# Flight Operations Manual
# Part (D) - OMD

| | |
|---|---|
| **Issue No.: (05)** | **Rev. No.: (02)** |
| **Issue Date: Jan. 2020** | **Rev. Date: Jan. 2024** |



CONTROLLED DOCUMENT

COPY NO.: ..09 IT (Electronic Library)

Form-EAR- 12320-5.3.18(a)

## (Approval /Acceptance) Operations Manual Form

**Part I: to be completed by the Operator**

- ATO: ☐ Operator: ☐ Name :- Nesma Airlines
- Manual Title: - Flight Operations Manual – Part (D) (OMD)
  Issue No.: 05
  Revision No.: 02
  Date : 24 Jan. 2024

| | |
|---|---|
| - Prepared by: | Name: Mr. Mouadh Mustapha and Mr. Mohamed Sherif<br>Title: OPS Library in Charge<br>Signature: / M. Sherif<br>Date : 24 January 2024 |
| - Prepared by: | Name: Capt. Nashaat Ayad<br>Title: Chief Pilot<br>Signature: NASHAT<br>Date : 24 January 2024 |
| - Revised by: | Name: Capt. Sherif El Messiri<br>Title: Director of Operations<br>Signature:<br>Date : 28 January 2024 |
| - Revised by: | Name: Eng. Bahy Metkies<br>Title: Safety & Quality Director<br>Signature:<br>Date : 29 January 2024 |
| - Accountable Manager: | Name: Mr. Karim Baky<br>Title: Accountable Executive<br>Signature:<br>Date: 30 January 2024 |

Nesma Airlines
نسما للطيران
CEO

(Stamp )

**Part II: to be completed by ECAA**

ECAA: Acceptance ☐ Approval ☑

ECAA PEL Inspector:
Name: Yousef Farrag Signature: Date 28/2/ 2024

Flight Training G.D :
Name: MOHAMED AMIN Signature: for / YEHIA Date :28/2 / 2024

LICA Administrator :
Name: SHEHAB HASSAN Signature: for/YEHIA Date 28/ 2 / 2024

This ☑ Final ☐ Temporary / (Acceptance/ Approval) Expiry Date: / /
( Stamp )

ECAA APPROVED (PEL)

# CHAPTER 0 ADMINISTRATION AND CONTROL OF MANUAL.

## 0.1 Foreword

Nesma Airlines Flight Operations produce this Operations Manual Part D (Operations Training Manual).
It is a guide to Nesma Airlines crew based on EGYPTIAN CAA requirements.

Its content does not supersede any requirements mandated by the EGYPTIAN CAA nor does it supersede or amend fleet type specific documentations such as AFM, FCOM, MMEL or any other approved documentation.

**In case of conflict with the applicable Egyptian CAA regulations, the Egyptian CAA regulations are the overriding authority.**

This manual contains guidelines, regulations and examples that adapted to Nesma Airlines policies and regulations.

Use and duplication (in whole or part, in all media) of this manual is authorized for internal purposes of Nesma Airlines departments only. Any commercial use is strictly excluded.

**All references to CAT III approaches, Cargo, transports of dangerous goods, (MNPS, AMU), and ETOPS** are to be treated as not applicable items till Nesma Airlines crew and Aircraft be approved for such an operation.

**NESMA AIRLINES**

**Flight Operations**

**5 El Madina St., El Nozha El Gedida,**

**Cairo, Egypt.**

**TELEFAX (202) 26217591**

**E-mail : - Traini ng.admin@nesmaairlines.com**



ECAA
APPROVED
( PEL )

## Table of Contents

**CHAPTER 0 ADMINISTRATION AND CONTROL OF MANUAL. .............................. 1**

0.1 Foreword ..................................................................................................... 1

0.3 Record of Approval ..................................................................................... 3

0.4 Training Manual Distribution List ................................................................ 4

0.5 Record of Normal Revisions ........................................................................ 5

0.6 Record of Temporary Revisions .................................................................. 6

0.7 Revision highlights ...................................................................................... 7

0.8 List of Effective Pages ................................................................................ 12

### 0.3 Record of Approval

This Manual complies with the requirements of the ECAA of Egypt and is issued under the authority of the Operations Director.

| | Name | Signature | Position | Date |
|---|---|---|---|---|
| **Prepared by** | Mr. Mouadh Mustapha | | OPS Library in Charge | 24 JAN 24 |
| **Prepared by** | Mr. Mohamed Sherif | M. Sherif | Technical writer | 24 JAN 24 |
| **Prepared by** | Capt. Nashaat Ayad | NASHAT | Chief Pilot | 24 JAN 24 |
| **Reviewed by** | Capt. Sherif El Messiri | | Operation Director | 28 JAN 24 |
| **Reviewed by** | Eng. Bahy Metkies | | Safety & Quality Director | 29 JAN 24 |
| **Approved By** | Mr. Karim Baky | | Accountable executive | 30 JAN 24 |



ECAA
APPROVED
( PEL )

## 0.4 Training Manual Distribution List

Training manual distribution list must be specified in this paragraph as well as the associated Flight Operation Manual number.

| No. | Operations Manual Holders | Type of Format | Control No. | Status (NO. of copies) |
|---|---|---|---|---|
| 1 | Egyptian Civil Aviation Authority (ECAA) | Hardcopy | 01 | 01 |
| 2 | Director Flight Operation | Hardcopy | 02 | 01 |
| 3 | Chief Pilot | DC | 03 | 01 |
| 4 | Operations Training Manager | Hardcopy | 04 | 01 |
| 5 | OCC Manager | DC | 05 | 01 |
| 6 | Operations Library | DC & HC | 06 | 01 |
| 7 | Instructors & Examiners | DC / Flyco | 07 | 01 |
| 8 | IFS Department | Hard copy / DC | 08 | 01 |
| 9 | IT Department | DC | 09 | 01 |
| 10 | Document & Record Control | DC | 10 | 01 |

**The OM-D Shall Be Distributed to:**

1. All Instructors Through DC
2. All Parties Listed Above.

**Note:**

- DC: Digital Copy – HC: Hard Copy
- Training Department Is Responsible for Issuing, Updating of OM-D and Revising All of Its Appendixes (Issuing and Updating) Before Its Effectiveness.
- Training Department Shall Keep a List of Parties Who Received the Updates of The OM-D.

**0.5 Record of Normal Revisions**

Revision to this Manual shall be made by all authorized users without delay. After inserting the revision enter the appropriate data in the revision sheet below. The compliance has to be signed under "Inserted by". Revision will be issued at irregular intervals, retain this revision sheet until officially replaced.

| Issue No. | Revision No. | Revision Date | Effective Date | Inserted by |
|---|---|---|---|---|
| 05 | 00 | Jan 2020 | Jan 2020 | FLT OPS TRN |
| 05 | 01 | April 2022 | April 2022 | FLT OPS TRN |
| 05 | 02 | Jan 2024 | Jan 2024 | FLT OPS TRN |
| | | | | |
| | | | | |
| | | | | |
| | | | | |



ECAA
APPROVED
( PEL )

## 0.6 Record of Temporary Revisions

Temporary Revision to this Manual shall be made by all authorized users without delay. After inserting the temporary revision enter the appropriate data in the revision sheet below. The compliance has to be signed under "Inserted by". Revision will be issued at irregular intervals, retain this revision sheet until officially replaced.

| TR. NO. | ISSUE DATE | DATE FILED | FILED BY | SIGNATURE | REMARKS |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |



ECAA APPROVED (PEL)

### 0.7 Revision highlights

| Items | Descriptions |
|---|---|
| **Chapter 0 Ref 0.1-page 1** | Changed the E-mail |
| **Chapter 0 Ref 0.2-page 2** | an item (Revision Highlights) is Added & table of content has been updated |
| **Chapter 0 Ref 0.3-page 3** | The Record of approval has been updated |
| **Chapter 0 Ref 0.4-page 4** | Training Manual Distribution List has been updated (No.10 Document & Record control) is Added |
| **Chapter 0 Ref 0.5-page 5** | A new Revision No. & date has been added (Rev No.02) (Date Jan 2024) |
| **Chapter 0 Ref 0.6-page 6** | All Temporary of normal revision has been removed |
| **Chapter 0 Ref 0.7-page 7** | Add a new pages of Revision highlights. |
| **Chapter 0 Ref 0.8-page 8** | The list of effective page has been updated Pages (1-2-3-4-5-6-7-8-9-10-11-12-13-14-15-16-17-18-20-21-23-37-38-39-40) |
| **Chapter 1 page 1 & 2** | Contents has been updated |
| **Chapter 1 Ref 1.1.5.1.5-page 12** | -Training policy (simulator Training) Instructor pilots (4 Hrs. per day and may be increased to 8 Hrs. as a Maximum) |
| **Chapter 1 Ref 1.1.5.1.7-page 12** | -Trend Analysis Policy and Process (Trend analysis program is issued every 12 months) |
| **Chapter 1 Ref 1.1.5.7-page 17** | Instructor / Check Airman / Examiner Selection Policy<br>Requirements & Selection has been updated |
| **Chapter 1 Ref 1.1.5.18 Page 18** | (IOE) Policies<br>(Item h) has been Removed |
| **Chapter 1 Ref 1.1.5.11 Page 20** | An Item (if the absent period is more then 6 month , trainee shall 4 hours (PF) training |
| **Chapter 1 Ref 1.1.5.17 page 21** | <u>-Requalification Simulator Requirements for Instructors</u><br>An Item (The re-qualification program for Instructors depends on the period of absence as detailed below) moved from page 20 to page 21 |
| **Chapter 1 Ref 1.1.5.18-page 22** | -Scheduling of Training Policy<br>An item (Normally seven (7) days in a row of training, followed by a day off, will be scheduled for any Flight Crew during Initial or Transition Training and any changes shall be approved by the Training Manager) has been updated |

| | |
|---|---|
| **Chapter 1 Ref 1.5.7-page 37** | Transition Training<br>An item (E.g. Captain A220 to be qualified as Captain A320<br>Has been updated |
| **Chapter 1 Ref 1.9.1-page 47** | General<br>An Item (Should a line check be required then the specific requirements, in accordance with the minimum requirements tabulated below, should be recommended by Chief pilot) Has been updated |
| **Chapter 1 Ref 1.9.5-page 48** | Line check has been removed |
| **Chapter 1 Table 1 page 49** | Table 1 has been updated and moved from chapter 4-page 20 |
| **Chapter 2-page 1** | Contents has been updated |
| **Chapter 2 Page 1** | It became intonationally left blank |
| **Chapter 2 Ref 2.3 page 5** | Selection System and Qualification of Instructor Pilots item c) Total 1000 hours Pilot in Command on type for previous fixed wing aircraft flight instructors. |
| **Chapter 2 page 6** | Presentation & psychometric has been removed |
| **Chapter 2 Ref 2.3.3 page 10** | Phase III (Ground Training & Simulator Training)<br>A) Simulator instructor only<br>Delete point 2<br>An observation simulator, which includes -<br>16 hours for first time instructors and 8 hours for transition training instructors. |
| **Chapter 2-page 11** | It became intonationally left blank |
| **Chapter 2-page 12** | 2.3.3.1.1 Instructor Pilots Initial / Transition Ground Training<br>**Course Duration.**<br>Training shall be 24 hours at Nesma Airlines Approved Classrooms |



ECAA
APPROVED
( PEL )

| | |
|---|---|
| **Chapter 2 Ref 2.3.3.1.2-page 13** | course duration<br>28 training hours during 4 working day |
| **Chapter 2 Ref 2.3.3.1.2-page 14** | Course layout<br>Total and hours has been removed |
| **Chapter 3 page 1** | Contents has been updated |
| **Chapter 3 Ref 3.2.2.2** | Checking<br>➢ **Dispatcher checking shall be S-, S and US;**<br>• **US** Unsatisfactory or Failed (Training committee meeting required).<br>• **S-** 70% - 89%<br>• **S** 90% and Above |
| **Chapter 4 page 1** | Content has been updated |
| **Chapter 4-page 2** | Content has been updated |
| **Chapter 4 Ref 4.1.1.1-page 4** | Flight Crew.<br><br>**Prerequisite.**<br>Crew members attending initial, transition and Re-qualification training courses or Rejoining Crew who left the company more than 1 year.<br><br>**Course Duration.**<br>20 Training hours during 3 working days • for a newly hired crew member with past operational, Airline experience or rejoining Crew who left the company more than 1 year. |
| **Chapter 4 page 6,7,8** | Course layout hours has been removed |
| **Chapter 4 page 9,10,11,12** | 4.1.1.2 Cabin Crew.<br>Refer to. Chapter 9 Point 9.1.1 |
| **Chapter 4 Ref 4.1.2-page 13** | Course Duration.<br><br>(Recurrent training 24 hours every 12 calendar months) has been updated. |
| **Chapter 4 Ref 4.3.1 page 20** | Re-qualification training<br>An item ( if the absent period is more than 6 months , trainee shall have 4 hours ) has been removed |

| | |
|---|---|
| **Chapter 4 Ref 4.5.1 page 23** | Course Duration. Command UP-Grade Ground Training<br>Training shall be 24 hours during 3 working days .<br>has been updated |
| **Chapter 4 Ref 4.6.3 page 31 & 32** | Runway Excursion ) has been added |
| **Chapter 4 Ref 4.6.13 page 48** | PBN Training. Objective<br><br>Fleet<br><br>A320-220 .has been updated |
| **Chapter 4 Ref 4.6.13 page 54** | Self-defense course (practical)<br>Initial training 12 hours during 2 days, -<br>Has been updated |
| **Chapter 4 Ref 4.6.17 page 57** | English Standard Test. has been updated |
| **Chapter 4 Ref 4.6.18 page 58** | FANS B (CPDLC + ADS-B) Training and Checking. Added ADS-B |
| **Chapter 4 Ref 4.7.2 page 61** | Prerequisite<br><br>This course is required for all Nesma Airlines Flight Crew, as a part of Basic Indoctrination course<br><br>Has been updated |
| **Chapter 4 Ref 4.8-page 62** | Courses<br><br>Added 2 courses (CPDLC & ADS-B) |
| **Chapter 5 page 1** | Contents has been updated |
| **Chapter 5 Ref 5.6.1-page 19** | IOE Policy<br><br>No. h has been removed |
| **Chapter 5 Ref 5.6.2-page 20** | Planned Sectors (IOE and USV)<br><br>if the absent period is more than 6 months , trainee shall have 4 hours ) has been removed |



ECAA
APPROVED
( PEL )

| | |
|---|---|
| **Chapter 5 Ref 5.12.1 page 31** | Course Layout<br>One session including LOFT to check the following<br>Training location: Egypt air training center has been updated. |
| **Chapter 5 Ref 5.12.3-page 33** | Curriculum has been updated A320 |
| **Chapter 5 Ref 5.13-page 38** | Training Location has been updated |
| **Chapter 6-page 1** | Contents has been updated |
| **Chapter 6 page 5** | Change the E-Mail |
| **Chapter 5 Ref 6.11 page 5** | The E-mail has been updated |
| **Chapter 9 page 1** | Contents has been updated |
| **Chapter 9 Ref 9.11 page 5** | Basic indoctrination<br>Objectives & Duration has been updated |
| **Chapter 10 page 1** | Contents has been updated |
| **Chapter 10 Ref 10.5.7 page 10** | Oral test company form has been updated in form No.146 |
| **Appendix I page 1** | Contents has been updated |
| **Appendix I-page 9** | UPRT duration every 36 months |

### 0.8 List of Effective Pages

| CHAPTER 0 ADMINISTRATIONS AND CONTROL OF MANUAL | | | | | |
|---|---|---|---|---|---|
| Chapter No. | Page | Issue No. | Issue Date | Revision No. | Revision Date |
| 0 | 1 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 2 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 3 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 4 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 5 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 6 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 7 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 8 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 9 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 10 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 11 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 12 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 13 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 14 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 15 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 16 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 17 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 18 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 19 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 20 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 21 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 22 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 0 | 23 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 24 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 0 | 25 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 0 | 26 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 0 | 27 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 0 | 28 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 0 | 29 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 0 | 30 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 0 | 31 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 0 | 32 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 0 | 33 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 0 | 34 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 0 | 35 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 0 | 36 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 0 | 37 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 38 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 39 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 0 | 34 | 05 | Jan 2020 | **02** | **Jan 2024** |



ECAA APPROVED (PEL)

| CHAPTER 01 INTRODUCTION AND POLICY | | | | | |
|---|---|---|---|---|---|
| Chapter No. | Page | Issue No. | Issue Date | Revision No. | Revision Date |
| 1 | 1 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 1 | 2 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 1 | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 5 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 10 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 12 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 1 | 13 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 14 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 15 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 17 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 1 | 18 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 1 | 19 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 20 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 1 | 21 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 1 | 22 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 1 | 23 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 24 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 25 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 26 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 27 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 28 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 29 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 30 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 31 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 32 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 33 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 34 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 35 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 36 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 37 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 1 | 38 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| 1 | 39 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 40 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 41 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 42 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 43 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 44 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 45 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 46 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 47 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 1 | 48 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 1 | 49 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 1 | 50 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 51 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 52 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 53 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 54 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 55 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 56 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 57 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 58 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 59 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 60 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 61 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 62 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 63 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 64 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 65 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 66 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 67 | 05 | Jan 2020 | 00 | Jan 2020 |
| 1 | 68 | 05 | Jan 2020 | 00 | Jan 2020 |
| **CHAPTER 02 INTRODUCTION AND POLICY** | | | | | |
| **Chapter No.** | **Page** | **Issue No.** | **Issue Date** | **Revision No.** | **Revision Date** |
| 2 | 1 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 2 | 2 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 2 | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| 2 | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| 2 | 5 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 2 | 6 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 2 | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| 2 | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| 2 | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| 2 | 10 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 2 | 11 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 2 | 12 | 05 | Jan 2020 | **02** | **Jan 2024** |

| | | | | | |
|---|---|---|---|---|---|
| 2 | 13 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 2 | 14 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 2 | 15 | 05 | Jan 2020 | 00 | Jan 2020 |
| 2 | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| 2 | 17 | 05 | Jan 2020 | 00 | Jan 2020 |
| 2 | 18 | 05 | Jan 2020 | 00 | Jan 2020 |
| 2 | 19 | 05 | Jan 2020 | 00 | Jan 2020 |
| 2 | 20 | 05 | Jan 2020 | 00 | Jan 2020 |
| 2 | 21 | 05 | Jan 2020 | 00 | Jan 2020 |
| 2 | 22 | 05 | Jan 2020 | 00 | Jan 2020 |
| 2 | 23 | 05 | Jan 2020 | 00 | Jan 2020 |
| 2 | 24 | 05 | Jan 2020 | 00 | Jan 2020 |

| CHAPTER 03 Tests Grading and Checking Process | | | | | |
|---|---|---|---|---|---|
| Chapter No. | Page | Issue No. | Issue Date | Revision No. | Revision Date |
| 3 | 1 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 3 | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 5 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 7 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 3 | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 10 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 12 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 13 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 14 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 15 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 17 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 18 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 19 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 20 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 21 | 05 | Jan 2020 | 00 | Jan 2020 |
| 3 | 22 | 05 | Jan 2020 | 00 | Jan 2020 |
| CHAPTER 04 Ground Training | | | | | |
| Chapter No. | Page | Issue No. | Issue Date | Revision No. | Revision Date |
| 4 | 1 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 2 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 4 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 5 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 6 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 7 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 8 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 9 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 10 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 11 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 12 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 13 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 14 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
| --- | --- | --- | --- | --- | --- |
| 4 | 15 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 17 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 18 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 19 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 20 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 21 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 22 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 23 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 24 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 25 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 26 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 27 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 28 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 29 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 30 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 31 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 32 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 33 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 34 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 35 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 36 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 37 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 38 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 39 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 40 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 41 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 42 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 43 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 44 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 45 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 46 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 47 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 48 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 49 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 50 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 51 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 52 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 53 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 54 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 55 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| 4 | 56 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 57 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 58 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 59 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 60 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 61 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 62 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 4 | 63 | 05 | Jan 2020 | 00 | Jan 2020 |
| 4 | 64 | 05 | Jan 2020 | 00 | Jan 2020 |
| **CHAPTER 05 Tests Grading and Checking Process** | | | | | |
| **Chapter No.** | **Page** | **Issue No.** | **Issue Date** | **Revision No.** | **Revision Date** |
| 5 | 1 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 5 | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 5 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 10 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 12 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 13 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 14 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 15 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 17 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 18 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 19 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 5 | 20 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 5 | 21 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 22 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 23 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 24 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 25 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 26 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 27 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 28 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 29 | 05 | Jan 2020 | 00 | Jan 2020 |



ECAA APPROVED ( PEL )

| | | | | | |
|---|---|---|---|---|---|
| 5 | 30 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 31 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 5 | 32 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 33 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 5 | 34 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 35 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 36 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 37 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 38 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 5 | 39 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 40 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 41 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 42 | 05 | Jan 2020 | 01 | June 2020 |
| 5 | 43 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 44 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 45 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 46 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 47 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 48 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 49 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 50 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 51 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 52 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 53 | 05 | Jan 2020 | 00 | Jan 2020 |
| 5 | 54 | 05 | Jan 2020 | 00 | Jan 2020 |
| **CHAPTER 06 Nesma Airlines E-learning System** | | | | | |
| **Chapter No.** | **Page** | **Issue No.** | **Issue Date** | **Revision No.** | **Revision Date** |
| 6 | 1 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 6 | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| 6 | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| 6 | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| 6 | 5 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 6 | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| **CHAPTER 07 Dispatcher Training** | | | | | |
| **Chapter No.** | **Page** | **Issue No.** | **Issue Date** | **Revision No.** | **Revision Date** |
| 7 | 1 | 05 | Jan 2020 | 00 | Jan 2020 |
| 7 | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| 7 | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| 7 | 4 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| 7 | 5 | 05 | Jan 2020 | 00 | Jan 2020 |
| 7 | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| 7 | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| 7 | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| 7 | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| 7 | 10 | 05 | Jan 2020 | 00 | Jan 2020 |
| 7 | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| 7 | 12 | 05 | Jan 2020 | 00 | Jan 2020 |
| 7 | 13 | 05 | Jan 2020 | 00 | Jan 2020 |
| 7 | 14 | 05 | Jan 2020 | 00 | Jan 2020 |
| **CHAPTER 08 Simulator Evaluation Policy** | | | | | |
| **Chapter No.** | **Page** | **Issue No.** | **Issue Date** | **Revision No.** | **Revision Date** |
| 8 | 1 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 5 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 10 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 12 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 13 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 14 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 15 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 17 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 18 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 19 | 05 | Jan 2020 | 00 | Jan 2020 |
| 8 | 20 | 05 | Jan 2020 | 00 | Jan 2020 |
| **CHAPTER 09 Cabin Crew Training Program** | | | | | |
| **Chapter No.** | **Page** | **Issue No.** | **Issue Date** | **Revision No.** | **Revision Date** |
| 9 | 1 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 9 | 2 | 05 | Jan 2020 | 00 | Jan 2020 |



ECAA APPROVED (PEL)

| | | | | | |
|---|---|---|---|---|---|
| 9 | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 5 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 9 | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 10 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 12 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 13 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 14 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 15 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 17 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 18 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 19 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 20 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 21 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 22 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 23 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 24 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 25 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 26 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 27 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 28 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 29 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 30 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 31 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 32 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 33 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 34 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 35 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 36 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 37 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 38 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| 9 | 39 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 40 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 41 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 42 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 43 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 44 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 45 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 46 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 47 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 48 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 49 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 50 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 51 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 52 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 53 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 54 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 55 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 56 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 57 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 58 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 59 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 60 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 61 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 62 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 63 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 64 | 05 | Jan 2020 | 00 | Jan 2020 |
| 9 | 65 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 66 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 67 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 68 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 69 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 70 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 71 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 72 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 73 | 05 | Jan 2020 | 01 | Apr. 2022 |



ECAA APPROVED (PEL)

| | | | | | |
|---|---|---|---|---|---|
| 9 | 74 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 75 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 76 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 77 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 78 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 79 | 05 | Jan 2020 | 01 | Apr. 2022 |
| 9 | 80 | 05 | Jan 2020 | 01 | Apr. 2022 |
| **CHAPTER 10 Forms** | | | | | |
| **Chapter No.** | **Page** | **Issue No.** | **Issue Date** | **Revision No.** | **Revision Date** |
| 10 | 1 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 10 | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 5 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 10 | 05 | Jan 2020 | **02** | **Jan 2024** |
| 10 | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 12 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 13 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 14 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 15 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 17 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 18 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 19 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 20 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 21 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 22 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 23 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 24 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 25 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 26 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 27 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
| --- | --- | --- | --- | --- | --- |
| 10 | 28 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 29 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 30 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 31 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 32 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 33 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 34 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 35 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 36 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 37 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 38 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 39 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 40 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 41 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 42 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 43 | 05 | Jan 2020 | 00 | Jan 2020 |
| 10 | 44 | 05 | Jan 2020 | 00 | Jan 2020 |



ECAA
APPROVED
( PEL )

| (Appendix A) Initial Training | | | | | |
|---|---|---|---|---|---|
| Appendix | Page | Issue No. | Issue Date | Revision No. | Revision Date |
| A | 1 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 5 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 10 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 12 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 13 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 14 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 15 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 17 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 18 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 19 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 20 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 21 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 22 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 23 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 24 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 25 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 26 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 27 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 28 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 29 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 30 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 31 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 32 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 33 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 34 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 35 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 36 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 37 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| A | 38 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 39 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 40 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 41 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 42 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 43 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 44 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 45 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 46 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 47 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 48 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 49 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 50 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 51 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 52 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 53 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 54 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 55 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 56 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 57 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 58 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 59 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 60 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 61 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 62 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 63 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 64 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 65 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 66 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 67 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 68 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 69 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 70 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 71 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 72 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 73 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 74 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 75 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 76 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
| --- | --- | --- | --- | --- | --- |
| A | 77 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 78 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 79 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 80 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 81 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 82 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 83 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 84 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 85 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 86 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 87 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 88 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 89 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 90 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 91 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 92 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 93 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 94 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 95 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 96 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 97 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 98 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 99 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 100 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 101 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 102 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 103 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 104 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 105 | 05 | Jan 2020 | 00 | Jan 2020 |
| A | 106 | 05 | Jan 2020 | 00 | Jan 2020 |
| **(Appendix B) Recurrent Training** | | | | | |
| **Appendix** | **Page** | **Issue No.** | **Issue Date** | **Revision No.** | **Revision Date** |
| B | 1 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 5 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 7 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| B | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 10 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 12 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 13 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 14 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 15 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 17 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 18 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 19 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 20 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 21 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 22 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 23 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 24 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 25 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 26 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 27 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 28 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 29 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 30 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 31 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 32 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 33 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 34 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 35 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 36 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 37 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 38 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 39 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 40 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 41 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 42 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 43 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 44 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 45 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 46 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| B | 47 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 48 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 49 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 50 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 51 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 52 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 53 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 54 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 55 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 56 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 57 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 58 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 59 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 60 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 61 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 62 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 63 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 64 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 65 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 66 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 67 | 05 | Jan 2020 | 00 | Jan 2020 |
| B | 68 | 05 | Jan 2020 | 00 | Jan 2020 |
| **(Appendix C) Upgrade Training** | | | | | |
| **Appendix** | **Page** | **Issue No.** | **Issue Date** | **Revision No.** | **Revision Date** |
| C | 1 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 5 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 10 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 12 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 13 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 14 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 15 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| C | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 17 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 18 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 19 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 20 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 21 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 22 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 23 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 24 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 25 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 26 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 27 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 28 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 29 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 30 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 31 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 32 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 33 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 34 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 35 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 36 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 37 | 05 | Jan 2020 | 00 | Jan 2020 |
| C | 38 | 05 | Jan 2020 | 00 | Jan 2020 |
| **(Appendix D) Low Visibility Training** | | | | | |
| **Appendix** | **Page** | **Issue No.** | **Issue Date** | **Revision No.** | **Revision Date** |
| D | 1 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 5 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 10 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 12 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 13 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 14 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| D | 15 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 17 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 18 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 19 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 20 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 21 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 22 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 23 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 24 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 25 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 26 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 27 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 28 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 29 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 30 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 31 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 32 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 33 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 34 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 35 | 05 | Jan 2020 | 00 | Jan 2020 |
| D | 36 | 05 | Jan 2020 | 00 | Jan 2020 |
| **(Appendix E) Type Rating check** | | | | | |
| **Appendix** | **Page** | **Issue No.** | **Issue Date** | **Revision No.** | **Revision Date** |
| E | 1 | 05 | Jan 2020 | 00 | Jan 2020 |
| E | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| E | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| E | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| E | 5 | 05 | Jan 2020 | 00 | Jan 2020 |
| E | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| E | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| E | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| **(Appendix F) CCQ check** | | | | | |
| **Appendix** | **Page** | **Issue No.** | **Issue Date** | **Revision No.** | **Revision Date** |
| F | 1 | 05 | Jan 2020 | 00 | Jan 2020 |
| F | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| F | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| F | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| F | 5 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| F | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| F | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| F | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| F | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| F | 10 | 05 | Jan 2020 | 00 | Jan 2020 |
| F | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| F | 12 | 05 | Jan 2020 | 00 | Jan 2020 |
| **(Appendix G) CRM Material** | | | | | |
| **Appendix** | **Page** | **Issue No.** | **Issue Date** | **Revision No.** | **Revision Date** |
| G | 1 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 5 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 10 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 12 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 13 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 14 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 15 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 17 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 18 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 19 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 20 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 21 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 22 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 23 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 24 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 25 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 26 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 27 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 28 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 29 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 30 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| G | 31 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 32 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 33 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 34 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 35 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 36 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 37 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 38 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 39 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 40 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 41 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 42 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 43 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 44 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 45 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 46 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 47 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 48 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 49 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 50 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 51 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 52 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 53 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 54 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 55 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 56 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 57 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 58 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 59 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 60 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 61 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 62 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 63 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 64 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 65 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 66 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 67 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 68 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 69 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| G | 70 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 71 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 72 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 73 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 74 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 75 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 76 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 77 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 78 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 79 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 80 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 81 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 82 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 83 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 84 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 85 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 86 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 87 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 88 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 89 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 90 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 91 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 92 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 93 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 94 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 95 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 96 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 97 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 98 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 99 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 100 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 101 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 102 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 103 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 104 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 105 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 106 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 107 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 108 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| G | 109 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 110 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 111 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 112 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 113 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 114 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 115 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 116 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 117 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 118 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 119 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 120 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 121 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 122 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 123 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 124 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 125 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 126 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 127 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 128 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 129 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 130 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 131 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 132 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 133 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 134 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 135 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 136 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 137 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 138 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 139 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 140 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 141 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 142 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 143 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 144 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 145 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 146 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 147 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| G | 148 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 149 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 150 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 151 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 152 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 153 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 154 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 155 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 156 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 157 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 158 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 159 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 160 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 161 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 162 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 163 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 164 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 165 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 166 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 167 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 168 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 169 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 170 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 171 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 172 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 173 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 174 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 175 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 176 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 177 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 178 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 179 | 05 | Jan 2020 | 00 | Jan 2020 |
| G | 180 | 05 | Jan 2020 | 00 | Jan 2020 |

| (Appendix H) Requalification | | | | | |
|---|---|---|---|---|---|
| Appendix | Page | Issue No. | Issue Date | Revision No. | Revision Date |
| H | 1 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 5 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 9 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 10 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 12 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 13 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 14 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 15 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 17 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 18 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 19 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 20 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 21 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 22 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 23 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 24 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 25 | 05 | Jan 2020 | 00 | Jan 2020 |
| H | 26 | 05 | Jan 2020 | 00 | Jan 2020 |
| (Appendix I ) Requalification | | | | | |
| Appendix | Page | Issue No. | Issue Date | Revision No. | Revision Date |
| I | 1 | 05 | Jan 2020 | 02 | Jan 2024 |
| I | 2 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 3 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 4 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 5 | 05 | Jan 2020 | 00 | Jan 2020 |

| | | | | | |
|---|---|---|---|---|---|
| I | 6 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 7 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 8 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 9 | 05 | Jan 2020 | 02 | Jan 2024 |
| I | 10 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 11 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 12 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 13 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 14 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 15 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 16 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 17 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 18 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 19 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 20 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 21 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 22 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 23 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 24 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 25 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 26 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 27 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 28 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 29 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 30 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 31 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 32 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 33 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 34 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 35 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 36 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 37 | 05 | Jan 2020 | 00 | Jan 2020 |
| I | 38 | 05 | Jan 2020 | 00 | Jan 2020 |

**INTENTIONALLY LEFT BLANK**

**INTENTIONALLY LEFT BLANK**

## Contents

**CHAPTER 1 INTRODUCTION AND POLICY**......4
1.1 Introduction......4
1.1.1 Administration and Control of Training Manual.......4
1.1.2 Purpose of the Manual.......6
1.1.3. Editorial conventions......8
1.1.4. Training Manual.......9
1.1.5 Training Policy......10
1.1.6. Approval and Acceptance by the Authority......24
1.2. Responsibilities......25
1.2.1. Authority......25
1.2.2. Structure and Contents......25
1.2.3. Distribution......25
1.2.4. Holder Responsibility.......25
1.2.5. Training Philosophy......26
1.3. System of Amendments.......26
1.3.1. Issue.......26
1.3.2. Training Directives......27
1.3.3. Notification to the Authority......27
1.3.4. Amendment Process......27
1.3.5. Control Pages......28
1.4. Organization Charts.......29
1.4.1. Nominated post holders.......30
1.4.2. Director of Operations......30
1.4.3. Chief Pilot.......32
1.4.4. Operations Training Manager......33
1.4.5. Training Admin......35
1.5. Definitions......36
1.5.1 Airplane Groups......36
1.5.2 Base Month “Training/Checking Month”......36
1.5.3 Calendar Month......36
1.5.4 Grace Period......36
1.5.5 Difference Training......36
1.5.6 Initial Training......37
1.5.7 Transition Training......37
1.5.8 Cross Crew Qualification (CCQ)......37
1.5.9 Upgrade Training......37
1.5.10 Program Hours......37
1.5.11 In-Flight Training......37
1.5.12 Recurrent Training......37
1.5.13 Ground Training......37

1.5.14 Safety and Emergency Procedures (SEP) ........ 37
1.5.15 Proficiency Check ........ 37
1.5.16 Line Check ........ 38
1.5.17 Random Checks ........ 38
1.5.18 Safety Pilot ........ 38
1.5.19 Abbreviations ........ 39
1.6. Training Review Committee (TRC) ........ 42
1.6.1 Training Memo's ........ 42
1.6.2 Training Material Review Policy ........ 43
1.7. Selection Committee. ........ 44
1.8. Areas, Routes and Airports Categories. ........ 45
1.8.1. General. ........ 45
1.8.2. Airports Categories. ........ 45
1.8.3. Route Qualifications. ........ 46
1.9. Recent Experience. ........ 47
1.9.1. General ........ 47
1.9.2. Flight crew member. ........ 47
1.9.3. Recency of Training and Checking ........ 48
1.9.4. (Base) Training / Zero Flight Time. ........ 48
1.10. Pilot Returning Back from leave of absence. ........ 48
1.11. Use of Simulator Instructor passed 60th birthday. (Ref. ECAR 121.412 (d)) ........ 51
1.11.1 Use of Pilots passed 60th birthday. ........ 51
1.11.4. Training by External Instructors ........ 52
1.12. Flight under Supervision ........ 53
1.12.1. General ........ 53
1.13. Zero Flight Time (ZFT). ........ 54
1.13.1. General ........ 54
1.13.2. Levels of Certifications and Maneuvers Credit: ........ 54
1.14. Training bag contents for simulator. ........ 56
1.15. Training Time Policy. ........ 56
1.15.1. Training Syllabus Policy ........ 56
1.16. Flight Training Department General Policies. ........ 57
1.16.1. Communication Protocol ........ 57
1.16.2. Contact with the Authority ........ 57
1.16.3. Instructors Meeting ........ 57
1.16.4. Segregation of Training and Checking ........ 57
1.16.5. Instructors and Evaluators Objectivity Criteria ........ 58
1.16.6. Change of Instructor/Examiner ........ 58
1.16.7. Working Hours ........ 58
1.16.8. Instructor Evaluation Policy. ........ 58
1.16.9 Instructor Certification ........ 58

1.16.10 Introduction of A New Type Policy ........ 58
1.17. Processes to Communicate Flight Crew Qualifications to Scheduling Department ....... 59
1.17.1. Air Crew Licenses Responsibility for Renewal ........ 59
1.18. Training on Aircraft ........ 60
1.19. Language ........ 60
1.19.1. Induction ........ 60
1.19.2. Instructors ........ 60
1.19.3. Recurrent Training ........ 61
1.19.4. English Language Test. ........ 61
1.19.5. Test Location. ........ 61
1.19.6. Test Results. ........ 61
1.20. Co-Pilots Take-off and Landings. ........ 61
1.21. Training Records ........ 62
1.22.1 General. ........ 64
1.22.2. Training records. ........ 66
1.22.3. Course Attendance Records ........ 66
1.22.4. Training and Assessment Forms ........ 66
1.22.5. Certificate of Test ........ 66
1.23. Training Quality Audits. ........ 67
1.23.1. Quality Control of Training Courses. ........ 67
1.24. Trend analysis. ........ 67
1.25. Nesma Airlines Pilots Selection Process ........ 67
1.26. Newly Hired Type rated Pilot ........ 67

# CHAPTER 1 INTRODUCTION AND POLICY.

## 1.1 Introduction

### 1.1.1 Administration and Control of Training Manual.

**General**.

Part D of the Operations Manual (Training Manual) is issued in accordance with the Egyptian Civil Aviation Authority (ECAR 121). This manual complies with the requirements of ECAR 121, Subparts E, N, O and Appendix E, F, the applicable ECARs and the terms and conditions of the Nesma Airlines Operator's Certificate. The format of this manual is as specified in ECAR 121 Subpart P Section2.

Operations manual Part D is for the use of those Flight Operations personnel assigned to operational duties in connection with the training of flight, cabin crew and flight dispatcher. Copies of Part D shall also be made available to non-Nesma Airlines personnel who may be authorized to carry out training on the Company's behalf (e.g. ECAA personnel authorized to conduct check or evaluation flights or subcontractor instructor).

It is the Company's policy that all requirements of ECAR's are to be complied with. Moreover, training courses and procedures are to be developed and conducted in accordance with the guidance material contained in the associated regulatory Interpretive and Explanatory Material and Acceptable Means of Compliance. However, an alternative method of compliance may be developed and implemented subject to the regulatory authority's approval or acceptance, as appropriate. When appropriate other reference documents may be used when designing and developing training courses. The use of such reference sources is to be explicitly documented

### 1.1.1.1 Document Control

**(REF to corporate manual CH.2)**

To ensure that manual and documents used to support, control or provide guidance for the conduct of operation are relevant, valid and up to date and revised for expeditious dissemination of information to appropriate personnel.

**a)** A "Controlled Copy" mark printed on the first page of every manual indicates that the said manual is updated, current and controlled. It bears the Document Control Number of the holder.

**b)** An "Uncontrolled Copy" mark shall be stamped over the printed "Controlled Copy" for manuals that are not updated and shall not have Document Serial Number.

***"CONTROLLED DOCUMENT"***

***"COPY NO ...... "***

### 1.1.1.2 Distribution of Documents

The Manuals / Amendments are distributed through a process of distribution list which shall be acknowledged with the date of receipt of the manual /amendments / revisions and returned to the Flight Training Office within period of ten (10) days. The Manager of Flight Training is responsible for the timely distribution of the documents and to ensure the prevention of unintentional use of obsolete documents and further ensure that such documents are suitably identified if they are used for any purpose.

### 1.1.1.3 Distribution of Information

Nesma-Air management will distribute urgent information (bulletins) by means of internal memos, faxes, intranet, emails and/or SITA. This information will be used for a time specified on the bulletins and may be later incorporated into the applicable manual.

### 1.1.2 Purpose of the Manual.

The main objective of the flight Training Manual is to outline policies related to all training and checking activities in order to achieve the overall goal of the air safety. The training programs and procedures set herein are the tools of implementing those policies.

All policies shall be in accordance with the conditions contained in the Air Operator Certificate (AOC) and with the relevant provisions of Egyptian Civil Aviation Regulations (ECAR). In addition, the Training Manual contains the applicable national rules and regulations in addition to relevant ICAO standards and procedures for air navigation services. It reflects the valid company policies, regulations and procedures derived from and part of the Operation Manual.

The **Egyptian Civil Aviation Authority** has been provided with a copy of the Training Manual and will receive all amendments and revisions there too.

Nesma Airlines Flight Training Manual will provide the following:

**1)** Training Department shall monitor, record and evaluate the results of all successful and unsuccessful ground and flight training and examination for the purpose of achieving continuous improvement of the flight crew training and evaluation program.

**2)** This section covers all ground and flight training programs shall ensure training is conducted on the type of aircraft for which the flight crew member is assigned to operate and shall include all initial, recurrent, transition or conversion, re-qualification, upgrade to Commander (PIC), recency, familiarization, and differences or any other specialized training. When applicable, evaluations to ensure flight crewmembers are competent to perform assigned duties.

**3)** All ground and flight training examination programs are approved by ECAA.

**4)** All instructors, examiners, line check airmen and flight crew (whether employed or subcontracted) are trained, qualified and standardized for their assigned tasks, and are certified by Nesma Airlines and approved by ECAA when required.

**5)** The Training Manual which includes the training programs and syllabi for all initial, recurrent, transition, re-qualification, upgrade, recency, familiarization, and differences is approved by ECAA (Egyptian Civil Aviation Authority). And shall be reviewed annually or when condition warrant to ensure compliance with ECAA approved standards.

**6)** Training Department shall insure that all flight crew members receive training that supports the introduction of:

   **a.** New policies, rules, instructions and procedures.
   As per operation manual 1.3.6, the technical office manager and technical pilot are responsible for tracking, monitoring and customizing the updates sent by aircraft manufacturer and/or the updates done through retrofits and inform training manager, and he will send all updates to pilots via email.

   **b.** New aircraft types, systems and fleet modifications / upgrades.

**Note: -**

This will be assured during Basic indoctrination, recurrent ground course and via Nesma Airlines communications tools.

**7)** The content of the Training Manual shall be updated to reflect current procedures.
**8)** All operations personnel shall have easy access to the applicable sections of the current Training Manual.
**9)** Training Manual shall include curriculum for ground training, simulator training, aircraft training, examination and certification, line flying under supervision, and any specialized training.
**10)** Training Manual shall include comprehensive syllabi to include lesson plans, procedures for training and the conduct of evaluations.
**11)** Training Manual shall include the training Program for the development of knowledge and skills related to human performance (Crew Resource Management/Dispatch Resource Management, CRM/DRM).
**12)** All training facilities, devices, instructors, Check Airmen shall have the required approval from the ECAA.
**13)** Training department shall ensure training facilities, devices, equipment and course materials (whether owned or contracted) are standardized and:
  **I.** have the required certification(s) and approval or acceptance from ECAA.
  **II.** Are periodically evaluated in Training Review Committee (TRC) to ensure compliance with applicable training resource standards.
**14)** Training department shall insure that Nesma Airlines have sufficient Instructors, Examiners, Line Check Airmen and support personnel to conduct the training and examination programs.
**15)** Training Department will ensure that Instructors, Check Airmen (employed or subcontracted) and all training facilities, course materials meet the required qualifications and performance standards.
**16)** Training department shall ensure that training aids and equipment, to include mock-ups, flight deck procedure trainers and other devices and/or course materials used in the flight crew training and evaluation program, reasonably reflect the configuration of the fleet for which the respective training is being conducted. Therefore, the Training Department shall develop and maintain a list of differences (if any) between a Synthetic Flight Training Device and aircraft currently on the fleet that affect the training and checking program. Prior to each training session, the Instructor conducting the session shall familiarize himself and brief the trainee on the differences relevant to the training session.
**17)** All Flight crews (Check Airmen, Instructors, Pilots, and Trainees) shall adapt and use only the authorized training Manuals, documents and records which are published and submitted by Training Department.
**18)** In order to abide by OM-A policy, English & Arabic languages to be considered as the common language throughout training and examinations.
**19)** All Examinations shall be administered by a qualified examiner.
**20)** All Crew members must carry with them the required licenses/ certificates to exercise their duties (as issued/ agreed by the authority ECAA).
**21)** All Crew members are responsible for the renewal of their Licenses/ certificates

### 1.1.3. Editorial conventions

The meaning of specific terms and definitions is in accordance with that list of definitions and explanatory remarks contained in the Operations Manual Part D.

The following definitions apply when interpreting the intent of the contents of this manual:

- "Shall" or "Must" means that the application of the criteria is mandatory
- "Should" means that the application of the criteria is recommended.
- "May" means that the application of the criteria is optional.
- "Will" indicates a mandatory requirement and serves to advise that action is incumbent on the Authority.
- "The Authority" means the ECAA.
- "The Company" means Nesma Airlines.

"The appropriate training manger" means the appropriate manager chosen from chief pilot.

- 'The applicable type specific training manual" means the appropriate training manual applicable to the aircraft type being considered.
- "Suitably qualified" means having the required experience, qualifications and training to conduct training in accordance with the provisions required by the Authority.
- "Training Captain" is a generic term referring to a TRE, TRI.
- "Ground Instructor" is a generic term referring to an suitably qualified PI, SFI, TRI, SFE, TRE or other nominated and authorized person conducting ground or classroom based instructional duties.
- "Check" normally indicates that the exercise referred to is a mandatory simulator or airplane assessment.
- "Examination" normally indicates a ground based or classroom test of knowledge.
- "Evaluation" normally indicates that a non-mandatory simulator or airplane assessment.
- Low Visibility Operations (LVOPS) may be termed All Weather Operations (AWOPS) in other manuals.

### 1.1.4. Training Manual.

This is comprised all instructions and information for the training of flight operations personal needed to conduct a safe operation.

The ECAA approved training manual contains standards for flight crew training and examinations including:

**1)** Training policies/directives.
**2)** Comprehensive syllabus, including lesson plans, procedures for training and the conduct for examinations.
**3)** Maneuver tolerances for normal and non-normal situations for training and examinations for the following flight parameters:
   **a.** Heading
   **b.** Airspeed
   **c.** Height/altitude
   **d.** Course tracking
**4)** Procedures to properly train and examine abnormal and emergency conditions.
**5)** All simulated aircraft, weather and environmental conditions are standardized, And appropriate for the training/examination being administered.
**6)** Limits for the number of times maneuvers may be repeated and examination still considered acceptable.
**7)** Procedures for remedial training and subsequent examination for flight crew unable to achieve or maintain required standards.
**8)** Nesma policy that all instructors, evaluators, line check airmen and flight crew members shall use only the documents and records for the conduct of training and evaluation that are authorized by Nesma Airlines training department

## 1.1.5 Training Policy

### 1.1.5.1 In Case of a Flight Crew Trainee Failure for a Qualification

The Following Rules Apply:

#### 1.1.5.1.1 Simulator Training Sessions

- Any extension beyond simulator assigned sessions can be extended to a limit of 2 sessions during initial training and 1 session during transition training without a training committee, but just by a special approval from the Training Manager.
- In case of a trainee failure to finish training in the extended sessions mentioned above, a training committee shall be formed by Training Manager decide the remedial action for the trainee based on case by case basis and Flight Crew position.
- The training committee will decide either to terminate the training or extend the training sessions.
- In case the committee approved to extend the training, the maximum extension sessions allowed are 2 sessions, and in case of trainee failure during these two extended sessions, training shall be terminated.

#### 1.1.5.1.2 Line Training Sectors

- No Evaluation to continue or stop training before the training reaches half the limit sectors. And in case of training complications sensed during half the limit sectors, the instructor shall inform the Training Manager.
- Extension beyond the Limit sectors and training hours shall be performed through a committee chaired by Training Manager.
- In case the committee approved to extend the training sectors, the maximum sectors allowed are 20 sectors during initial, and 10 sectors during transition, and in case of trainee failure during those extended sectors, training shall be terminated.

**Note:** Evaluation flight should be conducted by Examiner pilot.

### 1.1.5.1.3 Training Retake Policy

As a principal Initial / Transition / Upgrade / Pre-Command training are one (1) chance training:

- In case of trainee's failure during Initial / Transition training a committee will be formed and chaired by Training Manager to decide the remedial actions on a case by case basis.
- The remedial actions shall include but will not be limited to:
  - A higher proficiency level for the Crewmember to operate on his/her previous type if applicable.
  - A second (Last) chance may be allowed only after passing two consecutive Proficiency Checks with no S1, and two Random Checks with no S1.
  - Termination.

**Note: Nesma Airlines** policy may allow for a second (Last) chance Initial / Transition / Upgrade / Pre-Command training based on:

- File.
- Administrative History.
- Training history.
- Training progress.

### 1.1.5.1.4 Pre-Command Check Policy

- Pre-command check Examiner should be selected and approved by the Training Manager.
- F/O shall satisfactory complete 2 consecutive recurrent proficiency checks with no S1 to be eligible for conducting command course and pre command Simulator check (LOFT).
- As a principal only one retake chance is allowed.
- Pilots failed in their pre-command check and consumed their retake chance are not allowed to attend the command course.

**Pre-Command Simulator Check Retake Policy**

In case of failure during a pre command check a committee shall be held to decide the appropriate course of action. This committee will consist of:

- Training Manager.
- Chief Pilot.
- Examiners who conducted the check.
- The F/O being checked will not be eligible for another pre-command check except after fulfilling the following:
  - 2 consecutive PC check with a minimum S2 in all item.

Normally a period of 10 months is between the previous and next pre- command check, and according to the F/O history and file these 10 months can be reduced by a committee chaired by the Training Manager.

### 1.1.5.1.5 Training Time Policy (Simulator Training)

- Training time shall not be reduced without prior approval.
- An approval from Training Manager or his deputy is required if additional training time is required during Initial, Transition, Upgrade, CCQ and Recurrent Training.
- Trainee Pilots (Maximum 4 Hrs. per day as PF and/or PM).
- Instructor Pilots (4 Hrs. per day and may be increased to 8 Hrs. as a Maximum).

Provisions of Flight Time, Duty Time and Rest period shall be applied (Refer to OM - PART A chapter 7).

### 1.1.5.1.6 Training Via External Suppliers and Distance Learning Policy

All training programs & courses accomplished via external suppliers (contracts) shall be performed in accordance with OM - PART A chapter 3.

- All Distance Learning courses are monitored via an administrative access at the FTD.
- After the completion of any course via Distance Learning a record of completion is shown with specific time & date through the administrative access at the FTD.
- A certificate of completion is issued for each trainee and will be retained in the trainee`s file.

### 1.1.5.1.7 Trend Analysis Policy and Process.

Evaluating areas of training is a very important task for the training process.

- Trend analysis is responsibility of Training Manager in Nesma Airlines.
- Trend analysis program is issued every 12 months.
- Trend analysis covers many areas of training (Refer to trend analysis sheet).
- Trend analysis is numerical value of trends in Nesma Airlines training and operations.
- 10% of the same item in every type is the performance indicator of trend.
- The trend analysis report will be discussed during the regular meetings between the Training Manager in Nesma Airlines and the Instructors.

A committee will be shared by Training Manager in Nesma Airlines and Chief pilot, to improve the training program, cover all aspects of training and develop the weak points emerged during the trend reports if any.

### 1.1.5.1.8 Type Rating Check (Certification) Policy

Each new pilot shall attend the type rating course relevant to his previous experience

No training is allowed during Type Rating Certification (Final Check)

a- Trainee shall be familiar with all evaluation maneuvers but all evaluation maneuvers sequence shall be unknown to the trainee being evaluated.
b- Examiner is the only person authorized to conduct and sign the type rating check.
c- The result of the check should be either **SATISFACTORY** or **UNSATISFACTORY** depends on the compliance of the pilot under check to the specified tolerances set forth in ECAA practical test standards.
d- During Line or any other Check, the Check Airman or Examiner shall normally occupy the observer seat, and he/she shall not interfere by giving instructions or comments at any time - Especially during critical phases of flight, and he shall debrief any comments only on ground.
e- However, he/she shall retain the final responsibility for the safety of the operation, he shall therefore consider the command of the flight at any time and relief the captain under check from his command. Company Examiner or Check Airman shall conduct line Check.
f- During area, route and airport qualification the Captain under check for route qualification is the pilot in command of the flight (Refer OM - PART D item 1.6).
g- During any checking activity, the Check Airman retains the final responsibility for the safety of the operation. He/she shall therefore relief the Captain under check from his command.
h- Proficiency Check shall be conducted by company Examiner or Check Airman.
i- The Instructor of the Flight Crew being evaluated shall not perform the evaluation.
j- The instructor who admits the Flight Crew for the Type Rating Check, shall attend the evaluation, unless by a special approval from Training Manager.
k- Inappropriate interferences from management, any other department, individuals, or external organization are prohibited.
l- Type rating proficiency check shall be performed before line training.

**Note:** In case of an item failed during the check, the instructor can repeat the item for 3 trials maximum for the same maneuver, or 1 trial for 2 different maneuvers. If the trainee fails in more than 2 maneuvers, the check should be suspended.

### 1.1.5.2 Using Training Hand Outs Policy

- No personal training papers prepared by Instructors shall be used as briefing notes and distributed to trainees unless prepared by and approved by training department.
- All instructors, evaluators, line check airmen and flight crew members shall use only those documents for the conduct of training and evaluation that are authorized by Nesma Airlines.
- All training materials are distributed throw official Nesma Airlines communications tools and E-Learning system, unauthorized training materials (e.g., handouts, training aids) are not allowed.

### 1.1.5.3 Flight Training Department Communication with Instructors and Flight Crew Policy.

- A meeting between Training Manager and Instructors shall be held at the flight training department every 6 months to discuss training materials and to assure that all training aspects are up to standards.
- Training Memo's or Bulletins shall be published to instructors and sent via emails and shall be posted in **Nesma Airlines** Operations and OCC for all the flight crew.
- Chief Pilot or his deputies shall attend with Training Manager regular meeting even if he is not an instructor, he shall be responsible to transfer technical and meeting materials to update the flight crew.
- Any suggestions or ideas on how to enhance our training programs, please don't hesitate to contact the training department through emails or in person with Training Manager.

**Note**

It's the Pilots responsibility to check their official Company Email for any Bulletins or information sent from the management, as well as Check the published memos and information on routine basis.

### 1.1.5.4 Flight under Supervision Policy

- Under supervision flying is normally conducted after the completion of the Initial Operating Experience (IOE) phase for Captains.
- Upon the recommendation of a training committee or the decision of Training Manager, a flight or a series of flights may be required as a form of additional or remedial training to clear a specific problem, before a person may be released again as an active Flight Crew.
- Cases requiring Flight Under Supervision (USV) are stated below but not limited to:
  - At the end of IOE phase.
  - If required for re-qualification.
  - Unsatisfactory PC.
  - Unsatisfactory LC.
  - Crewmember involved in an accident or incident.
- Flight under supervision may be conducted following route qualification, after consultation between Training Manager and chief pilot, based on the complexity of a route, airport or a terminal area, considering the Captain experience. Flight under supervision as the means of monitoring continual compliance with **Nesma Airlines** (OM - PART A) and Standard Operating Procedures (SOP).
- Under supervision flying is a **Nesma Airlines** training policy and is not required by ECARS, therefore, there is no specific training or approval required by the regularity authorities for the person conducting USV. An examiner, Check Airman or Instructor Pilot shall conduct under supervision flights.
- The Examiner, Check Airman or Instructor Pilot, shall normally occupy the observer seat. A Captain flying under supervision shall occupy the left seat and must be fully qualified to act as a pilot in command; however, the Examiner, Check Airman or Instructor Pilot shall relief him/her from command whenever air safety is in question.
- Captains under Supervision is not allowed to fly to airport category C even if he/she did familiarization flight during IOE training

### 1.1.5.5 Foreign Type Rated Instructors

- Manufacturers.
- Others.

**Nesma Airlines** Flight Training Department shall rarely resort to use foreign instructors to train **Nesma Airlines** Flight Crew, however in some cases and due to operational and training demand or when new equipment is entering service, foreign instructors may be used to cover those specific needs.

Approval requirements to use foreign instructors:

- A copy of the instructor license will be attached to the Approval request to the ECAA.
- If simulator training only is required, the training can be started after receiving the approval from the ECAA.
- Instructors are periodically evaluated to ensure compliance with required qualification and performance standards.
- In case Flight Training (ZFTT) or Line Training is required the following procedures shall apply.

**Administration Procedures**

- Security Release.
- Work Permit / Resident Visa.
- Insurance Release.
- Medical Check.
- License validation from ECAA.

**Technical Procedures**

- Basic Indoctrination (Refer to OM - PART D Chapter 4).
- P.C to include a LOFT scenario evaluation (Min 2 Hrs. in simulator).
- Line Check of minimum 4 sectors (line check could include Area, Route and Airport Qualification for type).

**Notes:**

- Only after completion of the administration procedures may the Technical procedures could be carried out.
- For flight instructor designated by manufacturer, they only require an instructor pilot license validation from ECAA.

### 1.1.5.6 Ground Training Evaluation Policy and Ground Courses Scheduling Policy.

- The trainee must obtain a minimum of 70 % grade in all examinations and demonstrate the required skills and knowledge in order to pass a unit of instruction and satisfactory complete a course

### 1.1.5.7 Instructor / Check Airman / Examiner Selection Policy

**Requirements**

- Current ATPL with current type and instrument rating.
- Medically fit pilots must be qualified on all routes of the type he/she is flying.
- Total 1000 Hrs. Pilot in Command on **Nesma Airlines** Aircrafts for first time instructors, including 300 Hrs. on type.
- Total 300 Hrs. Pilot in Command on type for previous instructors.
- If the type is being introduced to **Nesma Airlines** Fleet for the first time, nominated instructors must be already instructors on another type and 50 flying Hrs. pilot in command shall be conducted before the instructor can train on the new type.

**Selection**

- Check Airman shall be selected after been qualified as Instructor Pilot and conducted at least 40 Simulator Hrs.
- Examiners shall be nominated by Training Manager. and approved by Operations Director after being a Check Airman and conducted at least 80 Simulator Hrs.
- The candidate’s file shall be completely clear from any technical or administrative flaws.
- Selected persons shall be submitted to ECAA for approval.

### 1.1.5.8 Instructor Certification

Required instructor’s certification and approval or acceptance from the state shall be kept in the instructors file in the training department.

### 1.1.5.9 Instructor Evaluation Policy

Each Instructor shall be evaluated as follows:

- Annual check on his/her performance during training.
- A copy of his/her simulator reports shall be filed back for Trend Analysis Program.

### 1.1.5.10 Instructors Number Required Policy

- A minimum number of **1.5** Instructor/Aircraft is required to carry out training for pilots on each type.
- This number may be increased to cover:
  - Instructor’s works within the management.
  - Amount of initial training on type **(ex: Initial Pilots on A320).**

### 1.1.5.10 Introduction of a New Type Policy

- When a new type is introduced to **Nesma Airlines** the following procedures apply:
  - A contract between **Nesma Airlines** and the company offering the new type, in this contract the number of crewmembers to be trained by the offering company is stated.
  - A meeting is organized between the offering company of the new type and
- Training Manager before the new type first aircraft delivery by at least 6 months to prepare for crew training.
  - After this meeting, the training process starts so that crewmembers are ready with first aircraft delivery.

### 1.1.5.11 (IOE) Policies

a- Initial, Transition, Upgrade, CCQ, Difference and Recurrent training for Captains must include Right Hand Seat training requirements.

b- An Examiner or Check Airman must occupy one of the pilot seats during Captains (IOE) until he/she makes the following entry in his/her progress report “Captain (Name) is fit to fly as a captain under supervision “the Trainee Captain shall continue flying under supervision until he/she is ready for final Line Check.

c- Frequent change of instructors for the same trainee is not recommended, and in such situations that a change is unavoidable the instructor shall fly with the trainee for at least 4 sectors.

d- For the initial IOE the first 40 Hrs. shall be conducted by a Check Airman or an Examiner and the remaining time may be completed by an instructor pilot by special approval from Training Manager.

e- For the transition training the first 2 sectors shall be conducted by an Examiner or Check airman and the remaining sectors/time may be completed by an instructor pilot by special approval from Training Manager.

f- Captain IOE should include at least two sectors from the right-hand seat, one as PF and one as PM. If RHS was completed during simulator training.

g- A Captain flying under supervision shall occupy the left seat and will act as the pilot in command; however, the Instructor Pilot, Check Airman or Examiner shall relief him/her from command whenever Air Safety is in question.

### 1.1.5.12 Pilot Returning from Leave of Absence Policy

Pilots returning from a period of leave of absence will be required to undergo different individual re-qualifications procedures according to their flying status during the period of leave.

### 1.1.5.13 Process to Submit Flight Crew Qualifications to Scheduling Department

- To ensure that flight crew proficiency is of the required standard, a variety of ground and flight training schedules are set to meet the requirement of the ECAA as a minimum.
- The instructor hands over Flight Crew training form indicating that the Flight Crew have completed satisfactory certain type of training to type personnel.
- Training personnel shall prepare a form to scheduling department and hand it over to Training Manager.
- Training Manager shall sign the training form and the form sent to the scheduling department and make sure all appropriate training is completed and send by instructor.
- After signing the form training coordinator hand, it over to scheduler specialist in scheduling department.

### 1.1.5.14 Proficiency Check Policy

- Examiners and Check Airman are authorized to conduct proficiency check.
- The provisions of item No. 3.4.1 - Paragraph (d) shall be applied.
- The instructor shall review the trainee's last PC before conducting PC check.
- All scheduled recurrent ground courses shall be completed before proficiency check due date in accordance with item 1.13.
- In case of a scheduled ground course is not completed, proficiency check will not be scheduled for the concerned flight crew member. Flight Training Department shall not be held responsible for any consequences due to pilot license expiration in such a case.

### 1.1.5.15 Quality Audits Retain Policy

All quality audits shall be retained for a period of 5 years either done by internal or external audits.

### 1.1.5.16 Records & Forms Policy

a- All training items listed in the Training Record/Forms should be checked by (□), S, US or Not Applicable (NA).

b- The results of checking shall either be **Satisfactory, Unsatisfactory** or request committee.

c- Further comments and/or recommendations shall be submitted in a separate Report.

d- Comments should be as objective as possible.

e- Trainees must sign their Training /checking records after entering the dates of last 3 landings and after the records being completed by IP/Check Airman/Examiner.

f- The expiration date of a record of form is calculated by adding 7 months to the base month of the current event, and it's clearly stated in the form except when it's to be calculated according to type of training.

**e.g.**

**Base Month Is: January - 01/12**
**Expiration Date : August - 08/12**

g- Simulator Training Flight Reports shall be completed, Flight Time and Duty Period (DP) entered properly and signed by the Flight Instructor for the purpose of time logging and salary compensation.

h- Simulator training flight Reports must be delivered by the instructor by hand to training department and shall never be given to the trainees.
i- Training/Checking records or forms shall be signed by the Training Manager or his deputy before being entered in the trainee's file.

### 1.1.5.17 Requalification (Recent Experience) Policy

The following are Nesma Airlines requirements when any Flight Crew was absent from line flying:

- More than 90 days' Re-qualification requirements apply.

Flight Crew need to be re-qualified if they do not maintain their recent experience requirements of performing a minimum of three (3) Take-Offs and landings within the past 90 days.

The re-qualification program for Flight Crew depends on the period of absence as detailed below:

**Requalification Requirements for Flight Crew**

| Time past month due | Required ground re-qualification segment | Required flight re-qualification segment | Additional qualification segments |
| --- | --- | --- | --- |
| Up to 12 calendar months | The portion of ground recurrent training not accomplished when due. | The elements not accomplished when due: Proficiency check. | The modules not accomplished in the eligibility period: Line check or special airports. |
| 12 to 35 months | 16 hours including HAZMAT, safety and emergency training hands on. | 8 Hours including proficiency check. | All qualification modules of the transition curriculum, line check, or special airports. airports. |
| 36 to 59 months | 24 hours Including HAZMAT, safety and emergency training hands on. | 16 hours Including proficiency check. | All qualification modules of the transition curriculum, line check, or special airports. |
| More than 59 months | --Same as initial equipment training -- | | |

**Requalification Simulator Requirements for Instructors**

The re-qualification program for Instructors depends on the period of absence as detailed below:

| Up To 12 Month | More than 12 months up to 36 months | More than 36months |
|---|---|---|
| - 8 Hrs. USV | -2 Hrs. RHS<br>-8 Hrs. Observation<br>- 8 Hrs. USV | - Instructor transition training |

**Zero Flight Time Training or Base Training Expiry Policy**

Zero Flight Time Training or aircraft base Flight training shall be conducted within a period that shall not exceed 21 days after completing the simulator training.

**Aircraft Dispatcher Requalification Policy**

Dispatchers are to be re-qualified if they do not maintain the Operating Familiarization consisting of at least Five (5) Hrs. observing from the flight deck operations during the preceding 12 Calendar month.
(The observation Flight/Flights may be in one of the types of aircraft in each group he is certified to dispatch).

**Re-qualification Requirements for Dispatchers**

| Requalification Training | | |
|---|---|---|
| **Time Past Month Due** | **Ground Training Segment** | **Qualification Segment** |
| Up to 3 calendar months | Recurrent training (if not accomplished in eligibility period) | Any training not accomplished in eligibility: CC or OF |
| More than 3 and less than 6 months | 8 hours remedial (if not accomplished in eligibility period) recurrent training | CC and (if not accomplished in eligibility OF |
| More than 6 and less than 12 month | 8 hours remedial recurrent training and OJT to proficiency | CC and OF |
| More than 12 and less than 36 month | 16 hours remedial recurrent training OJT to proficiency | CC and OF |
| More than36 months | Initial Training | CC and OF |

**KEY:**
**CC = Competency Check.**
**OF = Operational Familiarization.**
**OJT = On Job Training USV.**

### 1.1.5.18 Scheduling of Training Policy

- Training rosters and simulator schedules should be adhered to that there shall be no change without prior approval.
- Instructors shall not leave the training location without prior approval and this will be limited to emergency cases only.
- Flight Time and Duty Time limitation should be adhered to during Line Training (IOE) and under all circumstances.
- Normally seven (7) days in a row of training, followed by a day off, will be scheduled for any Flight Crew during Initial or Transition Training and any changes shall be approved by the Training Manager.

### 1.1.5.19 Simulator Training Bag Contents for Instructor & Trainee

**The Navigation Bag of the Instructor Shall Include the Following:**

- Spare of corrective glasses if used.
- Type Quiz (If available).
- License and ID.
- Valid passport (For simulator out of base).

**Notes**

- Instructor may use his/her PED during training sessions.
- Simulator trip kits (Maps) are available at simulator lockers room.

**The Navigation Bag of the Trainee Shall Include the Following:**

- Flashlight.
- Spare of corrective glasses if used.
- Type Quiz (If available).
- License and ID.
- Valid passport (For simulator out of base).

### 1.1.5.20 Syllabus Policy

- Instructor Pilot /Check Airman/Examiner shall adhere to the training syllabus without neither additions nor omissions.
- Instructor Pilot /Check Airman/Examiner shall adhere to FCOM, SOP, OM - PART A and OM - PART D.

### 1.1.5.21 Training Committee Policy

#### 1.1.5.21.1 Pilots Training Committee

- The function of a training committee is to review and decide the appropriate training course of action required for pilots having training problems or special cases, or to terminate the training according to trainee file, training progress or training history.
- The training committee consists of a minimum of two (2) instructors and shall be chaired by the Training Manager.

#### 1.1.5.21.2 Cabin Crew Training Committee

- The function of a training committee is to review and decide the appropriate training course of action required for cabin crew having training problems or special cases.
- The cabin crew training committee shall consist of but not limited to:
  - Cabin crew training manager.
  - The instructor of the case.
  - Type rated instructor.
  - Training committee course of action should be raised to Training Manager. after the completion of the remedial process.

### 1.1.5.22 Training Material Review Policy

#### 1.1.5.22.1 Training Manual and Training Memo's

- The Training Manual (OM - PART D) should be reviewed every six months or when needed by a committee composed of:
  - Training Manager.
  - Staff Responsible for updating and editing.
- The Training Manual (OM - PART D) comprises the following:
  - Training manual chapters.
  - Training forms.
  - Training Memo's.
  - Appendixes.

#### 1.1.5.22.2 Training Memo's

- Upon receiving of a new policy or rule, a training memo of this information shall be sent to the instructors via the official company email before it is documented in the OM-PART D
- It is published and distributed in simulator documents by type personnel for a period of 6 month or until it is documented in the training manual.
- Training MEMO'S will be in the training file at the simulator.

**Note:** It's the Pilots responsibility to check their official Company Email for any Bulletins or information sent from the management, as well as Check the published memos and information.

### 1.1.5.23 Training on Aircraft Policy

No training on Non-normal or emergency maneuvers shall be conducted on an Aircraft.

### 1.1.6. Approval and Acceptance by the Authority

#### 1.1.6.1. General

The word 'approval' or requirement to be 'approved' invariably implies that a responsible person designated by the regulatory body gives signature to a document. This document then expresses the Authority's legal finding and, as such, will be drawn up in accordance with the provisions of that Authority's national law. The approval may stipulate various conditions which the Authority wishes to attach. It follows that the Authority must first make a satisfactory technical finding before issuing such approval. It is the Company's policy to support the Authority's technical investigation by supplying statements of regulatory compliance or other such documents required by the Authority.

The expression 'acceptable to' refers to those subjects or proposals that the Authority may exercise greater discretion upon how its agreement is to be given.

The following courses / materials of training require regulatory approval:

- Flight Crew Initial, Transition and upgrade.
- Flight Crew Recurrent training and checking.
- Flight Crew Differences training.
- Type rating and ATPL skill tests and proficiency checks scenarios.
- LVOPS training and checking.
- Cabin Crew Initial, Conversion, Differences and Recurrent training.
- Instructor training.
- Examiner training.
- Flight Dispatcher Initial, Conversion, Differences and Recurrent training.
- All related Ground, Simulator and flight training courses.
- Changes to approved training courses shall be approved by ECAA.
- Training arrangements with other training organizations shall be approved.

All training courses / materials must:

- have the required certification(s) and approval or acceptance from ECAA.
- Be periodically evaluated to ensure compliance with applicable training resource standards.

Personnel nominated for the following training positions require approval from the Authority before exercising the privileges of that position:

- Type rating instructor (A320) – (TRI)
- Type rating examiner (A320) – (TRE)
- Simulator Flight instructor (A320) - SFI
- Simulator Flight examiner (A320) – SFE

## 1.2. Responsibilities

### 1.2.1. Authority

The Operations Manual Part D is published under the authority of the Operations Training Manager. This authority is delegated to the Chief Pilot.

### 1.2.2. Structure and Contents

The structure and contents of the Operations Manual Part D are in accordance with ECAR 121, Operations Manual, Flight Crew Training Manual issued by Airbus, Flight Crew Operation Manual and contain the following Chapters:

- Chapter 0 Administration and Control of Manual
- Chapter 1: introduction and Policy
- Chapter 2: Flight Instructor, Check Airman & Examiner
- Chapter 3: Training testing and checking process
- Chapter 4: Ground Training
- Chapter 5: Flight Training
- Chapter 6: Nesma airlines E-Learning System
- Chapter 7: Dispatch Training
- Chapter 8: Simulator Evaluation Policy
- Chapter 9: Cabin Crew Training Program
- Chapter 10: Forms
- Appendix

All subsections of Training Syllabi and Checking and associated appendices are arranged in terms of the courses conducted by Flight Training.

### 1.2.3. Distribution

The Training Department will keep a "Master" copy of this manual that will include all Approval letters issued by the Authority. Several hard copies are distributed to selected appointment holders and the Authority. The Company maintains an up-to-date list of manuals together with their copy numbers and the name/appointment of each copy holder as appropriate. Amendments will be issued to all such holders, who will be required to amend their copies and return their certificates of incorporation to the Company as soon as possible after the amendments have been completed. (Refer to chapter 0 for Training Manual disruption list).

### 1.2.4. Holder Responsibility.

Each holder of the Training Manual and each person responsible for a copy of the Training Manual in his keeping, shall revise the manual at the time specified with the amendment and complete the record of Revision (ROR) of the Training Manual.

The rules and regulations contained in the Training Manual shall be adhered to by the relevant personnel at all times, in the event of negligence or disobedience to those rules and regulations the personnel concerned may become subject to disciplinary measures, legal or disqualification from the training team.

### 1.2.5. Training Philosophy
All training should be learner focused, instructor facilitated and form part of a comprehensive system of knowledge management.

All Instructors should be aware of the various processes that enhance learning and should measure the validity and effectiveness of all training programs.

#### 1.2.5.1. Mission
Flight Training supports the conduct of safe and efficient flight operations through integrity, compassion, honesty (by having consistent assessment and evaluation standards), and by providing training of the highest quality.

#### 1.2.5.2. Values
Flight Training's values reflect those of the Nesma Airlines, giving guidance to training personnel maximizing the relationship with our customers and colleagues. Our values help our training personnel respond to the challenges and opportunities they face daily, in the manner expected of a member of the Flight Training team.

#### 1.2.5.3. Innovation
Flight Training builds on a strong heritage of training excellence incorporating tried and true methods and the latest techniques available. Through research and a commitment to continuous quality improvement.

#### 1.2.5.4. Selection
We select pilots of the highest caliber to be our instructors and support them to improve their skills and knowledge. We respect our training staff for the vital role they play in supporting flight operations and, ultimately, the continued success of the Company. We foster a working environment that encourages teamwork, loyalty and commitment to supplying the best possible training product. We recognize our students to be aviation professionals and treat them as a collaborative partner in the training and assessment process.

#### 1.2.5.5. Safety
Focusing on quality and integrity in training design, delivery and assessment supports Nesma Airlines commitment to safety. Training personnel should seek every opportunity to improve the services provided. We encourage and actively support constructive challenge and debate within Flight Training in order to improve safety and efficiency outcomes. We utilize proven risk management principles to tailor the training product in order to address the Company's unique and challenging operational environment.

## 1.3. System of Amendments.
### 1.3.1. Issue.
The Operations Manual Part D is issued on the authority of Nesma Airlines, and all amendments to it, as required by the Company or the Authority, shall be authorized by the Flight operation Training Department.

### 1.3.2. Training Directives

Details of revisions which may be urgently required in the interests of flight safety, or which are supplementary to processes and procedures incorporated in this manual, will be promulgated as Training Directives. Those of a temporary nature will be cancelled as soon as they are no longer relevant. Those of long-term application will be incorporated into the manual when it is next amended, or within six months of their effective date, whichever is the sooner.
Only the Training Department is authorized to issue Training Directives and all Training Directives must be approved by the operations director.

### 1.3.3. Notification to the Authority

All intended amendments and revisions must be supplied to the Authority in advance of the effective date. When the amendment/revision concerns any part of the Training Manual which must be approved by means of the Operations Approval document, this approval must be obtained before the amendment or revision becomes effective. When immediate amendment or revisions are required in the interest of safety, they may be published and applied immediately, provided that application for approval has been made.

### 1.3.4. Amendment Process

This manual shall be revised at regular intervals of 6 months by the Training Department. Six weeks prior to the next revision cycle date, the Training Department will review the accumulated Training Directives and determine the work schedule required to meet the deadline. Any changes in policy after this date will not be included in the revision, but rather take the form of a Training Directive that will be incorporated at the next regular cycle.
All amendments shall be in the form of printed, replacement pages for the paper copy of this part. Revisions shall be annotated to show the month of issue (and date of effect if different).
Amendments requiring immediate revision in the interest of safety shall be initiated and put into force by an information bulletin signed by training manager, subsequently the ECAA shall be informed immediately. Bulletins shall be followed by a formal amendment as soon as practicable. With each normal amendment an updated "List of Effective pages" (Which forms part of the Training Manual) shall be issued, which will enable the user to check whether his manual is up to date.

#### 1,3.4.1. Handwritten Amendments

Handwritten amendments shall not be used throughout this Manual.

#### 1.3.4.2. Normal Revisions

Issued periodically to cover non-urgent corrections, changes and/or to add new data. They are accompanied by Filing instructions and an updated List of Effective Pages (LEP).

#### 1.3.4.3. Temporary Revisions (TR)

Temporary revisions printed on yellow paper are issued to cover urgent matters arising between normal revisions. They are accompanied by filing instructions.

### 1.3.4.4. Filing Instructions

Use the filing instructions as follows:

**REMOVE:** The page must be removed. It may be replaced by a new page if associated with an INSERT instruction. If not, the page is cancelled.

**INSERT:** The page must be inserted. If not associated with a REMOVE instruction, the page is new and does not replace an existing one.

### 1.3.4.5. List of Effective Pages (LEP)

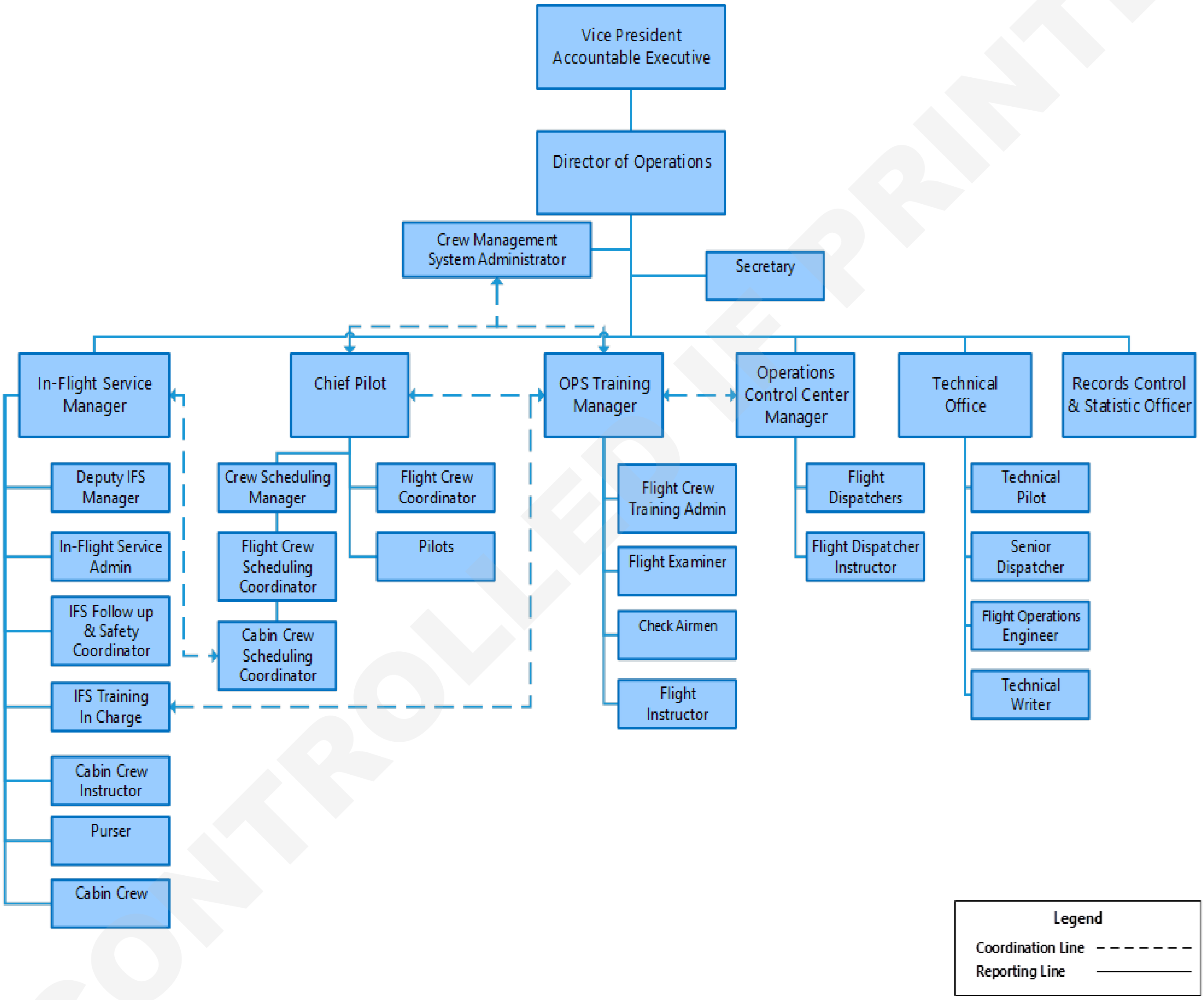
The manual after revision must comply with the LEP, which lists all the pages that are in the manual. The new pages are indicated by 'N' and the revised pages by 'R'.

### 1.3.5. Control Pages

Several control pages are inserted into the manual immediately preceding the Master Table of Contents. These pages are inserted in the following order:

- ECAA Control Page
- List of Effective Pages
- Record of Revisions

## 1.4. Organization Charts.



### 1.4.1. Nominated post holders.

**Ref** OM-A 1.2

### 1.4.2. Director of Operations

Reference: ECAR 121.59 (a).

The Director of Operations is a nominated management position approved by ECAA and must be qualified in accordance with ECAR 121.61 (b).

Director of Operations or his deputy is the executive responsible for the day-today implementation of the company policies and for direct supervision of the line operations on all fleet. This involves implementing and maintaining whatever procedures necessary to ensure the smooth operation of all fleet.

Particularly, he determines all flight operational standards and practices. He is responsible for editing the Operations Policy Manual ensuring that revisions are submitted to the authority (ECAR) for acceptance and approval, and Operations Manuals are up to date and include all data necessary to comply with all relevant regulations and requirement and with the provision of the AOC.

The Director of Operations reports to the Accountable Executive and has the responsibility, and thus is accountable, for ensuring:

- **i.** The management and supervision of all flight operations activities;
- **ii.** The management of safety and security in flight operations;
- **iii.** Flight operations are conducted in accordance with conditions and restrictions of Nesma Airlines Air Operator Certificate (AOC), and in compliance with ECAA regulations and standards of Nesma Airlines.

**Authorities**

The Director of Operations has the authority to command the departments under his jurisdiction, coordinate between the operations department and other departments, control all aspects of operations, enforce procedures and processes, and represent the operations department in the management board.

**Responsibilities: (ECAR 121.71 (b))**

The Director of Operations is responsible for safe flight operations. In particular, the responsibilities of the position include:

1. Management of operations and operational standards of all airplanes operated;
2. Management of safety risks and security threats
3. Ensure the allocation of resources necessary for aircraft operations.
4. Ensuring compliance with regulatory, company and safety requirements.
5. Control of the human resources required for the operations authorized to be conducted under the operations certificate;

6. The identification of operations coordination functions which impact on operational control (e.g. maintenance, crew scheduling, load control, security, equipment scheduling);
7. He has the authority for supervision, organizing, managing, controlling, and maintaining the efficiency of the following areas:
   - Safety and security of flight operations;
   - Flight operations functions and/or activities;
   - Fleet operations;
   - Documentation and control;
   - Accident prevention and flight safety;
   - Human resources;
   - cabin safety;
   - crew scheduling and Roistering;
   - training programs; Safety and quality assurance program; and
   - Any other associated activities.
8. The contents of the company Operations Manual; including production and the amendment of content.
9. Liaison with the regulatory authority on all matters concerning flight operations, including any variations to the company certificate (AOC);
10. Liaison with OEM and any external entities which may affect company operations;
11. Ensuring that the company operations are conducted in accordance with current regulations, standards, conditions, restrictions of the Air Operator Certificate Ensuring that crew scheduling complies with flight and duty time regulations, and that all crewmembers are kept informed of any changes to the regulations and standards;
12. The receipt and acting of any aeronautical information affecting the safety of flight;
13. The dissemination of airplane safety information, both internal and external, in conjunction with the safety and quality assurance programs;
14. Qualifications of flight and cabin crews;
15. Maintenance of a current operations library; and
16. Promoting and implementing a non-punitive policy.
17. Ensuring long-term operational planning in regards to recruitment of Flight Deck Crew, cabin crew and Ground Staff.
18. Implementing standard operating procedures and safety requirements.
19. Attend Safety Management Review Committee meetings and ensuring all recommended safety corrective actions are carried out within the specified time period.
20. Provide the necessary resources and commitment in ensuring safety issues raised during the Safety Management Review Committee is corrected.
21. Accountable to senior management for ensuring the safety and security of flight operations
22. Ensuring compliance of all flight operation personnel with the Nesma Airlines policies and/or procedures, monitor if any wilful and deliberate violation of Nesma Airlines policies and/or procedures has been reported he shall take the necessary actions required such as company investigation to investigate the violation and if required the National Aviation Authority will be involved on the case review (Refer to OM-A 1.8.1 and 11.4).

23. Manage the committee of study of the new airports and ensure compliance with the safety and security standards presented by the commercial department (Refer to 8.1.2 Criteria for Determining the Usability of Aerodromes).
24. Do whatever is needed to assure the accomplishment of a safe flight mission within the established period to ensure customer satisfaction.

**Deputized By:** Chief pilot

### 1.4.3. Chief Pilot.

**Job Description**

Chief Pilot is a nominated management position approved by ECAA and must be qualified in accordance with ECAR 121.61. (c)

The Chief Pilot reports to the Director of Operations and is responsible for the safe and professional standards of the flight crew.

**Authorities and Responsibilities (ECAR 121.71 (c))**

Chief pilot is responsible for the professional standards of the flight crews under his/her authority, and in particular:

**1.** Line operations supervision;
**2.** Flight crew scheduling;
**3.** Publish, amend and revise Nesma Airlines Operations Manual, Part D (Manual Owner);
**4.** Management of safety risks and security threats
**5.** Management the training of the operations department crewmembers.
**6.** Develop, publish and revise training strategies (i.e. Training Syllabi) under due consideration of legal and other requirements as they have to be observed
**7.** Ensure the functioning of the Quality System within his area of responsibility;
**8.** Writes and keeps up to date adequate job descriptions for flight operations personnel reporting to him;
**9.** Monitor training provided by third parties (i.e. Airbus Industries, Egypt Air Training Centre);
**10.** Assure that training aids used (i.e. Simulators, Full Flight Simulators) have been approved as necessary for the kind of training administered by the Authority ECAA Develop and maintain all forms required for any kind of training administered and processes them as applicable;
**11.** Issuing directives and notices to the flight crews as require
**12.** The processing and acting of any flight crew reports;
**13.** The acting and distribution of accident, incident, and other occurrence reports;
**14.** Assure on a tactical and strategic basis that an adequate number of instructors for all training activities to be accomplished are held available to cover Nesma Airline Straining needs;
**15.** Assure that all training is conducted in such a way that qualified personnel are made available in a timely manner;
**16.** Make recommendations to the Director of Operations in terms of appointments, promotions, demotions, dismissals and any other disciplinary action within his area of responsibility;
**17.** Closely coordinate with the ECAA on all ECARs subject matters as they apply to his area of responsibility;
**18.** Direct and monitor outsourced training activities within Nesma Airlines (Safety, security,

Dangerous Goods, CRM ⋯.) as far as they fall under ECAR training requirements for flight operations;
**19.** Monitor and verify the adherence to training standards among the instructors;
**20.** Develop and maintain relevant statistical data;
**21.** Liaise with other management personnel in his area of responsibility;
**22.** Represent Nesma Airlines on national and international training meetings;
**23.** Manages Nesma Airlines EFB in accordance with the control procedures and responsibilities outlined in OMA VOL1 Chapter 8.12 Electronic Flight Bag (EFB)
**24.** Manages Nesma Airlines crew management system in accordance with procedures and responsibilities outlined in OMA VOL1 Chapter 4 Crew Composition
**Deputized By:** Operations Training Manager

### 1.4.4. Operations Training Manager

(ECAR 121.59 (b))
**Job Description**
Manage Operations Department Training for Flight Crewmembers, cabin crew and dispatchers to several requirements and aspects such as coordination, arrangements, and furnishing of materials, tools, facilities and instructors.
Those requirements are vital for generating and maintaining Standardized Operational personnel, i.e. Flight Crewmembers, Cabin Crew and Dispatchers. Of course, Standardized Training of Operational personnel shall lead to higher degree of Operational Safety. In this context, concerned management personnel are required to furnish highest degree of coordination with Operations Training Manager to accomplish his duties and responsibilities.

- The Operations Training Manager Reporting to the Chief pilot.
- Coordinate with the chief pilot to develop and implement the flight training program (to comply with ECAR 121.400).
- Direct and coordinate with all operations department training responsible for developing and implementing (dispatch and IFS) training program.

**Minimum Qualifications:**
Chosen by Operations department committee with Accountable Executive approval.

- Holding a valid license on company Aircraft type
- He has enough knowledge about the requirements of ICAO, ECAR and the state and other applicable authorities.
- Good personality with excellent communication skills
- Good computer skills.

Operations Training Manager is responsible for the professional training standards of the flight crewmembers, cabin crew and dispatchers under his responsibilities, and in particular:

1. Publish, amend and revise Nesma Airlines Operations Manual, Part D;
2. Develop, publish and revise training strategies (i.e. Training Syllabi) under due consideration of legal and other requirements as they have to be observed;
3. Publish, select and maintain in-house training software and hardware (i.e. CBT Software, Paperback Training Hand-outs);
4. Administer Nesma Airlines E-learning system in accordance with OM-D Chapter 6.
5. Ensure the functioning of the Quality System within his area of responsibility;

6. Writes and keeps up to date adequate job descriptions for flight operations personnel reporting to him;
7. Monitor training provided by third parties (i.e. Egypt Air Training Centre);
8. Assure that training aids used (i.e. Simulator etc.) have been approved as necessary for the kind of training administered by the Authority ECAA;
9. Develop and maintain all forms required for any kind of training administered and processes them as applicable;
10. Issuing directives and notices to the flight crews as required in coordination with direct manager(s);
11. The processing and acting of any flight crew reports related to training standards;
12. Recommend in his function as Flight Standards Training Coordinator, team procedural and standardization changes throughout Nesma Airlines Flight Operations Department; activities to the Director Flight Operations whenever this is necessary and provides justification for such proposed changes;
13. Assure on a tactical and strategic basis that an adequate number of instructors for all operations training activities to be accomplished are held available to cover Nesma Airlines operations training needs;
14. Assure that all training is conducted in such a way that qualified personnel are made available in a timely manner;
15. Make recommendations to the Director Flight Operations in terms of appointments, promotions, demotions, dismissals and any other disciplinary action within his area of responsibility;
16. Closely coordinate with the ECAA on all ECARs subject matters as they apply to his area of responsibility;
17. Direct and monitor outsourced training activities within Nesma Airlines Safety, security, Dangerous Goods, CRM ….) as far as they fall under ECAR training requirements for flight operations;
18. Monitor and verify the adherence to training standards among the instructors;
19. Develop and maintain relevant statistical data;
20. Liaise with other management personnel in his area of responsibility;
21. Represent Nesma Airlines on national and international training meetings in coordination with Chief Pilot.

**Deputized by:** Most senior pilot examiner after director of operations approval

### 1.4.5. Training Admin

**Job Description**

- Flight Crew Training Admin Reporting to the Operations Training manager.
- Coordinate with the Rostering department and Crew Management System Administrator to make sure all pilots training, and pilot's licenses are valid.

**Minimum Qualification:**

- Experience not less than 3 years in Aviation
- Good managerial and administrative skills.
- Flexible and adaptable to work and acceptance of changes
- Able to communicate effectively in a positive manner at all levels.
- Knowledge of the requirements of ECAR & other applicable authorities

**Training Admin responsibility**

1) Documenting and archiving pilots' licenses.
2) Organizing training sessions to meet pilots' licenses renewal timetable.
3) Reservation of training sessions and flight simulators.
4) Coordinate with IT department for emails creation and cancelation.
5) Participating in creating and implementing training programs.
6) Booking and setting up classrooms and training venues.
7) Managing schedules, records and accounts receivable.
8) Resolve issues as they arise onsite.
9) Submit reports on training activities and results.
10) Recommend improvements or new programs.
11) Map out annual training plans for management.
12) Select appropriate training methods or activities (e.g. simulations, mentoring, on-the-job training, professional development classes).
13) Gather feedback from trainers and trainees after each educational session.
14) Schedule meetings.
15) Insure for keeping training manual with last updated and distributed to all concerned and update electronic library.
16) Organize, develop, maintain and send training plan monthly for Rostering department.
17) Is responsible to perform assigned tasks as listed in CMS **Table 2.3**

## 1.5. Definitions

The following terms and definitions are used throughout the Training Manual (OM - PART D).

### 1.5.1 Airplane Groups

- Group I. Propeller driven, including-reciprocating powered, and Turbo- propeller powered.
- Group II. Turbojet power.

### 1.5.2 Base Month "Training/Checking Month"

The calendar month during which a Crewmember or Dispatcher is due to receive required recurrent training, required flight check and required Proficiency Check.

**Note:**

Recurrent training can be received one month before the Base month by special approval from Training Manager.

### 1.5.3 Calendar Month

The first day through the last day of a particular month.

### 1.5.4 Grace Period

It is a period of three calendar months as follows:

The Calendar Month before the Base Month "training / checking month". The Base Month "training/checking month".

The Calendar Month after the Base Month "training/checking month"

During this period, a Flight Crew or Dispatcher must receive recurrent training, flight Check, Proficiency Check to remain in qualified status. Training or Checking completed during grace period is considered to be completed during the Base Month "training/checking month".

**Example:** A Flight Crew or Dispatcher whose base month is January receives the required recurrent training in February; January remains the base month "training/checking month". Also, if a Crewmember or Dispatcher fails to complete the required training during the base month, the Crewmember or Dispatcher is not in violation of ECARS since the month following the Base Month is still considered part of the Grace Period.

### 1.5.5 Difference Training

The training required for Flight Crew that qualified and served on a particular type airplane, when difference training is necessary before a Flight Crew serves in the same capacity on a particular variation of that type.

E.g. A319 & A320 & A321.

### 1.5.6 Initial Training

The training required for Crewmembers and Dispatchers who have not qualified and served in the same capacity on other airplane of the same group.
E.g. newly hired pilots with no past experience.

### 1.5.7 Transition Training

The training required for Crewmembers and Dispatchers who have qualified and served in the same capacity of the same group.
E.g. Captain A220 to be qualified as Captain A320

### 1.5.8 Cross Crew Qualification (CCQ)

The training required for A320, A330, A340 Flight Crew rated and experienced on that type (at least 6 months and 300 flight Hrs.) to be promoted to one other type (A320, A330, and A340).

### 1.5.9 Upgrade Training

The training required for Flight Crew that have been qualified and served as F/O on a particular airplane type before they serve as Pilot in command on same airplane.

### 1.5.10 Program Hours

- The Hrs. of training prescribed in a specific training program.
- The program Hrs. may be reduced by the ECAA upon submitting a request by **Nesma Airlines** Training Manager Explaining and justifying circumstances.

### 1.5.11 In-Flight Training

Maneuvers, procedures or functions that must be conducted in the airplane.

### 1.5.12 Recurrent Training

Recurrent training must ensure that each Crewmember or Dispatcher is adequately trained and currently proficient with respect to the type aircraft (including differences training, if applicable) and crewmember position involved.
The above mentioned recurrent training shall be conducted in accordance with the provisions of ECARS subpart N.

### 1.5.13 Ground Training

Ground Training shall include the following:

- General subjects required by ECARS.
- Emergency equipment and evacuation procedures (Emergency Training).

### 1.5.14 Safety and Emergency Procedures (SEP)

Ground and practical programmed training given as required enabling Flight Crew and Cabin Crew to reach and maintain the required level of proficiency in using emergency equipment and performing emergency procedures.

### 1.5.15 Proficiency Check

- It is a Check to ensure compliance with the provision of ECAA though recurrent training on subjects related to efficient a safe flight operation, to be carried out every 6 calendar months in the simulator.
- For all Flight Crew Proficiency Check is a requirement for license renewal.

### 1.5.16 Line Check

- A check on the line, minimum two (2) sectors, or (1) sector for flights more than 4 Hrs.
- Line check could be annual, final, during instructor selection process, after route qualification, during re-qualification process, or due to a training committee recommendation.
- Annual line check is to be carried out once every 12 calendar months for Pilots in Command and first officers, Line Check is a requirement for licenses renewal.
- Line Checks in general term should be oriented to check the compliance of Flight Crew with the OM - PART A & OM – PART B.

### 1.5.17 Random Checks

- Random checks are company requirements to observe Flight Crew compliance with OM - PART A & OM – PART B, during line operation when they are not under any scheduled checks or training.
- Random check is a check or series of checks which shall be scheduled by Training Manager, Chief Pilot. to check Flight Crew compliance with standard policies and procedures laid down in OM - PART A & OM – PART B.

### 1.5.18 Safety Pilot

Safety pilot is a pilot rated on a specific type, has a current license and released on this type. He acts as safety pilot occupying the third pilot seat for other pilots in a line training phase.

**Note:**

Safety pilot is not required for CCQ, Upgrade training or Requalification Training up to 12 months absence.

### 1.5.19 Abbreviations

**A.**

| | |
|---|---|
| ABC | Airline Basic Course |
| AFTN | Aeronautical Fixed Telecommunication Network |
| AOM | Airplane Operations Manual |
| AOC | Air Operator Certificate |
| ATPL | Airline Transport Pilot License |

**B.**

| | |
|---|---|
| BAMS | Broadcast and Archival Messages |

**C.**

| | |
|---|---|
| CA | Check Airman |
| CCQ | Cross Crew Qualification |
| CDL | Configuration Deviation List |
| CEET | Cabin Evacuation Emergency Instructor |
| CM 1 | Pilot in Command |
| CM 2 | Co-Pilot |
| CMP | Configuration Maintenance and Procedures |
| CNS/ATM | Communications, Navigation and Surveillance Systems for Air Traffic Management. |
| CPDLC | Controller Pilot Data Link Communications |
| CPT | Cockpit Procedures Training |
| CRM | Crew Resources Management |

**D.**

| | |
|---|---|
| DEK | Doctor's Emergency Kit |

**E.**

| | |
|---|---|
| ECAA | Egyptian Civil Aviation Authority |
| ECARS | Egyptian Civil Aviation Regulations |
| EP | Examiner Pilot |
| EROPS | Extended Range Operations |
| ETOPS | Extended Twin Engines Operations |

**F.**

| | |
|---|---|
| FAPS | Flight Activities Progression System |
| FAR | Federal Aviation Regulation |
| FBS | Fixed Base simulator |
| FCOM | Flight Crew Operations Manual (OM – PART B) |
| FDOB | Flight Dispatch Operation Bulletin |
| FFS | Full Flight Simulator |
| FHB | Flight Hand Book |
| FSTD | Flight Simulator Training Device |
| FTD | Flight Training Department |

**G.**

| | |
|---|---|
| TRAINING MANAGER | General Manager Flight Training |
| GSOP | General Standard Operating Procedures |

**I.**

| | |
|---|---|
| I.E.R.A | Instrument, Electric, Radios, Avionics (Systems) |
| IFALPA | International Federation of Airline Pilots Association |
| IFM | Inflight Monitor. |
| IFPL | Interactive Flight Planning |
| IOCC | Integrated Operations Control Center |
| IOE | Initial Operating Experience |
| IP | Instructor Pilot |
| IR | Instrument Rating |

**L.**

| | |
|---|---|
| LC | Line Check |
| LDA | Localizer Type Directional Aid |
| LOAS | Line Operations Assessment System |
| LOFT | Line Oriented Flight Training |
| LOS | Line Operational Simulation |
| LOSA | Line Operations Safety Audits |

**M.**

| | |
|---|---|
| MEL | Minimum Equipment List |
| MFF | Mixed Fleet Flying |
| MNPS | Minimum Navigation Performance Specification |

**N.**

| | |
|---|---|
| NAT | North Atlantic Training |
| NOTAM | Notices to Airman |

| | |
|---|---|
| **O.** | |
| OE | Operating Experience |
| OM-A | Operations Manual Part A (General / Basic) |
| OM-B | Airplane operations Manual |
| OM-D | Operations Manual Part D (Training Manual) |
| OM-E | Operations Manual Part E (Flight Dispatch Manual) |
| OM-F | Operations Manual Part F (Safety Manual) |
| **P.** | |
| PBE | Protective Breathing Equipment |
| PC | Proficiency Check |
| PED | Personal Electronic Device |
| PF | Pilot Flying |
| PIC | Pilot in Command |
| PM | Pilot Monitoring |
| PRM | Precision Radar Monitoring |
| **R.** | |
| RCU | Route Clearance Unit |
| RHS | Right Hand Seat |
| RNP | Required Navigation Performance |
| RVSM | Reduced Vertical Separation Minimum |
| **S.** | |
| SAFA | Safety Assessment of Foreign Aircraft |
| SET | Safety and Emergency Training |
| SEP | Safety and Emergency Procedures |
| SIC | Second In Command |
| SIM | Simulator |
| SOP | Standard Operating Procedures |
| **T.** | |
| TCAS | Traffic Alert and Collision Avoidance System |
| TEM | Threat & Error Management |
| TFR | Traffic Flow Restrictions |
| T.M | Training Manager |
| **U.** | |
| USV | Under Supervision Flight |
| **Z.** | |
| ZFTT | Zero Flight Time Training |

### 1.6. Training Review Committee (TRC)

The Training Review Committee (TRC) meets every 12 months to review trends and feedback from the outputs of the training and assessment systems. The committee's prime responsibility is to address training system issues and improvements related to trend analysis of training system output and audit activities. The committee represents fleet, training, audit and safety interests. The committee also addresses the impact of regulatory, procedural, technical, fleet and schedule change as well as international best practice upon future training requirements. The committee shall review the training plan for the next 12 months to decide the sufficient number of instructors, examiners, line check Airman and the support personal to conduct the training and examination programs.

The TRC will be comprised of the following personnel:

- Operations Director.
- Chief pilots
- Instructor(s) check airman and / or Examiner(s).
- Operation Training Manager
- Senior Flight crew members if applicable

Chief Pilot shall attend the TRC regular meeting even if he is not an instructor, he shall be responsible to transfer technical and meeting materials to update the flight crew.

#### 1.6.1 Training Memo's

Upon receiving of a new policy or rule, a training MEMO of information shall be sent to the instructors before it is documented in the OM - PART D.

Training Memo's or Bulletins shall be uploaded on Flyco and it's their responsibility to check.

It is published and distributed in simulator documents by type personnel for a period of 3 month or until it is documented in the training manual.

### 1.6.2 Training Material Review Policy

**Training Manual and Training Memo's**

The Training Manual (OM - PART D) should be reviewed every 12 months or when needed by a committee composed of:

- Training Manager
- Standardization Responsible of training.
- Staff Responsible for updating and editing.

The Training Manual (OM - PART D) comprises the following:

- Training manual chapters.
- Training forms.
- Training Memo’s.
- Appendixes.

**Using Training Hand Outs Policy.**

No personal training papers prepared by Instructors shall be used as briefing notes and distributed to trainees unless prepared with and approved by training department.

## 1.7. Selection Committee.

**Purpose: -**

1. Hiring New Pilots
2. Upgrading F/O'S
3. Selecting, Training and checking of instructors, check airmen & Examiners
4. Doing all necessary Evaluation for the pilots.

**Composition.**

The selection committee, as appropriate, will comprise of the following members:

1) Instructors, check airmen and examiners
2) Chief pilot
3) Training manager
4) Operations Director
5) Operational Safety Representative
6) Administration representative
7) Final interview is with the vice president in case of new hires

## 1.8. Areas, Routes and Airports Categories.

### 1.8.1. General.

All Nesma Airlines Pilots must get current information concerning areas, routes and airports over which they are to fly, and to each airport and terminal area into which they operate while ensuring that they have adequate knowledge and ability to use this available information.

Nesma Airlines shall ensure each pilot, prior to being used as PIC in operations, is currently qualified for operations into airports of intended landing in areas, on routes or route segments to be used in operations for Nesma Airlines. If an instrument approach is required into an airport for which the PIC has not made an actual approach, the PIC shall be accompanied by a pilot flight crew member or pilot observer on the flight deck who is qualified for the airport unless either:

- **a.** The approach to the airport is ***not*** over difficult terrain and the instrument approach procedures and aids available are similar to those with which the pilot is familiar, and the normal operating minima are adjusted by a process that adds a margin of safety that is approved or accepted by ECAA, or there is reasonable certainty that the approach and landing can be made in visual meteorological conditions, or
- **b.** Descent from the initial approach altitude to landing at the airport can be made by day in VMC, or
- **c.** Nesma Airlines qualifies the PIC to land at the airport by means a pictorial representation approved or accepted by the authority (Jeppesen Instrument Approach Charts)
- **d.** The airport is adjacent to another airport at which the PIC is currently qualified to land.

On all other routes and in exceptional circumstances the chief pilot is authorized to permit a captain to operate in command on a sector without having completed a route experience flight. When such authority is exercised chief pilot will notify captains in writing.

### 1.8.2. Airports Categories.

- Airports category A
- Airports category B
- Airports category C

### 1.8.3. Route Qualifications.

Route qualification shall be conducted by one of the following methods:

| | |
|---|---|
| Airport Class (A) | By self-briefing. |
| Airport Class (B) | By self-briefing with route documentation or by means of programmed instruction. |
| Airport Class (C) | By means of programmed instruction and briefing in the (Special routes and airports).<br>**And**<br>In-flight familiarization with a route and type qualified Instructor Pilot (IP), supervisor or a senior captain.<br>**Or**<br>Familiarization in an approved flight simulator, using a database of the route. With full customized visual details for airport concerned. |

**1.8.3.1.** A captain qualified on a route and airport class A in a specified area shall be qualified to operate as a Captain in Command on all airports in this area provided that they are of the same class.

**1.8.3.2** Routes and/or airports qualification are not related to aircraft type and are valid for a period of twelve (12) calendar months, and if not flown within (12) calendar months, a requalification on the Route and Airport is required.

**1.8.3.3.** Operating on the route and / or airport within the previous period of validity (12 months) will revalidate routes and/or airports competence.

**1.8.3.4** Area, Route and Airport Qualification form must be completed, signed and entered in the flight crew member file before line check flight takes place for flying to category C airport.

**1.8.3.5** In addition to the above requirement as a company policy, the training management and the chief pilot may select to conduct an additional line check to specific route/airport based on special nature of that route or airport and weather prevailing.

**1.8.3.6** Flight Crew shall be considered qualified on routes and airports which has been flown during IOE and USV, However chief pilots may randomly check the performance of the newly promoted Captains on case by case bases, also Chief pilot shall conduct route qualification to the Flight Crew on special routes.

## 1.9. Recent Experience.

***(Ref. ECAR 121.439)***

### 1.9.1. General

Company pilots who are type qualified and hold a type rating endorsement on their license, but have not flown in an operational capacity on type or has not made at least three takeoffs landing for a period exceeding 90 days and at least has previously logged 100 hours of flight time in the same type aircraft in which he is serve are subject to the requirements listed in OM-A 5.2.2. For regaining Recency.

Should a line check be required then the specific requirements, in accordance with the minimum requirements tabulated below, should be recommended by Chief pilot.

For revalidation after not performing a take-off and landing, in any Nesma Airlines aircrafts for which the pilot holds or has held a type rating, in the previous 90 days or more, the following apply:

### 1.9.2. Flight crew member.

Flight crew member shall perform under the supervision of a check airman at least three takeoffs and landing using the company aircraft or in a visual simulator approved level D.

**a)** When a visual simulator is used, takeoffs and landing maneuvers must include:
- ➢ At least one takeoff with a simulated failure of one power plant.
- ➢ At least one landing from an ILS approach to the lowest ILS minimum authorized for Nesma Airlines.
- ➢ At least one landing to a full stop.

**b)** A required pilot cockpit crewmember who performs the maneuvers prescribed above of this section in a visual simulator must:
- **(1)** Have previously logged 100 hours of flight time in the same type aircraft in which he is to serve; and
- **(2)** The flight crew shall be observed on the first two takeoffs and landing in line operation by an approved check airman who acts as pilot in command and occupies a pilot seat. The landing must be made in a weather minimum that are not less than Nesma Airlines minimum in the operations specifications, and must be made within 45 days following completion of the simulator training.

**c)** When using a simulator to accomplish any of the requirements of paragraph (a) or (b) of this section, each required cockpit crewmember position must be occupied by an appropriately qualified person and the simulator must be operated as if in a normal in-flight environment without use of the repositioning features of the simulator.

**d)** A check airman who observes the takeoffs and landings prescribed in paragraphs (b)(1) and (c) of this section shall certify that the person being observed is proficient and qualified to perform flight duty in operations under this Part and may require any additional maneuvers that are determined necessary to make this certifying statement.

### 1.9.3. Recency of Training and Checking
In general, should the Recency requirements listed below not be met, a successful re-qualification check shall be completed prior to undertaking further training/examining duties.

If no training/checking events have been conducted during the preceding 24 months, the complete qualification process shall be undertaken.

Further specific minimum requirements associated with revalidation or the maintenance of instructor/examiner Recency are also listed below.

### 1.9.4. (Base) Training / Zero Flight Time.
Base training shall be conducted within a period that shall not exceed 21 days after completing the simulator training.

### 1.10. Pilot Returning Back from leave of absence.
Pilots returning from a period of absence will be required to undergo different individual re-qualification procedure according to their flying status during the period of leave as follows:

**1.10.1.** Pilots who were not flying at all during their absence.

Requirements for re-qualifications

- Provisions of re-qualification item 1.10. and table (1) shall apply

**1.10.2.** Pilots who during their absence were flying the same aircraft type and still have a valid license and type rating with recent experience.

Requirements for re-qualification

- Line check (minimum 2 sectors)
- Re-qualification on routes if applicable.

**1.10.3.** Pilots who were flying the same a/c type but have only a foreign license for that type with recent experience.

Requirements for re-qualification:

- Re-validation of his Egyptian license.
- Line check (minimum 2 sectors)
- Re-qualification on routes if applicable.

**Table (1):** Requirements (***REF. ECAR 121.428)***

**<u>Re-qualification curriculums for cockpit crew members overdue training</u>**

| Time past month due | Required ground re-qualification segment | Required flight re-qualification segment | Additional qualification segments |
|---|---|---|---|
| Up to 12 calendar | The portion of ground recurrent training not accomplished when | The elements not accomplished when due: Proficiency check. | The modules not accomplished in |
| 12 to 35 months | 16 hours including HAZMAT, safety and emergency training | 8 Hours including | All qualification modules of the |
| 36 to 59 months | 24 hours Including HAZMAT, safety and emergency training | 16 hours Including | All qualification modules of the transition |
| More than 59 months | --Same as initial equipment training -- | | |

**<u>Re-qualification curriculums for cabin crewmembers overdue training</u>**

<table>
<tr><th>Time Interval Without Flying Duties</th><th>Valid License</th><th>Non Valid License</th></tr>
<tr><td>91 days – 12 months</td><td><ul><li><u>4 sectors</u> the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).</li></ul></td><td><ul><li>Recurrent training depending on his/her last Recurrent.</li><li><u>4 sectors</u> the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).</li></ul></td></tr>
<tr><td>12 months - up to 36 months.</td><td colspan="2"><ul><li>Recurrent training depending on his/her last Recurrent.</li><li>4 sectors perform the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).</li></ul></td></tr>
<tr><td>More than 36 months.</td><td colspan="2">A. A tailored basic indoctrination program.<br>B. Initial general emergency training and transition training on A/C type.<br>C. <u>06 sectors</u> perform the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including at least 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).</td></tr>
</table>

**Re-qualification curriculums for aircraft dispatcher**

| **Re qualification Training** | | |
|---|---|---|
| **Time past month due** | **Ground Training** | **Qualification** |
| Up to 3 calendar months | Recurrent training ( if not accomplished in eligibility period) | Any training not accomplished in eligibility: CC or OF |
| More than 3 and less than 6 months | 8 hours remedial and ( if not accomplished in eligibility period ) recurrent training | CC and ( if not accomplished in eligibility OF |
| More than 6 and less than 12 months | 8 hours remedial ,recurrent training, and OJT to proficiency | CC and OF |
| More than 12 and less than 36 months | 16 hours remedial ,recurrent training, and OJT to proficiency | CC and OF |
| More than 36 months | Initial training | CC and OF |
| **KEY : CC =**<br>**OF =** | Competency check<br>Operational familiarization | |

### 1.11. Use of Simulator Instructor passed 60th birthday. (Ref. ECAR 121.412 (d))

A Simulator instructor may be used for simulator training duties provided that approval has been gained from the appropriate authority ECAA. No special requirements are needed from Nesma Airlines expect the same requirement needed for renewal his/her instructor / examiner licenses from the ECAA.

Nesma Airlines will provide the ground, simulator training and flight familiarization for him/her to validate him/her licenses.

#### 1.11.1 Use of Pilots passed 60th birthday.

A person who has reached his or her 60th birthday, but has not reached his or her 65th birthday, shall not act as Pilot In Command as a required flight crewmember of an aircraft unless the other pilot engaged in the same flight has not reached his or her 60th birthday.
Regarding the age requirements established by Country regulations over which Nesma Airlines aircraft shall fly or land, must be fulfilled and monitored.

ECAA may allow a person has reached his (her) 60th birthday, but has not reached his (her) 65th birthday, to act a flight crewmember on any aircraft engaged in international commercial and transport operations.
Nesma Airlines shall not:

- Hire any person to serve as a pilot over 60th year's age, unless authorization is issued by the ECAA to Nesma Airlines for each person once after reaching his or her 60th birthday and once each year when reaching his or her 63rd birthday.
- Assign any pilot that has reached his or her 60th birthday with any kind of duties except actual flying duties on Nesma Airlines aircraft, Max flying hours for pilots over 60 years is 75% of normal pilot as mentioned at OMA chapter 7 (flight limitations).
- Pilot that has reached his or her 60th birthday may serve as flight instructor, check airman or designated pilot examiner on simulator or Nesma Airlines aircraft.

Such person shall meet all requirements to act in the capacity of flight crewmember, including meeting the requirements of class I medical assessment not less than once every six calendar months.

### 1.11.4. Training by External Instructors

The Training Department may authorize the use of external instructors for training. External instructors will only be utilized for training duties. The Company Examiners will carry out all required checking. In all cases, the Company will retain responsibility for the standards of training.

Training Department shall check all documents and license are approved and valid by the authority for the subcontracted instructors.

For flight instructor designated by manufacturer, they only require an instructor pilot license validation from ECAA.

**Approval requirements to use foreign instructors:**

- A copy of the instructor license will be attached to the Approval request to the ECAA.
- If simulator training only is required the training can be started after receiving the approval from the ECAA.
- Instructors are periodically evaluated to ensure compliance with required qualification and performance standards.
- In case Flight Training (ZFTT) or Line Training is required the following procedures shall apply: -

**Administration Procedures**

- Security Release
- Work Permit / Resident Visa.
- Insurance Release.
- Medical Check.
- License validation from ECAA.

**Technical Procedures**

- Basic Indoctrination (Refer to OM - PART D Chapter 4).
- P.C to include a LOFT scenario evaluation (Min 2 hrs. in simulator).
- Line Check of minimum 4 sectors (line check could include Area, Route and Airport Qualification for type).

**Notes:** Only after completion of the administration procedures may the Technical procedures could be carried out.

## 1.12. Flight under Supervision

### 1.12.1. General

Upon the recommendation of the safety committee, a flight or a series of flights may be required as a form of additional training before a person may be released as an active crew member.

Cases requiring flight under supervision are stated below, but not limited to:

- If required for re-qualification.
- Unsatisfactory proficiency check.
- Unsatisfactory line check.
- Crew member involved in accident/incident due to a poor standard of conduct.

**Note**: The instructor pilot/Check Airman shall normally occupy the observer seat. The captain flying under supervision shall occupy the left seat acting as pilot-in-command however, the IP/Check Airman shall relieve him from command whenever safety is in question.

Line flying under supervision shall include specialized training in the following areas:

- Reduced Vertical Separation Minima (RVSM).
- Required Navigation Performance (RNP).

Line flying under supervision for Co-pilot shall include amount of PF/PM duties sufficient to develop and display proficiency.

## 1.13. Zero Flight Time (ZFT).

### 1.13.1. General

Statistics on commercial jet transport accident and incidents shows the importance of flight path control during the critical phases of flight when the airplane is close to ground. Although only 5% of the flight time is spent in takeoff, initial climb, final approach and landing, these phases of flight together account for more than 60% of all commercial jet transport accidents.

Bearing in mind the above-mentioned statistics, and also the very high number of actual aircraft training accidents in commercial jet transport industry during last three decades, we can see the very high safety hazard during a touch and go maneuver.

In the old days, flight simulator and visual systems were not able to meet the requirement to simulate takeoff and landing maneuvers. That is why we were conducting aircraft base training as a part of type rating certification requirements.

Due to the huge advancement in flight simulators in the last 30 years, most of the flight maneuvers required for type rating can be conducted in flight simulators, depending on its level of certification.

### 1.13.2. Levels of Certifications and Maneuvers Credit:

**A. Simulator Level C (or Equivalent):**

All maneuvers required for type rating ***initial training, transition training,*** takeoffs and landings shall be credited in lieu of the aircraft except walk around which can be conducted by using a slide presentation.

**B. Simulator Level D (or Equivalent):**

All maneuvers required for type rating ***initial training, transition training, including takeoffs and landings*** shall be credited in lieu of the aircraft except walk around which can be conducted by using a slide presentation.

**1)** Base training shall be conducted in flight simulators Level D for type rating initial training and for PIC upgrade.

**2)** ZFTT shall be conducted in flight simulators level D for type rating initial training.

**3)** ZFTT shall be conducted after successful completion of the type rating proficiency check.

**4)** ZFTT syllabus and training conditions are the same for Captains and F/O's Refer to BASE TRAINING FORM (ZERO FLIGHT TIME).

**5)** Zero flight time consists of minimum 1:30 hrs. Training & 00:30 minutes zero flight time check and shall be conducted by Check Airmen or Examiners.

**6)** A total of three manually controlled landings must be conducted in normal landing configuration without ILS reference.

**7)** One engine out landing must be conducted during zero flight time rating check.

**8)** In case of un-satisfactory result in the ZFTT remedial action should be given only through a committee chaired by training manager.

**9)** Zero Flight Time Shall be done under the supervision of an evaluator (Check airman or Examiner) Approved by Nesma Airlines and ECAA.

**10)** Minimum pilot experience: - commercial pilot license

**11)** A demonstration of competency is completed in a flight simulator conforming to the specifications in item 1) under the supervision of an evaluator

### 1.14. Training bag contents for simulator.

**1)** 2 sets of simulator approach charts
**2)** FCOM
**3)** QRH
**4)** MEL
**5)** Simulator MEL

### 1.15. Training Time Policy.

- Training time shall not be reduced without prior approval.
- An approval from Training Manager is required if additional training time is required during Initial, Upgrade, and Recurrent Training.
- Additional training in excess of 4 hrs. Shall be approved only by training Committee.
- Trainee Pilots (Maximum 4 hrs. per day as PF and/or PM).
- Instructor Pilots (4 hrs. per day and may be increased to 6 hrs. as a Maximum).
- Provisions of Flight Time, Duty Time and Rest period shall be applied (Refer to OM A-chapter 7).

#### 1.15.1. Training Syllabus Policy

- Instructor Pilot/Check Airman shall adhere to the training syllabus without additions nor omissions.
- Instructor Pilot/Check Airman shall adhere to FCOM, SOP. Operation and Training Manuals.
- Training time cannot be reduced without a previous approval.
- IF additional training is required during Initial, Transition or upgrade Training, no approval is needed up to 4 hours. Additional training in excess of 4 hours will be subject to Chief Pilot's approval.

## 1.16. Flight Training Department General Policies.

### 1.16.1. Communication Protocol

Nesma Airlines shall permit formal and regular communication between and among management, instructors, examiners, line check airman and flight crew (via approved Nesma airlines communication tools) to achieve continuous improvement of ground, simulator and aircraft training, and line operations.

The normal communication protocol within Flight Training is through **1.6. Training Review Committee (TRC).**

### 1.16.2. Contact with the Authority

The normal procedure for contact with the Authority is via chief pilot who will liaise with Operations Director.

### 1.16.3. Instructors Meeting

- Training Review Committee meeting to discuss standardization and training matters relevant to the fleet.
- Chief pilot shall ensure that each Instructor/ Check Airman attend at least one meeting per year.
- Minutes of the meeting shall be distributed to all Instructors and Check Airmen, and relevant issues shall be circulated to concerned crew members.

### 1.16.4. Segregation of Training and Checking

If necessary, with the approval of Operations Director, training duties may be assigned to a TRE. Except for recurrent, Recency, familiarization, differences or other specified training, trainees shall not be trained and examined by the same person. It is not a policy for managers to be checked by other managers.

### 1.16.5. Instructors and Evaluators Objectivity Criteria

Nesma Airlines training program is designed to ensure an absence of bias in the training and evaluation program that permits trainees to be objectively assessed against the operating standards set forth by the company and/or authority without undue internal or external interference.

These criteria are applicable to evaluations administered in conjunction with simulator, aircraft and/or line training, that conducted or administered by Nesma Airlines instructors and evaluators

To ensure and maintain the objectivity of the training, it is Nesma Airlines policy that Different individuals than those that conducted the majority of the training will conduct the evaluations administered in conjunction with simulator, aircraft and/or line training.

Instructors and Examiners shall not be subjected to inappropriate interference from management and/or external organizations.

### 1.16.6. Change of Instructor/Examiner

A trainee may request a change of Instructor/Examiner. Each request will be dealt with by the appropriate Operations Director or chief pilot.

### 1.16.7. Working Hours

Normal working hours for Office Duties and Projects are:

Sun – Thu: 0900 - 1700

### 1.16.8. Instructor Evaluation Policy.

Each instructor shall be evaluated as follows:

1) Annual check on his performance by company approved instructor/ examiner.
2) A copy of his reports shall be filed back for inspection by chief pilots.

### 1.16.9 Instructor Certification

Required instructor's certification and approval or acceptance from the state shall be kept in the instructors file in the training department.

### 1.16.10 Introduction of A New Type Policy

When a new type is introduced to Nesma Airlines the following procedures apply:

1) A contract between Nesma Airlines and the company offering the new type, in this contract the number of crewmembers to be trained by the offering company is stated.
2) A meeting is organized between the offering company of the new type and training manager before the new type first aircraft delivery by at least 6 months to prepare for crew training.

After this meeting, the training process starts so that crewmembers are ready with first aircraft delivery.

### 1.17. Processes to Communicate Flight Crew Qualifications to Scheduling Department.

1) The instructor hands over crew training form indicating that the crew have completed satisfactory certain type of training to Flight Training Administration.
2) The Flight Training Administration shall responsible to submit a Flight Crew qualification change notes to Scheduling department via emails.

#### 1.17.1. Air Crew Licenses Responsibility for Renewal

Flying staff are personally responsible for ensuring that their professional licenses are kept currently valid in accordance with regulations in relation to the appropriate license which may be, for the time being, in force.

Minimum Requirements for Renewal off a Professional Pilot's License:

- An applicant for renewal of a Commercial, Senior Commercial or Airline Transport Pilot's License shall certify on the official form of application that he has, during the preceding six months completed not less than six landings in each class of aircraft for which the license is valid. He should have passed the prescribed medical examination.
- To retain a type in Part 1 (pilot-in-command) of the aircraft rating of a license, the six hours specified above shall have been completed as pilot-in-command or as certified co-pilot performing under supervision as pilot-in-command. In addition one flight, including take-off and landing, as pilot-in-command, or as certified co-pilot performing under supervision as pilot-in-command, shall have been carried out in the type of aircraft concerned during the preceding twelve months.
- Time spent as co-pilot performing under supervision as pilot-in-command, will be credited only if has been carried out in accordance with the conditions outlined in subparagraph.
- To retain a type in Part 2 (co-pilot) of the aircraft rating of a license, the hours specified above may have been completed as co-pilot, and the take-offs and landings may have been performed under the supervision of pilot-in-command.
- If for any reason a pilot finds that he does not possess the necessary minimum flying experience for the renewal of his license or maintenance of his current type rating in - Part 1, he shall inform the Chief Pilot without delay so that arrangements can be made for the necessary experience to be obtained.

### 1.18. Training on Aircraft

The following Training / Examining exercises are permitted on Public Transport Flights:

- Line flying under supervision
- Supernumerary flying for the purposes of familiarization on an aircraft type. Pilots flying on supernumerary fights are required to have the normal operation of the aircraft systems demonstrated to them. Supernumerary pilots are not to occupy a crew member's seat
- Familiarization flights along routes and into Airfields designated Cat A, B & C in the Route Manual
- Line Checks

Nesma Airlines shall insure that **no abnormal or emergencies training exercise** are simulated during commercial air transport flights.

### 1.19. Language

All Flight Operations and training activities are conducted in English and Arabic.

Nesma Airlines shall require for all flight members, who conduct flight into areas where English is the primary language of Air Traffic Control (ATC) and whose duties include communication with ATC, to demonstrate a sufficient level (min 4) of English Language proficiency to ensure effective communication during performance of such duties and Understand information in the OM pertaining to duties and responsibilities.

**Note: -** Level 4 is subject to evaluation every 3 years, level 5 every 5 years while level 6 has no further evaluation.

#### 1.19.1. Induction

As part of the recruitment process, pilots will be tested by Operations Director, chief pilot to ensure effective English language verbal and written communication skills. Cadet pilots obtain a minimum standard using the ICAO standard.

#### 1.19.2. Instructors

All instruction is undertaken in English. New instructors are assessed on their ability to use effective English language verbal and written skills.

instructors and evaluators whose native language is not English will complete an evaluation prior to being assigned to operational duties to demonstrate a level of proficiency in English language to ensure that flight crew members are able to:

**1)** Effectively communicate during the performance of operational duties;
**2)** Understand information in the OM pertaining to duties and responsibilities.

### 1.19.3. Recurrent Training

No formal language recurrent training is provided to pilots, however all documents, instruction and exams are written and conducted in English. Should a language problem be identified, the Training Department will arrange for appropriate remedial training until a satisfactory standard is reached.

### 1.19.4. English Language Test.

Effective 5 March 2008 all Nesma Airlines Pilot Crew Members and instructors must demonstrate sufficient level of proficiency in aviation English Language with a minimum of level 4 according to ICAO.

### 1.19.5. Test Location.

Egypt air training center

### 1.19.6. Test Results.

70% is the minimum passing grade.

## 1.20. Co-Pilots Take-off and Landings.

An aircraft commander is authorized to allow, at his discretion, a Co-pilot to carry out take-offs and landings under supervision.

Newly promoted captains must, however have more than ***100 hours*** experience in command prior to allowing co-pilots to carry out take-offs and landings.

All take-offs and landings carried out by a co-pilot shall be from the right hand seat and with:-

1. Dry Runway
2. Cross wind comp less than 15 KT
3. CAT I Airports.

**Note:**

- The ultimate responsibility of the safety of the aircraft rest with the pilot in command, regardless of who is at the controls.
- Not with standing the foregoing, the pilot-in-command must take over all flying duties in the event of any malfunctions.

## 1.21. Training Records

The Company is required to maintain complete records of all training and checking which must be certified by the instructor or check airman and available for inspection by the Authority.

Flight Training stores the following information and documentation in original form, for the periods shown in the table below. Furthermore, a copy of the documents marked with an asterisk shall also be sent to the Authority for their records.

| Information/Documentation | Period Stored For | Responsible Person |
|---|---|---|
| License | As Long As The Flight Crew Member Is Exercising The Privileges Of The License For The Company. | Refer to OM-A |
| Basic indoctrination records;<br><br>Initial qualification records;<br><br>Transition and upgrade training records; and Initial Operating Experience | Permanently during individual employment | Training Department |
| Training And Checking Records | 3 Years | Training Department |
| Upgrade Command Course Training and Checking Records | 3 Years | Training Department |
| Recurrent Training And Checking Includes:<br>**1)** Combined Operator Proficiency Check / License Proficiency Check<br>**2)** Instrument Rating Revalidation / Renewal<br>**3)** Annual Line Check<br>**4)** Triennial Emergency And Safety<br>**5)** Ground And Ground Recurrent Training<br>**6)** LVOPS Revalidation | 3 Years | Training Department |
| Training and qualification for specific operations. (LVP, RVSM, TCAS, EGPWS,….etc.) | Permanently during individual employment | Training Department |
| Training And Checking To Operate In Either Pilot’s Seat | 3 Years | Training Department |

| | | |
|---|---|---|
| Recent Experience | 15 Months | Training Department |
| Route And Aerodrome Competence | 3 Years | Training Department |
| Low Visibility Qualification | 3 Years | Training Department |
| Dangerous Goods Training | 3 Years | Training Department |
| CRM | 3 Years | Training Department |
| SMS | 3 Years | Training Department |
| Security training | 12 months | Training Department |
| Pilots evaluation & monitoring | 12 months | Training Department |

- All cupboards are located in the Training Manager & Chief Pilot Office secured under key.
- The electronic copies for the records located on the Training Admin Computer which is located in the Training department, is back- up automatically every 24 hours according to the company I.T system for the electronic back up or on Flyco system for approved courses.
- Practical training records on training files and soft copy on training admin computers, is back- up automatically every 24 hours according to the company I.T system for the electronic back up.

### 1.22.1 General.

Training Department is responsible for ensuring that all supporting documentation, including record keeping forms, assessment forms, student notes, instructor guides and notes, and all courseware associated with the training courses and programs described in this manual are current and sufficient for the purpose.

The Flight Training Administration will issue a periodically (four weeks ahead) crew-training status covering ground, simulator and flight training to:

- Flight Operation Director.
- Chief pilots.
- Flight Crew Planning and scheduling department.

The Flight Training department is responsible for the monitoring compilation and distribution of the various trainee materials for the purposes of standardization, course administration, record keeping, qualification requirements and assessment for the following courses and programs;

- Licenses / certification.
- Recency of experience.
- Medical status, including medical certificate.
- Initial training courses.
- Transition training courses.
- Re qualification training courses.
- Differences training courses.
- Pre-command assessment training course.
- Command training courses.
- Line check.
- Proficiency check.
- Recurrent training.
- Specific qualifications (LVP, RVSM).
- Equipment qualifications (TCAS, GPWS/EGPWS).
- Airport and route competence (including special airports).
- Instructor Pilot Training course...
- Check Airmen/Examiner.
- CAT II training courses.
- Recurrent Training and Checking
- Pilot Qualification to Operate in Either Pilot's Seat Training and Checking
- CRM/Human Factors training.
- Dangerous goods training.
- Security training.

The company retains course attendance records or Course Completion Certificate for all courses of training undertaken.

The Flight Training Administration is responsible for retaining the original copy of the following training, checking and qualification undertaken by a flight crew;

- Conversion training and checking.
- Upgrade Command training and checking.
- Recurrent training and checking.
- Pilot qualification to operate in either pilot's seat.

Refer to Operation Manual Part A for retention of records associated with Route and Aerodrome Competence qualification.

This record includes a complete summary of the flight crew member's completion of each stage of training and checking, which must be certified by the instructor or check airman and available for inspection by the Authority and made available, on request, to the flight crew member concerned. It remains the trainee's responsibility to maintain a copy of all completed forms and assessments.

Upon completion of training, Flight Training Administration will forward notice of qualification changes and/or renewal to:

- Flight Operation Director.
- Chief pilots.
- Flight Crew Planning and Rostering.
- Crew Records.
- Operation Administration.

For the purposes of Cabin Crew Training, all record keeping responsibilities are delegated to the responsible manager for Cabin Crew.

### 1.22.2. Training records.

The Flight Training Administration shall be responsible for maintaining an archive of course modules, training and checking events, and their various versions. In addition, he shall maintain a record of when those modules are taught.

Further, specific administrative requirements including course attendance, reporting and quality assurance activities are listed.

### 1.22.3. Course Attendance Records

Unless otherwise specified, course attendance record sheets are prepared for every training course conducted by Flight Training. Participants and the appropriately designated instructor sign the form separately for every day of the course.

### 1.22.4. Training and Assessment Forms

Training events, such as simulator and line training, are supported by a training form. Checking events are supported by a check form.

On all training forms, the trainer shall make comments any time they can aid in identifying specific areas that in the future may assist the pilot in improving his standard of performance. In all cases, a grade of 3, 2 or 1 requires a comment. When poor progress has been recorded on a training event, the training form will contain full details of the reasons for poor progress.

On all check forms, the examiner shall make comments on all points he considers worthy of note. In all cases, a grade of 3, 2 or 1 requires a comment. When a failure has been recorded on a check, the check form will contain full details of the reasons for failure.

Unless otherwise specified, the applicable form will be signed by the instructor/examiner and countersigned by the candidate. The counter-signing of the form can follow at a later date.

A copy of the Form will be given to the candidate; and the master copy will be retained on file. When required, the original will be forwarded to the Authority.

The file is to be classified confidential and access to it is to be restricted to the appropriate fleet, training staff and individual.

### 1.22.5. Certificate of Test

Following the completion of a mandatory check, the examiner also completes the Test Form.

## 1.23. Training Quality Audits.

**(Refer to corporate manual ch.3)**

- All instructors/ Check Airmen (employed or subcontracted) shall be audited to assure compliance with approved standards.
- All Training facilities/ Simulators shall be audited to assure compliance with approved standards.
- All audits shall be retained as per quality assurance program requirements.
- All training results and examinations shall be monitored and analyzed for future training program improvement.

### 1.23.1. Quality Control of Training Courses.

Feedback shall be sought from trainers and trainees on the quality of training courses and instruction. Fleet Management and the Authority should also be encouraged to provide feedback. Feedback regarding course content and structure shall be forwarded to the Training Review Committee for review and incorporation as appropriate.

## 1.24. Trend analysis.

The Flight Training department shall be responsible to monitoring, recording and evaluation of results of successful and unsuccessful flight crew evaluations, all the grade included in the training forms for training deficiencies and examination trends. This will help the training department for trend analysis, program improvements and personnel monitoring and evaluation.

1. Trend analysis is every 12 months.
2. Trend analysis covers many areas of training such as simulator, line check and ground training.
3. Trend analysis is numerical value of trends in Nesma Airlines training and operations.

The trend analysis report will be discussed during the regular meetings between the Training Manager and Instructors, to improve the training program, cover all aspects of training and develop the weak points emerged during the trend reports if any.

## 1.25. Nesma Airlines Pilots Selection Process

**(Refer to OMA CH.5)**

1. Interview
2. Written exam
3. Simulator Skill Test.

## 1.26. Newly Hired Type rated Pilot

After completion of all appropriate ground courses the chief pilot shall schedule him with a company examiner or check airmen on a flight for Line Check.

**THIS PAGE INTENTIONALLY LEFT BLANK**

# Contents

CHAPTER 2 INSTRUCTOR SELECTION AND TRAINING MANUAL. ... 3
2.1 General ... 3
2.2 Position Description ... 4
2.2.1 IP, CA, EP Position Description ... 4
2.3 Selection System and Qualification of Instructor Pilots ... 5
2.3.1 Phase I (Selection and Assessment Process) ... 5
2.3.2 Phase II Leadership Course ... 7
2.3.3 Phase III (Ground Training & Simulator Training) ... 10
2.4 Upgrade to Check Airman ... 18
2.4.1 Objective ... 18
2.4.2 Prerequisite ... 18
2.4.3 Course Layout ... 18
2.4.4 Program Hours ... 18
2.4.5 Training Location ... 18
2.4.6 Training Aids ... 19
2.4.7 Methods of Instruction ... 19
2.5 Upgrade to Examiner ... 20
2.5.1 Objective ... 20
2.5.2 Prerequisite ... 20
2.5.3 Course Layout ... 20
2.5.4 Program Hours ... 20
2.5.5 Training Location ... 20
2.5.6 Training Aids ... 20
2.5.7 Methods of Instruction ... 20
2.6 Instructor Pilot Recurrent Training ... 21
2.7 Non-Line Qualified Instructors Recurrent Training ... 22
2.8 Supervision of Instructors ... 22
2.8.1 Newly Appointed Instructors ... 22
2.8.2 Instructors Evaluation program ... 22
2.9 CRM Facilitator - Flight and Cabin Crew ... 22
2.10 Instructor Pilot / Check Airman / Examiner Retention of Instructor License ... 23

**INTENTIONALLY LEFT BLANK**

# CHAPTER 2 INSTRUCTOR SELECTION AND TRAINING MANUAL.

## 2.1 General

The Flight Instructors, Check Airman and Examiners are the foundation and the pillars on which the entire safe and efficient flight operations stand.
Careful selection system for Instructor Pilot, Check Airman and Examiners is developed to ensure a high standard product of the training and checking process. The Instructor Pilot must be basically a Role Model.
The initial selection therefore shall be based on many factors, included but not limited to:

- Desire to do the job.
- Self-discipline.
- Experience and proficiency.
- High standard of aviation knowledge.
- Positive attitude.
- Ability to work in a team.
- Socially respected among colleagues.
- Strong work ethics.
- Leadership.
- Teaching ability.
- Flexibility.

Detailed selection system is laid down in **2.3 Selection System and Qualification of Instructor Pilots**, Selected Instructor Pilot; Check Airman shall undergo a training program to develop teaching skills, techniques and Right-Hand Seat training program.
The performance and adherence of flight instructors to the rules, procedures and regulations contained in the OM - PART D shall be closely supervised by the Training Manager.
The training department shall have sufficient Instructor Pilots, Check Airman and Examiners, to conduct training, Nesma Airlines policy is to maintain at least **two** check airman and **three** instructors to administer the training and evaluation programs in accordance with requirements of Nesma Airlines and ECAA, increasing number of instructors and check airman will be decided via training review committee.

## 2.2 Position Description

### 2.2.1 IP, CA, EP Position Description

| Flight Instructor/ Check Airman Category | Duties And Responsibilities |
| --- | --- |
| Instructor Pilot<br>**IP** | **1.** Ground Training.<br>**2.** Supervision flying, Rout qualification.<br>**3.** IOE after initial release (refer to item 1.19{d, e}) |
| Check Airman<br>**CA** | All Instructor Pilot Duties **Plus:**<br>**1.** Line Checks.<br>**2.** Proficiency Checks.<br>**3.** ZFTT (Fit Check Airman only).<br>**4.** Initial, transition simulator training |
| Examiner Pilot<br>**EP** | All Instructor and Check Airman Duties **Plus:**<br>**1.** ATP and Type Rating Certification.<br>**2.** Initial, transition simulator check. |

**Notes:**

- The duties of the <u>Non-Line Qualified Instructor Pilots</u> shall be limited to simulator duties and Random checks as prescribed for each category, and are not allowed for making annual checks.
- IP, CA, EP who have medical waivers and still fit to fly are Considered as Non-line qualified instructors.

## 2.3 Selection System and Qualification of Instructor Pilots

**Prerequisite**

**(a)** Current ATPL with current type and instrument rating.
**(b)** Medically fit pilots must be qualified on all routes of the type he is flying.
**(c)** Total 1000 hours Pilot in Command on type for previous fixed wing aircraft flight instructors.
**(d)** Total 1000 hours Pilot in Command on type for first time flight instructors.
**(e)** If the type is being introduced to Nesma Airlines Fleet for the first time, nominated instructors must be already instructors on another type. Fifty flying "up to proficiency" hours shall be conducted before the trainer can train on the new type.
**(f)** The candidate's file should be completely clear from any technical or administrative flaws.

The qualifications process consists of the following steps:

### 2.3.1 Phase I (Selection and Assessment Process)

#### 2.3.1.1 Candidate Approval

1. When operations require increasing the number of instructors or replacing those who have been promoted to other types, the new instructors will be selected through announcement.
2. A committee consists of:
   - Operations Director.
   - Training Manager.
   - Chief Pilot.

This Committee will review the Candidate pilot's technical as well as personal files in order to approve the nominee for the qualifications process.

**Note:**
A clear technical and administrative file must be complying with **Nesma Airlines** administrative policy.
All instructors, evaluators, and line check airmen (whether employed or contracted) must meet the required qualification and performance standards for Nesma Airlines.

### 2.3.1.2 Oral Exam

Oral Exam Committee shall consist of:

1. Training Manager and at least: -
2. Two type rated Examiner pilots including the Chief Pilot if he/she is an Examiner

Training department and the selected committee shall conduct company oral exam for the Candidate pilot to check their level of proficiency, knowledge and understanding of the following areas:

1. Aircraft limitations, normal procedures, non-normal procedures, systems operations and specific type performance
2. General Aeronautical which shall include, but not limited to the knowledge of:
   - Aerodynamics
   - Performance
   - Aviation Weather
   - Regulations & etc.
3. Operation manuals (OM-A, OM-B, OM-C, OM-D )

Failure to pass any stage of the oral exam shall be considered as a failure in a proficiency check with all the consequences and remedial actions required in this case. On the other hand, passing oral exam does not guarantee any instructor position.

### 2.3.1.3 Line Check:

Candidate pilot must have a line check in a flight not less than 3 hours in total flight time for the Check airman/Examiner to cover all items in the Line Check Form.
Any S1 rating in the Line check form will eliminate the Candidate pilot from Instructors selection and will be subject to the selected training committee.

### 2.3.1.4 RHS and Error Recovery Session

after successfully Passing the previous Stages of selection, Candidate pilot shall conduct a 2 hours' right hand seat session by a qualified examiner to check his/her ability to do the normal and non-normal procedures of the type as well as Recovery techniques from the right seat as a final stage of the selection process, this session items will be described in the Instructor RHS qualification form.

### 2.3.2 Phase II Leadership Course

#### 2.3.2.1 Objective

- To provide participants with new knowledge and arts in the area of training.
- To enhance their instructional skills including those of presentation, communication and psychological understanding.
- To develop the participant's positive attitudes toward self-learning and transfer of knowledge to others.

#### 2.3.2.2 Prerequisite

This training is predicated on the nominee that successfully completed selection process, assessment & testing stages and the right-hand seat session.

#### 2.3.2.3 Course Layout

- Instructor profession skills course.

**Day One (8 hours)**

**Module 1 – Background**

- Introduction
- Background
- Instructor impact and role
- Training role
- Consultant role
- Learning process
- What is learning?
- How do people learn?
- Why do people learn?
- Environmental barriers to learn
- Personal barriers to learn
- How adults learn

**Module 2 – Training Needs Analysis**

- Overview of TNAs steps
- An idea designing the TNAs
- The training processes.
- The training cycles.

**Day Two (8 Hours)**

**Module 3 – Course Preparation**

- Preparing a lesson plan
- Areas of inclusion in the background
- Definition of an objective
- Performance
- Conditions
- Criterion
- Example of a properly stated objective
- Presentation
- Application
- Briefing
- Designing tests
- Types of tests
- Rule to consider in applying tests
- Selecting course methodology
- Type of teaching methods
- Lecture methods
- Discussion method
- Case study method
- Demonstration and performance method
- Role play method
- Programmed instruction method

**Day Three (8 Hours)**

**Module 4 – Presentation Skills**

- The fear of speaking
- Four levels of competence
- Success formula
- Principals of effective speaking
- Rules of effective speaking
- Communications and interpersonal skills
- How do we communicate
- Body language
- Culture difference
- Territories and zone
- Barriers to communications
- Active listening skills
- Causes of poor listening.
- Listening technique
- Coaching
- Feedback
- Guidelines for giving feedback

- Question technique
- Type of Question

**Day Four (6 Hours)**

**Module 5 – Training Aids**

- Visual Aid preparation
- Types of training aids
- Overhead transparencies
- 35 mm slides
- Audio
- Flipcharts
- Chalkboard / white board
- Some useful visual aids techniques

**Module 6 – Classroom Management**

- Classroom layout
- Types of learners
- How to handle different student types
- A model for handling difficult behaviors
- Question from trainees

**Module 7 – Evaluating Trainees**

- Analyzing test results
- Evaluation
- Evaluation elements
- Trainees comment on a session
- Level of evaluation
- Trainee practical presentation using different training aids including self-designed P.P presentation
- Trainee debriefing:
  - Training Manual OM - PART D & Forms review.
  - The applicable ECARS.
  - Review OM - PART A and SOP.

### 2.3.2.4 Program Hours

- 30 Hours, 4 Days.

### 2.3.2.5 Training Location

- ECAA approved training center or Nesma airline approved classroom.

### 2.3.2.6 Training Aids

- Projector.
- White board.

### 2.3.2.7 Methods of Instruction

- Lectures.
- Role Plays and Participatory Training.

### 2.3.3 Phase III (Ground Training & Simulator Training)

**A) Simulator instructor only**

- Initial Ground course **2.3.3.1 Ground Training**
- pilot must conduct RHS and Error recovery in Simulator for one Flight Crew under supervision of an Examiner.
- one Simulator session for one Flight Crew under supervision of an Examiner and ECAA Inspector.
- All of above can be Conduct on one initial or transition flight training session on full flight simulator for one crew under supervision of an Examiner

**B) Flight instructor only**

- Initial Ground course **2.3.3.1 Ground Training**
- An observation simulator, which includes 16 hours for first time instructors and 8 hours for transition training instructors.
- pilot must conduct RHS and Error recovery in Simulator for one Flight Crew under supervision of an Examiner.
- Conducted 12 sectors as follow: -

**(i)** A minimum of two flight sectors, from the right pilot seat conducted by the trainee instructor, under the supervision of a designated pilot examiner, who occupy the left pilot seat; and

**(ii)** A minimum of four (4) sectors conducted with a designated pilot examiner acting as a simulated a second in command trainee for (2) sectors, and as a qualifying initial or transition or upgrade pilot in command trainee for the other (2) sectors.

**(iii)** A minimum of four (4) sectors conducted with an actual trainee under the supervision of a designated pilot examiner who occupy the third pilot seat. In the event of no actual trainee available another instructor must simulate a trainee from both the left and right pilot seats; and

**(iv)** A Final Evolution (minimum (2) sectors) conducted under the supervision of a designated pilot examiner who occupy the left pilot seat, and in addition be observed by an ECAA inspector.

**Note: - If instructor pilot:**

1. **has simulator instructor licenses and Nesma airlines will upgrade him to be flight instructor, process will start from bulleted item 4; i.e. "***Conducted 12 sector including 2 sector under ECAA inspector"* **OR**
2. **is already a flight instructor and Nesma airlines will upgrade him to be simulator instructor, process will start from bulleted item 4; i.e. "***one Simulator session for one Flight Crew under supervision of an Examiner and ECAA Inspector"*

**INTENTIONALLY LEFT BLANK**

### 2.3.3.1 Ground Training

#### 2.3.3.1.1 Instructor Pilots Initial / Transition Ground Training.

**(Ref. ECAR 121.414 (c))**

**Objective.**

- The course is intended to ensure that Instructor pilots under training:
- Receive adequate knowledge in basic training principles, objectives, effective methods, techniques, policies, common errors, briefings and debriefing etc....
- To enhance their instructional skills including those of communication and psychological understanding.
- To develop the participant's positive attitudes toward self-learning and transfer of knowledge to others.

**Prerequisite.**

Flight Crew members who has been selected to be trained as an Instructor pilot in accordance with procedure outlined in operations training Manual (Chapter 2).

Applicability

This course applicable for flight crew member.

**Course Duration.**

- Training shall be 24 hours at Nesma Airlines Approved Classrooms and;
- 30 hours at ECAA approved training centers for new instructors only (instructor professional skills).
- Training location.
- Training shall be conducted by Nesma Airlines trainers in the company training classrooms
- Training Methods.
- Lectures.
- Classroom discussions.
- Visual aids.

**Curriculum.**

- The fundamentals of teaching and evaluation;
- Lesson plan management;
- Briefing and debriefing
- Human performance issues
- Policy and procedures contained in Training & Operation Manual.
- Simulator serviceability and training in simulator operation;

- Flight instructor duties, responsibilities and function.
- Provision from applicable ECARs.
- The approved Methods, procedures, limitation and techniques for performing the required normal, abnormal and emergency procedures in the aircraft.
- Evaluation for pilot performance, grading scale, tolerances.
- Corrective actions in case of unsatisfactory checks.
- Forms and Documents.
- Teaching methods and procedures.
- The instructor – student relationship.
- As applicable, the simulated or actual weather and environmental conditions necessary to conduct each simulator or aircraft training/evaluation session to be administered.

### 2.3.3.1.2 Examiner/Check Airman Initial and Transition Ground Training.

**Objective**

The objective of this course is to qualify selected Nesma Airlines Instructor Pilots for assuming duties and responsibilities as Check Airmen.

- To provide participants with new knowledge and arts in area of training.
- To enhance their instructional skills including those of presentation, communication and psychological understanding.
- To develop the participant's positive attitudes toward self-learning and transfer knowledge to others

**Prerequisite**

- This course is predicated on the candidate being recommended for training in accordance with procedure outlined in Chapter 2 Flight instructor.
- Applicability
- This course applicable for Flight crew member.
- Training Location
- Training shall be conducted by Nesma Airlines trainers in the company training classroom.

**Training Aids**

- Instructor Pilot handbook.
- Training and Operation Manual.
- Briefing and de briefing handbook.

**Methods of Instruction**

- Lectures.
- Class participation
- Classroom drill

**Curriculum**

- Examiner/Check airman duties, responsibilities and function.

- Provision from applicable ECARs.
- Policy and procedures contained in Training & Operation Manual.
- Methods, procedures, and techniques for conduction required checks.
- Evaluation for pilot performance, grading scale, tolerances.
- Corrective actions in case of satisfactory checks.
- Forms and Documents.
- Effective communication

**Course Layout.**

| **No.** | **Subject** |
|---|---|
| **1)** | Instructor skills and techniques course |
| **2)** | Duties, responsibilities, functions and authority |
| **3)** | ECARs |
| **4)** | Nesma Airlines Operation and Training Manual |
| **5)** | Methods and techniques. |
| **6)** | Evaluation and grading |
| **7)** | Corrective actions. |
| **8)** | Forms and documents. |

### 2.3.3.2 Flight Training.

**Objective.**

The objective of this course is to qualify Nesma Airlines crewmember for responsibilities as flight instructor or check Airman.

**Prerequisite.**

This course is predicated on the candidate's prior qualification as a crewmember on A320 and satisfactory completion of Flight Instructor / Check Airman Ground Training.

**Training Location.**

Training shall be conducted at any ECAA approved training center, such as Egypt Air Training Center in Cairo and/or others.

**Training aids.**

- Full Flight Simulator (Class C or Class D).
- Aircraft.

**Methods of Instruction.**

- Briefings.
- Demonstration.
- Procedural Drills.
- Critique.

**Curriculum**. ***ECAR 121.413 / 121.414.***

#### 2.3.3.2.1 Instructor Pilots Initial / Transition Flight Training.

The initial and transition flight training must include the following:

- The safety measures for emergency situations that are likely to develop during instructions,
- The potential result of improper, untimely or non-execution of safety measures during instructions,
- For pilot flight instructor (aircraft);

In-flight training and practice in conducting flight instruction from the left and right pilot seats in the required normal, abnormal, and emergency procedures to

1. ensure competence as an instructor under the supervision of an approved instructor; and
2. The safety measures to be taken from either pilot seat for emergency situations that are likely to develop during instruction.

- The requirements of this section must be accomplished in full in a flight simulator, or in a flight training device, as appropriate.
- The initial and transition flight training for flight instructors (simulator) must include the following:
  1. Training and practice in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight instruction required by this Part. This training and practice must be accomplished in full or in part in a flight simulator or in a flight training device, as appropriate; and
  2. Training in the operation of flight simulators or flight training devices, as appropriate, to ensure competence to conduct the flight instructions.

#### 2.3.3.2.2 Examiner/Check Airman Initial and Transition Flight Training.

The initial and transition flight training must include the following:

- The safety measures for emergency situations that are likely to develop during a check,
- The potential result of improper, untimely or non-execution of safety measures during a check,
- For pilot flight airman (aircraft);
  1. Training and practice In conducting flight checks from the left and right pilot seats in the required normal, abnormal, and emergency procedures to ensure competence to conduct the pilot checks required by EACR 121 and,
  2. The safety measures to be taken from either pilot seat for emergency situations that are likely to develop during checks.
- The requirements of this section must be accomplished in full or in part in flight, in a flight simulator, or in a flight training device, as appropriate.
- The initial and transition flight training for check airman (simulator) must include the following:

1. Training and practice in the required normal, abnormal, and emergency procedures to ensure competence to conduct the flight checks required by this Part. This training and practice must be accomplished in full or in part in a flight simulator or in a flight training device, as appropriate; and
2. Training in the operation of flight simulators or flight training devices, as appropriate, to ensure competence to conduct the flight checks.

**Course Layout.**

- Pilots will receive sufficient flight training and practice in conducting training and flight checks from left and right pilot seats.
- This training will include the required normal, abnormal, and emergency maneuvers to ensure his competence in conducting the flight check and flight training required by ECAA regulations.
- Methods, procedures and techniques for conducting check.
- The appropriate safety measures to be taken from either pilot seat for emergency situations that are likely to develop in training.
- The potential results of improper or untimely safety measures that may occur during training.
- Corrective action for unsatisfactory checks.
- Proper completion of required forms.

Note :-

In case of hiring new check airman the selection committee has to ensure that the candidate fulfils the perquisite criteria mention in 2.3

### 2.4 Upgrade to Check Airman

Examiners and Check Airmen hold the most important positions in the companies training team. They are considered the elite of that team, as they are the key to maintaining the highest level of safety standards. Bearing in mind this fact, they should be carefully selected. The scope of their operation is to determine the quality of training program, and the quality of instructor's performance. Their feedback and comments are one of the basis on which all training activities is reviewed and updated. Examiners and Check Airmen must clearly understand that they represent ECAA in performing the functions of the respective positions; therefore, they are responsible to the ECAA administrator, and they should also understand that company policies or affiliations, economics, union affiliation, and seniority with **Nesma Airlines** are not relevant issues when the management determines the qualifications of Examiners and Check Airmen.

#### 2.4.1 Objective

The objective of the upgrade is to give the instructor pilot ground training to acquire the appropriate skills for being a Check airman.

#### 2.4.2 Prerequisite

This course is predicated on the candidate who completed an instructor course with the following:

- A minimum of 40 simulator hours.
- Approval of a committee chaired by Training Manager
- USV simulator session under the observation of ECAA inspector.

#### 2.4.3 Course Layout

Check airman skills and techniques course for the purpose of acquiring the following skills:

- Assessing the trainee performance against defined standards.
- Recognize the importance of making adequate progress reports.
- Know how to develop the trainers own training skills.
  i. Detecting of improper and insufficient training.
  ii. Detecting of personal characteristics of an applicant that could adversely affect safety.

#### 2.4.4 Program Hours

- 6 hours.

#### 2.4.5 Training Location

- **Nesma Airlines** classroom.

### 2.4.6 Training Aids

- Projector.
- White board.

### 2.4.7 Methods of Instruction

- Lectures.
- Role Plays and Participatory Training.

## 2.5 Upgrade to Examiner

### 2.5.1 Objective

The objective of the upgrade is to give the Check Airman pilot ground training to acquire the appropriate skills for being an examiner.

### 2.5.2 Prerequisite

This course is predicated on the candidate who completed an instructor Course with the following:

- A minimum of 80 simulator hours.
- Approval of a committee chaired by Training Manager.
- USV simulator session under the observation of ECAA inspector.

### 2.5.3 Course Layout

Examiner skills and techniques course for the purpose of acquiring the following skills:

- Assessing the trainee performance against defined standards.
- Recognize the importance of making adequate progress reports.
- Know how to develop the trainers own training skills.
  - **(i)** Detecting of improper and insufficient training
  - **(ii)** Detecting of personal characteristics of an applicant that could adversely affect safety.

### 2.5.4 Program Hours

- 6 hours.

### 2.5.5 Training Location

- **Nesma Airlines** class room.

### 2.5.6 Training Aids

- Projector.
- White board.

### 2.5.7 Methods of Instruction

- Lectures.
- Role plays and participatory training.

## 2.6 Instructor Pilot Recurrent Training

Recurrent training for Instructors, Check Airmen & Examiners shall be conducted once a year associated with P.C however a minimum of three Touch and Go must be conducted during Simulator Recurrent Training. If the Base Month for Instructor qualifications is different than the Base Month for type rating, Instructor qualifications shall be considered a P.C and shall be used to calculate P.C validation (Base Month).

**I. <u>Standardization meetings</u>**

- All Nesma Airlines instructors must attend one Standardization meetings as part of license recurrent process.

**II. <u>Ground Training</u>**

- A review of the latest training concepts, industry trends, training related accidents, company procedures and ECARS shall be included in the ground segment of the Recurrent Training of Flight Instructors.
- Standardization meeting between Instructors, Check Airmen & Examiners shall be held with Training Manager.

**Course Duration: -** 3 Hrs every 12 calendar month.
**Course Layout:-**

For flight instructors who conduct training in a flight simulator or a flight-training device, the following subject is specific to the device(s) for the airplane type:

- Proper operation of the controls and systems;
- Proper operation of environmental and fault panels;
- Data and motion limitations of simulation; and
- The minimum airplane simulator equipment required by Chapter 8, for each maneuver and procedure completed in a flight simulator or a flight-training device.

**III. <u>Simulator Training</u>**

- A minimum of three Touch and Go's from RHS.
- Error recovery session which will include Lateral and Vertical offsets performed by the Instructor Pilot occupying the left seat and the recovery techniques required by the Instructor Pilot under training.
- Simulator training session supervised by an Examiner.

### 2.7 Non-Line Qualified Instructors Recurrent Training

Non-Line Qualified Instructors shall fly as observer on their fleet for at least 3 flights before each recurrent simulator training.

### 2.8 Supervision of Instructors

#### 2.8.1 Newly Appointed Instructors

Performance of newly appointed Instructor shall be under supervision for the first year of appointment; the supervision shall include but not be limited to:

- A check on his/her performance while giving instructions at least once a year.
- A check on his/her performance during a proficiency check from the right-hand seat at least once a year.

#### 2.8.2 Instructors Evaluation program

An annual check on the Instructor Pilot, Check Airman and Examiner performance shall be conducted by one of the Examiners or Check Airmen to ensure that they are standardized for their assigned tasks.
Random Checks might be conducted according to feedback.

### 2.9 CRM Facilitator - Flight and Cabin Crew

An applicant for appointment as a CRM Facilitator shall satisfy the following requirements:

– have completed six months line flying experience in the Company or have significant previous experience in human factors or CRM training;
– have either successfully passed the Human Performance and Limitations (HPL) examination whilst recently obtaining the ATPL or, if holding a Flight Crew license acceptable to the Authority before the introduction of HPL into the ATPL syllabus, followed a theoretical HPL course covering the whole syllabus of the HPL examination; and
– must be acceptable to the ECAA.
When acceptable to the Authority :
– a flight crew member holding a recent qualification as a CRM trainer may continue to be a CRM trainer even after the cessation of active flying duties;
– an experienced non-flight crew CRM trainer having a knowledge of HPL, may also continue to be a CRM trainer
; – a former flight crew member having knowledge of HPL may become a CRM trainer if he maintains adequate knowledge of the operation and aeroplane type.

### 2.10 Instructor Pilot / Check Airman / Examiner Retention of Instructor License

**a-** Instructor Pilot, Check Airman and Examiner will be retained based upon company **(Nesma Airlines)** needs and their ability to maintain those prerequisites upon which they were selected.

**b-** Instructor Pilot, Check Airman and Examiner must perform 1 initial / transition simulator training, or 3 recurrent training sessions every calendar year as a minimum, and ground course once every year.

**c-** Instructor Pilot, Check Airman and Examiner must perform right hand seat qualification at the simulator and during line check once a year.

**d-** To work as an Instructor Pilot, Check Airman or Examiner, he/she must remain current and qualified in the crew position and equipment for which he/she has been designated.

**e-** Instructor Pilot, Check Airman and Examiner must also maintain productivity (i.e. his ability to carry out the training roster keeping the average training hours among other Instructors).

**f-** Instructor Pilot, Check Airman and Examiner who does not maintain currency and qualifications, or with any negative impact or productivity, on company's image or economy will be relieved from their positions at the discretion of the Training Manager and the approval of the operations director.

**g-** Instructor Pilot, Check Airman and Examiner deviation from training policies and procedures, rules set forth in OM - PART A and or OM - PART D or non-compliance with those policies and procedures shall be subject to termination of training duties through decision of an investigation committee. The investigation committee shall consist of the Chief Pilot, one Flight Instructor on type, and chaired by Training Manager and approved by operations director.

**h-** A written request by the Instructor Pilot, Check Airman and Examiner submitted to Training Manager for cancellation of the current appointment or designation.

All training and evaluation process in this chapter ensure that all Nesma airlines instructors, evaluators, and line check airmen (whether employed or contracted) are standardized and:

**i.** have the required certifications/approvals from ECAA and all are kept in their training files at training department.

**ii.** meet the required qualification and performance standards of Nesma Airlines and ECAA.

**iii.** Are periodically evaluated to ensure compliance with required qualification and performance standards.

**INTENTIONALLY LEFT BLANK**

# Contents

**CHAPTER 3 TESTS GRADING AND CHECKING PROCESS.** .... 2
3.1 General .... 2
3.1.1 General Rules, Limitations, Requirements. .... 2
3.1.2 Training and Checking .... 2
3.1.3 Simulator briefing and debriefing. .... 4
3.1.4. Rostering and Scheduling. .... 5
3.2 Assessment and Grading System .... 6
3.2.1 General .... 6
3.2.2 Grading Scale .... 7
3.2.3 Acceptable Performance Guidelines and Tolerances .... 7
3.2.4 Tolerances .... 9
3.3 Training .... 12
3.3.1 General .... 12
3.3.2 The Training Objectives Aim to Cover Three Broad Areas .... 12
3.3.4 Types of Training .... 13
3.4 Checking .... 14
3.4.1 General .... 14
3.4.2 Type Rating Check (Certification)/ Proficiency Check Policy .... 15
3.4.3 Proficiency Check Policy .... 15
3.5 Testing .... 15
3.5.1 Objective .... 15
3.5.2 Oral / Knowledge Test .... 15
3.5.3 Written Test .... 16
3.5.4 Re-Take Policy .... 16
3.6 Personnel that do not achieve or maintain required standards .... 17
3.6.1 Poor Progress of a student .... 18
3.6.2 Failure of a Student/Candidate .... 18
3.6.3. Remedial training following failure of a line or simulator check .... 19
3.6.4 Termination of training .... 20
3.6.5. Poor Performance of an Instructor / Examiner .... 20
3.7 Training facilities .... 21
3.7.1 General .... 21
3.7.2 Classroom Facilities .... 21
3.7.3. Computer Based Training .... 21
3.7.4. Training Devices .... 22
3.7.5 Course Materials .... 22

# CHAPTER 3 TESTS GRADING AND CHECKING PROCESS.

## 3.1 General

The Functions of the Check Airman and Examiner are basically either Training or Checking, it is important, yet very difficult, to draw a line between those two functions.
The objectives of this chapter are:

- To draw the line and make a clear distinction between training and checking.
- To design a system of evaluation, containing specified tolerances, to be followed for the purpose of standardizing the assessment process.

**Note:** Inappropriate interferences from management, any other department, individuals, or external organization are prohibited during any training or evaluation.

### 3.1.1 General Rules, Limitations, Requirements.

The purpose of this section is to collect all rules together to facilitate training personnel's job in following them.
The functions of the Check Airman/Flight instructor are basically either Training or checking, it is important, yet very difficult, to draw a line separating those two functions.
The main objective of the following is to:

- Make a clear distinction between training and checking.
- Set up a system of evaluation, containing specified tolerances, to be followed by all Check Airmen/Examiner for the purpose of standardizing the assessment process.

### 3.1.2 Training and Checking

Nesma Airlines shall require that all flight crew are trained and objectively examined or evaluated according to the published standards which approved by ECAA ensuring that:

- Evaluation administered in conjunction with simulator, aircraft and/or line training are conducted by different organizations or individuals than those conducted the training.
- Instructors, Examiners and Line check Airman are able to perform their duties without inappropriate interference from management and/or external organizations.

Nesma Airlines should ensure flight crew members participate in joint training activities or exercises with cabin crew members for the purpose of enhancing onboard coordination and mutual understanding of CRM and the human factors involved in addressing emergency situations and security threats.
When such coordinated training is not possible, combined flight crew and cabin crew training should include joint discussion of emergency scenarios.

Nesma Airlines shall ensure flight crew members receive training in normal and non-normal procedures and maneuvers, to include, as a minimum:

1. PM / PF and other flight crew division of duties (task sharing).
2. Positive transfer of aircraft control.
3. Consistent checklist philosophy.
4. Emphasis on aviate, navigate, communicate" priority.
5. Proper use of all levels of flight automation.

Nesma Airlines shall ensure flight crew members receive training and, demonstrate competence in normal and non-normal procedures and maneuvers, to include, as a minimum:

1. Rejected takeoff.
2. Emergency evacuation.
3. Engine fire and failure.
4. Emergency descent.

Nesma Airlines shall ensure flight crew member complete practical training exercises:

1. In the use of all emergency and safety equipment required to be onboard the aircraft.
2. That address emergency evacuation and coordination among crew member.

Theoretical and Practical training are decrypted in chapter (9) and chapter (4) of OM-D.

During Training (***Simulator and line Training***) Nesma Airlines Training Department shall ensure pilot flight crew members demonstrate knowledge of the operations approved as part of Nesma Airlines (AOC) and according to PRO-ABN-01,PRO-NOR-SOP to include the following items:-

1. Approaches authorized by ECAA;
2. Ceiling and visibility requirements for takeoff, approach and landing;
3. Allowance for inoperative ground components;
4. Wind limitation (crosswind, headwind and tailwind)

### 3.1.3 Simulator briefing and debriefing.

#### 3.1.3.1 Briefing

- Nesma Airlines shall provide for all flight crew a simulator briefing which ensure a clear understanding the required maneuvers to be performed in their respective training or examination, without providing the flight crew the precise order of the exercise (detailed chronological sequence of the maneuver or malfunctions prior to the respective maneuver or malfunctions being administered). This is not intended to preclude the crews from knowing the city pairs to the flown or the general maneuver requirements prior to the examination, but merely to ensure that the script (simulator syllabus) is not known to the flight crew.

**Note: -** Simulated weather and environment conditions are standardized and appropriate for the training/ evaluation being administered.

- The instructor should encourage trainees to ask questions and be able to guide them through the appropriate references and offer any additional information to help the trainee understand.
- The instructor shall check the latest FCOM, SOP, and OM-A, QRH and MEL revision.
- The instructor shall check the flight crew knowledge for the latest bulletins, circulars and crew notices.
- The instructor shall check the flight crew license and/or any medical restriction.
- The instructor shall provide the flight crew with a simulator safety briefing.

#### 3.1.3.2. Debriefing

- The instructor shall register the faults and deviations during performing different maneuvers without interruption of the session (either positively or negatively).
- The instructor should take a snap shot for deviations (glide path, speed, direction, and heading).
- The instructor shall assess the deviation against the acceptable tolerances mentioned in chapter three (Ref. 3.3.4) according to the phase of flight and type of maneuver and also pilot position (putting into consideration the total experience).
- The instructor shall discuss all the above-mentioned deviations, backed with the documentation (snapshot printout) to reduce and eliminate any un-productive discussions and to reduce the defensive attitude of the some trainee.
- The instructor should analyze the trainee's difficulties objectively and during debrief competent phrases and terms that are simple and commonly used in aviation.
- The instructor shall evaluate the flight crew overall performance, task sharing, SOP and decision-making process.
- The instructor shall inform clearly the flight crew of his intentions.
- The instructor shall write reports clearly and objectively explaining the strengths and weaknesses of trainees.

### 3.1.4. Rostering and Scheduling.

Training rosters and simulator schedules should be adhered to;

- There shall be no change without prior approval.
- Instructor Pilot shall not leave the training location without prior approval and this will be limited to emergency cases only.
- Flight time and Duty Time limitation should be adhered to during Line Training and under all circumstances.
- Normally three days in a row of training, followed by a day off, will be scheduled for any crew during initial or transition training. However, no more than four days in a row of training shall be planned or conducted under any circumstances.

## 3.2 Assessment and Grading System

### 3.2.1 General

**a-** It would be impossible to devise a complete and detailed formula by which an Examiner or Check Airman can assess whether a trainee has passed or failed his/her check. However, it is essential that the highest degree of standardization in assessment to be achieved.

**b-** The system of assessment and evaluation contains an acceptable performance guide lines in the general areas (knowledge-skills- management), grading scale, and specified tolerances for all maneuvers, to standardize the evaluation process among Instructor Pilot, Check Airman and Examiner as much as possible.

**c-** Crew assessment and evaluation at any training phase shall always be oriented to compliance with **Nesma Airlines** OM - PART A and Standard Operating Procedures (SOP).

**d-** During flights under supervision, Supervisor Instructor Pilot or Check Airman shall asses crew performance to ensure continues compliance with OM - PART A and (SOP).

**e-** Tolerances for any check or evaluation are detailed in 3.2.4 Flight within these tolerances should not be achieved at the expense of smoothness and good co-ordination.

**f-** Weather and environmental conditions are standardized and appropriate for the training or evaluation being administered.

### 3.2.2 Grading Scale

#### 3.2.2.1 Training

- Grading scale is reflected in both ground and flight training activity as follows:

**<u>Ground Training Grading Scale Rules (Written Exams and Quizzes)</u>**

- Correct answer: Trainee will have Full question grade.
- No answer: Trainee will lose Full question grade.
- Wrong answer: Trainee will lose Full question grade.

Minimum passing grade is 70%

**<u>Flight training grading scale (Simulator and aircraft training)</u>**

**US** Unsatisfactory or Failed (Training committee meeting required).
**S 1** 70% - 79%
**S 2** 80% - 89%
**S 3** 90% and Above

**Notes:**

- In case of more than three S1 in the same PC / Line Check, a training committee shall be formed to decide a remedial action which may be halt of flying if necessary, till a corrective action is taken.
- In case of repetitive S1 for the same item in two consecutive PC's / Line Checks a committee shall be formed to decide a remedial action which may be halt of flying if necessary, till a corrective action is taken.
- In case of multiple S1's does not mean the failure of the trainee.
- The instructor shall review the trainee's last PC before conducting PC check.

#### 3.2.2.2 Checking

The result of any check shall be either Satisfactory or Unsatisfactory.

- **Dispatcher checking shall be S-, S and US;**
  - **US** Unsatisfactory or Failed (Training committee meeting required).
  - **S-** 70% - 89%
  - **S** 90% and Above

### 3.2.3 Acceptable Performance Guidelines and Tolerances

It is the factors that will be considered by the Examiner in deciding whether the trainee has met the objective of the maneuver procedure at the required level of competence and has met the objectives of the three major areas of the training.

### 3.2.3.1 Knowledge (Oral or Written)

Evaluation shall be conducted during initial training and subsequently during recurrent training based on the trainee has a practical knowledge of the following:

**(a) Aero plane Systems:**

- Power Plant.
- System components.
- Operational performance
- Limitations.
- Normal procedures.
- Non-normal procedures
- Emergency procedures.
- OM - PART A.
- A/C SOP.

**(b) General Aeronautical Knowledge**

### 3.2.3.2 Flying Skills

Evaluation shall be based on:

- SOP.
- Complying with FCOM standard operating procedures under Normal, Abnormal and Emergency situations under various meteorological conditions.
- Flying technique and accuracy.
- Aero plane configuration, altitude and speed control.
- Orientation and navigation concepts.

### 3.2.3.3 Management

Evaluation shall be based on:

- SOP.
- Good planning in all phases of flights.
- Timely correct decisions.
- Crew Coordination
- Use of available resources.
- Adherence to clearance and safe heights.
- Situation awareness.
- General outlook to his flying performance and conduct.

### 3.2.4 Tolerances

The air speed altitude and heading tolerances given hereunder represent the minimum performance expected in good flying conditions. Exceeding these tolerances before corrective action is initiated is an indication of an **UNSATISFACTORY** performance.
It is a fact that even a good pilot may relax his attention to accuracy for a few moments under suitable circumstances, and exceed these tolerances without deserving to fail the test. The decision as to when, how long a trainee may exceed these tolerances without being classified **UNSATISFACTORY** is left to the Examiner's discretion.
A trainee performance within tolerance does not mean that he/she may ignore applying correct procedures.

#### 3.2.4.1 T/O and Area Departure

##### 3.2.4.1.1 Normal T/O, Cross Wind, Instrument and Engine Failure

| | |
| --- | --- |
| Heading | ±5° |
| Target Speed | ±5 Kts |

##### 3.2.4.1.2 Area Departure

| | |
| --- | --- |
| Heading | ±10° |
| Target Speed | ±10 Kts |
| Altitude | ±100 Feet |

**Note:** Speed should not exceed 250 kts below FL 100.

#### 3.2.4.2 Rejected T/O

Evaluation shall be based on:

- Prompt application of braking, speed brake and reverse.
- Keeping aircraft within the physical limits of the runway and its centerline.
- Application of the correct Abnormal or Emergency procedures and check list as laid down in FCOM & SOP.
- Application of the correct evacuation procedures as laid down in FCOM and Emergency drill.

#### 3.2.4.3 Steep Turns

| | |
| --- | --- |
| Roll Out Heading | ±10° (of the entry or specified heading) |
| Target Speed | ±10 KTS |
| Altitude | ±100 Feet |
| Bank angle | 45° ±5° |

### 3.2.4.4 Stall

Evaluation shall be based on maneuver entry and recovery techniques according to the procedures as specified in the FCOM in keeping the limits and tolerance of the specific types.
Reducing angle of attack is the most important pilot action in an impending or full stall. Instructors should emphasize teaching the same recovery technique for impending stall. Evaluation criteria for a recovery from an impending stall should not include a predetermined value for altitude loss.

### 3.2.4.5 Slow Flight

Evaluation shall be based on maneuver entry and recovery techniques such as:

- Inadequate back-elevator pressure as power is reduced, resulting in altitude loss.
- Excessive back-elevator pressure as power is reduced, resulting in a climb, followed by a rapid reduction in airspeed.
- Inadequate power management.
- Inability to inadequately divide attention between airplane control and orientation.
- Failure to anticipate changes in lift as flaps are extended or retracted.

### 3.2.4.6 Cruise

Evaluation shall be based on:

- Flight level selection.
- Awareness of maneuver margins.
- Awareness of fuel management (specific range, step climb).
- Use of weather radar.
- Cruise flight path accuracy.
- In- Flight Fuel Management.

### 3.2.4.7 Area Arrival and Holding

Evaluation shall be based on the trainee’s ability to:

- Complete the appropriate approach briefing as prescribed in SOP.
- Complete descent checks as prescribed in FCOM.
- Adherence to actual or simulated ATC clearances and assigned radials, altitude and use of available navigation facilities as appropriate.

| | |
| --- | --- |
| Heading | ±10° |
| Target Speed | ±10 Kts |
| Altitude | ±100 Feet |

**Notes:**

- Speed should not exceed 250 Kts below FL 100.
- SOP approach gates tolerance applies.

### 3.2.4.8 Instrument Approaches (Precision and Non-Precision)

The instrument approach begins when the aeroplane is over the Initial Approach Fix (IAF) for the approach procedure being used (or handed- over to the final approach controller in the case of a long final approach) and ends when the transition to a missed approach configuration is completed. Evaluation shall be based on aircraft configuration and air speed as prescribed by specified FCOM.

| | |
|---|---|
| Heading | ±10° |
| Target Speed | ±10 Kts |
| Altitude | ±100 Feet |
| ILS deviation | One-quarter scale deflection (Glide Slope or Localizer) |
| Non-Precision VOR | One-quarter scale deflection of the Course Deviation Indicator (CDI) |
| ADF | ±5° (of RMI or bearing pointer from the desired bearing) |

#### 3.2.4.8.1 Final Approaches

| | |
|---|---|
| MDA/DH | +50/-0 Feet |
| Speed | ±5 Kts |

**Note:** GSOP approach gates tolerance applies.

#### 3.2.4.8.2 Circling Approach

| | |
|---|---|
| Heading/Track | ±5° |
| Target Speed | -0/+5 Kts |
| Altitude | -0/+100 Feet |

**Notes:** During final approach:
- Maintain 25° bank and altitude until runway threshold identified and on path.
- Set LDG configuration as required.
- As published by Airbus or Boeing:
- Do not descend below MDA (H) until intercepting the visual profile to the LDG runway
- SOP approach gates tolerance applies.

#### 3.2.4.8.3 Missed Approach

Evaluation shall be based on the trainee's ability to:
- Take the missed approach decision at the correct time.
- Accurate and safe transition from approach and landing configuration to climb configuration.
- Fly the airplane throughout the missed approach procedure from MDA/DH to the missed approach altitude under normal conditions and with a simulated engine failure.
- Descent below MDA/DH, as appropriate, prior to the initiation of the missed approach procedure with no visual cues shall be considered UNSATISFACTORY (US).
- Heading/Track ±5°

- Target Speed ±5 Kts
- Altitude ±100 Feet

**Note:** Go-Around procedures must be conducted without Flight Director during recurrent training.

## 3.3 Training

### 3.3.1 General

**a-** Trainee Pilots vary in age, experience and current ability; therefore, they will learn in different rates. To resolve this situation the training management is adopting the concept of **(TRAINING TO PROFICIENCY)**; however, the Programmed hours for each training program will be designed so that an average standard pilot can cope with.

**b-** Training should be oriented to **WHY** and **HOW** a particular procedure or maneuver should be performed as stated in the manual rather than **JUST DO IT** as understanding and insight represents the **Concrete Base** on which a layer on layer of training to higher level of intellectual application can be achieved.

**c-** The small number of trainees involved in each training situation together with the fact that the trainee is liable to be in sustained contact with a training pilot for some considerable time means that the character and quality of the trainer's inter-active skills will have a crucial bearing on efficient use of training time and quality of the outcome.

**d-** The emphasis should be on training the pilot and permitting him to practice rather than on checking and testing him/her.

**e-** There are significant differences between PROCEDURES and **TECHNIQUES** simply because each individual may perform a certain procedure in different ways for example:

1. Initiating descent.
2. Reducing speed to 250 knots below 10,000 feet, etc....

The Instructor Pilot / Check Airman should understand this significant difference and should not be offended if the trainee elects to perform a procedure with a different technique.

**f-** All training courses should be in standardized manner to define the required operational standards and performance objectives. Training programs should then ensure that the defined standard is reached at each step before moving on to the next.

### 3.3.2 The Training Objectives Aim to Cover Three Broad Areas

- To develop the trainee's **knowledge** of technical understanding of the operational theory into practical understanding of the operating standards required.
- To develop the practical aircraft operating **Skills** required of each pilot in the crew.
- To instill responsible attitudes essential to safe and efficient operation of the aircraft, while stressing co-ordinate overall **Management**, performance, and conduct of the flight needed to achieve highest standard of safety.

**Note:** Every training program will be covered in a detailed lesson plan to achieve the training objective.

### 3.3.4 Types of Training

- Initial Training.
- Transition Training.
- Cross Crew Qualification (CCQ).
- Difference training
- Re-Current and Loft Training.
- Aircraft ZFTT.
- Line Training.
- Upgrade training (F/O to captain on the same type).

## 3.4 Checking

### 3.4.1 General

a- Bearing in mind that we have based our training guidelines on Proficiency, we have to establish our basis of checking on Competence.
b- Since experience is an asset that cannot be taught, the Examiner/Check Airman should bear in mind the level of experience of each individual pilot undergoing the check, especially if this pilot is recently hired or newly promoted to another type.
c- The role of the Examiner during a TYPE RATING CHECK exercise is not to provide TRAINING, it is solely to observe and evaluate the pilot's performance and to determine his/her competence and ability to apply Correct Procedures within the specified Tolerances.
d- During PROFICIENCY CHECK, If the pilot being checked fail any of the required maneuvers, the Examiner/Check Airman shall STOP the CHECK and may give additional TRAINING to the pilot during the course of the Proficiency Check. The proficiency shall be resumed and the failed maneuvers shall be repeated, In addition to repeating the maneuvers failed, the Check Airman or Examiner giving the proficiency check may require the pilot being checked to repeat any other maneuvers he finds are necessary to determine the pilot's proficiency.
e- If the Pilot undergoing the check is unable to demonstrate SATISFACTORY performance to the Examiner/Check Airman, further flight scheduling for this Pilot will be suspended waiting for a remedial action by the Training Manager.
f- Acceptable performance guidelines and tolerances set forth in ECAA practical test standards shall be applied.
g- The instructor of the Flight Crew being evaluated shall not perform the evaluation.
h- Inappropriate interferences from management, any other department, individuals, or external organization are prohibited.
i- Type rating proficiency check shall be performed before line training.

**Note:**

In case of an item failed during the check, the instructor can repeat the item for 3 trials maximum for the same maneuver, or 1 trial for 2 different maneuvers. If the trainee fails in more than 2 maneuvers, the check should be suspended.

### 3.4.2 Type Rating Check (Certification)/ Proficiency Check Policy

No Training is allowed during Type Rating Certification (Final Check).

- **a-** Trainee shall be familiar with all evaluation maneuvers, but all evaluation maneuvers sequence shall be unknown to the trainee being evaluated.
- **b-** Examiner is the only person authorized to conduct and sign the type rating check.
- **c-** The result of the check should be either SATISFACTORY or UNSATISFACTORY depends on the compliance of the pilot under check to the specified tolerances set forth in ECAA practical test standards.
- **d-** Type rating checks could be conducted on any airport and it's not mandatory to be conducted on the same airports being trained on.

### 3.4.3 Proficiency Check Policy

- **a-** Examiners and Check Airman are authorized to conduct Proficiency Check.
- **b-** The provisions of Proficiency Check (Certification) Paragraph (d) shall be applied.

## 3.5 Testing

### 3.5.1 Objective

Oral or Written tests shall be administered by Training Manager to evaluate the trainee's competence in acquiring the knowledge required for each training phase.

### 3.5.2 Oral / Knowledge Test

#### 3.5.2.1 Oral Test Shall Be Administered in The Following Conditions:

- **a-** As a part of the approved ECAA approved training programs (Proficiency Check).
- **b-** By the End of FBS, initial or Transition Training (type rating certification oral test)
- **c-** At the end of line training (Company requirements).
- **d-** Upon the recommendation of the training committee.

#### 3.5.2.2 Oral Tests

Required By (c) or (d) In Item 3.5.2.1 Above Shall Be Administered by Flight Training Department as Follows:

- **a-** Three Instructor Pilots (Minimum two) and chaired by the most senior Pilot.
- **b-** Each instructor pilot shall hand over the result of the test in percent to the committee chairman and enter the result in the appropriate box of the Oral Test form.
- **c-** The result of the test shall be the average of the three numbers given with a passing grade of 70%.
- **d-** The Instructor Pilot and the trainee shall sign the form and hand it over to Training Manager.

**Notes:**

- In case of the oral test is required by the committee for any reason, and the pilot fails to demonstrate satisfactory Performance (Grade 70%), only one retake is allowed. If the pilot fails to pass the retake exam, he/she shall be submitted to the committee.
- Refer to Appendix C for certification and company oral form.

### 3.5.3 Written Test

- Written tests shall be administered by the Flight Training Department as a part of ECAA approved Initial, Transition, Upgrade, Difference and CCQ training program and shall be conducted at the end of the Ground school phase (Certification written test).
- The certification written test shall consist of 100 questions from the questionnaire handbook covering all A/C systems and performance shall be administered by the FTD.
- The trainee must obtain a minimum of 70 % on all examinations and demonstrate the required skills and knowledge in order to pass a unit of instruction and satisfactory complete a course.

### 3.5.4 Re-Take Policy

In case of failure during Oral or Written test a re-take shall be conducted 15 days from the date of the first take.

### 3.6 Personnel that do not achieve or maintain required standards

If at any stage of training, or as the result of a test, it is evident that a pilot has not reached the necessary standards, the trainer/instructor/examiner should refer the case to the Chief Pilot or delegate for a decision on whether or not further training should be given.

The progress of the pilots is monitored throughout any training/checking carried out by Flight Training.

3.6.1. Poor Progress of a student.
3.6.2. Failure of a Student/Candidate.
3.6.3. Remedial training following failure of a line or simulator check
3.6.4. Termination of training.
3.6.5. Poor Performance of an Instructor / Examiner.

### 3.6.1 Poor Progress of a student

If at any time an Instructor/Examiner feels that a trainee is exhibiting poor progress during training he should contact the training manager for further guidance. Poor progress may be characterized by the student failing to show progress in required skills, knowledge or application of procedures, without necessarily scoring less than three in assessed tasks.
Should a student score two or less for the overall training event or consistently score three or less for any specific training task, the trainer should inform the training manager.
That Training Manager will:

- Review the trainee's progress to date.
- Consider any mitigating factors.

The Chief Pilot can then recommend the following actions.

- Additional training
- Change of instructor
- Continue with the course
- Other action, as the situation warrants

The Chief Pilot, may authorize up to a maximum of four extra simulator sessions or flight sectors without specific approval from Operation Director.
Prior to the Upgrade PPC or LOE, one extra session of remedial training will be made available to an upgrade candidate if he is experiencing difficulty in reaching the required standard.
Should a candidate score an overall grading of three during any recurrent check, the Administration will notify the Chief Pilot who will forward the result to the Operations Director.

### 3.6.2 Failure of a Student/Candidate

The following procedures are to be followed for pilots who fail to achieve the required standards during specific training or evaluation exercises.

#### 3.6.2.1. Procedures in the event of a failed Flight or Simulator Check

A pilot who fails a Flight or Simulator Check will have achieved an OVERALL EVALUATION score of two or less in accordance with the Grading System.
When a pilot fails a Check, the Examiner should:

- Inform the pilot and provide him with details and evidence of areas of unsatisfactory performance
- Provide him with methods or techniques of how to correct or rectify areas of unsatisfactory performance for the future
- Inform the pilot that they are unable to act as operating crew until the issue has been resolved
- Inform crew scheduling that the pilot is removed from flying and simulator duties until further notice
- Inform the Chief Pilot

Provide recommendations for additional training or other appropriate actions to assist the pilot regain proficiency.

### 3.6.2.2. Additional Procedures in the event of a Failed Initial or Recurrent PPC

The Chief Pilot is to advise the Operation Director of the circumstances of the failure and recommend an appropriate course of training or other action to be taken. In all cases, the Chief Pilot can then recommend either:
Additional training or other appropriate actions to assist the pilot regain proficiency followed by a further re-check.
Further action as deemed necessary with consideration given to amount of retraining that might be required and the available training assets. Any decisions regarding further action should be taken by the Operations Director in consultation with the Chief Pilot if appropriate.
In all cases of re-training and/or re-checks, the training or check is to be carried out by a different TRE from that performing the original training or check.

### 3.6.2.3 Additional Procedures in the event of a failed Upgrade PPC

The Chief Pilot is to advise the Operations Director of the circumstances of the failure. The Upgrade PPC are regarded as PASS or FAIL sessions, failure will result in termination from the course.

### 3.6.2.4 Additional Procedures in the event of a failed Upgrade LOE

The Chief Pilot is to advise the Operations Director of the circumstances of the failure. Normally no more than one additional LOS session followed by a further LOE check may be recommended. Failure of the subsequent LOE will result in termination from the course.

### 3.6.2.5 Additional Procedures to be followed in the event of a failed Line Check (FLC, ALC, PC)

The Chief Pilot is to advise the Operations Director of the circumstances of the failure and recommend an appropriate course of training or other action to be taken. In all cases, the Chief Pilot can then recommend either:

- Further Line Training or other appropriate actions followed by another Line Check
- Another Line Check only
- Further action

### 3.6.3. Remedial training following failure of a line or simulator check

Additional training may be provided by any appropriate trainer. The Chief Pilot is to be advised when additional training is required.
Any re-checks should be conducted by a different TRE.

### 3.6.3.1. Procedures to be followed in the event of a failed Ground Exam

A pilot who fails a Ground Training written examination will not have achieved the required pass mark for the subject being examined.

A pilot on any training course that requires a pass in a written examination may be permitted one examination re-sit. When a pilot fails a written examination, the FCTI should:
Inform the pilot and provide the candidate with details and evidence of areas of unsatisfactory performance.
Advise the respective CFP.
The Chief Pilot will then recommend either:

- Additional ground instruction followed by another examination
- Another ground examination only
- Further action

### 3.6.4 Termination of training

Where termination of training or other action is recommended, the Operations Director should make that decision in consultation with the Chief Pilot.

### 3.6.5. Poor Performance of an Instructor / Examiner

Should poor performance be evident for an Instructor/Examiner the following procedure shall be followed:

- A detailed set of documents will be prepared in which a clear description of the poor performance of the examiner/instructor is contained. A de-briefing of the examiner/instructor will take place. The debriefing will be led by the respective CFP.
- A representative from Human Resources will be present if appropriate.
- The examiner/instructor concerned will be allowed a colleague who will act as an observer.
- Formal notification in writing from the respective Chief Pilot in which the Operations Director is also copied will precede all action of this nature.
- Any relevant documentation will go on the training file of the respective examiner/instructor but not his personal file.
- Operations Director Presence is required if disciplinary action may result.
- Should an instructor or examiner be removed from instructional or checking duties then immediate notification to withdraw his Authority shall be addressed to the ECAA and his Certificate and Letter of Appointment are to be surrendered to the ECAA.

## 3.7 Training facilities

### 3.7.1 General

(Ref. ECAR 121.402)

Training or checking will be performed in the airplane or an approved flight simulator or, in the case of emergency and safety equipment training, in a representative training device. The type of equipment used for checking should be representative of the instrumentation, equipment and layout of the airplane type operated by the flight crew member.

All training facilities such as Nesma Airlines Classroom, Nesma Airlines Computer Based Training, Training Centers (i.e. Egypt Air Center) and Training Devices must be approved by the Egyptian Civil Aviation Authority for the conducting ground courses, safety courses and simulator training or any training center certified under Part 142.

All training facilities, devices, course materials and equipment whether owned or subcontracted must:

- Meet the required qualification and performance standards;
- Reflect Nesma Airlines fleet configuration.
- Be periodically reviewed to require compliance with approved standards.

All the approvals for the training centers used by Nesma Airlines and Nesma Airlines facilities are available in Training Department.

### 3.7.2 Classroom Facilities

Classroom training aids and equipment including computers should reflect the content of the course and the complexity of the aircraft. For airplanes certified for multi-pilot operations, the minimum level of ground training aids for approval should include equipment that provides a realistic cockpit working environment. Task analysis and the latest state of the art training technology are encouraged by the Authority and should be fully incorporated into the training facilities wherever possible. Facilities for self and supervised testing should be available to the student.

### 3.7.3. Computer Based Training

Where CBT aids are used as a training tool, the organization should ensure that a fully qualified ground instructor is always available when such equipment is being used by course students. Other than for revision periods, CBT lessons should be briefed and debriefed by a qualified ground instructor.

### 3.7.4. Training Devices

A Flight Training Device or Other Training Device may be provided to supplement the classroom training and enable students to practice and consolidate theoretical instruction.
The Approved Full Flight Simulators are compliant with international standards laid down by the JAA specifically JAR STD 1A. The target accreditation for all FFS devices operated by the Company is a minimum Level 'C' or optimally Level 'D' where the data package from the aircraft manufacturer supports it. Where this is not the case, the standard manufacturer's data package is used and a differences course is provided. Simulators are subject to an annual check as specified by the Authority.
An Aircraft simulator approved under this section must be used instead of aircraft to satisfy the pilot flight training requirements prescribed in the extended envelope training Nesma Airlines shall require minimum serviceability requirements include any major malfunction such as simulator motion, visual systems, instrumentation that may affect the session plan even in training and/or examination. Less important malfunction will be judged by the instructor to continue or terminate the training. The requirements guidance are published in chapter (8) of this manual.
The Authority has approved the following simulators and training devices, located at the Egypt Air Training Center, for the purposes of carrying out pilot training and testing as detailed:

- A320-200 Full Flight Simulator (Level 'D')
- Pilot Transition Training
- Pilot Proficiency Checks
- Instrument Rating Checks
- All Weather Operations Training and Checking
- Pilot Recency Type Experience
- ETOPS Training
- Recurrent Training
- LOFT/LOS and LOE Training
- Procedures Training
- Technical Systems Training
- Technical Refresher Training
- Zero Flight Time Training

Additional simulator centers approved by the Authority are listed in ECAA.

### 3.7.5 Course Materials

All training materials are periodically reviewed by the training review committee to ensure consistency with configuration of Nesma Airlines Aircrafts including E-Learning course materials, simulator syllabus and hand out materials for any ground courses conducted at Nesma airlines classroom or any other approved training center.

# Contents

CHAPTER 4 GROUND TRAINING. 3
4.1 Initial qualification. 4
4.1.1 Basic Indoctrination 4
4.1.2 Initial Ground Training (A320). 13
4.2 Recurrent qualification. 18
4.2.1 Recurrent Ground Training. 18
4.3 Re-qualification 20
4.3.1 Re-qualification training 20
4.4 Aircraft Transition 22
4.4.1 Transition Ground Training (A320). 22
4.5 Upgrade to PIC 23
4.5.1 Command UP-Grade Ground Training. 23
4.6 Other specialized training requirements 26
4.6.1 Difference Ground Training. (variants A320/A319) 26
4.6.2 Traffic Alert and Collision Avoidance System (TCAS). 28
4.6.3 Adverse weather operations. 30
4.6.4 Area, Route and Airport Qualification. 33
4.6.5 CRM / TEM Recurrent Training (Joint Training Flight Crew, Cabin Crew and Dispatcher) 35
4.6.6 Dangerous Goods Recurrent Training 37
4.6.7 Reduced Vertical Separation Minima (RVSM). 39
4.6.8 CAT II Ground Training 41
4.6.9 Wind Shear Ground Training. 43
4.6.10 Controlled Flight Into Terrain (CFIT). 45
4.6.11 Upset Prevention and Recovery Training (UPRT) 46
4.6.12 Pilot Incapacitation 47
4.6.13 PBN Training 48
4.6.14 General Safety and Emergency Training 51
4.6.15 Safety Management System Course 52
4.6.16 Security Training 54

4.6.17 English Language Test Standard ........ 57
4.6.18 FANS B+ AND CPDLC Training and Checking. ........ 58
4.7 Traditional Training program requirement ........ 58
4.7.1 Cross Crew Qualification (CCQ) ........ 59
4.7.2 Electronic Flight Bag (EFB) ........ 61
4.8 Distance Learning ........ 62
4.8.1 List of the ground courses approved by the ECAA for use on FlyCo ........ 63

# CHAPTER 4 GROUND TRAINING.

## General.

### Purpose.

The purpose of this chapter is to detail the specific Ground Training Courses administered by the Training Department or other Courses administered by an approved Training center.

### Evaluations.

The trainee must obtain a minimum of 70% corrected to 100% on all examinations and demonstrate the required skills and knowledge in order to pass a unit of instruction and satisfactory complete a course.

Ground courses required for initial hired pilots and active pilots: -

| GROUND COURSES | HRS (Initial) | HRS (Recurrent) |
|---|---|---|
| **1)** Basic Indoctrination. (initial). | **40** | **-** |
| **2)** Basic Indoctrination. (Training for past airline experience) | **-** | **20** |
| **3)** Initial Ground Training (A320).** | **105** | **-** |
| **4)** Aviation Secuirty course. | **24** | **16** |
| **5)** Crew Resources Management (CRM) Training Course (Joint with Cabin Crew and Flight Dispatchers). | **16** | **16** |
| **6)** Dangerous Goods and Hazardous Material Training. | **8** | **6** |
| **7)** Adverse weather operations. | **5** | **3** |
| **8)** General Safety Training theortical. | **24** | **8** |
| **9)** Practical Safety training. | **8** | **3** |
| **10)** SMS Course (Safety Management System Course). | **8** | **6** |
| **11)** Different A320/319 ground course | **-** | **4** |
| **12)** English Language Test Standard | **-** | **Based on level** |
| **13)** Traffic Alert And Collision Avoidance System (TCAS). | **2** | **-** |
| **14)** Reduced Vertical Separation Minima (RVSM). | **2** | **-** |
| **15)** Low Visibility Operation / CAT II. | **2** | **2** |
| **16)** Controlled Flight Into Terrain (CFIT). | **2** | **-** |
| **17)** Aircraft Upset Recovery / Airbus (A320) Flight Control LAWs | **2** | **2** |
| **18)** PBN Training | **2** | **2** |

** Not required for valid license A320 pilots.

## 4.1 Initial qualification.

### 4.1.1 Basic Indoctrination

#### 4.1.1.1 Flight Crew.

**Objective.**

To prepare new pilots for appropriate ground and flight training and to familiarize the crew member joining the company with general company rules, regulations, duties and all related aspects of the company to achieve the highest level of safety, economical and passenger care.
Furthermore, to achieve highest level of standardization through the understanding of all local and international rules and regulations.
Nesma Airlines shall ensure flight crew members complete Basic indoctrination training during initial ground training and prior to being assigned to duties in line operation.

**Prerequisite.**

Crew members attending initial, transition and Re-qualification training courses or Rejoining Crew who left the company more than 1 year.

**Applicability**

This course applicable for Flight crew members attending initial, transition, difference, upgrade and recurrent training courses.

**Course Duration.**

- 40 Training hours during 5 working day for a newly hired crew member with no operational or airline experience.
- 20 Training hours during 3 working days for a newly hired crew member with past operational, Airline experience or rejoining Crew who left the company more than 1 year.

**Recurrent Training.**

CPDL N/A

**Training Location.**

Training shall be conducted by Nesma Airlines trainers in the company training class rooms.

**Methods of Instruction.**

Lecture.
Demonstration.
Class participation.
Follow-up reading material.

**Curriculum.**

| | |
|---|---|
| • Company Organization. | 4 hours |
| • General Discipline and conduct. | 2 hours |
| • Authorized operations; | 2 hours |
| • Duties and responsibilities. | 5 hours |
| • ECAR Regulations. | 5 hours |
| • Company back ground and History. | 4 hours |
| • General forms. | 4 hours |
| • Relevant sections of the OM | 5 hours |
| • Safety Management System. | 4 hours |
| • Electronic Flight bag training (EFB) | 3 Hours |
| • New policies, rules, instructions and procedures.<br>• New aircraft types, systems and fleet modifications / upgrades. | 2 hours |
| **TOTAL** | **40 hours** |

**<u>Training for Past Operational Or Airline Experience.</u>**

**Curriculum.**

| | |
|---|---|
| • Company Organization. | 2 hours |
| • Authorized operations; | 2 hours |
| • Duties and responsibilities. | 2 hours |
| • ECAR Regulations. | 2 hours |
| • Company back ground and History. | 1 hours |
| • General forms. | 1 hours |
| • Relevant sections of the OM. | 3 hours |
| • Safety Management System. | 2 hours |
| • Electronic Flight bag training (EFB) | 3 hours |
| • New policies, rules, instructions and procedures.<br>• New aircraft types, systems and fleet modifications / upgrades. | 2 hours |
| **TOTAL** | **20 hours** |

**Course layout (40 Hours)**

| No. | Subject |
|---|---|
| A | **Company Organization and Authorized operations**<br>• Managing Director.<br>• Operation Department.<br>• Engineering Department.<br>• Cabin Services Department.<br>• Commercial Department.<br>• Ground Handling Department. |
| B | **General Discipline and conduct.**<br>• Uniform.<br>• Company properties.<br>• General conduct between crew members.<br>• General conduct during night stops.<br>• General conduct while operating for other airlines (wet lease).<br>• Cockpit discipline.<br>• Conduct with other company staff and out stations. |
| C | **Duties and responsibilities.**<br>• According to operations manual. |
| D | **ECAR Regulations.**<br>• According to operations manual regulations.<br>• According to ECAR publications and amendments. |
| E | **Company back ground and History.**<br>• Goal.<br>• Authorized Type of operations. |
| F | **General forms.**<br>• Voyage reports.<br>• Confidential reports.<br>• Leave forms.<br>• Sickness report forms.<br>• Incident report forms.<br>• Incident report forms (Bird strikes, GPWS, Lighting, etc.). |
| G | **Manuals.**<br>• Operations Manual.<br>• Aircraft operating Manual.<br>• Ground operations Manual.<br>• Low Visibility Manual<br>• MEL Manual.<br>• Cabin Emergency Manual.<br>• Operations Specifications.<br>• Standard operating procedures Manual. |
| H | **Safety Management System**<br>• Safety overview. |

| | |
| --- | --- |
| | • Hazard Identification and Reporting.<br>• Risk Management.<br>• SMS and Airline Operation. |
| I | **Electronic Flight bag training (EFB)** |

**<u>Training for past operational or airline experience.</u>**

**Course Layout.(20 Hours)**

| No. | Subject |
| --- | --- |
| A | **Company Organization.**<br>• Managing Director.<br>• Operation Department.<br>• Engineering Department.<br>• Cabin Services Department.<br>• Commercial Department.<br>• Ground Handling Department. |
| B | **General Discipline and conduct.**<br>• Uniform.<br>• Company properties.<br>• General conduct between crew members.<br>• General conduct during night stops.<br>• General conduct while operating for other airlines (wet lease).<br>• Cockpit discipline.<br>• Conduct with other company staff and out stations. |
| C | **Duties and responsibilities.**<br>• According to operations manual. |
| D | **ECAR Regulations.**<br>• According to operations manual regulations.<br>• According to ECAR publications and amendments. |
| E | **Company back ground and History.**<br>• Goal.<br>• Authorized Type of operations. |
| F | **General forms.**<br>• Voyage reports.<br>• Confidential reports.<br>• Leave forms.<br>• Sickness report forms.<br>• Incident report forms.<br>• Incident report forms (Bird strikes, GPWS, Lighting, etc.). |
| G | **Manuals.**<br>• Operations Manual. |

| | |
| --- | --- |
| | • Aircraft operating Manual.<br>• Ground operations Manual.<br>• Low Visibility Manual<br>• MEL Manual.<br>• Cabin Emergency Manual.<br>• Operations Specifications.<br>• Standard operating procedures Manual. |
| **H** | **Safety Management System**<br>• Safety overview.<br>• Hazard Identification and Reporting.<br>• Risk Management.<br>• SMS and Airline Operation. |
| **I** | **Electronic Flight bag training (EFB)** |

#### 4.1.1.2 Cabin Crew.

**Refer to .Chapter 9 Point 9.1.1**

#### 4.1.1.2 Cabin Crew.

**Refer to .Chapter 9 Point 9.1.1**

#### 4.1.1.2 Cabin Crew.

**Refer to .Chapter 9 Point 9.1.1**

#### 4.1.1.2 Cabin Crew.

**Refer to .Chapter 9 Point 9.1.1**

### 4.1.2 Initial Ground Training (A320).

**(Ref. ECAR 121.419 a, b)**

**General**

The purpose of this course is to train and evaluate the Flight Crew to be proficient in the operational theory and procedures related to the aircraft systems, Limitations and emergency equipment. The training will prepare the trainee to meet the entry requirements of Flight Training and provide the basis for the standardized operation.
**Note: -** Newly hired pilots must demonstrate sufficient level in aviation English language during initial ground training with a minimum of level 4.

**Prerequisite**

This course is predicated on the fact that the new hired pilots had satisfactorily completed the basic indoctrination course, or the Flight Crew had been qualified as a F/O and newly promoted captain on Nesma Airlines aircraft.

**For Normal operation.**

Having studied each system of the aircraft separately during the previous stage the trainee shall study the integration of these systems and subsequent procedures, as well as aircraft handling in normal situations. (No failures).
The fixed base simulator shall be used as the training device.

**Applicability**

A New hired Flight crew member attending initial training courses satisfactorily completed the basic indoctrination course.

**Course Duration.**

- Initial training 105 hours during 15 working day.
- Recurrent training 24 hours every 12 calendar months.

**Training Location.**

Ground training course shall be conducted at one of the well-established training centers approved and certified by ECAA such as EGYPT AIR TRAINING CENTER, and Nesma Airlines Approved classrooms.

**Method of Instructions.**

Lectures

**Training aids.**

- Presentation
- Videos
- Handout materials

**Course Layout**

| | | |
|---|---|---|
| **1)** | Aircraft general / EIS / ECAM. limitations | **7 hours** |
| **2)** | Communication / Navigation. | **7 hours** |
| **3)** | FMGS. | **14 hours** |
| **4)** | APU / Fuel. | **7 hours** |
| **5)** | Electrical. | **7 hours** |
| **6)** | Hydraulic / Landing Gear. | **7 hours** |
| **7)** | Flight control. | **14 hours** |
| **8)** | Pneumatics / Air conditioning. | **7 hours** |
| **9)** | Pressurization / Ventilation. | **7 hours** |
| **10)** | Power plant. | **7 hours** |
| **11)** | Fire protection / Ice and rain protection. | **7 hours** |
| **12)** | Performance. | **12 hours** |
| **13)** | Final examination. | **2 hours** |
| **Total Hours** | | **105 hours** |

**Initial aircraft Performance Course layout.**
Shall be covered using airbus performance course for a duration of 12 Hours including a performance test for 2 hours.

| | |
| --- | --- |
| **1.** | **<u>Presentation</u>**<br>• FCOM<br>• Exercises (QUIZ) |
| **2.** | **<u>Weight / mass and Balance</u>**<br>Reminder<br>• Reference chord.<br>• Center of gravity limits.<br>• QUIZ.<br>• Balance chart. |
| **3.** | **<u>Flight Planning</u>**<br>FCOM presentation.<br>• Contents.<br>• Fuel policy.<br>• Cruise level.<br>• Integrated calculation.<br>• Quick calculation.<br>• Alternate flight.<br>• Fuel Planning.<br>• QUIZ. |
| **4.** | **<u>Take – OFF and climb Performance</u>.**<br>Reminder.<br>• Definitions.<br>• Limitations.<br>• Calculation optimization.<br>• Flexible temperature philosophy.<br>• QUIZ.<br>**FCOM presentation.**<br>• Obstacle clearance.<br>• Speeds.<br>• Regulatory Take-off and<br>• Landing charts.<br>• QUIZ. |
| **5.** | **<u>IN Flight Performance.</u>**<br>FCOM Presentation.<br>• Operating data.<br>• Climb.<br>• Cruise.<br>• Descent.<br>• Holding. |

| | |
|---|---|
| | • GO around.<br>• QUIZ check.<br>• Diversion planning.<br>• QUIZ. |
| **6.** | **Landing.**<br>FCOM presentation.<br>• General.<br>• Speeds.<br>• Actual landing distance.<br>• Available landing distance.<br>• Approach and landing performance.<br>• QUIZ. |
| **7.** | **Single Engine.**<br>FCOM Presentation.<br>• Regulation.<br>• Flight preparation.<br>• In flight failure.<br>• Engine-out drift down.<br>• QUIZ. |
| **8.** | **Effect of inoperative or missing components (MEL / CDL)** |

**Aircraft Ground Training Schedule.**

| DAY | Training Subject | Working days |
| --- | --- | --- |
| **One** | A/C General, Limitations and EIS / ECAM. | **1** |
| **Two / Three** | FMGS. | **2** |
| **Four** | Navigation - Fuel - communication. | **1** |
| **Five** | APU - Electrical. | **1** |
| **Six** | Hydraulic - Landing Gear. | **1** |
| **Seven / Eight** | Flight control. | **2** |
| **Nine** | Power plant. | **1** |
| **Ten** | Air conditioning - Pressurization - Ice and rain protection. | **1** |
| **Eleven / twelve** | Fire protection - Pneumatics. | **2** |
| **Thirteen / fourteen** | Performance. | **2** |
| **Fifteen** | Final Exam. | **1** |
| | **Total** | **15** |

## 4.2 Recurrent qualification

### 4.2.1 Recurrent Ground Training.

**Objective.**

The objective of this course is to ensure the competence of a flight crew member on subjects related to efficient and safe flight Operations

**Prerequisite.**

This training is designed for crew members who are currently qualified on Nesma Airlines aircraft's.

**Applicability**

This course applicable for Flight crew member.

**Course Duration.**

This course shall be held once every 12 calendar months and takes approximately 24 hours during 3 working days including 2 hours exam if carried out in Nesma Airlines approved classroom
As an integral part of recurrent training each crew member will participate in continuous reading program that consists of:

- Operations Bulletins
- Flight Crew Operating Manual.
- Safety Bulletins.

**Training location.**

Training shall be conducted by Nesma Airlines trainers in the company training class room or Through E-learning.

**Training aids.**

- Flight crew operating manual (FCOM).
- Flight operation manual (OMA).

**Methods of Instruction**

- Lectures.
- Class participation
- Distance Learning

**Curriculum.**

**Approximately 24 hours during 3 working day in case of training conducted at the classroom.**

- Normal Operating Procedures.
- Emergency Operating Procedures.
- Aircraft Systems and modifications (A320).
- FOM and General SOP.
- Emergency equipment and evacuation procedures (every 12 month). .
- Performance.
- Ground De-icing / Anti-icing.
- Adverse weather and Wind Shear.
- Differences if required.
- Limitations
- New policies, rules, instructions and procedures;
- New aircraft types, systems and fleet modifications/upgrades.
- Examination.

## 4.3 Re-qualification

### 4.3.1 Re-qualification training

(a) Re-qualification training must ensure that each crewmember or dispatcher is adequately trained and currently proficient with respect to the type aircraft and crewmember position involved.
(b) Re-qualification ground and flight training for crewmembers or dispatcher as required by this subpart must include at least the following:

**(A) <u>Re-qualification curriculums for Flight crew members overdue training</u>**

| **Time past month due** | **Required ground re-qualification segment** | **Required flight** re-qualification segment | **Additional qualification segments** |
|---|---|---|---|
| Up to 12 calendar months | The portion of ground recurrent training not accomplished when due. | The elements not accomplished when due: Proficiency check. | The modules not accomplished in the eligibility period: Line check or special airports. |
| 12 to 35 months | 16 hours including HAZMAT, safety and emergency training hands on. | 8 Hours including proficiency check. | All qualification modules of the transition curriculum, line check, or special airports. airports. |
| 36 to 59 months | 24 hours Including HAZMAT, safety and emergency training hands on. | 16 hours Including proficiency check. | All qualification modules of the transition curriculum, line check, or special airports. |
| More than 59 months | | --Same as initial equipment training -- | |

**(B) Re-qualification curriculums for Cabin crewmembers overdue training**

| Time elapsed without exercising license privilege | Valid license | Non valid license |
|---|---|---|
| 91 days – 12 months | 4 sectors with a certified trainer and a competency check. | Recurrent 12 month or 24 months depending on his last recurrent. |
| 12 month – up to 36 months | A recurrent 24-month and 4 sectors with a certified trainer and a competency check. | |
| more than 36 months | - Initial general emergency training on A/C types.<br>- A tailored basic indoctrination program & civil aviation regulations.<br>- 06 sectors and competency check on one A/C type, in addition to 4 sectors and competency check on each A/C type required with certified trainer | |

**(C) Re-qualification curriculums for aircraft dispatcher**

| Re qualification Training | | |
|---|---|---|
| **Time past month due** | **Ground Training** | **Qualification** |
| Up to 3 calendar months | Recurrent training (if not accomplished in eligibility period) | Any training not accomplished in eligibility: CC or OF |
| More than 3 and less than 6 months | 8 hours remedial and (if not accomplished in eligibility period) recurrent training | CC and (if not accomplished in eligibility OF |
| More than 6 and less than 12 months | 8 hours remedial, recurrent training, and OJT to proficiency | CC and OF |
| More than 12 and less than 36 months | 16 hours remedial, recurrent training, and OJT to proficiency | CC and OF |
| More than 36 months | Initial training | CC and OF |
| **KEY: CC =**<br>**OF =** | Competency check<br>Operational familiarization | |

## 4.4 Aircraft Transition

### 4.4.1 Transition Ground Training (A320).

**(Ref. ECAR 121.419 a, b)**

**Objective**

The purpose of this course is to train the crewmember to be proficient in the operational theory and procedures related to the aircraft systems, limitations, and emergency equipment. The training will prepare the trainee to meet the entry requirements of the flight training and provide the basis for the standardized operation.
This phase of training is to supply trainees with all the technical information enabling the application of all normal, abnormal and emergency procedures.
Moreover, the aircraft performance and the theoretical part of the safety course are also studied during the ground training phase.

**The objectives are:**

- To use the complete normal procedure with each crew member performing his own task in crew coordination.
- To make each trainee capable of performing his tasks in normal flight conditions with no failures.
- To demonstrate aircraft characteristics in normal operation, with the maximum degree of realism, particularly those requiring visual outside reference.

**For Normal operation.**
Having studied each system of the aircraft separately during the previous stage the trainee shall study the integration of these systems and subsequent procedures, as well as aircraft handling in normal situations. (No failures).
The fixed base simulator shall be used as the training device.

**Prerequisite.**

Newly hired flight Crew members operate another aircraft with the same capacity attending Transition Training courses satisfactorily completed the basic indoctrination course.

**Applicability**

This course applicable for Flight crew member with previous other type experience.

**Course Duration.**

Same as initial ground training (4.1.2 Initial Ground Training (A320).)

## 4.5 Upgrade to PIC

### 4.5.1 Command UP-Grade Ground Training.

**(Ref. ECAR 121.419)**

**Objective.**

A course specifically designed for First Officers who are approaching promotion to Captain within the airline. This course concentrates on crew management techniques, decision making, emergency scenario management and relevant technical and legal subjects that will prove invaluable as they transition to the left-hand seat.

**Prerequisite**

This course is required to prepare First Officers and qualify them before performing the Pre-Command Simulator Check.

**Applicability**

First Officers (second in command).

**Course Duration.**

Training shall be 24 hours during 3 working days.

**Training Location.**

Training will be conducted by Nesma Airlines in the training class rooms at the company location in Cairo.

**Methods of Instruction.**

- Lectures.
- Class participation.
- Visual Aids
- Follow - up reading material

**Curriculum.**

- Technical refresher. *
- General subjects.
- Meteorology.
- Performance and flight planning. *
- Aircraft Flight Manual.
- Operations Manual.

* **Note:** In case these subjects have been completed within the previous 6 months from the commencement of the command up-grade training then they may be omitted from ground training.

**Course Layout**

| No. | Subject |
|---|---|
| **Day 1** | ➢ General subjects.<br>➢ Determination of weight and balance.<br>➢ Runway limitation for takeoff and landing.<br>➢ Utilizing reduced flex. Temp. And reduced V1-V2-VR.<br>➢ Company dispatch procedures. (documents)<br>➢ Use of navigation aids and instrument approach Procedures.<br>➢ Visual cues prior to and during descent below DH or MDA.<br>➢ ATC procedures :<br>➢ Unlawful interference.<br>➢ Communication failure procedures.<br>➢ Urgency and distress communication.<br>➢ Search and rescue. |
| **Day 2** | **Meteorology.**<br>➢ Low - altitude wind shear.<br>➢ Meteorological reports.<br>➢ Frontal systems and thunderstorms (detection and Avoidance).<br>➢ Icing and fog.<br>➢ Turbulence and high altitude weather. |
| **Day 3** | **Flight Crew Operating Manual (FCOM).**<br>➢ Normal procedures.<br>➢ Emergency procedures.<br>➢ Supplementary techniques.<br>➢ Operating emergency bulletins.<br>➢ Limitations. |
| **Day 4** | **Flight Operation Manual.**<br>➢ Operating weather minims.<br>➢ Take off, En-route & landing alternates.<br>➢ Authority and responsibilities of the PIC in operations, and documents.<br>➢ Flight time limitations & minimum crew rest.<br>➢ Responsibilities relevant to the reporting of accidents and incidents.<br>➢ Nesma Airlines Fuel Policy.<br>➢ Review of human performance and CRM Skill Training relevant to command, Teamwork, leader Ship with all crew members.<br>➢ Adherence to the limitations of the AOC;<br>➢ Responsibilities relevant to the OFP and ATPL |

## 4.6 Other specialized training requirements

### 4.6.1 Difference Ground Training. (variants A320/A319)

**Objective**

The objective of this course is to train the Flight Crew to be proficient in the operational theory and procedures related to the aircraft systems and equipment on a model of aircraft different from those on which he/she has previously been trained (A319/A320).

**Prerequisite**

This course is predicated on the Flight Crew having attended the same type of initial ground training or CCQ.

**Applicability**

This course applicable for Flight crew members attending initial, transition, difference, upgrade and recurrent training courses.

**Training location.**

Ground training course shall be conducted at one of the well-established training centers approved and certified by ECAA such as Egypt Air Training Center, and Nesma Airlines Approved classrooms.

**Course Duration.**

Initial Ground course 4 hours during 1 working day, for recurrent training will be every 12 calendar months during simulator training.

**Training Methods.**

- Lectures.
- Class participation.
- E-learning System

**Training aids.**

- Visual Aids.
- Relevant Manuals.

**Curriculum.**

- A-320 Flight crew operating manual (GEN/DSC, PRO/LIM, FCB, QRH, PER).
- Power plant differences (limitations, performance).
- Different systems, equipment installed.

**Course Layout**

- Weights.
- Fuel quantities.
- Limitations.
- Dimensions.
- Speeds.
- Systems.
- Performance.
- Supplementary procedures

**Ground course**

| No. | Subject | Hours |
|---|---|---|
| 1 | **FCOM GEN/DSC –PRO/LIM/OEB/FCB - PERF:**<br>• Aircraft systems differences.<br>• Aircraft performance differences.<br>• Aircraft limitations differences.<br>• Aircraft loading limits and trimming.<br>• Fleet Modifications or Upgrades | 2 |
| 2 | **Power plant differences. (If applicable)**<br>• Description and components.<br>• Starting sequence and cycles.<br>• Limitations.<br>• Consumption and performance.<br>• Evaluation | 2 |
| | **Total** | **4** |

### 4.6.2 Traffic Alert and Collision Avoidance System (TCAS).

**Objectives**

This course is designed to train flight crew member in those areas of TCAS which they are required to know prior to operating in RVSM airspace.

**Prerequisite**

All pilots operating a TCAS equipped aircraft.

**Applicability**

Flight crew members attending initial, transition, difference, upgrade and recurrent training course, and recurrent training courses once every 36 months.

**Training Location**

Approved classroom or through Nesma Airlines approved E-Learning system.

**Course Duration.**

2 hours in classroom or through Nesma Airlines E-learning system.

**Methods of Instruction**

- **(a)** Class Work.
- **(b)** Demonstration and Observations.
- **(c)** Airbus training aids.
- **(d)** E-learning System

**Curriculum**

1) TCAS operating characteristics and parameters.
2) Interaction between TCAS and RVSM.
3) Transition area operations.
4) Planned Modifications TCAS.
5) Recommended Operating procedures.
6) Reporting Requirement.
7) Recurrent Training.
8) TCAS/RVSM quiz.

**Course Outline**

- **a)** TCAS Operating characteristics and parameters.
  Basic TCAS operation and thresholds above FL290.
  Both aircraft level.
  ONE or BOTH aircrafts climbing or descending.
  BOTH aircrafts LEVEL.
  ONE or BOTH aircrafts with vertical rate.
  Potential for extended RA display.
  In transition areas.
- **b)** Interaction between TCAS and RVSM.
  RVSM airspace operations.
  TA's
  RA's
- **c)** Transition area operations
  TA's
  RA's
- **d)** Planned modifications to TCAS
  TCAS design criteria.
- **e)** Recommended operating
  Recommended mode during all operations
  Recommended climb and descent rates
- **f)** Reporting requirements
  Collection of data.
  Reports.
- **g)** Recurrent training

  Discussion of TA's/RA's.
  TCAS scenario.
- **h)** TCAS/RVSM quiz.

### 4.6.3 Adverse weather operations.

**Objectives.**

The objective of this course is to review all possible areas of adverse weather that may be encountered on Nesma Airline's area of operations.

**Prerequisite.**

Flight crew members attending initial, transition, difference, upgrade and recurrent training courses.

**Applicability**

This course applicable for Flight crew members attending initial, transition, difference, upgrade and recurrent training courses once every 36 months.

**Course Duration.**

Initial Training shall be 5 hours during 1 working day.

**Recurrent Training.**

Every 36 months 3 hours during 1 working day
Nesma Airlines will provide training for cockpit crew as a part of recurrent ground training and simulator training

**Training Location.**

Nesma Airlines approved classroom or through E-Learning system

**Training aids.**

The training aids used in the presentation will vary depending upon the subject and objective of the training element.

**Curriculum.**

- Cold weather operations
  - Performance considerations in cold weather conditions.
  - Altimeter Corrections.
- Aircraft De-icing / Anti-icing
  - Inspection
  - Glossary / Definition.
  - Flight crew information – communication.
  - Aircraft Surface Contamination
  - De-icing / Anti-icing Procedures
  - Cold Weather Pre-flight inspection
  - Recognition of conditions requiring the use of aircraft anti icing systems and contaminated pavement aircraft handling techniques.
  - De-icing / Anti-icing awareness – the basic requirements.
  - De-icing / Anti-icing aircraft on the ground : "WHEN, WHY AND HOW"
  - Checks to determine the need to de-ice / anti-ice.
  - Responsibilities of de-ice / anti-ice decision.
  - Pilot techniques.
  - Aerodynamics and the contaminated wing.
  - Fluid characteristics and handling.
- Contaminated runway operations;
- Thunderstorm avoidance;
- Volcanic ash avoidance
- Flight in turbulence, turbulence penetration speed/Mach, actions and handling consequences.
- Hot weather operations;
- Runway excursion
- High altitude airports;
- Aircraft preparation in adverse weather.
- Low visibility taxi and take off
- Use of weather radar
- Performance considerations in “hot and high” conditions
- Effect of high TAS
- Recognition of conditions requiring the use of hot weather or high elevation procedures
- Air mass characteristics leading to possible severe turbulence.
- Use of documentation: temperature and wind gradient on computer flight plan.
- Examination.

**Course Layout**

1) **Cold Weather Pre-flight Inspection**
   - **(a)** Recommended Weather Pre-flight Inspection.
   - **(b)** MEL Considerations.

2) **De-icing / Anti-icing**

**Holdover Time**
   - **(a)** Application of De-icing or Anti-icing Fluid.
   - **(b)** Holdover Time Guidelines.
   - **(c)** Use of Holdover Tables

3) **Aircraft De-icing or Anti-icing Inspections Procedures**
   - **(a)** Pre-flight Inspections
   - **(b)** Pre-take-off Check.
   - **(c)** Pre-take-off Contamination Check.

4) **Communication**

Procedures of Communication between Crewmembers and De-icing /Anti-icing Personnel.

5) **Aircraft Surface Contamination**
   - **(a)** Identification of Surface Contamination.
   - **(b)** Critical Area Identification.
   - **(c)** Aircraft Performance.
   - **(d)** Flight Characteristics.

6) **De-icing Anti-icing Procedures**
   - **(a)** Types of Fluids.
   - **(b)** Fluid Characteristics.

7) **Recognizing Contamination on Aircraft**
   - **(a)** Aerodynamics on Aircraft.
   - **(b)** Definitions of Icing Conditions.

8) **Volcanic ash avoidance**
9) **Runway contamination**
10) **Thunderstorm avoidance**
11) **Cold weather operations**
12) **Hot weather operations**
13) **Runway Excursion**
14) **Examination**

To verify the crewmember's knowledge of Nesma Airlines approved ground De-icing/Anti-icing Program

### 4.6.4 Area, Route and Airport Qualification.

**Objective**

The purpose of this course is to provide Flight Crew with the necessary and required current information pertinent to the routes and airports into which he will be operating.

**Perquisite**

This course is predicated on the Flight Crew require initial airport qualification or will be operating into a special area or airport.

**Applicability**

This course applicable for Flight crew member attending initial, transition, difference, upgrade and recurrent training courses.

**Course Layout**

The curriculum for this course will contain the following subjects related to the specific areas, route or airport involved.

- Terrain and minimum safe altitudes
- Seasonal meteorological conditions
- Meteorological, communication and air traffic facilities, services and procedures
- Search and rescue services for the areas over which the aircraft will be flown
- Navigational facilities and procedures, including any long-range navigation procedures associated with the route along which the flight is to take place
- Procedures applicable to flight paths over heavily populated areas and areas of high air traffic density
- Airport obstructions, physical layout, lighting, approach aids and arrival, departure, holding and instrument approach procedures and applicable operating minima.
- NOTAMS.
- Political Considerations.

**Note**

The training time for the course will vary depending on the amount of coverage required for each specific area, route or airport involved.

**Training Location**

Training will be conducted at Nesma Airlines approved classroom at the company location in Cairo or through E-Learning system.

**Course Duration.**

If more than 12 months elapse in which a pilot-in-command has not made such a trip on a route in close proximity and over similar terrain.

**Training Aids**

- Briefing
- Emails
- Simulator if needed

### 4.6.5 CRM / TEM Recurrent Training (Joint Training Flight Crew, Cabin Crew and Dispatcher)

**Objectives.**

This course is intended to ensure that all crew members / flight dispatchers receive adequate training regarding available resources, crew communication, human factor, human error and performance, situational awareness, proper teamwork.
Nesma Airlines will provide combined CRM training between ALL flight crew, Cabin Crew and Dispatchers.

**Prerequisite.**

This course is required for all Crewmembers and Dispatchers of Nesma Airlines and will be conducted jointly as Nesma Airlines implements an Operational Control system with shared responsibilities.

**Applicability**

This course applicable for Flight crew, Cabin crew and Dispatchers attending initial, transition, difference, upgrade and recurrent training courses.

**Course Duration.**

- For initial training 16 hours during 2 working day.
- Recurrent training 16 hours during 2 working day every 36 months joint with crew member and Flight Dispatchers at Nesma airlines approved classroom.

**Training Location.**

Ground training course shall be conducted at one of the well-established training centers approved and certified by ECAA such as Egypt Air Training Center, and Nesma Airlines Approved classrooms.

**Training aids.**

- Lectures (standard classroom).
- Video.
- Overhead projector + slides show.
- Hand out reading materials.

**Curriculum:**

- Introduction, general.
- Communication.
- Stress management, Fatigue and Sleep.
- Human error, chain of error, error management.
- Human performance and human factors principles.
- Situational Awareness.
- Team work, synergy and leadership.
- Standard operating procedures (operator's).
- CRM loop.
- Threat and error Management
- mutual understanding of the human factors involved in joint operational control
- Decision Making.
- Enhancing coordination, ensuring a mutual understanding of the human factors involved in joint operational control.

**Evaluation**

- Group discussion.

### 4.6.6 Dangerous Goods Recurrent Training

**Objective**

Nesma airlines shall ensure all flight crew members complete training and an evaluation in dangerous goods.

**Prerequisite**

This course is required for all **Nesma Airlines** Flight Crew members attending initial, transition, difference, upgrade and recurrent training courses.

**Applicability**

This course applicable for Flight crew member within the 24-month period from the previous training.

**Course Layout**

The course program will cover the following:
- General philosophy.
- Limitation.
- List of dangerous goods.
- Labeling and marking.
- Recognition of undeclared dangerous goods.
- Storage and loading procedures.
- Pilot's notification.
- Provision for passengers and crew.
- Emergency procedures.

**Course Duration**

- 8 hours for initial
- 6 Hours for Recurrent Training.

**Training Location**

Approved classroom or through Nesma Airlines approved E-Learning system.

**Training Aids**

- Slide Presentation.
- Distance Learning.

**Methods of Instruction**

- Distance Learning.
- Lecture.

**Evaluation**

- Written examination

### 4.6.7 Reduced Vertical Separation Minima (RVSM).

**Objectives**

This course is designed to train and evaluate Flight Crew during initial training and subsequently during recurrent training in those areas of reduced vertical separation which they are required to know prior to operate in RVSM airspace.

**Prerequisite**

All pilots operating in RVSM airspace with or without TCAS equipped aircraft.

**Applicability**

This course applicable for Flight crew members attending initial, transition, difference, upgrade and recurrent training courses.

**Course layout**

- Introduction.
- Definitions
- Regulations.
- History.
- Basics concepts for contingencies
- Aircraft requirements.
- Flight Crew requirements.
- Eastern & Western Hemisphere.
- Metric RVSM.
- Normal & Non-normal procedures.
- ATC phraseology & clearance
- Operation Procedures
- MEL & minimum requirement
- Contingency procedure
- What should you do?
- Preliminary cockpit preparation.
- After T/O and before RVSM entry.
- While entering or flying in RVSM.
- If you have any failures.
- After the flight.
- RVSM quiz.

**Course Duration**

- 2 hours.

Recurrent Training for RVSM Operations shall be incorporated into the overall recurrent training program for flight crew

**Training Aids**

Distance Learning.

**Methods of Instruction**

- Distance Learning.
- Simulator.
- During IOE & USV training.

**Course materials**

- Flight Crew Operation Manual (FCOM)
- Flight Crew Training Manual (FCTM)
- Quick Reference Handbook (QRH)
- OM part A
- RVSM course material

### 4.6.8 CAT II Ground Training

**Objective**

The objective of this course is to ensure the competence of **Nesma Airlines** Flight Crew to safely perform automatic or manual landing in actual CAT II weather minima with normal and Non-normal aircraft system operation, subject to the ECAA approval and limitations contained in **Nesma Airlines** Ops specs.
CAT II training consists of:

- Low Visibility Taxiing.
- Low Visibility Takeoff.

However, each of the above training programs could be conducted separately. The CAT II training is integrated in the recurrent training and proficiency check program.

**Prerequisite**

This training is designed for Flight Crew currently qualified Captains and First Officers on **Nesma Airlines** aircrafts.

**Applicability**

This course applicable for Flight crew members attending initial, transition, difference, upgrade and recurrent training courses and passed minimum required flying hours as per ECAA (300 hours).

**Course Duration.**

3 hours.

**Training Location**

Training will be conducted at Nesma Airlines approved classroom at the company location in Cairo or through E-Learning system.

**Training Aids**

- Distance Learning.
- Visual Aids.
- Video tapes.
- Slides Presentations.

**Methods of Instruction**

- Lecture.
- Distance Learning.

**Course Layout**

1. **On Ground Facilities**

- The operational characteristics, capabilities and limitations as applied to CATII of:
- The instrument landing system and critical area protection.
- The visual approach aids; i.e. approach lights, touchdown zone and centerline, signs and markings.
- Transmission meter systems,
- Facility status, NOTAMS, or outage reports pertinent to use of CAT II minima.
- Recognition of and action to be taken in the event of failure of ground equipment.

2. **In-Flight Systems**

The operational characteristics, capabilities and limitations appropriate to the CAT II system(s) utilized such as:

- Automatic landing system.
- Auto-thrust/ Auto-throttle system.
- Flight director system.
- Instrument and display systems and aircraft characteristics which determine The AH or DH as applicable.
- Other systems or devices peculiar to the particular installation, i.e. failure warning systems etc.
- Description of the limits to which acceptable system performance has been demonstrated for wind and Wind shear.
- Review of operations specifications applicable to CAT II operations.
- Policies and procedures concerning the conduct of CAT II operations. on ice or snow-covered runways, as well as those runways with braking action reported less than good.
- Pilot reporting of ILS anomalies, airport lights outage and other discrepancies which may be pertinent to CAT II approaches.
- The characteristics of fog.
- Precautions, which must be observed by the Flight Crew during taxiing and takeoff in low visibility weather conditions.
- The principles of obstacle clearance requirement.
- The procedures and precautions to be followed with regard to surface movement during operations when the RVR is 400m or less.
- The significance of decision heights based upon radio altimeters.
- The importance and significance of alert height, when applicable.
- The importance of correct seating and eye position.

## 4.6.9 Wind Shear Ground Training.

**Objective**

The objective of this course is to train Nesma Airlines crewmembers on Windshear related problems.

**Prerequisites**

This course is required for all crewmembers on Nesma Airlines aircraft.

**Applicability**

This course applicable for Flight crew members attending initial, transition, difference, upgrade and recurrent training courses.
Recurrent will be during recurrent simulator training once every 36 months.

**Course Duration**

2 hrs.

**Training Location**

Approved classroom or through Nesma Airlines E-Learning System

**Course materials**

- Flight Crew Operation Manual (FCOM)
- Flight Crew Training Manual (FCTM)
- Quick Reference Handbook (QRH)
- OM part A
- Wind shear course material

**Course Layout**

Operation in Wind-shear / Downburst conditions.

**(a) General**

**(1)** Wind-shear associated with Convective Clouds and Storm Cells.
**(2)** Wind-shear associated with Non–Convective Frontal systems.
**(3)** Wind-shear associated with strong winds near the ground.

**(b) Detection of Conditions.**

Indications of Windshear presence;

**(c) Optional Systems integrated on the Aircraft.**

**(1)** Predictive Wind-shear.
**(2)** Reactive Wind-shear.

**(d) Briefing and preparation.**

**(e) Precautions during take-off and landing.**

**(1)** Decreased performance.
**(2)** Increased performance.
**(3)** Increased Performance followed by Decreased Performance.
**(4)** Approach through Microburst.
**(5)** Climb Gradient and Acceleration Capability.
**(6)** Acceleration Capability.
**(7)** Climb Gradient maintainability.
**(8)** Windshear Quiz

**(f) Avoidance and recovery techniques**

**(g) Windshear case studies or scenarios**

### 4.6.10 Controlled Flight Into Terrain (CFIT).

**Course Title:** TERRAIN AWARENESS

**Objective:**

The purpose of this course is to provide the flight crewmembers with the knowledge needed to develop competence in terrain awareness procedures and maneuvers.

**Prerequisites**

This course is required for all crewmembers flying Nesma Airlines aircraft.

**Applicability**

This course applicable for Flight crew members attending initial, transition, difference, upgrade and recurrent training courses.
Recurrent will be during recurrent simulator training once every 36 months

**Course Duration**

2 hrs.

**Training Location**

Approved classroom or through Nesma Airlines E-Learning System.

**Course materials**

- FCOM
- FCTM
- QRH
- terrain awareness course material

**Course Layout**

1) CFIT avoidance techniques;
2) CFIT recovery techniques and maximizing aircraft performance;
3) GPWS alerts and warnings;
4) CFIT case studies or scenarios. Case studies

### 4.6.11 Upset Prevention and Recovery Training (UPRT)

Refer to appendix I

### 4.6.12 Pilot Incapacitation

**Objectives**

This course is designed to train and evaluate Flight Crew in a demonstration of competence in pilot incapacitation procedures to include OM- Part A knowledge and associated procedures, be integrated in initial, transition, upgrade, CCQ, difference training and subsequently during recurrent training once a year.

**Prerequisite**

This course is required for all **Nesma Airlines** Flight Crew.

**Applicability**

This course applicable for Flight crew members attending initial, transition, difference, upgrade and recurrent training courses.

**Course Duration**

- 2 hours.

**Training Location**

Approved classroom or through Nesma Airlines E-Learning System

**Training Aids**

Simulator.

**Methods of Instruction**

- Briefing.
- Demonstration.
- De-Briefing.

### 4.6.13 PBN Training

**Objective**

The objective of this course is to train Flight Crew for PBN operations. Currently **Nesma Airlines** is approved for RNAV10 (RNP10), RNP4, RNAV5 (B-RNAV), RNAV 1(P-RNAV), RNAV2, RNP1, and RNP APCH (RNAV GNSS).

| Fleet | En-route / Continental Terminal & Approach | | | |
|---|---|---|---|---|
| | RNAV5 | RNAV1 | RNP1 | RNP- APCH |
| A320-232 | * | * | * | * |

**Notes**

- For En-route operations, ground training is sufficient.
- Terminal and Approach operations require the use of simulator in addition to ground training.
- Refer to OPS SPECS for specific fleet operational approvals.

**Prerequisite**

This course is required for all **Nesma Airlines** Flight Crew.

**Applicability**

This course applicable for Flight crew members attending initial, transition, difference, upgrade and recurrent training courses.

**Course Duration**

- 2 hours.

**Training Location:**

- Approved classroom or through Nesma Airlines E-Learning System

**Curriculum**

The curriculum for this course will contain the following subjects related to the specific areas,
Route airport involved.

**1)** Weather
**2)** Navigation Facilities
**3)** Communications
**4)** Terrain
**5)** Flight Levels
**6)** Enroute and Terminal Area Procedures
**7)** Airport Characteristics
**8)** Notices to Airman
**9)** Political Considerations

**Note:** The training time for the course will vary depending on the amount of coverage required
for each specific area, route or airport involved.

**Course Layout**

**General**

The following knowledge requirements apply to all PBN operations and should be addressed during initial training:

- Area navigation principles.
- Navigation system principles.
- Equipment operation and functionality.
- Flight planning.
- Operating procedures.
- Performance monitoring and alerting.
- Operating limitations.
- P-RNAV NOTAMs MEL
- Data Base integrity.
- Before start operation Track keeping
- Descent and arrival operation
- Video
- Quiz

**RNAV5, RNAV1, RNP1, RNP APCH.**

Pilots Ground training should cover the following;

- Difference between RNAV and RNP.
- The capabilities and limitations of the RNAV/RNP system installed.
- The operations and the airspace for which the RNAV/RNP system is approved to operate.
- The NAVAID limitations with respect to the RNAV/RNP system to be used.
- Contingency procedures.
- The radio phraseology for the airspace.
- Flight planning requirements for the RNAV/RNP operation.
- RNAV requirements as determined from chart depiction and textual description.
- Depiction of waypoint types (flyover and fly-by) and Path terminators (CA, TF, CF, RF, etc.)
- Required navigation equipment for operation on RNAV routes/SIDs/STARs, e.g. DME/DME, DME/DME/IRU, and GNSS.
- For RNP APCH, training should also address; RAIM prediction, MEL requirements, Chart Minimums, Temperature effect and BARO-VNAV.

**Training Aids**

Guidance material provided in OM-A and OM-B (including relevant parts in FCOM & FCTM)

**Methods of Instruction**

- Lecture.
- Simulator Classroom Briefing.

### 4.6.14 General Safety and Emergency Training

Refer to Chapter 9, item 9.1.2

### 4.6.15 Safety Management System Course

**Objective**

The objective of this course is to train all **Nesma Airlines** Crewmembers & Dispatchers on safety issues as prescribed in SMS manual.

**Prerequisite**

This course is required for all **Nesma Airlines** Crewmembers & Dispatchers.

**Applicability**

This course applicable for Flight crew, Cabin Crew member & Dispatchers attending initial, transition, difference, upgrade and recurrent training courses.

**Course Duration:**

- 8 hours for initial course provided by Egyptian Civil aviation Authority instructors.
- 6 Hours for recurrent course every 36 Calendar Months

**Training Location**

Approved classroom or through Nesma Airlines E-Learning System (for recurrent ground course only)

**Course Layout**

- Overview.
- Safety policies.
- Responsibilities and Accountabilities.
- Emergency response plan.
- Documentation.
- Hazard identification processes.
- Risk assessment and mitigation processes.
- Safety performance monitoring and measurement.
- The management of change.
- Continuous improvement of the safety system.
- Training and education.
- Safety Communication.

**Training Aids**

- Lecture.
- Manual.

- CDs.
- Distance Learning.

**Methods of Instruction**

- Lecture.
- Exercises, Case Studies.

### 4.6.16 Security Training

**Objective**

To enable Nesma airlines flight deck and cabin crew members to implement the appropriate security measures and procedures in accordance with the Nesma Airlines security program. This course shall train airline flight deck and cabin crew who are responsible for the implementation of airline security measures to prevent and respond to acts of unlawful interference and for the purpose of enhancing onboard coordination and mutual understanding of
the human factors involved in addressing emergency situations and security threats the flight crew
members will participate in a joint aviation security and self-defense training.
Upon completion of the course, trainees shall be able to:

- Understand the nature of threats and risks to civil aviation;
- Implement the relevant contents of the airline security program;
- Understand the responsibility for security control of people and items taken on board
- an aircraft;
- Recognize prohibited items, dangerous articles and substances;
- Describe the airline procedures for handling, carriage and disposal of restricted and
- dangerous articles:
- Assist in the process of searching aircraft; and
- Respond to security incidents or emergencies on the ground and in flight.

**Prerequisite**

This course is required for all Nesma Airlines Crewmembers

**Applicability**

This course applicable for Flight crew and Cabin crew member attending initial, transition, difference, upgrade and recurrent training courses.

**Course Duration**

**Aviation security (theoretical)**

- Initial training 24 hours during 3 days
- Recurrent training 16 hours during 2 working days every 12 months.

**Self-defense course (practical)**

- Initial training 12 hours during 2 days,
- refer to Secuirty Manual Chapter 13 item 13.3

**Training Location**

Training shall be conducted by Nesma Airlines trainers in the company training class rooms, or
by any ECAA approved training center, such as EGYPT AIR TRAINING CENTER in Cairo or through E-learning system.
**Note** we take one year on FlyCo and one year on ECAA

**Methods of Instruction.**

- Lecture.
- Demonstration.
- Group discussions.
- Class participation.
- Follow-up reading material.

**Curriculum.**

**Topics:**

**1)** Determination of the seriousness of the occurrence;
**2)** Crew communication and coordination;
**3)** Appropriate self-defense responses;
**4)** Use of non-lethal protective devices assigned to crew members for use as authorized by the State;
**5)** Understanding the behavior of terrorists so as to facilitate the ability to cope with hijacker behavior and passenger responses;
**6)** Situational training exercises regarding various threat conditions;
**7)** Flight deck procedures to protect the aircraft;
**8)** Aircraft search procedures;

As practicable, guidance on least-risk bomb locations

**Course Layout.**

**Subject**

**Introduction to the course**

- Explain the course aims and methodology.
- Global aviation security structure.
- Describe the purpose of ICAO Annex 17 Standards and Recommended Practices of the ICAO and IATA Security Manuals.
- Specify the nature of the threat made against the air transportation industry.
- Describe briefly the characteristics of offenders, technique and aims. (Development of security Measures).
- Security responsibilities and awareness.
- Protection of A/C on ground.
- Explain recent attacks using case study.

**Development of countermeasures**

- Aircraft searches and checks.
- Describe the industry countermeasures to prevent acts of unlawful interference.
- Identify the aviation security role of airline flight deck crewmembers.
- Define the response to disruptive passenger.
- Appreciate the need of security awareness.
- Define and classify prohibited items.
- Recognize offensive weapons.
- Recognize improvised explosive devices and dangerous objects.
- Identify places and methods of concealment for all of the above.
- In flight response to acts to unlawful seizure (Hijack).
- Ground response to aircraft emergencies.
- Evaluation (test).

### 4.6.17 English Language Test Standard

All crew members and instructors must demonstrate sufficient level of proficiency in aviation English language with a minimum of level 4 according to ICAO standards.

**Test Location**

Egypt Air Training Center

**Test Results**

- ICAO Level 4
- ICAO Level 5
- ICAO Level 6

Note: - Level 4 is subject to evaluation every 3 years, level 5 every 6 years while level 6 has no further evaluation.

### 4.6.18 FANS B (CPDLC + ADS-B) Training and Checking.

#### 4.6.18.1 Objective

This course is to train and evaluate NESMA cockpit crew members and dispatchers during the initial, transition, requalification, and during recurrent ground training once every 3 years.

#### 4.6.18.2 Prerequisite

Current flight crewmembers and dispatchers on A320 type.

#### 4.6.18.3 Training location and Method

- Ground training will be conducted at Nesma Airlines Approved Classroom or Egyptair Training Academy in Cairo or any other ECAA approved Training Center according to availability.
- Evaluation during line checks.
- E-learning module is conducted every 3 years.

#### 4.6.18.4 Training Aids.

- CD and Video, Lectures.
- E-learning modules for recurrent training.

#### 4.6.18.5 Course Contents.

- Introduction to CNS and ATM.
- Introduction to CPDLC.
- Lateral requests.
- Vertical requests.
- When can we expect?
- Other requests.
- Text messages.
- Message log.
- Reports.
- Notifications.
- Connection status.
- Emergency.
- CPDLC - controller and pilot data link communications.

#### 4.6.18.6 Course Duration

- **2** hours

## 4.7 Traditional Training program requirement

### 4.7.1 Cross Crew Qualification (CCQ)

**Objectives**

The CCQ course provides the training required to achieve a type rating for Fight Crew currently rated and experienced in operating the aircraft (at least 6 calendar months and 300 flight hours) and well versed in systems integration and normal / Non-normal, Emergency procedures.

**Prerequisite**

Flight Crew type rated and experienced in operating the aircraft for at least 6 calendar months and 300 hours.

**Training Location**

- **Nesma Airlines** classroom.

**Training Aids**

- Lecture.

**CCQ A330 /A340 → A320/A319**

**Objectives**

The A330/A340 to A320/A319 CCQ course provides the training required to achieve an A320/A319 **Instructor** for those Instructors currently rated and experienced in training on A330/A340.

**Prerequisite**

Pilot already A330 type rated. Pilot experienced in operating the aircraft for at least 6 months and 300 hours

**Course Layout**

The course covers the aircraft systems presenting differences between the two aircraft. Academic training is carried out with Lecture. The program guides trainees through the systems required.

**Program Hours**

- 15 hours.

**Training Location**

- **Nesma Airlines** classroom.

**Training Aids**

- Lecture.

### 4.7.2 Electronic Flight Bag (EFB)

**Objective**

The objective of this course is to introduce Class I applications and provide step by step instructions for using each application which is designed to assist the Flight Crew with routine tasks and reduce the reliance on paper documents. The EFB allows Flight Crew to view pertinent flight data available, through personal electronic device, or interactive display units located on the side panels, depending on Aircraft type. EFB training is integrated as an item during initial and subsequently during recurrent training.

**Prerequisite**

This course is required for all **Nesma Airlines** Flight Crew, as a part of Basic Indoctrination course.

**Course Layout**

- Introduction to the EFB
- Step by step instructions for using each application.
- Application manager.
- Demonstration on each application.

**Training Location**

- **Nesma Airlines** class room.

**Training Aids**

- Distance learning.

**Methods of Instruction CD's.**

- Briefing.
- Demonstration

## 4.8 Distance Learning

### Objective

Distance Learning is a new learning method designed to simplify ways of learning as you can learn some courses wherever you are and whenever you want.

### Prerequisite

All Distance Learning courses shall be completed during initial ground training and subsequently during recurrent training or up to course validity.

### Courses

- Area Qualification.
- CAT II.
- Dangerous Goods.
- Jet Performance Refresher.
- Meteorology:
  - All Weather Operation (Adverse Weather).
  - De-Icing / Anti-Icing.
  - Cold Weather Operation.
  - Wind shear.
- RNAV/RNP.
- Refresher Ground Training.
- RVSM.
- TCAS.
- Upset recovery
- Security Awareness.
- Safety Management System (SMS)
- CPDLC
- ADS-B
- Other courses to be added and approved later on.

### Training Location

- **FlyCo** application

### 4.8.1 List of the ground courses approved by the ECAA for use on FlyCo

- Recurrent Ground Training
- Difference Ground Training
- Traffic Alert and Collision Avoidance System (TCAS).
- Adverse weather Ground Training
- Dangerous Goods
- Reduced Vertical Separation Minima (RVSM).
- CAT II Ground Training
- Wind Shear Ground Training.
- Controlled Flight into Terrain (CFIT).
- Upset prevention and recovery training (UPRT)
- Pilot Incapacitation
- PBN Training
- General Safety and Emergency Training
- Safety Management System Course (SMS)
- Security Training (One-year E-Learning and One year at the approved classroom)

THIS PAGE INTENTIONALLY LEFT BLANK

## Contents

**CHAPTER 5 FLIGHT TRAINING.** ........ 3
5.1 Right Hand Seat Qualification. ........ 5
5.1.1 Right hand seat qualifications for Instructor Pilots ........ 5
5.1.2 Right hand seat qualifications for Normal Line Captain. ........ 6
5.2 Reserved ........ 7
5.3. Initial Flight Training. ........ 8
5.4. Transition Flight Training. ........ 11
5.5. Recurrent Flight Training. ........ 12
5.6. Initial Operating Experience (IOE) & (USV) & (Line Training) ........ 17
5.6.1 (IOE) Policy ........ 19
5.6.2 Planned Sectors (IOE and USV) ........ 20
5.6.3 Line Training Sectors Extension ........ 21
5.7. Proficiency Check. ........ 22
5.8. Line Check. ........ 24
5.9. LOFT Training. ........ 26
5.9.1. Introduction. ........ 26
5.9.2. Basic LOFT elements. ........ 26
5.9.3. LOFT Philosophy. ........ 27
5.9.4. LOFT Pre-flight Briefing. ........ 27
5.9.5. LOFT Debriefing. ........ 27
5.9.6. Proficiency Level. ........ 27
5.9.7. LOFT course validity. ........ 28
5.9.8. Session Details: ........ 28
5.10. Line Oriented Simulation (LOS) Training ........ 28
5.11. Wind Shear Training. ........ 29
5.12. Command Upgrade Flight Training. ........ 31
5.12.1 Pre-Command Simulator Check ........ 31
5.12.2 Pre-Command Simulator Check Retake Policy ........ 31
5.12.3 Upgrade Training ........ 33
5.12.4 Simulator Training. ........ 35
5.12.5 Base Training / Zero Flight Time. ........ 36
5.12.6 Line Training. ........ 36
5.13 Volcanic Ash Training. ........ 38
5.14. PBN Training ........ 39
5.15. Pilot Incapacitation. ........ 41
5.16. Upset prevention and recovery training (UPRT) ........ 42
5.17. Adverse weather operations. ........ 43
5.18. Controlled Flight Into Terrain (CFIT). ........ 45
5.19. Traffic Alert and Collision Avoidance System (TCAS). ........ 46
5.20. Reduced Vertical Separation Minima (RVSM). ........ 47
5.21 Low Visibility Training ........ 48

5.22 CAT II ........................................ 50
5.23 CCQ A330 to A320 ........................................ 52
5.24 CCQ A340 to A320 ........................................ 53

## CHAPTER 5 FLIGHT TRAINING.

**Purpose.**

The purpose of this chapter is to detail the specific flight training program administered by the Flight Training Department.

**Evaluations.**

The trainee must demonstrate proficiency in the required skill and knowledge in order to satisfactory complete a course, Evaluation guideline and specific tolerance are laid down in chapter 3.

**Initial, Transition and Recurrent Training Maneuvers and Procedures.**

The maneuvers and procedures utilized during Initial, Transition and Recurrent training will conform to the requirements of ECAR 121.419.

**Proficiency Check Maneuvers and Procedures**

The maneuvers and procedures required during Proficiency Checks will comply with ECARS 121 Appendix F.
During Training (Simulator and line Training) Nesma Airlines Training section shall ensure pilot
flight crew members demonstrate knowledge and compliance with the operations approved as part of Nesma Airlines (AOC) and according to (PRO-ABN-01,PRO-NOR-SOP),to include the following items:-

1. Approaches authorized by ECAA;
2. Ceiling and visibility requirements for takeoff, approach and landing;
3. Allowance for inoperative ground components;
4. Wind limitation (crosswind, headwind and tailwind)
5. Confirmation of PF/PM duties and other flight crew division of duties (Task Sharing) according to FCOM and QRH.
6. Confirmation of Positive Transfer of Air Craft flight Control.
7. Consistent Checklist Philosophy
8. Emphasis on a prioritization of tasks (e.g. “aviate- Navigate- Communicate”) according to FCOM and QRH
9. Proper use of all levels of flight automation according to FCOM and QRH.

**Proficiency Check Maneuvers and Procedures**.

The maneuvers and procedures required during the Proficiency Checks will conform to ECAR 121 appendix F

**Additional Time.**

When the phrase "Additional Time" is used, the amount of time will be determined by the instructor. It will be the amount of additional time necessary to ensure that the trainee is competent to execute the required maneuvers.

**Note:**

- If additional training time is required during initial, Transition or Recurrent Training, an approval from chief pilot is required.
- Additional time in excess of 4 hours shall be approved only by Training committee.

## 5.1 Right Hand Seat Qualification.

**General**
There are two different types of right-hand seat qualifications:

1. Right hand seat qualifications for Instructor Pilots.
2. Right hand seat qualifications for normal line captain.

### 5.1.1 Right hand seat qualifications for Instructor Pilots.

**Objective.**

The objective of this course is to qualify the trainee instructor pilot to safely operate the aircraft from the right seat and to perform the duties of an instructor as well as a qualified first officer. The training will include normal and emergency procedures and emphasize on aircraft handling from the right seat so that he/she may after successful completion, operate Nesma Airlines aircraft in a standard, safe and efficient manner.

**Prerequisite.**

This course is predicated on the trainee being a Nesma Airlines captain and having satisfactory completed Nesma Airlines Instructor Ground Training course.

**Training Location.**

Training shall be conducted at any ECAA approved training center, such as Egypt Air Training Center in Cairo and/or others.

**Training Aids**

Training aids used in this course will be the full flight simulator.

**Methods of Instruction.**

- Briefings.
- Demonstration.
- Procedural Drills.
- Critique.

**Curriculum.**

Normally, control and observer times for the trainee will be approximately the same. In those cases where there is only one trainee, an extra amount of time, as determined by instructor / check airman, may be given in lieu of observer time.

- Full Flight Simulator 2 hours as PF.

This includes time for the partial PC to demonstrate right seat proficiency.

**Course Layout.**
Full Flight Simulator.

1. Cockpit preflight and normal procedures.
2. A normal take-off, an ILS approach.
3. An engine out departure take-off, and engine out ILS approach and landing.
4. Emergency descent from right hand seat.
5. PC to demonstrate right seat proficiency.
6. Error recovery session which will include Lateral and vertical offsets performed by instructor pilots occupying the left seat and the recovery techniques required by the instructor pilot under training from the right seat.

### 5.1.2 Right hand seat qualifications for Normal Line Captain.

**Objective.**

The objective of this course is to train the crewmember to safely operate the aircraft from the right seat and to perform the duties of a qualified first officer. The training will include normal and emergency procedures and emphasize on aircraft handling from the right seat so that he/she may after successful completion, operate Nesma Airlines aircraft in a standard, safe and efficient manner.

**Prerequisite.**

This course is predicated on the trainee being an Nesma Airlines captain.

**Training Location.**

Training shall be conducted at any ECAA approved training center, such as Egypt Air Training Center in Cairo and/or others.

**Training Aids**

Training aids used in this course will be the full flight simulator.

**Methods of Instruction.**

- Briefings.
- Demonstration.
- Procedural Drills.
- Critique.

**Curriculum.**

Normally, control and observer times for the trainee will be approximately the same. In those cases where there is only one trainee, an extra amount of time, as determined by instructor / check airman, may be given in lieu of observer time.

- Full Flight Simulator 1 hours as PF.

This includes time for the partial PC to demonstrate right seat proficiency.

**Course Layout.**

Full Flight Simulator.

1. Cockpit preflight and normal procedures.
2. A normal take-off, an ILS approach.
3. An engine out departure take-off, and engine out ILS approach and landing.
4. Emergency descent from right hand seat.
5. PC to demonstrate right seat proficiency.

## 5.2 Reserved

## 5.3. Initial Flight Training.

**Objective.**
The objective of this course is to train the train and evaluate newly hired F/O, or newly promoted Captain in the operation of the aircraft. The training will include aircraft systems, operation, flight characteristics and airline procedures so that he may, after successful completion, operate Nesma Airlines aircraft in a standard, safe and efficient manner. The training will prepare the trainee to meet the entry requirements of Initial Operating Experience (IOE).

**Prerequisite.**
This course is predicated on the trainee being a Nesma Airlines Crew member and having satisfactory completed Nesma Airlines Initial Ground Training course.

**Training Location.**
Training shall be conducted at any ECAA approved training center, such as Egypt Air Training Center in Cairo and/or others.

**Training Aids.**
Training aids used in this course will be:

- Fixed Base Simulator
- Full Flight Simulator.
- Aircraft.

**Methods of Instruction.**

- Briefings.
- Demonstration.
- Procedural Drills.
- Critique.

**Course Layout**

1. **Briefing:**
   - Bulletin Review & FCOM Revisions.
   - Aircraft Limitations, Normal / Non-Normal procedures.
   - Simulator Syllabus & Maneuvers.
2. **Full Flight Simulator:**
   - Flight Maneuvers.
   - Simulator Syllabus
   - Flight Patterns.
   - Proficiency Check.
3. **Simulator Syllabus & Maneuvers Items:**
   - Pre-Flight and Cockpit Preparation
   - Engine Start

- Low Visibility Taxiing (150/200m RVR)
- X- Wind with Loss of Visual Cues At 80/100 Kt.
- With Simulated Engine Failure at V1
- Rejected T.O with An Engine Failure BeforeV1
- Winds hear T/O
- Manually controlled loss of reliable airspeed
- Manually controlled instrument departure.
- Pilot Incapacitation
- In-flight Fire and Smoke Control
- Decompression
- Emergency Descent
- Emergency Landing (Partial L/G, No Flaps, etc)
- Emergency Evacuation
- TCAS
- Volcanic Ash Training
- Steep Turns (Min. 180□ - Max. 360□)
- Upset Recovery
- Manually controlled slow flight
- High Altitude Stall Recovery
- Low Altitude Stall Recovery
  - T/O Configuration
  - Clean Configuration
  - Base Leg Configuration (25□ bank angle)
  - Landing Configuration
- Anti-Icing and De-icing
- Hydraulics
- Electricals
- Pneumatic
- Gears
- Flaps
- Flight Controls
- NAV/Comm. Equipment
- Manually controlled instrument arrival.
- Holding pattern
- ILS Approach (Coupled)
- Second ILS Approach (Manual)
- Missed Approach
- Non-Precision Approach
- Second Non-Precision Approach
- Circling Approach
- Engine Failure Missed Approach
- Normal Landing
- ILS Approach
- Cross Wind
- Visual Approaches with Manual Thrust.

- With 50% Power Plant Failure.
- Circling Approach
- Un Stabilized Approach
- GPWS (CFIT)
- Rejected At 50'
- Windshear Landing
- Recovery from bounced landing

4. **ZFTT**
   - Approaches.
   - Maneuvers.
   - Proficiency check.
   - ECAA type rating.

**Program Hours**

| A320 | PF | PM |
|---|---|---|
| **FBS hrs. (PF)** | 12 | 12 |
| **FFS hrs. (PF)** | 12 | 12 |
| **Evaluation** | 2 | 2 |
| **ZFT** | 2 | 2 |
| **Total hrs.** | **28** | **28** |
| **Course layout** | (for details ref. initial Training Syllabus form) | |

*** (For Captains only) Notes**

- Any extension beyond simulator assigned sessions can be extended to a limit of 2 sessions during initial training without a training committee, but just by a special approval from the Training Manager.
- In case of a trainee failure to finish training in the extended sessions mentioned above, a training committee shall be formed by the Training Manager to decide the remedial action for the trainee based on case by case basis and Flight Crew position.
- The training committee will decide either to terminate the training or extend the training sessions.
- In case the committee approved to extend the training, the maximum extension sessions allowed are 2 sessions, and in case of trainee failure during these two extended sessions, training shall be terminated.

## 5.4. Transition Flight Training.

**Objective.**

The objective of this course is to train the crewmember in the operation of the aircraft. The training will include aircraft systems, operation, flight characteristics and airline procedures so that he may, after successful completion, operate Nesma Airlines aircraft in a standard, safe and efficient manner. The training will prepare the trainee to meet the entry requirements of line training.

**Prerequisite.**

This course is predicated on the trainee being an Nesma Airlines Crew member and having satisfactory completed Nesma Airlines Transition Ground Training course.

**Training Location.**

Training shall be conducted at any ECAA approved training center, such as EGYPT AIR TRAINING CENTER in Cairo and/or others.

**Training Aids.**

Training aids used in this course will be:

- Fixed Base Simulator
- Full Flight Simulator.
- Aircraft.

**Methods of Instruction.**

- Briefings.
- Demonstration.
- Procedural Drills.
- Critique.

**Program Hours**

Normally, pilot flying and pilot monitoring times for the trainee will be approximately the same. In those cases where there is only trainee, an extra amount of time, as determined by instructor / check airman, may be given in lieu of observer time.

| A320 | PF | PM |
|---|---|---|
| **FBS hrs. (PF)** | 12 | 12 |
| **FFS hrs. (PF)** | 12 | 12 |
| **Evaluation** | 2 | 2 |
| **ZFT** | 2 | 2 |
| **Total hrs.** | **28** | **28** |
| **Course layout** | (for details ref. initial Training Syllabus form) | |

### 5.5. Recurrent Flight Training.

**Objective.**

The objective of this course is to ensure the competence of Nesma Airlines flight crewmember and to comply with the provisions of ECAA through the medium of twice within any period of one year plus or minus one calendar month from the original qualification anniversary date or base month
Recurrent training on subjects related to efficient and safe flight operations. The plan for recurrent simulator training and checking is approved by the ECAA, which specifies the general content of the 3-year recurrent training cycle. It will ensure that all regulatory training and checking requirements are met.
The actual lesson plan for each session does not require the ECAA approval. However, the lesson plan shall be designed in accordance with the applicable regulatory requirements and shall also cover additional training requirements identified by Nesma Airlines as deemed necessary for recurrent training.

**Prerequisite.**

This training is designed for crewmembers who are currently qualified on Nesma Airlines aircraft and who have completed Recurrent Ground Training.

**Training Location.**

Training shall be conducted at any ECAA approved training center, such as Egypt Air Training Center in Cairo and/or others.

**Training Requirements.**

The following table details the minimum Simulator Training and Checking Cycle as required by the ECAA.

**Course Layout.**

1. **<u>Briefing</u>**
   - Bulletin Review & FCOM Revisions.
   - Aircraft Limitations, Normal / Non-normal procedures.
   - Simulator Syllabus, Maneuvers & CRM.
2. **<u>Full Flight Simulator</u>**
   - Flight Maneuvers.
   - Flight Patterns.
   - Proficiency Check.

## 3. Simulator Syllabus & Maneuvers Items (Recurrent or Requalification)

- Pre-Flight and Cockpit Preparation
- Engine Start
- Low Visibility Taxiing (150/200m RVR)
- X- Wind with Loss of Visual Cues At 80/100 Kt With Simulated Engine Failure at V1
- Rejected T.O with An Engine Failure BeforeV1
- Windshear T/O
- Manually controlled loss of reliable airspeed
- Manually controlled instrument departure.
- Pilot Incapacitation
- In-flight Fire and Smoke Control
- Decompression
- Emergency Descent
- Emergency Landing (Partial L/G, No Flaps, etc.)
- Emergency Evacuation
- TCAS
- Volcanic Ash Training
- Steep Turns (Min. 180° - Max. 360°)
- Upset Recovery
- Manually controlled slow flight
- High Altitude Stall Recovery
- Low Altitude Stall Recovery
  - T/O Configuration
  - Clean Configuration
  - Base Leg Configuration (25°bank angle)
  - Landing Configuration
- Anti-Icing and De-icing
- Hydraulics
- Electricals
- Pneumatic
- Gears
- Flaps
- Flight Controls
- NAV/Comm. Equipment
- Manually controlled instrument arrival.
- Holding pattern
- ILS Approach.
- Second ILS Approach (Manual)
- Missed Approach
- Non-Precision Approach
- Circling Approach
- Engine Failure Missed Approach
- Normal Landing
- Cross Wind

- Visual Approaches with Manual Thrust.
- With 50% Power Plant Failure.
- Circling Approach
- Un Stabilized Approach
- GPWS (CFIT)
- Rejected landing At 50’
- Windshear Landing
- Recovery from bounced landing

**Training cycle.**

| Events and System Requirement | Training and Checking | | | | | |
|---|---|---|---|---|---|---|
| | Year 1 | | Year 2 | | Year 3 | |
| **Abnormal Conditions** | **Day 1** | **Day 2** | **Day 1** | **Day 2** | **Day 1** | **Day 2** |
| Engine Failures | **X** | | **X** | | | **X** |
| Volcanic Ash Training | | | **X** | | | |
| Pressurization and Air Conditioning | **X** | | **X** | | | |
| Pitot and Static System | | | **X** | | | |
| Unreliable air speed | **X** | | | | **X** | |
| Fuel System | | **X** | | | | |
| Electrical System | | | | **X** | | |
| Hydraulic System | | | **X** | | | |
| Flight Control | | | | | **X** | |
| Anti and De-ice system, Glare shield heat | | | | **X** | | |
| Autopilot / Flight Director | | **X** | | | | |
| Stalling Protection | **X** | | | | | |
| EGPWS, Weather, Radar, Radio Altimeter, Transponder | | | **X** | | | |
| Radios, Navigation, Equipment, Instruments, FMS | **X** | | | | | |
| Landing Gear and Brakes | | | | | | **X** |
| Slat and Flap System | **X** | | | | | |
| APU (Fail / Fire) | | **X** | | | | **X** |
| TCAS RA maneuvers | **X** | | **X** | | **X** | |
| Fire Drills | | **X** | | | | |
| Smoke Control and Removal | **X** | | | **X** | | |
| Engine failures / Shutdown / Restart | | **X** | | **X** | | **X** |
| Wind shear (Take-off / Landing) | **X** | | | **X** | | **X** |
| Cabin pressurisation / Emergency descent | **X** | | | **X** | | **X** |
| Incapacitation (practical) | **X** | | **X** | | **X** | |
| Thunderstorm Avoidance (Briefing/practical) | | | **X** | | | |
| Pilot Incapacitation | **X** | | **X** | | **X** | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Adverse Weather as appropriate:<br>Ground De-icing, Cold weather operations and Contaminated runway operations; (discussion)<br>***OR***<br>Hot Weather Operations | **X** | **X** | **X** | **X** | **X** | **X** |
| Pax Evacuation | | | **X** | | | |
| upset prevention and recovery training (UPRT) | **X** | | | | | |
| RVSM (Discussion) | **X** | | **X** | | **X** | |
| RNP & P-RNAV (discussion) | **X** | | **X** | | **X** | |
| Area Route, airports (discussion or practical as required) | **X** | | **X** | | **X** | |
| Flight Safety Feedback (discussion or Practical) | | | | | | |
| LVOPS | **X** | **X** | **X** | **X** | **X** | **X** |
| LOFT | **X** | | **X** | | | **X** |
| CFIT | | **X** | | **X** | | **X** |
| Performance (Discussion) | **X** | | **X** | | **X** | |
| Operation in Either Seat Qualification (RHS) (if required) | **X** | **X** | **X** | **X** | **X** | **X** |

**Training Aids.**

Training aids used in this course will be:

- Full Flight Simulator.

**Methods of Instruction.**

The detailed lesson plan for each recurrent training session will be distributed to Instructors in advance. Instructors must ensure that all the briefings, exercises and manoeuvres specified in the lesson plan are covered during a recurrent training session. If time permits, then the exercises may be repeated to ensure that pilots achieve the necessary level of proficiency.
The sequence of exercises may be varied at the instructor's judgment in order to enhance both training value and the efficient utilization of session time. The content must not be altered.

- Briefings.
- Demonstration.
- Procedural Drills.
- Critique.

**Program Hours**

The briefing must be conducted in the briefing room of the simulator at least for one hour.

- Full Flight Simulator (2 sessions X 4 hours)
- Briefing (1 hour each day)
- First day is a training day. (2 PF+2 PM)
- Second day will be proficiency check (PC). (2 PF+2 PM)

**Course Layout.**

Briefing:

- Bulletin Review.
- Aircraft Limitations.
- Simulator activity review.

## 5.6. Initial Operating Experience (IOE) & (USV) & (Line Training)

**Objective.**

- Nesma Airlines shall ensure flight crew members, before starting line training (IOE), have successfully completed the proficiency evaluation administrated by one of the Nesma Airlines approved Examiners or a representative of the ECAA and demonstrated the skill and knowledge level adequate for operating the aircraft at or above standards stipulated in the training syllabus.
- The purpose of this section is to detail the line training requirements for A320 and provide guidelines for crewmember involved with IOE operations and line checks.
- The objective of this IOE time is to provide operating experience to the crewmember during line operation of the aircraft. The line training will include aircraft systems operation, flight characteristics, planning, performance, airline policy and procedures.
- After successful completion of the IOE, the Flight Crew will be able to operate the aircraft line operation in a standard, safe and efficient manner.
- An Examiner, Check Airman or Instructor pilot must occupy one of the pilot seats during IOE until he makes the following entry in his progress report "Captain (Name) is fit to fly as a captain under supervision ". The Captain under training shall continue to fly under supervision until he/she is ready for final Line Check.
- Amount of PF and PM duties sufficient for F/O to develop and demonstrate proficiency in such duties.
- Frequent change of instructors for the same trainee is not recommended, and in such situations that a change is unavoidable the instructor shall fly with the trainee for **at least 4 sectors.**
- For the initial IOE the first 40 Hrs. shall be conducted by a Check Airman or an Examiner and the remaining time may be completed by an instructor pilot by special approval from Training Manager.
- The sectors limit is a boundary not a maximum.
- No Evaluation to continue or stop training before the training reaches half the limit sectors. And in case of training complications sensed during half the limit sectors, the instructor shall inform the Training Manager.
- During the line training Nesma Airlines Training section shall ensure pilot flight crew members demonstrate knowledge of the operations approved as part of Nesma Airlines (AOC) and according to OM-A 8.1.3 to include the following items:-
    - Approaches authorized by ECAA;
    - Ceiling and visibility requirements for takeoff, approach and landing;
    - Allowance for inoperative ground components;
    - Wind limitation (crosswind, headwind and tailwind)

After successful completion of the IOE, the crewmember will be able to operate the aircraft line operation in a standard, safe and efficient manner.

**General.**

1. Initial Operating Experience is the replacement of the old term-line training. The IOE is an ECAR's requirement for captains and F/O's.
2. An examiner, check airman pilot must occupy one of the pilot seats during IOE until he makes the following entry in his progress report "***Captain (Name) is fit to fly as Captain.*** The trainee Captain shall continue to fly under supervision until he is ready for final line check.
3. Line training (IOE) shall include a program for the flight crew members to be qualified to operate in areas, on routes or route segments and into the airports to be used in operations, this program includes ground training (Ref. 4.6.4) and simulator or flight training
4. Initial operating experience shall not be less than ***a minimum of 40 hours*** and 10 sectors for all pilots during initial and transition training.
5. Minimum 6 sectors under supervision shall be flown after the minimum sector of IOE and the RHS.
6. After completing all the above final line check shall be performed.

**Prerequisite.**
This course is predicated on the trainee being an Nesma Airlines crewmember having satisfactory completed Nesma Airlines flight training course. (Initial, Transition and command upgrade flight training).

**Evaluation of IOE Progress.**
The crewmember must demonstrate proficiency in the required skills and knowledge in order to satisfactorily complete IOE requirements and be recommended for final check. Assessment and grading system laid down in chapter 3 shall be used as the base of IOE evaluation.

In case a recommendation for final check cannot be given due to failure to progress, a check airman designated by management will perform an evaluation and recommend either additional IOE time or another course of action for the crewmember.

**Training Location**.
Line training shall take place during normal revenue operations at locations dictated by the flying schedule.

**Training Aids.**
Nesma Airlines Aircraft.

**Methods of Instruction.**

- Briefings.
- Demonstration.
- Procedural Drills.
- Critique.

### 5.6.1 (IOE) Policy

**a)** Initial, Transition, Upgrade, CCQ, Difference and Recurrent training for Captains must include Right Hand Seat training requirements.

**b)** An Examiner or Check Airman must occupy one of the pilot seats during Captains (IOE) until he/she makes the following entry in his/her progress report "Captain" (Name ) is fit to fly as a captain under supervision "the Trainee Captain shall continue flying under supervision until he/she is ready for final Link Check .

**c)** Frequent change of instructors for the same trainee is not recommended, and in such situations that a change is unavoidable the instructor shall fly with the trainee for at least 4 sectors.

**d)** For the initial IOE the first 40 Hrs shall be conducted by a Check Airman or an Examiner and the remaining time may be completed by an instructor pilot
Note :- If the required 100 hours of line operating flight time are not completed within 120 days, the certificate holder may extend the 120 days period to no more than 150 days

or the transition training the first 2 sectors shall be conducted by an Examiner or Check airman and the remaining sectors/time may be completed by an instructor pilot

**e)** Captain IOE should include at least two sectors from the right hand seat, one as PF and one as PM. If RHS was completed during simulator training.

**f)** A Captain flying under supervision shall occupy the left seat and will act as the pilot in command; however, the instructor Pilot, Check Airman or Examiner shall relief him/her from command whenever Air Safety is in question.

**g)** Refer to number of sectors required for each training program under each specific aircraft type.

### 5.6.2 Planned Sectors (IOE and USV)

**Planned Sectors IOE, USV & RHS**

| F/O's | A320 | |
| --- | --- | --- |
| | **Min** | **limit** |
| | 30 | 40 |

**Note:** Third pilot training sectors are not included in the sectors above.

**The First Officer sectors shall include as a Minimum:**

- 10 sectors as third pilot before simulator training.
- 2 sectors as third pilot after simulator training.
- 100 hours shall be conducted during the IOE for F/O's.
- During line training the Instructor shall fill Area, Route and Airport qualification form to the trainee for Category **B&C** Airports he/she fly to.

**Note:** Third Pilot sectors are not required during upgrade training.

**First Time Captains with Experience on Type**

**The sectors shall include as a Minimum:**

- 10 sectors as third pilot prior to simulator training.
- 25 sectors with minimum 80 hours IOE.
- 2 sectors RHS one as PF & one as PM for captains to be Included in IOE sectors.
- 6 sectors USV after IOE for Captains.
- 2 sectors Line Check.

**IOE flights shall include:**

- Any requirement **or**, restrictions shall be implemented by Chief Pilot according to OM - PART A duties & responsibilities.
- During line training the Instructor shall fill Area, Route and Airport qualification form to the trainee for Category **B&C** Airports he/she fly to.

**Note:** Chief Pilot must make sure that Captain under training reach 4000 hours before flying USV sectors.

**Note:** Any extra sectors needed more than the sectors mentioned above are considered training extension (Extension policy applies).

| First Time Captains Without Experience on Type |
| --- |
| **The sectors shall include as a Minimum:**<br>– 10 sectors as third pilot prior to simulator training.<br>– 25 hours or up to proficiency IOE Right Hand Seat.<br>– 25 sectors with minimum 80 hours IOE from Left Hand Seat.<br>– 6 sectors USV after IOE for Captains.<br>– 2 sectors line check.<br>**IOE flights shall include:**<br>– Any requirement **or**, restrictions shall be implemented by Chief Pilot according to OM - PART A duties & responsibilities.<br>– During line training the Instructor shall fill Area, Route and Airport qualification form to the trainee for Category **B&C** Airports he/she fly to. |

**Note:** Chief Pilot must make sure that Captain under training reach 4000 hours before flying USV sectors.

**Note:** Any extra sectors needed more than the sectors mentioned above are considered training extension (Extension policy apply).

### 5.6.3 Line Training Sectors Extension

- Any extra sectors above the minimum sectors needed, Training Manager. shall be notified about the reason.
- Any Extra sectors above the maximum sectors shall fall under line training sectors extension policy.
- Extension beyond the maximum sectors limit shall be performed through a committee chaired by Training Manager.
- In case the committee approved to extend the training sectors, the maximum sectors allowed are 20 sectors during initial and in case of trainee failure during those extended sectors, training shall be terminated.

## 5.7. Proficiency Check.

***ECAR 121.441***

**General.**

The Proficiency Check is an ECAA required semi-annual check for Flight Crew.
The objective is to check the Flight Crew competence in performance of normal, Non-normal and Emergency procedures as required by ECARS combined with task sharing and CRM concept.
The Proficiency Check shall also include an oral test; the questions of this test must be of operational significance.

- First day is a training day.
- Second day is the Proficiency Check.

Proficiency check shall be conducted by company Examiner or Check Airman.
The objective is to check the crewmember's competence in performance of normal, abnormal and emergency procedures as required by ECAR's.

The proficiency check shall also include an oral test; the questions of this test must be operational significance.

**Prerequisite.**

This course is predicated on the trainee being an Nesma Airlines crewmember having satisfactory completed Nesma Airlines flight training course.

**Evaluation of Proficiency Check.**

The crewmember must demonstrate proficiency in the required skills, piloting technique, procedures (normal, abnormal and emergency), and maneuvers and comply with instrument flight rules. in order to satisfactorily complete Proficiency check requirements. Assessment and grading system laid down in chapter 3 shall be used as the base of proficiency check evaluation.

**Training Location.**

Training shall be conducted at any ECAA approved training center, such as EGYPT AIR TRAINING CENTER in Cairo and/or others.

**Training Aids.**

- Full Flight Simulator.

**Methods of Instruction.**

- Oral.
- Briefings.
- De-briefings.

**Curriculum.**

Normally, pilot flying and pilot not flying times for the trainee will be approximately the same. In those cases where there is only one trainee, an extra amount of time as determined by the instructor / check airman, may be given in lieu of observer time.

- Full Flight Simulator 1 sessions X 4 hours (2 hrs. PF+2 hrs. PM)
- Briefing 1 hour

**Course Layout.**

Full Flight Simulator.

- Approaches.
- Maneuvers.
- Proficiency check (Time for PC is included within program hours.)

### 5.8. Line Check.

***ECAR 121.440.***

**General.**

**(a)** The line check is an ECAA requirement, the objective of the line check is to check the Flight Crew competence in performance of normal procedures in line operations environment and to check his/her compliance with company rules and Standard Operating Procedures (SOP). Line checks shall be conducted in the following cases:
- Captain final line check after successfully finishing line training, and at the end of under supervision portion of the (IOE).
- Captain annual line check.
- F/O final line check after successfully finishing line training.
- Random line check.
- During instructor selection process.
- Area, Route and Airport Qualification for category C airports.
- During re-qualification process, or due to a training committee recommendation.

**(b)** Line checks offer the company opportunity to monitor the proficiency level and the compliance of all crew members with Standard Operating Procedures (SOP) at regular intervals in the context of normal operations.

**(c)** Line checks should include an inspection of manuals for currency and enough "questioning "to determine adequate knowledge of normal line operation on the part of the person being checked.

**(d)** During Line check, the instructor pilot shall normally occupy the observer seat. However, he/she shall retain the final responsibility for the safety of the operation, he/she shall therefore consider assuming command of the flight at any time and relief the captain under check from his/her command.

**(e)** Line check shall be conducted by Company Examiner or Check airman.

**(f)** A Minimum of 1-line check shall be performed during a period of 12 calendar months for Captains.

**Prerequisite.**

This course is predicated on the trainee being a Nesma Airlines crewmember having satisfactory completed Nesma Airlines flight training course.

**Evaluation of Proficiency Check.**

The crewmember must demonstrate proficiency in the required skills, procedures and maneuvers in order to satisfactorily complete line check requirements. Assessment and grading system laid down in chapter 3 shall be used as the base of proficiency check evaluation.
Line training shall take place during normal revenue operations at locations dictated by the flying schedule.

**Training Aids.**

Nesma Airlines AIRCRAFT.

**Methods of Instruction.**

- Oral.
- Briefings.
- De-briefings.

**Curriculum.**

- Systems operation knowledge.
- A/C performance.
- Standard Operating Procedures.
- Company rules and regulations.

**Program hours.**

Minimum 2 flying sectors or 1 sector if flying time is more than 4 hours, except for final check should be 2 sectors.

**Course Layout.**

- Systems operation knowledge.
- A/C performance knowledge.
- Standard operating procedures.
- Area, route and airport knowledge.
- Company rules and regulations.
- Departure.
- Enroute.
- Approaches.
- Maneuvers.
- Normal procedures.

## 5.9. LOFT Training.

**ECAR 121-410 (c)**

### 5.9.1. Introduction.

This section is designed to assist the check airman in administering Line Oriented Flight Training.
Line Oriented Flight Training (LOFT) session is intended to provide flight crews with opportunities to enhance Crew Resource Management (CRM) principles to simulated regular airline flight.
Scenarios are intended to produce a busy environment, but should never overload the flight crew. In many cases, there is no single 'right' answer but using their skills and knowledge, flight crew should be able to reach a successful conclusion to each scenario. Alternative solutions may provide useful, constructive post-flight discussion.
Relatively simple failures are introduced during the flight to enable the session objectives to be met.
To make LOFT as valuable and realistic as possible, flight documentation is provided by the instructor at briefing. Flight briefing shall begin 1 hour before the scheduled simulator start time and will take 15-20 minutes. Thereafter flight crew will have some time to study documentation and, for example, decide on required fuel load, etc.
The take-off time for the flight is 30 minutes after the simulator session starts.
Whenever problems are encountered during scenarios in terms of their realism or changes in SIDs, STARs, and Approaches …., please make notes / corrections and send that information to Chief Pilot for amendment. Scenario in focus will be updated and new copies shall be sent out to amend handbooks. In the meantime, copies of all approach plates and navigational charts required to run each scenario are included.
Remember that scenarios are controlled documents and copies are not to be given to flight crewmembers.

### 5.9.2. Basic LOFT elements.

1. Takes place in a simulated line operational environment.
2. Uses a complete flight crew with total participation.
3. Contains real-world incidents, unfolding in real time.
4. LOFT session ***should be 4 hours***.
5. Contains a preflight documentation’s:
    - Weather briefing.
    - NOTAM's.
    - MEL.
    - Traffic load and C.G. position.

6. Contains planned scenarios and segments which run uninterrupted:

- No position or total Freeze.
- No lateral or vertical repositioning.
- No reset to any introduced failure.

7. Incorporates CRM skills where such skills are observed and debriefed upon completion.
8. The instructor Pilot shall act as:

    - Flight dispatcher.
    - Ground mechanic.
    - Maintenance engineer.
    - Air traffic controller.

9. Provides critique of individual and crew performance.
10. Includes scenario-based or maneuver-based stall prevention training before, during or after the LOFT scenario for each pilot
11. Is given by at least an instructor who meets the applicable requirements & the satisfactory completion of the course of training must be certified by either the ECAA or a qualified check airman.

### 5.9.3. LOFT Philosophy.

The effectiveness of LOFT is dependent on four important aspects.

- The use of the highest fidelity simulator available.
- Only line qualified flight crewmembers are scheduled to participate in LOFT.
- LOFT scenarios run fully uninterrupted real time course.
- Varieties of scenarios, fully compatible with training objectives, are available and periodically updated to insure that LOFT does not become repetitive.

### 5.9.4. LOFT Pre-flight Briefing.

- Weather Documents.
- Notam's Documents.
- Load sheet.
- Deferred defects.

### 5.9.5. LOFT Debriefing.

Refer to chapter (3) simulator briefing and debriefing item 3.1.3

### 5.9.6. Proficiency Level.

- Ability to perform normal and abnormal procedures and techniques in accordance with General SOP in a line environment.
- Ability to correctly apply the following CRM principles:
    1. Communication.
    2. Situational awareness.
    3. Decision Making.
    4. Workload management.

### 5.9.7. LOFT course validity.

Course validity 12 month

### 5.9.8. Session Details:

Ref. to appendix section.

LOFT Training shall be used in the following cases:

- 1 session in the initial training.
- 1 session in the transition training.
- 1 session in the command upgrade training.
- 1 session every year with recurrent training (**LOS**).
- In case there is a need due to training committee or as remedial action.

## 5.10. Line Oriented Simulation (LOS) Training

Same as LOFT.

## 5.11. Wind Shear Training.

**General.**

Accidents / Incidents during initial climb, final approach and landing phases of flight (Safety Window) continue to comprise a disproportionate percentage of commercial jet aircraft accidents and incidents.

Flight into terrain may arise from a low-level Windshear encounter, improperly executed go around maneuver, inadequate response to a ground proximity warring or a high rate of descent at low altitude.

These Windshear encounters are especially significant because forces outside the cockpit have placed the crew in a situation, which they may require to make use of the performance capability of the airplane.

**Prerequisite**

This course is required for all **Nesma Airlines** Flight Crew.

**Training Program.**

**Course Layout**

Individual low level Windshear training and evaluation is integrated in initial, transition, and recurrent simulator training every 36-calendar month for all types. The IP /CA or EP will discuss the phenomena during briefing and de-briefing and will cover the following:

- Weather conditions.
- Early Recognition.
- Aircraft Performance
- Recovery Techniques
- Take-Off roll.
- After Liftoff.
- Final Approach.

**Flight Training:**

Simulator Initial and recurrent training program shall include Windshear encounter during the following situations:

- ➢ Take-Off roll.
- ➢ After liftoff.
- ➢ Final Approach.

## 5.12. Command Upgrade Flight Training.

### 5.12.1 Pre-Command Simulator Check

**Objective**

Pre-Command check specifically designed for First Officers who are approaching promotion to Captain within the airline.

**Prerequisite**

F/O evaluation prior to upgrade for captain.

**Course Layout**

One session including LOFT to check the following: -

- OM - PART A and relevant ECARS.
- Compliance with SOP & FCOM.
- Crew coordination and use of available resources.
- Situational awareness.
- Attitude and command ability.
- Decision making process.
- Flying Skills.

**Training location**

Egypt Air Training Center

**Training aids**

- Simulator.

**Methods of Instruction**

- Oral.
- Briefing.
- Observation.
- Review.
- De-Briefing.

### 5.12.2 Pre-Command Simulator Check Retake Policy

In case of failure during a pre-command check a committee shall be held to decide the appropriate course of action. This committee will consist of:

- Training Manager
- Chief Pilot.

- Examiners who conducted the check.
- The F/O being checked will not be eligible for another pre-command check except after fulfilling the following:
  - 2 consecutive PC check with a minimum S2 in all item.
  - Normally a period of 10 calendar months are between the previous and next pre-command check, and according to the F/O history and file these 10 calendar months can be reduced by a committee chaired by Training Manager.

**Note:** As a principal only one retake chance is allowed.

### 5.12.3 Upgrade Training

**General.**

This training course is intended for upgrading Nesma Airlines senior first officers, who have qualified for the course and after successful completion of Pre - command assessment training course.

All through this training, it is very important to pass the knowledge and experience to the candidate rather than checking him. (I.e. the candidate should never feel that he is being checked or tested, as he should have passed this stage during his Command Assessment). So, all through the course the instructor should be always open minded for discussions with the candidate.

**Prerequisite.**

- The course is predicated on the fact that the trainee has successfully completed the command upgrade ground training.
- F/O's who fulfilled the requirement (refer to OM" A" 5.6.2)

**Training Location.**

Training shall be conducted at any ECAA approved training center, such as Egypt Air Training Center in Cairo and/or others.

**Training Aids.**

- Full Flight Simulator.

**Methods of Instruction.**

- Oral.
- Briefings.
- De-briefings.

**Curriculum.**

| A320 | PF | PM |
| --- | --- | --- |
| **FFS hrs.** | 12 | 12 |
| **Evaluation** | 2 | - |
| **ZFT** | 2 | - |
| **Total hrs.** | **16** | **12** |

**Course Layout.**

**Full Flight Simulator:**

- Familiarization
- Systems.
- Proficiency check.

**Aircraft:**

- Approaches
- Maneuvers.
- Proficiency check.
- ECAA type rating.

**Notes**

- Any extension beyond simulator assigned sessions can be extended to a limit of 2 sessions during Upgrade training without a training committee, but just by a special approval from the Training Manager.
- In case of a trainee failure to finish training in the extended sessions mentioned above, a training committee shall be formed by the Training Manager to decide the remedial action for the trainee based on case by case basis and Flight Crew position.
- The training committee will decide either to terminate the training or extend the training sessions.
- In case the committee approved to extend the training, the maximum extension sessions allowed are 2 sessions, and in case of trainee failure during these two extended sessions, training shall be terminated.

### 5.12.4 Simulator Training.

(Ref. command upgrades LOFT training)

- Make best advantage of Line Oriented Flight Training during simulator.
- Make Line Oriented Flight Training scenarios as close as possible to real life, especially with regards to airports and routes so as the candidate is to concentrate more on CRM development and decision making rather than navigating through new airports.
- Give enough briefing time before sessions to avoid rushing through nothing, and give all the time needed after the sessions in open discussion atmosphere, since this is where candidate will really polish up his command skills and knowledge.
- Cockpit discipline should be emphasized up and any bad habits should be cleared out.
- During all sessions SOP should be conducted literally, so as to permit the standard, and discipline.
- In the first two sessions concentrate on manual flying, for candidate to get used to flying from left seat.
- During Line Oriented Flight Training, utilize cockpit automation to its best.
- During most approaches, all through sessions make the flying manual, unless the exercise requires auto flying to improve skills.
- During approaches, increase the No. of raw data approaches, to improve cockpit instruments scanning and skills.
- Communication with Cabin Chief and passengers should be stressed upon, so as to make it nature during his career, to improve the quality of his command ship.
- Any points with regards to Airman Ship should be stressed upon.

The attached syllabus is designed to upgrade A-320 type qualified first officer from Second in command to pilot in command. Pilots undergoing this training will have completed both ground and flight Pre-Command Training.

All items of the syllabus should be completed

It is not part of Nesma Airlines training policy to deliberately introduce multiple failures that could overload the flight crew. Simple system failure and abnormalities should therefore be introduced at appropriate times during each session. The candidate’s ability to recognize and analyze the abnormality, take correct action and the intelligent use of the appropriate *ECAM* action backed up with use of *QRH* written checklist when applicable. Should be assessed.

**Objectives of the course.**

The objective of this course is to prepare the trainees to safely, knowledgeably and effectively pilot the A320 at type rating proficiency from left hand seat according to Airbus task sharing philosophy.

### 5.12.5 Base Training / Zero Flight Time.

Following satisfactory completion of the proficiency check, the trainee shall be ready to attend the base training.
Base training shall be accomplished on simulator A320 aircraft
After satisfactory completion of this phase, the trainee shall proceed to the next phase.

### 5.12.6 Line Training.

Throughout the line, training the Instructor pilot will occupy the RHS and be legal commander of the aircraft. However, the command trainee will make all command decisions and aircraft operations under the guidance of the Instructor pilot.

A minimum of 40 sectors will be completed during 100 flying hours.

The command trainee should be given every opportunity of checking all relevant documents as if he was the commander. However, the Instructor pilot will cross check all documents and when satisfied as to their correctness the Instructor pilot will sign them accordingly.

On completion of flight, training sectors command *LHS* training a progress evaluation of the command candidate will be conducted by one of the following:

- Chief pilot.
- A-320 designated examiner.

The progress evaluation (PE) will BE AFTER 40 hrs. Consist of the command in the *LHS*, and ON the *RHS* for the purpose of the evaluation. The *PE* will consist of a minimum of 2 sectors each in excess of 2 hours.

The progress evaluation will be reported in the normal way within the command candidate's line training file. However, the sector number and the progress report will be annotated "Progress Evaluation" and not to be numbered.

On satisfactory completion of the progress evaluation, the command trainee proceeds to complete min number of 30 sectors &100 hrs.

An unsatisfactory progress evaluation would include a recommendation for additional training and/or interview and/or possible termination.

Final command check - On completion of a minimum of 40 sectors & 100 hrs. (which includes the *PE* sectors) a final check will be conducted. This will consist of a minimum of 2 sectors each in excess of 2 hours as a PF & PM.

Route Airfields - The command candidate's line training is to incorporate landing at all the usable domestic airfields and not less than 80% of the international airfields listed on Nesma Airlines route structure.

The command candidate's Line training (IOE) shall include a program for the flight crew members to be qualified to operate in areas, on routes or route segments and into the airports to be used in operations, this program include ground training and simulator or flight training terrain and minimum safe altitudes;

1. seasonal meteorological conditions;
2. meteorological, communication and air traffic facilities, services and procedures;
3. search and rescue procedures;
4. navigational facilities and procedures;
5. procedures applicable to flight paths over heavily populated areas and areas of high air traffic density;
6. Airport obstructions, physical layout, lighting, approach aids and arrival, departure, holding and instrument approach procedures and applicable operating minima.
7. Terrain & MSA

The command candidate's line training must incorporate the landing at all the airfields with reusable length of less than 2500m that are listed on Nesma Airlines route structure.

During the line training Nesma Airlines Training Department shall ensure pilot flight crew members demonstrate knowledge of the operations approved as part of Nesma Airlines (AOC) and according to (PRO-ABN-01, PRO-NOR-SOP)

The command candidate's line training shall demonstrate the knowledge of the operation approved as part of the Air Operator Certificate (AOC) (Opes. Specs. Ground Training Ref. Chapter 4) and according to (PRO-ABN-01, PRO-NOR-SOP), to include the following items

1. Approaches authorized by Authority;
2. Ceiling and visibility requirements for takeoff, approach and landing;
3. Allowance for inoperative ground components;
4. Wind limitation (crosswind, headwind and tailwind)

## 5.13 Volcanic Ash Training.

**Objective.**

The objective of this training is to train and evaluate all Flight Crew operating in airports having a volcanic ash eruption and shall be integrated during initial and recurrent training once every 36 months.

**Prerequisite**

This training is required for all **Nesma Airlines** Flight Crew.

**Training Location.**

Nesma Airlines classroom / Nesma Airlines Operations and the relevant simulator.

**Training Aids.**

- Simulator.
- Aircraft.

**Simulator Items.**

1- **Ground Operation on Airport Covered with Ash or Dust.**
   - Briefing.
   - Preliminary cockpit preparation.
   - Exterior inspection.
   - Engine start.
   - Taxi.
   - T/O.
   - Landing.

2- **Briefing on Securing the Aircraft in Volcanic ASH.**

**Training Location**

- Nesma Airlines classroom.
- ECAA approved training center.
- Distance learning

**Methods of Instruction**

- Briefing.
- Demonstration.
- Observation.
- De-Briefing.

## 5.14. PBN Training

***(Ref. ECAR 91.16)***

**Objective.**

The objective of this course is to insure the competence of Nesma Airlines flight crew member to safely perform an automatic approach and manual landing using P-RNAV with normal and abnormal aircraft system operation, subject to ECAA approval and limitations contained in Nesma Airline sops-specs.

P-RNAV is part of Nesma Airlines training program which consists of RNAV (RNP1+ RNP5)

- STARS.
- P-RNAV (RNP1+ RNP5) approaches.

The P-RNAV is integrated in the Recurrent Training and Proficiency check form.

**Prerequisite.**

This training is designed for crewmembers who are currently qualified captains and first officers of Nesma Airlines.

**Training Location.**

Training shall be conducted at any ECAA approved training center such as Egypt Air training center and/or others.

**Training Aids**

Training aids used in this course should be full flight simulator.

**Methods of instructions**

- Briefing
- Demonstration
- Procedural Drills
- Critic

**Course Layout.**

Full Flight Simulator.

1. **Normal operation**

**A.** RNAV (RNP1) briefing, verification.
**B.** Accuracy requirements
**C.** FMS setup and cross-checking procedure
**D.** RNAV (RNP1) SID.
**E.** Arrival briefing.
**F.** Accuracy requirements.
**G.** FMS setup and cross-checking procedure
**H.** RNAV star (RNP1)

**Approach.**

- Holding patterns to a manual termination.
- Holding patterns to a manual altitude.
- Holding patterns to a fix.
- Holding patterns to Constance radiance to a fix.
- A minimum of three departures and three arrivals using RNAV and RNP1.

2. **Visual Segment Demo.**

**a.** Crosswind and standard callouts
**b.** System Failure and downgrading procedure.

## 5.15. Pilot Incapacitation.

**Objective.**

The objective of this training is to train all crewmembers operating Nesma Airlines aircraft the procedure to handle any flight crew incapacitation in all phases of the flight.

**Training Location.**

A320 simulator.

**Training Aids.**

- Briefing.
- Simulator (to be introduced as an item during) :-
  - Type Qualification
  - Transition
  - Upgrade to PIC
  - Re-Qualification
  - Re-Current

**Simulator Items.**

- Flight crew incapacitation during Takeoff.
- Flight crew incapacitation during Departure.
- Flight crew incapacitation during Cruse.
- Flight crew incapacitation during Landing.

### 5.16. Upset prevention and recovery training (UPRT)

Refer to Appendix I

## 5.17. Adverse weather operations.

***(Ref. ECAR 121.404)***

**Objectives.**

This course is intended to ensure that all crewmembers receive the required knowledge to operate the aircraft according to recommended procedures in.

- Anti-ice/de-ice policies and procedures;
- Contaminated runway operations;
- Thunderstorm avoidance;
- Flight in severe turbulence.
- Cold weather operations;
- Hot weather operations;
- High altitude airports;
- Operations near volcanic ash;

**Prerequisite.**

Crewmembers attending initial, transition, difference, upgrade and recurrent training courses.

**Recurrent Training.**

Part of annual simulator check.

**Training Location.**

A320 simulator.

**Training aids.**

- Briefing.
- Simulator (to be introduced as an item during the recurrent training).

**Curriculum.**

- Aircraft preparation in adverse weather.
- Correct procedure for deicing Operations in icing conditions.
- Performance considerations in cold weather conditions.
- Altimeter Corrections.
- Contaminated pavement aircraft handling techniques.
- Recognition of conditions requiring the use of aircraft anti icing systems
- Use of weather radar
- Performance considerations in “hot and high” conditions
- Effect of high TAS
- Recognition of conditions requiring the use of hot weather or high elevation procedures
- Turbulence penetration speed/Mach, actions and handling consequences.
- Flight in turbulence on FBW aircraft
- Air mass characteristics leading to possible severe turbulence.
- Use of documentation: temperature and wind gradient on computer flight plan.

## 5.18. Controlled Flight Into Terrain (CFIT).

**Objectives.**

This course is intended to ensure that all crewmembers receive the required knowledge for the terrain awareness procedures, including GPWS/EGPWS alerts and the avoidance of Controlled Flight into Terrain (CFIT).

- To alert flight crews to the factors this may cause CFIT.
- To ensure horizontal and vertical situation awareness is maintained at all times.
- To provide crews with an adequate knowledge of the capabilities and limitations of the GPWS/EGPWS on their aircraft.
- To ensure they are proficient in performing the terrain avoidance maneuver required in response to a GPWS/EGPWS warning.

**Prerequisite.**

Crewmembers attending initial, transition, difference, upgrade and recurrent training courses.

**Recurrent Training.**

Part of annual simulator check.

**Training Location.**

A320 simulator.

**Training aids.**

- Briefing.
- Simulator (to be introduced as an item during the recurrent training).

**Curriculum.**

- Factors that contribute to CFIT
- Immediate reaction.
- GPWS/EGPWS review
- Reaction adapted to type of warning

## 5.19. Traffic Alert and Collision Avoidance System (TCAS).

**Objectives.**

This course is intended to ensure that all crewmembers receive the required knowledge for the TCAS system principle and procedures.

- To Understand the system concept
- Conflict Resolution Principles
- To perform the operational procedures and avoid collision

**Prerequisite.**

Crewmembers attending initial, transition, difference, upgrade and recurrent training courses.

**Recurrent Training.**

Part of annual route and simulator check.

**Training Location.**

A320 Simulator.

**Training aids.**

- Lectures (standard classroom).
- Hand out reading materials.

**Curriculum.**

- General system description
- Airspace boundaries
- Intruders classifications and symbols
- TCAS alerts; Advisories and Aural messages
- Basic components
- Inhibitions
- TCAS procedures and alert responses;
- TCAS case studies or scenarios.

## 5.20. Reduced Vertical Separation Minima (RVSM).

**Objectives.**

This course is intended to ensure that all crewmembers receive the required knowledge for the RVSM airspace definition and procedures.

**Prerequisite.**

Crewmembers attending initial, transition and difference training courses.

**Recurrent Training.**

Part of annual route check. Training and evaluation are applicable to all pilot crew members.

**Training Location.**

Training will be conducted at Nesma Airlines aircrafts.

**Training aids.**

- Briefing.
- Hand out reading materials.

**Curriculum.**

1- Introduction.
2- Definitions.
3- Applicable regulations.
4- A320 certification.
5- Aircraft system performance.
6- RVSM Required equipment.
7- MEL.
8- RVSM Approval.
9- Nesma Airlines A/C status.
10- Operation procedure.
11- A/C release for RVSM operation.
12- Contingency procedures after entering RVSM airspace.
13- (PRO-SPO-50).

## 5.21 Low Visibility Training

**Objective**

The objective of this course is to train the crewmember to safely operate the aircraft during low visibility taxiing and takeoff conditions subject to the ECAA approval and limitations contained in Nesma Airlines Ops specs.
Low visibility taxiing and takeoff training is a part of Nesma Airlines low visibility training program, which consist of:

- Low Visibility Taxiing
- Low Visibility Takeoff

However, each of the above training programs could be conducted separately. The low visibility taxiing and takeoff training is integrated in the recurrent training and proficiency check programs.

**Prerequisite**

This course is predicated on the trainee being an Nesma Airlines type rated flight deck crewmember.

**Training Location**

Training will be conducted by Nesma Airlines at the Flight Operations Training Center in Cairo or at any approved training center abroad.

**Training Aids**

Full flight simulator.

**Methods of Instruction**

Briefings

- Demonstration
- Procedural Drills.

**Curriculum**

**Subject**

- Simulator briefing
- Full Flight Simulator

**Course Layout**

**a) Simulator Briefing**

1. Regulation requirements and limitations to operate at lower T.O minima.
2. Crew co-ordination and planning.
3. Definition of critical and sensitive areas.
4. Required ground-based visual aids (such as stop bars, taxi holding position lights).
5. Utilization of ILS Localizer beam as an electronic center line guidance.
6. Requirements for RVR measuring equipment's.
7. Takeoff alternate requirements, as specified in Nesma Airlines flight operations manual.

**b) Full Flight Simulator detail**

***(150/200m RVR for category C/D aircrafts respectively)***

1. Cockpit preflight and normal procedures.
2. Low Visibility takeoff briefing including crew- co-ordination.
3. Implementation of low visibility taxiing with emphasis on preventing RWY incursion.
4. Crosswind takeoff with loss of visual cues before and/or after 100 Knots.
5. Engine failure at v1
6. Rejected takeoff.

## 5.22 CAT II

**Objective**

The objective of this course is to ensure the competence of Nesma Airlines flight crew to safely perform automatic or manual landing in actual CAT II weather minima with normal and abnormal aircraft system operation. Subject to the ECAA approval and limitations contained in Nesma Airlines OPS.

CAT II training is a part of Nesma Airlines low visibility training program, which consist of:

- Low Visibility Taxiing
- Low Visibility Takeoff
- CAT II.

However, each of the above training programs could be conducted separately. The CAT II training is integrated in the recurrent training and proficiency check programs.

**Prerequisite**

This training is designed for crewmembers that are currently qualified Captains and First Officers on Nesma Airlines aircrafts with a minimum of 300 flying hours experience on type.

Instructor pilots are not required to fulfill the flying hours requirements.

**Training Location**

Training will be conducted by Nesma Airlines at the Flight Operations Training Center in Cairo or at any approved training center abroad.

**Training Aids**

Full flight simulator

**Methods of Instruction**

- Briefings
- Demonstration
- Procedural Drills.
- Critique.

**Course Layout.**

- Briefing 1.30 HRS
- Simulator 1.00 HRS
- P.C 1.00 HRS (150/200m RVR for category C/D aircrafts respectively)

**1)** LV Taxiing and L.V.T.O
- Low Visibility Taxiing and takeoff briefing
- Taxiing at RVR (150/200m RVR)
- Low Visibility Takeoffs (150/200m RVR)
- X Wind with loss of visual cues at 100 Kts.
- With simulated engine failure at V1
- Rejected T.O with an engine failure before V1.

**2)** Visual Segment Demo
- Visual segment

**a)** CAT II Registered Minima (150' & RVR 500 m)(special Authorization for 6 months)
**b)** CAT II Minima (100' & RVR 300 m)
**c)** X Wind and standard calls auto-land demo

**3)** Incapacitation
- CM1 incapacitation below 1000' & above DH
- F/O G.A when CM1 incapacitation.

**4)** System Failure
<u>Radio Failure</u>
- ILS Transmitter failure at 200'.
- ILS Receiver failure.

<u>Aircraft system failure</u>
- Standby horizon failure (reset above 1000')
- App. With one A/T, remaining A/T fails at 500'
- IR or A/P failure (One AlP Approach)
- One RA failure-remaining RA's fails at 200'-G.A
- All IR's failure (G.A on standby instruments)
- Eng. Failure above 100' (One Eng. inop. G.A), followed by one Eng. - CAT II App. and Landing
- Eng. Failure below 100'-one engine inop. Auto or manual landing
- Auto-approach-A/P failure at 80'-manual landing
- Flare mode failure-manual landing at 80'.

## 5.23 CCQ A330 to A320

**Objectives**

The A330 to A320/A319 CCQ course provides the training required to achieve an A320/A319 type rating for those pilots already currently rated experienced in operating the aircraft and well versed in A330 systems integration and normal/abnormal, emergency procedures

**Prerequisite**

Pilot already A330 type rated. Pilot experienced in operating the aircraft for at least 6 months and 300 hours.

**Course Layout**

**(a) Normal / abnormal operation – 3 sessions**
Having studied system differences during phase 1, trainees study the integration of those systems and subsequent procedures as well as aircraft handling in normal situations.

Training is done in the Full Flight simulator:

**FFS: 6 hrs PF+ 6 hrs PNF**
Each session is preceded by a briefing and followed by a debriefing of one hour and half each.

**(b) PC**

The crew will be evaluated during 1 FFS session (2 hrs PF + 2 hrs PNF).

**(c) Base Training - 2 Hours**

This normally consists of 2 hours up to proficiency. Basic circuit maneuvers are carried out in order to confirm the standard of the handling already seen in the simulator and 2 Hours of RHS if necessary.

## 5.24 CCQ A340 to A320

**Objectives**

The A340 to A320/A319 CCQ course provides the training required to achieve an A320/A319 type rating for those pilots already currently rated experienced in operating the aircraft and well versed in A340 systems integration and normal/abnormal, emergency procedures.

**Prerequisite**

Pilot already A340 type rated. Pilot experienced in operating the aircraft for at least 6 months and 300 hours.

**Course layout**

**(a) Normal / Abnormal operation – 3 sessions**

Having studied system differences during phase 1, trainees study the integration of those systems and subsequent procedures as well as aircraft handling in normal situations.
Training is done in the Full Flight simulator:
**FFS: 6 hrs PF+6 hrs PNF**
Each session is preceded by a briefing and followed by a debriefing of one hour each.

**(b) PC**
The crew will be evaluated during 1 FFS session (2 hrs PF + 2 hrs PNF).

**(c) Base Training -2 Hours**
This normally consists of 2 Hours up to proficiency. Basic circuit maneuvers are carried out in order to confirm the standard of the handling already seen in the simulator and 2 Hours of RHS if necessary.

**THIS PAGE INTENTIONALLY LEFT BLANK**

# Contents


**CHAPTER 6 Nesma Airlines E-Learning System** ........ 2
6.1 Preamble ........ 2
6.2 Learning Management System (LMS) ........ 2
6.3 Definitions ........ 2
6.4 Scope ........ 3
6.5 System Description ........ 3
6.6 Administration ........ 3
6.6.1 System Administrator ........ 3
6.6.2 Duties and Responsibilities: ........ 3
6.6.3 Administration Outline ........ 4
6.7 Training Material ........ 4
6.8 Security and Backup ........ 4
6.8.1 System Security ........ 4
6.8.2 System Backup ........ 5
6.9 Contingency Plan ........ 5
6.10 FlyCo System Orientation ........ 5
6.11 E-learning Monitoring and Continual Improvement Process ........ 5
6.12 Exam Failure Policy ........ 6

# CHAPTER 6 Nesma Airlines E-Learning System.

## 6.1 Preamble

E-Learning is a technique of learning remotely without being in regular face-to-face contact with an instructor in the classroom. This is carried out through the internet using commercial tools.
Nesma Airlines adopt E-learning system as part of its training program for both cockpit and cabin crews. It is the responsibility of Nesma Airlines to ensure the compliance of its E-learning system to training needs and civil aviation regulations.

## 6.2 Learning Management System (LMS)

It is a software application that automates the administration, documentation, tracking, reporting and delivery of online educational courses or training programs.

It helps the instructor deliver material to the students, administer tests and other assignments, track student progress, determine due dates and manage record keeping. Through LMS-based applications, an administrator can manage instructional content, handle student registration, track and assess student work.

A robust LMS system provides the following:

- Centralized and automated administration
- Supports portability
- Personalize content and enables knowledge reuse
- Uniquely identifies users and securely prevents fraudulent tricks

LMS is widely used technique for distance learning in many universities around the world and it is the most used methodology in aviation E-learning.

## 6.3 Definitions

**E-learning** is a remote learning technique that uses technology to provide training material instead of the regular face-to-face contact between an instructor and a crew member in the class room. It is interchangeable with Distance Learning and Online Learning.
**FlyCo Training Solutions:** is an LMS-based online training system from FlyCo Global. It may be referred to as FlyCo System or E-learning System.
**FlyCo Global:** is the software provider of FlyCo Training Solutions. It may be referred to as Service Provider.
**Web portal:** is the web interface of the E-learning system
**Content Management:** the creation and upload of a digital content to the E-learning system. This includes content update and tracking of users' receipt of content.
**Mobile application:** is the interface of FlyCo learning system through any mobile device. This includes iOS based devices and/or Android devices.
**Secure Sockets Layer (SSL):** is the standard security technology for establishing an encrypted link between a web server and a browser. This link ensures that all data passed between the web server and browsers remain private and integral.

## 6.4 Scope

Nesma Airlines shall use an internationally renowned commercial package FlyCo System as a platform for its E-learning system.

The use of E-learning system will include both cockpit and cabin crews and shall be limited to recurrent courses only. Initial courses and transition courses shall be carried out in approved classrooms.

## 6.5 System Description

FlyCo training system shall be available through web portal or mobile applications. Access to FlyCo training system shall meet the security requirements stated in section 6.8.1 System Security at all times.

## 6.6 Administration

E-learning system shall be administered in a way that always allows uninterrupted access to all users. Nesma Airlines is committed to following the best practices that ensure system security and prevent fraudulent workarounds in competency assessment.

The contract between Nesma Airlines and FlyCo Global includes terms and conditions that govern the updates, control and security of the system.

### 6.6.1 System Administrator

Nesma Airlines shall use the E-learning system for both cockpit and cabin crews. Online courses shall be limited to recurrent courses only.
In this respect, the administrators are:

- Operations training manager shall be the system administrator for cockpit crew training (Refer to OM-A, Volume 1, 1.3.5 for qualifications and job description)
- Cabin crew training in charge shall be administrator for cabin crew training (Refer to CCM 1.1.2.3 for qualifications and job description).

System administrator shall assign administrating privilege to qualified personnel within the department to help track users' progress, follow up exam due dates and manage record keeping.

### 6.6.2 Duties and Responsibilities:

Along with the duties and responsibilities assigned to system administrators as part of their job description as declared in OM-A chapter 1 and CCM chapter 1 their duties and responsibilities hereinafter include:

- Ensure system security that prevents fraudulent practices
- Ensure adequacy of training materials and compliance with regulations
- Track users progress and assure training due dates are met
- Manage record keeping and archive results
- Ensure training materials are up-to-date and complying with regulations

- Administer content management and distribution of uploaded documents/videos to concerned personnel.
- Customize training materials and review changes in accordance with regulations and company policy.
- Handle user registration (Enable/Disable, set password, etc.)
- Hold accountability before CAA and IOSA inspectors

### 6.6.3 Administration Outline

Nesma Airlines shall be responsible before ECAA and other inspection bodies for the following outline in administering their E-learning system. System administrators shall be responsible for providing evidence that substantiates the application of this outline.

- Every user shall only have three exam attempts
- Pass grade shall not be less than 70%
- Users shall be notified 90 days prior to expiration of their certificate
- Failure to pass exams in three attempts shall be reported to ECAA using official correspondence.
- Failure to pass exams before due date shall be reported to ECAA using official correspondence indicating alternate solution.
- Recurrent security courses are exempted from these procedures. They shall be assigned two weeks only before the expiration of the old certificate, pass grade shall not be less than 80% and a user is entitled to two exam attempts.

## 6.7 Training Material

Nesma Airlines shall be responsible for regularly updating the courseware in accordance with the updates from the civil aviation authority throughout the year.

FLYCO system allows the customization of training materials, addition of supplementary materials and user-defined syllabus. This would always allow the adherence to regulations regarding the compliance of training materials.

## 6.8 Security and Backup

Nesma Airlines shall ensure the E-learning system is secure against alteration of data, fraudulent actions or system tweaking to obtain preferential results. Moreover, periodic backups shall be retained in secure and safe servers to prevent data loss in case of system failure.

### 6.8.1 System Security

As per contract terms between Nesma Airlines and FlyCo Global, E-learning system shall be hosted on a secure cloud-based web server that maintain security and data protection in the cloud.

The following security measures shall always be met:

- Every user is given a unique account ID that is under the control of the administrators

- Administrators shall have access to user accounts that allow the administrators to scrutinize and examine user activity.
- Administrators shall have access to users' progress reports to track any malicious or fraudulent activities.
- Established connections through web portal or mobile applications shall be encrypted
- Log-in data shall be retained with unique ID
- Nesma Airlines shall always ensure the cloud-based web servers meet the highest security and integrity standards

### 6.8.2 System Backup

As part of Nesma Airlines' commitment to archiving and maintaining record-keeping, periodic backups of the E-learning system shall be retained to prevent data loss.

## 6.9 Contingency Plan

Nesma Airlines shall revert to classroom training if the E-learning system is anticipated to be down for more than five calendar days. In such case, ECAA shall be notified with the details of the failure and the status of trainees that are approaching exams due dates.

## 6.10 FlyCo System Orientation

FlyCo training solution provides a user-friendly interface that is easy to use and grasp. However, E-learning system administrators shall ensure all users are notified and briefed about how to use the E-learning system

## 6.11 E-learning Monitoring and Continual Improvement Process

All training materials are subject to continual scrutiny to ensure the fulfillment of regulatory requirement and Nesma Airlines training standards. E-learning materials are monitored through the following means:

1- Reporting through training.admin@nesmaairlines.com
2- Annual review through the TRC committee
3- Through official communications after revision of local regulations or other standards
4- SMS and security courses are reviewed annually by the safety department and security department respectively.

Following the reporting of anomaly or outdated pieces of information, Nesma Airlines training department contacts the service provider (FlyCo Global) who has exclusive access to changing courses contents. Procedures to change course content are as follows:

1- Nesma Airlines sends FlyCo a request to change course content (slide, chapter, etc.)
2- Once the request is approved by the service provider the change is carried out
3- After notified by the completion change, training manager reviews the new materials. The update is not published to flight crewmembers unless approved by the training manager.
4- Changes to SMS and security courses shall be subject to review and approval from Safety and Security departments.

### 6.12 Exam Failure Policy

Should a candidate fail during the online quiz, the following shall apply:

1) After the first failure, the candidate may retake the exam.
2) After the second failure, the candidate shall meet with the Training Manager before allowing a third attempt.
3) After the third failure, a review by the Training Manager shall be completed before deciding on the course of action. The review shall determine the reasons for the failure and possible corrective actions. Generally, the possible corrective actions are:
   - Allow the candidate to retake the online course and re-sit the online exam, or
   - Schedule a classroom course with an instructor before allowing the candidate to retake the exam.

Further failure requires a board review meeting to decide on the appropriate course of action.

## Contents


**CHAPTER 7 DISPATCH TRAINING.** ... 2
7.1 Basic Indoctrination. ... 3
7.2. Flight Dispatcher Initial Training. ... 4
7.3. Flight Dispatcher Transition Training. ... 6
7.4. Flight Dispatcher Recurrent Training. ... 8
7.5. SMS Course (Safety Management System Course) ... 10
7.6 ETOPS Procedure ... 10
7.7 Cargo Operational Procedure ... 10
7.8 Dangerous Goods Operational Procedure ... 10
7.9 Different Ground course ... 11
7.10 CRM Training. ... 13

# CHAPTER 7 DISPATCH TRAINING.

**Flight Dispatcher Training.**

**General.**

The purpose of this chapter is to detail the specific Training courses administered by the Training department.

The Trainee must obtain a minimum of 70% on all examinations and demonstrate the required skills and knowledge to satisfactory complete a course.

Instructors to ensure the Course Material of Dispatch Training will be reviewed, evaluated and amended when changes in ECAR or Company polices take place and it will be checked annually to ensure continuous improvement and effectiveness of the course material.

This section covers all ground and flight training programs, which include all initial, recurrent, transition, requalification in accordance with ECAR 121.422 and Operational Control and Dispatch Manual.

All ground and flight training and examination programs are approved by ECAA.

All delegated instructors, examiners, (whether employed or subcontracted) are trained, qualified and standardized for their assigned tasks, and approved by Nesma Airlines and by ECAA when required.

## 7.1 Basic Indoctrination.

**Objective.**

The objective of this course is to familiarize the trainee with the duties and responsibilities of Nesma Airlines dispatcher in relation to international, national and company regulations, operations specifications and company manuals.

**Prerequisite.**

Flight dispatcher attending initial, transition and Re-qualification training courses. Holding an ECAA flight dispatcher license and has no past experience with Nesma Airlines.

**Course Duration.**

- 40 Training hours for a newly hired flight dispatcher with no operational or airline experience.
- 20 Training hours for a newly hired flight dispatcher with operational or airline experience.

**Training Location.**

Training shall be conducted by Nesma Airlines trainers in the company training classrooms.

**Training Aids.**

- Visual aids.
- Data show.
- Related publications.

**Methods of Instruction.**

- Lecture.
- Demonstration.
- Class participation.
- Follow-up reading material.

**Curriculum.**

| | |
|---|---|
| Duties and Responsibilities. | 05 hrs. |
| Office Documentation. | 01 hrs. |
| Regulations and company procedures. | 05 hrs. |
| Emergency procedures & notification | 01 hrs. |
| Relationship between the flight dispatcher, crew member & ATC. | 01 hrs. |
| Meteorology. | 06 hrs. |
| Flight Operations Manual. | 06 hrs. |
| Planning and performance (general). | 12 hrs. |
| Safety Management System (SMS) | 02 hrs. |
| Review | 01 hrs. |
| Total | 40 hrs. |

## 7.2. Flight Dispatcher Initial Training.

**Objective.**

The objective of this course is to train the candidate in accordance with the applicable ECAA regulations. This course will qualify the trainee for assignments as Flight Dispatcher.

**Prerequisite.**

This course is predicated on the fact that the trainee is holding a valid ECAA Flight Dispatcher License.
The trainee will have completed basic indoctrination course to be eligible to get the a/c type/s license endorsed despite the examination results.

**Course Duration**

- 40 HRS

**Training Location.**

Training shall be conducted by any approved instructor and approved training center or classroom.

**Training Aids.**

- Visual aids. --- Data show. --- Relevant publications.

**Methods of Instruction.**

- Lecture --- Demonstration --- Class participation
- Follow-up reading material --- Classroom drill.

**Curriculum:**

1. **General Subject** **17 Hrs.**

- Contents of the Operations Manual
- Law and regulations;
- Communication
- Meteorology
- NOTAM
- Navigation and Navigational publications
- Joint Dispatcher/pilot responsibilities
- Characteristics of appropriate airports and special airports
- De-icing/anti-icing procedures
- Air traffic control and air traffic management
- Flight monitoring;

2. **For Aircraft Type** **17 Hrs.**
   - Aircraft systems and Equipment
   - MEL/CDL;
   - Weight and balance
   - Aircraft performance and Limitations
   - Flight planning including fuel planning

3. **Dispatch Security and Emergency procedures** **06 Hrs.** .

**Total Course hours** **40 Hrs.**

Detailed Subjects for above curriculum are included in the Dispatch Training Course Material in accordance with ECARS 121.422 and the applicable competencies included in Nesma Airlines Flight Dispatch competency check form.
A competency check must be given by the airline training personnel to satisfy knowledge and ability gained.

## 7.3. Flight Dispatcher Transition Training.

**Objective.**

The objective of this course is to qualify the Flight Dispatchers for equipment type which they were not previously authorized to dispatch.

**Prerequisite.**

This course is predicated on the fact that the trainee is holding a valid ECAA Flight Dispatcher License and is qualified as a flight dispatcher at the same group.

**Course Duration**

- 40 HRS

**Training Location.**

Training shall be conducted by Nesma Airlines trainers in the company training classrooms.

**Training Aids.**

- Visual aids. --- Data show. --- Relevant publications.

**Methods of Instruction.**

- Lecture --- Demonstration --- Class participation
- Follow-up reading material --- Classroom drill.

**Curriculum:**

1. **General Subject** **17 Hrs.**
   - Contents of the Operations Manual
   - Law and regulations;
   - Communication
   - Meteorology
   - NOTAM
   - Navigation and Navigational publications
   - Joint Dispatcher/pilot responsibilities
   - Characteristics of appropriate airports and special airports
   - De-icing/anti-icing procedures
   - Air traffic control and air traffic management
   - Flight monitoring;

**2. For Aircraft Type** **17 Hrs.**

- Aircraft systems and Equipment
- MEL/CDL;
- Weight and balance
- Aircraft performance and Limitations
- Flight planning including fuel planning

**3. Dispatch Security and Emergency procedures** **06 Hrs.** .

---

**Total Course hours** **40 Hrs.**

Detailed Subjects for above curriculum are included in the Dispatch Training Course Material in accordance with ECARS 121.422 and the applicable competencies included in Nesma Airlines Flight Dispatch competency check form.

A competency check must be given by the airline training personnel to satisfy knowledge and ability gained.

## 7.4. Flight Dispatcher Recurrent Training.

**(Every 12 calendar months)**

**Objective.**

The objective of this course is to ensure the continued competence of all Nesma Airlines Flight Dispatchers and to comply with the provisions of the regulations through the medium of annual or semi-annual recurrent training on subjects related to efficient and safe flight operations.

**Prerequisite.**

This course is designed for Flight Dispatchers who are currently qualified to dispatch Nesma Airlines aircraft.

**Course Duration**

- 20 HRS

**Training Location.**

Training shall be conducted by Nesma Airlines trainers in the company training classrooms.

**Training Aids.**

- Visual aids. --- Data show. --- Relevant publications.

**Methods of Instruction.**

- Lecture --- Demonstration --- Class participation
- Follow-up reading material --- Classroom drill.

**Curriculum:**

**1.General Subject** **9 Hrs.**

- Contents of the Operations Manual
- Law and regulations;
- Communication
- Meteorology
- NOTAM
- Navigation and Navigational publications
- Joint Dispatcher/pilot responsibilities
- Characteristics of appropriate airports and special airports
- De-icing/anti-icing procedures
- Air traffic control and air traffic management
- Flight monitoring;

**2. For Aircraft Type** **9 Hrs.**

- Aircraft systems and Equipment
- MEL/CDL;
- Weight and balance
- Aircraft performance and Limitations
- Flight planning including fuel planning

**3. Dispatch Security and Emergency procedures** **02 Hrs.** .

**Total Course hours** **20 Hrs.**

Detailed Subjects for above curriculum are included in the Dispatch Training Course Material in accordance with ECARS 121.422 and the applicable competencies included in Nesma Airlines Flight Dispatch competency check form.
A competency check must be given by the airline training personnel to satisfy knowledge and ability gained.

## 7.5. SMS Course (Safety Management System Course)

Objective:
This course is intended to ensure that all Crew Members, Dispatchers & All Nesma Airlines Staff receive the required knowledge to understand the requirements of a SMS. It covers all SMS relevant guidelines, contents, requirements and principles on a basic level appropriate to their operational role.

**Course Duration.**

- 8 hours for initial course provided by Egyptian Civil Aviation Authority Instructors.
- 6 hours for recurrent course Every 36 calendar months in accordance with SMS manual Chapter 4 ***(ECAR 121.427)***

**Training Location.**

Training will be conducted at Nesma Airlines Approved Classrooms at the company location in Cairo or Egypt Air Training Center.

**Training & Material**

Provided by Egyptian Civil Aviation Authority Instructors and will cover SMS elements that are appropriate for this level, as a minimum:

- SMS Overview
- SMS Components and Elements
- SMS Development and Implementation
- SMS Teamwork
- Human Error
- Developing a Safety Culture
- Case Studies
- Performance Monitoring

## 7.6 ETOPS Procedure

Such training not applicable for Nesma Airlines Dispatchers as Nesma Airlines not authorized for ETOPS operations in according with operations specifications.

## 7.7 Cargo Operational Procedure

Such training not applicable for Nesma Airlines Dispatchers in according Nesma Airlines type of operation specified on operations specifications.

## 7.8 Dangerous Goods Operational Procedure

Such training not applicable for Nesma Airlines Dispatchers as Nesma Airlines not authorized for carrying dangerous goods

## 7.9 Different Ground course

**Objective**

The objective of this course is to train the Flight dispatchers to be proficient in the operational theory and procedures related to the aircraft systems and equipment on a model of aircraft different from those on which he/she has previously been trained (A319/A320).

**Training location.**

Ground training course shall be conducted at one of the well-established training centers approved and certified by ECAA such as Egypt Air Training Center, and Nesma Airlines Approved classrooms.

**Course Duration.**

Training shall be 4 hours during 1 working day

**Training Methods.**

- Lectures.
- Class participation.
- E-learning System

**Training aids.**

- Visual Aids.
- Relevant Manuals.

**Curriculum.**

- A-320 Flight crew operating manual (GEN/DSC, PRO/LIM, FCB, QRH, PER).
- Power plant differences (limitations, performance).
- Different systems, equipment installed.

**Course Layout**

- Weights.
- Fuel quantities.
- Limitations.
- Dimensions.
- Speeds.
- Systems.
- Performance.
- Supplementary procedures

**Ground course**

| No. | Subject | Hours |
|---|---|---|
| **1** | **FCOM GEN/DSC –PRO/LIM/OEB/FCB - PERF:**<br>• Aircraft systems differences.<br>• Aircraft performance differences.<br>• Aircraft limitations differences.<br>• Aircraft loading limits and trimming.<br>• Fleet Modifications or Upgrades | **2** |
| **2** | **Power plant differences. (If applicable)**<br>• Description and components.<br>• Starting sequence and cycles.<br>• Limitations.<br>• Consumption and performance. | **2** |
| | **Total** | **4** |

## 7.10 CRM Training.

**(Ref. ECAR 121.419 (viii)**

**Objectives.**

This course is intended to ensure that all crew members / flight dispatchers receive adequate training regarding available resources, crew communication, human factor, human error and performance, situational awareness, proper team work.
Nesma Airlines will provide combined CRM training between flight crew and:

- Cabin crew;
- Flight dispatchers.

**Prerequisite.**

Crew members / Dispatchers attending initial, transition, difference, upgrade and recurrent training courses.

**Course Duration.**

- For initial training 16 hours during 2 working day.
- Recurrent training 16 hours during 2 working day every 36 calendar months, joint with Crew member at Nesma airlines approved classroom.

**Training Location.**

Training shall be conducted at any ECAA approved training center, such as Egypt Air Training Center in Cairo and/or others.

**Training aids.**

- Lectures (standard classroom).
- Video.
- Overhead projector + slides show.
- Hand out reading materials.

**Curriculum:**

- Introduction, general.
- Communication.
- Stress management.
- Human error, chain of error, error management (Human Factor).
- Human performance.
- Situation awareness.
- Teamwork, synergy and leadership.
- Standard operating procedures (operator's).
- CRM loop.
- CFIT (controlled flight into terrain).

**THIS PAGE INTENTIONALLY LEFT BLANK**

## Contents

CHAPTER 8 SIMULATOR EVALUATION POLICY ........ 2
8.1 Introduction. ........ 2
8.1.1 Training Devices ........ 2
8.2. Test required for simulator evaluation. ........ 3
8.2.1. Assessment ........ 3
8.2.2. Validation Tests. ........ 3
8.2.3. Functions and Subjective Tests. ........ 3
8.2.4. Minimum Serviceability Requirements. ........ 3
8.3. Comparison of Simulator Level by Different Regularity. ........ 4
8.4. Nesma Airlines requirements to approve a Flight Simulator for training. ........ 4
8.5 ECAA Requirements to Approve Flight Simulator ........ 4
Appendix A ........ 5
Appendix B ........ 19

# CHAPTER 8 SIMULATOR EVALUATION POLICY.

## 8.1 Introduction.

This section establishes the performance and documentation requirements for the evaluation of aircraft flight simulator used for training and checking of Nesma Airlines flight crew. Also, the functional description, maneuver and procedures approved for different simulator levels.

### 8.1.1 Training Devices

A Flight Training Device or Other Training Device may be provided to supplement the classroom training and enable students to practice and consolidate theoretical instruction.
The Approved Full Flight Simulators are compliant with international standards laid down by the JAA specifically JAR STD 1A. The target accreditation for all FFS devices operated by the Company is a minimum Level 'C' or optimally Level 'D' where the data package from the aircraft manufacturer supports it. Where this is not the case, the standard manufacturer's data package is used, and a differences course is provided. Simulators are subject to an annual check as specified by the Authority.
The Authority has approved the following simulators and training devices, located at the EGYPT AIR TRAING CENTER, for the purposes of carrying out pilot training and testing as detailed:

- A320-200 Full Flight Simulator (Level 'D')
    1. Pilot Transition Training
    2. Pilot Proficiency Checks
    3. Instrument Rating Checks
    4. All Weather Operations Training and Checking
    5. Pilot Recency Type Experience
    6. ETOPS Training
    7. Recurrent Training
    8. LOFT/LOS and LOE Training
    9. Procedures Training
    10. Technical Systems Training
    11. Technical Refresher Training
    12. Zero Flight Time Training

Additional simulator centers approved by the Authority are listed in ECAA.

## 8.2. Test required for simulator evaluation.

### 8.2.1. Assessment

The flight simulator must be assessed in those areas which are essential for completing the flight crew member training and checking process. The intent is to evaluate the simulator as objectively as possible. Pilot acceptance is also an important consideration.

### 8.2.2. Validation Tests.

Validation test are used to compare objectively simulator and the aircraft manufacturer's validation flight test data to ensure that they agree within a specified tolerance and normally conducted by highly qualified personnel of major civil aviation authorities such as the British CAA, FAA, and French DGCA.

### 8.2.3. Functions and Subjective Tests.

This test provides a basis for evaluating the simulator capability to perform over a typical training period and to verify its correct operation of the simulator. A type rated Instructor Pilot nominated by the Chief Pilot normally conducts this test.

### 8.2.4. Minimum Serviceability Requirements.

Minimum serviceability for conducting simulator training must not adversely affect training and/or checking.
Nesma Airlines shall require minimum serviceability requirements include any major malfunction such as simulator motion, visual systems, instrumentation that may affect the session plan even in training and/or examination. Less important malfunction will be judged by the instructor to continue or terminate the training.
Minimum serviceability for conducting simulator training must not adversely affect training and\or examination.
Simulator training shall not be conducted if one of the following items unserviceable:

- Fire escape Route.
- Vision (Forward or Side).
- Motion (Full Flight Simulator Only).
- Reliable Communication.
- Oxygen System.
- Instructor Seat.
- Instructor Panel (Any failure affecting training Syllabus).
- Flight Controls.
- Environmental & Weather Condition required by the training syllabus to be set for training purposes.
- Any system failure affecting simulator efficiency and training objective shall not be accepted by the Instructor.
- Any other simulator MEL item mentioned in the manufacture manual.

### 8.3. Comparison of Simulator Level by Different Regularity.

Each regularity authority uses a different grading system in evaluating simulators, for example:

| **Authority** | **FAA / JAA** | **British CAA** |
|---|---|---|
| Level | Level C | Level 3 |
| Level | Level D | Level 4 |

### 8.4. Nesma Airlines requirements to approve a Flight Simulator for training.

The Instructor Pilot / Check Airman shall conduct the tests and complete the forms of the function listed in Appendix A of this Chapter.
The simulator shall be evaluated in the following general areas:

1. Function check of all switches, indications, systems and equipment at all crewmember and instructor's stations.
2. Longitudinal and lateral directional response.
3. Performance evaluation of Take-off, Climb, Crouse, Descent, Approach and Landing.
4. All Weather Operations.
5. Proper operation and responses of the motion and visibility systems.

### 8.5 ECAA Requirements to Approve Flight Simulator

**8.5.1** The simulator approval certificate by the local and or other civil aviation authorities normally contains all types of training and checking approved that can be conducted.
**8.5.2** A copy of the simulator approval by the concerned civil aviation authority shall be submitted with the simulator approval application form to the ECAA.
**8.5.3 Nesma Airlines** shall designate experienced instructors to evaluate the technical status of the simulator periodically to ensure compliance with required qualification and performance standards.

## Appendix A

| | |
|---|---|
| I.P Name: | Signature: |
| A/C Type: | Engines: |
| Sim. Type: | Serial No.: |
| Sim. Level: | Original Approval: |
| Validation From: To: | Location: |

| ITEM | NA | S | US | NOTES |
|---|---|---|---|---|
| **1. FUNCTIONS AND MANOEUVRES** | | | | |
| **a) Preparation for flight** 1) Pre-flight. Accomplish a function check of all switches, indicators, systems and equipment at all crew members' and instructors' stations and determine that the flight check design and functions are identical to that of the aero plane simulated. | ☐ | ☐ | ☐ | |
| **b) Surface operations (pre-take-off)** | | | | |
| **1)** engine start | | | | |
| **i)** normal start | ☐ | ☐ | ☐ | |
| **ii)** alternate start procedures | | | | |
| **iii)** abnormal starts and shutdowns (Hot start, hung start, etc.) | ☐ | ☐ | ☐ | |
| **2)** Pushback/ power back | | | | |
| **3)** Taxi | | | | |
| **i)** thrust response | ☐ | ☐ | ☐ | |
| **ii)** power lever friction | | | | |
| **iii)** ground handling | | | | |
| **iv)** nose-wheel scuffing | | | | |
| **v)** brake operation (normal and alternate/ emergency) | | | | |
| **vi)** brake fade (if applicable) | | | | |
| **vii)** other | | | | |

| IP Name: …………………………......... | Signature: ………………………………. |
|---|---|

| ITEM | NA | S | US | NOTES |
|---|---|---|---|---|
| **c) Take-off** | | | | |
| **1)** normal take-off | | | | |
| **i)** Parameter relationships. | ☐ | ☐ | ☐ | |
| **ii)** Acceleration characteristics. | | | | |
| **iii)** Nose-wheel and rudder steering. | | | | |
| **iv)** Cross-wind (maximum demonstrated). | | | | |
| **v)** Special performance. | | | | |
| **vi)** Instrument take-off. | | | | |
| **vii)** Landing gear, wing flap, leading edge device operation. | | | | |
| **viii)** Other. | | | | |
| **2)** abnormal / emergency | ☐ | ☐ | ☐ | |
| **i)** Rejected take-off. | | | | |
| **ii)** Rejected special performance. | | | | |
| **iii)** With failure of most critical engine at most critical point along Take-off path (continued Take-off). | | | | |
| **iv)** With wind shear. | | | | |
| **v)** Flight control system failure modes. | | | | |
| **vi)** Other. | | | | |

| IP Name: …………………………….......... | Signature: ………………………………. |
|---|---|

| ITEM | NA | S | US | NOTES |
|---|---|---|---|---|
| **d) In-Flight operation** | | | | |
| **1)** Climb. | | | | |
| **i)** Normal. | ☐ | ☐ | ☐ | |
| **ii)** one engine inoperative | | | | |
| **iii)** Other. | | | | |
| **2)** Cruise | | | | |
| **i)** Performance characteristics (Speed vs. power). | ☐ | ☐ | ☐ | |
| **ii)** turns with / without spoilers (Speed brake) deployed. | | | | |
| **iii)** High altitude handling. | | | | |
| **iv)** High sped handling. | | | | |
| **v)** Mach tucks and trims, over speed warning. | | | | |
| **vi)** Normal and steep turns. | | | | |
| **vii)** Performance turns. | | | | |
| **viii)** approach to stalls, stall warning, buffet break (cruise, take-off, approach and landing configuration) | ☐ | ☐ | ☐ | |
| **ix)** high angle of attack maneuvers (cruise, take-off, approach and landing configuration) | | | | |
| **x)** In-flight engine shutdown and restart. | | | | |
| **xi)** maneuvering with one engine inoperative. | | | | |
| **xii)** specific flight characteristics. | | | | |

| IP Name: ……………………………......... | Signature: ………………………………. |
|---|---|

| ITEM | NA | S | US | NOTES |
|---|---|---|---|---|
| **e) Approaches**<br>**1)** non-precision approach and landing procedures<br>– NDB<br>– VOR, RNAV, TACAN<br>– DME ARC<br>– ILS/LOC/BC *<br>– Direction finding facility<br>– Surveillance radar.<br>**i)** Maneuvering with all engines operating.<br>**ii)** landing gear, operation of flaps and speed brake.<br>**iii)** all engines operating<br>**iv)** One or more engines inoperative.<br>**v)** Missed approach procedures.<br>– All engines operating.<br>– one or more engines inoperative (as applicable)<br>* ILS localizer/back course approaches are not included in PANS-OPS (DOC 8168). | ☐ | ☐ | ☐ | |

| IP Name: ……………………………......... | Signature: ………………………………. |
|---|---|

| ITEM | NA | S | US | NOTES |
|---|---|---|---|---|
| **2)** Precision approach and landing procedures<br>**i)** PAR<br>**ii)** ILS/MLS<br>– normal<br>– engine(s) inoperative<br>– Category I published approach<br>Manually controlled with and without flight director to 30 m (100 ft below) CAT I minima.<br>With cross-wind (maximum demonstrated). With wind-shear -Category II published approach<br>with generator failure<br>with 10 knot tail wind<br>with 10 knot cross-wind<br>one engine inoperative<br>**3)** Visual approach and landing<br>**i)** abnormal wing flaps /slats<br>**ii)** without glide slope guidance | ☐<br>☐ | ☐<br>☐ | ☐<br>☐ | |

| IP Name: …………………………......... | Signature: ………………………………. |
|---|---|

| ITEM | NA | S | US | NOTES |
|---|---|---|---|---|
| **f) Visual segment and landing**<br>**1)** normal<br>**i)** cross-wind (maximum demonstrated)<br>**ii)** From VFR traffic pattern.<br>**iii)** from non-precision approach<br>**Note:** Simulators with visual systems which permit completing a circling approach with applicable regulations maybe approved for that particular circling approach procedure. | □ | □ | □ | |
| **2)** Abnormal / Emergency<br>**i)** Engine inoperative.<br>**ii)** Rejected.<br>**iii)** With wind shear. with stand by (minimum) electrical hydraulic power<br>**iv)** With longitudinal trim malfunction.<br>**v)** With lateral-directional trim malfunction.<br>with loss of flight control power (manual Reversion).<br>with worst case failure of flight control system (most significant degradation of fly- by-wire system which is not extremely Improbable).<br>Other flight control system failure modes as Dictated by the training program<br>**vi)** other. | □ | □ | □ | |

| IP Name: …………………………….......... | Signature: ………………………………. |
|---|---|

| ITEM | NA | S | US | NOTES |
|---|---|---|---|---|
| **g) Ground Operations (post landing)**<br>**1)** Landing roll and taxi.<br>**i)** Spoiler operation.<br>**ii)** Reverse thrust operation.<br>**iii)** Directional control and ground handling, both with and without reverse thrust.<br>**iv)** Reduction of rudder effectiveness with increased reverse thrust (rear pod mounted engines).<br>brake and anti-skid operation with dry, wet and icy conditions<br>**v)** Brake operation.<br>**vi)** Other. | ☐ | ☐ | ☐ | |

| IP Name: …………………………….......... | Signature: ………………………………. |
|---|---|

| ITEM | NA | S | US | NOTES |
|---|---|---|---|---|
| **h) Any flight phases** | | | | |
| **1)** Aero plane and power plant systems operation<br>**i)** air conditioning<br>**ii)** anti-icing/ de-icing<br>**iii)** auxiliary power unit<br>**iv)** communications<br>**v)** electrical<br>**vi)** fire detection and suppression<br>**vii)** flaps<br>**viii)** flight controls<br>**ix)** fuel and oil<br>**x)** hydraulic<br>**xi)** landing gear<br>**xii)** oxygen<br>**xiii)** pneumatic<br>**xiv)** power plant<br>**xv)** Pressurization.<br>**xvi)** flight management system | ☐ | ☐ | ☐ | |
| **2)** Flight management and guidance systems.<br>**i)** airborne radar<br>**ii)** automatic landing aids<br>**iii)** autopilot<br>**iv)** collision avoidance systems<br>**v)** flight control computers<br>**vi)** flight display systems<br>**vii)** ground proximity warning systems<br>**viii)** head-up displays<br>**ix)** navigation systems<br>**x)** stall warning/avoidance<br>**xi)** stability and control augmentation<br>**xii)** wind shear avoidance equipment | ☐ | ☐ | ☐ | |
| **3)** Airborne procedures<br>**i)** holding<br>**ii)** air hazard avoidance<br>**iii)** wind shear | ☐ | ☐ | ☐ | |
| **4)** Engine shutdown and parking<br>**i)** engine and systems operation<br>**i)** parking brake operation | ☐ | ☐ | ☐ | |

| IP Name: ……………………………......... | Signature: ………………………………. |
|---|---|

| ITEM | NA | S | US | NOTES |
|---|---|---|---|---|
| **2. VISUAL SYSTEM**<br>**(a)** Accurate portrayal of environment relating to simulator attitudes. | ☐ | ☐ | ☐ | |
| **(b)** The distance at which runway features are visible should be less than those listed below. Distances are measured from runway on an extended 3-degree glide slope. | ☐ | ☐ | ☐ | |
| Runway definition, strobe lights, approach lights, white runway edge lights VASI from 8 km (5sm) of the runway threshold. | ☐ | ☐ | ☐ | |
| **2)** Runway center line lights and taxiway definition from 5 km (3sm). | ☐ | ☐ | ☐ | |
| **3)** Threshold lights and touchdown zone lights from 3 km (2 sm). | ☐ | ☐ | ☐ | |
| **4)** Runway markings within range of landing lights for night scenes; as required by 3 arc-minute resolutions on day scenes. | | | | |
| **(c)** Representative aerodrome scene content including: | | | | |
| **1)** Aerodrome runways and taxiways. | ☐ | ☐ | ☐ | |
| **2)** runway definition:<br>**i)** Runway surface and markings. lighting for the runway in use including runway edge and center line lighting, touchdown zone, VASI and approach Lighting of appropriate colors.<br>**iii)** taxiway lights | ☐ | ☐ | ☐ | |

| IP Name: ……………………………......... | Signature: ………………………………. |
|---|---|

| ITEM | NA | S | US | NOTES |
|---|---|---|---|---|
| **(d)** Operational landing lights. | ☐ | ☐ | ☐ | |
| **(e)** Instructor controls of:<br>**1)** Cloud base.<br>visibility in kilometers / statute miles and<br>RVR in meters/feet aerodrome selection.<br>**4)** Aerodrome lighting. | ☐<br>☐<br>☐<br>☐ | ☐<br>☐<br>☐<br>☐ | ☐<br>☐<br>☐<br>☐ | |
| Visual system compatibility with aerodynamic programming. | ☐ | ☐ | ☐ | |
| **(g)** Visual cues to assess sink rates and depth perception during landings.<br>Surfaces on taxiways and ramps.<br>**2)** Terrain features. | ☐<br>☐ | ☐<br>☐ | ☐<br>☐ | |
| **(h)** Dusk and night visual scan capability | | | | |
| **(i)** Minimum of three specific aerodrome scenes.<br>**1)** Surfaces on runways, taxiways and ramps.<br>Lighting appropriate color for all runways edge, center line, VASI and approach lighting for the runway in use.<br>**3)** Aerodrome taxing lighting.<br>ramps and terminal buildings which correspond to specific line-oriented flight training (LOFT) and line-oriented Simulator (LOS) scenarios. | ☐<br>☐<br>☐<br>☐ | ☐<br>☐<br>☐<br>☐ | ☐<br>☐<br>☐<br>☐ | |

| IP Name: …………………………......... | Signature: ………………………………. |
|---|---|

| ITEM | NA | S | US | NOTES |
|---|---|---|---|---|
| **(j)** General terrain characteristics and significant landmarks. | ☐ | ☐ | ☐ | |
| **(k)** At and below altitude of 610 m (2 000 ft) height above the aerodrome and within a radius of 16 km (10 sm.) from the aerodrome, weather representations, including the following:<br>**1)** variable cloud density.<br>partial observation of ground scenes, the effect of a scattered-<br>to-broken cloud deck.<br>gradual break-out. patchy fog.<br>**5)** The effect of fog on aerodrome lighting. | ☐<br>☐<br>☐<br>☐<br>☐ | ☐<br>☐<br>☐<br>☐<br>☐ | ☐<br>☐<br>☐<br>☐<br>☐ | |
| **(I)** Capabilities to present ground and air hazards such as another aero plane crossing the active runway or converging airborne traffic. | ☐ | ☐ | ☐ | |
| **(m)** Operational visual scenes which portray representative physical relationships known to cause landing illusions, such as short runways, landing approaches over water, uphill or downhill runways, rising terrain on the approach path and unique topographic features. | ☐ | ☐ | ☐ | |

| IP Name: …………………………….......... | Signature: ………………………………. |
| --- | --- |

| ITEM | NA | S | US | NOTES |
| --- | --- | --- | --- | --- |
| **(n)** Special weather representations which include the sound, visual and motion effects of entering light, medium and heavy precipitation near a thunderstorm on take-off, approach and landings at and below an altitude of 16 km (10 sm.) from the aerodrome. | ☐ | ☐ | ☐ | |
| **(o)** Wet and snow-covered runways including runway lighting reflections for wet, partially obscured lights for snow or suitable alternative effects. | ☐ | ☐ | ☐ | |
| **(p)** Realistic color and directionality of aerodrome lighting. | ☐ | ☐ | ☐ | |
| **(q)** Weather radar presentations in aero planes where radar information is presented on the pilot's navigation instruments. Radar returns should correlate to the visual scene. | ☐ | ☐ | ☐ | |
| Freedom from apparent quantization (aliasing). | ☐ | ☐ | ☐ | |

| IP Name: ……………………………......... | Signature: ………………………………. |
|---|---|

| ITEM | NA | S | US | NOTES |
|---|---|---|---|---|
| **3. SPECIAL EFFECTS**<br>**(a)** Runway rumble, oleo deflections, effects of ground speed and uneven runway characteristics. | ☐ | ☐ | ☐ | |
| **(b)** Buffets on the ground due to spoiler/ speed brake extension and thrust reversal. | ☐ | ☐ | ☐ | |
| **(c)** Bumps after lift-off of nose and main gear. | ☐ | ☐ | ☐ | |
| **(d)** Buffet during extension and retraction of landing gear. | ☐ | ☐ | ☐ | |
| **(e)** Buffet in the air due to flap and spoiler/ speed brake extension and approach to-stall buffet. | ☐ | ☐ | ☐ | |
| **(f)** Touchdown cues for main and nose gear. | ☐ | ☐ | ☐ | |
| **(g)** Nose-wheel scuffing. | ☐ | ☐ | ☐ | |
| **(h)** Thrust effect with brakes set | ☐ | ☐ | ☐ | |

| IP Name: …………………………….......... | Signature: ………………………………. |
|---|---|

| ITEM | NA | S | US | NOTES |
|---|---|---|---|---|
| **(i)** Mach buffet. | ☐ | ☐ | ☐ | |
| **(j)** Representative brake and tire failure dynamics (including anti-skid) and decreased brake efficiency due to high brake temperatures based on aero plane related data. These representations should be realistic enough to cause pilot identification of the problem and implementation of appropriate procedures. Simulator pitch, side loading and directional | ☐ | ☐ | ☐ | |
| **(k)** Sound of precipitation and significant aero plane noises perceptible to the pilot during normal operations and the sound of a crash when the simulator is landed in excess of landing gear limitations. Significant aero plane noises should include noises such as engine, flap, gear and spoiler extension and retraction and thrust reversal to a comparable level as that found in the aero plane. The sound of a crash should be related in some logical manner to landing in an unusual attitude or in excess of | ☐ | ☐ | ☐ | |
| **(l)** Effects of airframe icing. | ☐ | ☐ | ☐ | |

## Appendix B

The following Table is the functional description of different Simulator levels:

**(Table - 1)**

| **Simulator Levels, Characteristics and Components** | |
|---|---|
| **Level A** | **Level B** |
| **1.** Systems representations, switches, and controls which are required by the type design of the aircraft and by the user's approved training program.<br>**2.** System which respond appropriately and accurately to the switches and controls of the aircraft being simulated.<br>**3.** Full-scale replica of the cockpit of the aircraft being simulated.<br>**4.** Correct simulation of the aerodynamic characteristics of the aircraft being simulated.<br>**5.** Correct simulation of the effects of selected environmental conditions which the simulated aircraft might encounter.<br>**6.** Control forces and travel which correspond to the aircraft.<br>**7.** Instructor controls and seat.<br>**8.** At least a night visual system with the minimum of 45◦ horizontal by 30◦ vertical field of view for each pilot station. | **1.** Systems representations, switches, and controls which are required by the type design of the aircraft and by the user's approved training program.<br>**2.** Systems which respond appropriately and accurately to the switches and controls of the aircraft being simulated.<br>Full-scale replica of the cockpit of the aircraft being simulated.<br>**3.** Correct simulation of the aerodynamic (including ground effect) and ground dynamic characteristics of the aircraft being simulated.<br>**4.** Correct simulation of the effects of selected<br>**5.** environmental conditions which the simulated aircraft might encounter.<br>**6.** Control forces and travel which correspond to the aircraft<br>**7.** Instructor controls and seat.<br>**8.** At least a night visual system with the minimum of 45◦ horizontal by 30◦ vertical field of view for each pilot station. |

**Appendix B (Cont'd)**

The following Table is the functional description of different Simulator levels:

**(Table - 2)**

| Simulator Levels, Characteristics and Components | |
|---|---|
| **Level C** | **Level D** |
| **1.** Systems representations, switches, and controls which are required by the type design of the aircraft and by the user's approved training program.<br>**2.** System which respond appropriately and accurately to the switches and controls of the aircraft being simulated.<br>**3.** Full-scale replica of the cockpit of the aircraft being simulated.<br>**4.** Correct simulation of the aerodynamics including ground effect and ground dynamic characteristics of the aircraft being simulated.<br>**5.** Correct simulation of the effects of selected environmental conditions which the simulated aircraft might encounter.<br>**6.** Control forces and travel which correspond to the aircraft.<br>**7.** Instructor controls and seat. | **1.** Systems representations, switches, and controls which are required by the type design of the aircraft and by the user's approved training program.<br>**2.** Systems which respond appropriately and accurately to the switches and controls of the aircraft being simulated.<br>**3.** Full-scale replica of the cockpit of the aircraft being simulated.<br>**4.** Correct simulation of the aerodynamic including ground effect and ground dynamic characteristics of the aircraft being simulated.<br>**5.** Correct simulation of the selected Environmentally affected aerodynamic and ground dynamic characteristics of the aircraft being simulated considering the full range of its flight envelope in all approved configurations.<br>**6.** Correct simulation of the effects of selected environmental conditions which the simulated aircraft might encounter.<br>**7.** Control forces, dynamics and travel which correspond to the aircraft. |

## Contents

Chapter 9 Cabin Crew Training Program. ....3
9.1 Initial Training Course ....5
9.1.1 Basic Indoctrination ....5
9.1.2 General Safety and Emergency Training (flight and cabin crew) ....6
9.1.3 First Aid Training ....11
9.1.4 Automated External Defibrillator Training (AED) ....13
9.1.5 Aircraft Type Ground Course ....14
9.1.6 Crew Resources Management (CRM) (flight and cabin crew) ....15
9.1.7 Dangerous Goods and Hazardous Material ....16
9.1.8 Aviation Security (Flight and Cabin Crew) ....17
9.1.9 SMS Course (Safety Management System Course) (flight and cabin crew) ....18
9.2 Differences Training ....19
9.4 Recurrent Training ....21
9.4.1 Recurrent 12 Months ....22
9.4.2 Recurrent 24 Months ....23
9.4.3 Recurrent 36 Months ....24
9.4.4 Validity of Training ....25
9.5 Re-qualification Training ....26
9.5.1 Operating Experience ECAR (121.435) (e): ....27
9.6 General policy ....28
9.7 Line qualification ....29
9.8 Procedures in the event of a Check Failure ....29
9.9 Cabin Crew instructor course ....30
9.10 Cabin crew leader training (Purser) ....32
9.11 Training Modules & Elements ....33
9.11.1 Basic Indoctrination Modules NA 01 ....33
9.11.2 General Emergency Training Modules NA 02 ....40
9.11.3 Aircraft Ground Training Modules NA 03 ....53
9.11.4 First Aid Training and AED NA 04 ....67
9.11.5 Dangerous Goods Regulations Training NA 05 ....69

9.11.6 Crew Resource Management Training (CRM) NA 06 ........................................ 70
9.11.7 Safety Management System Training (SMS) NA 07 .......................................... 71
9.11.8 Aviation Security Training NA 08.......................................................................... 72
9.11.9 Recurrent Training NA 09 ..................................................................................... 73
9.11.10 Tailored Basic Indoctrination Training Courses................................................. 76

## Chapter 9 Cabin Crew Training Program.

### Objective

Nesma Airlines has a training program approved by the ECAA (ECARs 121 subpart N, ECAR 63, ECAR 67) that is applicable on cabin crew members to ensure they understand their responsibilities and are competent to perform the duties and functions associated with cabin operations.
Nesma Airlines has a process to track the qualification requirements to ensure cabin crew members complete recurrent training in a timely manner to remain qualified (yearly training plan).
Nesma Airlines has also a process to track qualification requirements to ensure, when a cabin crew member become unqualified for any reason, to complete re-qualification training prior to be assigned to perform duties as a cabin crew.
Nesma Airlines training program includes testing and evaluation, by written or practical means to satisfy requirements for cabin crew members to demonstrate adequate knowledge, competency to perform duties, execute procedures or operate emergency and life-saving equipment.
All required training by cabin crew shall be recorded, and such records are retained in accordance with CCM 0.2.2.

### Types of training

There are **five** categories of training for cabin crew members:

- Initial training course
- Transition training course
- Differences Type Course
- Recurrent training course
- Re-qualification training course

### Training location

- Nesma Airlines E-Learning system for the theoretical courses of the recurrent training only.
- Nesma Airlines approved classroom.
- Any other approved training center by ECAA
- The aircraft
- Familiarization flights

### Trainers

Any approved training instructor by ECAA

**Training aids**

- Visual materials
- Training Films
- CCM
- In-flight Service Manual
- Emergency Equipment
- Firefighting facilities
- Aircraft mock-up
- Ditching Pool

**Methods of instruction**

- Classroom Sessions
- Open Discussion
- Participation
- Hand-outs
- Practical training (hands-on)
- Nesma E-Learning System (Recurrent Theoretical Courses Only)

**Training program requirements:**

- Basic indoctrination
- General Safety and Emergency training
- Aircraft type training
- First Aid training
- Automated External Defibrillator (AED)
- Dangerous goods training
- Aviation security training (Theoretical and Practical)
- Crew recourses management
- Safety management system
- Aircraft type ground and flight training
- Differences (if app.)
- Updates and Qualification.
- Transition

**Testing and evaluation:**

Nesma Airlines has a testing and evaluation policy which may be accomplished using oral or practical means to ensure a throughout knowledge of and an ability to perform duty assignments and execute functions in the cabin.

## 9.1 Initial Training Course

**(Ref. to ECAR 63.37 & 121.421)**

**Qualification:**

- At least 18 years old.
- Medically fit certified from the ECAA medical center. Re-examined once every 24 months.

**Objective:**

To qualify individuals who have not previously been qualified as cabin crew member, prior to be assigned any duties as a cabin crew member for the operator.

### 9.1.1 Basic Indoctrination

**Objective**

Introduction and serves as a basis for subsequent cabin crew training to provide familiarity with basic aviation subjects relevant to cabin operations and cabin crew duties. This training shall be a part of the cabin crew initial training course and for the New Experience Cabin Crew joining Nesma Airlines with license or Rejoining Crew who left the company more than 1 year and Cabin Crew elapsed more than 36 months without exercising license privilege.

**Duration**

- **40** hours as a part of an initial course.
- **20** hours for the new joiner's cabin crew or Rejoining Crew who left the company more than 1 year.
- **20** Hours Cabin Crew elapsed more than 36 months without exercising license privilege

**Course Outline**

- Introduction of the aviation jargon and terminology
- Basic theory of flight
- Altitude physiology
- Duties and responsibilities of cabin crew members
- Provision of the Egyptian Civil Aviation Regulations (10 hours only as a part of an initial course)
- Contents of the company certificate and operation specification
- Standard operating procedures for cabin operations on the ground all phases of the flight
- Relevant aircraft systems
- All applicable and Company rules and regulations.
- Appropriate portion of the CCM

**Examination:**

An examination with multiple choice answers as a part of the cabin crew initial course shall be conducted in ECCA at the end of the course the examination pass mark is 70%.

### 9.1.2 General Safety and Emergency Training (flight and cabin crew)

General safety and emergency training for crew member includes two distinct subject areas:

**A- General Safety and emergency situation training.**

**B- Emergency drill training.**

**Objective:**

To ensure that all crew members are receiving training that provides knowledge of safety policies associated to all flight phases and required to execute emergency procedures. The general safety (emergency training) includes a practical training exercises consisting of cabin drills and hands-on operation of cabin equipment

Some practical exercises are in participation with flight crew members for the purpose of enhancing onboard coordination and mutual understanding of the human factors involved in addressing emergency situations.

This program ensures cabin crew members receive training that provides the necessary awareness of other cabin crew assignments and procedures to assure fulfillment of all cabin duties in the event of an emergency situation.

This program includes also training in high altitude depressurization, a review and discussion of previous aircraft accidents and incidents pertaining to actual emergency situations.

This program consists of:

**A- General Safety and emergency situation training.**

- 24 hours as a part of an initial course for all crew member.
- 08 hours for all crew member as recurrent course every 12 months period in any Approved Class Room by ECAA or through Nesma Airlines E-Learning system.

**B- Practical Emergency Drill Training (emergency and safety equipment)**

- 08 hours as part of flight Crew and Cabin crew initial course
- 03 hours as part of recurrent course every 24 months period for cabin crew and 36 months for flight crew.

**Course Outlines:**

**A-General safety and emergency Situation Training:**

**1-Flight and cabin Crew Duties and Responsibility**

- Other crew member's assignments and functions in the event of an emergency so far as is necessary for the fulfillment of the cabin crew member's own duties
- Flight deck access
- Sterile flight deck
- Captain's emergency authority
- Reporting incidents and accidents

**2-Crew Coordination/ two-way communication, and company communication**

- Safety checks
- Mandatory briefings
- Passengers acceptance and handling
- Cabin baggage
- Personal electronic equipment
- Fueling with passengers on board
- Turbulence
- Ground and crew notification procedures
- Company notification procedures
- Crew members notification procedures
- Sterile cockpit/ DND
- Flight deck access / protocol
- Sop's

**3-Aircraft Fires**

- Elements and classes of fire
- Smoke and fumes
- Use of hand fire extinguishers
- Lavatory, cabin and galley fires
- Protective breathing equipment

**4-Emergency landing (on land/ water)**

- Notification to the cabin crew
- Notification to the passengers
- Emergency briefing (PIC to the cabin crew- the cabin crew to the passengers)
- Cabin preparation
- Cabin crew actions before and after impact.

**5-Ground evacuation (prepared/ unprepared)**

- Aircraft configuration
- Directing passenger flow
- Blocked or jammed exit procedures
- Fuel spills and ground hazards
- Handicapped passengers
- On land survival (knowledge and equipment)

**6-Ditching (prepared/ unprepared)**

- Ditching and water landings
- Directing passenger flow
- Use of exits and floating equipment
- Handicapped passengers
- In water survival (knowledge and equipment)

**7-Rapid/ slow decompression**

- Understanding effect of flying on high altitudes on crew and passengers
- Physiological phenomena accompanying a loss of pressurization (Hypoxia)
- Gas expansion and gas bubble formation
- Time of useful consciousness
- Cabin crew action to execute associated emergency procedures
- Post decompression duties

**8-Flight or cabin crew incapacitation**

- Company policy and procedures
- Crew action to execute associated emergency procedures
- Reporting requirements
- Interference with crew members

**9- Unusual situations**

**10-Previous Aircraft accidents and incidents discussion**

**Evaluation:**

- An examination with multiple choice answers shall be conducted in the ECAA as a part of an initial course and every 24 months. Or through Nesma airlines E-Learning system for the recurrent only, the examination pass mark is 70%.
- An examination with multiple choice answers shall be conducted in any approved class room by ECAA every 12 months or through Nesma airlines E-Learning system, the examination pass mark is 70%.

**B- Emergency Drills Training (practical training exercises):**

**1) Firefighting drill**

- Use of proper fire extinguisher
- Use of protective breathing equipment.

**2) Portable oxygen system**

- Inspection tags, dates, and pressure
- Actual operation
- Oxygen administration
- Therapeutic oxygen

**3) Cabin exit and slides operation**

- Actual operation (open and close) of each exit in the normal and emergency modes

**4) Emergency evacuation**

- Instructions on slide/raft deployment, transfer from one door to another, and detachment from the aircraft (training device) of each type of slide or slide/raft (if applicable)
- Actual use of slide or slide raft (if applicable)

**5) Individual flotation means (if applicable)**

- Donning and inflation

**6) Ditching (if applicable)**

- Cockpit preparation and procedures
- Crew coordination
- Passenger briefing and cabin preparation
- Use of life line
- Boarding of passengers and crew into a raft or a slide/raft pack

**Ground Competency Check**

An approved instructor shall conduct a ground competency check in an approved training center equipped with simulation aids. The competency check is either satisfactory or unsatisfactory.

The competency check shall cover following items:

**Part One: General Safety (Emergency Training)**

- Crewmember duties and responsibilities
- Crew coordination and company communication
- Aircraft fires
- Safety-Related duties and functions which the cabin crew member is assigned to perform in the event of an emergency or in a situation requiring emergency evacuation
- Ditching
- Physical phenomena and incidents of decompression
- Previous aircraft accidents/incidents
- Crew member incapacitation

**Part two: Emergency Drill (practical training exercises)**

- Use of emergency and life- saving equipment required to be carried, such as life jackets, escape/ slide rafts, evacuation slides, emergency exits, portable fire extinguisher, oxygen equipment and first aid kits.
- Ditching equipment
- Pilot seat mechanism

### 9.1.3 First Aid Training

**Objective:**

To provide cabin crew with the knowledge in first aid and some medical cases throughout the operation and as a general provision of the medical equipment used on board Nesma Airlines aircraft.

This training shall be on a frequency of once every 12 months period.

**Duration:**

- 10 hours theoretical + 2 hours practical as a part of an initial course.
- 04 hours as a part of recurrent training every 12 months period in any approved ECAA classroom or through Nesma airlines E-Learning system.

**Course Outlines:**

- Life threatening medical cases.
- Cardiopulmonary resuscitation
- Injuries and illness assessment and management
- First aid and medical equipment supplies and use such as universal precaution kit and the Automated External Defibrillator

This training provides knowledge and skills in seven subject areas appropriate for cabin crew:

**1) Altitude physiology:**

- Changes in atmospheric pressure
- Relative hypoxia
- Trapped Gas
- Decompression sickness
- Cabin depressurization
- Hyperventilation
- Cabin air quality

**2) Travel health;**

- Immunization
- Protection against infectious diseases
- Circadian rhythm and jet lag
- Fatigue Management
- Personal safety and fatigue

**3) Management regulation:**

- First aid training and equipment
- Reporting of communicable diseases
- Aircraft disinfection
- Biohazard waste disposal.

**4) Procedures and resources**

- Seeking medical assistance
- First aid and doctor kit
- Death on board
- Birth on board
- Documentation to be completed
- PIC notification

**5) first aid (medical cases recognition and management)**

- Assessing causality
- Lifesaving procedures (ABC-chocking-CPR-recovery position)
- Inflight Medical Events

**6) Medical problems:**

- The unconsciousness causes Suspected communicable diseases
- Respiratory disorders (hyperventilation- asthma)
- Cardiovascular disorders (angina- heart attack-stroke)
- Abdominal problems (vomiting- diarrhea- bleeding)
- Nervous disorder (headache- seizure- shock)
- Ear, nose and throat problems
- Behavioral / psychological disorders (panic attack, alcohol intoxication, irrational behavior).
- Other problems (diabetes, allergic reaction, pregnancy related)

**7) Trauma:**

- Wounds and bleeding
- Burns
- Head and neck injury
- Eye injury
- Muscular-skeletal injury
- Chest and abdominal injury

**Examination:**

**1. Initial Course**

An examination with multiple choice answers shall be conducted in the Egypt Air Training Center or ECAA at the end of the course the examination pass mark is 70% pass degree.

**2. Recurrent Courses**

Exam will be conducted through Nesma E-learning system or any ECAA approved class Room

#### 9.1.3.1 Automated External Defibrillator Training (AED)

**Objective**

Cabin Crew awareness for pre-flight check and the proper use of Defibrillator.

**Course Duration and Interval**

- 06 hours as a part of an initial course.
- 03 hours as a part of recurrent training every 24 months period.

**Course Outlines**

- CPR
- AED pre-flight check, how to use and precautions.

**Location:**

Approved classroom by ECAA through approved instructors.

### 9.1.4 Aircraft Type Ground Course

**Objective:**

Is to qualify and remain qualified cabin crew members to perform their duties on each type of aircraft to which they may be assigned. This training shall be on a frequency of once during every 12 months period.

**Duration:**

- 16 hours as a part of an initial training
- 12 hours as a part of recurrent training every 12 months period or through Nesma Airlines E-learning system

**Course Outlines:**

- Aircraft systems
- Cabin emergency equipment and how to execute associated pre-flight checks
- Cabin and galley Service Systems
- Exit locations and operation
- Lighting systems
- Oxygen system
- Use of public address and the means of communication with other flight crew members.
- Portable emergency equipment locations and operation
- Flight deck description
- Cockpit door description and operation
- Crew members and passengers seats and restrains
- Aircraft panels
- Aircraft features and specific crew duties, responsibilities and emergency assignment
- Unique features of the aircraft cabin (as applicable for variants of a common aircraft type).
- Emergency lighting system
- Lavatories

**Examination:**

**1. Initial Course**

- An approved instructor shall conduct a ground competency check in the aircraft (walk around) on all above instructed systems. The competency check is either satisfactory or unsatisfactory.
- An examination with multiple choice answers shall be conducted in the ECAA at the end of the course the examination pass mark is 70% pass degree.

**2. Recurrent 12 Courses**

Exam will be conducted in Nesma Airlines Approved Class Room or through

Nesma E-learning system, the exam pass mark is 70% pass degree.

### 9.1.5 Crew Resources Management (CRM) (flight and cabin crew)

**Objective:**

to ensure all cabin crew are receiving adequate training in human performance to gain an understanding of the human factors involved in conducting cabin safety duties and coordinating with the flight crew during the execution of onboard emergency procedures.

This training shall be on a frequency of once during every 36 months period (ECAR 121.427).

Nesma Airlines is providing joint training between flight crew, cabin crew and dispatchers.

**Duration:**

As part of Cabin Crew initial training 16 hours during 2 working day.

**Recurrent training:**

- Recurrent training 16 hours during 2 working day every 3 years joint with crew member and Flight Dispatchers at Nesma airlines approved classroom.

**Course Outlines:**

- Introduction
- Communication
- Stress management
- Human error, chain of error, error management
- Human performance
- Situational awareness
- Team work, synergy and leadership
- Standard operating procedures
- CRM loop

### 9.1.6 Dangerous Goods and Hazardous Material

**Objective:**

To ensure that all cabin crew receive adequate training regarding dangerous goods awareness, recognition and emergency action. This training shall be on a frequency of once during every 24 months period.

**Duration:**

- 5 hours during one working day as a part of an initial training
- 2 hours as a part of a recurrent training during every 24 months period in Any Approved Class Room by ECAA or through Nesma Airlines E-learning system.

**Course Outlines:**

- General philosophy, Definitions and limitations
- Recognition of undeclared goods
- Classes and divisions
- List of dangerous goods
- Packing
- Marking
- Labeling
- Loading
- Provision of information for passengers and crew (notification to Captain)
- Dangerous goods emergency response

**Examination:**

Exam will be conducted through Nesma E-learning system or an open book exam will be carried out with 70% pass degree and will be considered as a competency check.

### 9.1.7 Aviation Security (Flight and Cabin Crew)

**Objective:**

To enable the cabin crew to implement the appropriate security measures and procedures in accordance with the company security program. This course shall train the cabin crew who are responsible for the implementation of the company security measures to prevent and respond to acts of unlawful interference. Understand the nature of threats and risks to civil aviation.

Nesma Airlines has a joint security training exercises, (cabin crew with the flight crew members) for the purpose of enhancing onboard coordination and mutual understanding of the human factors involved in addressing security threats.

**Duration:**

**Initial: -**

- 24 hours in 3 working days as a part of an initial course in ECAA Approved Class room

**Recurrent: -**

- 16 hours in 2 working days as a part of a recurrent training during every 12 months in ECAA Approved Class room.

**Course outlines:**

- Determination of the seriousness of the occurrence;
- Causes of disruptive behavior on board and management of such types of incidents.
- Crew communication and coordination;
- Appropriate self-defense responses;
- Use of non-lethal protective devices assigned to crew members for use as authorized by the State;
- Understanding the behavior of terrorists so as to facilitate the ability to cope with hijacker behavior and passenger responses;
- Situational training exercises regarding various threat conditions;
- Flight deck procedures to protect the aircraft;
- Aircraft search procedures;
- As practicable, guidance on least-risk bomb locations.

**Practical:**

- Appropriate self-defense responses.
- Use of non-lethal weapons.
- Respond to security incidents or emergencies on ground and in-flight.

### 9.1.8 SMS Course (Safety Management System Course) (flight and cabin crew)

This course is intended to ensure that all Crew Members, Dispatchers & All Nesma Airlines Staff receive the required knowledge for SMS Course, accuracy and requirements.

**Course Duration:**

- 8 hours for initial course provided by Egyptian Civil Aviation Authority Instructors
- 6 hours Every 36 months in accordance with SMS manual Chapter 4 for recurrent course conducted through Nesma Airlines E-learning system or Any Approved Class Room by ECAA.

**Training Location:**

Training will be conducted through Nesma Airlines E-learning system or Any Approved Class Room by ECAA.

**Training & Material**

Through Nesma Airlines E-Learning system or provided by Egyptian Civil Aviation Authority

Instructors and will cover SMS elements that are appropriate for this level, as a minimum.

- SMS Overview
- SMS Components and Elements
- SMS Development and Implementation
- SMS Teamwork
- Human Error
- Developing a Safety Culture
- Case Studies
- Performance Monitoring

## 9.2 Differences Training

**Objective:**
To provide cabin crew with the differences of an aircraft model of the same type they are qualified on (if applicable).
**Duration:**

- 3 hours if carried out in approved classrooms or through Nesma E-Learning System.

**Curriculum:**
Differences Course

**Aircraft Differences Ground Training:**

**Course Outline**
Instructions On:

- General
- Aircraft dimension
- Entrance and emergency exits
- Cabin doors Description
- Overwing exits descriptions
- Controls and indicators of the emergency exists
- Emergency exits operation
- Crew composition
- Seat configuration and emergency seating positions
- Cabin crew positions for safety demonstration
- Emergency equipment
- Door escape slides/slide rafts
- Cockpit door description and operation
- Oxygen systems
- Aircraft panels
- Lighting systems
- Emergency lighting system
- Galley systems
- Lavatories
- Communication System
- Emergency equipment
- Emergency assignment
- Unique features of the aircraft cabin (as applicable for variants of a common aircraft type).

**Examination:**

- An approved instructor shall conduct a ground competency check in the aircraft (walk around) on all above instructed systems. The competency check is either satisfactory or unsatisfactory.
- An examination with multiple choice answers shall be conducted in the ECAA at the end of the course the examination pass mark is 70%
- Receiving operating experience on an aircraft in operations under ECAR 121.435(e)
- A cabin crew must, for at least 4 sectors perform the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including at least 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

## 9.4 Recurrent Training

Nesma airlines has recurrent training program to maintain the cabin crew qualified to carry out their duties, each cabin crew shall complete the training in the calendar month before or after the calendar month in which that training is required, he/she is considered to have taken or completed in the calendar month in which it was required in any ECAA Approved Class Room.
Nesma Airlines recurrent training program is doing in three cycles:

**Cycle 1:** Annual recurrent training (12 Months) This cycle contains recurrent training of:

- Aircraft ground type recurrent training course
- General safety and emergency (theoretical) recurrent training course
- First Aid recurrent training course
- Aviation security recurrent training course

**Cycle 2:** Biennial Recurrent training (24 Months) this cycle contains annual recurrent courses and the following course:

- Emergency drill (practical) recurrent training course
- Dangerous goods (DGR) recurrent training course
- Automated External Deliberator (AED) recurrent training course

**Cycle 3:** Triennial Recurrent training (36 Months) This cycle contains the following recurrent courses:

- Crew Resource Management (CRM) every three years (36 months
- Safety Management System (SMS) recurrent training every three years (36 Months).

### 9.4.1 Recurrent 12 Months

**Objective:**

To ensure that cabin crew members are remaining qualified to perform duties as cabin crew.

**Duration: 40 Hours**

- 08 hours General Safety Course
- 12 hours in 2 working days Aircraft Type Course
- 04 hours First Aid Course
- 16 hours in 2 working days Aviation Security Course

**Course Outline:**

**General Safety**

- Course syllabus (ref. 9.1.2)
- Exam will be conducted with 70% passing degree.

**Aircraft Type**

- Course syllabus (ref. 9.1.5)
- Exam will be conducted with 70% passing degree.

**First Aid**

- Course syllabus (ref. 9.1.3)
- Exam will be conducted with 70% passing degree

**Aviation Security**

- Course syllabus (ref. 9.1.8)

### 9.4.2 Recurrent 24 Months

**Objective:**
To ensure that cabin crew members are remaining qualified to perform duties as cabin crew.
**Duration: 48 Hours**

- 08 hours General Safety Course
- 12 hours in 2 working days Aircraft Type Course
- 04 hours First Aid Course
- 16 hours in 2 working days Aviation Security Course
- 03 hours Emergency drill (practical) recurrent training course.
- 02 hours Dangerous goods (DGR) recurrent training course.
- 03 hours Automated External Defibrillator (AED) recurrent training course.

**Course Outline:**

**General Safety**
- Course syllabus (ref. 9.1.2)
- Exam will be conducted with 70% passing degree.

**Aircraft Type**
- Course syllabus (ref. 9.1.5)
- Exam will be conducted with 70% passing degree.

**First Aid**
- Course syllabus (ref. 9.1.3)
- Exam will be conducted with 70% passing degree

**Aviation Security**
- Course syllabus (ref. 9.1.8)

**Emergency Drill Training**
- Course syllabus (Ref. 9.1.2)
- Exam will be conducted with 70% passing degree

**Dangerous Good Training**

- Course syllabus (Ref. 9.1.7)
- Exam will be conducted with 70% passing degree.

**Automated External Defibrillator (AED)**
- Course syllabus (Ref. 9.1.9)

### 9.4.3 Recurrent 36 Months

**Objective:**
To ensure that cabin crew members are remaining qualified to perform duties as cabin crew.
**Duration:**

- 06 hours Safety Management System Course
- 16 hours during 2 working days CRM joint with flight crew member and Flight Dispatchers at Nesma Airlines approved classroom.

**Course Outline:**

**Safety Management System**
- Course Syllabus (Ref. 9.1.9)

**CRM Training**
- Course Syllabus (Ref. 9.1.6)

### 9.4.4 Validity of Training

Below table literate, the validity of training after successfully completing the Cabin Crew Initial Course.
Recurrent training completed in the month before or after the due month is considered to have been completed in the due month.

| Type of Training | Period in Months | | |
| --- | --- | --- | --- |
| | 12 | 24 | 36 |
| General Emergency Training (Safety) | ✓ | | |
| Aircraft General Training (Type) | ✓ | | |
| First Aid | ✓ | | |
| Crew Resource Management Training (CRM) | | | ✓ |
| Competence Check | ✓ | | |
| Dangerous Goods Training | | ✓ | |
| Fire Drill | | ✓ | |
| Ditching Drill | | ✓ | |
| Evacuation Drill | | ✓ | |
| PBE Drill | | ✓ | |
| Automated External Defibrillator (AED) | | ✓ | |
| Emergency Equipment Drills | | ✓ | |
| Safety Management Training (SMS) | | | ✓ |
| Aviation Security Training | ✓ | | |

### 9.5 Re-qualification Training

For individuals who have failed to remain qualified as a cabin crew, to regain qualification to perform cabin crew duties, the process is according to the following chart:

<table>
<tr><th>Non Valid License</th><th>Valid License</th><th>TIME Interval Without Flying Duties</th></tr>
<tr><td><ul><li>Recurrent training depending on his/her last Recurrent.</li><li><u>4 sectors</u> the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).</li></ul></td><td><ul><li><u>4 sectors</u> the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).</li></ul></td><td>91 days – 12 months</td></tr>
<tr><td colspan="2"><ul><li>Recurrent training depending on his/her last Recurrent.</li><li><u>04 sectors</u> perform the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).</li></ul></td><td>12 months - up to 36 months.</td></tr>
<tr><td colspan="2">A. A tailored basic indoctrination program.<br>B. Initial general emergency training on A/C type.<br>C. <u>06 sectors</u> perform the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including at least 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).</td><td>More than 36 months.</td></tr>
</table>

### 9.5.1 Operating Experience ECAR (121.435) (e):

**(1) Initial:** For at least **06 sectors** perform the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including at least 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

**(2) Transition:** For at least **04 sectors** perform the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including at least 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

**(3) Requalification:**

**(a) More than 91 days and less than 12 months (Valid License):** 4 sectors the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

**(b) More than 91 days and less than 12 months (invalid License):** 4 sectors the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

**(c) Less than 36 months:** For at least **04 sectors** perform the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including at least 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

**(d) More than 36 months:** For at least **06 sectors** perform the assigned duties of a cabin crew member under the supervision of a cabin crew instructor / examiner who personally observes the performance of duties including at least 2 sectors under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

## 9.6 General policy

The Pass criteria for examinations and tests are as follows:

| | | |
|---|---|---|
| **Safety and Emergency Procedure - General** | **Multiple Choice Exam** | **70 %** |
| **Safety and Emergency Procedure - Aircraft Type and Location of Safety Equipment** | **Multiple Choice Exam** | **70 %** |
| **First Aid Procedure** | **Multiple Choice Exam** | **70 %** |
| **Dangerous Goods Response and Procedure** | **Multiple Choice Exam** | **70 %** |
| **Emergency Drills Practical Assessment** | **Satisfactory / Unsatisfactory** | |
| **Any Other Examination and Tests** | **70 %** | |

## 9.7 Line qualification

**(Ref. to ECAR 121.435 "e")**

Nesma Airlines has a cabin crew line qualification program which consists of supervised flights as a part of the cabin crew initial qualification process and re-qualification process **(Ref. table 9.5)** to demonstrate an understanding and competency to perform the duties and execute the procedures associated with cabin operation prior to being assigned unsupervised duties on an aircraft

- **06** familiarization sectors for initial cabin crew prior to being assigned unsupervised duties.
- **04** familiarization sectors for cabin crew to qualify her/him on a new type endorsement (Transition).
- **04** familiarization sectors for cabin crew who spent more than 91 days and up to 12 months without carrying on any flying duties.
- **04** familiarization sectors for cabin crew who spent more than 12 months and up to 36 months without carrying on any flying duties.
- **04** familiarization sectors for cabin crew who spent more than 36 months without carrying on any flying duties.
- **02** Sectors line check during every 12 months period (in-flight competency check).
- **02** evaluation flights yearly.

All the above checks and evaluation are recorded on a checklist and retained with other cabin crew qualification records.

## 9.8 Procedures in the event of a Check Failure

If a Cabin Crew member fails an examination or test, he/she will be stopped from flying until he/she pass the retest. one retest shall be permitted after 15 days, however further attempts will be at the discretion of the In-Flight Services Manager on the same time interval.
In the event of a major failure, the failed course shall be repeated. In this case, the definition of major failure will be at the discretion of the examiner involved.
After two failures of an examination or test, the Cabin Crew's contract of employment will be subject to review by In-Flight Services Manager.

## 9.9 Cabin Crew instructor course

**Objective:**
To qualify cabin crew in accordance to the **ECARs 121.420 & 63** subpart B to prepare him /her to perform cabin crew instructor duties unsupervised in revenue services and to ensure such instructors have an adequate level of knowledge and standardization to provide instruction in the cabin crew training program.

**The minimum requirements for nomination as a Cabin Crew Instructor are:**

- Will hold or has held a valid license on the aircraft type requested;
- Not less than 5 years total experience as a qualified cabin crewmember whether continuous or not including experience for at least one year on the type requested; and
- A cabin crew instructor may be certified on a maximum of three types of aircraft.

**Conditions for qualifying as a first-time cabin crew instructor:**

- Successfully pass instructor ground training for qualification to be a cabin crew instructor. Must attend and pass an approved course on the professional skills for cabin crew instructors acceptable to the ECAA.

**Duration:** Successfully pass a ground training of 40 hours

**Course outlines:**

a. CCM overview
b. General safety (emergency training and drills)
c. Company training program
d. Company training forms
e. Training record
f. Teaching and professional skills course: (26 Hours)
g. The learning process;
h. Elements of effective learning;
i. Student evaluation and testing;
j. Course development;
k. Teaching methods
l. Lesson planning; and
m. Classroom training techniques.
n. Body language
o. Presentation technique
p. How to handle a trainee.
q. Evaluation and testing

- Successfully conducts an initial, transition or recurrent ground training for minimum 4 cabin crew members under the supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval) and;
- Successfully conduct a competency check for 2 cabin crew members on any aircraft type required for certification on a flight (2 sectors) under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).
- Final evaluation of the I.F.S manager.
- The ECAA approval for Cabin Crew Instructor will expire after 24 months.

**Conditions for qualifying a cabin crew instructor on additional aircraft type**

- Must be previously licensed on the endorsed aircraft type.
- Successfully conduct a competency check for 2 cabin crew members on any aircraft type required for certification on a flight (2 sectors) under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

**Requirement for the renewal of cabin crew flight instructor:**

1. Hold a valid license
2. Complete the following:
   - Successfully conducts an initial, transition or recurrent ground training for minimum 4 cabin crew members under the supervision of a qualified cabin crew instructor, examiner / inspector and;
   - Successfully conduct a competency check for 2 cabin crew members on any aircraft type required for certification on a flight (2 sectors) under supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

**Requirement for issuance and renewal of for cabin crew ground instructor:**

1. For issuance, the applicant must satisfy the requirements same as flight instructor as provided above.
2. For renewal: Successfully conducts an initial, transition or recurrent ground training during the preceding 12 months period for minimum 4 cabin crew members under the supervision of an ECAA inspector (or cabin crew examiner upon ECAA approval).

## 9.10 Cabin crew leader training (Purser)

**Objective:**
The objective of this course is to qualify cabin crew as to prepare him / her to perform purser duties.

**Qualifications:**
- He/she shall have at least 3 years' experience as an operating crew member and not less than one year on the same type.
- And shall complete a leadership training course at ECAA approved training centers. (refer to C.C.M 1.1.2.5)

**Course Duration:**
Subject to cover all required subjects.

**Course Outline:**
- CCM overview
- Emergency training
- Aircraft type training
- Pre-flight briefing training
- Area and type of operation
- Discipline and responsibilities and chain of command
- Categories of passengers and seat allocation rules
- Legal and operator requirements:
- passengers briefing
- cabin securing
- Use of electronic equipment
- Fueling with passengers on board
- Aircraft documentation
- Reporting system
- Pilot incapacitation
- Flight and duty time limitations and rest requirements

**Practical training:**
The trainee will be assigned as an acting purser to operate 4 flights under the supervision of an approved instructor until released.

**Examination (release)**
- The release will be through the instructor reports.
- The final evaluation of the I.F.S manager.
- A periodic check will be carried out by an approved instructor after the release; a report will be submitted to the I.F.S manager.

**Note:** consecutive unsatisfactory evaluation could lead to dismiss him/her from all cabin crew leader (purser) duties.

### 9.11 Training Modules & Elements

These training modules may be included in more than one curriculum segment; however, that training module must be placed in the curriculum segment as designated in ECAR.

### 9.11.1 Basic Indoctrination Modules NA 01

**Training Level:** Initial/New experience cabin crew joining Nesma Airlines with license
**Duration:** 40 Hours Initial
20 Hours New experience CC joining Nesma Airlines with license
20 Hours Cabin Crew elapsed more than 36 months without exercising license privilege

#### 9.11.1.1 Company Orientation

**Module Name:** Company Orientation
**Module Number:** **NA 01-01**
**Objectives:** To gain the required awareness and proficiency with Company Standard practices and structure.
**Courseware:** Training Slides

| Element No. | Element Title |
|---|---|
| **1.** | **Overview of Company**<br>1. Type<br>2. Scope of operations conducted |
| **2.** | **Company Structure**<br>1. Management organization,<br>2. Route structure,<br>3. Fleet composition (size and type),<br>4. Facility locations |

#### 9.11.1.2 Administrative Practices

**Module Name:** Administrative Practices
**Module Number:** **NA 01-02**
**Objectives:** To become familiar with the administrative practices of Nesma Airlines.
**Courseware:** Training Slides

| Element No. | Element Title |
|---|---|
| **1.** | 1. Required documentation<br>2. Scheduling<br>3. Inner-company communications |

### 9.11.1.3 Appropriate Provisions of ECAR and Other Applicable Regulations and Aviation Terminology

**Module Name:** Appropriate Provisions of ECARs and Other Applicable Regulations and Aviation Terminology
**Module Number:** **NA 01-03**
**Objectives:** To gain an understanding of the regulatory basis of the Cabin Crew Member policy and procedures of Nesma Airlines.
**Courseware:** Training Slides, CCM, ECARs

| Element No. | Element Title |
|---|---|
| **1.** | **ECARs:**<br>1. Regulatory function;<br>2. Overview of appropriate provisions of ECARs<br>3. Any pertinent additional guidance materials |
| **2.** | 1. Other regulatory agencies interfacing with civil aviation, such as, Customs, Immigration, etc.,<br>2. Applicable recommendations of ICAO |
| **3.** | 1. Aviation Terminology and Alphabet |

### 9.11.1.4 Nesma Airlines Policies and Procedures

**Module Name:** Nesma Airlines Policies and Procedures
**Module Number:** **NA 01-04**
**Objectives:** To become familiar with policies, procedures of Nesma Airlines as required by the ECAA.
**Courseware:** Training Slides, CCM & Video Illustrations

| Element No. | Element Title |
|---|---|
| 1 | **Operational Policies and Regulations Relating to Cabin Crew Activities:**<br>• Authority of PIC; chain-of-command<br>• Credential requirements for admission to cockpit<br>• Locking of cockpit door<br>• Sterile cockpit procedures<br>• Required number of Cabin Crews<br>• Cabin Crew substitutes at intermediate stops<br>• Taxi requirements<br>• Passenger briefings and demonstrations<br>• Carriage and briefing of passengers who require special assistance<br>• Carry-on baggage requirements<br>• Exit row seating requirements<br>• Carriage of cargo in passenger compartments<br>• Stowage of canes and crutches |

| | |
|---|---|
| | • Stowage of crew bags<br>• Identification and stowage of hazardous materials<br>• Alcoholic beverages<br>• Fueling with passengers on board<br>• Electronic devices<br>• Carriage of pets<br>• Stowage of inflight service items<br>• Galley equipment restraints<br>• Stowage compartment restraints<br>• Cabin Crew jump seat requirements<br>• Passenger seating requirements<br>• Infant/child restraints<br>• Required placards and signs<br>• Compliance with seatbelt and no-smoking signs<br>• Smoking regulations<br>• Cockpit-to-cabin signals<br>• Serving food to flight crewmembers<br>• MEL provisions<br>• Pre-flight policies<br>• Report mechanical irregularities<br>• Cabin Crew duty period limitations and rest requirements.<br>• Routine opening/closing of doors<br>• Upright position of seat backs for take-off and landing.<br>• Protruding passenger seat armrests.<br>• Procedures for opening, closing, and locking of flight crew compartment doors. |
| 1. | **Communication & Coordination between flight crew member and Cabin Crew**<br>• Cockpit to Cabin Communication:<br>**a.** Take-off & Landing<br>**b.** Turbulence |
| 2. | **Emergencies**<br>• Cabin to Cockpit Communication:<br>**a.** Sterile Cockpit Time<br>**b.** Sterile Cockpit Meaning<br>• Emergency Procedures<br>• Normal Operations<br>• Practices & Procedures<br>**a.** Cockpit/Cabin Pre-flight Briefing<br>**b.** Other Recommended Practices |
| 3. | **Passenger Handling Policies and Regulations Relating to Cabin Crew Activities:**<br>1. Passenger acceptance/refusal policies including those requiring special assistance; |

| | |
|---|---|
| | 2. Armed passengers, prisoners with escorts, couriers and unauthorized persons;<br>3. Passengers who carry oxygen for personal use, and oxygen administration inflight;<br>4. Serious illness or injury and apparent death inflight;<br>5. Apprehensive and problem passengers such as those who appear to be emotionally disturbed, appear to be under the influence of alcoholic beverages and narcotic drugs;<br>6. Passengers who abuse Cabin Crews, who interfere with a crewmember in the performance of duties, who smoke in lavatories, who refuse to follow safety instructions of crewmembers, and who do not comply with ECAR;<br>7. Special needs passengers such as infants, children, unaccompanied minors, elderly, obese, pregnant, and non-English speakers. |

### 9.11.1.5 CCM and Appropriate Portions of NESMA AIRLINES's Operations Manual

**Module Name:** CCM and Appropriate Portions of the NESMA AIRLINES's Operations Manual (OM)
**Module Number:** **NA 01-05**
**Objectives:** To become familiar with the CCM and OM
**Courseware:** Manuals, Training Slides & Video Illustrations

| Element No. | Element Title |
|---|---|
| 4. | **CCM Organization:**<br>1. Overview of manual sections;<br>2. Correlation of manual sections to Cabin Crew member training program;<br>3. Reference system & Revision system;<br>4. Distribution system |
| 5. | **CCM Requirements:**<br>1. Cabin Crew responsibilities, including carriage of manual when performing assigned duties and maintaining manual currency;<br>2. Importance of standardization of procedures and communication signals between flight crew members and Cabin Crew members |
| 6. | **Operations Manual (OM)**<br>1. Organization and familiarity with portions applicable to Cabin Crew members |

### 9.11.1.6 General Aircraft and Aviation Orientation

**Module Name:** General Aircraft and Aviation Orientation
**Module Number:** **NA 01-06**
**Objectives:** To become familiar with the Aircraft Familiarization, Weather Conditions, and Time Conversion & Aviation Terminology.
**Courseware:** Training Slides & Video Illustrations

| Element No. | Element Title |
|---|---|
| 1. | **Basic Theory of Flight & Aircraft Familiarization:**<br>Basic Theory of Flight<br>7. Basic aircraft description and terminology (interior and exterior);<br>8. Basic aircraft components such as flaps and landing gear;<br>9. Cockpit and cabin configurations;<br>10. Appropriate cabin systems such as communication, lighting, and oxygen;<br>11. Effect of mass and balance on passenger seating;<br>12. Recognition of unusual aircraft functioning |
| 2. | **Weather Conditions:**<br>A basic understanding of:<br>Clear air turbulence<br>13. Cloud penetration<br>14. Thunderstorms<br>15. Winter operations |
| 3. | **Time Conversion:**<br>1. 24-hour clock, including time zones<br>2. Greenwich Mean Time<br>3. International Date Line |
| 4. | **Aviation Terminology:**<br>1. Airport<br>2. Flight and ground operations<br>3. Airport designator |

### 9.11.1.7 Cabin Crew Member Requirements and Standards

**Module Name:** Cabin Crew Member Requirements and Standards
**Module Number:** **NA 01-07**
**Objectives:** To become knowledgeable and proficient with the Nesma Airlines Cabin Crew Member duties and responsibilities.
**Courseware:** Training Slides, CCM & Video Illustrations

| Element No. | Element Title |
|---|---|
| 5 | **Cabin Crew Requirements & Standards:**<br>1. Company required equipment & Cabin Crew manual responsibilities;<br>2. Required documents, immunizations and duties<br>3. Training and qualification requirements, recurrent training, performance checks, and competency checks<br>4. Rules on consumption of alcoholic beverages and use of narcotics by crewmembers |

### 9.11.1.8 Crew Member Flight Duties and Responsibilities

**Module Name:** Crew Member Flight Duties and Responsibility
**Module Number:** **NA 01-08**
**Objectives:** To provide the student with an understanding of their duties and responsibilities
**Courseware:** Training Slides, CCM & Video Illustrations

| Element No. | Element Title |
|---|---|
| 1. | 1. Crew communication, coordination, the importance and content of crew briefing;<br>2. Flight familiarization, take offs and landings;<br>3. Inflight communications and post-flight debriefing;<br>4. Crewmember team concept, standardization of procedures and signals between cockpit and crew, and pre-flight responsibilities;<br>5. Chime signals, signal for evacuation, and for sterile cockpit;<br>6. Security procedures, procedures for initiation of evacuation, for notification of emergency, and cockpit emergency assignments; Procedures for notifying cockpit all passengers seated prior to aircraft movement; and<br>7. Positioning of cockpit door prior to take-off, for Cabin Crew entry to cockpit, and signal for Cabin Crews to be seated prior to take-off. |
| 2. | Routine flight duties, authority of crew, duty positions, crewmember duties and responsibilities specific to each position per phase of flight such as emergency equipment pre-flight and passenger boarding responsibilities;<br>1. Review of ECAR and company policies on cabin safety; |

| | |
|---|---|
| | 2. Awareness of interior and exterior safety hazards;<br>3. Content of all passenger briefings; and<br>4. Special flight situations, procedures for delayed flights, spoiled food, passenger complaints, and damaged personal effects. |
| 3. | **Special Flight Situations:**<br>1. Procedures for delayed flights;<br>2. Spoiled food;<br>3. Passenger complaints;<br>4. Damaged personal effects |

### 9.11.2 General Emergency Training Modules NA 02

**Training Level:** Initial/Requalification/Recurrent
**Duration:** 24 Hours Initial + 8 Hours Practical
08 Hours Requalification/Recurrent training + 03 hours as part of recurrent course every 24 months period for cabin crew and 36 months for flight crew Ref. 9.11.2.4 Emergency Drills & 9.11.8.2 Recurrent 24 Calendar Months NA 09
**Training Location:** Any Approved Class Room by ECAA or through Nesma Airlines E-learning system Requalification and Recurrent only.

#### 9.11.2.1 Emergency Equipment NA 02-01

**Module Name:** Emergency Equipment
**Module Number:** **NA 02-01**
**Training Level:** Initial/Requalification/Recurrent

**To Objectives:** To ensure each Cabin Crew is adequately trained and currently proficient in instruction, demonstration and practice in the functions and operation of emergency equipment installed on NESMA AIRLINES aircraft. To report any equipment which fails to meet the pre-flight requirements. Individual instruction in the location, function, and operation of emergency equipment
**Courseware:** Training Slides & Video Illustrations

| Element No. | Element Title |
|---|---|
| 1. | **General**<br>1. Training requires using the type of fire extinguisher installed on the airplane;<br>2. Use methods for removing equipment from securing devices;<br>3. Use methods for properly securing equipment;<br>4. Operate equipment including awareness of operational limitations;<br>5. Fulfil the function of equipment including operations under adverse conditions; and |
| 2. | **Ditching Equipment:**<br>1. Pre-flight of ditching equipment, inspection tag, dates; pressures, accessibility, and integrity of casings;<br>2. Life preservers, removal function, donning, inflation, activation/deactivation of locator light, donning an adult vest on a small child or infant, and special needs use; and<br>3. Flotation seat cushion removal, function, donning, and swimming techniques.<br>4. (If Applicable) Slides: Deployment; inflation; detachment from aircraft for use as a flotation device; boarding techniques<br>5. (If Applicable) Raft Survival Equipment (Including Canopy and Survival Kit): Function; use |

| | |
|---|---|
| | 6. The removal, function, use and operation of the megaphone, flashlights, emergency lights, emergency locator transmitters, and first aid kits used during a ditching |
| 3. | **Ground Evacuation Equipment**<br>1. Pre-flight of inspection tags, seals, dates, operable/pressures, security, and accessibility of evacuation equipment;<br>2. Window exit escape rope removal, function and use;<br>3. (If Applicable) Slide deployment, inflation, sliding techniques with use under adverse conditions; and<br>4. Removal, function, uses, and operation of megaphones, flashlights, emergency lights, emergency locator and transmitters used during ground evacuation. |
| 4. | **First Aid Equipment**<br>1. Pre-flight of inspection tags, dates, integrity of casing, and accessibility; and<br>2. Emergency Medical Kit: Removal; contents; use, including reporting requirements<br>3. First Aid Kit: Removal; contents; use |
| 5. | **Portable Oxygen Systems**<br>1. Pre-flight: Inspection tags; dates; seals; pressures; integrity of tubing and masks, casings, or smoke hoods; security; accessibility<br>2. Portable Oxygen Devices/Masks (Oxygen Bottles): Removal and handling; function; operation including donning, activation, and cautions; procedure for administering oxygen to self, to passengers, and to persons with special oxygen needs; methods of securing an oxygen device while administering oxygen<br>3. PBE: Removal; function; limitations; operation, including donning, activation, and cautions; use with fire extinguisher in a fire fighting situation, including methods of maneuvering in limited space with reduced visibility; use of communications system<br>4. Passenger-Supplied Oxygen: Function; operation; requirements for carriage |
| 6. | **Firefighting Equipment**<br>1. Pre-flight: Inspection tags; dates; seals; proper charge levels; properly serviced; security of mounting; accessibility<br>2. Individual Extinguishers: Removal; function; operation and operating techniques; cautions<br>3. Classes of Fires: Appropriate extinguishers; specific firefighting techniques<br>4. PBE, Smoke Goggles: Donning; use<br>5. Lavatory Equipment: Integrity of trash container; spring-loaded doors; smoke alarms; fire extinguishers; placards |
| 7. | **Emergency Exits**<br>1. Exits: Pre-flight door seals; integrity and condition of brackets; markings and placards; door opening controls; signs; lights; assist |

| | |
|---|---|
| | handles; function; operation, including under adverse conditions; impact of wind, weather, and fire<br>**Window Exits**<br>1. Pre-flight window seals, window opening controls, markings, placards, signs, lights, tactile indicators for non-visual conditions; function; operation and positioning, including under adverse conditions |
| 8. | **Additional Emergency Equipment**<br>1. Pre-flight: Equipment integrity; equipment accessibility<br>2. Cockpit Key, Demo Equipment, CPR Equipment, Seatbelt Extensions, Lavatory Smoke Detectors: Function; use |

### 9.11.2.2 Emergency Situation NA 02-02

**Module Name:** Emergency Situation
**Module Number:** **NA 02-02**
**Objectives:**
1. To ensure each Cabin Crew is adequately trained and currently proficient in of instruction in the factors involved and the procedures to be followed when an emergency situation occurs.
2. To ensure each Cabin Crew has:
   a. Knowledge of crew coordination, emergency procedures, and equipment;
   b. Knowledge of each crewmembers' emergency procedures, signals, and safety-related duties;
   c. The necessary awareness of other cabin crew assignments and procedures to assure fulfilment of all cabin crew duties in the event of an emergency situation
   d. Ability to recognize an emergency situation and select appropriate procedures;
   e. Ability to assume decisive leadership in the event flight crewmembers are incapacitated or unable to participate; and
   f. Knowledge of requirements for reporting accidents.
3. The training module consists of:
   a. Individual instruction
   b. Demonstration, and
   c. Practice in the handling of emergency situations common to all aircraft that the student is qualifying for.

**Courseware:** Training Slides & Video Illustrations

| Element No. | Element Title |
|---|---|
| 1. | **Basic Principles**<br>a. **General:** Types of emergencies; need for standardization of procedures between crew members; crew coordination and communication, including team responsibilities, assertive command and control, response initiation, passenger behavior and management. |
| 2. | **High Altitude Decompression**<br>1. **General:** Causes and recognition of cabin pressure loss; physiological effects of reduced atmospheric pressure; time of useful |

| | |
|---|---|
| | consciousness; Respiration; Hypoxia; Duration of consciousness without supplemental oxygen at altitude; Gas expansion; Gas bubble formation; and Physical phenomena and incidents of decompression?<br>2. **Rapid Decompression (Immediate Action/ Secondary Action Procedures):** Possible causes; cabin effects; physiological effects; crew coordination procedures; "immediate action procedures," including recognition of signs of decompression, grasping nearest oxygen mask, sitting down or holding onto something solid, waiting for notification from the flight deck before moving around; "secondary action procedures," including obtaining and putting on portable oxygen, checking other Cabin Crews, assisting passengers, treating injuries, damage assessment and control<br>3. **Insidious Decompression:** Possible causes; cabin effects; physiological effects; crew coordination; immediate action procedures<br>4. **Cracked Window/Pressure Seal Leaks:** Cabin effects; crew coordination; immediate action procedures |
| 3. | **Fires, Smoke & Fumes**<br>1. **Principles of Combustion and Classes of Fires:** Characteristics of an aircraft fire, including flash over and time element; toxic fumes and chemical irritants; review of function and use of firefighting equipment; firefighting techniques; special factors, including cabin material flammability and toxicity; confined space; cabin ventilation<br>2. **Fire Prevention:** Cabin Crew readiness; cabin checks, including stowage of articles which could contribute to fire; lavatory checks, including condition of trash container, spring loaded door, smoke detectors, and fire extinguishers; galley checks, including ovens and electrical equipment; enforcement of smoking regulations; procedures for use of circuit breakers<br>3. **Basic Firefighting Procedures:** Flight crew member notification procedures; source identification; firefighting and crew coordination procedures; proper use of PBE; effective use of aircraft communication systems; methods of gaining access to a fire source; smoke control and removal procedures<br>4. **Smoke & Fumes:** Identification of Smoke & Fumes. Flight Crew member notification procedures; source identification; Smoke generated by electrical circuits, air-conditioning or other sources; methods of gaining access to a fire source; smoke control and removal procedures<br>5. **Extinguishing Cabin Fires:** Crew coordination, including team response; procedures for extinguishing cabin fires to include lavatories; galleys/lower lobe galleys; ovens; volatile fuel vapours; light ballasts; cabin furnishings; stowage bins/hat racks; trash containers; clothing<br>6. **External Fires on Ground:** Crew coordination; role of Cabin Crews for exterior aircraft, APU, jetway, ramp fires |

| | |
|---|---|
| | 7. **Electrical Equipment and Circuit Breakers:** Procedures for circuit breaker use with galleys, lavatories, and movie screens. Resetting tripped circuit breakers. |
| 4. | **Ditching**<br>**Basic Practices:**<br>1. Description of ditching and unanticipated water landings (prior to impact/after impact); crew notification, including time before touchdown, type of landing, signal to assume protective brace position; crew coordination, including cabin and passenger preparation; passenger briefings; helper briefing; passenger protective brace positions; Cabin Crew protective brace positions (forward facing jump seat—head forward, aft facing jump seat—head back);<br>2. Impact on water; assessing conditions; commands; opening primary/secondary exits; use of flotation devices; evacuation at over wing exits including use of escape ropes; redirection techniques; evacuating persons needing assistance; passenger control<br>3. **Prior to Impact—Unanticipated:** Cabin Crew readiness; protective brace position; commanding passengers to assume protective brace position<br>4. **After Impact—Unanticipated:** Assessing conditions; crew coordination procedures; releasing Cabin Crew seatbelts; ensuring activation of emergency lights; commanding passengers to release seatbelts and don individual flotation devices; assessing exits; redirection techniques; opening exits, including deploying flotation devices and commanding helpers to assist; commanding passengers to evacuate at exit, inflate vests, and use flotation devices; assisting incapacitated passengers and crew members; removing appropriate emergency equipment from aircraft<br>5. **Prior to Impact—Anticipated:** Crew notification and coordination; passenger briefing and preparation; donning life vests; cabin preparation; helper briefings; assuming protective brace positions; Cabin Crew review of ditching duties<br>6. **After Impact—Anticipated:** Assessing conditions; crew coordination procedures; releasing Cabin Crew seatbelts; ensuring activation of emergency lights; commanding passengers to release seatbelts; assessing exits; redirection techniques; opening exits, including deploying slide rafts or launching rafts (If Applicable), commanding helpers to assist; commanding passengers to evacuate at exit, inflate life vests, and board slide rafts or rafts (If Applicable); assisting incapacitated passengers and crew members; removing appropriate emergency equipment from aircraft<br>7. **Evacuation Techniques:** Airplane flotation characteristics; adverse conditions; assisting handicapped; directing passenger flow; boarding rafts (If Applicable)<br>8. **Survival at Sea:** Raft management; basic survival procedures in a raft environment; signaling |

| | |
|---|---|
| 5. | **Emergency Landing on Terrain / Ground Evacuation**<br>1. **Basic Practices:** Description of unanticipated and anticipated evacuations (prior to impact/ after impact); crew notification, including time before touchdown, type of landing, signal to assume protective brace position; crew coordination, including cabin and passenger preparation; passenger briefings; helper briefings; passenger protective brace positions; Cabin Crew protective brace positions (forward facing jump seat—head forward, aft facing jump seat—head back); impact and post-crash fire; assessing conditions; initiation evacuation; commands; opening primary/ secondary exits; evacuation at over wing exits, including use of escape ropes; redirection techniques; evacuating persons who may need assistance; passenger control Prior to Impact —Unanticipated: Cabin Crew readiness; assuming protective positions; commanding passengers to assume protective positions<br>2. **Prior to Impact—Anticipated:** Crew notification and coordination; passenger briefing and preparation, removal of high heeled shoes and stowage in approved areas such as overhead compartments, not seat pockets; cabin preparation; helper briefings; assuming protective positions; Cabin Crew review of evacuation duties<br>3. **After Impact—Unanticipated or Anticipated:** Assessing conditions; crew coordination procedures; releasing Cabin Crew seatbelts; ensuring activation of emergency lights; initiation of evacuation, including decision and signal to evacuate or not to evacuate; commanding passengers to release seatbelts and evacuate; assessing exits; redirection techniques; opening exits, including deploying slides (If Applicable); commanding helpers to assist; commanding passengers to evacuate at exit and run away from aircraft; assisting incapacitated passengers and crew members; removing appropriate emergency equipment from aircraft<br>4. **Evacuation Techniques:** Aircraft landing attitudes; adverse conditions; assisting handicapped; directing passenger flow;<br>5. **Post-Crash Rescue:** Role of Cabin Crews<br>6. **Survival in Uninhabited Area:** Group management; basic survival procedures on land |
| 6. | **Unwarranted Evacuation**<br>1. Passenger or Crew Initiated: Cabin Crew readiness; assessing situation<br>2. Crew Coordination: Method of communicating that an unwarranted evacuation is in progress<br>3. Stopping the Evacuation: Commands; actions |
| 7. | **Abnormal Situations Involving Passengers or Crewmembers:**<br>1. Passenger Abuse of Cabin Crew: Crew coordination; recommended procedures |

| | |
|---|---|
| | 2. Passengers who appear to be Under the Influence of Intoxicating Substances: Crew coordination; recommended procedures<br>3. Passengers Who May Jeopardize Aircraft or Passenger Safety: Crew coordination; recommended procedures |
| 8. | **Hijacking/Bomb Threat:**<br>1. Hijacking: Specific company hijacking procedures; reinforcement of security training procedures; methods of communicating with other crewmembers when hijacking is threatened or in progress<br>2. Bomb Threat: Specific company security procedures; reinforcement of security training procedures; crew coordination procedures; specific bomb search procedures; bomb handling and stabilization procedures for each aircraft |
| 9 | **Turbulence**<br>1. Basic Action (Dependent on Severity of Turbulence): Flight crew member notification procedures; communication procedures for securing passengers, crew members, cabin, galleys, serving carts<br>2. Severe Turbulence (Anticipated or Unanticipated): Crew coordination procedures; appropriate actions<br>3. Mild Turbulence (Anticipated or Unanticipated): Crew coordination procedures; appropriate actions<br>**Preventing Injuries Caused by Turbulence**<br>4. Emphasize the Importance of Cabin Crew's Personal Safety<br>5. Promote Communication and Coordination - The importance of maintaining communication during the flight |
| 10 | **Previous Accidents and Incidents**<br>1. General: Types and major causes of accidents; NTSB recommendations; survivability factors,<br>b. Crewmember and passenger preparation for impact; ability of aircraft to withstand impact; ability of crew members to perform assigned duties after impact; emphasis on crew coordination and communication as critical elements in emergency situations<br>c. Accident/Incident Aftermath: Coping with survival |
| 11 | **Planned Evacuation Briefings**<br>1. Procedures to encourage communication from the flight crew to the Cabin Crews regarding possibility of evacuation;<br>2. Procedures to ensure passengers are provided with precautionary briefing when flight crews anticipate evacuation;<br>3. Procedures designed to accommodate abbreviated timeframes for cabin preparation in planned evacuation and ditching;<br>4. Allowing the opportunity for Cabin Crews to practice reduced timeframes.<br>5. Instruction on procedures that give the Cabin Crews s clear direction for handling of carry-on baggage during an evacuation including practice during evacuation drills. |

### 9.11.2.3 Emergency Drills NA 02-03

**Module Name:** Emergency Drills
**Module Number: NA 02-03**
**Objectives:**
1. To train each Cabin Crew:
   a. To proficiency by reinforcing the concepts developed in the instruction phase of emergency training;
   b. The equipment must have the identical dimensions, weight, forces, and specifications.
2. To ensure Cabin Crew obtain proficiency in emergency situations and have the ability to:
   a. Correctly pre-flight and prepare emergency/safety equipment for each type of aircraft, as assigned;
   b. Identify type of emergency and correctly use appropriate emergency equipment;
   c. Exercise good judgment in assessing emergency situation;
   d. Implement appropriate emergency procedures and coordinate actions/signals with Flight Crew and other Cabin Crew members;
   e. Operate emergency/safety equipment for each type of aircraft; and
   f. Communicate effectively with crewmembers/passengers in an emergency situation.
3. Each Crew member shall be required to satisfactorily complete and demonstrate each of the below mentioned Hands-on drills in the initial training and once every 24 months. The details are mentioned in the Validity of Training.

**Courseware:**
1. A use of an approved fire extinguisher to be used.
2. A use of a training PBE to be used
3. An actual Life Jacket to be used
4. An approved evacuation Trainer
5. A Door Trainer to be used
6. All equipment should be same to the ones installed in the aircraft

**Note:** Whenever schedules permit, cabin crew should be scheduled for joint training activities or exercises with flight crew members for the purpose of enhancing on board coordination and mutual understanding of the human factors involved in addressing emergency situations.

**Duration:** 8 Hours initial course and 3 hours recurrent course in practical training area

| Element No. | Element Title |
|---|---|
| 1. | **Emergency Exit Drill:** During an emergency exit drill, each student must operate every type of emergency exit in the normal and emergency modes, including the actions and forces required for deployment of the emergency evacuation slides (If Applicable).<br>1. **Pre-flight Exit:** Ability to correctly prefight each type of emergency exit and evacuation slide or slide raft (If Applicable) |

| | |
|---|---|
| | 2. **Actual Disarming and Opening of Each Type of Door Exit in Normal Mode:** Ability to open exit properly by disarming door either manually; to verify girt bar disengagement; to assume correct body position; to use door controls correctly; to secure exit in open and locked position; to secure safety strap<br>3. **Actual Closing of Each Type of Door Exit in Normal Mode:** Ability to close exit properly by removing safety strap; to release locking mechanism; to assume correct body position; to use door controls correctly; to secure exit in closed and locked position<br>4. **Actual Arming of Each Type of Door Exit in Emergency Mode:** Ability to arm exit properly by checking if threshold is free of debris; to arm door manually; to verify girt bar engagement<br>5. **Actual Opening of Each Type of Door Exit in Emergency Mode:** Ability to open exit properly by assuming correct body/protective position; to use door controls correctly; to ensure that door is in open and locked position; to use manual slide inflation system to accomplish or ensure slide or slide raft inflation (If Applicable)<br>6. **Actual Opening of Each Type of Window Exit:** Ability to open exit properly by assuming correct body/protective position; to use controls correctly; to place window safely; to remove escape rope and position for use |
| 2. | **Hand Fire Extinguisher Drill:** During a hand fire extinguisher drill, each student must operate every type of installed hand fire extinguisher.<br>1. **Pre-flight:** Ability to correctly pre-flight each type of hand fire extinguisher (if part of Cabin Crew's assigned duties)<br>2. **Operation:** Ability to correctly operate each type of hand fire extinguisher and to implement appropriate firefighting procedures; to locate source of fire or smoke and identify class of fire; to select appropriate extinguisher and remove from securing device; to prepare extinguisher for use; to actually operate and discharge extinguisher; to use correct fire-fighting techniques for type of fire<br>3. **Crew Coordination:** Ability to implement procedures for effective crew coordination and communication, including notification of flight crew members about the type of fire situation |
| 3. | **Emergency Oxygen System Drill:** During an emergency oxygen system drill, each student must operate every type of emergency oxygen system, including PBE.<br>1. **Pre-flight and Operation of Portable Oxygen Devices:** Ability to correctly pre-flight (if part of Cabin Crew's assigned duties) and operate portable oxygen bottles, including masks and tubing; ability to prefight and verbally demonstrate operation of chemical oxygen generators, including procedures for administering oxygen |
| 4. | 2. **Administering Oxygen from Portable Oxygen Bottles:** Ability to properly remove from securing device; to prepare for use; to operate oxygen device properly, including donning and activation; to administer oxygen to self, passengers, and to those persons with special oxygen needs; |

| | |
|---|---|
| | to utilize proper procedures for effective crew coordination and communication<br>3. **Pre-flight and Operation of PBE:** Ability to correctly prefight (if required) and properly put on equipment; to activate equipment and manoeuvre in limited space with reduced visibility; to utilize the aircraft's communication system for effective crew coordination. To remove PBE, stowage requirements for used PBE, safety requirements i.e.; shaking hair out, removing earrings, etc.<br>4. **Use of Aircraft Oxygen System:** Ability to manually open each type of oxygen mask compartment and deploy oxygen masks; to identify compartments with extra oxygen masks; to implement immediate action decompression procedures; to reset |
| 5. | **Flotation Device Drill:** During a flotation device drill, each student must put on, use, and inflate (as applicable) one type of individual flotation device<br>1. **Pre-flight:** Ability to correctly prefight (if part of Cabin Crew's assigned duties) each type of individual flotation device<br>2. **Donning and Inflating Life Vests:** Ability to locate and remove from packaging; to properly put on and inflate (automatically and manually); to activate and deactivate locator light; to put on a small child or infant; to instruct children, non-swimmers, handicapped, and elderly on how to use and when to inflate; to demonstrate swimming techniques with a life vest<br>3. **Flotation Seat Cushions:** Ability to remove them from the seat and properly use them; to demonstrate swimming techniques using a seat cushion |
| 6. | **Ditching Drill:** During a ditching drill, each student must perform the "prior to impact" and "after impact" procedures for a ditching<br>1. **Crew Coordination:** Ability to implement crew coordination procedures, including briefing with flight crew members to obtain pertinent ditching information and briefing Cabin Crews; to coordinate timeframe for cabin and passenger preparation<br>2. **Passenger Briefing:** Ability to adequately brief passengers on ditching procedures, including information on the removal and stowage of restrictive personal articles; removal, donning, inflation of life vests; positioning of seats and tray tables; stowage of carryon baggage; securing and release of seatbelts; appropriate brace positions; location of exits; location and boarding of rafts; helper briefings<br>3. **Passenger and Cabin Preparation:** Ability to ensure that all passenger briefing procedures are implemented properly; to ensure that cabin is prepared, including the securing of carry-on baggage, lavatories, and galleys<br>4. **Launching of Slide Rafts** (If Applicable)**:** Ability to assess conditions; to demonstrate how to properly deploy and inflate slide rafts; to remove, position, attach to aircraft, and inflate rafts; to use escape ropes at over wing exits; to command helpers to assist; to use slides and seat cushions as |

| | |
| --- | --- |
| | flotation devices; to remove appropriate emergency equipment from aircraft<br>5. **Boarding of Passengers and Crew into Slide Raft** (If Applicable)**:** Ability to command passengers to exit aircraft, inflate life vests, and board rafts properly; to initiate raft management procedures, including disconnecting rafts from aircraft, applying immediate first aid, rescuing persons in water, salvaging floating rations and equipment, deploying sea anchor, tying rafts together, activating, and ensuring emergency locator transmitter in operation; to initiate basic survival procedures, including removing and using survival kit items, repairing and maintaining raft, ensuring protection from exposure, erecting canopy, communicating location, providing continued first aid, and providing sustenance<br>6. **Use of Life Lines** (If Applicable)**:** Ability to use heaving line to rescue persons in water; to tie slide rafts or rafts together; to use life line on edge of slide raft or raft as a handhold and to secure survival kit items |
| 7. | **Slide raft Transfer Drill. During a slide raft transfer drill** (If Applicable)**:**<br>Students must observe the transfer of each type of slide raft pack from an unusable door to a usable door.<br>1. Disconnecting Slide raft at Unusable Door: Crew coordination procedures, assessing conditions to determine usable door, redirecting passengers to usable slide raft, completing specific steps for slide raft disconnection at unusable door<br>2. Slide raft Installation and Deployment at Usable Door: Positioning slide raft pack at usable door, completing specific steps for slide raft installation at usable door |
| 2. | **Slide or Slide Raft Deployment, Inflation, and Detachment Drill** (If Applicable)**:** During a slide or slide raft deployment, inflation, and detachment<br>drill, students must observe the deployment, inflation, and detachment of the slide or slide raft pack from the aircraft or training device.<br>1. **Slides with Quick Release Handle** (If Applicable)**:** Engaging slide girt bar in floor brackets; opening of door and verification of slide deployment; inflating slide either manually or automatically; disconnecting slide from aircraft for use as a flotation device<br>2. **Slides Without Quick Release Handle** (If Applicable)**:** Engaging slide girt bar in floor brackets; opening door and verifying slide deployment; disconnecting slide from aircraft; inflating slide for use as a flotation device<br>3. **Slide rafts** (If Applicable)**:** Arming slide rafts for automatic inflation; opening door and verifying inflation; disconnecting slide raft from the aircraft |
| 9. | **Emergency Evacuation Slide Drill** (If Applicable)**:** During an emergency evacuation slide drill, students must observe the deployment and inflation of an evacuation slide, including participants egressing from the cabin or approved training device via the evacuation slide. |

| | |
| --- | --- |
| | 1. Opening Exit: Opening armed exit with slide or slide raft deployment and inflation<br>2. Evacuation of Aircraft: Commanding the evacuation; having participants egress from aircraft via the evacuation slide and run away to a safe distance;<br>Training needs to specify that during the emergency evacuation drill the Cabin Crew:<br>1. Prior to impact, has the ability to recognize and evaluate the emergency, assume appropriate protective position, and command passengers to assume protective position;<br>2. After impact, has the ability to implement crew coordination to release seatbelt; ensure activation of emergency lights, assess aircraft conditions, initiate evacuation (signal or decision), command passengers to release seatbelts and evacuate, assess exit and redirect, if necessary; to open exit, deploying slides and commanding helpers to assist; to command passengers to evacuate at exit and run away from aircraft.<br>3. Correctly jump on to the slide, maintain correct body position while sliding, land on feet and run away from aircraft; and<br>4. Be aware of methods for assisting special need passengers, handicapped, elderly, and persons in a state of panic.<br>5. Practice opening primary and second choice exits or simulate opening a second choice exit after actually opening primary exit, and demonstrate the skills associated with passenger flow control management.<br>6. Evaluate passenger use of exits, direct passengers to another exit to increase the number of passengers evacuating the airplane, continually appraise the condition of exits, and signal/direct passengers to available exits. |
| 10. | **PBE Fire Fighting Drill**<br>**1.** Locate source of fire or smoke;<br>**2.** Implement procedures for effective crew coordination/communication including notification of flight crewmembers;<br>**3.** Identify class of fire, select the appropriate extinguisher; and properly remove extinguisher from securing device;<br>**4.** Prepare extinguisher for use, operate and discharge extinguisher properly; utilize correct firefighting techniques for type of fire; and<br>**5.** Completely extinguish the fire<br>**6.** Donning the PBE<br>**7.** Re-stowing of used firefighting equipment |

### 9.11.2.4 Ground Competency Check NA 02-04

As part as Initial Training and Every 24 Months for Cabin Crew and every 36 Months for Flight Crew.

- Emergency Exit
- Handheld Fire Extinguisher
- Emergency Oxygen System
- Flotation Devices
- Ditching
- Life raft Removal & Inflation
- Slide raft Deployment, Inflation and Detachment
- Emergency Evacuation/ Slide

### 9.11.3 Aircraft Ground Training Modules NA 03

**Training Level:** Initial/Transition/Requalification/Recurrent
**Duration:** **16** hours as a part of an initial/Transition/Requalification training
**12** hours as a part of recurrent training every 12 months

**Objectives:** As part as initial/Transition Course: Upon completion of this course the trainee will have acquired the knowledge and competence required to perform his/her duties and responsibilities on the aircraft on which they will be assigned during routine, abnormal, and emergency situations. This course fulfills the requirements of ECAR 121.421.

As part as Recurrent Course**:** Refresh knowledge of crewmembers to demonstrate their ability in using the cabin crew manual, to remain qualified to perform duties as cabin crew members, this course fulfills the requirements of ECAR 121.433

#### 9.11.3.1 Aircraft Equipment and Furnishings NA 03-01

**Module Name:** Aircraft Equipment and Furnishings
**Module Number:** **NA 03-01**
**Objectives:** To familiarize the Cabin Crew with the Aircraft Equipment and Furnishings.
**Courseware:** Training Slides, Training Equipment & Video Illustrations

| Element No. | Element Title |
|---|---|
| 1. | **Cabin Crew Stations:**<br>1. Procedures for pre-flight checks of a Cabin Crew jump seat, such as the following:<br>a. Automatic seat retraction<br>b. Jump seat headrest<br>c. Restraint system integrity<br>2. Description of the function and operation of restraint system<br>3. Securing restraint system when not in use. |
| 2. | **Cabin Crew Panels:**<br>1. Identification of and function of controls, switches, and indicators on Cabin Crew panels.<br>2. Pre-flight and use of controls and switches. |
| 3. | **Passenger Seats:** Description of passenger seats and surrounding area, such as the following:<br>1. Seat belts<br>2. Armrests, footrests, and seat recline controls<br>3. Tray tables<br>4. Passenger service units<br>5. Passenger convenience panels on armrests (as applicable)<br>6. Passenger information signs<br>7. Placards |

| | |
|---|---|
| | 8. Passenger entertainment and convenience systems |
| 1. | **Passenger Service Units and Convenience Panels:** Description of function and use of the following:<br>1. Controls on passenger service units, such as reading lights and reading light switches<br>2. Gasper air outlets<br>3. Cabin Crew call light indicator and Cabin Crew call light switch<br>4. NO SMOKING and FASTEN SEAT BELT signs<br>5. Emergency oxygen outlets |
| 2. | **Passenger Information signs:** Description of location, purpose, and chime indicator of the following passenger information signs:<br>1. NO SMOKING signs<br>2. FASTEN SEAT BELT signs<br>3. LAVATORY OCCUPIED signs<br>4. RETURN TO SEAT signs in the lavatory<br>5. EXIT signs |
| 3. | **Aircraft Markings:** Include description, location, and purpose of aircraft markings such as the following:<br>1. Interior emergency exit markings indicating location of each passenger emergency exit<br>2. Emergency exit operating handle markings indicating location of operating handle and<br>3. instructions for opening exit<br>4. Emergency equipment markings identifying equipment<br>5. Emergency equipment compartment or container markings identifying contents |
| 4. | **Aircraft Placards:** Description, location, and purpose of aircraft placards, such as the following:<br>1. Placards on each forward bulkhead and passenger seat back stating FASTEN SEAT BELT WHILE SEATED<br>2. Placards in each lavatory stating NO SMOKING IN THE LAVATORY |
| 5. | **Bassinets and Bayonet Tables:** Description of, and use of, bassinets and bayonet tables including the following:<br>1. Means of securing while in use<br>2. Proper stowage when not in use<br>3. Applicable restrictions |

### 9.11.3.2 Aircraft Systems NA 03-02

**Module Name:** Aircraft Systems
**Module Number:** **NA 03-02**
**Objectives:** To familiarize the Cabin Crew with the Aircraft Systems.
**Courseware:** Training Slides & Video Illustrations

| Element No. | Element Title |
|---|---|
| 1. | **Conditioning and Pressurization System**: Description, location, function and operation of temperature controls, such as the following:<br>1. Gasper air outlets<br>2. Cabin pressurization indicators<br>3. Location and function of decompression vents. |
| 2. | **Aircraft Communication Systems:** Description, location, function, and operation of the following:<br>1. Manual system controls<br>2. Cabin intercommunication data systems |
| 3. | **Communications—Call System:** Description, location, function, and operation of the call system, such as the following:<br>1. Call light switches<br>2. Chime and light indicators when call is initiated<br>3. Routine and emergency call light identification<br>4. Resetting procedures for call light indicators |
| 4. | **Communications—Interphone System:** Description of interphone system, such as the following:<br>1. Location of handset controls and indicators<br>2. Function and operation of routine and emergency controls and indicators<br>3. Interphone system inoperative procedures |
| 5. | **Communications—Passenger Address System:** Description, function, and operation of passenger address system, including the following:<br>1. Location of handset and microphone controls and indicators<br>2. Passenger address system inoperative procedures |
| 6. | **Lighting and Electrical Systems:**<br>1. Description and location of interior and exterior lighting.<br>2. Function and operation of cabin lighting systems including the following:<br>a. Controls<br>b. Switches<br>c. Testing procedures<br>3. Description and location of circuit breakers, including the following:<br>a. Means of access<br>b. Switches<br>c. Indicators<br>d. Resetting procedures |

| | |
|---|---|
| 7. | **Oxygen—Flight Crew and Observer Oxygen System:** Description and function of flight crew and observer oxygen system, including the following:<br>1. Location of oxygen regulators and quick donning oxygen masks<br>2. Operation of oxygen regulator switches and indicators<br>3. Distinction between “on demand” and “under pressure” oxygen flow<br>4. Proper use of oxygen masks<br>**Oxygen—Passenger Oxygen System.** Including the following:<br>1. Description and location of each type of oxygen mask and compartment<br>2. Location of extra masks<br>3. Description and location of oxygen mask compartment door latching indicators<br>4. Instruction on manual opening of each type of oxygen mask compartment<br>5. Restrictions for repacking oxygen mask compartments<br>6. **Function of passenger oxygen system**, including the following:<br>a. Automatic and manual means of system activation<br>b. ii. Indicators of oxygen system activation<br>c. iii. Procedure for initiating oxygen flow to mask<br>d. iv. Procedure for properly donning oxygen mask and testing for<br>e. oxygen flow<br>f. v. Procedure for resetting oxygen system in the event oxygen<br>g. system is not designed to shut off automatically<br>**h.** vi. Procedure for activating aircraft system for first aid oxygen |
| 8. | **Water System:** Description of aircraft potable water system, such as the following:<br>1. Location of quantity indicators<br>2. Water supply pre-flight procedures<br>3. Location and operation of individual or main water shutoff valves |
| 9. | **Entertainment and Convenience Systems:**<br>1. Description of aircraft entertainment and convenience system(s).<br>2. Location and operation of controls and switches including system indicators.<br>3. Problem identification including the following:<br>a. Probable causes<br>b. Corrective action procedures |

### 9.11.3.3 Aircraft Exits NA 03-03

**Module Name:** Aircraft Exits
**Module Number:** **NA 03-03**
**Objectives:** To familiarize the Cabin Crew with the Features, Pre-flight and Operations of Aircraft Exits.
**Courseware:** Training Slides, Door Trainer & Video Illustrations

| Element No. | Element Title |
| --- | --- |
| 1. | **General Information:** Description, location, and identification of each type of cabin and cockpit exit, including the following:<br>1. Type and number<br>2. Function<br>3. Dimensions<br>4. Basic components<br>5. Controls<br>6. Aircraft Emergency evacuation escape routes |
| 2. | **Exits Pre-flight:**<br>1. Identification and function of door opening controls and indicators.<br>2. Procedures to pre-flight door seals<br>3. Exit markings and placards signs<br>4. Lights<br>5. Assist handles |
| 3. | **Exits Normal Operation:**<br>1. Procedures for opening exit in normal mode<br>2. Procedures for closing exit in normal mode, including the following:<br>a. Releasing door latching mechanism<br>b. Assuming correct body position for door closing<br>c. Using door controls correctly<br>d. Securing exit in closed and locked position |
| 4. | **Cockpit Exits —Operation:**<br>1. Assessing conditions prior to opening, assuming correct body position, and operating exit controls correctly; and<br>2. Using escape ropes/inertial escape reels, exit operation under adverse conditions, passing through expeditiously, assessing/following a safe path away**.** |

### 9.11.3.4 Crew Member Communication and Coordination NA 03-04

**Module Name:** Crew Member Communication and Coordination
**Module Number:** **NA 03-04**
**Objectives:** To familiarize the Cabin Crew with the Crew Member Communications and Coordination.
**Courseware:** Training Slides & Video Illustrations

| Element No. | Element Title |
|---|---|
| 1. | **Captain's Authority:** Description of the captain's authority on aircraft in routine and emergency conditions, including the chain of command as applicable to specific aircraft. |
| 2. | **Routine Communication signals and Procedures:** Review of location, function, and operation of communication systems as applicable to specific aircraft, including specific procedures for cockpit and cabin chime and interphone signals for routine situations. The following are examples:<br>1. Cabin Crew notification to be seated prior to movement on the surface<br>2. Cabin Crew notification of critical phases of flight<br>3. Flight crew member notification when requesting access to cockpit |
| 3. | **Crewmember Briefing: Review the following:**<br>1. Importance of crew briefing and development of crew member resource management concept (CRM)<br>2. Description of crew member responsibilities for crew briefing including any required paperwork<br>3. Content of crew briefing as applicable to specific aircraft |
| 4. | **Coordination/communication between flight and Flight Attendant members contain:**<br>1. Pre-departure briefings to be conducted by flight crew with the Cabin Crew Leader and to include forecast turbulence, related weather conditions, scheduling of cabin service, clean up, securing of galley and cabin, carry-on baggage, and passenger information;<br>2. Use of the public-address (PA) system by flight crewmembers to alert Cabin Crew and passengers of anticipated inflight turbulence;<br>3. Guidance for flight crewmembers to notify Cabin Crew when they are to cease in-flight service, secure galley(s), be seated with restraints fastened, and/or resume duties; and<br>**4.** Standardized notification to the flight crew from the Cabin Crew when all pre-take-off and pre-landing duties have been completed and the cabin is secured |
| 5. | **During emergency conditions** the flight crew is primarily responsible for maintaining control of the aircraft; however, as conditions permit, the flight crew should brief the Cabin Crew on the:<br>1. Nature of the emergency;<br>2. Approximate amount of time for cabin preparation; |

| | |
|---|---|
| | 3. Contemplated course of action for Cabin Crew to carry out their duties; and<br>4. Cabin Crew to use the public-address (PA) system to advise passengers to fasten seat belts |

### 9.11.3.5 Routine Crew Members Duties & Procedures NA 03-05

**Module Name:** Routine Crew Members Duties & Procedures
**Module Number:** **NA 03-05**
**Objectives:** To familiarize the Cabin Crew with the Crew member Routine duties and Responsibilities.
**Courseware:** CCM, Training Slides & Video Illustrations

| Element No. | Element Title |
|---|---|
| 1. | **Crewmember General Responsibilities:**<br>1. Crew member communication and coordination while performing crew member assignments, duties, and procedures as applicable to specific aircraft during each phase of flight<br>2. Description of all operator policies and ECAR pertinent to crew member performance of assigned duties on specific aircraft as per CCM type specification Chapter. |
| 2. | **Reporting Duties and Procedures for Specific Aircraft:**<br>1. Identification of required crew members when specific aircraft is parked at the gate.<br>2. Description of pre-flight and in-flight duty assignments and responsibilities.<br>3. Description of passenger boarding procedures.<br>4. Description of carry-on baggage stowage procedures.<br>5. Assurance of exit seat program compliance.<br>6. Conduct of cockpit and Cabin Crew briefings.<br>7. Assurance of the possession of all required personal equipment, such as the following:<br>a. Cabin Crew manuals<br>b. Flashlights |
| 3. | **Pre-departure Duties and Procedures Prior to Passenger Boarding:**<br>1. Description of pre-flight safety check assignments and procedures.<br>2. Review of pre-flight responsibilities as applicable to specific aircraft. The following are<br>3. examples:<br>a. Checking jump seat restraint system, retraction, and emergency oxygen source<br>b. Locating and inspecting all assigned emergency equipment including switches and controls<br>c. Locating and ensuring that safety information and exit seating cards are applicable to make, model, type, and series of aircraft<br>d. Preparing demo equipment and safety briefing information videotape |

| | |
|---|---|
| 4. | **Passenger Boarding Duties and Procedures:** Ensure adherence to all regulatory and company requirements as applicable to specific aircraft. The following are examples:<br>1. Ensuring that a minimum number of required Cabin Crew are at the assigned boarding station<br>2. Implementing security procedures<br>3. Monitoring passenger boarding and seating<br>4. Making required announcements<br>5. Assessing passengers to identify possible helpers<br>6. Identifying and handling any unruly passengers<br>7. Screening carry-on baggage<br>8. Screening exit seat occupants<br>9. Ensuring that infant and child restraint devices are approved for use on aircraft and secured properly<br>10. Conducting an individual briefing of any person who may need the assistance of another person to move expeditiously to an exit in the event of an emergency |
| 5. | **Prior to Movement on the Surface Duties and Procedures:**<br>1. Checking for stowaways.<br>2. Verifying the following:<br>a. That exit seat and carry-on baggage requirements as applicable to specific aircraft are met<br>b. That all stowage compartments are secured properly<br>c. That no carry-on baggage, cargo, or trash is in unauthorized receptacles<br>d. That galley and service equipment is stowed and secured<br>e. That galley doors, curtains, and dividers are secured open<br>f. That galleys and lavatories are unoccupied<br>g. The proper operation of the doors including latching and arming prior to movement on the surface |
| 6. | **Prior to Take-off Duties and Procedures:** Description of prior to take-off duties and procedures as applicable to specific aircraft. The following are examples:<br>1. Taking demo positions.<br>2. Making required safety briefing announcement and demonstration or safety briefing videotape.<br>3. Individually briefing passengers in seats with restricted view of Cabin Crew demonstration or screen.<br>4. Making passenger and cabin safety inspection to verify the following:<br>a. No smoking<br>b. Seat belts fastened<br>c. Infants held properly or secured in approved infant seat<br>d. Seatbacks and tray tables in fully upright position<br>e. All carry-on baggage, including infant restraint devices, properly secured<br>5. Coordinating with cockpit regarding the security of the cabin for take-off. |
| 7. | **In Flight Duties and Procedures:** Description of performance of routine |

| | |
| --- | --- |
| | in flight assignments, duties, and procedures as applicable to specific aircraft. The following are examples:<br>1. Following sterile cockpit procedures<br>2. Stowing the restraint system upon leaving seat<br>3. Implementing appropriate procedures for the handling of any emergency or abnormal situations including turbulence<br>4. Restraining each item of galley equipment and each serving cart when not in use |
| 8. | **Prior to Landing Duties and Procedures:** Description of duties and procedures as applicable to specific aircraft. The following are examples:<br>1. Reporting cabin discrepancies to cockpit.<br>2. Following sterile cockpit procedures except for safety related communication.<br>3. Making passenger and cabin safety inspection to verify the following:<br>a. No smoking<br>b. Seat belts fastened<br>c. Infants held properly or secured in approved infant restraint devices<br>d. Seatbacks and tray tables in fully upright position<br>e. All carry-on baggage including infant restraint devices and loose objects stowed and secured properly<br>f. All stowage compartments secured properly<br>g. No carry-on baggage, cargo, or trash in unauthorized receptacles<br>4. Stowing and securing galley and service equipment.<br>5. Securing curtains and dividers in open position. |
| 9. | **Movement on the Surface and Arrival Duties and Procedures:** Description of movement on the surface and arrival duties and Responsibilities as applicable to specific aircraft. The following are examples:<br>1. The use of the PA to inform passengers to remain seated with seat belt fastened until arrival at gate<br>2. Disarming the girt bar manually after the seat belt sign is off following the crew leader PA<br>4. Opening doors<br>5. Verifying doors are opened properly and securely latched |
| 10. | **After Arrival Duties and Procedures:**<br>1. Ensuring minimum number of required Cabin Crews at assigned arrival station.<br>2. Reviewing deplaning responsibilities as applicable to specific aircraft. The following are examples:<br>a. Implementing security procedures<br>b. Ensuring that Cabin Crews are uniformly distributed throughout cabin in accordance with the GACR EBOOK Volume 4 Section 4.27.4.3 and company policy<br>c. Monitoring passenger deplaning to ensure adherence to all regulatory and company requirements |

| | |
|---|---|
| | d. Ensuring that all cabin electrical equipment is turned off<br>e. Inspecting unique areas of the cabin and galley to ensure safety precautions specific to that aircraft |
| 11 | **Intermediate Stops:**<br>1. Determining minimum number of Cabin Crews required to remain on board at intermediate stops when passengers remain on board the aircraft.<br>2. Ensuring that Cabin Crews are positioned at designated stations<br>3. Implementing procedures to ensure passenger safety during fuelling and defueling including procedures for emergency evacuation while parked at gate or ramp |
| | **1. Distribution of Cabin Crews**<br>**2. Duty assignment of required and non-required Cabin Crews**<br>**3. Use of non-f/a personnel in aircraft cabins** |

### 9.11.3.6 Passenger Handling Responsibilities NA 03-06

**Module Name:** Passenger Handling Responsibilities
**Module Number:** **NA 03-06**
**Objectives:** To familiarize the Cabin Crew with the Passenger Handling Responsibilities.
**Courseware:** Training Slides & Video Illustrations

| Element No. | Element Title |
|---|---|
| 1. | **Crew Member General Responsibilities:** Description of crew member duties and procedures for the handling of passengers applicable to the specific type of aircraft and operation. |
| 2. | **Infants, Children, and Unaccompanied Minors:** Specific procedures as applicable to specific aircraft. The following are examples:<br>1. Designation of seating locations<br>2. Designation of additional oxygen masks and infant and child life vest locations<br>3. Designation of infant and child carrier and bassinet seat locations<br>4. Description of reporting requirements |
| 3. | **Passengers Needing Special Assistance:** Procedures as applicable to specific aircraft such as the following:<br>1. Procedures for the handling of on board wheelchairs and special aircraft accommodations, such as accessible lavatories and moveable armrests<br>2. Method and procedures for the carriage of a passenger requiring oxygen for personal use<br>3. Description of recommended alternate locations for administering medical assistance<br>4. Description of escape paths and methods for the evacuation of passengers with physical limitations |
| 4. | **Passengers Needing Special Accommodation:** Procedures as applicable to specific aircraft for the following:<br>1. Armed passengers<br>2. Escorts<br>3. Prisoners<br>4. Couriers<br>5. VIPs<br>6. Deportees<br>7. Runaways<br>8. Persons traveling without visas<br>9. Other designated unescorted individuals |
| 5. | **Carry-On Stowage Requirements:** Procedures as applicable for specific aircraft, such as the following:<br>1. Location requirements for oversized items in the cabin<br>2. Designated areas for the carriage of pets and pet containers |

| | |
|---|---|
| | 3. Designated areas for the stowage of passenger assistance aids,<br>such as wheelchairs, canes, and Crutches |
| 6. | **Passenger Seating Requirements:** Procedures as applicable to specific aircraft, such as the following:<br>1. Location of exit seats<br>2. Location of seats for accommodating passengers who are unable to sit erect for a medical reason<br>3. Designated areas for passengers with trained assist animals |
| 7. | **Smoking and No Smoking Requirements:** Procedures as applicable to specific aircraft, such as the location of no smoking areas and smoking areas, as applicable. |
| 8. | **Completion Standards:** The student will become familiar with the Passenger Handling Responsibilities. |

### 9.11.3.7 Aircraft Familiarization (A/C Visit) NA 03-07

**Module Name:** Aircraft Familiarization (Aircraft Visit)

**Training Level:** Initial/Transition/Requalification

**Duration:** 03 Hours

**Module Number:** **NA 03-07**

**Objectives:** To familiarize each Cabin Crew member with the aircraft environment and its equipment. Accordingly, Cabin Crew Instructor shall conduct aircraft visits

**Courseware:** Actual Nesma Airlines Aircraft

| Element No. | Element Title |
| --- | --- |
| 1. | **Aircraft Characteristics and Description:** Description of aircraft make, model, type, and series, including the following:<br>1. Design<br>2. Principal dimensions<br>3. Interior configuration<br>4. Power plant<br>5. Range<br>5. Speed<br>6. Altitude |
| 2. | **Flight deck Configuration:** Description and location of the following:<br>1. Flight crew member and observer stations<br>2. Portable emergency equipment<br>3. Stowage areas<br>4. Operation of cockpit door including emergency opening |
| 3. | **Cabin Configuration:** Description and location of the following:<br>1. Cabin Crew station(s)<br>2. Passenger seating zone and aisle<br>3. Passenger seats<br>4. Galley<br>5. Lavatory<br>6. Stowage areas<br>7. Emergency exits<br>8. Oxygen mask compartments<br>9. Passenger service units<br>10. Passenger convenience panels<br>11. Passenger information signs<br>12. Required placards<br>13. Cabin Heating / Ventilation. |
| 4. | **Galleys:** Description, location, function, and operation of galley equipment, such as the following: |

| | |
|---|---|
| | 1. Ovens<br>2. Refrigeration units<br>3. Stowage compartments and latching devices<br>4. Carts and braking mechanisms and restraining devices<br>5. Electrical control panels and circuit breakers<br>6. Water system and water shutoff valves<br>7. Oxygen mask compartments |
| 5. | **Lavatories:** Description and location of equipment, such as the following:<br>1. Washbasins<br>2. Stowage compartments and latching devices<br>3. Oxygen mask compartments<br>4. Passenger information signs<br>5. Required placards<br>6. Automatic fire extinguishers<br>7. Smoke detectors<br>8. Water shutoff valves<br>9. Water heater switches and indicators<br>10. Interior door locking mechanism and signs<br>11. Exterior door locking and unlocking mechanisms |
| 6. | **Stowage Areas:** Description, location, and function of stowage areas, such as the following:<br>1. Overhead bins and racks<br>2. Coat closets<br>3. Stowage compartments<br>4. Mass restrictions<br>5. Restraint or latching requirements<br>6. Required placards |

### 9.11.4 First Aid Training and AED NA 04

**Module Name:** First Aid Training & AED
**Module Number:** **NA 04**
**Training Level:** Initial/Requalification/Recurrent
**Duration First Aid:** **12** hours as a part of an initial training
**04** hours as a part of Requalification/recurrent every 12 months
**Duration AED:** **06** hours as a part of an initial training
**03** hours as a part of Requalification/recurrent every 24 months

**Objectives:** To become familiar with the Basic First Aid, treatment and medical equipment available to Cabin Crew.

**Courseware:**
1. Training Slides & Video Illustrations
2. The contents of the Aero medic First Aid and Medical kits
3. The use of Rescue Anne
4. The use of AED

| Element No. | Element Title |
|---|---|
| 1. | **General Principles of Care:** Effects of aircraft environment; crew medical responsibilities; crew coordination, including flight crew notification; requesting and verification of medically qualified personnel; rules for administering medication; documentation and written reports; ground to air assistance; removal of ill or injured passengers. Crewmember protection from blood borne pathogens |
| 2. | **In flight, Medical Emergencies/Incidents:** Illness or injury symptom recognition and examination; attempt to obtain medical history; assessment of passenger; appropriate medical treatments; handling of passenger; aircraft limitations; crew member incapacitation; apparent death in flight; review of contents and use of first aid equipment.<br>1. Instruction in emergency medical event procedures, including coordination among crewmembers.<br>2. Instruction in the location, function, and intended operation of emergency medical equipment;<br>3. Instruction to familiarize crewmembers with the content of the emergency medical kit;<br>4. Instruction and performance drills in the proper use of automated external defibrillators; and<br>5. Instruction and performance drills in cardiopulmonary resuscitation.<br>6. Treatments of illness and injuries, as well as protection from blood borne pathogens;<br>7. Procedures for administering oxygen;<br>8. Proper restraint of oxygen equipment while in use;<br>9. Lack of breathing, choking, and hyperventilation. |

| | |
|---|---|
| 3. | Instruction in the assessment of severity, possible treatment of medical problems, and history and assessment of individuals who are ill or injured. |
| 4. | **The assessment of severity and possible treatment of:**<br>1. Profuse bleeding, including nosebleed;<br>2. Shock, unconsciousness, and major allergic response;<br>3. Chest pain;<br>4. Cardio-pulmonary resuscitation (CPR);<br>5. Strokes;<br>6. Seizures;<br>7. Diabetic emergencies;<br>8. Childbirth;<br>9. Abdominal distress;<br>10. Airsickness;<br>11. Injuries to the extremities;<br>12. Injuries to the skull, spine, and chest;<br>13. Eye injury;<br>14. Ear distress; and<br>15. Infectious diseases/conditions. |
| 5. | **Instruction in the assessment of severity and possible management of:**<br>1. Common injury situations, minor burns caused by the spillage of hot liquids, or by in-flight fires/smoke situations, situations where passengers and crew could be exposed to extreme conditions such as in a water landing, treatment of chemical burns, treatment of smoke inhalation, and treatment of excessive heat exposure;<br>2. Special communication situations including the elderly, visually/hearing impaired, those with behavioral problems and those who do not understand English; and<br>3. Drug and alcohol abuse. |
| 6. | **Instruction in the procedures and guidelines for:**<br>1. a) Identifying medically qualified persons on board the aircraft; and b) Obtaining medical consultation from the ground.<br>2. Instruction in the assessment of severity, possible treatment of medical problems, and history and assessment of individuals who are ill or injured. |
| 7. | **Instruction in the procedures and guidelines for:**<br>1. Identifying medically qualified persons on board the aircraft; and<br>2. Obtaining medical consultation from the ground. |

### 9.11.5 Dangerous Goods Regulations Training NA 05

**Module Name:** **Dangerous Goods Regulations Training**
**Module Number:** **NA 05**
**Training Level:** Initial/Requalification/Recurrent
**Duration:** 05 Hours Initial/Requalification
03 Hours Recurrent training every 24 Months
**Training Location:** Any Approved Class Room by ECAA or through Nesma Airlines E-learning system Recurrent only.
**Objectives:** To provide the student with an understanding of the dangers involved with certain types of cargo, what Dangerous Goods **Nesma Airlines** will accept how to identify those goods, the responsibilities of crewmembers while transporting Dangerous Goods, and crewmember's actions during emergencies which involve Dangerous Goods.
**Courseware**: Training Slides & Video Illustrations

| Element No. | Element Title |
|---|---|
| 1. | 1. General Philosophy<br>2. Limitations<br>3. Labelling & Marking<br>4. Recognition of Undeclared Emergency Goods<br>5. Provisions of Passengers and Crew<br>6. Emergency Procedures |

### 9.11.6 Crew Resource Management Training (CRM) NA 06

| | |
| --- | --- |
| **Module Name:** | **Crew Resource Management Training (CRM)** |
| **Module Number:** | **NA 06** |
| **Training Level:** | Initial/Requalification/Recurrent |
| **Duration:** | 16 Hours during 2 working day<br>16 hours during 2 working day every 3 years joint with crew member and Flight Dispatchers at Nesma airlines approved classroom. |
| **Training Location:** | ECAA Approved Class Room |
| **Objectives:** | To enhance the communication and management skills of all Cabin Crew members. The emphasis is placed on the nontechnical aspects of crew performance. |
| **Courseware:** | Training Slides & Video Illustrations |
| **Applicability:** | All Cabin Crew Certificate Holder shall receive approved CRM Training before being released to the Operating Experience flights. |

Note: All Crew Resource Management training should as far as possible be a Joint training exercise. This enhances the Crew coordination and communication during operations and Emergencies.

| Element No. | Element Title |
| --- | --- |
| **1.** | 1. Introduction<br>2. Errors<br>3. Standard Operating Procedures<br>4. Fitness and Health<br>5. Stress<br>6. Fatigue, Sleep and Vigilance<br>7. Information Processing<br>8. Situational Awareness<br>9. Workload Management<br>10. Decision Making<br>11. Communication<br>12. Leadership and Behavior<br>13. Conflict<br>14. Automation |

### 9.11.7 Safety Management System Training (SMS) NA 07

| | |
|---|---|
| **Module Name:** | **Safety Management System** |
| **Module Number:** | **NA 07** |
| **Training Level:** | Initial/Requalification/Recurrent |
| **Duration:** | 08 Hours Initial<br>06 hours every 36 Months |
| **Objectives:** | The students will understand the company safety policy and accident prevention programs. |
| **Courseware:** | Training Slides & Video Illustrations |
| **Applicability:** | All Cabin Crew Certificate Holder shall receive approved SMS Training before being released to the Operating Experience flights. |

| Element No. | Element Title |
|---|---|
| 1. | **Nesma Airlines Safety Policy**<br>Training objectives<br>NESMA AIRLINES Safety Policy<br>Safety Accountability<br>Safety Personnel |
| 2. | **SMS Fundamentals and overview**<br>SMS Description<br>Hazard Identification<br>Individual responsibilities<br>Hazard Identification Tools<br>Reporting<br>Just Culture and Nin-Punitive Policy |
| 3. | **Final Exercise & Test**<br>Evaluation of knowledge gained |

### 9.11.8 Aviation Security Training NA 08

**Module Name:** Security Training
**Module Number:** **NA 08**
**Training Level:** Initial/Requalification/Recurrent
**Duration:** 24 hours in 3 working days as a part of an initial course
16 hours in 2 working days Requalification/Recurrent training

**Objectives:** To provide the student with an understanding of security threats, acts of unlawful interference, understanding the behavior of terrorists, appropriate self-defense responses and apply appropriate crew communication and coordination procedures during acts of unlawful interference.
**Courseware**: Training Slides & Video Illustrations; Practical training exercises

Note: Whenever schedules permits, cabin crew should be scheduled for joint training activities or exercises with flight crew members for the purpose of enhancing on-board coordination and mutual understanding of the human factors involved in addressing security threats.

| Element No. | Element Title |
|---|---|
| 1. | Determination of the seriousness of the occurrence;<br>5. Crew communication and coordination;<br>6. Appropriate self-defense responses;<br>7. Use of non-lethal protective devices assigned to crew members for use as authorized by the State;<br>8. Understanding the behavior of terrorists so as to facilitate the ability to cope with hijacker behavior and passenger responses;<br>9. Situational training exercises regarding various threat conditions;<br>10. Flight deck procedures to protect the aircraft;<br>11. Aircraft search procedures;<br>12. Guidance on least-risk bomb location(s). |

### 9.11.9 Recurrent Training NA 09

**Applicability:**
This Module of training is for a Cabin Crew who has been trained and qualified by Nesma Airlines, and who must receive recurring training within the appropriate eligibility period to maintain currency. Recurrent training emphasizes general emergency training and the specifics of each aircraft in which the Cabin Crew is qualified. This will be applicable to all Cabin Crew Members.
All the Recurrent Training will be conducted in any ECAA approved Class Room or though Nesma Airlines E-Learning system for the theoretical courses.

#### 9.11.9.1 Recurrent 12 Calendar Months NA 09-01

**Module Name:** Recurrent Training – 12 Calendar Months
**Module Number:** **NA 09-01**
**Objectives:**

1. To ensure Cabin Crew are adequately and currently proficient, during the Eligibility Period
2. To review and reiterate the Basic Cabin Crew member duties
3. To review and reiterate the General Emergency Training
4. To review cabin crew assignments and procedures to assure fulfilment of all cabin crew duties in the event of an emergency situation
5. To review and reiterate the Aircraft Specific
6. To become familiar with the basic concepts of First Aid and Medical Events.
7. To become familiar with the basic concepts of Aviation Security.

**Courseware:** Training Slides & Video Illustrations
**Duration:** **40 Hours**

| Element No. | Element Titles | Allocated Time |
| --- | --- | --- |
| 1. | **General Emergency Training** | **08** |
| 2. | **Aircraft Ground Training & Difference Type (if App.)** | **12** |
| 3. | **First Aid Training** | **04** |
| 4. | **Aviation Security Training** | **16** |

### 9.11.9.2 Recurrent 24 Calendar Months NA 09-02

**Module Name:** Recurrent Training – 24 Calendar Months
**Module Number:** **NA 09-02**
**Objectives:**
1. To provide Cabin Crew with an understanding of the dangers involved with undeclared Dangerous Goods, how to identify those goods, the responsibilities of crewmembers while transporting Dangerous Goods, and crewmember's actions during emergencies which involve Dangerous Goods.
2. To ensure Cabin Crew obtain proficiency in emergency situations and have the ability to:
a. Correctly pre-flight and prepare emergency/safety equipment for each type of aircraft, as assigned;
b. Identify type of emergency and correctly use appropriate emergency equipment;
c. Exercise good judgment in assessing emergency situation;
d. Implement appropriate emergency procedures and coordinate actions/signals with Flight Crew and other Cabin Crew members;
e. Operate emergency/safety equipment for each type of aircraft; and
f. Communicate effectively with crewmembers/passengers in an emergency situation.
3. Cabin Crew awareness for pre-flight check and the proper use of Defibrillator.
2. Each Crew member shall be required to satisfactorily complete and demonstrate each of the below mentioned drills every 12 or 24 months. The details are mentioned in the Validity of Training.

**Courseware:** Training Slides, Mock-ups, Door Trainer & Video Illustrations
**Duration:** 48 Hours.

| Element No. | Element Titles | Allocated Time |
|---|---|---|
| 1. | **General Emergency Training** | **08** |
| 2. | **Emergency Drills (Practical)** | **03** |
| 3. | **Aircraft Ground Training & Difference Type (if App.)** | **12** |
| 4. | **First Aid Training** | **04** |
| 5. | **Aviation Security Training** | **16** |
| 6. | **Dangerous Goods** | **02** |
| 7. | **Automated External Defibrillator (AED)** | **03** |

**Note;**
1. All Emergency Evacuation training should as ECAR as possible to be a Joint training exercise. This enhances the Crew coordination during operations and Emergencies.

### 9.11.9.3 Recurrent 36 Calendar Months NA 010

**Module Name:** Recurrent Training – 36 Calendar Months
**Module Number:** **NA 010**
**Objectives:**

- The Trainees will understand the company safety policy and accident prevention programs.
- To become familiar with the basic concepts of Crew resource management.

**Courseware**: Training Slides, Video Illustrations
**Duration:** 22 Hours

| Element No. | Element Titles | Allocated Time |
| --- | --- | --- |
| 1 | **Safety Management System (SMS)**<br>• SMS Overview<br>• SMS Components and Elements<br>• SMS Development and Implementation<br>• SMS Teamwork<br>• Human Error<br>• Developing a Safety Culture<br>• Case Studies<br>• Performance Monitoring | **06** |
| 2 | **Crew Recourses Management (CRM)**<br>• Introduction<br>• Communication<br>• Stress management<br>• Human error, chain of error, error management<br>• Human performance<br>• Situational awareness<br>• Team work, synergy and leadership<br>• Standard operating procedures<br>• CRM loop | **16** |

**Note;**
1. All CRM training should as ECAR as possible to be a Joint training exercise. This enhances the Crew coordination during operations and Emergencies.

### 9.11.10 Tailored Basic Indoctrination Training Courses

#### 9.11.10.1 Tailored Basic Indoctrination for New Hire Experience Cabin Crew NA 011

**Module Name:** **Tailored Basic Indoctrination**
**Module Number:** **NA 011**
**Training Level:** Experience Cabin Crew Newly joining Nesma Airlines with license
**Duration:** **20 Hours**
**Training Location:** Nesma Airlines Approved Class Room by ECAA

**Objectives:** Upon completion of this course the trainee will have acquired the knowledge necessary to perform his duties and responsibilities in accordance with Nesma Airlines policies and procedures. This course fulfills the requirements of ECAR 121.415(a)(1).

**Courseware:** Training Slides & Video Illustrations

#### 9.11.10.2 Tailored Basic Indoctrination for Re-Qualification Training NA 012

**Module Name:** **Tailored Basic Indoctrination**
**Module Number:** **NA 012**
**Training Level:** Re-qualification for Cabin Crew elapsed more than 36 months without exercising license privilege

**Duration:** **20 Hours**
**Training Location:** Nesma Airlines Approved Class Room by ECAA

**Objectives:** Upon completion of this course the trainee will have acquired the knowledge necessary to perform his duties and responsibilities while maintaining compliance with the applicable Egyptian Civil Aviation Regulations and in accordance with Nesma Airlines policies and procedures. This course fulfills the requirements of ECAR 121.428 (b).

**Courseware:** Training Slides & Video Illustrations
Applicable ECAR
Basic Indoctrination Training Material

### 9.11.10.3 Course Outline

| Element No | Element Titles |
|---|---|
| 1 | **Legal requirements**<br>• ECARS<br>• ECAR Part 63 - Certification of flight crew- members other than Pilots<br>• ECAR Part 67 - Medical standards and certifications<br>• ECAR Part 91 - General operating and flight rules<br>• ECAR Part 121 - Certification and operations: air carries and air taxi operations<br>• ECAR Part 175 - Transport of dangerous goods<br>• Operation On More Than One Type or Variant<br>• Legal Documents<br>• Cabin Crew License<br>• Power to Inspect<br>• Destinations legal particularities (custom services & agriculture) |
| 2 | **Updates and Highlights**<br>• Company overview<br>• Nesma Airlines Orientation<br>• Cabin crew regulations<br>• Cabin Crew Manual Issue/Revision<br>• Operations Manual |
| 3 | **Operational Policies and Regulations Relating to Cabin Crew Activities:**<br>• Authority of PIC; chain-of-command<br>• Credential requirements for admission to cockpit<br>• Locking of cockpit door<br>• Sterile cockpit procedures<br>• Required number of Cabin Crews<br>• Cabin Crew substitutes at intermediate stops<br>• Taxi requirements<br>• Passenger briefings and demonstrations<br>• Carriage and briefing of passengers who require special assistance<br>• Carry-on baggage requirements<br>• Exit row seating requirements<br>• Carriage of cargo in passenger compartments<br>• Stowage of canes and crutches<br>• Stowage of crew bags<br>• Identification and stowage of hazardous materials<br>• Alcoholic beverages<br>• Fueling with passengers on board<br>• Electronic devices<br>• Carriage of pets<br>• Stowage of inflight service items<br>• Galley equipment restraints |

| | |
|---|---|
| | • Stowage compartment restraints<br>• Cabin Crew jump seat requirements<br>• Passenger seating requirements<br>• Infant/child restraints<br>• Required placards and signs<br>• Compliance with seatbelt and no-smoking signs<br>• Smoking regulations<br>• Cockpit-to-cabin signals<br>• Serving food to flight crewmembers<br>• MEL provisions<br>• Pre-flight policies<br>• Report mechanical irregularities<br>• Cabin Crew duty period limitations and rest requirements.<br>• Routine opening/closing of doors<br>• Upright position of seat backs for take-off and landing.<br>• Protruding passenger seat armrests.<br>• Procedures for opening, closing, and locking of flight crew compartment doors. |
| 4 | **Communication & Coordination between flight crew member and Cabin Crew**<br>• Cockpit to Cabin Communication:<br>**a.** Take-off & Landing<br>**b.** Turbulence |
| 5 | **Emergencies**<br>• Cabin to Cockpit Communication:<br>**a.** Sterile Cockpit Time<br>**b.** Sterile Cockpit Meaning<br>• Emergency Procedures<br>• Normal Operations<br>• Practices & Procedures<br>**a.** Cockpit/Cabin Pre-flight Briefing<br>**b.** Other Recommended Practices |
| 6 | **Passenger Handling Policies and Regulations Relating to Cabin Crew Activities:**<br>1. Passenger acceptance/refusal policies including those requiring special assistance;<br>2. Armed passengers, prisoners with escorts, couriers and unauthorized persons;<br>3. Passengers who carry oxygen for personal use, and oxygen administration inflight;<br>4. Serious illness or injury and apparent death inflight;<br>5. Apprehensive and problem passengers such as those who appear to be emotionally disturbed, appear to be under the influence of alcoholic beverages and narcotic drugs; |

| | |
|---|---|
| | 6. Passengers who abuse Cabin Crews, who interfere with a crewmember in the performance of duties, who smoke in lavatories, who refuse to follow safety instructions of crewmembers, and who do not comply with ECAR;<br>7. Special needs passengers such as infants, children, unaccompanied minors, elderly, obese, pregnant, and non-English speakers. |
| 7 | **Cabin Crew Requirements & Standards:**<br>1. Company required equipment & Cabin Crew manual responsibilities;<br>2. Required documents, immunizations and duties<br>3. Training and qualification requirements, recurrent training, performance checks, and competency checks<br>4. Rules on consumption of alcoholic beverages and use of narcotics by crewmembers |
| 8 | 1.Crew communication, coordination, the importance and content of crew briefing;<br>2.Flight familiarization, take offs and landings;<br>3.Inflight communications and post-flight debriefing;<br>4.Crewmember team concept, standardization of procedures and signals between cockpit and crew, and pre-flight responsibilities;<br>5.Chime signals, signal for evacuation, and for sterile cockpit;<br>6.Security procedures, procedures for initiation of evacuation, for notification of emergency, and cockpit emergency assignments; Procedures for notifying cockpit all passengers seated prior to aircraft movement; and<br>7.Positioning of cockpit door prior to take-off, for Cabin Crew entry to cockpit, and signal for Cabin Crews to be seated prior to take-off. |

**This Page Intentionally Left Blank**

## Contents

**CHAPTER 10 FORMS**......2
10.1. Introduction......2
10.2. Forms / Records Filling Instructions......2
10.3 System of Form Numbering......2
10.4 List of Appendixes......2
10.5 Forms......3
10.5.1 Training Committee Note (TCN)......3
10.5.2 Special Route or Airfield of Qualification Form......4
10.5.3 Base Training/ Zero Flight Training Form......5
10.5.4 Captain's USV Form......6
10.5.5 CAT II/III Auto-Approach & Auto-Land Performance......8
10.5.6 CAT II/II Initial Qualification Record-All Type......9
10.5.7 Company Oral Test......10
10.5.8 Flight Crew Re Qualification Record......11
10.5.9 Instructor Evaluation......12
10.5.10 Instructor RHS Training Form......13
10.5.11 IOE Form......14
10.5.12 IOE/USV......16
10.5.13 Line Check......20
1.5.14 Oral Exam for Instructor......22
10.5.15 Application for Pilot Check Airman......23
10.5.16 Application for Designated Pilot Examiner......24
10.5.17 Proficiency Check......25
10.5.18 Random / Remedial Form......27
10.5.19 RHS Qualifications for Line Captains......29
10.5.20 Spot Check Form......30
10.5.21 Training Separate Report Form......32
10.5.22 Written Knowledge Exam......33
10.5.23 Full Flight Simulator (FFS) Training......34
10.5.24 Flight Dispatcher's Training \ Competency Check Form......35
10.5.25 In Flight Sectors and Competency Check......37
10.5.26 Cabin Crew Performance Evaluation......38
10.5.27 Purser Performance Evaluation......39
10.5.28 Instructor In-Flight Proficiency Check......40
10.5.29 Ground Competency Check......41
10.5.30 Flight Crew Ground Competency check......42
10.5.31 Cabin Crew Ground Competency Check......43

# CHAPTER 10 FORMS.

## 10.1. Introduction

This section provides the standard Forms/Records to be used by Nesma Airlines Instructors/Check Airmen. The forms have been developed to meet the requirements of the rules and regulations of national and international authorities and also to cover a Nesma Airlines Training and checking needs. A detailed maneuver and procedure records shall be issued and attached with the Training or Check form to cover all the Training and Checking requirements for each aircraft type.

## 10.2. Forms / Records Filling Instructions.

1. All training items listed in the training Records/Forms should be checked by grades (1 to 5 or not applicable (NA).
2. The results of Checking shall either be SATISFACTORY / UNSATISFACTORY, or grade (1 to 5) further comments and/or recommendations shall be submitted in the detailed Confidential Report Form. The report will be then placed in a sealed envelope and handed to the chief Pilot.
3. Comments should be as objective as possible.
4. Trainees must sign their Training /checking records after entering the dates of last 3 landings and after the records being completed by IP/Check Airman.
5. The expiration date is calculated by adding 7 months to the Base Month of the current event.
6. Simulator Training Flight Reports shall be completed; Flight Time and Duty Period (DP) entered properly and signed flight instructor for the purpose of time logging and salary compensation.

## 10.3 System of Form Numbering

All forms in this manual are numerically numbered in sequence

## 10.4 List of Appendixes

Syllabus appendix D

## 10.5 Forms

### 10.5.1 Training Committee Note (TCN)

| | | |
|---|---|---|
| Nesma Airlines نسما للطيران | **Training committee Note** | **Training Department** |

| | | |
|---|---|---|
| **Ref:** | **Date of Issue:** | **Validity:** |

Issue No.: 05 issue date: Jan. 2020 Form No.: 140

## 10.5.2 Special Route or Airfield of Qualification Form

| Nesma Airlines نسماللطيران | SPECIAL ROUTE OR AIRFIELD OF QUALIFICATION FORM | Training Department |
|---|---|---|

| Name : ........................................................................ | ID No. ............. | Location | Date |
|---|---|---|---|
| A/C Type | Crew Position ☐ Capt ☐ F/O | | |
| Area | Route | Airports | |
| ☐ Familiarization Flight<br>Seat Position:<br>☐ LHS* ☐ LRS ☐ OBS** | ☐ RCU *** | ☐Simulator<br>Simulator Level : ☐A ☐B ☐C ☐D | |

**Items :**
Enter : F (Familiarization Flight) R (RCU***) S : (Simulator) NA (Not Applicable)

| BEFOR DEPARTURE | | APPROACH AND LANDING | |
|---|---|---|---|
| Description of Route Segments | | Terminal Area Procedures | |
| Prevailing seasonal weather | | Arrival Procedures (STARs) | |
| NOTAM briefing | | Instrument Approach Procedures | |
| MEL Requirements | | Low Drag and Noise Requirements | |
| Fuel Calculations | | Airport physical characteristics & ground features | |
| Performance Calculations | | Especial airport lighting | |
| **ENROUTE** | | Approach and Taxi way lighting | |
| Navigation Facilities | | Taxi in and Parking Procedures (Docking system) | |
| Enroute communication procedures (VHF-HF) | | **STATE RULES AND REQUIREMENTS** | |
| Terrain | | Visa and Immigrations Requirements | |
| Flight Level selection and Step Climb | | Customs Regulations | |
| Enroute Especial Procedures | | Political and Culture Considerations | |
| ATIS | | Any other considerations | |
| Weather Avoidance Procedures | | **DEPARTURE** | |
| Communication Failure Procedures | | StartUP Procedures | |
| Emergency Procedures | | Taxi out Procedures | |
| | | Take-Off and Noise Abatement | |
| | | Departure Procedures (SIDs) | |

***Remarks :***

..................................................................................................................................................

..................................................................................................................................................

*This is to certify that*
*Capt. / FO : ........................................................................ Has completed his*
*Qualification for the Area, Route and Airport listed above.*

| Instructor Name : ........................................................................ | Instructor 's Signature ........................................ | ID No. .................. |
|---|---|---|
| Chief Pilot Name : ........................................................................ | Chief Pilot Signature ........................................ | ID No. .................. |
| Flight Training Manager : | | |

* LHS : is allowed only when I.P. is occupying RHS and acting as PIC.
** OBS : Observer
*** RCU : Route Clearance Unit.

Issue No.: 05 issue date: Jan. 2020 Form No.: 141

### 10.5.3 Base Training/ Zero Flight Training Form

| Nesma Airlines نسما للطيران | BASE TRAINING / ZERO FLIGHT TRAINING FORM | Training Department |
|---|---|---|

**BASE TRAINING / ZERO FLIGHT TRAINING FORM**

| Name : ……………………………………………… | ID No. ………… | Crew Position ☐ Captain ☐ F/O |
|---|---|---|

| A/C Type ………………… | A/C Registration …………………… | Sim. Level (ZFT) ☐ C ☐ D | Location : …………… | Date : ……/……../,,,,,,, |
|---|---|---|---|---|

| R / W | GA | TG | FS | Weather |
|---|---|---|---|---|
| | | | | |
| Flight Time | | Hours | Min. | |
| | | | | |

**FLIGHT MANEUVERS**

| | Sim | A/C | | Sim | A/C |
|---|---|---|---|---|---|
| • Exterior inspection * | | | • Visual Approach (ILS supported) T-Go | | |
| • Cockpit preparation | | | • Visual Approach (No-ILS)- T/Go | | |
| • SEngine Start | | | • Visual Approach No-ILS- No/ATH T/Go | | |
| • Taxi | | | • Simulated Eng. Failure after T/O | | |
| • Flx / Reduced Thrust Take-off | | | • One Eng. Out Visual Approach | | |
| • ILS Pattern | | | • Eng. Out Landing. | | |
| • Automatic Approach | | | • | | |
| | | | | | |

**Remarks :**

……………………………………………………………………………………………………

……………………………………………………………………………………………………

……………………………………………………………………………………………………

***This is to certify that :***

☐ ***Captain*** ☐ ***F/O*** ………………………………………………………… ***Is ready for A/C type rating Base Check.***

| ☐ IP ☐ CP Name | ☐ IP ☐ CP Signature |
|---|---|
| ID No. | Trainee's Signature |

| ECAA Notified ☐ Y ☐ N | Inspector Name | Flight Training Manager |
|---|---|---|

* Can be performed by using pictorial presentation.

Issue No.: 05 issue date: Jan. 2020 Form No.: 142

### 10.5.4 Captain's USV Form

| Nesma Airlines نسما للطيران | CAPTAIN'S USV FORM | Training Department |
|---|---|---|

**CAPTAIN'S USV FORM**

| Name | Code No. | ☐ Capt. ☐ F/O |
|---|---|---|
| A/C Type | | |

| Date | Route | Time →Previous | | Sectors →Previous | |
|---|---|---|---|---|---|
| | | Today | Total | Today | Total |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| Date<br>Type of Training | Comments | Instructor Name | Signature |
|---|---|---|---|
| / /<br>☐ USV | | | |
| / /<br>☐ USV | | | |
| / /<br>☐ USV | | | |

USV: Under Supervision.

Page 1 of 2

Issue No.: 05 issue date: Jan. 2020 Form No. 143

| Nesma Airlines نسما للطيران | CAPTAIN'S USV FORM | Training Department |
|---|---|---|

| CAPTAIN'S USV FORM (Cont'd) | | | |
|---|---|---|---|
| / / ☐ USV | | | |
| / / ☐ USV | | | |
| / / ☐ USV | | | |
| | | | |

| ***Ready for Final Line Check*** | | |
|---|---|---|
| Check Airman Name | Signature | Code No. |
| Trainee Name | Trainee's Signature | Code No. |
| Chief Pilot Name | Chief Pilot's Signature | Date |

USV: Under Supervision.

Page 2 of 2

Issue No.: 05 issue date: Jan. 2020 Form No. 143

### 10.5.5 CAT II/III Auto-Approach & Auto-Land Performance

| Nesma Airlines نسما للطيران | CAT II/III AUTO-APPROACH & AUTO-LAND PERFORMANCE | Training Department |
|---|---|---|

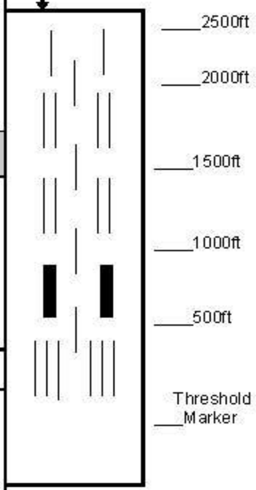
**CAT II/III AUTO-APPROACH & AUTO-LAND PERFORMANCE**

**SECTION I.**
**"Complete all items"**

| Captain's Name | | Code No. | F/O Name | | Code No. |
|---|---|---|---|---|---|
| Check Airman Name/Code No. (During USV Not for Instructors) | | | Type Of Approach ☐Ops. Demo ☐USV ☐Recurrent | | |
| Flight No. | A/C Type | A/C REG. | Date | TIME (Z) | |
| Airport | RWY | Wind | Wx-Conditions RVR/Vis. | Ceiling | ATC RWY protection provided ☐ Yes ☐ No |
| | | | | | |

***Auto-Land Touchdown zone is 900 feet to 2400 feet down the runway, and within 27 feet of centreline.***

**Record area of Touchdown with an X on runway depiction**




The Auto-Approach Auto-Land was:
☐ S ☐ US*

***If unsatisfactory you must complete SECTION II.**

**SECTION II.**
**"Complete ONLY if Auto-Approach or Auto-Land was UNSATISFACTORY."**

Approach was discontinued due to:

☐ Airborne Equipment Failures.
☐ Ground Facility Difficulties.
☐ ATC Instructions.
☐ Other (specify) : ______________________________

If the autopilot was disconnected the altitude was ______________ ft MSL

**Comments**

| Observed by ECAA Inspector ☐ Yes* ☐ No | * ECAA Inspector Name |
|---|---|
| Captain's Signature | Check Airman Signature |

Issue No.: 05 issue date: Jan. 2020 Form No.: 144

## 10.5.6 CAT II/II Initial Qualification Record-All Type

| Nesma Airlines نسما للطيران | CAT II/III Initial Qualification Record-All Types | Training Department |
|---|---|---|

### CAT II/III Initial Qualification Record-All Types

| Name | Code No. | Aircraft Type | ☐ Capt. ☐ F/O ☐ F/E |
|---|---|---|---|
| | | | |

**PART 1 : Ground Training**

| Type of Ground Training | Hours | Date | Location | Inst. Name/ Code No. | | Signature |
|---|---|---|---|---|---|---|
| ☐ CBT ☐ VACBI<br>☐ Class Room | *03:00* | | | | | |

**PART 2 : Simulator Flight Training**

| Sim. Level | Owned By | Hours | Date | Location | CP. Name/ Code No. | | Signature |
|---|---|---|---|---|---|---|---|
| ☐ C ☐ D | | *01:00* | | | | | |

*All items must be completed-check (✓) indicating completion of each item.*

| 1. L.V Taxiing and L.V.T.O | | 4. System Failures | |
|---|---|---|---|
| Low Visibility Taxiing and takeoff Briefing | | *4.1 Radio failure* | |
| Taxiing at RVR (150/200m RVR)[1] | | ILS Transmitter failure at 200'. | |
| Low Visibility Take-off's (150/200m RVR)[1] | | ILS Receiver failure | |
| *- X- Wind with loss of visual cues at 100 Kt.* | | *4.2 Aircraft system failure* | |
| *- With simulated engine failure at $V_1$* | | App. with one A/T, remaining A/T fails at 500' | |
| *- Rejected T.O with an engine failure before $V_1$* | | IR or A/P failure (One A/P Approach.) | |
| **2. Visual Segment Demo** | | One RA Failure-remaining RA's fails at 200'- G.A | |
| Visual segment : | | Eng. failure above 100' (One eng. inop. G.A), Followed by one eng.-CAT II App. And landing | |
| *a) CAT II Restricted Minima 150' & RVR 500 m.* | | | |
| *b) CAT II Minima 100' & RVR 300 m.* | | Eng. failure below 100'-one engine inop. auto or manual landing | |
| *c) CAT III Minima 050' & RVR 200 m.* | | | |
| X-Wind and standard calls auto-land demo | | Flare mode failure -manual landing at 80' | |
| **3. Incapacitation** | | | |
| CM 1 Incapacitation below 1000' & above DH | | | |
| F.O G.A when CM 1 incapacitation is confirmed | | | |

**PART 3 : Simulator Evaluation**

*Note: Some of the simulator training items shall be selected from PART 2 to conduct the evaluation.*

| | Hours | Date | Location | CP. Name/ Code No. | | Signature |
|---|---|---|---|---|---|---|
| Simulator Check | *01:00* | | | | | |

| | Simulator Check Result | |
|---|---|---|
| Knowledge<br>☐ 1(US) ☐ 2 ☐ 3 ☐ 4 ☐ 5 | Flying Skills and Procedures<br>☐ 1(US) ☐ 2 ☐ 3 ☐ 4 ☐ 5 | Management and Decision Making<br>☐ 1(US) ☐ 2 ☐ 3 ☐ 4 ☐ 5 |

**PART 4 : USV Flight Training(Min.3 Auto-Land)[2]**

*Note: At least one landing must be conducted manually with A/P disconnected at 80'.*

| Date | Airport/Runway | | Weather | Approach & Landing Perf. | CP. Name & Code No. | | Signature |
|---|---|---|---|---|---|---|---|
| | | | CAT I or better | ☐ S ☐ US | | | |
| | | | | ☐ S ☐ US | | | |
| | | | | ☐ S ☐ US | | | |

| CAT II Qualification Final Result | Trainee's signature | G.M Flight Training |
|---|---|---|
| ☐ US ☐ S | | |

1- *150/200m RVR for category C/D aircrafts respectively.*
2- *Instructor pilots shall be perform autoland requirements without USV.*

Issue No.: 05 issue date: Jan. 2020 Form No.: 145

## 10.5.7 Company Oral Test

**COMPANY ORAL TEST**

| **Name :** ……………………………………………………….. | **ID No.** ………….. | **Location** | **Date** |
|---|---|---|---|
| **A/C Type** | **Crew Position** □ **Capt** □ **F/O** | | |

**The company Oral is oriented to check the outcome all practical phases of the training program and the knowledge of the operational aspects of the aircraft systems. The trainee must demonstrate a knowledge of the items listed below :**

Enter : S (Satisfactory) U (Un-satisfactory) NA (Not Applicable)

| **Aircraft Limitations** | | **Non-Normal and Emergency Procedures** | |
|---|---|---|---|
| All A/c systems limitation | | Ability to perform or state immediate action items | |
| Weight limitation | | Ability to locate Non-Normal check list | |
| Performance | | Communication between cockpit and cabin | |
| Knowledge of, ability to compute:<br>- Take-off card<br>- Landing data card<br>- Cruise performance | | Emergency evacuation procedures | |
| | | Prepared / Unprepared emergency | |
| | | **Aircraft Systems** | |
| | | Electrical – Hydraulic – Pneumatic – Fuel. | |
| Effect of MEL on performance | | Power Plant – EFIS – Air conditioning & Pressurization. | |
| High speed Vs low speed phases of take-off | | Autopilot – F/D, FMGS – Navigation system. | |
| Wet and contaminated runways | | Flight controls – Flight Instruments – Landing Gears. | |
| Flight level selection, specific range and OPT. ALT | | **Flight Operations Manual** | |
| Step climb and fuel saving | | Weather Minima limitation (Operation Manual) | |
| Cruise Mach No. and maneuver capability | | Fuel Policy | |
| **Normal Procedures** | | Wind shear, Thunderstorm and Turbulence | |
| Flight Crew Operations Manual (FCOM) SOP | | Fueling with PAX on board | |
| Flight Operation Manual (FOM) SOP | | Dangerous Goods (FCOM – NOTAC & Load Sheet) | |
| Flight patterns | | Shoulder harness, seat belt policy and cockpit door | |
| | | First Officer T.O and Landing. | |

***Remarks :***

…………………………………………………………………………………………………………………………

………………………………………………………………………………………………………………………..

| **Instructor Name** | **ID No.** | **Result** | **Instructor Sign.** |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| ***Average*** → | | | ***Passing Grade 70%*** |

| ***Test Result*** □ **S** □ **US** | **Trainee Signature** | **Flight Training Manager Sign.** |
|---|---|---|

Issue No.: 06 issue date: Jan. 2024 Form No.: 146

### 10.5.8 Flight Crew Re Qualification Record

| Nesma Airlines نسما للطيران | FLIGHT CREW TRAINING RECORD | Training Department |
|---|---|---|

**FLIGHT CREW TRAINING RECORD**

| | |
|---|---|
| Name | o Capt. o F/O o F/E |
| Code No. | A/C Type |

| Ground Training | Hours | Completion Date | Location | Instructor Name / ID No. | Signature signifying satisfactory completion |
|---|---|---|---|---|---|
| G. school | : | | | | |
| Written Test Result ☐ S ☐ US | : | | | | |
| FBS | : | | | | |
| **Flight Training** | **Hours** | **Completion Date** | **Location** | **Instructor Name / ID No.** | **Signature signifying satisfactory completion** |
| Instrument Trainer | : | | | | |
| FBS | : | | | | |
| Oral Test Result ☐ S ☐ US | : | | | | |
| FFS | : | | | | |
| RHS* | : | | | | |
| Airplane | : | | | | |
| **Flight Check** | **Hours** | **Completion Date** | **Location** | **Examiner / Check Airman / ID No.** | **Examiner / Check Signature** |
| FFS | : | | | | |
| Airplane ** | : | | | | |
| **Flight Crew Training Manager** | | | | | |

* Right Hand Seat for Captains.
** Total for A/C base training and base check.

Issue No.: 05 issue date: Jan. 2020 Form No.: 148

## 10.5.9 Instructor Evaluation

| Nesma Airlines نسماللطيران | INSTRUCTOR EVALUATION | Training Department |
|---|---|---|

| INSTRUCTOR EVALUATION | | | | |
|---|---|---|---|---|
| Name: | | ID. No. | Crew Position<br>☐ IP ☐ CP | Date |
| A/C Type: | Simulator Operator | Simulator Level<br>☐A ☐B ☐C ☐D | Location | |
| * FLT | From: | To: | Total hours: | |

Enter (S / U or NA) Indicating Satisfactory / Unsatisfactory completion of each item or Not Applicable.

| Knowledge | | Comments |
|---|---|---|
| • Aircraft systems, Aircraft performance and Limitations. | | |
| • General Aeronautical knowledge | | |
| • Relevant ECARs. | | |
| • Operations Specifications. | | |
| • Operations Manual SOP, | | |
| • Compliance with G.SOP. | | |
| **Briefing** | | |
| • Covering all briefing items. | | |
| • Instructor Skills :<br>- Asking questions<br>- Using illustrations and examples<br>- Listing Skill<br>- Using and training aids | | |
| • Instructor trainee relation. | | |
| **Simulator Session** | | |
| • Time Management during simulator session. | | |
| • Proper use of Reposition and freeze function | | |
| • Proper use of Line Oriented Simulator (LOS) during PC | | |
| • Use of Line Oriented Training (LOFT) during recurrent training | | |
| • Demonstration | | |
| **Debriefing** | | |
| • Accurate record of debriefing items | | |
| • Complete debriefing for all items | | |
| • Instructor Skills<br>- Asking questions<br>- Using illustrations and examples<br>- Listing Skill<br>- Using and training aids | | |
| **Demonstration and Error Recovery (*)** | | |
| • Engine failure during Take-Off | | |
| • One Engine ILS approach and go around | | |
| • One Engine VOR approach and Landing | | |
| • Error recovery (Minimum 3 Landing) | | |

*General Comment:*

……………………………………………………………………………………………………………………

| ☐IP ☐CP Name: | ID No. | Signature: |
|---|---|---|
| Trainee Signature | Inspector Signature | Flight Training Manager |

*(*) To be filled when performed on A/C.*

Issue No.: 05 issue date: Jan. 2020 Form No.: 149

## 10.5.10 Instructor RHS Training Form

| Nesma Airlines نسماللطيران | INSTRUCTOR RHS TRAINING FORM | Training Department |
|---|---|---|

**INSTRUCTOR RHS TRAINING FORM**

| Name | | Code No. | | Location | Date |
|---|---|---|---|---|---|
| A/C Type | | A/C Registration | | Sim. Level (ZFT) ☐ C ☐ D | |

| ***Training Device*** | **Flight Time*** Hours | Minutes | **R / W** | **GA** | **TG** | **FS** |
|---|---|---|---|---|---|---|
| **SIM** | | | | | | |
| **A/C** | | | | | | |

**Trainee Instructor in RHS - Training Instructor in LHS**

***Enter (✓) indicating completion of each item.***
***(×) indicates that A/C cannot be use for this item***

| **A. RHS Proficiency (PF: RHS)** | Sim | A/C | **B. Error Recovery (PF: LHS) - (Cont'd)** | Sim | A/C |
|---|---|---|---|---|---|
| 1. Take-off | | X | **Approach** | | X |
| 2. ILS / Visual | | X | 1. Over controlling in down wind and during | | X |
| 3. Full Stop Landing | | X | approach | | X |
| 4. Take-off Visibility 400 m, Cloud Base 100 ft | | X | 2. Single engine approach | | X |
| 5. Engine Failure after V1 | | X | 3. Single engine Go Around from flare height | | X |
| 6. Radar Vectors Single engine ILS - Full Stop | | X | **Final approach** | | X |
| Landing | | X | 1. Lateral offset | | X |
| 7. FL 350 - Emergency descent | | X | 2. Vertical offset | | X |
| 8. Take-Off - Climb to FL 100 (Steep Turn & | | X | 3. Cross wind correction | | X |
| Stall ) | | X | **Flare** | | X |
| 9. Flight Controls Malfunction ( Type Specific ) | | X | 1. High flare and long float | | X |
| 10. Full Stop Landing | | X | 2. No flare | | X |
| 11.Take-off Visual circuit (500 ft) | | X | 3. Single engine high flare and Go Around | | X |
| 12.Touch and Go | | X | 4. Misuse of rudder causing roll during flare | | X |
| 13.Repeat as required | | X | 5. Over control in roll during flare | | X |
| **B. Error Recovery (PF: LHS)** | | | **Touch and Go / Landings** | | |
| **Take-off** | | X | 1. T/G landings followed by low level circuits | | |
| 1. Creeping throttles during take-off | | X | (500' AGL) | | |
| 2. Wrong application of rudder during cross- | | X | 2. T/G briefing in down wind ***( NO Brakes,*** | | |
| wind | | X | ***NO Speed brake, NO Reverse)*** | | |
| 3. Wrong application of rudder during engine | | X | 3. T/G briefing in final approach *NO Brakes, NO* | | |
| failure | | X | *Speed brake, NO Reverse* | | |
| | | | 4. After landing commands *Stand power* | | |
| | | | *,Center line ,Open power, Rotate* | | |
| | | | 5. Full stop landing | | |
| | | | **3 Engines ferry*** | | X |

| Remarks | | |
|---|---|---|
| | | |
| ☐ IP ☐ CP Name | Code No | Signature |
| Training Result<br>☐ S ☐ US | Trainee's Signature | G.M Flight Training |

*** PF FLIGHT TIME** *** * NOTE: TOTAL 4 HRS AS PF**

Issue No.: 05 issue date: Jan. 2020 Form No.: 150

## 10.5.11 IOE Form

| Nesma Airlines نسما للطيران | IOE FORM | Training Department |
|---|---|---|

**IOE FORM**

| Name | Code No. | ☐ Capt. ☐ F/O |
|---|---|---|
| A/C Type | | |

| Date | Route | Time Previous → | | Sectors Previous → | |
|---|---|---|---|---|---|
| | | Today | Total | Today | Total |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| Date Type of Training | Comments | Instructor Name | Signature |
|---|---|---|---|
| / / <br>☐ IOE<br>☐ RHS<br>PF: PM: | | | |
| / / <br>☐ IOE<br>☐ RHS<br>PF: PM: | | | |
| / / <br>☐ IOE<br>☐ RHS<br>PF: PM: | | | |

**Note:-**
IOE: Initial Operating Experience
RHS: Right Hand Seat (Two sectors: One PF-One PNF) For Capt's only
Specify PF & PM Hours Flown

Page 1 of 2

Issue No.: 05 issue date: Jan. 2020 Form No.: 151

| Nesma Airlines نسماللطيران | IOE FORM | Training Department |
|---|---|---|

| IOE FORM (Cont'd) | | | |
|---|---|---|---|
| / /<br>☐ IOE<br>☐ RHS<br>PF: PM: | | | |
| / /<br>☐ IOE<br>☐ RHS<br>PF: PM: | | | |
| / /<br>☐ IOE<br>☐ RHS<br>PF: PM: | | | |
| / /<br>☐ IOE<br>☐ RHS<br>PF: PM: | | | |

**INITIAL RELEASE**

***This is to certify that*** *Captain ……………………………………………… is fit to fly as a*

*Captain under supervision on …………………………… Aircraft type.*

| | | |
|---|---|---|
| Check Airman Name | Signature | Code No. |
| Trainee Name | Trainee's Signature | Code No. |
| Chief Pilot Name | Chief Pilot's Signature | Date |

**Note:-**
IOE: Initial Operating Experience
RHS: Right Hand Seat (Two sectors: One PF-One PNF) For Capt's only
Specify PF & PM Hours Flown

Page 2 of 2

Issue No.: 05 issue date: Jan. 2020 Form No.: 151

## 10.5.12 IOE/USV

| Nesma Airlines نسما للطيران | IOE / USV<br>EVALUATION / DISCUSSION ITEMS | Training Department |
|---|---|---|

**IOE / USV**
**EVALUATION / DISCUSSION ITEMS**

**Trainee Name:**………………………… **ID No.:** ………… **Trainee Signature:** …………

**THE FOLLOWING ITEMS MUST BE COVERED DURING IOE AND USV**
**INSTRUCTOR/s SHOULD SIGN IN FRONT OF EACH COVERED ITEM**

| REF | SUBJECT | DISCUSSED | DISCUSSED | DISCUSSED | COMPETENT |
|---|---|---|---|---|---|
| A1 | FLIGHT PREPERATION | | | | |
| A2 | FUEL CALCULATIONS | | | | |
| A3 | EXTERIOR INSPECTION | | | | |
| A4 | COCKPIT PREPARATION | | | | |
| A5 | RTOW CHARTS | | | | |
| A6 | BRIEFINGS | | | | |
| A7 | TAXI PROCEDURES | | | | |
| **TAKE-OFF AND DEPARTURE** | | | | | |
| B1 | TAKE-OFF TECHNIQUES | | | | |
| B2 | CLIMB PROCEDURES | | | | |
| **CRUISE** | | | | | |
| C1 | CRUISE MANAGMENT | | | | |
| C2 | OPTIMUM LEVEL AND STEP CLIMB | | | | |
| C3 | WEATHER RADER / STORM AVOIDANCE | | | | |

Page 1 of 4

Issue No.: 05 issue date: Jan. 2020 Form No.: 152

| Nesma Airlines نسما للطيران | IOE / USV<br>EVALUATION / DISCUSSION ITEMS | Training Department |
|---|---|---|

**IOE / USV**
**EVALUATION / DISCUSSION ITEMS**

**Trainee Name:**………………………….. **ID No.:** ………… **Trainee Signature:**…………..

THE FOLLOWING ITEMS MUST BE COVERED DURING IOE AND USV
INSTRUCTOR/s SHOULD SIGN IN FRONT OF EACH COVERED ITEM

| REF | SUBJECT | DISCUSSED | DISCUSSED | DISCUSSED | COMPETENT |
|---|---|---|---|---|---|
| **DESCNENT AND APPROACH** | | | | | |
| D1 | DESCENT PLANNING AND PREPERATION | | | | |
| D2 | BRIEFING APPROACH AND GO-AROUND | | | | |
| D3 | HOLDING AND ALTERNATE FUEL REQUIRMENT | | | | |
| D4 | DESCENT TECHNIQUES | | | | |
| D5 | CONTINUOUS DESCENT APPROACHES AND LOW POWER/LOW DRAG -DELAYED FLAP APPROUCH | | | | |
| D6 | NON PRECISION APPROUCH | | | | |
| D7 | VISUAL APPROUCH | | | | |
| D8 | CAT 1 ILS APPROACH | | | | |
| D9 | DIVERSION | | | | |
| **LANDING** | | | | | |
| E1 | MANUAL LANDING | | | | |
| E2 | USE OF ENGINE REVERSE AND BRAKES | | | | |
| E3 | CROSSWIND LANDING | | | | |

Page 2 of 4

Issue No.: 05 issue date: Jan. 2020 Form No.: 152

| Nesma Airlines نسما للطيران | IOE / USV<br>EVALUATION / DISCUSSION ITEMS | Training Department |
|---|---|---|

**IOE / USV**
**EVALUATION / DISCUSSION ITEMS**

**Trainee Name:**…………………………. **ID No.:** ………… **Trainee Signature:**…………..

**THE FOLLOWING ITEMS MUST BE COVERED DURING IOE AND USV INSTRUCTOR/s SHOULD SIGN IN FRONT OF EACH COVERED ITEM**

| REF | SUBJECT | DISCUSSED | DISCUSSED | DISCUSSED | COMPETENT |
|---|---|---|---|---|---|
| **AFTER LANDING PROCEDURES** | | | | | |
| F1 | AFTER LANDING PARKING | | | | |
| F2 | SECURING AIRCRAFT | | | | |
| **NAVIGATION, AUTOFLIGHT AND AVIONICS** | | | | | |
| G1 | USE OF FMS | | | | |
| G2 | ADIRS | | | | |
| G3 | AFIRS/SATCOM | | | | |
| G4 | RNAV/RNP/RVSM | | | | |
| **MUST KNOW-ABNORMALS AND EMERGENCIES** | | | | | |
| H1 | PILOT INCAPACITATION | | | | |
| H2 | ENG FAILURE IN CRUISE AND DRIFTDOWN | | | | |
| H3 | BOMB ON BOARD | | | | |
| H4 | EMERGENCY DESCENT/RAPID DESCENT | | | | |
| H5 | LIMITATION | | | | |
| H6 | DITCHING/FORCED LANDING BRIEFING | | | | |
| H7 | ALL ENG FLAME OUT – VOLCANIC ASH | | | | |
| H8 | REJECTED T/O AND EVACUATION | | | | |
| H9 | RECALL ITEMS | | | | |
| H10 | MISCELLANEOUS ABNORMAL & EMERGENCIES | | | | |
| H11 | PRE-CHECK | | | | |

Page 3 of 4

Issue No.: 05 issue date: Jan. 2020 Form No.: 152

| Nesma Airlines نسما للطيران | IOE / USV<br>EVALUATION / DISCUSSION<br>ITEMS | Training Department |
|---|---|---|

## IOE / USV
## EVALUATION / DISCUSSION ITEMS

**Trainee Name:**………………………… **ID No.:** ………… **Trainee Signature:**…………

THE FOLLOWING ITEMS MUST BE COVERED DURING IOE AND USV
INSTRUCTOR/s SHOULD SIGN IN FRONT OF EACH COVERED ITEM

| REF | SUBJECT | DISCUSSED | DISCUSSED | DISCUSSED | COMPETENT |
|---|---|---|---|---|---|
| **PERFORMANCE, SPECIAL OPERATION AND POLICY** | | | | | |
| I1 | DE-ICING /ANTI-ICING | | | | |
| I2 | ADVERSE RUNWAY CONDITIONS | | | | |
| I3 | COLD WETHER OPERATIONS | | | | |
| I4 | HOT WETHER OPERATIONS | | | | |
| I5 | FLIGHT IN TURBULANCE | | | | |
| I6 | FUEL POLICY AND AIRCRAFT REFUELING | | | | |
| I7 | LVO | | | | |
| **DOCUMENTATION** | | | | | |
| J1 | MEL/CDL | | | | |
| J2 | OEB AND FCOM BULLETINS | | | | |
| J3 | AIRCRAFT LIBRARY AND DOCUMENTATION | | | | |
| J4 | LOAD AND TRIM SHEETS | | | | |
| J5 | ASR/CSR/CHFR/DISCRETION | | | | |

Page 4 of 4

Issue No.: 05 issue date: Jan. 2020 Form No.: 152

## 10.5.13 Line Check

| Nesma Airlines نسما للطيران | LINE CHECK FORM | Training Department |
|---|---|---|

**LINE CHECK FORM**

**THE FOLLOWING ITEMS MUST BE COVERED DURING LINE CHECK**

(√) Indicates that item has been checked

| **1. FLIGHT CHECK** | | ***DESCENT AND APPROACH*** | |
|---|---|---|---|
| ***Dispatch*** | | • ATIS, SNOWTAM and braking action* | |
| • Reporting for duty. | | • Descent planning | |
| • Inspection on personal license for currency | | • Approach briefing, stars and Approaches : | |
| • Computerized and ATC flight plan | | | |
| • Weather briefing T.O and Landing min. | | □ Precision □ Non-Precision □ Visual | |
| • Alternate planning Wx. Min. | | • Destination and Alt. weather minimums | |
| • NOTAM briefing | | ***LANDING AND TAXI IN*** | |
| • Cabin crew safety briefing | | • Landing technique | |
| ***Cockpit*** | | • Use of Auto brakes and reverse thrust | |
| • Tech. log, B snags & Effect on T.O / LDG performance | | • After landing and Taxi in procedures | |
| • Aircraft library and documentation | | **2. KNOWLEDGE CHECK**** | |
| • Inspection of Manuals for currency | | ***A) Flight Operation Manual*** | |
| • Cockpit preparation – FMGS | | • IOE, Initial release, USV and Command Respo. | |
| • Take-Off briefing | | • Navigation Bag contents | |
| • Load, Trim sheet and NOTOC | | • The difference between planning and actual Weather min. and Wx. Min. for new Captain | |
| • □ Cold Wx Operation □ Hot Wx Operation | | • Fuel policy | |
| • T.O performance T.O. speeds and C.G. | | • Windshear, Thunderstroms and Turbulance | |
| • Engine Start procedures | | • Fuelling with PAX on board | |
| ***TAXI, TAKE-OFF AND INITIAL CLIMB*** | | • Dangerous goods | |
| • Push back procedures | | • Shoulder harness, seat belt policy and cockpit door | |
| • Taxi speed and braking technique | | • First officer T.O. and Landing | |
| • T.O roll and V1 concept | | • ECARs 121 | |
| • Noise abatement procedure and initial climb | | • Flight Operations Manual Questions & Answers | |
| • Best angle, best rate and turbulence speeds | | ***B) Aircraft Performance and Technical Knowledge*** | |
| • Area departure, SID and holding | | • Operational system knowledge & Limitations | |
| ***CRUISE*** | | • T.O. performance limits | |
| • FL selection, Mach No. and Maneuver capability | | • Wet and contaminated runways | |
| • Opt, Alt, Specific range, cruise speed schedule | | • Reduced (Flex) thrust | |
| • Step climb and fuel saving | | • Approach and Landing climb performance | |
| • Use of weather radar and Weather avoidance | | • Normal, Non-normal and emergency procedures | |
| • Drift down procedure | | • Flight patterns | |
| • Enroute alternate and emergency procedure | | ***C) Safety Procedures*** | |
| • Calculation of weather min. (Dest. & Alt) | | • Communication between cockpit and cabin | |
| • Minimum fuel for diversion (Alt. + Holding) | | • Emergency evacuation procedures | |
| • Communication failure procedures | | • Prepared / Un-prepared emergency | |
| • Flight control comm.... procedures | | • Bomb on board and least risk location | |
| • | | • Crew incapacitation | |

*** If Applicable.**
**** May be conducted during cruise portion or any time after the completion of the flight**

Page 1 of 2

Issue No.: 05 issue date: Jan. 2020 Form No.: 153

| Nesma Airlines نسماللطيران | LINE CHECK FORM | Training Department |
|---|---|---|

## LINE CHECK FORM

| | | |
|---|---|---|
| Name: ……………………………………………… | ID No. ……………………… | ☐ Capt. ☐ F/O ☐ IP |
| A/C Type ……………………………………………… | Date ……………………………… | |

☐ Final Line Check ☐ Annual Line Check ☐ Route / Area Check

| Route / Area | No. of Section | Flight Time |
|---|---|---|
| | | |

**PERFORMANCE EVALUATION**

| Knowledge | (US) | 1 | 2 | 3 |
|---|---|---|---|---|
| **Flight Operation Manual (FOM) and Relevant ECARs** | ☐ | ☐ | ☐ | ☐ |
| A/C System, Limitations and Performance | ☐ | ☐ | ☐ | ☐ |
| Normal Procedures | ☐ | ☐ | ☐ | ☐ |
| Non-normal Procedures* | ☐ | ☐ | ☐ | ☐ |
| **Flying Skills** | **(US)** | **1** | **2** | **3** |
| **Compliance with SOP (Flight Operations Manual & FCOM)** | ☐ | ☐ | ☐ | ☐ |
| Attitude flying and correct trim technique | ☐ | ☐ | ☐ | ☐ |
| Use of FMGS | ☐ | ☐ | ☐ | ☐ |
| Aircraft configuration, Altitude & Speed control. | ☐ | ☐ | ☐ | ☐ |
| Flying accuracy & Smoothness | ☐ | ☐ | ☐ | ☐ |
| **Management** | **(US)** | **1** | **2** | **3** |
| **Compliance with Flight Operations Manual (FCOM)** | ☐ | ☐ | ☐ | ☐ |
| Planning ahead and use of FMGS | ☐ | ☐ | ☐ | ☐ |
| Crew coordination and use of available resources | ☐ | ☐ | ☐ | ☐ |
| Adherence to clearance and safe heights | ☐ | ☐ | ☐ | ☐ |
| Situational awareness | ☐ | ☐ | ☐ | ☐ |
| Cabin crew safety briefing | ☐ | ☐ | ☐ | ☐ |

**Comments:**
……………………………………………………………………………………………………………
……………………………………………………………………………………………………………
……………………………………………………………………………………………………………
……………………………………………………………………………………………………………

| | | |
|---|---|---|
| **Check Airman Name:** ……………………………………… | **Check Airman Signature:** ……………………………… | **ID No.** ………………… |

**I Certify that I have read the comments contained in this report and understand the final assessment above. In addition I certify that I have self-briefing on route and aerodromes operated by Nesma Airlines**

**Candidate Signature:-………………………**

| | |
|---|---|
| **Chief Pilot Name:** ……………………………………………… | **Chief Pilot Signature:** ……………………………………………… |
| **Check Result** ☐ Satisfactory ☐ Unsatisfactory | **Flight Training Manager** |
| **ECAA inspector Name:** ……………………………………………… | **ECAA inspector Signature:** ……………………………………………… |

***Non-Normal Procedure: Are Abnormal, Additional, Alternate and Emergency Procedures.**

Page 2 of 2

Issue No.: 05 issue date: Jan. 2020 Form No.: 153

### 1.5.14 Oral Exam for Instructor

| Nesma Airlines نسماللطيران | ORAL EXAM FOR INSTRUCTOR SELECTION | Training Department |
|---|---|---|

**ORAL EXAM FOR INSTRUCTOR SELECTION**

| Name : ………………………………………… | ID No. ……………… | Location | Date |
|---|---|---|---|
| A/C Type | Crew Position | | |

**The company Oral is oriented to check the outcome all practical phases of the training program and the knowledge of the operational aspects of the aircraft systems. The trainee must demonstrate a knowledge of the items listed below :**

Enter : S (Satisfactory) U (Un-satisfactory) NA (Not Applicable)

| **Aircraft Limitations** | | **Non-Normal and Emergency Procedures** | |
|---|---|---|---|
| All A/c systems limitation | | Ability to perform or state immediate action items | |
| Weight limitation | | Ability to locate Non-Normal check list | |
| Performance | | Communication between cockpit and cabin | |
| Knowledge of, ability to compute: | | Emergency evacuation procedures | |
| - Take-off card | | Prepared / Unprepared emergency | |
| - Landing data card | | **Aircraft Systems** | |
| - Cruise performance | | Electrical – Hydraulic – Pneumatic – Fuel. | |
| Effect of MEL on performance | | Power Plant – EFIS – Air conditioning & Pressurisation. | |
| High speed VS low speed phases of take-off | | Autopilot – F/D, FMGS – Navigation system. | |
| Wet and contaminated runways | | Flight controls – Flight Instruments – Landing Gears. | |
| Flight level selection, specific range and OPT. ALT | | **Flight Operations Manual** | |
| Step climb and fuel saving | | Weather Minima limitation (Operation Manual) | |
| Cruise Mach No. and maneuver capability | | Fuel Policy | |
| **Normal Procedures** | | Wind shear, Thunderstorm and Turbulence | |
| Flight Crew Operations Manual (FCOM) SOP | | Fueling with PAX on board | |
| Flight Operation Manual (FOM) SOP | | Dangerous Goods (FCOM – NOTAC & Load Sheet) | |
| Flight patterns | | Shoulder harness, seat belt policy and cockpit door | |
| | | First Officer T.O and Landing. | |

***Remarks :***

……………………………………………………………………………………………………
……………………………………………………………………………………………………
……………………………………………………………………………………………………
……………………………………………………………………………………………………

| Instructor Name | ID No. | Result | Instructor Sign. |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| *Average* → | | | *Passing Grade 80%* |

| *Test Result*<br>☐ S ☐ US | Trainee Signature | Flight Training Manager Sign. |
|---|---|---|

Issue No.: 05 issue date: Jan. 2020 Form No.: 154

### 10.5.15 Application for Pilot Check Airman

| Nesma Airlines نسما للطيران | Application for Pilot Check Airman (PCA) | Training Department |
|---|---|---|

| | |
|---|---|
| Ministry of Civil Aviation | |
| **Application for Pilot Check Airman (PCA)** | |
| Air Carrier Name:<br>NESMA AIRLINES | Supervisor Signature:<br>................................................................................ |
| Applicant's Full Name: | Applicant's Signature:<br>................................................................................ |
| Date of Application: / / 20 | |
| **NOTE**: The Air Carrier Supervisor must complete this Application and sign it. His signature and the Applicant signature will serve as a certification of the accuracy of the information | |

| Requirements | Data required |
|---|---|
| **1.** License No. | |
| **2.** Type Ratings (ALL) | |
| **3.** Total Fling Hours | |
| **4.** Date of completion of the last Type Rating | |
| **5.** Total hours accomplished in the required aircraft type | |
| **6.** Date of completion of the initial training on the required aircraft type | |
| **7.** Date of initial issuance of Instructor License | |
| **8.** Instructor experience in terms of Hours of Instruction and Years of experience | |
| **9.** Hours of Check Airman Training that the applicant received | |
| **10.** Date of Check Airman Training completion ( per ECAR 121.413 ) | |

**Inspection Results**:

................................................................................

................................................................................

................................................................................

................................................................................

Signature of Inspector Date: / /20

Signature of General Manager: Date: / /20

Issue No.: 05 issue date: Jan. 2020 Form No.: 155

## 10.5.16 Application for Designated Pilot Examiner

| Nesma Airlines نسماللطيران | Application for Designated Pilot Examiner (DPE)<br>For Air Carriers | Training Department |
|---|---|---|

| Ministry of Civil Aviation | |
|---|---|
| **Application for Designated Pilot Examiner (DPE)<br>For Air Carriers** | |
| Air Carrier Name:<br>NESMA AIRLINES | Supervisor Signature:<br>........................................................................... |
| Applicant's Full Name:<br>……………………………………………….... | Applicant's Signature:<br>........................................................................... |
| Date of Application: / / 20 | |
| **NOTE**: The Air Carrier Supervisor must complete this Application and sign it. His signature and the Applicant signature will serve as a certification of the accuracy of the information | |

| Requirements | Data required |
|---|---|
| **1.** License No. | |
| **2.** Type Ratings (ALL) | |
| **3.** Total Fling Hours | |
| **4.** Date of completion of the last Type Rating | |
| **5.** Total hours accomplished in the required aircraft type | |
| **6.** Date of completion of the initial training on the required aircraft type | |
| **7.** Date of initial issuance of Check Airman Authorization | |
| **8.** Date of completion of the Applicant's Background Check | |
| **9.** Attach a copy of justification for this DPE position | |

**Inspection Results**:

.......................................................................................................................................................................

.......................................................................................................................................................................

.......................................................................................................................................................................

.......................................................................................................................................................................

Signature of Inspector Date: / /20

Signature of General Manager: Date: / /20

Issue No.: 05 issue date: Jan. 2020 Form No.: 156

## 10.5.17 Proficiency Check

| Nesma Airlines نسما للطيران | PROFICIENCY FORM | Training Department |
|---|---|---|

### PROFICIENCY FORM

**Day 1:** Training For Flight Manoeuvres required by ECARS 121 Appendix F (PC)
**Day 2:** Proficiency Check

| | | | | |
|---|---|---|---|---|
| Name | | | Code No. | ☐ Capt. ☐ F/O ☐ IP |
| Simulator Owned By<br>Egypt Air | Location<br>Cairo | | Aircraft Type<br>A320 | Simulator Level |
| Flight Training Time | Time PF | Time PNF | Date | ☐A ☐B ☐C ☐D |

***This form is based on ECARS 121 Appendix F.***

***Enter ( S / U or NA) indicating Satisfactory / Unsatisfactory completion of each item or Not Applicable***

| PART 1: PC ORAL TEST | |
|---|---|
| **Operational Oriented Questions** | |
| • Aeroplane systems | |
| • Aeroplane performance | |
| • Normal and non-normal procedures[1] | |
| • ETOPS, North Atlantic or special routes | |
| • Company flight operations manual | |
| • Use of checklists | |
| • Windshear Review | |
| **PART 2: PC FLIGHT CHECK** | |
| *PRE FLIGHT AND TAXIING* | |
| • Pre-flight and cockpit preparation | |
| • Engine start | |
| • Low visibility taxiing (150/200m RVR)[2] | |
| *TAKE-OFFS* | |
| • Normal | |
| • Low visibility takeoffs (150/200m RVR)[2] | |
| ***- X- Wind with loss of visual cues at 100 Kt.*** | |
| ***- Rejected T.O with an engine failure before $V_1$*** | |
| ***- With simulated engine failure at $V_1$*** | |
| • Wind shear | |
| *INSTRUMENT PROCEDURES* | |
| • Area departure | |
| • Area arrival and Holding | |
| • ILS approach (Coupled) | |
| • Second ILS approach (Manual) | |
| • Missed approach | |
| • Non-precision approach | |
| • Second Non-precision approach (RNAV) | |
| • Circling approach | |
| • Engine failure missed approach | |
| *CAT II Approaches* | |
| • A min. of 3 CAT II approaches are required for | |
| • CAT II recurrent | |
| *SPECIAL TRAINING* | |
| • ETOPS | |
| • North Atlantic En-route diversion scenario | |
| • MNPS | |
| • Precision Radar Monitoring. | |
| • Pilot incapacitation | |
| • Upset / Bounce Recovery | |

| PART 2: PC FLIGHT CHECK (cont'd) | |
|---|---|
| *INFLIGHT MANEUVERS* | |
| • Steep turns (Min. 180° - Max. 360°)[3] | |
| • Approach to stalls (Two may be waived): | |
| ***- Take-Off configuration*** | |
| ***- Clean configuration*** | |
| ***- Landing configuration*** | |
| *Note: One Stall must be performed with bank angle 25°.* | |
| | |
| *APPROACHES & LANDINGS* | |
| • Normal Landing | |
| • From ILS | |
| • Cross Wind | |
| • Visual approaches With Manual Thrust. | |
| • With 50% power plant failure | |
| • (2 Eng.'s on one side for 4 Eng.'s aeroplanes)[4] | |
| • From circling approach | |
| • Un stabilized approach | |
| • GPWS (CFIT) | |
| • Rejected at 50' | |
| • Windshear | |
| *NORMAL AND ABNORMAL PROCEDURES* | |
| • Anti icing and De-icing | |
| • Hydraulics | |
| • Electrical | |
| • Pneumatic | |
| • Gears | |
| • Flaps | |
| • Flight Controls | |
| • Nav/Comm. Equipment | |
| *EMERGENCY PROCEDURES* | |
| • In-flight Fire and Smoke Control | |
| • Decompression | |
| • Emergency Descent | |
| • Emergency Landing (Partial L/G, No Flaps, etc...) | |
| • Emergency Evacuation | |
| • TCAS | |
| • Volcanic Ash Training | |
| *EMERGENCY PROCEDURES (SPECIFIC TYPE)* | |
| | |

1. ***Non-Normal Procedures: Are Abnormal, Additional, Alternate and Emergency Procedures***
2. ***150/200m RVR for category C/D aircrafts respectively.***
3. ***One direction may be waved.***
4. ***For Captains Only.***

Page 1 of 2

Issue No.: 05 issue date: Jan. 2020 Form No.: 159

| Nesma Airlines نسمالطيران | PROFICIENCY FORM | Training Department |
|---|---|---|

## PROFICIENCY FORM (cont'd)

| *RHS TRAINING FOR INSTRUCTORS* | | *RHS TRAINING FOR CAPTAINS* | |
|---|---|---|---|
| • Error recovery | ☐ | • Normal Take Off | ☐ |
| Lateral offsets | ☐ | • Manual ILS (CAT I minima) | ☐ |
| Vertical offsets | ☐ | • Minimum 3 Touch & Go | ☐ |
| • Minimum 3 Touch and Go | ☐ | *Note: Above manoeuvres are not required for instructors* | |

### EVALUATION

| Knowledge | (US) | S1 | S2 | S3 |
|---|---|---|---|---|
| *Flight Operations Manual (FOM) and Relevant ECARs* | ☐ | ☐ | ☐ | ☐ |
| A/C Systems, Limitations and Performance | ☐ | ☐ | ☐ | ☐ |
| Normal, Non-Normal Procedures[1] | ☐ | ☐ | ☐ | ☐ |
| NESMA AIRLINES Operations Specifications | ☐ | ☐ | ☐ | ☐ |
| **Flying Skills** | **(US)** | **S1** | **S2** | **S3** |
| *Compliance with SOP (Flight Operations Manual & FCOM)* | ☐ | ☐ | ☐ | ☐ |
| Attitude flying and correct trim technique | ☐ | ☐ | ☐ | ☐ |
| Use of FMC, PMS, FMGS, etc.… | ☐ | ☐ | ☐ | ☐ |
| Aeroplane configuration, Altitude & Speed Control | ☐ | ☐ | ☐ | ☐ |
| Flying accuracy & Smoothness | ☐ | ☐ | ☐ | ☐ |
| **Management** | **(US)** | **S1** | **S2** | **S3** |
| *Compliance with Flight Operations Manual (FOM)* | ☐ | ☐ | ☐ | ☐ |
| Planning ahead and use of FMC, PMS, FMGS, etc… | ☐ | ☐ | ☐ | ☐ |
| Crew co-ordination and use of available resources | ☐ | ☐ | ☐ | ☐ |
| Adherence to clearances and safe heights | ☐ | ☐ | ☐ | ☐ |
| Cabin crew safety briefing | ☐ | ☐ | ☐ | ☐ |
| **General** | **(US)** | **S** | | |
| Situational Awareness | ☐ | ☐ | | |
| Discipline | ☐ | ☐ | | |

**Comments**
**Note:** *If remedial action is required, please submit a separate report to G.M flight training.*

| | | |
|---|---|---|
| **Base Month** (Through Last Day of) : Month Year | **License Valid** (Through Last Day of) : Month Year | **Next Event** ☐ PC ☐ Recurrent. Training |
| **Date of Last 3 Takeoffs and Landings:** [2] | **1.** / / | **2.** / / **3.** / / |

| | | | |
|---|---|---|---|
| Check Airman Name | Code No. | Check Airman's signature | Trainee's signature |

| | |
|---|---|
| **Checking Result** Previous ☐ **US** ☐ **S** Current ☐ **US** ☐ **S** | G.M Flight Training |
| **ECAA Inspector Name:-** | **ECAA inspector signature :** |

1. *Non-Normal Procedures: Are Abnormal, Additional, Alternate and Emergency Procedures.*
2. *Trainee is responsible for the accuracy of this data and he must sign the form.*
3. *Passing grade 70% - (S1 70% - 79%) - (S2 80% - 89%) – (S3 90% and above)..*
4. *For type rating, Transition, Upgrade.*

Page 2 of 2

Issue No.: 05 issue date: Jan. 2020 Form No.: 159

## 10.5.18 Random / Remedial Form

| Nesma Airlines نسما للطيران | Random / Remedial Form | Training Department |
|---|---|---|

**Random / Remedial Form**

THE FOLLOWING ITEAM MUST BE COVERED DURING LINE CHECK

Inter : S (Satisfactory) U (Un-satisfactory)

| 1. FLIGHT CHECK | | DECENT AND APPROACH | |
|---|---|---|---|
| **Dispatch** | | • ATIS, SNOWTAM and braking action | |
| • Reporting for duty. | | • Decent planning | |
| • Inspection on personal license for currency | | • Approach briefing, star and | |
| • Computerized and ATC flight plan | | • Approaches: | |
| • Weather briefing T. O and Landing min. | | ☐ Precision ☐ Non-Precision ☐ Visual | |
| • Alternate planning Wx. Min. | | • Destination and Alt. weather minimums | |
| • NOTAM briefing | | LANDING AND TAXI IN | |
| • Cabin crew safety briefing | | • Landing technique | |
| **Cockpit** | | • Use of Auto brakes and reverse thrust | |
| • Tech. log, B snags & Effect on T.O / LDG performance | | • After landing and Taxi in procedures | |
| • Aircraft library and documentation | | 2. KNOWLEDGE CHECK** | |
| • Inspection of Manuals for currency | | A) **Flight Operation Manual** | |
| • Cockpit preparation – FMGS | | • IOE, Initial release, USV and Command Respo. | |
| • Take-off briefing | | • Navigation Bag contents | |
| • Load, Trim sheet and NOTOC | | • The difference between planning and actual Weather min. and Wx. Min. for new Captain | |
| • ☐ Cold Wx Operation ☐ Hot Wx Operation | | • Fuel policy | |
| • T .O performance T.O. speeds and C.G. | | • Wind shear, Thunderstorms and Turbulence | |
| • Engine Start procedures | | • Fueling with PAX and board | |
| TAXI, TAKE-OFF AND INITIAL CLIMB | | • Dangerous goods | |
| • Push back procedures | | • Shoulder harness, seat belt policy and cockpit door | |
| • Taxi speed and breaking technique | | • First officer T.O. and Landing | |
| • T.O roll and V1 concept | | • ECARs 121 | |
| • Noise abatement procedure and initial climb | | • Flight Operations Manual Questions & Answers | |
| • Best angle, best rate and turbulence speeds | | B) **Aircraft Performance and Technical Knowledge** | |
| • Area departure, SID and holding | | • Operational system knowledge & Limitations | |
| CRUISE | | • T.O. performance limits | |
| • FL selection, Mach No. and Maneuver capability | | • Wet and contaminated runways | |
| • Opt, Alt, Specific range, cruise speed schedule | | • Reduced (Flex) thrust | |
| • Step climb and fuel saving | | • Approach and Landing climb performance | |
| • Use of weather radar and Weather avoidance | | • Normal, Non-normal and emergency procedures | |
| • Drift down procedure | | • Flight patterns | |
| • En-route alternate and emergency procedure | | C) **Safety Procedures** | |
| • Calculation of weather min. (Dest. & Alt) | | • Communication between cockpit and cabin | |
| • Minimum fuel for diversion (Alt. + Holding) | | • Emergency evacuation procedures | |
| • Communication failure procedures | | • Prepared / Un-prepared emergency | |
| • Flight control comm….. procedures | | • Bomb on board and least risk location | |
| • | | • Crew incapacitation | |

*** If Applicable.**
**** May be conducted during cruise portion or any time after the completion of the flight.**

Page 1 of 2

Issue No.: 05 issue date: Jan. 2020 Form No.: 160

| Nesma Airlines نسما للطيران | Random / Remedial Form | Training Department |
|---|---|---|

## Random / Remedial (Cont'd)

| | | | | |
|---|---|---|---|---|
| Name: ………………………………………… | ID No. ……………………… | ☐ Capt. ☐ F/O ☐ IP | | |
| A/C Type ………………………………………… | Date ……………………… | | | |
| ☐ Final Line Check ☐ Annual Line Check** ☐ Route / Area Check | | | | |
| **Route / Area** | **No. of Section** | **Flight Time** | | |
| | | | | |
| **PERFORMANCE EVALUATION** | | | | |
| **Knowledge** | **(US)** | **1** | **2** | **3** |
| **Flight Operation Manual (FOM) and Relevant ECARs** | ☐ | ☐ | ☐ | ☐ |
| A/C System, Limitations and Performance | ☐ | ☐ | ☐ | ☐ |
| Normal Procedures | ☐ | ☐ | ☐ | ☐ |
| Non-normal Procedures* | ☐ | ☐ | ☐ | ☐ |
| **Flying Skills** | **(US)** | **1** | **2** | **3** |
| **Compliance with SOP (Flight Operations Manual & FCOM)** | ☐ | ☐ | ☐ | ☐ |
| Attitude flying and correct trim technique | ☐ | ☐ | ☐ | ☐ |
| Use of FMGS | ☐ | ☐ | ☐ | ☐ |
| Aircraft configuration, Altitude & Speed control. | ☐ | ☐ | ☐ | ☐ |
| Flying accuracy & Smoothness | ☐ | ☐ | ☐ | ☐ |
| **Management** | **(US)** | **1** | **2** | **3** |
| **Compliance with Flight Operations Manual (FCOM)** | ☐ | ☐ | ☐ | ☐ |
| Planning ahead and use of FMGS | ☐ | ☐ | ☐ | ☐ |
| Crew coordination and use of available resources | ☐ | ☐ | ☐ | ☐ |
| Adherence to clearance and safe heights | ☐ | ☐ | ☐ | ☐ |
| Situational awareness | ☐ | ☐ | ☐ | ☐ |

**Comments:**
……………………………………………………………………………………………
……………………………………………………………………………………………
……………………………………………………………………………………………
……………………………………………………………………………………………

| | | |
|---|---|---|
| **Check Airman Name:** ………………………… | **Check Airman Signature:** ………………… | **ID No.** ………… |
| **Trainee Name:** ………………………… | **Trainee Signature:** ………………… | **ID No.** ………… |
| **Chief Pilot Name :** ………………………… | **Chief Pilot Signature:** ………………………… | |
| **Check Result** ☐ Satisfactory ☐ Unsatisfactory | **Flight Training Manager** | |

* **Non-Normal Procedure: Are Abnormal, Additional, Alternate and Emergency Procedures.**
** **For caption only.**

Page 2 of 2

Issue No.: 05 issue date: Jan. 2020 Form No.: 160

## 10.5.19 RHS Qualifications for Line Captains

| Nesma Airlines نسما للطيران | RHS QUALIFICATIONS FOR LINE CAPTAINS | Training Department |
|---|---|---|

| RHS Qualifications for Line Captains | | | | | | | |
|---|---|---|---|---|---|---|---|
| Name | | Code No. | | Location | | Date | |
| A/C Type | | A/C Registration | | Sim. Level (ZFT) ☐ C ☐ D | | | |
| ***Training Device*** | Flight Time* Hours | Flight Time* Minutes | R / W | GA | TG | FS | |
| SIM | | | | | | | |
| Trainee Captain in RHS - Training Instructor in LHS | | | | | | | |
| *Enter (✓) indicating completion of each item.* | | | | | | | |

| A. Simulator RHS Qualification (PF: RHS) | Sim |
|---|---|
| 1. Normal Take Off. | |
| 2. Simulated Engine failure - Take Off. | |
| 2. One Engine Out - Approach and Landing. | |
| 3. Climb to FL 350. | |
| 4. Emergency Descend. | |
| 5. Engines Start. | |
| 6. Visual Approach and Full Stop Landing. | |
| 7. Minimum 3 Takeoff's and Landings | |
| 8. Repeat Touch and Go as required | |
| **Remarks** | |

| ☐ IP ☐ CP Name | Code No | ☐ IP ☐ CP Signature | Trainee's signature |
|---|---|---|---|
| | | | |

| B. Aircraft RHS Qualification - IOE (PF: RHS) | | | | |
|---|---|---|---|---|
| Date | Route | No. of sectors | Time | |
| | | | PF | PNF |
| | | | | |
| **Remarks** | | | | |

| ☐ IP ☐ CP Name | Code No | ☐ IP ☐ CP Signature | Trainee's signature |
|---|---|---|---|
| | | | |
| G.M Flight Training | | | |

Issue No.: 05 issue date: Jan. 2020 Form No.: 164

## 10.5.20 Spot Check Form

Nesma Airlines نسما للطيران | SPOT CHECK FORM | Training Department

**SPOT CHECK FORM**

**THE FOLLOWING ITEMS MUST BE COVERED DURING LINE CHECK**

Enter: S Satisfactory U Unsatisfactory NA Not Applicable

| **1. FLIGHT CHECK** | | **DESCENT AND APPROACH** | |
|---|---|---|---|
| **PRE FLIGHT** | | ATIS , SNOWTAM and braking action*** | |
| *Dispatch* | | Descent planning | |
| Reporting for duty | | Approach briefing, Stars and | |
| Inspection on Personal License for currency | | Approaches: | |
| Computerised and ATC flight plan | | ☐ Precision ☐ N. precision ☐ Visual | |
| Weather briefing, T.O and landing minim. | | Destination and alternate weather minima | |
| Alternate planning Wx min | | **LANDING AND TAXI IN** | |
| NAT. Operations Specifications*** | | Landing technique | |
| NOTAM briefing | | Use of Auto brakes and reverse thrust | |
| Cabin crew safety briefing | | After landing and Taxi in procedures* | |
| *Cockpit* | | **2. KNOWLEDGE CHECK**** | |
| Tech. log, B snags& Effect on T.O/LDG performance | | *A) Flight Operations Manual* | |
| Aircraft library and documentation | | Navigation Bag contents | |
| Inspection of Manuals for currency* | | The difference between planning and actual | |
| Cockpit preparation-FMS/FMGS/PMS* | | Weather min. and WX. Min. for new Captain. | |
| Take-off briefing | | Fuel policy | |
| Load, Trim sheet and NOTOC | | Wind shear, Thunderstorms and Turbulence | |
| ☐ Cold Wx operation*** ☐ Hot Wx operation**** | | Fuelling with PAX on board | |
| T.O Performance, T.O speeds and C.G* | | Dangerous goods | |
| Engine start procedures* | | Shoulder harness, seat belt policy and cockpit door | |
| **TAXI, TAKE-OFF AND INITIAL CLIMB** | | First Officer T.O. and Landing | |
| Push back procedures | | ECARs 121 | |
| Taxi Speed and braking technique | | | |
| T.O roll and V1 Concept | | | |
| Noise abatement procedure and Initial climb | | | |
| Best angle, Best rate and turbulence speeds* | | *B) Aircraft Performance and Technical Knowledge* | |
| Area departure, SID and holding | | Operational system knowledge & Limitations* | |
| **CRUISE** | | T.O performance limits * | |
| FL selection, Mach No. and Manoeuvre capability* | | Wet and contaminated runways* | |
| Opt. Alt, Specific Range, Cruise speed schedule* | | Reduced (Flex) thrust * | |
| Step climb and fuel saving* | | Approach and Landing climb performance* | |
| Use of weather radar and weather avoidance | | Normal, Non-normal and emergency procedures* | |
| MNPS and MORA (Special routes)*** | | Flight patterns * | |
| Drift down procedure* | | *C) Safety Procedures* | |
| Enroute alternate and Emergency Proc. (NAT)*** | | Communication between cockpit and cabin | |
| Calculation of weather minima (Dest. & Alternate) | | Emergency evacuation procedures | |
| Minimum fuel for diversion (Alternate+ Holding) | | Prepared/Unprepared emergency | |
| Communication failure procedures | | Bomb on board and least risk location | |
| Flight control comm. Procedures (Stockholm radio) | | Crew incapacitation | |

*If The Trainer Is Type Rated.
** May be conducted during cruise portion or any time after the completion of the flight.
*** If Applicable.

Page 1 of 2

Issue No.: 05 issue date: Jan. 2020 Form No.: 166

| Nesma Airlines نسما للطيران | SPOT CHECK FORM | Training Department |
|---|---|---|

## SPOT CHECK FORM (Cont'd)

| Name | Code No. | ☐ Capt. ☐ F/O ☐ IP |
|---|---|---|
| A/C Type | Date | |

| Route | No. of sectors | Flight Time |
|---|---|---|
| | | |

PERFORMANCE EVALUATION

| Knowledge | US | 1 | 2 | 3 |
|---|---|---|---|---|
| *Flight Operations Manual (FOM) and Relevant ECARs* | ☐ | ☐ | ☐ | ☐ |
| A/C Systems, Limitations and Performance* | ☐ | ☐ | ☐ | ☐ |
| Normal Procedures* | ☐ | ☐ | ☐ | ☐ |
| Non-normal Procedures* | ☐ | ☐ | ☐ | ☐ |
| **Flying Skills** | **US** | **1** | **2** | **3** |
| *Compliance with SOP (Flight Operations Manual & FCOM)* | ☐ | ☐ | ☐ | ☐ |
| Attitude flying and correct trim technique | ☐ | ☐ | ☐ | ☐ |
| Use of FMC, PMS, FMGS, etc……. | ☐ | ☐ | ☐ | ☐ |
| Aeroplane configuration, Altitude. & Speed Control | ☐ | ☐ | ☐ | ☐ |
| Flying accuracy & Smoothness | ☐ | ☐ | ☐ | ☐ |
| **Management** | **US** | **1** | **2** | **3** |
| *Compliance with Flight Operations Manual (FOM)* | ☐ | ☐ | ☐ | ☐ |
| Planning ahead and use of FMC, PMS, FMGS, etc…… | ☐ | ☐ | ☐ | ☐ |
| Crew coordination and use of available resources | ☐ | ☐ | ☐ | ☐ |
| Adherence to clearances and safe heights | ☐ | ☐ | ☐ | ☐ |
| Situational awareness | ☐ | ☐ | ☐ | ☐ |

**Comments**

| | | |
|---|---|---|
| **Check Airman Name** ………………………………………………….. | **Check Airman's signature** ……………………………………………… | **Code No** …………… |
| **Trainee Name** ………………………………………………….. | **Trainee's signature** ……………………………………………… | **Code No** …………… |
| **Chief Pilot Name** ………………………………………………….. | **Chief Pilot's Signature** ……………………………………………… | |
| **Check Result** ☐ Satisfactory ☐ Unsatisfactory | **G.M Flight Training** ……………………………………………… | |

***If The Trainer Is Type Rated.**

Page 2 of 2

Issue No.: 05 issue date: Jan. 2020 Form No.: 166

### 10.5.21 Training Separate Report Form

| Nesma Airlines نسما للطيران | TRAINING SEPARATE REPORT FORM | Training Department |
|---|---|---|

**TRAINING SEPARATE REPORT FORM**

| Trainee Name : | ID. No. | Date |
|---|---|---|
| IP Name | ID. No. | IP Signature |

Issue No.: 05 issue date: Jan. 2020 Form No.: 167

## 10.5.22 Written Knowledge Exam

| Nesma Airlines نسماللطيران | Written Knowledge Exam | Training Department |
|---|---|---|

**Written Knowledge Exam**

| | | | |
|---|---|---|---|
| **Name** | | **Code No.** | **Crew Position** ☐Capt. ☐F/O ☐F/E |
| **A/C Type** | | **Date** | **Location** |
| Enter | S Satisfactory | U Unsatisfactory | |

| Flight Operation Manual | | Aircraft Performance and Technical Knowledge | |
|---|---|---|---|
| ▪ IOE, Initial release, USV and Command Respo. | | ▪ Operational system knowledge & Limitations | |
| ▪ Organisation Responsibilities. | | ▪ T.O. performance limits | |
| ▪ Operational Control. | | ▪ Wet and contaminated runways | |
| ▪ Crew Composition. | | ▪ Reduced (Flex) thrust | |
| ▪ Qualification Requirements. | | ▪ Approach and Landing climb performance | |
| ▪ Crew Health Precautions. | | ▪ Normal, Non-normal and emergency procedures | |
| ▪ Flight Time Limitations. | | ▪ Flight patterns | |
| ▪ Operating Procedures. | | | |
| ▪ Dangerous Goods/Weapons. | | | |
| ▪ Security. | | | |
| ▪ General Policies. | | | |
| ▪ Navigation Bag contents | | | |
| ▪ The difference between planning and actual Weather min. and Wx. Min. for new Captain | | | |
| ▪ Fuel policy | | | |
| ▪ Wind shear, Thunderstorm's and Turbulence | | | |
| ▪ Fuelling with PAX on board | | | |
| ▪ Shoulder harness, seat belt policy and cockpit door | | | |
| ▪ First officer T.O. and Landing | | | |
| ▪ ECARs 121 | | | |
| ▪ | | | |
| ▪ | | | |

| Instructor name | Code # | Result | Instructor |
|---|---|---|---|
| | | | |
| | | | |
| *Average* ➔ | | | *Passing Grade 70 %* |

| | | |
|---|---|---|
| Test Result ☐ S ☐ US | Trainee Signature | G.M Training Signature |

Issue No.: 05 issue date: Jan. 2020 Form No.: 168

## 10.5.23 Full Flight Simulator (FFS) Training

Nesma Airlines نسما للطيران

**FFS TRAINING**
FLIGHT TRAINING SECTION

Training Department

| | | | |
|---|---|---|---|
| **Trainee Information:** | | | |
| **Rank / Name** | | **Staff Number** | |
| **Session Information:** | | | |
| **Aircraft type** | | | |
| **PF/PNF** | | **Date( / / )** | |
| **Simulator Owned by** | | **Location** | |
| **Instructor Information:** | | | |
| **Rank / Name** | | **Staff Number** | |
| **General Comments:** | | | |

ATIS:

| | |
|---|---|
| RWY........................ | QNH... ... ... ... ... ... ... .. |
| WIND........................ | RWY COND... ... ... ... |
| VISI.......................... | AIR COND... ... ... ... ... |
| CELING.................... | ANTI ICE... ... ... ... ... .. |
| TEMP.......................... | |
| DEW POINT.................. | |

**Pilot Assessment Markers:**

| 5-Very Good, 4-Good, 3-Acceptable, 2-poor, 1-Very Poor | 5 | 4 | 3 | 2 | 1 |
|---|---|---|---|---|---|
| (M) Flight Deck Management | | | | | |
| (K) Knowledge of Systems and Procedures | | | | | |
| (P) Procedural Execution and Adherence | | | | | |
| (H) Handling | | | | | |
| (C ) Communication | | | | | |
| (D) Decision Making / Problem Solving | | | | | |
| (S) Situation Awareness | | | | | |
| (L) Leadership / Follower Ship | | | | | |

Note : Markers that are unseen within the session are to be left blank

**Progress: [ ]** 5-Very Good, 4-Good, 3-Acceptable, 2-poor, 1-Very Poor

| Trainee Signature | | Instructor Signature | |
|---|---|---|---|

Issue No.: 05 issue date: Jan. 2020 Form No.: 169

### 10.5.24 Flight Dispatcher's Training \ Competency Check Form

Nesma Airlines نسما للطيران

**Flight Dispatcher`s Training \ Compeatency Check Form (A)**

| | | | |
|---|---|---|---|
| Name | ID No. | Date: | License No. |
| Initial ☐ Recurrent ☐ Transition ☐ Requalification ☐ | | Instructor ☐ | |
| Ground Program Hours: | Location: | Expiry Date: Month Year | |

***PART ONE :1 GROUND TRAINING SEGMENT**

*Write ( S or U ) indicating Satisfactory or Unsatisfactory completion of each item.*

| A.GENERAL DISPATCH SUBJECTS | | C. EMERGENCY & ABNORMAL PROCEDURES | |
|---|---|---|---|
| • Use of comm.. Systems (Norm/Emerg. Proc.) | | Alerting Procedures | |
| • Meteorology | | - Company | |
| • NOTAMS | | - Government | |
| • Navigational charts & Publications. | | - Agencies | |
| • Dispatcher Responsibilities. | | **D.SPECIAL OPERATIONS.** | |
| • Characteristics of special airports. | | • ETOPS | |
| • ATC coordination procedures. | | • RVSM | |
| • ATC General Procedures. | | • RNP | |
| • FOM,FDM,OPS. SPEC., ECARS. | | • Special Routes | |
| • Flight monitoring procedures. | | | |
| • DRM/ CRM | | **E. COMPETENCY CHECKS.** | |
| • Crew Briefing. | | **1- Knowledge Check (Oral)** | |
| **B.AIRCRAFTS TYPE** | | • Airplane Systems | |
| • A/C Systems at description level | | • Airplane Performance | |
| • A/C operating & Performance characteristics | | • Normal, Abnormal & Emergency Proc. | |
| • Radio, Navigation equipment | | • Appropriate Provisions of AFM | |
| • Instrument approach & Com> Equipment | | • Company Flight operations Manual | |
| • Emergency Equipment | | **2- Practical Check (Oral)** | |
| • Weight & Balance | | • Dispatching Actual Flight | |
| • A/C performance computations | | - ETOPS FLIGHTS* | |
| • Flight planning | | - EROPS FLIGHTS* | |
| • MEL & CDL | | - Special Routes* | |
| • Emergency proc. | | *Practical check to include at least one item from above | |
| • NOTOC | | | |

**AIRCRAFT TYPES**

| 1- | 2- | 3- | 4- | 5- | 6- | 7- | 8- |
|---|---|---|---|---|---|---|---|

| | INSTRUCTOR NAME | ID NUMBER | INSTRUCTOR SIGN. | DATE |
|---|---|---|---|---|
| A | | | | |
| B | | | | |
| C | | | | |

***PART TWO : OPERATIONAL FAMILIARIZATION SEGMENT**

*Minimum Five (5) Hours Segment must be completed in this part and should include as applicable at least one of special operation flight*

| Date | Route | Time | | Sectors | |
|---|---|---|---|---|---|
| | | Today | Total | Today | Total |
| | | | | | |
| | | | | | |

| | | |
|---|---|---|
| **Final Result:**<br>**Satisfactory** ☐ **Unsatisfactory** ☐ | **Trainee's Signature:** | **G.M Flight Training Signature** |
| **Instructor / Flight Inspector :** | **Remarks:** | |

Issue No. 1 Date Jan 2012 1 / 2 Form No. 401

Nesma Airlines نسما للطيران

## Flight Dispatcher`s Training \ Compeatency Check Form (B)

| Name | Aircraft Type | License No. | Date |
|---|---|---|---|
| | | | |

**PART ONE : knowledge check**

*Enter (s , s – or US) indicating Satisfactory / Satisfactory minus / Unsatisfactory completion of each item*

*ORAL QUIZ*

| *ITEM* | US | s- | s | *REMARKS* |
|---|---|---|---|---|
| Airplane Systems | | | | ..................................................... |
| Airplane Performance | | | | ..................................................... |
| Normal and Non-normal procedures | | | | ..................................................... |
| Appropriate provisions of AFM | | | | ..................................................... |
| Company flight Operations and Route Manual | | | | ..................................................... |

**PART TWO : practical chech**

*Enter (s , s – or US) indicating Satisfactory / Satisfactory minus / Unsatisfactory completion of each item*

| *FLIGHT PREPARATION* ITEM | US | s- | s | *REMARKS* |
|---|---|---|---|---|
| Flight report form / filling | | | | ..................................................... |
| Check QRH | | | | ..................................................... |
| Check zero fuel weight (ZFW) | | | | ..................................................... |
| Check wx. & NOTAMS (DEP/ARRIVAL) | | | | ..................................................... |
| Request OFP | | | | ..................................................... |
| Check ATC with FIC | | | | ..................................................... |
| Check B-snag form | | | | ..................................................... |
| Check MEL / CDL | | | | ..................................................... |
| **FLIGHT DISPATCH CHECK** | | | | ..................................................... |
| Dispatch Release form use | | | | ..................................................... |
| B-snag & MEL or CDL Revision if applicable | | | | ..................................................... |
| Penormance Penalties | | | | ..................................................... |
| WX . Briefing | | | | |
| NOTAMS (Route & Terminal) | | | | |
| RTOW | | | | |
| MNPS (if Applicable) | | | | |
| ETOPS (if Applicable) | | | | |
| Escape Route (if Applicable) | | | | ..................................................... |
| Special proc (if Applicable) | | | | ..................................................... |
| Fuel policy | | | | ..................................................... |
| **SPECIAL BRIEFING NOTES** | | | | ..................................................... |
| RVSM | | | | ..................................................... |
| RNP-5(B-RNAV) | | | | ..................................................... |
| NOTOC | | | | |

| Inspector`s / Instructor`s Name | Trainee's signature: | Inspector / Instructor signature |
|---|---|---|
| Competency Check Result<br>Previous ☐ US ☐ S- ☐ S<br>Current ☐ US ☐ S- ☐ S | | G.M Flight Training Signature |

* comments will be attached in a separate form if required.

Issue No. 1 Date Jan 2012 2 / 2 Form No. 401

## 10.5.25 In Flight Sectors and Competency Check

| Nesma Airlines نسما للطيران | In flight Sectors and competency check | I.F.S Department |
|---|---|---|

| C/Crew Name: | | | | I.D. No. | | A/C Type: | |
|---|---|---|---|---|---|---|---|
| Training Category: ☐Initial ☐Transition Recurrent: ☐24 month ☐12 month ☐ Requalification | | | | | | | |
| Sectors: From | To | Flight No. | Flying Hours | Date | Instructor Name | I.D. No. | Signature |
| 1. | | | | | | | |
| 2. | | | | | | | |
| 3. | | | | | | | |
| 4. | | | | | | | |
| 5. | | | | | | | |
| 6. | | | | | | | |
| 7. | | | | | | | |
| 8. | | | | | | | |
| 9. | | | | | | | |
| 10. | | | | | | | |

| In Flight Competency check Items | S | US |
|---|---|---|
| 1. Pre- flight Briefing | ☐ | ☐ |
| 2. Pre- flight emergency equipment checks, location / operation | ☐ | ☐ |
| 3. Doors and Exits Operation | ☐ | ☐ |
| 4. Emergency procedures | ☐ | ☐ |
| 5. Galley electrical equipment and circuit breakers | ☐ | ☐ |
| 6. Crew co-ordination & communication | ☐ | ☐ |
| 7. Demonstration | ☐ | ☐ |
| 8. First Aid | ☐ | ☐ |
| 9. Control Panels | ☐ | ☐ |
| 10.Distruptive passenger's procedures | ☐ | ☐ |
| 11.Dangerous goods | ☐ | ☐ |
| 12.Knowledge | ☐ | ☐ |
| In-Flight competency check final result: | ☐ S | ☐ US |

| Trainee Name: | Signature: |
|---|---|
| Instructor Name : | Signature: |
| ECAA Inspector Name: | Signature: |

Issue No. 2 Dated 10/10/ 2011 1/1 Form No.: 539

### 10.5.26 Cabin Crew Performance Evaluation

| Nesma Airlines نسما للطيران | Cabin crew performance Evaluation | I.F.S Department |
|---|---|---|

| | | |
|---|---|---|
| Cabin Crew Name: | ID No.: | A/C Reg. |
| FLT NO: | Sectors: | Position: |

Excellent: 90-100 V. Good: 80-90 Good: 70-80 Poor:60-70 V. Poor: 50-60

| Grooming & Discipline | 15 | Comment |
|---|---|---|
| Grooming | | |
| Discipline | | |
| **Technical Knowledge** | **25** | **Comment** |
| Knowledge & Safety Oriented Mind | | |
| Participate in the Pre-flight Briefing | | |
| **Communication Skills** | **20** | **Comment** |
| Maintain Positive Body Language | | |
| Shows Respect & Understanding to Superior | | |
| Perform Duties in a Team Work | | |
| Language Fluency | | |
| **Work Skills** | **20** | **Comment** |
| Comply with Standard Safety & Security Procedures | | |
| Prompt & Organized Mind | | |
| **Customer Care** | **20** | **Comment** |
| Customer Service Oriented | | |
| Handle Special Care Cases Professionally | | |
| Total Degree (100) | | |

**Instructor General Comment**

| | |
|---|---|
| | Cabin Crew Signature: |

Completed by: ID: Signature: Date: / / 20

**IFS Manager Comment:**

| | |
|---|---|
| IFS Manager Signature: | |

Issue No.06 Dated Aug. 2016 1/1 Form No.:541

## 10.5.27 Purser Performance Evaluation

| Nesma Airlines نسماللطيران | Purser Performance Evaluation | I.F.S Department |
|---|---|---|

| | | |
|---|---|---|
| Purser Name: | ID No.: | A/C Reg. |
| FLT NO: Sectors: | | Position: |

Excellent: 90-100 V. Good: 80-90 Good: 70-80 Poor: 60-70 V. Poor: 50-60

| Grooming | 15 | Comment |
|---|---|---|
| Personal Hygiene & Appearance | | |
| **Technical Knowledge** | **25** | **Comment** |
| Comply with Standard Operating Procedures | | |
| Beneficial Pre-flight Briefing | | |
| **Communication Skills** | **20** | **Comment** |
| Maintain Positive Body Language | | |
| Shows Respect Towards Superiors & Subordinates | | |
| Perform Duties in a Team Work | | |
| Applicability of Reporting System | | |
| Public Announcement Fluency | | |
| **Work Skills** | **15** | **Comment** |
| Paper Work Completion | | |
| Performance Under Stress | | |
| Decision Making | | |
| **Leadership Skills** | **25** | **Comment** |
| Lead By Example | | |
| Capable to be Assertive Leader | | |
| Direct & Organize The Tasks of The Cabin Crew | | |
| Total Degree (100) | | |

Instructor General Comment

Purser Signature:

Completed by: ID: Signature: Date: / /20

IFS Manager Comment:

IFS Manager Signature:

Issue No.04 Dated Aug 2016 1/1 Form No.:545

## 10.5.28 Instructor In-Flight Proficiency Check

| Nesma Airlines نسما للطيران | Instructor In-Flight Proficiency Check | I.F.S Department |
|---|---|---|

| | | | |
|---|---|---|---|
| Instructor Name: | | ID No.: | A/C Reg. |
| FLT NO: | Sectors: | Date: | Type of Training:<br>☐ Flight Check<br>☐ Renewal |

| Reporting at dispatch office | S | US |
|---|---|---|
| • Inspection Of Personal Documentation | ☐ | ☐ |
| • Check On Safety Manual | ☐ | ☐ |
| • Preflight Briefing (Safety & Specific Type) | ☐ | ☐ |
| • Reporting On Board On Time | ☐ | ☐ |
| • Emergency Equipment Check | ☐ | ☐ |
| **Communication & body language** | | |
| • Instructor's Tutorial Performance | ☐ | ☐ |
| • Leadership And Command Ability | ☐ | ☐ |
| • Evaluation Skill | ☐ | ☐ |
| **Paper work** | | |
| • Training From Completion | ☐ | ☐ |
| • Cabin Defect Log, Voyage Report, Security Checklist, Etc... | ☐ | ☐ |
| **Knowledge** | | |
| • Emergency Procedures | ☐ | ☐ |
| • Aircraft Systems | ☐ | ☐ |
| • First Aid | ☐ | ☐ |
| • Security | ☐ | ☐ |

| | |
|---|---|
| In-Flight Proficiency Check Final Result | ☐ S ☐US |

Comments:______________________________________________

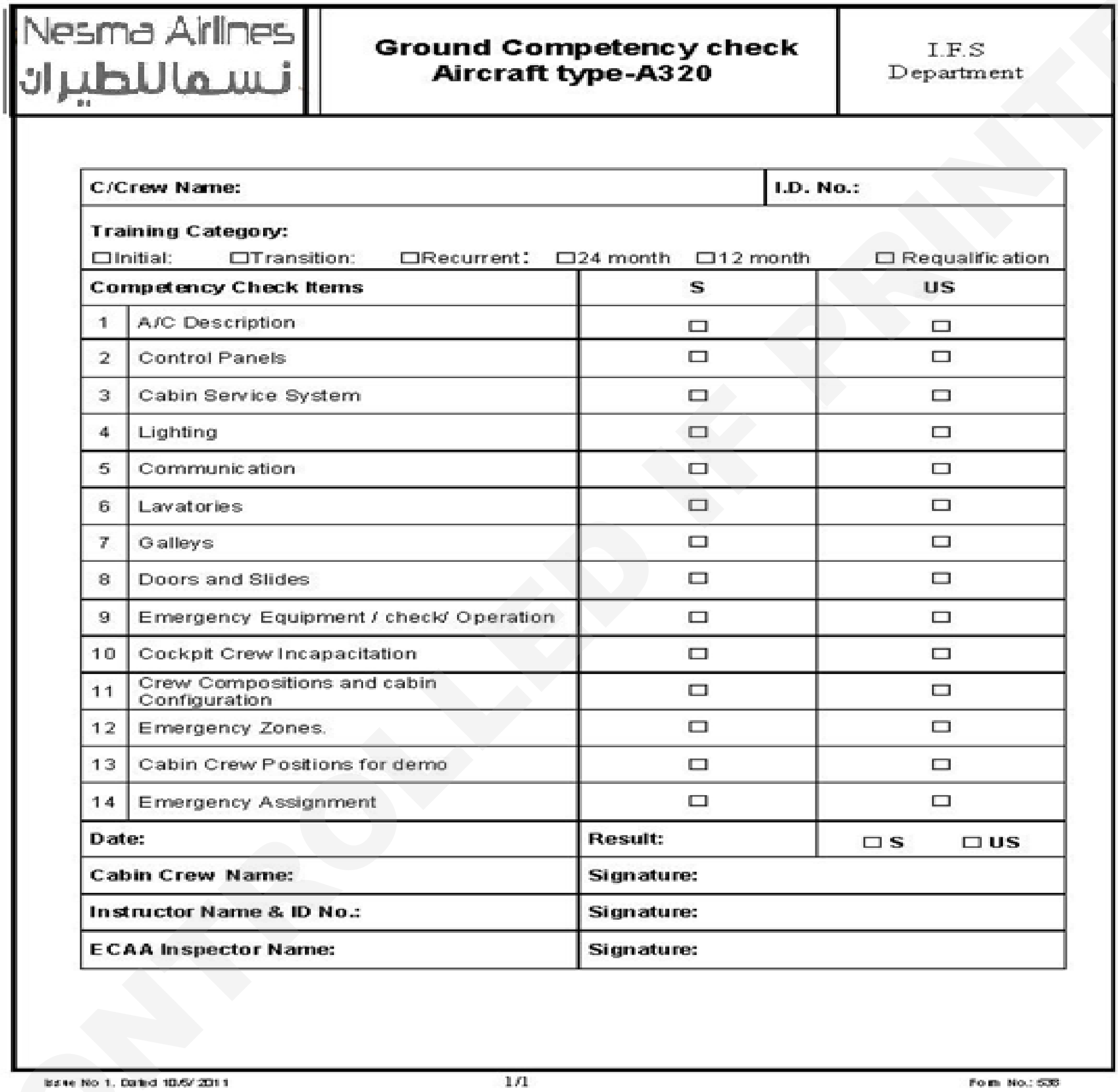
______________________________________________

______________________________________________

| | | |
|---|---|---|
| Instructor Name: | Signature: | |
| Instructor (Checker) Name: | ID No.: | Signature: |
| IFS Manager: | Signature: | |

Issue No. 1 Dated Aug 2016 1/1 Form No.: 548

## 10.5.29 Ground Competency Check



| Nesma Airlines نسما للطيران | Ground Competency check Aircraft type-A320 | I.F.S Department |
|---|---|---|

| C/Crew Name: | | | I.D. No.: |
|---|---|---|---|
| Training Category: ☐Initial: ☐Transition: ☐Recurrent: ☐24 month ☐12 month ☐ Requalification | | | |
| Competency Check Items | | S | US |
| 1 | A/C Description | ☐ | ☐ |
| 2 | Control Panels | ☐ | ☐ |
| 3 | Cabin Service System | ☐ | ☐ |
| 4 | Lighting | ☐ | ☐ |
| 5 | Communication | ☐ | ☐ |
| 6 | Lavatories | ☐ | ☐ |
| 7 | Galleys | ☐ | ☐ |
| 8 | Doors and Slides | ☐ | ☐ |
| 9 | Emergency Equipment / check/ Operation | ☐ | ☐ |
| 10 | Cockpit Crew Incapacitation | ☐ | ☐ |
| 11 | Crew Compositions and cabin Configuration | ☐ | ☐ |
| 12 | Emergency Zones. | ☐ | ☐ |
| 13 | Cabin Crew Positions for demo | ☐ | ☐ |
| 14 | Emergency Assignment | ☐ | ☐ |
| Date: | | Result: | ☐ S ☐ US |
| Cabin Crew Name: | | Signature: | |
| Instructor Name & ID No.: | | Signature: | |
| ECAA Inspector Name: | | Signature: | |

Issue No 1, Dated 10/6/2011 1/1 Form No.: 538

### 10.5.30 Flight Crew Ground Competency check

| Nesma Airlines نسما للطيران | Flight Crew Ground Competency Check<br>General Emergency Training | Training Department |
|---|---|---|

| Flight Crew Name: | | | I.D. No.: |
|---|---|---|---|
| ☐ Captain | | ☐ First Officer | |
| Training Category: ☐ Initial | | ☐ Requalification | ☐ Recurrent |
| **Competency Check Items** | | | |
| **Part (I) Emergency Situation** | | **S** | **US** |
| 1 | Crew Member Duties & Responsibilities | ☐ | ☐ |
| 2 | Crew Coordination & Company Communication | ☐ | ☐ |
| 3 | Aircraft Fires | ☐ | ☐ |
| 4 | Safety Related Duties and Functions | ☐ | ☐ |
| 5 | Ground Evacuation | ☐ | ☐ |
| 6 | Ditching | ☐ | ☐ |
| 7 | Rapid Decompression | ☐ | ☐ |
| 8 | Previous Aircraft Accidents / Incidents | ☐ | ☐ |
| 9 | Crew Member Incapacitation | ☐ | ☐ |
| **Part (II) Emergency Drill** | | **S** | **US** |
| 1 | Hand Held Fire Extinguishers | ☐ | ☐ |
| 2 | Portable Emergency Equipment | ☐ | ☐ |
| 3 | Emergency Exits and Slides | ☐ | ☐ |
| 4 | Ditching Equipment | ☐ | ☐ |
| 5 | Pilot Seat Mechanism | ☐ | ☐ |
| **Date:** | | **Result:** ☐ S | ☐ US |
| **Trainee Name:** | | **Signature:** | |
| **Instructor Name & ID No.:** | | **Signature:** | |
| **Egypt air Training Academy Manager Name:** | | **Signature:** | |

Issue No.: 05 issue date: Jan. 2020 1/1 Form No.: 170

### 10.5.31 Cabin Crew Ground Competency Check

| Nesma Airlines نسما للطيران | Cabin Crew Ground Competency Check<br>General Emergency Training | IFS Department |
|---|---|---|

| Cabin Crew Name: | | | I.D. No.: |
|---|---|---|---|
| Training Category: ☐ Initial | ☐ Requalification | | ☐ Recurrent |
| **Competency Check Items** | | | |
| **Part (I) Emergency Situation** | | **S** | **US** |
| 1 | Crew Member Duties & Responsibilities | ☐ | ☐ |
| 2 | Crew Coordination & Company Communication | ☐ | ☐ |
| 3 | Aircraft Fires | ☐ | ☐ |
| 4 | Safety Related Duties and Functions | ☐ | ☐ |
| 5 | Ground Evacuation | ☐ | ☐ |
| 6 | Ditching | ☐ | ☐ |
| 7 | Rapid Decompression | ☐ | ☐ |
| 8 | Previous Aircraft Accidents / Incidents | ☐ | ☐ |
| 9 | Crew Member Incapacitation | ☐ | ☐ |
| **Part (II) Emergency Drill** | | **S** | **US** |
| 1 | Hand Held Fire Extinguishers | ☐ | ☐ |
| 2 | Portable Emergency Equipment | ☐ | ☐ |
| 3 | Emergency Exits and Slides | ☐ | ☐ |
| 4 | Ditching Equipment | ☐ | ☐ |
| 5 | Pilot Seat Mechanism | ☐ | ☐ |
| **Date:** | | **Result:** ☐ S | ☐ US |
| **Trainee Name:** | | **Signature:** | |
| **Instructor Name & ID No.:** | | **Signature:** | |
| **Egypt air Training Academy Manager Name:** | | **Signature:** | |

Issue No. 01 Dated 25/11/2018 1/1 Form No.: 550

**THIS PAGE INTENTIONALLY LEFT BLANK**

**(APPENDIX A) Flight Crew Initial Flight Training ... 3**
**FMGS CAPTAIN OR FO A320 ... 4**
1.1 INITIAL A320 FMGS 1 ... 4
1.1.1 SESSION OBJECTIVES INITIAL A320 FMGS 1 ... 5
SESSION OBJECTIVES ... 5
SESSION EVALUATION ... 6
1.1.2 SESSION EVALUATION INITIAL A320 FMGS 1 ... 6
1.1 INITIAL A320 FMGS 2 ... 7
1.2.1 SESSION OBJECTIVES INITIAL A320 FMGS 2 ... 8
SESSION OBJECTIVES ... 8
1.2.2 SESSION EVALUATION INITIAL A320 FMGS 2 ... 9
SESSION EVALUATION ... 9
1.2 INITIAL A320 FMGS 3 ... 10
1.3.1 SESSION OBJECTIVES INITIAL A320 FMGS 3 ... 11
SESSION OBJECTIVES ... 11
1.3.2 SESSION EVALUATION INITIAL A320 FMGS 3 ... 12
SESSION EVALUATION ... 12
1.4 A320 FMGS REMEDIAL 1 ... 13
1.4.1 A320 FMGS REMEDIAL 1 ... 14
SESSION OBJECTIVES ... 14
SESSION EVALUATION ... 16
1.5 A320 FMGS REMEDIAL ... 17
1.5.1 A320 FMGS REMEDIAL 2 ... 18
SESSION OBJECTIVES ... 18
SESSION EVALUATION ... 19
**SECTION 2 INITIAL A320 FBS ... 20**
2.1 INITIAL A320 FBS 1 ... 20
SESSION PREPARATION ... 21
SESSION GUIDE ... 22
SESSION EVALUATION ... 25
INITIAL A320 FBS 2 ... 26
SESSION PREPARATION ... 27
SESSION GUIDE ... 28
SESSION EVALUATION ... 30
INITIAL A320 FBS 3 ... 31
SESSION PREPARATION ... 32
SESSION GUIDE ... 33
SESSION EVALUATION ... 35
INITIAL A320 FBS 4 ... 36

SESSION PREPARATION ........ 37
SESSION GUIDE ........ 38
SESSION EVALUATION ........ 40
INITIAL A320 FBS 5 ........ 41
SESSION PREPARATION ........ 42
SESSION GUIDE ........ 43
SESSION EVALUATION ........ 45
INITIAL A320 FBS 6 ........ 46
SESSION PREPARATION ........ 47
SESSION GUIDE ........ 49
SESSION EVALUATION ........ 51
**SECTION 3 INITIAL A320 FFS ........ 52**
INITIAL A320 FFS 1 ........ 52
SESSION PREPARATION ........ 53
SESSION GUIDE ........ 55
SESSION EVALUATION ........ 61
INITIAL A320 FFS 2 ........ 62
SESSION PREPARATION ........ 63
SESSION GUIDE ........ 65
SESSION EVALUATION ........ 69
INITIAL A320 FFS 3 ........ 70
SESSION PREPARATION ........ 71
SESSION GUIDE ........ 73
SESSION EVALUATION ........ 76
INITIAL A320 FFS 4 ........ 77
SESSION PREPARATION ........ 78
SESSION GUIDE ........ 80
SESSION EVALUATION ........ 85
INITIAL A320 FFS 5 ........ 86
SESSION PREPARATION ........ 87
SESSION GUIDE ........ 89
SESSION EVALUATION ........ 92
INITIAL A320 FFS 6 ........ 93
SESSION PREPARATION ........ 94
SESSION GUIDE ........ 96
SESSION EVALUATION ........ 99
INITIAL A320 LOS ........ 100

## (APPENDIX A) Flight Crew Initial Flight Training

**Trainees/Prerequisites**

- Commercial pilot license
- Minimum of 100 hrs. as PIC
- Multi-engine instrument rating
- Successfully passed initial theoretical ground training course.

**Type** : Airbus A320

**Course Objective**:

The objective of the course is to train crewmembers in performing procedures, managing and handling of the aircraft during normal and non-normal operation, without any assistance in reasonable time.

**Duration** : 56 hrs./Crew

**Training Device**

- Fixed Base Simulator (FBS)
- Full Flight Simulator (FFS)

**Place of Training** : Egypt Air Training Center or any approved training center

**Course Handouts**

- Flight Crew Operation Manual (FCOM)
- Flight Crew Training Manual (FCTM)
- Quick Reference Handbook (QRH)

**FMGS CAPTAIN OR FO A320**

**1.1 INITIAL A320 FMGS 1**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **HEGN** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | | **DRY.** | | MEL | **-** | |
| ZFW | | ZFWCG | | | FOB | |
| **46.1T** | | **30.1** | | | **4500T** | |

**<u>NOTES</u>**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH <u>EFB</u> APPLICATION**

### 1.1.1 SESSION OBJECTIVES INITIAL A320 FMGS 1

| INSTRUCTORS ONLY | | | |
|---|---|---|---|
| **SESSION OBJECTIVES** | | | |
| ➢ **This lesson provides flight management system(FMS) familiarization**<br>➢ **Introduce flight management system (FMS) tasks during pre-flight**<br>➢ **Integrate systems management tasks during preflight and post flight** | | | |
| **ENTER (S/US) INDICATING SATISFACTORY/UNSATISFACTORY COMPLETION OF EACH ITEM** | | | |
| **SESSION DETAILS** | **S** | **US** | **KEY POINTS** |
| A/C DATA----- A/C STATUS | ☐ | ☐ | |
| FMGS INIT A PAGE FROM-----TO | ☐ | ☐ | |
| ALTERNATE, FLT NO, COST INDEX, CRZ LEVEL, TEMP, WIND | ☐ | ☐ | |
| F-PLAN PREPARATION | ☐ | ☐ | |
| DEPARTURE RUNWAY (SID OR FLIGHT PLAN DISCONTINUITY) | ☐ | ☐ | |
| ROUTE, APPROCH, ALTERNATE | ☐ | ☐ | |
| RADIO NAV PAGE | ☐ | ☐ | |
| INIT B PAGE ZFW/CG, FUEL | ☐ | ☐ | |
| SECOUNDRY FLIGHT PLAN PAGE | ☐ | ☐ | |
| PERFORMANCE PAGE THR RED, ACC, TAKEOFF CONFIGURATION, TAKEOFF DATA CHECK | ☐ | ☐ | |
| FUEL PREDICTION PAGE | ☐ | ☐ | |
| PROGRESS PAGE | ☐ | ☐ | |
| FCU PRPARATION | ☐ | ☐ | |
| DEPARTURE FROM DIFFERENT RUNWAY | ☐ | ☐ | |
| TAKEOFF ALTERNATE | ☐ | ☐ | |
| RETURNE BACK IN CASE OF ENGINE FAIL | ☐ | ☐ | |

### 1.1.2 SESSION EVALUATION INITIAL A320 FMGS 1

| INSTRUCTORS ONLY | | | | |
|---|---|---|---|---|
| **Trainee name** | **Code No.** | **Capt.☐** | **F/O ☐** | **Date / /** |
| **Location**<br>**Cairo ☐**<br>**Other☐** | **Session Time:** | **Time PF:** | | **Time PM:** |
| **SESSION EVALUATION** | | | | |
| **EVALUATION AREAS** | **SLOW PROGRESS** | | | **NORMAL PROGRESS** |
| FMS.FLIGHT INSTRUMENTS AND AUTOPILOT SYSTEM KNOWLEDGE | ☐ | | | ☐ |
| ADHERENCE TO CLEARANCE AND SAFE ALTITUDE AWARENESS | ☐ | | | ☐ |
| PLANNING AHEAD, NAVIGATION | ☐ | | | ☐ |
| CRM | ☐ | | | ☐ |
| **COMMENTS: -** | | | | |
| **This is to certify that all applicable FMS training and discussion items in this session have been completed.** | | | | |
| **Instructor name:-** | **Instructor code:-** | **Instructor signature:-** | | **Trainee name:-** |

### 1.1 INITIAL A320 FMGS 2

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | | **DRY.** | | MEL | **-** | |
| ZFW | | ZFWCG | | | FOB | |
| **61.0T** | | **31.2** | | | **7500T** | |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

### 1.2.1 SESSION OBJECTIVES INITIAL A320 FMGS 2

| INSTRUCTORS ONLY | | | |
| --- | --- | --- | --- |
| **SESSION OBJECTIVES** | | | |
| ➢ **This lesson provides flight management system(FMS) familiarization**<br>➢ **Introduce flight management system (FMS) tasks during pre-flight**<br>➢ **Integrate systems management tasks during preflight and post flight** | | | |
| **ENTER (S/US) INDICATING SATISFACTORY/UNSATISFACTORY COMPLETION OF EACH ITEM** | | | |
| **SESSION DETAILS** | **S** | **US** | **KEY POINTS** |
| TAKE OFF SPEED CONST | ☐ | ☐ | |
| ALT CONST, EXPEDITE CLIMB | ☐ | ☐ | |
| LATERAL / VERTICAL REVISION CRUISE USE OFFET NAV | ☐ | ☐ | |
| CCURACY CHECK DME ARC CROSSING RADIAL | ☐ | ☐ | |
| HOLDING --- DATABASE / COMPUTED APPROACH ATIS | ☐ | ☐ | |
| RAD NAV PAGE BRIEFING STAR LATERAL | ☐ | ☐ | |
| REVISION/VERTICALREVISION ILS (STANDARD) VOR | ☐ | ☐ | |
| FINAL APPROCH PUCH PUSH BOTTOM GO AROUND FMGC | ☐ | ☐ | |
| DATA PAGE PILOT WAY POINT ENTRY NAV AID ENTRY | ☐ | ☐ | |
| AIRPORT ENTRY HOW TO ENTRE AT WAYPOINT NOT IN DATABASE PLACE / BEARING / DISTANCE | ☐ | ☐ | |
| PLACE-BEARING / PLACE-BEARING | ☐ | ☐ | |
| LAT/LONG | ☐ | ☐ | |
| HOLDING 360 FUEL TO EXIT HOLDING | ☐ | ☐ | |
| ENABLE ALTERNATE | ☐ | ☐ | |
| CHANCE ALTERNATE | ☐ | ☐ | |
| RADIAL FIX OPTION | ☐ | ☐ | |
| NEAREST AIRPORT | ☐ | ☐ | |
| REVISE HOLDING ENTRY | ☐ | ☐ | |

### 1.2.2 SESSION EVALUATION INITIAL A320 FMGS 2



| INSTRUCTORS ONLY | | | | |
|---|---|---|---|---|
| **Trainee name** | **Code No.** | **Capt.☐** | **F/O ☐** | **Date / /** |
| **Location**<br>**Cairo ☐**<br>**Other☐** | **Session Time:** | **Time PF:** | | **Time PM:** |

| **SESSION EVALUATION** | | |
|---|---|---|
| **EVALUATION AREAS** | **SLOW PROGRESS** | **NORMAL PROGRESS** |
| FMS.FLIGHT INSTRUMENTS AND AUTOPILOT SYSTEM KNOWLEDGE | ☐ | ☐ |
| ADHERENCE TO CLEARANCE AND SAFE ALTITUDE AWARENESS | ☐ | ☐ |
| PLANNING AHEAD, NAVIGATION | ☐ | ☐ |
| CRM | ☐ | ☐ |

**COMMENTS:-**

| **This is to certify that all applicable FMS training and discussion items in this session have been completed.** | | | |
|---|---|---|---|
| **Instructor name:-** | **Instructor code:-** | **Instructor signature:-** | **Trainee name:-** |

## 1.2 INITIAL A320 FMGS 3

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | **DRY.** | | | MEL | **-** | |
| ZFW | | ZFWCG | | | FOB | |
| **61.0T** | | **31.2** | | | **7500T** | |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

### 1.3.1 SESSION OBJECTIVES INITIAL A320 FMGS 3

| INSTRUCTORS ONLY | | | |
|---|---|---|---|
| **SESSION OBJECTIVES** | | | |
| ➢ **This lesson provides flight management system(FMS) familiarization**<br>➢ **Introduce flight management system (FMS) tasks during pre-flight**<br>➢ **Integrate systems management tasks during preflight and post flight** | | | |
| **ENTER (S/US) INDICATING SATISFACTORY/UNSATISFACTORY COMPLETION OF EACH ITEM** | | | |
| **SESSION DETAILS** | **S** | **US** | **KEY POINTS** |
| TAKE OFF AND INITIAL CLIMB | ☐ | ☐ | |
| SID, DIRECT TO | ☐ | ☐ | |
| LATERAL REVISION | ☐ | ☐ | |
| VERTICAL REVISION | ☐ | ☐ | |
| CRUISE LATERAL | ☐ | ☐ | |
| REVISION VERTICAL | ☐ | ☐ | |
| REVISION NAV | ☐ | ☐ | |
| ACCURACY CHECK | ☐ | ☐ | |
| APPROCH PREPARATION | ☐ | ☐ | |
| ATIS , BRIEFING, STAR | ☐ | ☐ | |
| ILS (STANDARD) | ☐ | ☐ | |
| VOR | ☐ | ☐ | |
| GO AROUND | ☐ | ☐ | |
| FMGS PREPARATION | ☐ | ☐ | |
| A/C DATA--- STATUS | ☐ | ☐ | |
| INIT A PAGE | ☐ | ☐ | |
| F-PLAN , SECONDARY F-PLAN | ☐ | ☐ | |
| RNAV PAGE | ☐ | ☐ | |
| PERFORMANCE | ☐ | ☐ | |
| PROGRESS | ☐ | ☐ | |
| WIND | ☐ | ☐ | |
| INIT B PAGE | ☐ | ☐ | |
| TAKEOFF DATA | ☐ | ☐ | |
| FCU | ☐ | ☐ | |
| RADIAL IN/OUT | ☐ | ☐ | |
| DME ARC, HOLDING ENTRY | ☐ | ☐ | |

### 1.3.2 SESSION EVALUATION INITIAL A320 FMGS 3

| INSTRUCTORS ONLY | | | | | |
|---|---|---|---|---|---|
| **Trainee name** | **Code No.** | **Capt.☐** | **F/O ☐** | **Date / /** | |
| **Location**<br>**Cairo ☐**<br>**Other☐** | **Session Time:** | **Time PF:** | | **Time PM:** | |
| **SESSION EVALUATION** | | | | | |
| **EVALUATION AREAS** | **SLOW PROGRESS** | | | **NORMAL PROGRESS** | |
| FMS.FLIGHT INSTRUMENTS AND AUTOPILOT SYSTEM KNOWLEDGE | ☐ | | | ☐ | |
| ADHERENCE TO CLEARANCE AND SAFE ALTITUDE AWARENESS | ☐ | | | ☐ | |
| PLANNING AHEAD, NAVIGATION | ☐ | | | ☐ | |
| CRM | ☐ | | | ☐ | |
| **COMMENTS:-** | | | | | |
| **This is to certify that all applicable FMS training and discussion items in this session have been completed.** | | | | | |
| **Instructor name:-** | **Instructor code:-** | **Instructor signature:-** | | **Trainee name:-** | |

### 1.4 A320 FMGS REMEDIAL 1

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | | **DRY.** | | MEL | **-** | |
| ZFW | | ZFWCG | | | FOB | |
| **61.0T** | | **31.2** | | | **7500T** | |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

### 1.4.1 A320 FMGS REMEDIAL 1



| INSTRUCTORS ONLY | | | |
|---|---|---|---|
| **SESSION OBJECTIVES** | | | |
| ➢ **This lesson provides flight management system(FMS) familiarization**<br>➢ **Introduce flight management system (FMS) tasks during pre-flight**<br>➢ **Integrate systems management tasks during preflight and post flight** | | | |
| **ENTER (S/US) INDICATING SATISFACTORY/UNSATISFACTORY COMPLETION OF EACH ITEM** | | | |
| **SESSION DETAILS** | **S** | **US** | **KEY POINTS** |
| A/C DATA ---- A/C STATUS | ☐ | ☐ | |
| FMGS INIT A PAGE | ☐ | ☐ | |
| FROM --- TO, ALTERNATE, FLT NO, COST INDEX, CRZ, WIND. | ☐ | ☐ | |
| F-PLAN PREPARATION. | ☐ | ☐ | |
| DEPARTURE RUWAY (SID OR F-PLAN DISCONTINUITY). | ☐ | ☐ | |
| ROUTE – APPROCH – ALTERNATE. | ☐ | ☐ | |
| SECOUNDRY F-PLAN. | ☐ | ☐ | |
| DEPARTURE FROM DIFFERENT R/W | ☐ | ☐ | |
| TAKE OFF ALT. | ☐ | ☐ | |
| RETURN BACK IN CASE OF ENGINE FAIL. | ☐ | ☐ | |
| RAD NAV PAGE. | ☐ | ☐ | |
| PERFORMANCE PAGE. | ☐ | ☐ | |
| THR RED/ACCELERATION. | ☐ | ☐ | |
| TAKE OFF CONFIGURATION. | ☐ | ☐ | |
| PROGRESS PAGE. | ☐ | ☐ | |
| WIND. | ☐ | ☐ | |
| TAKE OFF, CRZ, APPROCH. | ☐ | ☐ | |
| INIT B PAGE, ZFW/CG. | ☐ | ☐ | |
| FUEL, TAKE OFF DATA CHECK. | ☐ | ☐ | |
| FUEL PREDICTION PAGE. | ☐ | ☐ | |
| FCU PREPARATION. | ☐ | ☐ | |
| A/C DATA ---- A/C STATUS | ☐ | ☐ | |
| FMGS INIT A PAGE | ☐ | ☐ | |
| FROM ---- TO, ALTERNATE. | ☐ | ☐ | |

| SESSION DETAILS CONT'D | S | US | KEY POINTS |
|---|---|---|---|
| TAKEOFF | ☐ | ☐ | |
| SPEED CONST | ☐ | ☐ | |
| ALT CONST | ☐ | ☐ | |
| EXPEDITE CLIMB | ☐ | ☐ | |
| CLIMB | ☐ | ☐ | |
| SID | ☐ | ☐ | |
| DIRECT TO | ☐ | ☐ | |
| TRACKING RADIAL OUT/IN | ☐ | ☐ | |
| LATERAL / VERTICAL REVISION | ☐ | ☐ | |
| CRUISE | ☐ | ☐ | |
| USE OFFSET | ☐ | ☐ | |
| NAV ACCURACY CHECK | ☐ | ☐ | |
| DME ARC | ☐ | ☐ | |
| CROSSING RADIAL | ☐ | ☐ | |
| HOLDING -- DATABASE / COMPUTED | ☐ | ☐ | |
| APPROCH | ☐ | ☐ | |
| ATIS | ☐ | ☐ | |
| RAD NAV PAGE | ☐ | ☐ | |
| BRIEFING | ☐ | ☐ | |
| STAR | ☐ | ☐ | |
| LATERAL/VERTICL REVISION | ☐ | ☐ | |
| ILS (STANDARD) | ☐ | ☐ | |
| VOR | ☐ | ☐ | |
| FINAL APPROCH PUCH BOTTOM | ☐ | ☐ | |
| GO AROUND | ☐ | ☐ | |
| FMGC DATA PAGE | ☐ | ☐ | |
| PILOT WAY POINT ENTRY | ☐ | ☐ | |
| NAV AID ENTRY | ☐ | ☐ | |
| AIRPORT ENTRY | ☐ | ☐ | |
| HOW TO ENTER AT WAY POINT NOT IN DATABASE | ☐ | ☐ | |
| PLACE / BEARING / DIST | ☐ | ☐ | |
| PLACE-BEARING / PLACE-BEARING | ☐ | ☐ | |
| LAT/LONG | ☐ | ☐ | |
| HOLDING 360 | ☐ | ☐ | |
| FUEL TO EXIT HOLDING | ☐ | ☐ | |
| ENABLE ALTERNATE | ☐ | ☐ | |
| CHANGE ALTERNATE | ☐ | ☐ | |
| RADIAL FIX OPTION | ☐ | ☐ | |
| NEAREST AIRPORT | ☐ | ☐ | |
| REVISE HOLDING ENTRY | ☐ | ☐ | |

| INSTRUCTORS ONLY | | | | |
|---|---|---|---|---|
| **Trainee name** | **Code No.** | **Capt.☐** | **F/O ☐** | **Date / /** |
| **Location**<br>**Cairo ☐**<br>**Other☐** | **Session Time:** | **Time PF:** | | **Time PM:** |

| **SESSION EVALUATION** | | |
|---|---|---|
| **EVALUATION AREAS** | **SLOW PROGRESS** | **NORMAL PROGRESS** |
| FMS.FLIGHT INSTRUMENTS AND AUTOPILOT SYSTEM KNOWLEDGE | ☐ | ☐ |
| ADHERENCE TO CLEARANCE AND SAFE ALTITUDE AWARENESS | ☐ | ☐ |
| PLANNING AHEAD, NAVIGATION | ☐ | ☐ |
| CRM | ☐ | ☐ |

**COMMENTS:-**

**This is to certify that all applicable FMS training and discussion items in this session have been completed.**

| **Instructor name:-** | **Instructor code:-** | **Instructor signature:-** | **Trainee name:-** |
|---|---|---|---|
| | | | |

**1.5 A320 FMGS REMEDIAL** 2

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HEGN** | **HESH** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | **DRY** | | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **46.1 T** | **29.0** | **3600T** |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

### 1.5.1 A320 FMGS REMEDIAL 2

| SESSION OBJECTIVES | | | |
|---|---|---|---|
| ➢ **This lesson provides flight management system(FMS) familiarization**<br>➢ **Introduce flight management system (FMS) tasks during pre-flight**<br>➢ **Integrate systems management tasks during preflight and post flight** | | | |
| **ENTER (S/US) INDICATING SATISFACTORY/UNSATISFACTORY COMPLETION OF EACH ITEM** | | | |
| **SESSION DETAILS** | **S** | **US** | **KEY POINTS** |
| A/C DATA ---- A/C STATUS | ☐ | ☐ | |
| FMGS INIT A PAGE. | ☐ | ☐ | |
| F-PLAN PREPARATION. | ☐ | ☐ | |
| SECUNDARY F-PLAN. | ☐ | ☐ | |
| RNAV PAGE. | ☐ | ☐ | |
| SECOUNDRY F-PLAN. | ☐ | ☐ | |
| PERFORMANCE. | ☐ | ☐ | |
| PROGRESS. | ☐ | ☐ | |
| WIND | ☐ | ☐ | |
| INIT B PAGE. | ☐ | ☐ | |
| TAKE OFF DATA | ☐ | ☐ | |
| FCU | ☐ | ☐ | |
| RADIAL IN/OUT | ☐ | ☐ | |
| DME ARC | ☐ | ☐ | |
| HOLDING ENTRY. | ☐ | ☐ | |
| TAKE OFF AND INITIAL CLIMB | ☐ | ☐ | |
| SID, DIRECT TO. | ☐ | ☐ | |
| CRUISE. | ☐ | ☐ | |
| NAV ACCURACY CHECK. | ☐ | ☐ | |
| APPROCH PREPARATION. | ☐ | ☐ | |
| ATIS. | ☐ | ☐ | |
| BRIEFING. | ☐ | ☐ | |
| STAR. | ☐ | ☐ | |
| ILS (STANDERD). | ☐ | ☐ | |
| VOR. | ☐ | ☐ | |
| GO AROUND. | ☐ | ☐ | |

| INSTRUCTORS ONLY | | | | |
|---|---|---|---|---|
| **Trainee name** | **Code No.** | **Capt.☐** | **F/O ☐** | **Date / /** |
| **Location**<br>**Cairo ☐**<br>**Other☐** | **Session Time:** | **Time PF:** | | **Time PM:** |

| **SESSION EVALUATION** | | |
|---|---|---|
| **EVALUATION AREAS** | **SLOW PROGRESS** | **NORMAL PROGRESS** |
| FMS.FLIGHT INSTRUMENTS AND AUTOPILOT SYSTEM KNOWLEDGE | ☐ | ☐ |
| ADHERENCE TO CLEARANCE AND SAFE ALTITUDE AWARENESS | ☐ | ☐ |
| PLANNING AHEAD, NAVIGATION | ☐ | ☐ |
| CRM | ☐ | ☐ |

**COMMENTS:-**

**This is to certify that all applicable FMS training and discussion items in this session have been completed.**

| **Instructor name:-** | **Instructor code:-** | **Instructor signature:-** | **Trainee name:-** |
|---|---|---|---|
| | | | |

## SECTION 2 INITIAL A320 FBS

### 2.1 INITIAL A320 FBS 1

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | | **DRY.** | | MEL | **-** | |
| ZFW | | ZFWCG | | FOB | | |
| **61.0T** | | **31.2** | | **7500T** | | |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

**SESSION PREPARATION**

INSTRUCTORS ONLY

**1) SESSION OBJECTIVE**

- Introduce and practice the preliminary cockpit prep and cockpit preparation.
- Study, practice and use of the FMGS through a standard preparation.
- Introduce and practice SOPs and task sharing during:
  - BEFORE START.
  - ENGINE START / AFTER START.
  - TAXI & BEFORE TAKEOFF.
  - AFTER LANDING / PARKING SECURING.

**2) TRAINING TOPICS**

**A. EXERCISES / REFERENCES**

| EVENTS | FCOM | QRH | FCTM |
|---|---|---|---|
| • PRELIMINARY COCKPIT PREPARATION<br>COCKPIT PREPARATION | PRO-NOR-SOP-04<br>PRO-NOR-SOP-06<br>PRO-NOR-SRP-01 FMS-10 | NP | NO.020 |
| • BEFORE START<br>ENG START<br>AFTER START | PRO-NOR-SOP-07<br>PRO-NOR-SOP-08<br>PRO-NOR-SOP-09 | NP | NO.030 |
| • TAXI & BEFORE TAKEOFF | PRO-NOR-SOP-10<br>PRO-NOR-SOP-11<br>PRO-NOR-SRP-01 FMS-20 | NP | NO.040 |
| • AFTER LANDING<br>PARKING<br>SECURING A/C | PRO-NOR-SOP-21<br>PRO-NOR-SOP-22<br>PRO-NOR-SOP-23 | NP | |
| • IRS ALIGNMENT | DSC-22_20<br>PRO-SUP-34 | | |

**B. SUPPORT**

- FCOM / QRH.
- FCTM

**3) COMPETENCIES CRITERIA**

The graded competencies are:

- Application of procedures
- Knowledge.

INSTRUCTORS ONLY

**SESSION GUIDE**

**INIT TAKEOFF:** Use predetermined data for take-off performance.

1) **Electric external power available.** 2)
   - During open book preparation, the instructor will explain the panel scanning following the Tutorial Mode.
   - Panel scanning in agreement with the Tutorial Mode Explain the "All white lights" philosophy.
   - OVERHEAD PANEL CENTER INSTRUMENT PANEL, PEDESTAL SCAN
   - Do not explain the systems, but emphasize the flow of actions.

2) **No External power available.** 4)
   - BAT check refer to FCOM PRO-NOR-SOP-04 P 2/6
   - APU Start on BAT
   - Explain the brake & Flight control check.
   - Explain the general flow of actions.

**FMGS preparation:**

- Follow the Tutorial Mode.
- Do not describe the pages in detail, this will be done all along the ground phase. Explain following items:
  - **DATA:** Select A/C STATUS
  - **A/C STATUS page:** Check NAV DATA BASE validity
  - **INIT A:** Enter the F-PLN.
  - Explain IRS alignment with or without GPS using IRS INIT page

INSTRUCTORS ONLY

**Note:** Highlight the LAT/LONG check importance before EVERY FLIGHT.

- **F-PLN** Explain the architecture of F-PLN, cross-check with documentation.
- **SEC F-PLN** Select COPY ACTIVE, explain architecture.
- **RAD NAV**
- **INIT B** Predetermined Data
- **PERF T/O** Predetermined Data

- Glareshield, lateral consoles and CM1 / CM2 panels: Do not explain the systems, but emphasize the flow of actions.
- No take off briefing at this stage.

**3)** Explain the brake & Flight control check. 6)
**4)** Explain the general flow of actions.

# INITIAL A320 FBS 1

| TIME | INITIAL A320 – FBS 1 | | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|---|
| | **TRAINEE 1** | | | | | |
| | **INIT COCKPIT PREP** | | | | | |
| | **1)** SAFETY EXTERIOR INSPECTION (BRIEFING ROOM ) | | | | | |
| | **2)** COCKPIT PREPARATION **1)** | | | | | |
| | **3)** BEFORE START/ ENG START /AFTER START | | | | | |
| | **TRAINEE 2** | | | | | |
| | **INIT COCKPIT PREP** | | | | | |
| | **4)** COCKPIT PREPRATION **2)** | | | | | |
| | **5)** BEFORE START / ENG START / AFTER START | | | | | |
| | **6)** TAXI & BEFORE TAKE OFF **3)** | | | | | |
| | **INIT AFTER LANDING** | | | | | |
| | **7)** AFTER LANDING / PARKING / SECURING AIRCRAFT | | | | | |

# INITIAL A320 FBS 1

| TRAINEE NAME | CODE NO. | ☐ CAPT. ☐ F/O | DATE / / |
|---|---|---|---|
| Location<br>☐ Cairo ☐ Other | Session Time: | Time PF: | Time PM: |

| SESSION EVALUATION | | | | |
|---|---|---|---|---|
| **Knowledge** | US | S1 | **S2** | S3 |
| Operations Manual (OM – part A) And Relevant ECARS | | | | |
| A/C System. Limitation and Performance | | | | |
| Normal Procedures. Non – normal Procedures | | | | |
| NESMA – AIRLINES Operations Specifications | | | | |
| **Flying skills** | US | S1 | **S2** | S3 |
| Compliance with SOP (OM-part A & FCOM) | | | | |
| Attitude Flying | | | | |
| Scan flow. Attitude & Speed Control | | | | |
| A/C Configuration & Landing Technique | | | | |
| Flying Accuracy & Smoothness | | | | |
| **Management** | US | S1 | **S2** | S3 |
| Compliance with Operations Manual (OM-A) | | | | |
| Planning Ahead And Use of FMGS | | | | |
| Crew Coordination And Use Of Available Resources | | | | |
| Adherence To Clearance And Safe Heights | | | | |
| **General** | US | S1 | **S2** | S3 |
| Situational awareness | | | | |
| Discipline | | | | |

**Comments:-**

**This is to certify that all applicable flight training and discussion items in this session have been completed**

| ☐ NORMAL PROGRESS | ☐ SLOW POGRESS | ☐ REMEDIAL SESSION REQUIRED | |
|---|---|---|---|
| Instructor Name | Instructor Code | Instructor Signature | Trainee Signature |

**INITIAL A320 FBS 2**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | | **DRY.** | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **61.0T** | **31.2** | **7500T** |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

**SESSION PREPARATION**

INSTRUCTORS ONLY

1) **SESSION OBJECTIVE**
   - Introduce and practice SOPs and task sharing during: TAKEOFF. CLIMB and CRUISE.

2) **TRAINING TOPICS**

**C. EXERCISES / REFERENCES**

| EVENTS | FCOM | QRH | FCTM |
|---|---|---|---|
| • TAKEOFF / AFTER TAKEOFF | PRO-NOR-SOP-12 PRO-NOR-SOP-13 | NP | NO.050 |
| • AUTO THRUST LOGIC | DSC-22_30 | NP | OP.030 |
| • CLIMB | PRO-NOR-SOP-14 PRO-NOR-SRP-01 FMS-40 | NP | NO.060 |
| • CRUISE | PRO-NOR-SOP-15 PRO-NOR-SRP-01 FMS-50 | NP | NO.070 |

**D. SUPPORT**

- FCOM / QRH.
- FCTM
- PDP:
  - TAKE OFF
  - CLIMB
  - CRUISE
- FMS TRAINER
  - FMS preparation

3) **COMPETENCIES CRITERIA**

The graded competencies are:

- Application of procedures
- Knowledge.

**SESSION GUIDE**

INSTRUCTORS ONLY

1) **INIT TAKEOFF:** Use predetermined data for take-off performance.
2) Perform the TAKEOFF briefing **1)**
3) Start climb tutorial when AFTER TAKEOFF C/L is completed. **6)**
4) Perform the TAKEOFF briefing **8)**
5) Demonstrate entry of preselected speed on climb perf page **12)**
6) New CRZ FL 120 **13)**

➢ FMGS PERF pages
   - Insert a preset speed of 300 kt in cruise CLB
   - CRZ
   - PROG page

7) FMGS **14)**
   - DIR TO page (explain the 4 functions) FIX INFO
   - F-PLN page B
   - OVFY FUNCTION

8) AUTOTHRUST **15)**

N1 (or EPR) rating limits on EWD (computed by FADEC and depending on the TLA).
Disconnection / reengagement with associated FMA / ECAM announcements

# INITIAL A320 FBS 2

| TIME | INITIAL A320 – FBS2 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 2** | | | | | |
| | **INIT COCKPIT PREP** | | | | |
| | **1)** TRANSIT COCKPIT PREPARATION **2)** | | | | |
| | **2)** BEFORE START / ENG START / AFTER START | | | | |
| | **3)** TAXI & BEFORE TAKE OFF | | | | |
| | **4)** TAKE OFF – PACKS OFF | | | | |
| | **INIT TAKE OFF** | | | | |
| | **5)** TAKEOFF – PACKS ON | | | | |
| | **6)** APPROACHING FL 60 : CLIMB **3)** | | | | |
| | **7)** APPROACHING FL 240 : CRUISE | | | | |
| **TRAINEE 1** | | | | | |
| | **INIT COCPIT PREP** | | | | |
| | **8)** TRANSIT COCKPIT PREPARATION **4)** | | | | |
| | **9)** BEFORE START / ENG START / AFTER START | | | | |
| | **10)** TAXI & BEFORE TAKE OFF | | | | |
| | **11)** TAKE OFF – PACKS ON | | | | |
| | **INIT TAKEOFF** | | | | |
| | **12)** TAKE OFF - PACKS ON **5)** | | | | |
| | **13)** CLIMB / FMGS **6)** | | | | |
| | **14)** CRUISE / FMGS **7)** | | | | |
| | **15)** ATHR LOGIC **15)** | | | | |

# INITIAL A320 FBS 2

| TRAINEE NAME | CODE NO. | ☐ CAPT. ☐ F/O | DATE / / |
|---|---|---|---|
| Location<br>☐ Cairo ☐ Other | Session Time: | Time PF: | Time PM: |

| SESSION EVALUATION | | | | |
|---|---|---|---|---|
| **Knowledge** | US | S1 | **S2** | S3 |
| Operations Manual (OM – part A) And Relevant ECARS | | | | |
| A/C System. Limitation and Performance | | | | |
| Normal Procedures. Non – normal Procedures | | | | |
| NESMA – AIRLINES Operations Specifications | | | | |
| **Flying skills** | US | S1 | **S2** | S3 |
| Compliance with SOP (OM-part A & FCOM) | | | | |
| Attitude Flying | | | | |
| Scan flow. Attitude & Speed Control | | | | |
| A/C Configuration & Landing Technique | | | | |
| Flying Accuracy & Smoothness | | | | |
| **Management** | US | S1 | **S2** | S3 |
| Compliance with Operations Manual (OM-A) | | | | |
| Planning Ahead And Use of FMGS | | | | |
| Crew Coordination And Use Of Available Resources | | | | |
| Adherence To Clearance And Safe Heights | | | | |
| **General** | US | S1 | **S2** | S3 |
| Situational awareness | | | | |
| Discipline | | | | |

**Comments:-**

**This is to certify that all applicable flight training and discussion items in this session have been completed**

| ☐ NORMAL PROGRESS | ☐ SLOW POGRESS | ☐ REMEDIAL SESSION REQUIRED | |
|---|---|---|---|
| Instructor Name | Instructor Code | Instructor Signature | Trainee Signature |

**INITIAL A320 FBS 3**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | | **DRY.** | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **61.0T** | **31.2** | **7500T** |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

## SESSION PREPARATION

INSTRUCTORS ONLY

### 1) SESSION OBJECTIVE

- Introduce and practice Take off Performance Computation
- Introduce and practice SOPs and task sharing during:
  - DESCENT
  - APPROACH USING LOC-G/S GUIDANCE
  - REVERSION

### 2) TRAINING TOPICS

### E. EXERCISES / REFERENCES

| EVENTS | FCOM | QRH | FCTM |
|---|---|---|---|
| • DESCENT PREPARATION | PRO-NOR-SOP-16 PRO-NOR-SOP-17 | NP | NO.080 |
| • APPROACH USING LOC-G/S GUIDANCE | PRO-NOR-SOP-18 PRO-NOR-SRP-01 FMS-70 | NP | NO.110 |
| • LANDING | PRO-NOR-SOP-19 | NP | |
| • REVERSION | DSC-22_30 | NP | OP.030 |

### F. SUPPORT

- FCOM / QRH.
- FCTM
- PDP:
  - DESCENT / ILS APPROACH
- FMS preparation

### 3) COMPETENCIES CRITERIA

The graded competencies are:

- Application of procedures
- Knowledge.

**SESSION GUIDE**

INSTRUCTORS ONLY

1) **Check T/O performance computation** 1)
   - **FMGS**
     - NAVAID / STORED NAVAID
     - SEC F-FPLN     COPY ACTIVE
     - NEW DESTINATION for IMMEDIATE RETURN PREPARATION.
2) **Explain Take Off "Packs Off" procedure** 4)
3) **FMGS** 5)
   - Waypoint definition Prediction displayed on the MCDU Constraint symbols.
4) **New cruise level 190 then DESCENT tutorial.** 6)
5) **Use DIR TO** 10)
   - New cruise FL 70
6) **Request V/S selection + 6000 ft. / MIN,** 18)
   - When reaching VLS observe REVERSION;
   - when completed use DIR TO
7) **Use DIR TO** 23)
   - New cruise FL 70

# INITIAL A320 FBS 3

| TIME | INITIAL A320 – FBS 3 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 1** | | | | | |
| | **INIT COCKPIT PREP** | | | | |
| | **1)** TRANSIT COCKPIT PREPARATION **1)** | | | | |
| | **2)** BEFORE START / ENG START / AFTER START | | | | |
| | **3)** TAXI & BEFORE TAKE OFF | | | | |
| | **4)** TAKE OFF – PACKS OFF **2)** | | | | |
| | **5)** CLIMB **3)** | | | | |
| | **6)** CRUISE **4)** | | | | |
| | **7)** DESCENT | | | | |
| | **8)** ILS STANDARD / AUTOLAND | | | | |
| | **INIT TAKE OFF** | | | | |
| | **9)** TAKEOFF – PACKS ON | | | | |
| | **10)** CLIMB **5)** | | | | |
| | **11)** CRUISE | | | | |
| | **12)** DESCENT | | | | |
| | **13)** RADAR VECTORS ILS / AUTOLAND | | | | |
| **TRAINEE 2** | | | | | |
| | **INIT COCPIT PREP** | | | | |
| | **14)** TRANSIT COCKPIT PREPARATION | | | | |
| | **15)** BEFORE START / ENG START / AFTER START | | | | |
| | **16)** TAXI & BEFORE TAKE OFF | | | | |
| | **17)** TAKE OFF – PACKS OFF | | | | |
| | **18)** CLIMB – REVERSION **6)** | | | | |
| | **19)** CRUISE | | | | |
| | **20)** DESCENT | | | | |
| | **21)** ILS STANDARD SELECTED / AUTOLAND | | | | |
| | **INIT TAKE OFF** | | | | |
| | **22)** TAKEOFF – PACKS ON | | | | |
| | **23)** CLIMB **7)** | | | | |
| | **24)** CRUISE | | | | |
| | **25)** DESCENT | | | | |
| | **26)** RADAR VECTORS ILS / AUTOLAND | | | | |

# INITIAL A320 FBS 3

| TRAINEE NAME | CODE NO. | ☐ CAPT. ☐ F/O | DATE / / |
|---|---|---|---|
| Location<br>☐ Cairo ☐ Other | Session Time: | Time PF: | Time PM: |

| SESSION EVALUATION | | | | |
|---|---|---|---|---|
| **Knowledge** | US | S1 | **S2** | S3 |
| Operations Manual (OM – part A) And Relevant ECARS | | | | |
| A/C System. Limitation and Performance | | | | |
| Normal Procedures. Non – normal Procedures | | | | |
| NESMA – AIRLINES Operations Specifications | | | | |
| **Flying skills** | US | S1 | **S2** | S3 |
| Compliance with SOP (OM-part A & FCOM) | | | | |
| Attitude Flying | | | | |
| Scan flow. Attitude & Speed Control | | | | |
| A/C Configuration & Landing Technique | | | | |
| Flying Accuracy & Smoothness | | | | |
| **Management** | US | S1 | **S2** | S3 |
| Compliance with Operations Manual (OM-A) | | | | |
| Planning Ahead And Use of FMGS | | | | |
| Crew Coordination And Use Of Available Resources | | | | |
| Adherence To Clearance And Safe Heights | | | | |
| **General** | US | S1 | **S2** | S3 |
| Situational awareness | | | | |
| Discipline | | | | |

**Comments:-**

**This is to certify that all applicable flight training and discussion items in this session have been completed**

| ☐ NORMAL PROGRESS | ☐ SLOW POGRESS | ☐ REMEDIAL SESSION REQUIRED | |
|---|---|---|---|
| Instructor Name | Instructor Code | Instructor Signature | Trainee Signature |

**INITIAL A320 FBS 4**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | **DRY.** | | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **61.0T** | **31.2** | **7500T** |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

**SESSION PREPARATION**

INSTRUCTORS ONLY

1) **SESSION OBJECTIVE**
   - Ground speed mini function
   - Introduce and practice SOPs and task sharing during:
     - MMEL USE
     - APPROACH USING TRK-FPA GUIDANCE
     - MANUAL ENGINE START, CROSSBLEED ENGINE START
     - GO AROUND
     - HOLDING

2) **TRAINING TOPICS**

**G. EXERCISES / REFERENCES**

| EVENTS | FCOM | QRH | FCTM |
|---|---|---|---|
| • APPROACH USING TRK-FPA GUIDANCE | PRO-NOR-SOP-18 PRO-NOR-SRP-01 FMS-70 | NP | NO.120 |
| • MMEL | | | NO.020 |
| • MANUAL ENGINE START | PRO-SUP-70 | | NO.030 |
| • CROSSBLEED ENGINE START | PRO-SUP-70 | | |
| • GROUND SPEED MINI | DSC-22_30 | | NO.100 |
| • HOLDING | DSC-22_20-50-20-30 PRO-NOR-SRP-01 FMS-60 | | NO.090 |
| • GO AROUND | PRO-NOR-SOP-20 PRO-NOR-SRP-01 FMS-80 | NP | NO.170 |

**H. SUPPORT**

- FCOM / QRH.
- FCTM
- FMS Trainer:
  - preparation
- PDP:
  - GROUND SPEED MINI
  - MMEL / MEL USE
  - VOR/NDB USING TRK-FPA
  - GO AROUND

INSTRUCTORS ONLY

### 3) COMPETENCIES CRITERIA

The graded competencies are:

- Application of procedures
- Knowledge.

**SESSION GUIDE**

1) **FMGS** 1)
   - POSITION MONITOR: demonstrate how to deselect NAVAIDS and GPS
   - PROG page: observe Predictive GPS and demonstrate how to deselect Satellites.
   - ESTIMATED TAKE OFF TIME (ETT)
   - SPEED CONSTRAINT in CLB, in CRZ
2) **Manual engine start performed with FCOM** 2)
3) **Decelerated approach. Radar vectors - DIR TO RAD IN.** 7)
4) **APU failed AFTER ENG 2 START and GEN 2 available. Cross bleed engine start performed with FCOM.** 11)
5) **Decelerated approach. Radar vectors - DIR TO RAD IN.** 16)

**When reaching 1000 ft., freeze and use GO AROUND Tutorial. When ready, unfreeze and perform a GO AROUND at MDA.** 18)

# INITIAL A320 FBS

| TIME | INITIAL A320 – FBS 4 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 2** | | | | | |
| | **INIT COCKPIT PREP** | | | | |
| | **1)** TRANSIT COCKPIT PREPARATION **Error! Reference source not found.** | | | | |
| | **2)** BEFORE START / MANUAL ENG START **2)** | | | | |
| | **3)** TAXI & BEFORE TAKE OFF | | | | |
| | **4)** TAKE OFF – PACKS OFF | | | | |
| | **5)** CLIMB | | | | |
| | **6)** DESCENT | | | | |
| | **7)** ILS STANDARD SELECTED / AUTOLAND **3)** | | | | |
| | **INIT ILS APPROACH - WIND 030/20** | | | | |
| | **8)** GROUND SPEED MINI | | | | |
| | **9)** EARLY STABILIZED ILS RWY 05R-AUTOLAND | | | | |
| **TRAINEE 1** | | | | | |
| | **INIT COCPIT PREP** | | | | |
| | **10)** TRANSIT COCKPIT PREPARATION | | | | |
| | **11)** BEFORE START / CROSSBLEED ENG START **4)** | | | | |
| | **12)** TAXI & BEFORE TAKE OFF | | | | |
| | **13)** TAKE OFF | | | | |
| | **14)** CLIMB | | | | |
| | **15)** DESCENT | | | | |
| | **16)** ILS STANDARD SELECTED / AUTOLAND **5)** | | | | |
| | **INIT APPROACH** | | | | |
| | **17)** VOR DME RWY 05R USING TRK-FPA | | | | |
| | **18)** GO AROUND / HOLD CVO **0** | | | | |

# INITIAL A320 FBS 4

| TRAINEE NAME | CODE NO. | ☐ CAPT. ☐ F/O | DATE / / |
|---|---|---|---|
| Location<br>☐ Cairo ☐ Other | Session Time: | Time PF: | Time PM: |

| **SESSION EVALUATION** | | | | |
|---|---|---|---|---|
| **Knowledge** | US | S1 | **S2** | S3 |
| Operations Manual (OM – part A) And Relevant ECARS | | | | |
| A/C System. Limitation and Performance | | | | |
| Normal Procedures. Non – normal Procedures | | | | |
| NESMA – AIRLINES Operations Specifications | | | | |
| **Flying skills** | US | S1 | **S2** | S3 |
| Compliance with SOP (OM-part A & FCOM) | | | | |
| Attitude Flying | | | | |
| Scan flow. Attitude & Speed Control | | | | |
| A/C Configuration & Landing Technique | | | | |
| Flying Accuracy & Smoothness | | | | |
| **Management** | US | S1 | **S2** | S3 |
| Compliance with Operations Manual (OM-A) | | | | |
| Planning Ahead And Use of FMGS | | | | |
| Crew Coordination And Use Of Available Resources | | | | |
| Adherence To Clearance And Safe Heights | | | | |
| **General** | US | S1 | **S2** | S3 |
| Situational awareness | | | | |
| Discipline | | | | |

**Comments:-**

**This is to certify that all applicable flight training and discussion items in this session have been completed**

| ☐ NORMAL PROGRESS | ☐ SLOW POGRESS | ☐ REMEDIAL SESSION REQUIRED | |
|---|---|---|---|
| Instructor Name | Instructor Code | Instructor Signature | Trainee Signature |

**INITIAL A320 FBS 5**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **LFPG** | **HECA** | **CAVOK** | **CALM** | **-5/1** | **998** | **-** |
| RWY CONDITION | | **ICING CONDITION** | | MEL | **-** | |
| ZFW | | ZFWCG | | | FOB | |
| **61.0T** | | **31.2** | | | **7500T** | |

**NOTES**

- AIR COND ON
- RWY COND **ICING CONDITION**
- ANTI ICE ON
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

## SESSION PREPARATION

INSTRUCTORS ONLY

**1) SESSION OBJECTIVE**

- Introduce and practice SOPs and task sharing during:
  - APPROACH USING FINAL APP
  - DIVERSION.
- Perform landing performance confirmation without failure.

**2) TRAINING TOPICS**

**I. EXERCISES / REFERENCES**

| EVENTS | FCOM | QRH | FCTM |
|---|---|---|---|
| • DIVERSION | PRO-NOR-SRP-01 FMS-60 PRO-NOR-SRP-01 FMS-80 | | NO.170 |
| • IN FLIGHT LANDING PERFORMANCE | | FPE-IFL-MAT<br>FPE-IFL-VAP<br>FPE-IFL-LD | NO.080<br>SI.090 |
| • APPROACH USING FINAL APP GUIDANCE | PRO-NOR- SOP-18<br>PRO-NOR-SRP-01<br>FMS-70 | NP | NO.120 |

**J. SUPPORT**

- FCOM / QRH.
- FCTM
- PERFORMANCE COURSE
  - APPROACH AND LANDING WITHOUT FAILURE
- PDP:
  - VOR / NDB using FINAL APP
  - RNAV (GNSS) using LNAV/VNAV minimum
- FM TRAINER:
  - F MGS preparation
  - Save as lesson plan before takeoff for next session
  - Take off
  - VOR approach using TRK-FPA
  - Go around

INSTRUCTORS ONLY

**3) COMPETENCIES CRITERIA**

The graded competencies are:

- Application of procedures
- Knowledge

**SESSION GUIDE**

**1)** Airborne icing conditions for takeoff and performance computation **1)**

**2)** ATC reports: "Braking action is now GOOD TO MEDIUM" **6)**
Refer to QRH (In Flight Performance: FPE-IFL-MAT, FPE-IFL-VAP and FPE-IFL-LD) for landing performance confirmation. Make sure that the trainees have revised and understood the Performance modules: APPROACH and LANDING.

**3)** After go around, freeze and demonstrate diversion using **Enable ALTN. 21)**

# INITIAL A320 FBS 5

| TIME | INITIAL A320 – FBS 5 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 1** | | | | | |
| | **INIT COCKPIT PREP** | | | | |
| | **1)** TRANSIT COCKPIT PREPARATION **Error! Reference source not found.** | | | | |
| | **2)** BEFORE START / ENG START / AFTER START | | | | |
| | **3)** TAXI & BEFORE T/O | | | | |
| | **4)** TAKEOFF | | | | |
| | **5)** CLIMB | | | | |
| | **6)** HOLD **MOPAR** 2) | | | | |
| | **7)** LOC G/S OUT RWY 27L | | | | |
| | **8)** GO AROUND - HOLD **MOPAR** | | | | |
| | **9)** VOR DME RWY 27L USING FINAL APP | | | | |
| | **10)** GO AROUND | | | | |
| | **11)** RNAV | | | | |
| | **12)** AT MDA FREEZE | | | | |
| **TRAINEE 2** | | | | | |
| | **INIT TAKEOFF** | | | | |
| | **13)** TAKEOFF | | | | |
| | **14)** CLIMB | | | | |
| | **15)** VOR DME RWY 27L USING TRK-FPA | | | | |
| | **16)** GO AROUND | | | | |
| | **17)** RADAR VECTORS | | | | |
| | **18)** LOC G/S OUT RWY 27L | | | | |
| | **19)** GO AROUND - HOLD **MOPAR** | | | | |
| | **20)** VOR DME RWY 27L USING (FINAL APP) | | | | |
| | **21)** GO AROUND DIVERSION LFLL FREEZE 3) | | | | |
| | **INIT AFTER LANDING** | | | | |
| | **22)** AFTER LANDING / PARKING / SECURING AIRCRAFT | | | | |

# INITIAL A320 FBS 5

| TRAINEE NAME | CODE NO. | ☐ CAPT. ☐ F/O | DATE / / |
|---|---|---|---|
| Location<br>☐ Cairo ☐ Other | Session Time: | Time PF: | Time PM: |

| SESSION EVALUATION | | | | |
|---|---|---|---|---|
| **Knowledge** | US | S1 | **S2** | S3 |
| Operations Manual (OM – part A) And Relevant ECARS | | | | |
| A/C System. Limitation and Performance | | | | |
| Normal Procedures. Non – normal Procedures | | | | |
| NESMA – AIRLINES Operations Specifications | | | | |
| **Flying skills** | US | S1 | **S2** | S3 |
| Compliance with SOP (OM-part A & FCOM) | | | | |
| Attitude Flying | | | | |
| Scan flow. Attitude & Speed Control | | | | |
| A/C Configuration & Landing Technique | | | | |
| Flying Accuracy & Smoothness | | | | |
| **Management** | US | S1 | **S2** | S3 |
| Compliance with Operations Manual (OM-A) | | | | |
| Planning Ahead And Use of FMGS | | | | |
| Crew Coordination And Use Of Available Resources | | | | |
| Adherence To Clearance And Safe Heights | | | | |
| **General** | US | S1 | **S2** | S3 |
| Situational awareness | | | | |
| Discipline | | | | |

**Comments:-**

**This is to certify that all applicable flight training and discussion items in this session have been completed**

| ☐ NORMAL PROGRESS | ☐ SLOW POGRESS | ☐ REMEDIAL SESSION REQUIRED | |
|---|---|---|---|
| Instructor Name | Instructor Code | Instructor Signature | Trainee Signature |

**INITIAL A320 FBS 6**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | **DRY.** | | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **61.0T** | **31.2** | **7500T** |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

**SESSION PREPARATION**

INSTRUCTORS ONLY

**1) SESSION OBJECTIVE**

- To introduce and practice ECAM management to carry out ECAM procedures, crew coordination and task sharing according to SOP.
- Perform landing performance computation with failure.
- To introduce
  - The ENGINE START FAULT and SLATS / FLAPS FAULT
  - The SMOKE PROCEDURE

**2) TRAINING TOPICS**

**K. EXERCISES / REFERENCES**

| EVENTS | FCOM | QRH | FCTM |
|---|---|---|---|
| • ECAM ADVISORY | PRO-ABN-80 | ABN-80.13 | |
| • ECAM ARCHITECTURE DESCRIPTION RECONFIGURATION | DSC-31-10 | | |
| • ABNORMAL AND EMERGENCY INTRODUCTION | PRO-ABN-01 | GEN | OP.040 |
| • IN FLIGHT LANDING PERFORMANCE | | FPE-IFL-MAT<br>FPE-IFL-VAF<br>FPE-IFL-XX | NO.080<br>SI.090 |
| • ENG START FAULT | PRO-ABN-70 | | |
| • FLAPS / SLATS FAULT | PRO-ABN-27 | ABN-27.01 | AO.027 |
| • SMOKE | PRO-ABN-26 | ABN-26.01 ABN-26.02 | AO.026 |
| • MANUAL START OPERATION | PRO-SUP-70 | | |

INSTRUCTORS ONLY

**L. SUPPORT**

- FCOM / QRH
- FCTM
- PERFORMANCE COURSE
  - APPROACH AND LANDING WITH FAILURE
  - FUEL PENALTY FACTOR MODULE
- PDP
  - ECAM MANAGEMENT
  - FLAPS LOCKED DURING RETRACTION
  - ENGINE START FAULT
  - SLATS FAULT DURING EXTENSION
  - SMOKE

**3) COMPETENCIES CRITERIA**

The graded competencies are:
All criteria except:

- Flight path management – Manual.
- Problem solving and decision making.

**SESSION GUIDE**

| INSTRUCTORS ONLY |
| --- |

**1)** Trainee must enter the FROM / TO on the INIT page and fill the remainder of the flight plan. At this stage trainees must know how to build a flight plan. In SEC FPLN prepare runway 34L for takeoff. **1)**
**2)** During ECAM MANAGEMENT PDP, make sure that the trainees have revised and understood the Performance modules: APPROACH and LANDING and FUEL PENALTY FACTOR. Take a short example and comment if necessary. **9)**
**3)** Select oxygen low pressure (ATA 35) to trigger the advisory. Use QRH. Restore after explanations. **10)**
**4)** Use this example to perform ECAM Actions and situation assessment **14)**
**5)** Insert FLAPS LOCKED before retraction. Freeze at 500ft AGL on final approach. **15)**

Instructor takes control and demonstrates:

With AP still engaged and reaching MDA(H) – 50ft, the message “**DISCONNECT AP FOR LANDING”** appears on the FMA. (Freeze).

**6)** Restore after ECAM Action completed. **23)**
**7)** Use of tutorial to explain **SLATS FAULT** but do not perform exercise. **25)**
**8)** Study SMOKE PDP and QRH. **27)**

# INITIAL A320 FBS 6

| TIME | INITIAL A320 – FBS 6 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 2** | | | | | |
| | **INIT COCPIT PREP** | | | | |
| | **1)** TRANSIT COCKPIT PREPARATION **Error! Reference source not found.** | | | | |
| | **2)** BEFORE START | | | | |
| | **3)** ENG START / ENGINE 2 START FAULT - HOT START | | | | |
| | **4)** ENGINE 2 MANUAL START / AFTER START | | | | |
| | **5)** TAXI / BEFORE TAKEOFF | | | | |
| | **6)** TAKEOFF | | | | |
| | **7)** CLIMB | | | | |
| | **8)** CRUISE FL 130 | | | | |
| | **9)** ECAM MANAGEMENT **2)** | | | | |
| | **10)** ECAM ADVISORY **3)** | | | | |
| | **11)** CAB PR SYS 1 FAULT | | | | |
| | **12)** CAB PR SYS 1+2 FAULT | | | | |
| | **13)** ENG FIRE - RESTORE | | | | |
| | **14)** DMC 1 FAULT **4)** | | | | |
| | **INIT TAKEOFF** | | | | |
| | **15)** FLAPS LOCKED **5)** | | | | |
| | **16)** TAKEOFF | | | | |
| | **17)** FLAPS LOCKED AT RETRACTION | | | | |
| | **18)** VOR DME RWY 05R USING TRK- FPA | | | | |
| | **19)** DOWN TO MDA (DEMO) | | | | |
| **TRAINEE 1** | | | | | |
| | **20)** FMGS PREPARATION | | | | |
| | **21)** TAKEOFF | | | | |
| | **22)** CLIMB FL 130 | | | | |
| | **23)** HYD Y RSVR OVERHEAT- RESTORE **6)** | | | | |
| | **24)** DESCENT | | | | |
| | **25)** SLATS FAULT IN APPROACH – RESTORE **7)** | | | | |
| | **26)** ILS RWY 05R- AUTOLAND | | | | |
| | **INIT FL 350- DEST OEJN** | | | | |
| | **27)** SMOKE - DIVERT TO HELX **8)** | | | | |

# INITIAL A320 FBS 6

| TRAINEE NAME | CODE NO. | ☐ CAPT. ☐ F/O | DATE / / |
|---|---|---|---|
| Location<br>☐ Cairo ☐ Other | Session Time: | Time PF: | Time PM: |

| SESSION EVALUATION | | | | |
|---|---|---|---|---|
| **Knowledge** | US | S1 | **S2** | S3 |
| Operations Manual (OM – part A) And Relevant ECARS | | | | |
| A/C System. Limitation and Performance | | | | |
| Normal Procedures. Non – normal Procedures | | | | |
| NESMA – AIRLINES Operations Specifications | | | | |
| **Flying skills** | US | S1 | **S2** | S3 |
| Compliance with SOP (OM-part A & FCOM) | | | | |
| Attitude Flying | | | | |
| Scan flow. Attitude & Speed Control | | | | |
| A/C Configuration & Landing Technique | | | | |
| Flying Accuracy & Smoothness | | | | |
| **Management** | US | S1 | **S2** | S3 |
| Compliance with Operations Manual (OM-A) | | | | |
| Planning Ahead And Use of FMGS | | | | |
| Crew Coordination And Use Of Available Resources | | | | |
| Adherence To Clearance And Safe Heights | | | | |
| **General** | US | S1 | **S2** | S3 |
| Situational awareness | | | | |
| Discipline | | | | |

**Comments:-**

**This is to certify that all applicable flight training and discussion items in this session have been completed**

| ☐ NORMAL PROGRESS | ☐ SLOW POGRESS | ☐ REMEDIAL SESSION REQUIRED | |
|---|---|---|---|
| Instructor Name | Instructor Code | Instructor Signature | Trainee Signature |

**SECTION 3 INITIAL A320 FFS**

**INITIAL A320 FFS 1**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | | **DRY.** | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **61.0T** | **31.2** | **7500T** |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

**SESSION PREPARATION**

INSTRUCTORS ONLY

**1) SESSION OBJECTIVE**

- Practice preliminary cockpit preparation (real environment).
- Introduction to aircraft handling characteristics.
- Introduction to Normal Law and Protections.
- Practice visual approaches and landings.
- Practice Go Around

**2) TRAINING TOPICS**

**M. REVIEW**

- Preliminary cockpit preparation using aircraft equipment in a real environment

**N. EXERCISES / REFERENCES**

| EVENTS | FCOM | QRH | FCTM |
|---|---|---|---|
| • TAKEOFF | PRO-ABN-12 PRO-SUP-27 | NP | NO.050 |
| • NORMAL LAW PROTECTIONS | PRO-SUP-27 | | OP.020 |
| • AUTO THRUST LOGIC | DSC-22_30 PRO-SUP-70 | | |
| • APPROACH USING LOC G/S GUIDANCE | PRO-NOR-SOP-18 PRO-NOR-SRP-01 FMS-70 | NP | NO.030 |
| • SIDE STICK PRIORITY | DSC-27-20-30 | | |
| • VISUAL APPROACH | PRO-NOR-SOP-18 | | NO.140 |
| • LANDING | PRO-NOR-SOP-21 PRO-SUP-27 | NP | NO.160 |
| • GO AROUND | PRO-NOR-SOP-20 PRO-NOR-SRP-01 FMS-80 | NP | NO.170 |

INSTRUCTORS ONLY

**O. SUPPORT**

- FCOM / QRH - FCTM.
- FCOM Flight Crew Bulletin - FCB:
  - Use of rudder on transport category airplanes,
  - Aircraft handling in final approach.
- **PDP**:
  - First FFS session
  - Taxi & Before Takeoff (Taxi)
  - Takeoff
  - Normal law protections
  - Visual pattern
  - Go around
- **Specific presentation: Rudder and load presentation.**

Full Flight Crew Courses/Standard course/Daily order.

**3) COMPETENCIES CRITERIA**

The competencies criteria are:

- All criteria except:
- Problem solving and decision making.
- Situation awareness.

**SESSION GUIDE**

INSTRUCTORS ONLY

**1) FFS SAFETY BRIEFING: 1)**

- Occupant restraints (seat, seat belts)
- Danger area marking
- Escape exit (emergency doors, rope, ladder, building exit)
- External warning of motion and access ramp or stairs activity
- Guard rails and gates
- Motion and Control loading, Emergency stop controls
- Maintenance call
- Fire warning and fire extinguishers
- Ceiling lights
- Clean headsets, commands, and $O_2$ masks (by instructor if required)

**COCKPIT FAMILIARIZATION:**

- Review FFS specificity compared to APT Trainer:
- Safety equipment
- Seats adjustment
- Lights
- Oxygen masks
- Audio panel practice.

**2) A/P F/D DISCONNECTION AND RECONNECTION: 7)**

- Explain A/P disconnection (associated visual and aural warnings)
- Explain F/D disconnection and associated FMA modes (A/THR SPEED mode)
- Introduce FPV
- Return HDG / VS mode
- Re-engage FD, set appropriate FMA modes
- Re-engage A/P
- Speed managed

**3) A/THR LOGIC DEMO 8)**

- Disconnection/Re-engagement with associated FMA/ECAM announcement

**4) STUDY OF NORMAL LAW AND PROTECTIONS 9)**

**5) If standard crew, demonstration performed by each trainee. 26)**

**NORMAL LAW:**

AP OFF, FD's OFF, TRK FPA, A/THR ON, LEVEL FLIGHT, Speed selected 250 kt

- **Pitch**
  - Select speed variations (+/- 40kts).
  - Observe flight path stability, automatic pitch trim.

- **Roll**
  - Turn with bank angle of 30° (Observe roll stability, turn coordination and automatic pitch trim).
  - Wings level
  - Turn with bank angle of 45° (When above 33° of bank, observe loss of roll stability, pitch trim frozen. Turn coordination still in progress).
  - Release the side stick (Observe bank angle is automatically reduced to 33°).
  - Wings level.

**NORMAL LAW PROTECTIONS:**

AP OFF, FD's OFF, TRK FPA, A/THR ON, LEVEL FLIGHT, Speed selected 300 kt

- **Bank**
  - Increase bank smoothly to maximum. (Observe bank limited to 67° (Bank angle protection), g load factor indication (max 2.5g: Load factor limitation).

  Wings level. (AP OFF, FD's ON, HDG V/S, A/THR OFF, LEVEL FLIGHT, Speed selected 250 kt).

INSTRUCTORS ONLY

- **Low speeds**

  - Set CLB detent, apply full back side stick and maintain
    Observe g load, automatic FD removal (pitch exceeds 25° up), pitch attitude (+30° , then +25° at low speed: Pitch attitude protection), automatic FD disengagement at VLS, V alpha prot (pitch trim frozen, pitch law is no more g load demand, but AOA demand: High AOA protection).
    When alpha floor is reached, observe A/THR activation and TOGA command, regardless of THR LVR position.

  - Maintaining side stick full back, apply max bank angle
    Observe Alpha Max, no stall, bank limitation 45°.
  - Release side stick
    Observe behavior (bank 33°, AOA returns to alpha prot).

  - Level off and wings level
    Observe TOGA LK when leaving alpha floor conditions.

  - Recovery: set THR LVR to TOGA detent, disconnect A/THR, adjust THR manually, and then reengage A/THR. Select speed 300 kt.

- **High speeds**

  - Set THR LVR to IDLE detent, apply full forward side stick and maintain
    Observe g load factor, pitch attitude (-15°: Pitch attitude protection).
    High speed protection: observe the two green bars symbol on speed scale, pitch trim frozen, nose up order Ove ridable, the sidestick nose-down authority is progressively reduced and a permanent nose-up order is applied.

Over speed ECAM warning (VMO + 4kts): For training purpose, instructor cancels warning using EMER CANC PB

INSTRUCTORS ONLY

**Remind that the EMER CANC PB should only be used to suppress spurious MASTER CAUTIONS**

- Maintaining side stick full forward, apply max bank angle

  Observe that, at approximately VMO + 15kts, no more acceleration, bank limitation 40°.

- Release side stick

  Observe positive spiral static stability to 0°, nose up order, and deceleration to VMO. Level off, reengage automations.

6) **According to trainee's level, insert 10 Kts crosswind.** **21)**
7) **Sidestick priority demonstration** **27)**
8) **A/THR LOGIC DEMO** **28)**
   - Disconnection/Re-engagement with associated FMA/ECAM announcement
9) **According to trainee's level, insert 10 Kts crosswind** **40)**

# INITIAL A320 FFS 1

| TIME | INITIAL A320 – FFS 1 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 1** | | | | | |
| | **INIT PREP** | | | | |
| | **1)** COCKPIT FAMILIARIZATION **0** | | | | |
| | **2)** COCKPIT PREPARATION | | | | |
| | **3)** ENGINE START / AFTER START | | | | |
| | **4)** TAXI | | | | |
| | **5)** TAKEOFF | | √ | √ | |
| | **6)** SID CLIMB 120 | √ | √ | √ | |
| | **7)** A/P F/D DISCONNECTION AND RECONNECTION **2)** | | | | |
| | **8)** A/THR LOGIC **3)** | √ | √ | | |
| | **9)** STUDY OF NORMAL LAW – PROTECTIONS **0** | | | | √ |
| | **10)** DES STAR | √ | √ | √ | |
| | **11)** ILS RWY 05R | | √ | √ | |
| | **12)** LANDING | | | | |
| | **INIT HOLDING POINT** | | | | |
| | **13)** TAKEOFF | | √ | √ | |
| | **14)** VISUAL CIRCUIT | | | √ | √ |
| | **15)** LANDING | | | | |
| | **INIT TAKEOFF** | | | | |
| | **16)** TAKEOFF | | √ | √ | |
| | **17)** CLIMB 2300 FT | | √ | √ | |
| | **18)** VISUAL CIRCUIT | | | √ | √ |
| | **19)** GO AROUND | | √ | √ | |
| | **20)** CLIMB 2300 FT | | | √ | √ |
| | **21)** VISUAL CIRCUIT MODERATE CROSSWIND **6)** | | | | √ |
| | **22)** LANDING MODERATE CROSSWIND | | | | |
| | **23)** AFTER LANDING | | | | |

| TIME | INITIAL A320 – FFS 1 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 2** | | | | | |
| | **INIT HOLDING POINT** | | | | |
| | **24)** TAKEOFF | | √ | √ | |
| | **25)** SID CLIMB FL 120 | √ | √ | √ | |
| | **26)** STUDY OF NORMAL LAW AND PROTECTIONS **5)** | | | | √ |
| | **27)** SIDE STICK PRIORITY **7)** | | | √ | √ |
| | **28)** A/THR LOGIC **8)** | √ | √ | | |
| | **29)** DES STAR | √ | √ | √ | |
| | **30)** ILS RWY 05R | | √ | √ | |
| | **31)** LANDING | | | | |
| | **INIT HOLDING POINT** | | | | |
| | **32)** TAKEOFF | | √ | √ | |
| | **33)** VISUAL CIRCUIT | | | √ | √ |
| | **34)** LANDING | | | | |
| | **INIT TAKEOFF** | | | | |
| | **35)** TAKEOFF | | √ | √ | |
| | **36)** CLIMB 2300 FT | | √ | √ | |
| | **37)** VISUAL CIRCUIT | | | √ | √ |
| | **38)** GO AROUND | | √ | √ | |
| | **39)** CLIMB 2300 FT | | √ | √ | |
| | **40)** VISUAL CIRCUIT - MODERATE CROSSWIND **9)** | | | | √ |
| | **41)** LANDING | | | | |
| | **42)** AFTER LANDING | | | | |
| | **43)** TAXI | | | | |
| | **44)** PARKING | | | | |
| | **45)** SECURING THE AIRCRAFT | | | | |

# INITIAL A320 FFS 1

| TRAINEE NAME | CODE NO. | ☐ CAPT. ☐ F/O | DATE / / |
|---|---|---|---|
| Location<br>☐ Cairo ☐ Other | Session Time: | Time PF: | Time PM: |

| SESSION EVALUATION | | | | |
|---|---|---|---|---|
| **Knowledge** | US | S1 | **S2** | S3 |
| Operations Manual (OM – part A) And Relevant ECARS | | | | |
| A/C System. Limitation and Performance | | | | |
| Normal Procedures. Non – normal Procedures | | | | |
| NESMA – AIRLINES Operations Specifications | | | | |
| **Flying skills** | US | S1 | **S2** | S3 |
| Compliance with SOP (OM-part A & FCOM) | | | | |
| Attitude Flying | | | | |
| Scan flow. Attitude & Speed Control | | | | |
| A/C Configuration & Landing Technique | | | | |
| Flying Accuracy & Smoothness | | | | |
| **Management** | US | S1 | **S2** | S3 |
| Compliance with Operations Manual (OM-A) | | | | |
| Planning Ahead And Use of FMGS | | | | |
| Crew Coordination And Use Of Available Resources | | | | |
| Adherence To Clearance And Safe Heights | | | | |
| **General** | US | S1 | **S2** | S3 |
| Situational awareness | | | | |
| Discipline | | | | |

**Comments:-**

**This is to certify that all applicable flight training and discussion items in this session have been completed**

| ☐ NORMAL PROGRESS | ☐ SLOW POGRESS | ☐ REMEDIAL SESSION REQUIRED | |
|---|---|---|---|
| Instructor Name | Instructor Code | Instructor Signature | Trainee Signature |

**INITIAL A320 FFS 2**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | **DRY.** | | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **61.0T** | **31.2** | **7500T** |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

**SESSION PREPARATION**

**1) SESSION OBJECTIVE**

- Practice Transit cockpit preparation (real environment).
- Practice Take off and Landings with crosswind.
- Practice TCAS procedure
- Practice ILS in RAW DATA
- Practice Go Around and rejected landing

**2) TRAINING TOPICS**

**P. REVIEW**

- Transit cockpit preparation using aircraft equipment in a real environment.
- GO AROUND procedure

**Q. EXERCISES / REFERENCES**

| EVENTS | FCOM | QRH | FCTM |
|---|---|---|---|
| • TAKE OFF WITH CROSSWIND | PRO-NOR-SOP-12 | | NO.050 |
| • FLY PATH VECTOR | | | SI.020 |
| • ILS RAW DATA | | | NO.110 |
| • LOW ENERGY AURAL ALERT | DSC-27-20-10-20 FCB-FCB16 P 2/8 | ABN-27.02 | |
| • LANDING WITH CROSSWIND | PRO-NOR-SOP-19 | | |
| • TCAS | PRO-ABN-34 PRO-SUP-34 | ABN-34.06 | SI.060 |
| • LOSS OF BRAKING | PRO-ABN-32 | ABN-32.01 | |

**R. SUPPORT**

- FCOM / QRH – FCTM
- **Specific Presentation: Tail strike presentation.**
- **PDP:**
  - TCAS
  - Go around (High energy)
  - Use of FPV – ILS Raw data
  - Low energy aural alert
  - MMEL/MEL use
  - Mode reversions

## 3) COMPETENCIES CRITERIA

The competencies criteria are all criteria.

**SESSION GUIDE**

1) **FMGS preparation: 1)**
- Primary FPLN: RWY 05L
- Secondary FPLN: RWY 05R

2) Initial clearance RWY 05L for takeoff, give new clearance RWY 05R during taxi. Use of secondary F/PLN. **3)**

3) TCAS: RA **6)**

4) When Go-around ALT is set, ATC clearance: "[NESMA ---], go around". **11)**

5) Weather conditions CAVOK. **12)**

6) Weather conditions: 6 km / 800 ft ceiling and FOB 12T for OVERWEIGHT procedure. **15)**

7) Insert 20 kts crosswind, weather conditions CAVOK. **20)**

8) Initiate go around below 50 ft. **22)**

9) Introduction of Flaps 3 landing with associated procedure (GPWS Flaps 3 mode) **24)**

10) TCAS: RA **27)**

11) During initial approach, ATC clearance: "[NESMA ---], in case of missed approached, climb 3500 ft on RWY heading, then turn left CVO". **29)**

12) When in CONF2, ATC clearance: "[NESMA ---], go around ". **30)**

13) Insert 20 kt crosswind. **33)**

14) Rejected landing at 50 ft., set weather CAVOK. **35)**

INIT TAKE OFF - DISPATCH WITH REVERSER 1 INOP (FAIL ENG 1 REV FAULT REVERSER CONTROL)

- MMEL / OPERATIONAL PROCEDURES
- Lateral control induced problems during takeoff and landing (reverser 1 inop, crosswind)
- Brake failure considered (MEMORY ITEM).

**15)** ATHR OFF. Start final turn in level flight to trigger the LOW ENERGY AURAL ALERT: “SPEED, SPEED, SPEED. **39)**

**16)** Introduction of Flaps 3 landing with associated procedure (GPWS Flaps 3 mode) **40)**

**17)** During TAXI, insert LOSS OF BRAKING. When memory items completed, restore brakes failure and NWS switch. **42)**

# INITIAL A320 FFS 2

| TIME | INITIAL A320 – FFS 2 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| | **TRAINEE 2** | | | | |
| | **INIT PREP** | | | | |
| | **1)** TRANSIT COCKPIT PREPARATION **1)** | | | | |
| | **2)** ENG START / AFTER START | | | | |
| | **3)** TAXI - RWY CHANGE **2)** | | | | |
| | **4)** TAKE OFF - HECA O5R | | √ | √ | |
| | **5)** CLIMB FL60 | √ | √ | √ | |
| | **6)** CRUISE - TCAS EVENT **3)** | √ | √ | √ | |
| | **7)** SID CLIMB 070 | √ | √ | √ | |
| | **8)** RETURN TO DEPARTURE | | | | |
| | **9)** DES | √ | √ | √ | |
| | **10)** ILS RWY 05R | | √ | √ | |
| | **11)** HIGH ENERGY - GO AROUND - CLEAN UP – FREEZE **4)** | | √ | √ | |
| | **INIT TAKE OFF** | | | | |
| | **12)** TAKE OFF 05C **5)** | | √ | √ | |
| | **13)** VISUAL CIRCUIT | | | √ | √ |
| | **14)** LANDING | | | | |
| | **INIT TAKE OFF** | | | | |
| | **15)** TAKE OFF **6)** | | √ | √ | |
| | **16)** ILS RWY 05R - RAW DATA | | | √ | √ |
| | **17)** GO AROUND | | √ | √ | |
| | **18)** ILS RWY 05R - RAW DATA | | | √ | √ |
| | **19)** LANDING OVERWEIGHT | | | | |
| | **INIT TAKE OFF** | | | | |
| | **20)** TAKE OFF – CROSSWIND **7)** | | √ | √ | |
| | **21)** VISUAL CIRCUIT | | | √ | √ |
| | **22)** REJECTED LANDING **8)** | | √ | √ | |
| | **23)** VISUAL CIRCUIT | | | √ | √ |
| | **24)** LANDING FLAPS 3 – CROSSWIND **9)** | | | | |

| TIME | INITIAL A320 – FFS 2 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 1** | | | | | |
| | **INIT HOLDING POINT** | | | | |
| | **25)** TAKE OFF | | √ | √ | |
| | **26)** CLIMB FL 60 | √ | √ | √ | |
| | **27)** CRUISE – TCAS EVENT **10)** | √ | √ | √ | |
| | **28)** RETURN TO DEPARTURE | √ | √ | √ | |
| | **29)** ILS RWY 05R **11)** | | √ | √ | |
| | **30)** HIGH ENERGY GO AROUND **12)** | | √ | √ | |
| | **31)** ILS RWY 05R - RAW DATA | | | √ | √ |
| | **32)** LANDING | | | | |
| | **INIT TAKEOFF** | | | | |
| | **33)** TAKE OFF – CROSSWIND **13)** | | √ | √ | |
| | **34)** ILS RWY 05R - RAW DATA | | | √ | √ |
| | **35)** REJECTED LANDING **14)** | | √ | √ | |
| | **36)** VISUAL CIRCUIT | | | √ | √ |
| | **37)** LANDING CROSSWIND | | | | |
| | **INIT TAKEOFF** | | | | |
| | **38)** TAKE OFF | | √ | √ | |
| | **39)** VISUAL CIRCUIT RWY 05R- LOW ENERGY AURAL ALERT **15)** | | | | √ |
| | **40)** LANDING FLAPS 3 **16)** | | | | |
| | **41)** AFTER LANDING | | | | |
| | **42)** TAXI - LOSS OF BRAKING – RESTORE **17)** | | | | |
| | **43)** PARKING / SECURING AIRCRAFT | | | | |

**Note:** for last exercise REVERSER is INOP.

# INITIAL A320 FFS 2

| TRAINEE NAME | CODE NO. | ☐ CAPT. ☐ F/O | DATE / / |
|---|---|---|---|
| Location<br>☐ Cairo ☐ Other | Session Time: | Time PF: | Time PM: |

| SESSION EVALUATION | | | | | |
|---|---|---|---|---|---|
| **Knowledge** | US(1) | S2 | S3 | S4 | S5 |
| Operations Manual (OM – part A) And Relevant ECARS. | | | | | |
| A/C System. Limitation and Performance | | | | | |
| Normal Procedures. Non – normal Procedures | | | | | |
| NESMA – AIRLINES Operations Specifications | | | | | |
| **Flying skills** | US(1) | S2 | S3 | S4 | S5 |
| Compliance with SOP (OM-part A & FCOM). | | | | | |
| Attitude Flying. | | | | | |
| Scan flow. Attitude & Speed Control. | | | | | |
| A/C Configuration & Landing Technique. | | | | | |
| Flying Accuracy & Smoothness. | | | | | |
| **Management** | US(1) | S2 | S3 | S4 | S5 |
| Compliance with Operations Manual (OM-part A). | | | | | |
| Planning Ahead And Use of FMGS. | | | | | |
| Crew Co- Ordination And Use Of Available Resources. | | | | | |
| Adherence To Clearance And Safe Heights. | | | | | |
| **General** | US(1) | S2 | S3 | S4 | S5 |
| Situational awareness. | | | | | |
| Discipline. | | | | | |

**Comments:**

| **This is to certify that all applicable flight training and discussion items in this session have been completed** | | | |
|---|---|---|---|
| ☐ NORMAL PROGRESS | ☐ SLOW POGRESS | ☐ REMEDIAL SESSION REQUIRED | |
| Instructor Name | Instructor Code | Instructor Signature | Trainee Signature |

**INITIAL A320 FFS 3**

<table>
<tr><td>FROM</td><td>TO</td><td>CEILING/VIS</td><td>WIND</td><td>TEMP</td><td>QNH</td><td>WX</td></tr>
<tr><td>HECA</td><td>OEJN</td><td>CAVOK</td><td>CALM</td><td>13/10</td><td>1013</td><td>-</td></tr>
<tr><td colspan="2">RWY CONDITION</td><td colspan="2">DRY.</td><td>MEL</td><td colspan="2">-</td></tr>
<tr><td colspan="2">ZFW</td><td colspan="3">ZFWCG</td><td colspan="2">FOB</td></tr>
<tr><td colspan="2">61.0T</td><td colspan="3">31.2</td><td colspan="2">7500T</td></tr>
</table>

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

**SESSION PREPARATION**

**1) SESSION OBJECTIVE**

- Practice Non precision and Circling approach.
- Practice EGPWS recovery technique.
- Practice WINDSHEAR recovery technique

**2) TRAINING TOPICS**

**S. REVIEW**

- APPROACH USING TRK-FPA GUIDANCE
- APPROACH FINAL APP GUIDANCE
- RNAVAPPROACH

**T. EXERCISES / REFERENCES**

| EVENTS | FCOM | QRH | FCTM |
|---|---|---|---|
| • GPWS | DSC-34-70 PRO-ABN-34 PRO-SUP-34 | ABN-34.04 | |
| • CIRCLING | PRO-NOR-SOP-18 PRO-NOR-SRP-01-70 | | NO.130 |
| • 180° TURN ON RWY | PRO-NOR-SOP-10 | | |
| • G/S FROM ABOVE | PRO-NOR-SOP-18 | | |
| • PREDICTIVE WINDSHEAR AND WINDSHEAR | DSC-34-60-30 PRO-ABN-80 PRO-SUP-27-40 | | SI.010 |
| • ADVERSE WEATHER | PER-TOF-CTA PRO-SUP-91 | | SI.010 |
| • REVERSION MODE | DSC-22_30-10 | | OP.030 |

**U. SUPPORT**

- FCOM / QRH - FCTM.
- PDP:
  - EGPWS
  - G/S from above
  - Windshear
  - RNAV (GNSS) using LNAV/VNAV minimum
  - VOR / NDB using TRK-FPA
  - VOR / NDB using FINAL APP
  - Circling
- **Video: Controlled Flight into Terrain (CFIT).**

**3) COMPETENCIES CRITERIA**

The competencies criteria are all criteria.

**SESSION GUIDE**

1) Fail AP 1 during climb. Trainees should engage AP2. Then, ask trainee 1 to disconnect AP2, not to follow FD'S and to maintain 4° pitch. Demonstrate REVERSION **5)**

2) TCAS: RA **6)**

3) After CVO, maintain HDG 250 descent to 3000ft QNH and wait until EGPWS activation **7)**

4) Insert a predictive Windshear. After demonstration, cancel it and insert reactive Windshear after rotation for recovery technique **10)**

5) DIR TO CVO **15)**

6) ATC clearance: "After takeoff maintain 3000ft QNH and proceed CVO". After CVO, maintain HDG 250 and wait until EGPWS activation. **18)**

7) After AP swap, restore ATHR for TCAS exercise **19)**

8) TCAS: RA **20)**

9) During TAXI, insert LOSS OF BRAKING. When memory items completed, restore brakes failure and NWS switch. **34)**

# INITIAL A320 FFS 3

| TIME | INITIAL A320 – FFS 3 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 1** | | | | | |
| | **INIT PREP** | | | | |
| | **1)** TRANSIT COCKPIT PREPARATION | | | | |
| | **2)** ENGINE START / AFTER STAR | | | | |
| | **3)** TAXI | | | | |
| | **4)** ROLLING TAKE OFF | | √ | √ | |
| | **5)** CLIMB - AP FAILURE – REVERSION **1)** | √ | √ | √ | |
| | **6)** CRUISE - TCAS EVENT **2)** | √ | √ | √ | |
| | **7)** DIR CVO - EGPWS EVENT **3)** | √ | √ | √ | |
| | **8)** ILS RWY 05R - G/S FROM ABOVE | √ | √ | √ | |
| | **9)** LANDING - RWY CONTAMINATED | | | | |
| | **INIT HOLDING POINT** | | | | |
| | **10)** LINE UP - PREDICTIVE WINDSHEAR **4)** | | √ | √ | |
| | **11)** TAKE OFF - WINDSHEAR | | √ | √ | |
| | **12)** RADAR VECTORS | | √ | √ | |
| | **13)** ILS RWY 05R -WINDSHEAR ON APPROACH | | √ | √ | |
| | **14)** GO AROUND | | √ | √ | |
| | **15)** RNAV APPROCH **5)** | √ | √ | √ | √ |
| | **16)** LANDING | | | | |
| | **17)** 180° ON RWY | | | | |

| TIME | INITIAL A320 – FFS 3 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 2** | | | | | |
| | **INIT HOLDING POINT** | | | | |
| | **18)** TAKE OFF – EGPWS **6)** | | √ | √ | |
| | **19)** CLIMB - A/THR FAILURE – RESTORE **7)** | √ | √ | | |
| | **20)** CRUISE - TCAS EVENT **8)** | √ | √ | √ | |
| | **21)** DESCENT | √ | √ | √ | |
| | **22)** ILS RWY 05R - G/S FROM ABOVE | √ | √ | √ | |
| | **23)** LANDING | | | | |
| | **INIT TAKE OFF** | | | | |
| | **24)** TAKE OFF | | √ | √ | |
| | **25)** VOR DME RWY O5R USING TRK-FPA | √ | √ | √ | √ |
| | **26)** LANDING - RWY 05R CONTAMINATED | | | | |
| | **INIT HOLDING POINT** | | | | |
| | **27)** ROLLING TAKE OFF - WINDSHEAR | | √ | √ | |
| | **28)** RADAR VECTORS | | √ | √ | |
| | **29)** ILS RWY 05R -WINDSHEAR ON APPROACH | | √ | √ | |
| | **30)** GO AROUND | | √ | √ | |
| | **31)** VOR DME RWY 05R | √ | √ | √ | √ |
| | **32)** CIRCLING | | | √ | √ |
| | **33)** LANDING | | | | |
| | **34)** LOSS OF BRAKING – RESTORE **9)** | | | | |
| | **35)** 180° ON RWY | | | | |

# INITIAL A320 FFS 3

| TRAINEE NAME | CODE NO. | ☐ CAPT. ☐ F/O | DATE / / |
|---|---|---|---|
| Location<br>☐ Cairo ☐ Other | Session Time: | Time PF: | Time PM: |

| SESSION EVALUATION | | | | |
|---|---|---|---|---|
| **Knowledge** | US | S1 | **S2** | S3 |
| Operations Manual (OM – part A) And Relevant ECARS | | | | |
| A/C System. Limitation and Performance | | | | |
| Normal Procedures. Non – normal Procedures | | | | |
| NESMA – AIRLINES Operations Specifications | | | | |
| **Flying skills** | US | S1 | **S2** | S3 |
| Compliance with SOP (OM-part A & FCOM) | | | | |
| Attitude Flying | | | | |
| Scan flow. Attitude & Speed Control | | | | |
| A/C Configuration & Landing Technique | | | | |
| Flying Accuracy & Smoothness | | | | |
| **Management** | US | S1 | **S2** | S3 |
| Compliance with Operations Manual (OM-A) | | | | |
| Planning Ahead And Use of FMGS | | | | |
| Crew Coordination And Use Of Available Resources | | | | |
| Adherence To Clearance And Safe Heights | | | | |
| **General** | US | S1 | **S2** | S3 |
| Situational awareness | | | | |
| Discipline | | | | |

**Comments:-**

**This is to certify that all applicable flight training and discussion items in this session have been completed**

| ☐ NORMAL PROGRESS | ☐ SLOW POGRESS | ☐ REMEDIAL SESSION REQUIRED | |
|---|---|---|---|
| Instructor Name | Instructor Code | Instructor Signature | Trainee Signature |

**INITIAL A320 FFS 4**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | | **DRY.** | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **61.0T** | **31.2** | **7500T** |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

**SESSION PREPARATION**

**1) SESSION OBJECTIVE**

- Demonstration of F/CTL reconfiguration laws.
- SMOKE procedure.
- Practice approach and landing in alternate law.
- Demonstration of aircraft handling at high altitude (normal and alternate law).
- Practice stall recovery in different situations
- Practice EMERGENCY DESCENT.

**2) TRAINING TOPICS**

**V. REVIEW**

- ECAM management
- Windshear
- Circling

**W. EXERCISES / REFERENCES**

| EVENTS | FCOM | QRH | FCTM |
|---|---|---|---|
| • F/CTL RECONFIGURATION LAWS | DSC-27-20-20 PRO-ABN-27 | | OP.020 |
| • DUAL ADR FAULT | PRO-ABN-34 | | AO.034 |
| • IR DISCREPANCY | PRO-ABN-34 | | AO.034 |
| • STALL RECOVERY | PRO-ABN-27 | ABN | |
| • FCU FAULT | PRO-ABN-22 PRO-SUP-24 | | |
| • EMERGENCY DESCENT | PRO-ABN-80 | ABN-80.05 | AO.090 |
| • SMOKE PROCEDURE | PRO-ABN-26 | ABN-26 | AO.026 |

**X. SUPPORT**

- FCOM / QRH - FCTM
- PDP:
  - ECAM management
  - Reconfiguration law
  - Stall recovery
  - Emergency descent
  - Total loss of FCU
  - Smoke
  - Circling
- **Training Tool #1: Training to prevent upset.**

## 3) COMPETENCIES CRITERIA

The competencies criteria are all criteria.

**SESSION GUIDE**

**INIT HOLDING POINT**

Engines running, appropriate F/PLN inserted, ready for Takeoff.

**1)** Insert ADR 1 Fault at 5000 ft. AGL. **2)**

**2)** Both crew members will carry out the following exercises in the vicinity of CVO VOR. (ADR 3 switching knob, to CPT then F/O accordingly). Demonstrate Alternate law. **5)**

- Roll direct.
- Yaw damping function is available.
- No bank angle protection, No pitch limit protection.
- High speed stability: nose up demand which can be overridden by the pilot.
- Low speed stability: nose down demand which can be overridden by the pilot.
- Landing gear down: Demonstrate direct law.
- Pitch direct: USE MAN PITCH TRIM.
- Yaw: Mechanical use of rudders.

Both crew members carry out stall recovery: in clean and in landing configuration

If you exceed certain limitations during this exercise, it could be possible to revert in Abnormal Attitude Law and to stay in it when you extend the landing gear. After a reset of the ELAC, you will recover a normal situation.

**3)** Insert a top of cloud at 2 500 ft., in order to be VMC at 3 500 ft. **7)**

- When the a/c is configured with FLAPS 2, L/G UP at F speed, ATC requests: “When reaching 3 500 ft., perform a 360 for regulation.”
- Maintain current configuration.
- Once turning, request the trainee to set the thrust levers to IDLE. Maintain altitude. Wait for buffet and/or stall warning and apply the stall recovery procedure.
- Then after, provide radar vectoring for ILS approach

4) **Objective:** handle the aircraft at high altitude in normal and alternate law (introduction to unreliable airspeed situations). The goal is to focus on pitch/N1.This exercise is done IMC with light turbulences. **10)**

- Before releasing the simulator, determine with trainees, using QRH OPS.01 "SEVERE TURBULENCE", the turbulence speed and thrust setting (N1).
- Then, the trainee flies manually theses parameters (AP, FD, A/THR, and BIRD: OFF).
- When stable, observe pitch and N1. Compare them with those given in QRH 2.22 tables (UNRELIABLE SPEED INDIC/ADR CHECK PROC - Above FL250).
- Then, ask the trainee to increase pitch slightly. Observe that airspeed remains well within the limits between VLS and MMO/VMO.
- Return to FL350, with the previous flight parameters.
- When stable, insert failure: F/CTL ALTN LAW (if not avail: NAV IR 1 + 3 FAULT).
- Ask the trainee to perform a turn, increasing regularly the bank angle until buffet is detected and stall warning is triggered (exposure to buffet is the main objective). Then, apply the stall recovery procedure and return to the previous flight parameters.
- When stable, restore to Normal law, and engage auto flight system.
- Light turbulence may be used for this demonstration. The goal is to focus on pitch and N1

5) Activate CARGO DOOR switch fault. Perform ECAM actions. Meanwhile, activate EXCESSIVE CAB ALT: EMERGENCY DESCENT (structural damage). **11)**

6) TCAS RA **17)**

7) Insert FCU 1 + 2 Fault. **18)**

8) Arm Smoke Generator **22)**

9) TCAS RA **24)**

**10)** Objective: handle the aircraft at high altitude in normal and alternate law (introduction to unreliable airspeed situations). The goal is to focus on pitch/N1. **31)**

- This exercise is done IMC with light turbulences.
- Before releasing the simulator, determine with trainees, using QRH OPS.01 "SEVERE
- TURBULENCE", the turbulence speed and thrust setting (N1). Then, the trainee flies manually theses parameters (AP, FD, A/THR, BIRD: OFF).
- When stable, observe pitch and N1. Compare them with those given in QRH 2.22 tables (UNRELIABLE SPEED INDIC/ADR CHECK PROC - Above FL250). Then, ask the trainee to increase pitch slightly. Observe that airspeed remains well within the limits between VLS and MMO/VMO.
- Return to FL350, with the previous flight parameters.
- When stable, insert failure: F/CTL ALTN LAW (if not avail: NAV
- Ask the trainee to perform a turn, increasing regularly the bank angle until buffet is detected and stall warning is triggered (exposure to buffet is the main objective). Then, apply the stall recovery procedure and return to the previous flight parameters.
- IR 2 + 3 FAULT). When stable, restore to Normal law, and engage auto flight system.
- Light turbulence may be used for this demonstration. The goal is to focus on pitch and N1.

**11)** Use smoke generator or indicate that smoke is coming to the cockpit from the outlets (AIR CONDITIONING SMOKE suspected) **31)**

- Crew will apply SMOKE / FUMES / AVIONICS SMOKE PROC.
- Smoke building up until PACK 2 is set OFF.
- Indicate smoke emission decreases but dense fumes still persist.
- Complete SMOKE / FUMES REMOVAL PROC.
- Stop exercise when RAM AIR p/b is set ON.
- Monitor the cabin rate with RAM AIR opened

Insert EXCESS CAB ALT: EMERGENCY DESCENT (no structural damage). **37)**

# INITIAL A320 FFS 4

| TIME | INITIAL A320 – FFS 4 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 2** | | | | | |
| | **INIT HOLDING POINT** | | | | |
| | **1)** TAKE OFF WINDSHEAR | | √ | √ | |
| | **2)** CLIMB ADR1 FAULT **1)** | √ | √ | √ | |
| | **3)** CRUISE FL 070 | √ | √ | √ | |
| | **4)** ADR2 FAULT | | | | √ |
| | **5)** ALTERNATE LAW – STALL RECOVERY **2)** | | | | √ |
| | **6)** DESCENT | | | | √ |
| | **7)** STALL RECOVERY AT LOW ALTITUDE **3)** | | | | √ |
| | **8)** ILS RWY 05R - RAW DATA– DIRECT LAW | | | | √ |
| | **9)** LANDING | | | | |
| | **INIT FL 350 – IMC - FOB 8t** | | | | |
| | **10)** HIGH ALTITUDE HANDLING (DEMO ) – STALL RECOVERY AT HIGH ALTITUDE **4)** | | | | |
| | **11)** EMERGENCY DESCENT **5)** | √ | √ | √ | |
| | **12)** AT FL 100 - RESTORE | √ | √ | √ | |
| | **13)** VOR 05R USING FINAL APP | √ | √ | √ | √ |
| | **14)** LANDING | | | | |
| | **INIT TAKE OFF/ Rejected Takeoff** | | | | |
| | **15)** TAKE OFF | | √ | √ | |
| | **16)** CLIMB 4500 ft | √ | √ | √ | |
| | **17)** TCAS EVENT **6)** | √ | √ | √ | |
| | **18)** FCU 1 + 2 FAULT **7)** | | | | √ |
| | **19)** ILS RWY 05R - RAW DATA | | | | √ |
| | **20)** LANDING | | | | |
| | **21)** EVACUATION DUE TO FIRE | | | | |

| TIME | INITIAL A320 – FFS 4 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 1** | | | | | |
| | **INIT HOLDING POINT** | | | | |
| | **22)** TAKE OFF **8)** | | √ | √ | |
| | **23)** CLIMB NAV IR 3 FAULT | √ | √ | √ | |
| | **24)** CRUISE FL 070 - TCAS EVENT **9)** | √ | √ | √ | |
| | **25)** NAV IR 2 DISAGREE | | | | √ |
| | **26)** ALTERNATE LAW | | | | √ |
| | **27)** DESCENT | | | | √ |
| | **28)** STALL RECOVERY AT LOW ALTITUDE | | | | √ |
| | **29)** ILS RWY 05R - DIRECT LAW - RAW DATA | | | | √ |
| | **30)** LANDING | | | | |
| | **INIT FL 350 – FOB 8t– WIND 240/12** | | | | |
| | **31)** HIGH ALTITUDE HANDLING (DEMO) – STALL RECOVERY AT HIGH ALTITUDE **10)** | | | | |
| | **32)** AIR COND SMOKE **11)** | √ | √ | √ | |
| | **33)** SMOKE / FUMES REMOVAL | √ | √ | √ | |
| | **34)** AT FL 100 - RESTORE | √ | √ | √ | |
| | **35)** LOC (G/S OUT) RWY 05R | √ | √ | √ | √ |
| | **36)** CIRCLING | | | √ | √ |
| | **37)** LANDING. | | | | |
| | **INIT FL 350** | | | | |
| | **38)** EMERGENCY DESCENT **0** | √ | √ | √ | |
| | **39)** AT FL 100 - RESTORE | √ | √ | √ | |
| | **40)** GO AROUND - FREEZE | | | | |

# INITIAL A320 FFS 4

| TRAINEE NAME | CODE NO. | ☐ CAPT. ☐ F/O | DATE / / |
|---|---|---|---|
| Location<br>☐ Cairo ☐ Other | Session Time: | Time PF: | Time PM: |

| SESSION EVALUATION | | | | |
|---|---|---|---|---|
| **Knowledge** | US | S1 | **S2** | S3 |
| Operations Manual (OM – part A) And Relevant ECARS | | | | |
| A/C System. Limitation and Performance | | | | |
| Normal Procedures. Non – normal Procedures | | | | |
| NESMA – AIRLINES Operations Specifications | | | | |
| **Flying skills** | US | S1 | **S2** | S3 |
| Compliance with SOP (OM-part A & FCOM) | | | | |
| Attitude Flying | | | | |
| Scan flow. Attitude & Speed Control | | | | |
| A/C Configuration & Landing Technique | | | | |
| Flying Accuracy & Smoothness | | | | |
| **Management** | US | S1 | **S2** | S3 |
| Compliance with Operations Manual (OM-A) | | | | |
| Planning Ahead And Use of FMGS | | | | |
| Crew Coordination And Use Of Available Resources | | | | |
| Adherence To Clearance And Safe Heights | | | | |
| **General** | US | S1 | **S2** | S3 |
| Situational awareness | | | | |
| Discipline | | | | |

**Comments:-**

**This is to certify that all applicable flight training and discussion items in this session have been completed**

| ☐ NORMAL PROGRESS | ☐ SLOW POGRESS | ☐ REMEDIAL SESSION REQUIRED | |
|---|---|---|---|
| Instructor Name | Instructor Code | Instructor Signature | Trainee Signature |

**INITIAL A320 FFS 5**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | | **DRY.** | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **61.0T** | **31.2** | **7500T** |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

**SESSION PREPARATION**

**1) SESSION OBJECTIVE**

- Handling with one ENG OUT
- Study ALL ENG FLAME OUT
- Heavy Weight Operations
- Practice dual hydraulic failure
- Practice crew incapacitation.

**2) TRAINING TOPICS**

**Y. REVIEW**

- GO AROUND
- APPROACH USING TRK-FPA GUIDANCE
- APPROACH USING FINAL APP GUIDANCE

**Z. EXERCISES / REFERENCES**

| EVENTS | FCOM | QRH | FCTM |
|---|---|---|---|
| • ENGINE FAILURE | PRO-ABN-10 PRO-ABN-70 | ABN-70 | AO.020 |
| • ENGINE RELIGHT (IN FLIGHT) | PRO-ABN-70 | ABN-70 | |
| • OVERWEIGHT LANDING | PRO-ABN-80 | ABN-80.06 | AO.090 |
| • AUTO RETRACTION | DSC-27-30 | | |
| • ENG STALL | PRO-ABN-70 | ABN-70.04 | |
| • INCAPACITATION | PRO-ABN-80 | | AO.090 |
| • HYDRAULIC G + Y SYS LO PR SUMMARY | PRO-ABN-29 | ABN-29.03 | AO.029 |
| • ENGINE FAILURE IN CRUISE | PER-OEI-CRT | | |
| • LANDING WITH SLATS / FLAPS JAMMED | PRO-ABN-10 | ABN-27.04 | AO.027 |
| • ALL ENGINE FLAME OUT (FORCED LANDING, DITCHING) | PRO-ABN-70 PRO-ABN-80 | ABN-70 | AO.070 |

**AA. SUPPORT**

- FCOM / QRH.
- FCTM.
  - All Aircraft Courseware
- PDP:
  - Engine failure at takeoff
  - Engine failure in cruise – Standard strategy
  - All engine flame out
  - Crew incapacitation
  - Dual hydraulic failure (G+Y)

**3) COMPETENCIES CRITERIA**

The competencies criteria are all criteria.

**SESSION GUIDE**

**1)** Freeze POS and ALT at 500 ft. after takeoff. **2)**

SRS commands satisfied, wings level, side stick released, feet off rudder pedals. Select F/CTL page. Select IDLE thrust on one engine.

Adjust pitch attitude to that required by SRS (the current speed or V2, whichever is greater up to V2+ 15 kt).

Hands off: observe response of FBW system. Stabilized bank angle 7~9°, spoilers and ailerons deployed, rudder pedals feedback, flying the pitch as adjusted before.

Side slip index is blue now and displays the BETA TARGET.

Fly the aircraft. Use continuous rudder input to center the BETA TARGET. Trim out the foot load and observe the flight controls status on F/CTL page. Repeat up to proficiency.

Transfer the controls to Trainee 2 and repeat exercises.

**2)** Engine 2 fails with damage. Review APU bleed architecture. **4)**
**3)** Engine 1 fails with no damage. Engine relight. **9)**
**4)** At 1900ft QNH, insert a G/S transmitter failure leading to go around. **12)**
**5)** Insert an Engine 2 stall, then damage. Review QRH/ABN: Engine Stall **13)**
**6)** Fail one engine. When MCT set and ATHR disconnected, fail the other engine. Relight successful below FL 200 using APU BLEED. **15)**
- Reset all systems (RAT).

**7)** Engine 1 fails with no damage. For training purpose, do not attempt engine relight. **19)**

**INIT TAKE OFF MTOW:** Insert fuel quantity computed by the trainee.

**8)** Flap auto retraction demo (ARS at 210 kt). **24)**
**9)** Engine 2 fails with damage. **26)**
**10)** Engine 1 fails with damage. Review APU bleed architecture. **28)**
**11)** Trainee 2 incapacitation: At 100ft the trainee 2 sets an unusual high pitch attitude and holds the stick control. **32)**
- Emphasize the latching condition on trainee 1 side (more than 40 sec.). Back to normal crew position when aircraft in clean configuration.

**12)** Insert a G + Y RESERVOIR low level. Return to departure. ATC reports: “Braking actions is now GOOD”. **34)**
**13)** Engine 2 fails with no damage. For training purpose, do not attempt engine relight. **38)**
**14)** Flap auto retraction demo (ARS at 210 kt). **44)**

# INITIAL A320 FFS 5

| TIME | INITIAL A320 – FFS 5 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| | **TRAINEE 1** | | | | |
| | **INIT TAKE OFF** | | | | |
| | **1)** TAKE OFF | | √ | √ | |
| | **2)** ENGINE OUT FAMILIARIZATION **1)** | | √ | √ | |
| | **INIT TAKE OFF** | | | | |
| | **3)** TAKE OFF | | √ | √ | |
| | **4)** ENGINE FAIL AT V2 **2)** | | √ | √ | |
| | **5)** RETURN TO DEPARTURE | | √ | √ | |
| | **6)** ILS ONE ENG OUT HECA 05R | | √ | √ | |
| | **7)** LANDING ONE ENG OUT | | | | |
| | **INIT TAKE OFF** | | √ | √ | |
| | **8)** TAKE OFF | | √ | √ | |
| | **9)** ENGINE FAIL BETWEEN V1 AND V2 **3)** | | | | |
| | **10)** ENGINE RELIGHT | √ | √ | √ | |
| | **11)** RETURN TO DEPARTURE | √ | √ | √ | |
| | **12)** ILS RWY 05R **4)** | | √ | √ | |
| | **13)** GO AROUND - ENGINE STALL + DAMAGE **5)** | | √ | √ | |
| | **14)** CLEAN UP - FREEZE | | √ | √ | |
| | **INIT FL 350** | | | | |
| | **15)** ENG FAILURE IN CRUISE **6)** | | | | |
| | **16)** ALL ENG FLAME OUT | | | | √ |
| | **17)** RESTORE AFTER ONE ENG RELIGHT USING APU BLEED | | | | √ |
| | **INIT TAKE OFF/** | | | | |
| | **18)** TAKE OFF | | √ | √ | |
| | **19)** ENGINE FAIL AT V2 **7)** | | √ | √ | |
| | **20)** RETURN TO DEPARTURE | √ | √ | √ | |
| | **21)** VOR DME RWY 05R USING TRK-FPA - ONE ENG OUT | √ | √ | √ | √ |
| | **22)** LANDING ONE ENG OUT OVERWEIGHT | | | | |
| | **INIT TAKE OFF/REJECTED TAKEOFF/ EVACUATION DUE TO FIRE** | | | | |
| | **23)** TAKE OFF - MTOW | | √ | √ | |
| | **24)** ARS DEMO - CLEAN UP – FREEZE **8)** | √ | √ | √ | |

| TIME | INITIAL A320 – FFS 5 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| | **TRAINEE 2** | | | | |
| | **INIT TAKE OFF** | | | | |
| | **25)** TAKE OFF | | √ | √ | |
| | **26)** ENGINE FAIL AT V2 **9)** | | √ | √ | |
| | **27)** CLEAN UP - FREEZE | | √ | √ | |
| | **INIT TAKE OFF** | | | | |
| | **28)** TAKE OFF - ENGINE FAIL BETWEEN V1 AND V2 **10)** | | √ | √ | |
| | **29)** RETURN TO DEPARTURE | | √ | √ | |
| | **30)** ILS RWY 05R - ONE ENG OUT | | √ | √ | |
| | **31)** LANDING- ONE ENG OUT | | | | |
| | **INIT TAKE OFF** | | | | |
| | **32)** TAKE OFF – INCAPACITATION **11)** | | √ | √ | |
| | **33)** CLIMB 4500 ft. | √ | √ | √ | |
| | **34)** G + Y SYS LO PR **12)** | | √ | √ | |
| | **35)** ILS RWY 05R - DIRECT LAW | | √ | √ | |
| | **36)** LANDING NO FLAPS | | | | |
| | **INIT TAKE OFF - MTOW- FOB 14T** | | | | |
| | **37)** TAKE OFF | | √ | √ | |
| | **38)** ENGINE FAIL AT V2 **13)** | | √ | √ | |
| | **39)** ENGINE OUT CONTINGENCY PROCEDURE | √ | √ | √ | |
| | **40)** RETURN TO DEPARTURE | √ | √ | √ | |
| | **41)** VOR DME RWY 05R USING TRK-FPA - ONE ENG OUT | √ | √ | √ | √ |
| | **42)** LANDING ONE ENG OUT OVERWEIGHT | | | | |
| | **INIT TAKE OFF - MTOW- FOB 14T** | | | | |
| | **43)** TAKE OFF - MTOW | | √ | √ | |
| | **44)** ARS DEMO - CLEAN UP – FREEZE **14)** | √ | √ | √ | |

# INITIAL A320 FFS 5

| TRAINEE NAME | CODE NO. | ☐ CAPT. ☐ F/O | DATE / / |
|---|---|---|---|
| Location<br>☐ Cairo ☐ Other | Session Time: | Time PF: | Time PM: |

| SESSION EVALUATION | | | | |
|---|---|---|---|---|
| **Knowledge** | US | S1 | **S2** | S3 |
| Operations Manual (OM – part A) And Relevant ECARS | | | | |
| A/C System. Limitation and Performance | | | | |
| Normal Procedures. Non – normal Procedures | | | | |
| NESMA – AIRLINES Operations Specifications | | | | |
| **Flying skills** | US | S1 | **S2** | S3 |
| Compliance with SOP (OM-part A & FCOM) | | | | |
| Attitude Flying | | | | |
| Scan flow. Attitude & Speed Control | | | | |
| A/C Configuration & Landing Technique | | | | |
| Flying Accuracy & Smoothness | | | | |
| **Management** | US | S1 | **S2** | S3 |
| Compliance with Operations Manual (OM-A) | | | | |
| Planning Ahead And Use of FMGS | | | | |
| Crew Coordination And Use Of Available Resources | | | | |
| Adherence To Clearance And Safe Heights | | | | |
| **General** | US | S1 | **S2** | S3 |
| Situational awareness | | | | |
| Discipline | | | | |

**Comments:-**

**This is to certify that all applicable flight training and discussion items in this session have been completed**

| ☐ NORMAL PROGRESS | ☐ SLOW POGRESS | ☐ REMEDIAL SESSION REQUIRED | |
|---|---|---|---|
| Instructor Name | Instructor Code | Instructor Signature | Trainee Signature |

**INITIAL A320 FFS 6**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **CALM** | **13/10** | **1013** | **-** |
| RWY CONDITION | | **DRY.** | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **61.0T** | **31.2** | **7500T** |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF
- **PERFORMANCE CALCULATIONS THROUGH EFB APPLICATION**

**SESSION PREPARATION**

**1) SESSION OBJECTIVE**

- Practice EMER ELEC CONFIG procedure
- Practice crew incapacitation
- Practice Rejected Take Off
- Practice flaps locked procedure
- Familiarize with unreliable speed procedure
- Familiarize with mechanical backup
- Heavy weight operations

**2) TRAINING TOPICS**

**BB. REVIEW**

- LANDING WITH SLATS OR FLAPS JAMMED
- INCAPACITATION
- WINDSHEAR RECOVERY
- TCAS PROCEDURE

**CC. EXERCISES / REFERENCES**

| EVENTS | FCOM | QRH | FCTM |
|---|---|---|---|
| • EMER ELEC CONFIG | PRO-ABN-24 | ABN-24 | AO.024 |
| • UNRELIABLE SPEED | PRO-ABN-34 | ABN-24.07 | AO.034 |
| • DUAL RA | PRO-ABN-34 | | AO.034 |
| • ABNORMAL SLATS / FLAPS | PRO-ABN-27 | ABN-27.01 | AO.027 |
| • LANDING WITH SLATS OR | PRO-ABN-10 | ABN-27.01 | AO.027 |
| • REJECTED TAKE OFF | PRO-ABN-10 | | AO.020 |

**DD. SUPPORT**

- FCOM.
- QRH.
- FCTM: Use of RADAR (SI-070)
- All Aircraft Courseware
- PDP:
  - Unreliable speed indications
  - Rejected take off & Emergency evacuation
  - Dual radio altimeter failure
  - Electrical emergency configuration
- Laptop:
  - Unreliable speed indication presentation.
  - Use of radar presentation.

**3) COMPETENCIES CRITERIA**

The competencies criteria are all criteria.

**SESSION GUIDE**

**1)** TCAS RA. **2)**

**2)** At 1900ft QNH, insert an LOC transmitter failure leading to go around. **5)**

**3)** Insert an engine failure at go around. **6)**

**4)** At 900 ft. QNH, insert a PITOT BLOCKED on F/O side + ADR 3 FAULT, then, at 1800 ft. QNH, insert an AIRSPEED CHANNEL ADR 1 FAULT. **9)**
- Crew will apply MEMORY ITEMS, then follow QRH procedure.
- This exercise should be treated as a demonstration.

**5)** Proceed for intermediate and final approach for the other trainee. **12)**

**6)** Insert RA 2 fault at 2000 ft. and RA 1 fault at 4500 ft. **19)**
- When the ECAM actions have been completed (STATUS included), refer to FCOM PRO-ABN-34 for additional information. It is a good opportunity to practice: "Refer to FCOM, if time permits".

**7)** TCAS RA. **24)**

**8)** Insert AC BUS 1 + 2 Fault. **26)**
- In case of two captains, one approach is sufficient.
- In case of 2 F/O, freeze when reaching final approach fix.

**9)** No rotation from PF. **29)**

**10)** Fail ELAC 2. When ECAM ACTIONS completed, fail SEC 2 to get the flight controls in mechanical back up. **31)**
- Let each trainee have a chance to fly the aircraft, short leg then a turn. Emphasize the use of rudder.
- Restore the systems when demo is completed. NO APPROACH, NO LANDING.

**11)** Insert flaps locked by WTB before extension. ATC reports: "Braking actions is now GOOD TO MEDIUM". **32)**

**12)** Insert engine 2 flame out at 60 Kts. **35)**

# INITIAL A320 FFS 6

| TIME | INITIAL A320 – FFS 6 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| | **TRAINEE 2** | | | | |
| | **INIT HOLDING POINT** | | | | |
| | **1)** TAKE OFF | | √ | √ | |
| | **2)** CLIMB FL 070 – TCAS 1) | √ | √ | √ | |
| | **3)** CRUISE | √ | √ | √ | |
| | **4)** DESCENT | | √ | √ | |
| | **5)** ILS RWY 05R 2) | | √ | √ | |
| | **6)** GO AROUND ONE ENGINE OUT 3) | | √ | √ | |
| | **7)** CLEAN UP FREEZE | | | | |
| | **INIT TAKE OFF** | | | | |
| | **8)** TAKE OFF | | √ | √ | |
| | **9)** UNRELIABLE SPEED INDICATION (**DEMO**) 4) | | | | √ |
| | **10)** ILS RWY 05R | | | | √ |
| | **11)** LANDING | | | | |
| | **INIT APPROACH** | | | | |
| | **12)** UNRELIABLE SPEED INDICATION (DEMO) 5) | | | | |
| | **13)** ILS RWY 05R | | | | |
| | **14)** LANDING | | | | |
| | **INIT TAKE OFF** | | | | |
| | **15)** TAKE OFF | | √ | √ | |
| | **16)** ENG FAIL AT 100 KTS | | √ | √ | |
| | **17)** REJECTED TAKE OFF | | | | |
| | **INIT TAKE OFF – MTOW-PACKS OFF** | | | | |
| | **18)** TAKE OFF-MTOW | | √ | √ | |
| | **19)** RA 2 FAULT AT 2000 ft. 6) | | | | |
| | **20)** CLIMB 4500ft - RADAR VECTOR-FOB 11t – RA 1 FAULT | | √ | √ | |
| | **21)** ILS RWY 05R | | | √ | √ |
| | **22)** LANDING | | | | |

| TIME | INITIAL A320 – FFS 6 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| | **TRAINEE 1** | | | | |
| | **INIT TAKE OFF** | | | | |
| | **23)** TAKE OFF - WINDSHEAR | | √ | √ | |
| | **24)** CLIMB 4500 FT- TCAS EVENT **7)** | √ | √ | √ | |
| | **25)** CRUISE | | | | √ |
| | **26)** EMER ELEC CONFIG **8)** | | | | √ |
| | **27)** ILS RWY 05R - RAW DATA - DIRECT LAW | | | | √ |
| | **28)** LANDING | | | | |
| | **INIT TAKE OFF** | | | | |
| | **29)** TAKE OFF – INCAPACITATION **9)** | | √ | √ | |
| | **30)** CLIMB FL 70- HYD B RSVR LO LVL | | √ | √ | |
| | **31)** MECHANICAL BACKUP (DEMO) **10)** | | √ | √ | |
| | **32)** FLAPS LOCKED BEFORE EXTENSION **11)** | √ | √ | √ | |
| | **33)** VOR DME RWY 05R USING TRK-FPA | √ | √ | √ | √ |
| | **34)** LANDING NO FLAPS | | | | |
| | **INIT TAKE OFF** | | | | |
| | **35)** TAKE OFF (TOGA THRUST) **12)** | | √ | √ | |
| | **36)** ENG FAIL AT LOW SPEED | | √ | √ | |
| | **37)** REJECTED TAKE OFF | | | | |
| | **INIT TAKE OFF** | | | | |
| | **38)** TAKE OFF | | √ | √ | |
| | **39)** ENGINE FIRE AT 100 KTS | | √ | √ | |
| | **40)** REJECTED TAKE OFF | | | | |
| | **41)** EMERGENCY EVACUATION | | | | |

# INITIAL A320 FFS 6

| TRAINEE NAME | CODE NO. | ☐ CAPT. ☐ F/O | DATE / / |
|---|---|---|---|
| Location<br>☐ Cairo ☐ Other | Session Time: | Time PF: | Time PM: |

| SESSION EVALUATION | | | | |
|---|---|---|---|---|
| **Knowledge** | US | S1 | **S2** | S3 |
| Operations Manual (OM – part A) And Relevant ECARS | | | | |
| A/C System. Limitation and Performance | | | | |
| Normal Procedures. Non – normal Procedures | | | | |
| NESMA – AIRLINES Operations Specifications | | | | |
| **Flying skills** | US | S1 | **S2** | S3 |
| Compliance with SOP (OM-part A & FCOM) | | | | |
| Attitude Flying | | | | |
| Scan flow. Attitude & Speed Control | | | | |
| A/C Configuration & Landing Technique | | | | |
| Flying Accuracy & Smoothness | | | | |
| **Management** | US | S1 | **S2** | S3 |
| Compliance with Operations Manual (OM-A) | | | | |
| Planning Ahead And Use of FMGS | | | | |
| Crew Coordination And Use Of Available Resources | | | | |
| Adherence To Clearance And Safe Heights | | | | |
| **General** | US | S1 | **S2** | S3 |
| Situational awareness | | | | |
| Discipline | | | | |

**Comments:-**

**This is to certify that all applicable flight training and discussion items in this session have been completed**

| ☐ NORMAL PROGRESS | ☐ SLOW POGRESS | ☐ REMEDIAL SESSION REQUIRED | |
|---|---|---|---|
| Instructor Name | Instructor Code | Instructor Signature | Trainee Signature |

**INITIAL A320 LOS**

```
PLAN 5365               HESH TO HEGN C320    C25/F IFR  12/11/15
NONSTOP COMPUTED 1158Z  FOR ETD 0600Z  PROGS  1200ADF  SU-NMA   KGS

REMARKS:


STA . . . . ATA . . . .  LDG     . . . .  CAPT . . . . . . . . . . . .
STD . . . . ATD . . . .  T.OFF   . . . .  F/O  . . . . . . . . . . . .
SBT . . . . ABT . . . .  F.TIME  . . . .  S/O  . . . . . . . . . . . .
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
FUEL PLAN
GROUND DIST    82NM    AV WC P001 FL120/P02  MXSH  3/TOC
TRIP                  762  0.20  . . . .     MDF     1621
CONTINGENCY (5 %)     400  0.01  . . . .
ALTERNATE             753  0.21  . . . .  HESH
FINAL RESERVE         868  0.30  . . . .           APMS/ +03.0 PCNT
ADDIT/CFS               0                          DEGREDATION VALUE
MIN T/O FUEL         2783 01.11  . . . .           AS A %
TAXY/APU              400                          EFF: .. .. ..
EXTRA/TANKER          400        . . . . REASON .. .. .. .. ..
TOT   FUEL           3583        . . . .
THREE FIVE EIGHT THREE KGS

                     MSA  TTK  DIST  FL   W/C   TIME  ETA   FUEL
ALTERNATE - 1  HESH  105  033  0082  110  P008  0.21  0640  000753

ROUTE TO FIRST ALTERNATE
HEGN..HGD R650 SHM..HESH


FUEL BURN ADJUSTMENT FOR 2000FT INCREASE IN CRZ ALTITUDE :      0 KGS
FUEL BURN ADJUSTMENT FOR 2000FT DECREASE IN CRZ ALTITUDE :     -8 KGS
FUEL BURN ADJUSTMENT FOR 2000KGS INCREASE/DECREASE IN TOW :     9 KGS

          E.WT     ACT. WT       STRUC/OPS LIMITS
BASIC WT  044096   . . . . .
PLD       002000   . . . . .
ZFW       046096   . . . . .     061000
TOF       003383   . . . . .     018700
TOW       049479   . . . . .     077000
TRIP FUEL 000762   . . . . .               FUEL BURN . . . . . . . . .
LAW       048717   . . . . .     064500    CAPT SIGN . . . . . . . . .
- - - - - - - - - - - - - - - -  - - - - - - - - - - - - - - -
ROUTE DESCRIPTION : COMPANY ROUTE SSH-HRG

CLEARANCE

HESH..SHM R650 HGD..HEGN

FL  120



(FPL-TEST-IS
-A320/M-SDFHIRWY/S
-HESH0600
-N0359F120 DCT SHM R650 HGD DCT
-HEGN0020 HESH
-PBN/B3B4B5 COM/CPDLCX DAT/V DOF/151113 REG/SUNMA SEL/QRCF
 CODE/010140 PER/C
-E/0111 P/TBN R/E S/M J/L D/0 0
 A/WHITE)
```

```
ATC FILING ADDRESSES
HESHZPZX HECAZPZX HECCZQZX HEGNYFYX HEGNZAZR HEGNZIZX HEGNZTZX
HECAYUYX HECAZATC HECAZIZX HECAZTZX HECCZQZR HESHYFYX HESHZAZR
HESHZIZT HESHZIZX HESHZTZX HEZZNTXX

HESH ELEV  00143FT   ALT IND 1......    ALT IND 2...... ST BY ......

AWY   W/P     FREQ    SR OAT TAS G/S -TTK-LEG DIST TM   ACTM FOB XTR
FL  LAT/LONG         MSA W/V     COMP IMT DIS TOGO ETA  ATA  REQ
                                                   RETA
..    TOC             03 02  359 370 -042-015 0067 004 00.04 ... ....
120 N2759.4 E03424.6 ... 22/011 P011  038           ... .....  2169
TOC                ------------------------------- ... -------------
..    SHM     114.2   03 02  359 370 -042-007 0060 001 00.05 ... ....
120 N2759.9 E03424.8 ... 22/011 P011  038           ... .....  2118
SHARM EL SHEIKH    ------------------------------- ... -------------
R650  TOD             03 03  359 348 -214-013 0047 002 00.07 ... ....
120 N2749.2 E03416.8 105 23/011 M011  210           ... .....  2010
TOD                ------------------------------- ... -------------
R650  HGD     116.5      .. ..   ..  -214-046 0001 012 00.19 ... ....
DSC N2710.7 E03347.8 105 08/007 P006  210           ... .....  1829
HURGHADA           ------------------------------- ... -------------
..    HEGN               .. ..   ..  -090-001 0000 001 00.20 ... ....
DSC N2710.7 E03348.1 ... .. . .. . .. 086           ... .....  1821
                   ------------------------------- ... -------------
     ELEV   00052FT


ALTERNATE HESH/SSH    (CRUISE LRC)

AWY   W/P     FREQ    SR OAT TAS G/S -TTK-LEG DIST TM   ACTM FOB XTR
FL  LAT/LONG         MSA W/V     COMP IMT DIS TOGO ETA  ATA  REQ
                                                   RETA
..    TOC          03     P05 240 246 -360-014 0014 004 00.04 ... ....
110 N2724.8 E03348.0 ... 23/009 P006  356           ... .....  1437
                   ------------------------------- ... -------------
..    HGD     116.03      P05 283 289 -360-007 0021 001 00.05 ... ....
110 N2710.7 E03347.8 ... 23/009 P006  356           ... .....  1388
                   ------------------------------- ... -------------
R650  TOD          03     P05 215 224 -034-016 0037 003 00.08 ... ....
110 N2724.0 E03357.8 088 08/007 P009  030           ... .....  1261
                   ------------------------------- ... -------------
R650  SHM     114.03      P15 216 211 -034-043 0080 012 00.20 ... ....
DSC N2759.9 E03424.8 088 08/007 M004  030           ... .....  1077
                   ------------------------------- ... -------------
..    HESH         03     P15         -360-002 0082 001 00.21 ... ....
DSC N2758.7 E03423.6 ... 09/008  000  356           ... .....  1068
                   ------------------------------- ... -------------

WINDS/TEMPERATURES ALOFT FORECAST
FD DATA BASED ON  1200ADF
        10000   24000   30000   32000   34000   36000   38000   40000
SHM    2007P06 2841M20 2761M35 2766M40 2771M44 2771M48 2672M52 2671M57
HGD    2107P06 2739M20 2761M35 2766M39 2771M44 2672M48 2672M52 2671M57
HEGN   2207P07 2738M20 2758M35 2763M39 2769M44 2670M48 2671M53 2670M57



                      MSA  TTK  DIST  FL   W/C   TIME  FUEL
ALTERNATE  - 1  HESH   105 033   082  110  P008  00.21 753

END OF JEPPESEN DATAPLAN
REQUEST NO.  5365
```

```
PLAN 5364              HEGN TO HESH C320   C25/F IFR  12/11/15
NONSTOP COMPUTED 1157Z  FOR ETD 0600Z  PROGS  1200ADF  SU-NMA   KGS

REMARKS:


STA . . . . ATA . . . .  LDG    . . . .  CAPT . . . . . . . . . . .
STD . . . . ATD . . . .  T.OFF  . . . .  F/O  . . . . . . . . . . .
SBT . . . . ABT . . . .  F.TIME . . . .  S/O  . . . . . . . . . . .
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
FUEL PLAN
GROUND DIST   82NM   AV WC P001 FL120/P03  MXSH  3/TOD
TRIP               772  0.20  . . . .    MDF     1625
CONTINGENCY (5 %)   400  0.01  . . . .
ALTERNATE          758  0.21  . . . .  HEGN
FINAL RESERVE      867  0.30  . . . .         APMS/ +03.0 PCNT
ADDIT/CFS            0                        DEGREDATION VALUE
MIN T/O FUEL      2797 01.12  . . . .         AS A %
TAXY/APU           400                        EFF: .. .. ..
EXTRA/TANKER       400        . . . . REASON .. .. .. .. ..
TOT   FUEL        3597        . . . .
THREE FIVE NINE SEVEN KGS

                     MSA  TTK  DIST  FL   W/C   TIME  ETA   FUEL
ALTERNATE - 1  HEGN  105  213  0082  110  M004  0.21  0641  000758

ROUTE TO FIRST ALTERNATE
HESH..SHM R650 HGD..HEGN


FUEL BURN ADJUSTMENT FOR 2000FT INCREASE IN CRZ ALTITUDE :    -5 KGS
FUEL BURN ADJUSTMENT FOR 2000FT DECREASE IN CRZ ALTITUDE :     0 KGS
FUEL BURN ADJUSTMENT FOR 2000KGS INCREASE/DECREASE IN TOW :     7 KGS

          E.WT    ACT. WT       STRUC/OPS LIMITS
BASIC WT  044096  . . . . .
PLD       002000  . . . . .
ZFW       046096  . . . . .    061000
TOF       003397  . . . . .    018700
TOW       049493  . . . . .    077000
TRIP FUEL 000772  . . . . .          FUEL BURN . . . . . . . . .
LAW       048721  . . . . .    064500    CAPT SIGN . . . . . . . . .
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
ROUTE DESCRIPTION : COMPANY ROUTE HRG-SSH

CLEARANCE

HEGN..HGD R650 SHM..HESH

FL  120



(FPL-TEST-IS
-A320/M-SDFHIRWY/S
-HEGN0600
-N0360F120 DCT HGD R650 SHM DCT
-HESH0020 HEGN
-PBN/B3B4B5 COM/CPDLCX DAT/V DOF/151113 REG/SUNMA SEL/QRCF
 CODE/010140 PER/C
-E/0112 P/TBN R/E S/M J/L D/0 0
 A/WHITE)
```

```
ATC FILING ADDRESSES
HEGNZPZX HECAZPZX HECCZQZX HECAZIZX HECAZTZX HESHYFYX HESHZAZR
HESHZIZT HESHZIZX HESHZTZX HECAYUYX HECAZATC HECCZQZR HEGNYFYX
HEGNZAZR HEGNZIZX HEGNZTZX

HEGN ELEV  00052FT   ALT IND 1......    ALT IND 2...... ST BY ......

AWY   W/P      FREQ    SR OAT TAS G/S -TTK-LEG DIST TM   ACTM FOB XTR
FL  LAT/LONG          MSA W/V     COMP IMT DIS TOGO ETA  ATA  REQ
                                                    RETA
..    TOC               02 03  360 351 -270-016 0066 004 00.04 ... ....
120 N2710.8 E03348.0 ... 23/011 M009  266            ... .....  2170
TOC                 ------------------------------- ... --------------
..    HGD      116.5    02 03  360 351 -270-005 0061 001 00.05 ... ....
120 N2710.7 E03347.8 ... 23/011 M009  266            ... .....  2133
HURGHADA            ------------------------------- ... --------------
R650  TOD               03 03  359 370 -034-016 0045 002 00.07 ... ....
120 N2724.0 E03357.6 105 23/011 P011  030            ... .....  2008
TOD                 ------------------------------- ... --------------
R650  SHM      114.2       .. ..    ..   -034-043 0002 012 00.19 ... ....
DSC N2759.9 E03424.8 105 08/007 M005  030            ... .....  1842
SHARM EL SHEIKH     ------------------------------- ... --------------
..    HESH                 .. ..    ..   -222-002 0000 001 00.20 ... ....
DSC N2758.7 E03423.6 ... .. . .. . .. 218            ... .....  1825
                    ------------------------------- ... --------------
     ELEV   00143FT


ALTERNATE HEGN/HRG    (CRUISE LRC)

AWY   W/P      FREQ    SR OAT TAS G/S -TTK-LEG DIST TM   ACTM FOB XTR
FL  LAT/LONG          MSA W/V     COMP IMT DIS TOGO ETA  ATA  REQ
                                                    RETA
..    TOC          03      P04 232 240 -360-013 0013 003 00.03 ... ....
110 N2811.8 E03423.6 ... 21/009 P008  356            ... .....  1452
                    ------------------------------- ... --------------
..    SHM      114.03      P04 283 291 -360-009 0022 002 00.05 ... ....
110 N2759.9 E03424.8 ... 21/009 P008  356            ... .....  1386
                    ------------------------------- ... --------------
R650  TOD          03      P05 215 206 -214-015 0037 003 00.08 ... ....
110 N2747.4 E03415.4 088 08/007 M008  210            ... .....  1262
                    ------------------------------- ... --------------
R650  HGD      116.03      P15 216 221 -214-044 0081 012 00.20 ... ....
DSC N2710.7 E03347.8 088 08/007 P005  210            ... .....  1071
                    ------------------------------- ... --------------
..    HEGN         03      P15         -360-001 0082 000 00.20 ... ....
DSC N2710.7 E03348.1 ... 07/007  000  356            ... .....  1066
                    ------------------------------- ... --------------

WINDS/TEMPERATURES ALOFT FORECAST
FD DATA BASED ON   1200ADF
        10000   24000   30000   32000   34000   36000   38000   40000
HGD    2207P07 2738M20 2758M35 2763M39 2769M44 2670M48 2671M53 2670M57
SHM    2107P06 2739M20 2761M35 2766M39 2771M44 2672M48 2672M52 2671M57
HESH   2007P06 2841M20 2761M35 2766M40 2771M44 2771M48 2672M52 2671M57



                      MSA  TTK  DIST  FL   W/C   TIME  FUEL
ALTERNATE  - 1  HEGN   105 213   082  110  M004  00.21 758

END OF JEPPESEN DATAPLAN
REQUEST NO.  5364
```

```
                        ------------------------------- ... --------------
..     HEBA          02      P09          -360-002 0124 000 00.25 ... ....
DSC N3055.1 E02941.8 ... 04/015  000  356               ... .....  1162
                        ------------------------------- ... --------------

WINDS/TEMPERATURES ALOFT FORECAST
FD DATA BASED ON  1200ADF
         10000   24000   30000   32000   34000   36000   38000   40000
HGD    2207P07 2738M20 2758M35 2763M39 2768M44 2670M48 2671M53 2670M57
GIDID  2107P06 2740M20 2760M35 2765M39 2770M44 2671M48 2672M53 2671M57
KAPIT  1807P06 2743M21 2760M35 2765M40 2669M45 2670M49 2670M53 2669M57
MENLI  1306P05 2745M22 2760M36 2664M40 2669M45 2668M49 2667M53 2666M57
CVO    0805P05 2746M23 2660M36 2664M41 2668M45 2667M49 2666M53 2664M57
CA442  0605P05 2746M23 2660M36 2664M41 2668M45 2667M49 2665M53 2663M57
CA416  0505P05 2646M23 2659M36 2664M41 2668M45 2667M49 2665M53 2664M57
CA418  0605P05 2746M23 2660M36 2664M41 2668M45 2667M49 2665M53 2663M57
HECA   0705P05 2746M23 2659M36 2664M41 2668M45 2667M49 2665M53 2663M57



                      MSA  TTK  DIST  FL   W/C    TIME  FUEL
ALTERNATE  - 1  HEBA   027 298   124  240  M030   00.26 1045

END OF JEPPESEN DATAPLAN
REQUEST NO.  5362
```

**WEATHER**

HECA CALM CAVOK 13/10 Q1013

**FLIGHT DATA**

| FLT NBR | FROM | TO | ALT |
|---|---|---|---|
| **NMA ------** | **HESH** | **HEGN** | **HESH** |

| CI | CRZ FL | CRZ TEMP |
|---|---|---|
| **25** | **FL 070** | **+2 C** |

| TRIP WIND | TRIP DIST |
|---|---|
| **220/11** | **82 NM** |

**FUEL & LOAD**

| ZFW | ZFW CG | FOB | GW |
|---|---|---|---|
| **46.1** | **31.2** | **3600** | **49.5** |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF

# INITIAL A320 LOS

| TRAINEE NAME | CODE NO. | ☐ CAPT. ☐ F/O | DATE / / |
|---|---|---|---|

| Location<br>☐ Cairo ☐ Other ……………. | Session Time: | Time PF: | Time PM: |
|---|---|---|---|

| **SCENARIO** | **ENTER (√) FOR COVERED ITEM.** |
|---|---|
| PILOT INCAPACITATION | ☐ |
| CARGO FIRE AT 200FT. | ☐ |
| CABIN SMOKE DURING CRUISE | ☐ |
| ENGINE FAILURE AFTER V1 | ☐ |
| BOMB ON BOARD | ☐ |
| DITCHING | ☐ |
| ENGINE FIRE DURING CRUISE. | ☐ |
| FLIGHT CONTROLS | ☐ |
| PRESSURIZATION PROBLEM. | ☐ |

**Comments :**

**This is to certify that LOS session has been completed**

| Instructor Name | Instructor Code | Instructor Signature | Trainee Signature |
|---|---|---|---|
| | | | |

## Contents

(APPENDIX B) Recurrent Flight Training ..... 2
RECURRENT A320 (LOFT) TRAINING (A) ..... 3
RECURRENT PC A320 CHECKING (A) ..... 8
RECURRENT PC A320 CHECKING MONITOR (A) ..... 11
SIMULATOR STUDY GUIDE (A) ..... 13
RECURRENT A320 (LOFT) TRAINING (B) ..... 14
RECURRENT A320 (LOFT) TRAINING MONITOR (B) ..... 17
RECURRENT PC A320 CHECKING (B) ..... 19
RECURRENT PC A320 CHECKING MONITOR (B) ..... 22
SIMULATOR STUDY GUIDE (B) ..... 24
RECURRENT A320 (LOFT) TRAINING (C) ..... 25
RECURRENT A320 (LOFT) TRAINING MONITOR (C) ..... 28
RECURRENT PC A320 CHECKING (C) ..... 30
RECURRENT PC A320 CHECKING MONITOR (C) ..... 33
SIMULATOR STUDY GUIDE (C) ..... 35
RECURRENT A320 (LOFT) TRAINING (D) ..... 36
RECURRENT A320 (LOFT) TRAINING MONITOR (D) ..... 39
RECURRENT PC A320 CHECKING (D) ..... 41
RECURRENT PC A320 CHECKING MONITOR (D) ..... 44
SIMULATOR STUDY GUIDE (D) ..... 46
RECURRENT A320 (LOFT) TRAINING (E) ..... 47
RECURRENT A320 (LOFT) TRAINING MONITOR (E) ..... 50
RECURRENT PC A320 CHECKING (E) ..... 52
RECURRENT PC A320 CHECKING MONITOR (E) ..... 55
SIMULATOR STUDY GUIDE (E) ..... 57
Recurrent PC A320 CHECKING (F) ..... 58

## (APPENDIX B) Recurrent Flight Training

**Trainees/Prerequisites:**

This training is designed for crewmembers who are currently qualified on Nesma airlines aircraft.

**Course Objective:**

The objective of this course is to ensure the competency of Nesma Airlines flight crewmembers and to comply with the provisions of ECAA through the medium of bi-annual recurrent training on subjects related to efficient and safe flight operations.

**Duration:** 12hrs = 3 sessions 4 hrs. each every 12 month calendar

**Training Device:** Full Flight Simulator (FFS)

**Place of Training:** Egypt Air Training Center or any training center approved.

**Course Handouts:**

- Flight Crew Operation Manual (FCOM)
- Flight Crew Training Manual (FCTM)
- Quick Reference Handbook (QRH)

## RECURRENT A320 (LOFT) TRAINING (A)

### BREIFING ROOM

| INTRO+LOFT CONCEPT | SMOKE PROCEDURE | Fuel Leak | BREAK |
|---|---|---|---|
| **10 MINS** | **20 MINS** | **20 MINS** | **15 MINS** |

### SIMULATOR SETUP

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **LFPG** | **HEGN** | **2000M** | **300/15** | **3/-7** | **998** | **-** |
| RWY CONDITION | | **COMPACTED SNOW. (*Time for T/O perf. Calculation).*** | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **58T** | **29** | **15T** |

**CM 2**

| TIME | TOTAL | EVENTS PART 1 |
| --- | --- | --- |
| 00.20 | 00.20 | Transit cockpit preparation. |
| 00.10 | 00.30 | **Engine start fault, hot start followed by manual engine start.**<br>*Insert a hot start on engine 1. After ECAM completion, restore & perform a MAN start.* |
| 00.05 | 00.35 | Taxi to RWY 27L |
| 00.40 | 01.15 | **T/O: Windshear on rotation.**<br><br>**CLB 350: SEVERE TURBLUNCE AND ICING CONDITIONS.**<br>*Correct speed & procedure for thrust setting using QRH,* ***Unreliable speed indication by setting ADR speed channel fault with pitot tube blocked {standby} ,when set proper pitch /thrust descend to level 250, restore***<br><br>**FUEL LEAK, LEAK NOT LOCATED.**<br>**CASE 1: LEAK FROM THE WING.**<br>*After analysis & eng shutdown proc., leak continues, wing leak.*<br>Left wing will be empty…. EO. |
| 00.30 | 01.45 | Radar vectors for **ILS APPR**(CONTAMINATION CLEARED)<br>After AP OFF, force **GA** by ATC.<br>Radar vectors **LOC APPR** and landing.<br>**Engine fire at 200 feet , landing , evacuate**<br>**LOFT COMPLETE.** |
| | | |

**COMMENTS:**

- 
- 
- 
- 

**CM 1**

| TIME | TOTAL | EVENTS PART 2 |
|---|---|---|
| 00.15 | 02.00 | Break |
| 00.45 | 02.45 | **T/O: Windshear on rotation.**<br><br>**CLB: SMOKE; AVNCS SMOKE.**<br>During proc.: instructor will mention heavy smoke in the cockpit, crew should refer to REMOVAL OF SMOKE/FUMES C/L.<br>Smoke stops after setting ELEC EMER CONFIG<br>Divert and landing.<br>ILS APPR AND LANDING TO FULL STOP. |
| 00.30 | 03.15 | T/O: ENGINE FAILURE between $v_1$ and $v_2$<br>Radar vectors for VOR APPR<br>Set ceiling below MDA to force GA in IMC.<br>Weather CAVOK, visual approach and landing. |
| 00.10 | 03.25 | T/O:**REJECTED T/O AND EVAC DUE TO FIRE** |
| 00.35 | 04.00 | **INIT T/O , upset ,bounce recovery training**<br>**RHS training.** |

**COMMENTS:**

- 
- 
- 
- 
- 
- 
- 
- 

INSTRUCTORS ONLY

INSTRUCTORS ONLY

RECURRENT A320 (LOFT) TRAINING MONITOR (A)

| NAME: | | DATE: | |
|---|---|---|---|

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

| EVENT | COMMENTS |
|---|---|
| **T/O PERF.** | |
| **HOT START** | |
| **WINDSHEAR** | |
| **TURBLUNCE/ ICING unreliable speed** | |
| **FUEL LEAK** | |
| **ILS APPR/ GA** | |
| **LOC APPR** | |
| **SMOKE** | |
| **EFTO** | |
| **VOR APPR** | |
| **GA** | |
| **VISUAL APPR** | |
| **REJECTED T/O** | |
| **Upset , bounce recovery ,RHS for captains, IP** | |

**INSTRUCTORS ONLY**

**INSTRUCTORS ONLY**

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

- 
- 
- 
- 
- 
- 
- 
- 
- 
- 

| | | | |
|---|---|---|---|
| **TRAINEE NAME:** | | **SIGNATURE** | |
| **TRI/TRE NAME:** | | **SIGNATURE** | |

| | |
|---|---|
| **TRAINING MANAGER SIGN** | |

**INSTRUCTORS ONLY**

**INSTRUCTORS ONLY**

**RECURRENT PC A320 CHECKING (A)**

**BREIFING ROOM**

| INTRO | MEMORY ITEMS | use of summaries | ENG FAIL IN CRZ | BREAK |
|---|---|---|---|---|
| **10 MINS** | **10 MINS** | **20 MINS** | **20 MINS** | **15 MINS** |

**SIMULATOR SETUP**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HEGN** | **HECA** | **6KM** | **280/20** | **28/5** | **1003** | **-** |
| RWY CONDITION | | **-** | | MEL | **-** | |
| ZFW | | ZFWCG | | | FOB | |

**INSTRUCTORS ONLY**

**INSTRUCTORS ONLY**

**CM 1**

| TIME | TOTAL | EVENTS PART 1 |
|---|---|---|
| 00.20 | 00.20 | Transit cockpit preparation. |
| 01.00 | 01.20 | **T/O: WINDSHEAR on rotation.**<br>**STEEP TURNS.AT 2500FEET**<br>**STALL RECOVERY** (turning base, levers idle…etc.)<br>**GPWS**<br>**FL350: ENG FAIL IN CRZ** (engine relighted inflight )<br>**FAC1+2 FAULT**<br>ILS APPR RAW DATA AND LANDING.<br>***CATII TRAINING**<br>**1-AC BUS1 FAIL below 1000f crew should initiate a go around and change control**<br>**2-repostion to short final NO FLARE.**<br>**3-REPOSITION TO LONG FINAL, SET ENGINE FAIL (FINISH PROCEDURE) AUTOLAND successful** |
| 00.30 | 01.50 | RVR 200m.<br>T/O: **Engine failure between $v_1$ and $v_2$**<br>Radar vectors for ILS APPR 34.<br>FAIL AP<br>Set ceiling below DH to force **GA** in IMC.<br>WX CAVOK, VIS APPR |
| 00.10 | 02.00 | T/O: **REJECTED T/O AND EVAC DUE TO FIRE.** |

***NOTE:*** *for captains or IP if only OPC session (day 2 only) instructor to manage time for RHS training*

**COMMENTS:**

- 
- 
- 
- 
- 
- 

**CM 2**

| TIME | TOTAL | EVENTS PART 2 |
|---|---|---|
| 00.15 | 02.15 | Break |
| 01.00 | 03.15 | **T/O: WINDSHEAR on rotation.**<br><br>**STEEP TURNS.at 2500f**<br>**STALL RECOVERY(turning base, levers idle,…etc)**<br>**GPWS**<br><br>**FL350: emergency descent** (structure damage ) 10000f<br>CLB: **TCAS**<br><br>**DUAL HYD FAILURE (G+Y)**<br>ILS APPR AND LANDING. |
| 00.30 | 03.45 | RVR 200m.<br>T/O**: Engine failure between $v_1$ and $v_2$**<br>Radar vectors for VOR APPR 34<br>*FAIL AP*<br>*Set ceiling below DH* to force **GA** in IMC.<br>WX CAVOK, VIS APPR |
| 00.10 | 03.55 | T/O: **REJECTED T/O AND EVAC DUE TO FIRE.** |

**COMMENTS:**

- 
- 
- 
- 
- 
- 
- 

INSTRUCTORS ONLY

INSTRUCTORS ONLY

## RECURRENT PC A320 CHECKING MONITOR (A)

| NAME: | | DATE: | |
|---|---|---|---|

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

| EVENT | COMMENTS |
|---|---|
| WINDSHEAR | |
| STEEP TURNS/STALL | |
| GPWS | |
| ENG FAIL IN CRZ | |
| EMER DES | |
| TCAS | |
| FAC 1+2 FAULT | |
| HUD G+Y | |
| EFTO | |
| ILS APPR/GA | |
| VOR APPR/GA | |
| VISUAL APPR | |
| REJECTED T/O | |
| CATII APPROACHES | |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**COMMENTS:**

- 
- 
- 
- 
- 
- 
- 
- 
- 
- 

| | | | |
|---|---|---|---|
| **TRAINEE NAME:** | | **SIGNATURE** | |
| **TRI/TRE NAME:** | | **SIGNATURE** | |

| | | | |
|---|---|---|---|
| **TRAINING MANAGER SIGN.** | | **YES** | **NO** |
| **OPS DIRECTOR INFORMED?** | | | |
| **OPS DIRECTOR SIGN.** | | | |

## SIMULATOR STUDY GUIDE (A)

Dear pilots, to take full advantage of the simulator training please consider reviewing the following items:

1. Memory items.
2. Limitations.
3. SOP.

For the coming recurrent & proficiency you should study the following:

- T/O from contaminated RWY.
- Engine start problems.
- Severe turbulence and icing, unreliable speed
- Eng fail in cruise.
- Fuel leak.
- Smoke.
- Dual HYD failure.
- Rejected T/O and EVAC.
- DUAL FAC FAULT
- Upset, bounce recovery

---

❖ *Your study should not be limited to only these subjects; this guide outlines only the minimum to run the simulator session smoothly without interruptions.*

**RECURRENT A320 (LOFT) TRAINING (B)**

**BREIFING ROOM**

| INTRO+LOFT CONCEPT | Flaps lock | FMGC1+2 | RNAV APPR | BREAK |
|---|---|---|---|---|
| **10 MINS** | **20 MINS** | **20 MINS** | **25 MINS** | **15 MINS** |

**SIMULATOR SETUP**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **CAI 23R** | **LXR** | **SEL: CIRCLING** | **190/10G20** | **30/05** | **1003** | **SAND** |
| RWY CONDITION | | **DRY** | | MEL | **#1 Start valve fault** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **60 T** | **30** | **6 T** *no freeze* |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**CM 2**

| TIME | TOTAL | EVENTS PART 1 | |
|---|---|---|---|
| 00.10 | 00.10 | Transit cockpit preparation. TAKEOFF FLAPS2 | |
| 00.10 | 00.20 | engine start, **START VALVE STUCK CLOSED**<br>*Insert "start valve fault closed", emphasize the MEL consultation. Perform the manual start valve operation.* | |
| 00.05 | 00.35 | Taxi to RWY 27L | |
| 00.05 | 00.25 | Taxi to RWY 23R | LOFT START |
| 00.45 | | **INIT T/O FAPS2 : WINDSHEAR with moderate turbulence** on rotation, Restore turbulence<br>***flaps locked by WTB ON retraction*** *, crew should stop climbing to finish procedure and prepare for ILS* | |
| | 01.10 | ILS AND LANDING (WIND NO GUST) | LOFT END |
| 00.30 | 01.40 | • RVR: 200M. WIND: 190/10. TOW: 66T.<br>**T/O: Engine failure between $v_1$ and $v_2$**<br>Radar vectors for ILS APPR.<br>Set ceiling below DA to force **go around** in IMC.<br>• VIS: 20km. OVC: 2500FT.<br>**Visual APPR** and landing. Engine fire at 200 feet | |
| 00.10 | 01.50 | EVAC DUE TO FIRE | |

**COMMENTS:**

- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**CM 1**

| TIME | TOTAL | EVENTS PART 2 |
| --- | --- | --- |
| 00.15 | 02.05 | Break |
| 01.25 | | • WX: refer to simulator setup page 1<br>**T/O: CM 1 SIDESTICK FAULT** (RESTORE)<br>**CM 2 INCAPACITATED**<br>**RNAV APPR.** RWY blocked to force go around.<br>**CLB: CM 2 ACTIVE.**<br>**FMGC 1 + 2 FAIL** *(unsuccessful computer reset).*<br>ILS RAW DATA AND LANDING *(WIND NO GUST).* |
| | 03.30 | **INIT: FL350 EMER DES *(only the start of proc.)***<br>• **RVR: 200M. WIND: 240/10. TOW: 66T.**<br>**T/O: Engine Failure between $v_1$ and $v_2$**<br>**VOR APR TO LANDING**<br>**T/O: REJECTED T/O AND EVAC DUE TO FIRE** |
| 00.30 | 04.00 | **INIT T/O , upset ,bounce recovery training**<br>**RHS training.** |

**COMMENTS:**

- ➢
- ➢
- ➢
- ➢
- ➢
- ➢

## RECURRENT A320 (LOFT) TRAINING MONITOR (B)

| NAME: | | DATE: | |
|---|---|---|---|

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

| EVENT | COMMENTS |
|---|---|
| START VALVE FAULT | |
| WINDSHEAR | |
| TCAS | |
| FLAPS LOCK | |
| LOSS OF FCU1+2 | |
| ILS RAW DATA | |
| SIDESTICK FAULT | |
| CREW INCAPACITATION | |
| FMGC 1+2 FAULT | |
| RNAV APP | |
| EFTO | |
| Upset, bounce recovery , RHS for captains or IP | |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

- 
- 
- 
- 
- 
- 
- 
- 
- 
- 

| | | | |
|---|---|---|---|
| **TRAINEE NAME:** | | **SIGNATURE** | |
| **TRI/TRE NAME:** | | **SIGNATURE** | |

| | |
|---|---|
| **TRAINING MANAGER SIGN** | |

**INSTRUCTORS ONLY**

**INSTRUCTORS ONLY**

**RECURRENT PC A320 CHECKING (B)**

**BREIFING ROOM**

| INTRO | LANDING PERF EXERCISE | MEMORY ITEMS | LILMITATIONS | BREAK |
|---|---|---|---|---|
| **10 MINS** | **15 MINS** | **35 MINS** | **15 MINS** | **15 MINS** |

**SIMULATOR SETUP**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **CAI 23C** | **LXR** | **3000FT/10KM** | **240/10** | **30/09** | **1003** | **NO SIG** |
| RWY CONDITION | | **DRY** | | MEL | **NIL** | |
| ZFW | | ZFWCG | | | FOB | |
| **58 T** | | **33** | | | **6 T** | |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**CM 1**

| TIME | TOTAL | EVENTS PART 1 |
|---|---|---|
| 00.20 | 00.20 | Transit cockpit preparation. |
| 0.45 | 00.55 | **T/O: WINDSHEAR** on rotation.<br>**STEEP TURNS** IN IMC *(2500feet)*<br>Re-position to downwind.<br>**STALL RECOVERY (Turning base, levers idle ...Etc.).**<br>**GPWS** IN IMC<br>**Climb 10000 TCAS.**<br>**DUAL FCU FAULT.**<br>ILS APPR raw data and landing |
| 01.05 | 02.00 | • RVR: 200m. WIND: 240/10. TOW: 66T.<br>***CATII TRAINING**<br>**1-AC BUS1 FAIL below 1000f crew should initiate a go around and change control**<br>**2-repostion to short final NO FLARE.**<br>**3-REPOSITION TO LONG FINAL, SET ENGINE FAIL (FINISH PROCEDURE) AUTOLAND successful**<br><br>***INIT T/O**: **Engine failure between $v_1$ and $v_2$**<br>Radar vectors for ILS APPR<br>*Set ceiling below MDA to force **Go around** in IMC.*<br>• VIS: 4KM OVC: 2000FT<br>RNAV APPR and landing. |

***NOTE:*** for *captains or IP if only OPC session (day 2 only) instructor to manage time for RHS training*

**COMMENTS:**

- ➢
- ➢
- ➢
- ➢
- ➢

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**CM 2**

| TIME | TOTAL | EVENTS PART 2 |
|---|---|---|
| 00.15 | 02.15 | Break |
| 01.00 | 03.15 | • WX: refer to simulator setup page 1<br>***T/O: WINDSHEAR** on rotation.<br>**STEEP TURNS** IN IMC *(2500feet)*<br>Radar vectors to downwind or re-position.<br>**STALL RECOVERY (Turning base, levers idle ...Etc).**<br>**GPWS** IN IMC<br>**FL 350: TCAS**<br>**EMER DES.to 10000**<br>**HYD GREEN reservoir overheat (yaw damper 1 lost )**<br>**Insert yaw damper 2 fault**<br>**Alternate law**<br>ILS APPR and landing. |
| 00.35 | 03.50 | • RVR: 200m. WIND: 240/10. TOW: 66T.<br>**T/O: Engine failure between $v_1$ and $v_2$**<br>Radar vectors for VOR APPR<br>*Set ceiling below MDA* to force **Go around** in IMC.<br>• VIS: 20KM OVC: 2000FT<br>Visual APPR and landing. |
| 00.10 | 04.00 | T/O: **REJECTED T/O AND EVAC DUE TO FIRE.(should be done by captain )** |

**COMMENTS:**

- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢

INSTRUCTORS ONLY

INSTRUCTORS ONLY

## RECURRENT PC A320 CHECKING MONITOR (B)

| NAME: | | DATE: | |
|---|---|---|---|

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

| EVENT | COMMENTS |
|---|---|
| WINDSHEAR | |
| STEEP TURNS/STALL | |
| GPWS | |
| EMER DES | |
| TCAS | |
| DUAL FCU | |
| G HYD OVERHEAT,YAW DAMP 2LOST | |
| EFTO | |
| REJECTED T/O | |
| CAT II | |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**COMMENTS:**

- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢

| | | | |
|---|---|---|---|
| **TRAINEE NAME:** | | **SIGNATURE** | |
| **TRI/TRE NAME:** | | **SIGNATURE** | |

| | | | |
|---|---|---|---|
| **TRAINING MANAGER SIGN.** | | **YES** | **NO** |
| **OPS DIRECTOR INFORMED?** | | | |
| **OPS DIRECTOR SIGN.** | | | |

**INSTRUCTORS ONLY**

**INSTRUCTORS ONLY**

## SIMULATOR STUDY GUIDE (B)

Dear pilots, to take full advantage of the simulator training please consider reviewing the following items:

4. Memory items.
5. Limitations.
6. SOP.

For the coming recurrent & proficiency you should study the following:

- ENGINE START PROBLEMS.
- FCU 1+2 FAULT.
- SLATS FLAPS LOCK.
- REJECTED T/O.
- DUAL FMGC FAIL
- SIDESTICK FAULT.
- RNAV APPR
- HYD OVERHEAT
- YAW DAMPER FAULT
- ALTERNATE LAW,DIRECT LAW

---

❖ *Your study should not be limited to only these subjects; this guide outlines only the minimum to run the simulator session smoothly without interruptions.*

**RECURRENT A320 (LOFT) TRAINING (C)**

**BREIFING ROOM**

| INTRO+LOFT CONCEPT | LGCIU DUAL FAULT: USE OF MEL , OPERATIONAL PROCEDURE | FUEL PENALTY ,IFP-PER W/FAILURE EXAMPLE | UNRELIABLE SPEED INDICATION , ADR CHECK | BREAK |
|---|---|---|---|---|
| **10 MINS** | **25 min** | **25 MINS** | **15 MINS** | **15 MINS** |

**SIMULATOR SETUP**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **CAI** | **JED** | **RVR 200** | **340/15** | **18/16** | **1009** | **FOG** |
| RWY CONDITION | | **DRY** | | MEL | **LGCIU2** | |
| ZFW | | ZFWCG | | FOB | | |
| **58** | | **33** | | **6T** | | |
| **HRG WX : WIND 320/15, visibility 3000m ,TEMP 16, QNH 1006 ( TAKEOFF ALTERNATE ) Runway 34 in use** | | | | | | |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**CM 2**

| TIME | TOTAL | EVENTS PART 1 | |
|---|---|---|---|
| 00.10 | 00.10 | Transit cockpit preparation. And MEL review | |
| 00.05 | 00.15 | Normal start and the ground crew disconnect without asking for parking brakes to be set.<br>Low visibility taxi to runway 05C | **LOFT START** |
| 00.55 | 01.10 | **T/O: at V1 set LGCIU1 FAULT , after liftoff the landing gear will not retract**<br>**Crew should refer to fuel penalty factor table , special procedure (flight with L/G down )**<br>**Takeoff ALT HRG, runway blocked by disabled traffic for 20 minutes**<br>**Crew should recalculated the fuel and decide to enter the hold or proceed to alternate HRG , insert TCAS if TA not selected**<br>***ILS approach HRD 34 full stop landing*** | **LOFT END** |
| 00.30 | 01.40 | Takeoff (CAI 05C, RVR: 200M. WIND: 340/10. TOW: 66T.)<br>**T/O: Engine failure between $v_1$ and $v_2$**<br>Radar vectors for LOC ONLY APPR.<br>Set ceiling below DA to force **go around** in IMC.<br>• VIS: 20km. OVC: 2500FT.<br>**Visual APPR** and landing. After touch down set engine fire for evacuation | |
| 00.10 | 01.50 | **EVAC DUE TO FIRE** | |

**COMMENTS:**

➢

➢

➢

➢

➢

➢

➢

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**CM 1**

| TIME | TOTAL | EVENTS PART 2 | CM1 |
| --- | --- | --- | --- |
| 00.15 | 02.05 | Break | |
| 01.15 | 3:20 | • **[CAI –JED]WX: refer to simulator setup page 1and add some thunderstorm on departure from CAI**<br>• **T/O: climb to FL370 with severe icing condition , set ALFA CHANEL ADR FAULT {1&2}**<br>• **Crew should try to control the descend , unsuccessful , crew should apply the OEB48 by setting two ADRs off , when stabilized , restore the fault then :**<br>▪ **SET ADR 2+3 FAULT**<br>▪ **finish the procedure**<br>▪ **ILS approach and landing runway 05L**<br>• **INIT T/O , ENG FAIL BETWEEN V1, V2**<br>• **RNAV APPR TO LAND**<br>• **INIT T/O set engine fire for evacuation** | |
| 00.35 | 03.55 | • **INIT T/O , upset ,bounce recovery training**<br>• **RHS training. (TOUCH & GO'S (include EO)).** | |

**COMMENTS:**

➢

➢

➢

➢

➢

➢

➢

**INSTRUCTORS ONLY**

**INSTRUCTORS ONLY**

## RECURRENT A320 (LOFT) TRAINING MONITOR (C)

| NAME: | | DATE: | |
|---|---|---|---|

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

| EVENT | COMMENTS |
|---|---|
| T/O PERF. | |
| Flight with l/g down, fuel penalty factors | |
| WINDSHEAR | |
| OEB 48, pitch down | |
| ADR 1+3 | |
| ILS APPR/ GA | |
| LOC APPR | |
| Landing performance calculations | |
| VOR APPR | |
| Alt/direct law | |
| VISUAL APPR | |
| REJECTED T/O | |
| Decision making | |
| Upset, bounce recovery , RHS for captains or IP | |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢

| | | | |
| --- | --- | --- | --- |
| **TRAINEE NAME:** | | **SIGNATURE** | |
| **TRI/TRE NAME:** | | **SIGNATURE** | |

| | |
| --- | --- |
| **TRAINING MANAGER SIGN** | |

**RECURRENT PC A320 CHECKING (C)**

**BREIFING ROOM**

| INTRO | MEMORY ITEMS | FLIGHT CONTROLS (ALTERNATE, DIRECT LAW) | BREAK |
|---|---|---|---|
| **10 MINS** | **15 min** | **35 MINS** | **15 MINS** |

**SIMULATOR SETUP**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **CAI** | **JED** | **4000m** | **340/15** | **28 /16** | **1016** | **-** |
| RWY CONDITION | | **DRY** | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **58** | **29** | **7T** |

**CM 1**

| TIME | TOTAL | EVENTS PART 1 |
|---|---|---|
| 00.20 | 00.20 | Transit cockpit preparation. |
| 01.05 | 01.25 | T/O: **WINDSHEAR** on rotation. Circuit at 2000f to land<br>**STALL RECOVERY** on base leg<br>CLB, insert **GPWS**<br>**10000f**<br>**STEEP TURNS**<br>**ELAC 1 +2 FAULT**<br>*ILS APPR and landing.*<br>**CATII TRAINING**<br>**INIT takeoff and reposition to final**<br>**1-AC BUS1 FAIL below 1000f crew should initiate a go around and change control**<br>**2-repostion to short final NO FLARE.**<br>**3-REPOSITION TO LONG FINAL, SET ENGINE FAIL (FINISH PROCEDURE) AUTOLAND successful** |
| 00.35 | 02.00 | RVR 150m, TOW: 72T<br>T/O: **REJECTED T/O AND EVAC DUE TO FIRE.**<br>T/O: **Engine failure between $v_1$ and $v_2$**<br>Radar vectors for VOR APPR<br>*Set ceiling below MDA to force **go around** in IMC.*<br>Weather CAVOK, visual APPR.<br>T/O: **REJECTED T/O AND EVAC DUE TO FIRE.** |

***NOTE:*** *for captains or IP if only OPC session (day 2 only) instructor to manage time for RHS training*

**COMMENTS:**

- 
- 
- 
- 

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**CM 2**

| TIME | TOTAL | EVENTS PART 2 |
|---|---|---|
| 00.15 | 02.15 | Break |
| 01.05 | 03.20 | T/O: **WINDSHEAR** on rotation. Circuit at 2000f to land<br>**STALL RECOVERY** on base leg<br>CLB: **TCAS**<br>CRZ 350:. **ENG 1 FAIL** , drift down , engine relight with bleed 1 fault<br>Set bleed 2 fault , emergency descent<br>**At 10000f, restore bleed**<br>**steep turns ,**<br>**SEC 1,2,3 FAULT**<br>ILS APPR AND LANDING |
| 00.30 | 03.50 | RVR 150m, TOW: 72T<br>**T/O: Engine failure between $v_1$ and $v_2$**<br>Radar vectors for ILS APPR (RAW DATA)<br>*Set ceiling below MDA* to force **a go around** in IMC.<br>Weather CAVOK, visual APPR. |
| 00.10 | 04.00 | INIT T/O ENGINE FIRE BEFOR V1 REJECT |

**COMMENTS:**

- 
- 
- 
- 
- 
- 

## RECURRENT PC A320 CHECKING MONITOR (C)

| NAME: | | DATE: | |
|---|---|---|---|

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

| EVENT | COMMENTS |
|---|---|
| WINDSHEAR | |
| STEEP TURNS/STALL | |
| GPWS | |
| EMER DES | |
| TCAS | |
| ELAC 1+2 FAULT | |
| SEC 1+2+3 FAULT | |
| EFTO | |
| REJECTED T/O | |
| ILS RWA DATA | |
| ALTERNATE LAW , DIRCT LAW | |
| CAT II | |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**COMMENTS:**

- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢

| | | | |
|---|---|---|---|
| **TRAINEE NAME:** | | **SIGNATURE** | |
| **TRI/TRE NAME:** | | **SIGNATURE** | |

| | | | |
|---|---|---|---|
| **TRAINING MANAGER SIGN.** | | **YES** | **NO** |
| **OPS DIRECTOR INFORMED?** | | | |
| **OPS DIRECTOR SIGN.** | | | |

**INSTRUCTORS ONLY**

**INSTRUCTORS ONLY**

## SIMULATOR STUDY GUIDE (C)

Dear pilots, to take full advantage of the simulator training please consider reviewing the following items:

7. Memory items.
8. Limitations.
9. SOP.
10. CRM
11. Decision making
12. Special procedure

For the coming recurrent & proficiency you should study the following:

- Flight with Landing gear down, abnormal condition.
- Flight controls computers
- ELAC FAULT
- SEC FAULT.
- Abnormal V alpha protection
- ADR FAULT
- pressurization

---

❖ *Your study should not be limited to only these subjects; this guide outlines only the minimum to run the simulator session smoothly without interruptions.*

**RECURRENT A320 (LOFT) TRAINING (D)**

**BREIFING ROOM**

| INTRO | DUAL ENG FAILURE | LDG WITH ABNORMAL L/G | Landing distance exercise to save time during the session. | BREAK |
|---|---|---|---|---|
| **10 MINS** | **15 min** | **15 MINS** | **15 MINS** | **15 MINS** |

**SIMULATOR SETUP**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **LXR** | **JED** | **3000m** | **150/15** | **30 /14** | **1003** | **SA** |
| RWY CONDITION | | **DRY** | | MEL | **-** | |
| ZFW | | ZFWCG | | FOB | | |
| **60** | | **33** | | **5T** | | |





INSTRUCTORS ONLY

**CM 2**

| TIME | TOTAL | EVENTS PART 1 |
|---|---|---|
| 00.20 | 00.20 | Transit cockpit preparation. |
| 00.10 | 00.30 | ENG START: Insert a **HUNG START** on ENG 1, *After ECAM completion, restore and perform a MAN start.* |
| 00.05 | 00.35 | Taxi, T/O RWY 20 |
| 01.05 | 01.40 | T/O: **WINDSHEAR** on rotation.<br>CLB: **TCAS TRAFFIC**<br>EXPEDITE CLB DUE TO TRAFFIC.<br>CLB: at FL 280 **BOMB ON BOARD,** notified by ATC<br>When crew masters controlling the cabin ALT/delta P<br>Down to 10000<br>Bomb threat ends: EOD personnel disconnected the bomb.<br>Flight must return for investigation.<br><br>LXR CLOSED DUE TO BAD WEATHER.<br>**RNAV APP** in HRG. *Wind 300/15 3000m.*<br>Below MDA: WIND SHEER, GO AROUND.<br>**ILS APPR** and landing. Set engine fire at 200 feet<br>Evacuate. |
| 00.10 | 01.50 | **EVAC DUE TO FIRE.** |

**COMMENTS:**

- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢

**CM 1**

| TIME | TOTAL | EVENTS PART 2 |
|---|---|---|
| 00.15 | 02.05 | Break |
| 00.55 | 03.00 | INIT LXR RWY 20 , birds in the vicinity of the airport<br>T/C**limb FL 120 direct asrab.**<br>**ALL ENG FLAME OUT** crew expect bird strike.<br>*Crew decision either to immediate return or ditching on the river Nile*<br>***ENG DUAL FAILURE-FUEL REMAINING C/L.***<br>Both engines successfully restarted at 8000 feet<br>RNAV APPR RWY 20, GO AROUND.<br>ILS APPR (RAW DATA) and landing |
| 00.30 | 03.30 | INIT LXR T/O RWY 20<br>Windshear at V1.<br>*Set landing gear main door stays open left*<br>*Crew should return TO LXR*<br>SET right landing gear not locked down<br>**LDG WITH ABNORMAL L/G**<br>ONE MAIN L/G RETRACTED. *Request L/G down early in downwind.*<br><br>T/O: **REJECTED T/O AND EVAC DUE TO FIRE.** |
| 00.25 | 03.55 | **INIT T/O , upset ,bounce recovery training**<br>**RHS training.** |

**COMMENTS:**

- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢

INSTRUCTORS ONLY

INSTRUCTORS ONLY

## RECURRENT A320 (LOFT) TRAINING MONITOR (D)

| NAME: | | DATE: | |
|---|---|---|---|

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

| EVENT | COMMENTS |
|---|---|
| HUNG START | |
| WINDSHEAR | |
| TCAS | |
| ENG 1 REVERSE UNLOCKED | |
| RNAV APPR | |
| GO AROUND | |
| ILS APPR | |
| ALL ENG FLAME OUT | |
| ABNORMAL L/G | |
| REJECTED T/O | |
| Upset, bounce recovery for captains , IP | |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

- 
- 
- 
- 
- 
- 
- 
- 
- 
- 

| TRAINEE NAME: | | SIGNATURE | |
|---|---|---|---|
| TRI/TRE NAME: | | SIGNATURE | |

| TRAINING MANAGER SIGN | |
|---|---|

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**RECURRENT PC A320 CHECKING (D)**

## BREIFING ROOM

| INTRO | MEMORY ITEMS | BREAK |
|---|---|---|
| **10 MINS** | **15 min** | **15 MINS** |

## SIMULATOR SETUP

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **CAI** | **LXR** | **2000m** | **090/15** | **35/20** | **1004** | **SA** |
| RWY CONDITION | | **DRY** | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **58** | **30** | **4T** |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**CM 1**

| TIME | TOTAL | EVENTS PART 1 |
|---|---|---|
| 00.20 | 00.20 | Transit cockpit preparation. |
| 01.10 | 01.30 | T/O: **WINDSHEAR** on rotation.<br>CLB: **EGPWS**<br>CRZ: **ENG 1 FAIL** only the start of the proc, restore.<br>**EMER DES CABIN ALT FALIURE**<br>**. 10000F RESTORE**<br>**STEEP TURNS**<br>**2500 STALL RECOVERY**<br>**(Turning base, levers idle CONFIG3 LDG GEAR DN).**<br>**RA 1+2`**<br>ILS APPR AND LANDING<br>***CATII TRAINING**<br>**1-AC BUS1 FAIL below 1000f crew should initiate a go around and change control**<br>**2-repostion to short final NO FLARE.**<br>**3-REPOSITION TO LONG FINAL, SET ENGINE FAIL (FINISH PROCEDURE) AUTOLAND successful** |
| 00.30 | 02.00 | RVR 150m, TOW: 70T<br>T/O: **ENG STALL , DAMAGE $v_1$ and $v_2$**<br>Radar vectors for VOR APPR.<br>*Set ceiling below MDA to force **go around** in IMC.*<br>Weather improved, visual APPR.<br><br>T/O: **REJECTED T/O AND EVAC DUE TO FIRE.** |

***NOTE:*** *for captains or IP if only OPC session (day 2 only) instructor to manage time for RHS training*

**COMMENTS:**

- ➢
- ➢
- ➢
- ➢
- ➢

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**CM 2**

| TIME | TOTAL | EVENTS PART 2 |
| --- | --- | --- |
| 00.15 | 02.15 | Break |
| 01.05 | 03.30 | T/O: **WINDSHEAR** on rotation.<br>**TCAS & GPWS**<br>**STEEP TURNS AND STALL RECOVERY**<br>**(Turning base, levers idle ...etc.).**<br><br>CRZ: **FL350 EMER DES. Structure failure**<br>**.**<br>**DC ESS BUS FAULT**<br>RNAV APPR CAI AT 800F AGL SET ENGINE FIRE<br>ALLOW THE CREW TO SHUT DOWN THE ENGINE<br>WITH ABNORMAL PROCEDURE |
| 00.25 | 03.55 | RVR 150m, TOW: 70T<br>**T/O: Extinguishable engine fire between $v_1$ and $v_2$**<br>Radar vectors for ILS APPR (RAW DATA)<br>*Set ceiling below MDA* to force **a go around** in IMC.<br>VOR APP. |
| 00.05 | 04.00 | T/O: **REJECTED T/O AND EVAC DUE TO FIRE.** |

**COMMENTS:**

- 
- 
- 
- 
- 
- 

## RECURRENT PC A320 CHECKING MONITOR (D)

| NAME: | | DATE: | |
|---|---|---|---|

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

| EVENT | COMMENTS |
|---|---|
| WINDSHEAR | |
| TCAS | |
| ENG FAIL IN CRZ | |
| EMER DES | |
| GPWS | |
| STEEP TURNS/ STALL | |
| DC ESS BUS FAIL | |
| RNAV APPR | |
| RA 1+2 | |
| ILS RAW DATA | |
| CAT II | |
| VOR APPR | |
| GO AROUND | |
| VISUAL APPR | |
| REJECTED T/O | |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**COMMENTS:**

- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢

| | | | |
|---|---|---|---|
| **TRAINEE NAME:** | | **SIGNATURE** | |
| **TRI/TRE NAME:** | | **SIGNATURE** | |

| **TRAINING MANAGER SIGN.** | | **YES** | **NO** |
|---|---|---|---|
| **OPS DIRECTOR INFORMED?** | | | |
| **OPS DIRECTOR SIGN.** | | | |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

## SIMULATOR STUDY GUIDE (D)

Dear pilots, to take full advantage of the simulator training please consider reviewing the following items:

13. Memory items.
14. Limitations.
15. SOP.

For the coming recurrent & proficiency you should study the following:

- Engine problems including (all Eng flame out)
- BOMB ON BOARD
- L/G ABNORMAL LANGING.
- RA 1+2 FAULT.
- DC ESS BUS FAULT.

---

❖ *Your study should not be limited to only these subjects; this guide outlines only the minimum to run the simulator session smoothly without interruptions.*

**RECURRENT A320 (LOFT) TRAINING (E)**

**BREIFING ROOM**

| INTRO | ENG TAILPIPE FIRE | AC BUS FAULTS | ECAM HANDLING&APPR CLIM GRADIENT | BREAK |
|---|---|---|---|---|
| **10 MINS** | **10 min** | **15 MINS** | **35 MINS** | **15 MINS** |

**SIMULATOR SETUP**

<table>
<tr><td>FROM</td><td>TO</td><td>CEILING/VIS</td><td>WIND</td><td>TEMP</td><td>QNH</td><td>WX</td></tr>
<tr><td>LSZH</td><td>HESH</td><td>1500m RVR 800</td><td>120/10</td><td>15/14</td><td>1018</td><td>-</td></tr>
<tr><td colspan="2">RWY CONDITION</td><td colspan="2">DRY</td><td>MEL</td><td colspan="2">-</td></tr>
<tr><td colspan="2">ZFW</td><td colspan="3">ZFWCG</td><td colspan="2">FOB</td></tr>
<tr><td colspan="2">52</td><td colspan="3">33</td><td colspan="2">14T</td></tr>
<tr><td colspan="7">FLAPS 2 TAKEOFF</td></tr>
</table>

**CM 2**

| TIME | TOTAL | EVENTS PART 1 |
|---|---|---|
| 00.20 | **00.20** | **MEL FWC 2.** Transit cockpit preparation. |
| 00.15 | **00.35** | ENG START: after ENG 2 start.. **ENG 1 TAILPIPE FIRE;** reported by ground personnel. Restore. |
| 00.05 | **00.40** | Taxi, T/O RWY 16 DEGES 2R |
| 01.05 | **01.45** | **Windshear after V1**<br>CLB: **FWC 1 + 2 FAULT.**<br>Insert **PACK 1 OVERHEAT AFTER SET PACK 1 OFF , SET PACK 2 OVER HEAT**<br>**Rapid descend consider high terrain**<br>Restore **FWC 1 (***computer reset).*<br><br>ILS APPR RWY 16<br>While in short final: visual contact with RWY lost – GA-CONSIDER MISSED APPR CLIMB GRADIENT<br>REDAR VICTORING FOR ANOTHER TRIAL , LANDING<br>**LOFT COMPLETED.**<br>**SET visibility 3600M**<br>**T/O: ENGINE FAILURE with damage BETWEEN $v_1$ and $v_2$**<br>VOR APPR RWY 16 set engine fire at 200 feet ,landing , evacuate |
| 00.10 | **01.55** | **EVAC DUE TO FIRE.** |

**COMMENTS:**

- 
- 
- 
- 
- 
- 
- 


INSTRUCTORS ONLY

**CM 1**

| TIME | TOTAL | EVENTS PART 2 |
| --- | --- | --- |
| 00.15 | **02.10** | Break |
| 00.50 | **03.00** | INIT RWY 16<br>T/O: **WINDSHEAR** on rotation<br>CLB: **BLEED LEAK** *during clean up.*<br>Restore.<br>CLM : ELEC IDG 1 OVERHEAT ,after disconnect , SET **AC BUS 1 FAULT**<br>**LGD distance procedure RWY WET BRAKING ACTION medium**<br><br>ILS APPR – |
| 00.30 | **03.30** | SETUP: RVR 800<br>T/O: **ENGINE FAILURE between** $v_1$ **and** $v_2$<br>ILS APPR : *GS FAIL to force GA*<br>LOC ONLY APPR AND LANDING<br><br>T/O: **REJECTED T/O AND EVAC DUE TO FIRE** |
| 00.25 | **03.55** | **INIT T/O , upset ,bounce recovery training**<br>**RHS training.** |

**COMMENTS:**

- 
- 
- 
- 
- 
- 
- 
- 

INSTRUCTORS ONLY

INSTRUCTORS ONLY

## RECURRENT A320 (LOFT) TRAINING MONITOR (E)

| NAME: | | DATE: | |
|---|---|---|---|

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

| EVENT | COMMENTS |
|---|---|
| ENG TAILPIPE FIRE | |
| WINDSHEAR | |
| FWC 1+2 | |
| GA | |
| EFTO | |
| ILS EO | |
| BLEED LEAK | |
| AC BUS 1 FAULT | |
| EFTO | |
| LOC APPR | |
| ILS GS FAIL GA | |
| REJECTED T/O | |
| LDG DISTANCE PROCEDURE | |
| Upset, bounce recovery for captains, IP | |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢
- ➢

| | | | |
|---|---|---|---|
| **TRAINEE NAME:** | | **SIGNATURE** | |
| **TRI/TRE NAME:** | | **SIGNATURE** | |

| | |
|---|---|
| **TRAINING MANAGER SIGN** | |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**RECURRENT PC A320 CHECKING (E)**

**BREIFING ROOM**

| INTRO | MEMORY ITEMS | HIGH ELEVATION PERFORMANCE , FLT CONTROL LAWS | BREAK |
|---|---|---|---|
| **10 MINS** | **25 min** | **40 MINS** | **15 MINS** |

**SIMULATOR SETUP**

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **OEAB** | **HECA** | **2400M** | **180/15** | **18/12** | **1010** | **-** |
| RWY CONDITION | | **DRY** | | MEL | **-** | |
| ZFW | | ZFWCG | | FOB | | |
| **53** | | **30** | | **9.5T** | | |

**INSTRUCTORS ONLY**

**INSTRUCTORS ONLY**

**CM 1**

| TIME | TOTAL | EVENTS PART 1 |
|---|---|---|
| 00.20 | 00.20 | Transit cockpit preparation. |
| 01.10 | 01.30 | T/O: **WINDSHEAR** on rotation.<br><br>CLB: **TCAS**<br>**GPWS**<br>CLB: UPPER ECAM FAIL, **ECAM SINGLE DISPLAY**. *Restore.*<br><br>**STEEP TURNS & STALL RECOVERY (Turning right base, levers idle ...etc.).**<br><br>**Climb 12000ft**<br>**IR 1+2 FAULT**<br>ALTN/DIRECT LAW, ILS APPR RAW DATA AND LANDING<br><br>**REPOSITION A\C TO HECA FOR :**<br>**CATII TRAINING**<br>**INIT takeoff and reposition to final**<br>**1-AC BUS1 FAIL below 1000f crew should initiate a go around and change control**<br>**2-repostion to short final NO FLARE.**<br>**3-REPOSITION TO LONG FINAL, SET ENGINE FAIL (FINISH PROCEDURE) AUTOLAND successful** |
| 00.30 | 02.00 | REPOSITION A\C TO OEAB<br>LVO<br>T/O: **Extinguishable Engine fire between $v_1$ and $v_2$**<br>Radar vectors for VOR APPR<br>*When AP OFF force **go around.***<br>Weather CAVOK, visual APPR. NO AP<br>**(consider approach climb gradient single engine)**<br>T/O: **REJECTED T/O AND EVAC DUE TO FIRE.** |

***NOTE:*** *for captains or IP if only OPC session (day 2 only) instructor to manage time for RHS training*

**COMMENTS:**

- 

INSTRUCTORS ONLY

INSTRUCTORS ONLY

- 
- 
- 

**CM 2**

| TIME | TOTAL | EVENTS PART 2 |
|---|---|---|
| 00.15 | 02.10 | Break |
| 01.00 | 03.15 | T/O: **WINDSHEAR** on rotation.<br>**GPWS**<br>**TCAS**<br>**STEEP TURNS & STALL RECOVERY (Turning right base, levers idle ...etc.).**<br><br>CLB: **DMC 2 FAULT.** restore<br>CLB FL350: **CAB PR SYS 1+2 FAULT** *use man control.*<br>**EMER DES.**<br>**10000FT**<br>**DUAL HYD G+B**<br>ALTN/DIRECT LAW, ILS APPR AND LAND. |
| 00.30 | 03.45 | LVO<br>**T/O: Extinguishable engine fire between $v_1$ and $v_2$**<br>Radar vectors for ILS APPR (RAW DATA)<br>*Set ceiling below MDA* to force **a go around** in IMC.<br>Weather CAVOK, visual APPR NO AP<br>(**consider approach climb gradient single engine**) |
| 00.10 | 03.55 | T/O: **REJECTED T/O AND EVAC DUE TO FIRE.** |

**COMMENTS:**

- 
- 
- 
- 
- 
- 




INSTRUCTORS ONLY

## RECURRENT PC A320 CHECKING MONITOR (E)

| NAME: | | DATE: | |
|---|---|---|---|

**COMMENTS ON CRM AND GENERAL PERFORMANCE:**

| EVENT | COMMENTS |
|---|---|
| WINDSHEAR | |
| TCAS | |
| ENG FAIL | |
| EMER DES | |
| GPWS | |
| STEEP TURNS/ STALL | |
| IR 1+2 | |
| ILS RAW DATA | |
| CAT II | |
| VOR APPR | |
| GO AROUND | |
| VISUAL APPR | |
| REJECTED T/O | |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**COMMENTS:**

- 
- 
- 
- 
- 
- 
- 
- 
- 
- 

| | | | |
|---|---|---|---|
| **TRAINEE NAME:** | | **SIGNATURE** | |
| **TRI/TRE NAME:** | | **SIGNATURE** | |

| | | | |
|---|---|---|---|
| **TRAINING MANAGER SIGN.** | | **YES** | **NO** |
| **OPS DIRECTOR INFORMED?** | | | |
| **OPS DIRECTOR SIGN.** | | | |

**INSTRUCTORS ONLY**

**INSTRUCTORS ONLY**

## SIMULATOR STUDY GUIDE (E)

Dear pilots, to take full advantage of the simulator training please consider reviewing the following items:

1. Memory items.
2. Limitations.
3. SOP.

For the coming recurrent & proficiency you should study the following:

***Recurrent items***

- Engine tail pipe fire.
- Flight warning computer(FWC) fault
- Approach climbs gradient calculations.
- AC bus fault.

***Proficiency items***

- *Dual hydraulic failure*
- *AC bus fault*
- *Dual IR fault*
- *Emergency descent*

---

❖ *Your study should not be limited to only these subjects; this guide outlines only the minimum to run the simulator session smoothly without interruptions.*

**Recurrent PC A320 CHECKING (F)**

## SYLLABUS PRESENTATION

The syllabus is designed and prepared in accordance with Nesma Airlines Operations Manual Part D (Training) and ECAR. It is updated according to the current documentation at the time of publishing.

## Recurrent Training (day 1)

Session includes:

- One LOFT, covering Hot weather operation, Landing lights, Wind shear avoidance and NAV system failure
- Exercises including LVO, OEI operation, RTO, Emergency Evacuation
- UPRT refresher practice
- Unreliable speed indication at high altitudes.
- Right seat practice for Captains.

## License Proficiency Check – LPC (day 2)

Session includes:

- One LOFT, covering LVO and Fuel system failure.
- OEI operation, RTO, Emergency Evacuation.
- Right seat re-validation for captains.

## RT – SESSION PREPARATION

### 01 – SESSION OBJECTIVE

- Comply with ECAA requirements for recurrent Training Module 1 LPC.
- Comply with IOSA requirements for flight crew training and checking.
- Maintain LVO CAT II & RHS qualifications.

### 02 – REVIEW TOPICS

**Systems and Operations:**

- ATA 28: Fuel system
- ATA 33: Lights
- ATA 34: Navigation system
- Hot weather operations
- Engine failure on Take-off
- Single engine approach, Landing and go around
- LVO & CAT II requirements
- Precision & Non-precision approaches
- Rejected Take-off: FCTM-PR-AEP-MISC
- Emergency Evacuation: QRH C2
- Wind shear and associated memory items
- Unreliable speed indication

### 03 – CRM SKILLS & BEHAVIOURS

- NOTECHS: CRM Skills and Behavior
- FORDEC: Decision making

**04 – SESSION PROFICIENCY CRITERIA**

- **(C) CRM:** Crew coordination and cooperation. Decision-making. Situational awareness. Leadership and management skills all satisfactory during all phases of flight.
- **(A) Automation-Flight path management:** Controls the aircraft flight path through automation flight, including appropriate use of FMGS.
- **(M) Manual-Flight path management: Controls** the aircraft flight path through manual flight, including appropriate use of FMGS.
- **(P) Procedures:** Correctly identifies and applies procedures in accordance with SOP's and ECAA regulations.
- **(K) Knowledge** and understanding of operating instructions, procedures, aircraft systems, company policies and general aeronautical information.
- Good ECAM / Procedures handling & Failure Management.
- Strict compliance with stabilization criteria in approach.

**PREPARATION**

- Report time 1:30 hr. prior Simulator session
- 1:15hr Classroom Briefing
- 15min Flight preparation and Break
- Simulator session

Additional discussion during the classroom briefing on the following:

1. Safety department issues
2. PF/PM Duties transfer
3. PM tasks with emphasis on callouts and monitoring during engine failure abnormal procedure.

**RT – SIMULATOR SESSION**

| Airports | Weather | Aircraft | Miscellaneous |
|---|---|---|---|
| **DEP:** HECA 05C | **HECA:** 30015 8km HZ OVC010 35/20 QNH1020 NOSIG | **ZFW:** 60.5 t<br>**Fuel:** 4.8 t<br>**ZFCG:** 30.0 %<br>**TOCG:** 29.1 % | **NMA170**<br>**F-PLN:** See OFP<br>**MEL1:** FUEL L TK PUMP 1 LO PR 28-21-01A<br>**MEL2:** GPS 1<br>**DAY** |
| **DEST:** OEJN 34C | **OEJN:** 32010 CAVOK 35/15 Q1000 NOSIG | | |
| **ALTN:** OETF 25 | **OETF:** 33008 CAVOK 34/13 Q1000 NOSIG | | |

| Time | PART 1 LOFT (FO/SO PF) |
|---|---|
| | **INIT HECA – At the Gate (Gate 2)** |
| 00:15 | 1.1- TRANSIT COCKPIT PREPARATION. |
| 00:25 | 1.2- Push back/Engine start/ After start checklist/ Taxi out/ Before Take-off Checklist |
| 00:30 | 1.3- Take off Runway 05C, “Wind shear ahead” |
| 00:55 | 1.4- GPS 1+2 FAULT MAP SHIFT & (FAST) |
| 01:10 | 1.5- Full VOR DME 05R Raw-data approach via CVO VOR / Landing RWY 05R |

| Time | PART 2 OEI (Captain PF then repeat for FO/SO) |
|---|---|
| | **INIT HECA – Line up position Runway 05C** |
| 01:20 | 2.1-Take off Runway 05C /Engine Failure at V1 |
| | 2.2- Radar vectors OEI ILS Approach Runway 05C, Go-around |
| | 2.3- Radar vectors OEI RNAV (RNP) 05C(AR) |
| | 2.4- Landing Runway 05C |
| 02:10 | |

## 10 minutes Break

| Time | PART 3 LVO (Captain PF) |
|---|---|
| | **INIT HECA – Line up position Runway 05C** |
| 02:25 | 3.1- LVTO Runway 05C |
| 02:35 | 3.2- Down-wind |
| | 3.3- ILS CAT II NO FLAR, Go-around |
| 02:45 | 3.4- Radar vectors 05C |
| 02:50 | 3.5- LVO ILS CAT II Auto land Runway 05C |
| 02:55 | 3.6- LVTO Runway 05C – ENGINE FIRE AND EVACUATION |

| Time | PART 4 UPRT | |
|---|---|---|
| | INIT HECA 05C DOWNWIND – 5000 ft | CAVOK, DAY, CLEAN configuration, GREEN DOT speed |
| | **ZFW=55.0 Ton, Fuel 5.0 Ton, Freeze Fuel quantity** | |
| | **4.1- Review of F/CTL PROT (BOTH PILOTS)** | |
| | **HIGH AOA Protection**<br>**NORMAL LAW**<br>AP/FD………………..OFF<br>• Stabilize at 5000 ft and Green dot<br>• Set THR LVR to IDLE and allow speed to decay towards VαPROT<br>• As speed drops below VαPROT, release the stick<br>• Recover to Green dot speed with A/THR ON | Review of HIGH AOA protection and LOW SPEED stability<br>• Observe the pitch reducing to maintain VαPROT |
| | **LOW SPEED Stability**<br>**ALT LAW**<br>AP/FD………………..OFF<br>• Stabilize at 5000 ft and Green dot<br>• Set THR LVR to IDLE and allow speed to decay towards VSW | • As speed drops below VLS, observe the gentle progressive nose down signal (can be overridden by the pilot) |

| | | |
|---|---|---|
| | • Recover to Green dot speed with A/THR ON | |
| | **4.2- RUDDER (BOTH PILOTS)** | |
| | **NORMAL LAW**<br>• Using rudder, roll to 15° of bank, neutralize rudder and observe the aircraft behavior<br><br>**ALTN LAW**<br>• Using rudder, roll to 15° of bank, neutralize rudder and observe the aircraft behavior | CAUTION! : This is not to develop skills in maneuvering with rudder. Rather it is intended to highlight airplane reaction to rudder input and the risk of over control or ultimate rudder input<br>(Deflect the rudder when not needed).<br><br>• Observe the aircraft behavior. Experience magnitude of yaw and roll resulting from small rudder inputs. Compare between NORM and ALTN laws. |
| | **4.3- PITCH USING TRIM AND THRUST (BOTH PILOTS)** | |
| | **DIRECT LAW**<br>• Adjust the stabilizer trim to maintain Green dot speed. Accelerate to 250kts and trim.<br>• From a stabilized thrust setting (IAS=250kts), rapidly add full power and at a stabilized power setting, reduce thrust rapidly to idle | • Experience the rate of pitch change.<br><br>• Experience the pitch change |
| | **4.4- PITCH/THRUST IN DIFFERENT CONFIGURATIONS (ONE PILOT), AP ON** | |
| | **NORMAL LAW**<br>• Stabilize the clean aircraft's speed at Green dot. Observe resultant Pitch and Thrust | • Note thrust available vs thrust required. Correlate with the unreliable speed |

| | | |
| --- | --- | --- |
| | values (Low altitude). Repeat for CONF 1+F/S speed, CONF 2/F speed and CONF 3/F speed<br><br>**Approximate values:**<br>Clean and CONF 1+f : 5° pitch / 55% N1 = 175kts<br>CONF 2 : 6° pitch / 60% N1 = 160kts<br>CONF 3 : 7° pitch / 70% N1/Gear down = 140kts | indication tables in QRH ABN 26.02. The values given here can be used as <u>rough</u> figures. |
| | **INIT HECA – 10000 ft**<br>**ZFW=55.0 Ton, Fuel 5.0 Ton, Freeze Fuel quantity.** | **CAVOK, DAY, CLEAN configuration, IAS=225kts** |
| | **4.5- PITCH/THRUST (ONE PILOT), AP ON** | |
| | • Stabilize the speed at 225kts Mid altitude : 4° pitch / 64% N1 | • Observe resultant Pitch and Thrust values. Correlate with the Unreliable speed indication tables in QRH ABN 26.02 |
| | **4.6- ENERGY STATE (ONE PILOT), AP ON** | |
| | **NORMAL LAW**<br>AP/FD………………..ON<br>A/THR………………..ON<br>• Stabilize the speed at 250kts and note the thrust required vs thrust available. Then increase the speed to 300kts and start Chrono. Note down the elapsed time. | • Assess the acceleration capability of the aircraft |
| | **INIT HECA – FL350**<br>**ZFW=55.0 Ton, Fuel 5.0 Ton, Freeze Fuel quantity.** | **CAVOK, DAY, CLEAN configuration, IAS=245kts** |
| | **4.7- PITCH/THRUST (ONE PILOT), AP ON** | |
| | **NORMAL LAW** | |

| | | |
|---|---|---|
| | AP/FD……………….ON<br>A/THR……………….ON<br>• Stabilize the speed at 245kts IAS High altitude : 3° pitch / 80% N1 | • Observe resultant pitch and thrust values. Correlate with the unreliable speed indication tables in QRH ABN 26.02 |
| | **4.8- ENERGY STATE (ONE PILOT), AP ON** | |
| | **NORMAL LAW**<br>AP/FD……………….ON<br>A/THR……………….ON<br>• Note thrust available vs thrust required<br>• Increase to M 0.80 and start Chrono. Note down the elapsed time<br>• Extend the SPD BRK<br>• Establish the aircraft in climb | **Review of HIGH AOA protection and LOW SPEED stability.**<br>• Compare with the value at mid altitudes<br>• Compare the difference in acceleration with mid altitude<br>• Observe VLS increase<br>• Observe increase in VαPROT & VLS |
| | **INIT HECA – FL250**<br>**ZFW=55.0 Ton, Fuel 5.0 Ton, Freeze Fuel quantity.** | **CAVOK, DAY, CLEAN configuration, GREEN DOT speed** |
| | **4.9- SLOW FLIGHT (BOTH PILOTS)** | |
| | **NORMAL LAW**<br>AP/FD……………….OFF<br>BIRD…………………..ON<br>• Set the THR LVR to idle and allow the aircraft to decelerate all the way down to VαMAX, Deactivate A.FLOOR<br>• As speed approaches VαMAX, increase backpressure on the side stick to maintain a constant deceleration (about 1 kt/sec)<br>• Maintain VαMAX with full back stick. Perform a gentle turn either side with low bank | • Observe the aircraft behavior when crossing VαPROT: Auto trim stops, action on the side stick is required to continue deceleration |

| | | |
|---|---|---|
| | • Go back to wings level and while maintaining VαMAX, apply TOGA and maintain it for a while, then aggressively set levers to IDLE | • The aircraft remains maneuverable even at VαMAX<br>• The aircraft does not stall and pitch is adjusted for the new power setting.<br>This exercise develops confidence in the protection system |
| | **4.10- STEEP TURNS (BOTH PILOTS) IAS=250kts** | |
| **03:25** | **NORMAL LAW**<br>AP/FD………………..OFF<br>BIRD…………………..ON<br>• Perform roll with full aileron to 67° bank (IAS=250kts). Neutralize controls and return to level flight. Maintain approximate level flight and constant airspeed | • Experience roll-rate performance with full aileron inputs.<br>• Experience aircraft behaviour above 33° bank |

| Airports | Weather | Aircraft | Miscellaneous |
|---|---|---|---|
| **DEP :** HECA 05C | **HECA :** 36010 CAVOK 39/15 Q995 NOSIG | **ZFW : 56.0t**<br>**Fuel : 4.5t**<br>**ZFCG : 30.0 %**<br>**TOCG : 29.5 %** | **NMA170**<br>**F-PLN :** See OFP<br>**MEL:** NILL<br>**DAY** |
| **DEST :** OEJN 34C | **OEJN :** 36010kts CAVOK 38/18 Q995 NOSIG | | |
| **ALTN :** OETF 25 | **OETF :** 33008 2000m 38/16 Q995 NOSIG | | |

| Time | PART 5 Unreliable speed indication at high altitude (Captain PF) |
|---|---|
| | INIT HECA – FL350 MN=0.78, AP/FD OFF, A/THR OFF, Bird ON, |
| **03:40** | **5.1- Unreliable speed indication** |

| Time | PART 6 (Training Captain on right seat) |
|---|---|
| | INIT HECA – Line up position Runway 05C |
| | **6.1- Take off Runway 31L / Engine failure at V1** |
| | **6.2- OEI ILS Approach Runway 05C / Go around** |
| | **6.3- OEI Visual Approach Runway 05C** |
| | **6.4- OEI Landing Runway 05C** |
| **04:00** | **6.5- REJECTED TAKE-OFF AND EVACUATION Runway 05C (INSTRUCTORS ONLY)** |

**THIS PAGE INTENTIONALLY LEFT BLANK**

## Contents

(APPENDIX C) UPGRADE TO CAPTAIN A320 .... 2
UPGRADE TO CAPTAIN A320 FFS 1 .... 3
SESSION PREPARATION .... 4
SESSION EVALUATION .... 8
UPGRADE TO CAPTAIN A320 FFS 2 .... 9
SESSION PREPARATION .... 10
SESSION EVALUATION .... 13
UPGRADE TO CAPTAIN A320 FFS 3 .... 14
SESSION PREPARATION .... 15
SESSION EVALUATION .... 18
UPGRADE TO CAPTAIN A320 FFS 4 .... 19
SESSION PREPARATION .... 20
SESSION EVALUATION .... 25
UPGRADE TO CAPTAIN A320 FFS 5 .... 26
SESSION PREPARATION .... 27
SESSION EVALUATION .... 31
UPGRADE TO CAPTAIN A320 FFS 6 .... 32
SESSION PREPARATION .... 33
SESSION EVALUATION .... 37

# (APPENDIX C) UPGRADE TO CAPTAIN A320

**Trainees/Prerequisites:**

- ATPL
- Minimum of 4000 hrs.
- Successfully finished the ground training course required.

**Course Objective:**

The objective of the course is to train type rated co-pilots in performing procedures, managing and handling of the aircraft during normal and non-normal operation from the left seat without any assistance in reasonable time.

**Duration:**

- 28hrs (7 sessions, 4 hrs each, including the evaluation session).
- 2 hrs base training per trainee.

**Training Device:** Full Flight Simulator (FFS)

**Place of Training:** Egypt Air Training Center or any approved training center

**Course Handouts:**

- Flight Crew Operation Manual (FCOM)
- Flight Crew Training Manual (FCTM)
- Quick Reference Handbook (QRH)

## UPGRADE TO CAPTAIN A320 FFS 1

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **320/15** | **13/10** | **1013** | **-** |
| RWY CONDITION | | **DRY.** | | MEL | **-** | |
| ZFW | | ZFWCG | | | FOB | |
| **58.0T** | | **31.2** | | | **7500T** | |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF

## SESSION PREPARATION

**1) SESSION OBJECTIVE**

- Practice non precision approaches in automatic flight and in accordance with SOPs
- Use automation during non-precision approaches

**2) TRAINING TOPICS**

**A. REVIEW**

- CRM : Teamwork and communication
- Non precision approaches
- Circling
- Protections with AP engaged in V/S mode

**B. INTRODUCE**

NIL

**3) SESSION PROFICIENCY CRITERIA**

**The competencies criteria are:**

- **All criteria**

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**4) SESSION GUIDE**

**1)** Insert an altitude constraint **7)7)**

**2)** FMGS exercise : **9)**

- Deselect function

Display selected Navaids page (DATA - POSITION MONITOR - SEL NAVAIDS)

Insert a Navaids in use into DESELECT field. Note the rearrangement of the selected Navaids. Clear the deselected Navaids in order to revert to initial display.

Demonstrate how to deselect GPS entirely.

- Use direct to function (DIR TO)

**3)** This approach can be flown either in managed or in selected guidance. **10)**

**4)** After AP disconnected by pilot for landing, ATC orders a go-around due to runway incursion. **14)**

**5)** Point out that AP maintains VLS (or VMAX) when the speed selected on FCU is below VLS (or above VMAX) **15) 16)**

**6)** Set VISI 8 km - OVC011 **18)**

**7)** After AP disconnected by pilot for landing, ATC orders a go-around due to runway incursion. **26)**

**8)** Set VISI 8 km - OVC011. **30)**

INSTRUCTORS ONLY

# UPGRADE TO CAPTAIN A320 FFS 1

| TIME | UPGRADE TO CAPTAIN A320 FFS 1 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| TRAINEE 1 | | | | | |
| Non Precision Approaches | | | | | |
| | **INIT COCKPET PREP** | | | | |
| | **1)** PRELIMINARY AND COCKPIT PREPARATION | | | | |
| | **2)** BEFORE START | | | | |
| | **3)** ENGINE START | | | | |
| | **4)** AFTER START | | | | |
| | **5)** TAXI | | | | |
| | **6)** BEFORE TAKE-OFF | | | | |
| | **7)** TAKEOFF 05R. 1) | | | | |
| | **8)** CLIMB FL 180 | | | | |
| | **9)** FMGS EXERCISES 2) | | | | |
| | **10)** VOR RWY 05R. 3) | √ | √ | √ | √ |
| | **11)** GO-AROUND | √ | √ | √ | |
| | **12)** HOLD | √ | √ | √ | |
| | **13)** VOR RWY 05L USING FINAL APP | √ | √ | √ | √ |
| | **14)** GO-AROUND - CLIMB FL 60 - RADAR VECTORS 4) | | √ | √ | |
| | **15)** REVIEW OF AP/FD PROTECTION -SPEED VLS 5) | √ | √ | √ | |
| | **16)** REVIEW OF AP/FD PROTECTION - SPEED VMAX 5) | √ | √ | √ | |
| | **17)** RADAR VECTORS | √ | √ | √ | |
| | **18)** VOR RWY 05R USING TRK-FPA-CIRCLING RWY 23R 6) | √ | √ | √ | √ |
| | **19)** LANDING | | | | |

| TIME | UPGRADE TO CAPTAIN A320 FFS 1 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| | **TRAINEE 2** | | | | |
| | **Non Precision Approaches** | | | | |
| | **INIT TAKEOFF** | | | | |
| | **20)** BEFORE TAKEOFF | | | | |
| | **21)** TAKEOFF 23R | | | | |
| | **22)** RADAR VECTORS | √ | √ | √ | |
| | **23)** NPA VOR DME LFBD MANAGED VOR RWY 23R USING FINAL APP | √ | √ | √ | √ |
| | **24)** GO-AROUND | √ | √ | √ | |
| | **25)** VOR RWY 23R USING TRK-FPA | √ | √ | √ | √ |
| | **26)** GO-AROUND - RADAR VECTORS **7)** | √ | √ | √ | |
| | **27)** LOC (G/S OUT) RWY 23R | √ | √ | √ | |
| | **28)** GO-AROUND | √ | √ | √ | |
| | **29)** HOLD | √ | √ | √ | |
| | **30)** VOR RWY 05R USING FINAL APP - CIRCLING RWY 23R **8)** | √ | √ | √ | √ |
| | **31)** LANDING | | | | |
| | **32)** AFTER LANDING | | | | |
| | **33)** PARKING | | | | |

# SESSION EVALUATION

| | | | |
|---|---|---|---|
| **Trainee Information:** | | | |
| **Rank / Name** | | **Staff Number** | |
| **Session Information:** | | | |
| **Aircraft type** | | | |
| **PF/PM** | | **Date( / / )** | |
| **Simulator Owned by** | | **Location** | |
| **Instructor Information:** | | | |
| **Rank / Name** | | **Staff Number** | |
| **General Comments:** | | | |

| | |
|---|---|
| ATIS: | |
| RWY…………………….. | QNH…………………… |
| WIND…………………….. | RWY COND………… |
| VISI……………………… | AIR COND…………… |
| CELING………………… | ANTI ICE…………….. |
| TEMP……………………… | |
| DEW POINT………………. | |

| **Pilot Assessment Markers:** | | | | | |
|---|---|---|---|---|---|
| **5-Very Good, 4-Good, 3-Acceptable, 2-poor, 1-Very Poor** | **5** | **4** | **3** | **2** | **1** |
| (M) Flight Deck Management | | | | | |
| (K) Knowledge of Systems and Procedures | | | | | |
| (P) Procedural Execution and Adherence | | | | | |
| (H) Handling | | | | | |
| (C ) Communication | | | | | |
| (D) Decision Making / Problem Solving | | | | | |
| (S) Situation Awareness | | | | | |
| (L) Leadership / Follower Ship | | | | | |
| Note : Markers that are unseen within the session are to be left blank | | | | | |
| **Progress: [ ]** | **5-Very Good, 4-Good, 3-Acceptable, 2-poor, 1-Very Poor** | | | | |

| | | | |
|---|---|---|---|
| Trainee Signature | | Instructor Signature | |

## UPGRADE TO CAPTAIN A320 FFS 2

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **CAVOK** | **130/15** | **13/10** | **1013** | **-** |
| RWY CONDITION | | **DRY.** | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **58.0T** | **31.2** | **7500T** |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF

## SESSION PREPARATION

### 1) SESSION OBJECTIVE

- Review main systems
- Review main failures and related procedure
- Prepare trainees for the recurring FFS sessions

### 2) TRAINING TOPICS

**C. REVIEW**

- Abnormal engine start
- Sidestick fault
- Pressurization problems with emergency descent
- Abnormal slats / flaps procedure and approach
- Electrical emergency configuration and associated procedure
- Dual RA fault
- Dual hydraulic system malfunction and associated procedure
- Dual ADR or dual IR faults

**D. INTRODUCE**

NIL

### 3) SESSION PROFICIENCY CRITERIA

**The competencies criteria are:**

- **All criteria**

### 4) SESSION GUIDE

- Be realistic and in accordance with the exercise, insert failure during phase of flight giving the most efficient training.
- Restore failure or malfunction either after procedure completion (single failure) or after go around (failure which affects handling such as dual hydraulic failure, flight control problems, etc.).

# UPGRADE TO CAPTAIN A320 FFS 2

| TIME | UPGRADE TO CAPTAIN A320 FFS 2 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| | **TRAINEE 1** | | | | |
| | **Flight Controls - Pneumatic - Pressurization - Electrics Navigation - Hydraulics - Landing gear** | | | | |
| | **INIT COCKPIT PREPARATION** | | | | |
| | **1)** PRELIMINARY COCKPIT PREPARATION | | | | |
| | **2)** BEFORE START | | | | |
| | **3)** ENGINE START (ABNORMAL STARTS)<br>- 1st ENGINE - START VALVE FAILS TO OPEN - (START OPERATION)<br>- 2nd ENGINE - START VALVE FAILS TO CLOSE - RESTORE | | | | |
| | **4)** AFTER START | | | | |
| | **5)** BEFORE TAKEOFF | | | | |
| | **6)** TAXI | | | | |
| | **7)** TAKEOFF SID | | √ | √ | |
| | **8)** CLIMB FL 110 | √ | √ | √ | |
| | **9)** SIDESTICK FAULT - RESTORE | | √ | √ | |
| | **INIT FL 310** | | | | |
| | **10)** CPC 1 then CPC 2 FAULT - PRESS MANUAL OPERATION - RESTORE | √ | √ | √ | |
| | **11)** CRUISE :<br>PACK 2 OVERHEAT then | √ | √ | √ | |
| | **12)** LEFT WING LEAK (EMERGENCY DESCENT) - RESTORE at FL 100 | √ | √ | √ | |
| | **13)** ELEC EMER CONFIG – RESTORE | | | | √ |
| | **14)** RADAR VECTORS | √ | √ | √ | |
| | **15)** RA 1 + 2 FAULT | √ | √ | √ | |
| | **16)** ILS RWY 05R - DIRECT LAW | | | | √ |
| | **17)** GO-AROUND | | | | |
| | **18)** RADAR VECTORS | | | | √ |
| | **19)** ILS RWY 05R | | | | √ |
| | **20)** LANDING | | | | |

| TIME | UPGRADE TO CAPTAIN A320 FFS 2 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| | **TRAINEE 2** | | | | |
| | **Flight Controls - Pneumatic - Pressurization - Electrics Navigation - Hydraulics - Landing gear** | | | | |
| | **21)** TAKEOFF<br>ADR or IR FAILURE | √ | √ | √ | |
| | **22)** RADAR VECTORS | √ | √ | √ | |
| | **23)** 2nd ADR or 2nd IR FAILURE | | | | √ |
| | **24)** ILS RWY 05R - DIRECT LAW | | | | √ |
| | **25)** GO-AROUND - RESTORE | √ | √ | √ | |
| | **26)** CLIMB FL 110 | √ | √ | √ | |
| | **27)** HYD G + B RSVR LO LVL | | √ | √ | |
| | **28)** HOLD then RADAR VECTORS | | √ | √ | |
| | **29)** LANDING GEAR GRAVITY EXTENSION | | √ | √ | |
| | **30)** ILS RWY 05R NO SLATS | | √ | √ | |
| | **31)** LANDING | | | | |
| | **32)** AFTER LANDING | | | | |
| | **33)** TAXI | | | | |
| | **34)** PARKING | | | | |
| | **35)** SECURING AIRCRAFT | | | | |

INSTRUCTORS ONLY

## SESSION EVALUATION

| Trainee Information: | | | |
|---|---|---|---|
| Rank / Name | | Staff Number | |
| **Session Information:** | | | |
| Aircraft type | | | |
| PF/PM | | Date( / / ) | |
| Simulator Owned by | | Location | |
| **Instructor Information:** | | | |
| Rank / Name | | Staff Number | |
| General Comments: | | | |

| | |
|---|---|
| ATIS: | |
| RWY......................... | QNH...................... |
| WIND......................... | RWY COND........... |
| VISI.......................... | AIR COND............... |
| CELING.................... | ANTI ICE................ |
| TEMP........................... | |
| DEW POINT................... | |

| Pilot Assessment Markers: | | | | | |
|---|---|---|---|---|---|
| 5-Very Good, 4-Good, 3-Acceptable, 2-poor, 1-Very Poor | 5 | 4 | 3 | 2 | 1 |
| (M) Flight Deck Management | | | | | |
| (K) Knowledge of Systems and Procedures | | | | | |
| (P) Procedural Execution and Adherence | | | | | |
| (H) Handling | | | | | |
| (C ) Communication | | | | | |
| (D) Decision Making / Problem Solving | | | | | |
| (S) Situation Awareness | | | | | |
| (L) Leadership / Follower Ship | | | | | |
| Note : Markers that are unseen within the session are to be left blank | | | | | |

| | | |
|---|---|---|
| Progress: [ ] | 5-Very Good, 4-Good, 3-Acceptable, 2-poor, 1-Very Poor | |
| Trainee Signature | Instructor Signature | |

INSTRUCTORS ONLY

## UPGRADE TO CAPTAIN A320 FFS 3

| FROM | TO | CEILING/VIS | | WIND | TEMP | QNH | WX |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **HECA** | **OEJN** | **CAVOK** | | **130/15** | **23/10** | **1003** | **-** |
| RWY CONDITION | | **DRY.** | | | MEL | **-** | |
| ZFW | | ZFWCG | | | FOB | | |
| **58.0T** | | **31.2** | | | **7500T** | | |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF

# SESSION PREPARATION

**1) SESSION OBJECTIVE**

Train for the required level of proficiency after a flight activity interruption on A320 family.

**2) TRAINING TOPICS**

**E. REVIEW**

- Full cockpit preparation (cold aircraft).
- Windshear recovery
- Visual circuits
- Crosswind takeoff and landing
- Engine-out on takeoff

**F. INTRODUCE**

- NIL

**3) SESSION PROFICIENCY CRITERIA**

**The competencies criteria are:**

- **All criteria**

**4) SESSION GUIDE**

**1)** Insert failure (flaps jammed - WTB) when flaps less than 2. **14)**
**2)** Low altitude go around: at 50 ft , ATC orders immediate go-around due to runway incursion. **19)**
**3)** If time permits, repeat visual circuits. **35)**
**4)** Taxi may be reduced if time limited. **37)**

INSTRUCTORS ONLY

INSTRUCTORS ONLY

INSTRUCTORS ONLY

INSTRUCTORS ONLY

# UPGRADE TO CAPTAIN A320 FFS 3

| TIME | UPGRADE TO CAPTAIN A320 FFS 3 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 1** | | | | | |
| **Visual Circuits - Engine Failure** | | | | | |
| | **INIT COCKPIT PREPARATION** | | | | |
| | **1)** PRELIMINARY AND COCKPIT PREPARATION | | | | |
| | **2)** ENGINE START | | | | |
| | **3)** AFTER START AND TAXI | | | | |
| | **4)** BEFORE TAKE-OFF | | | | |
| | **5)** TAKE-OFF | | √ | √ | |
| | **6)** RADAR VECTORS | √ | √ | √ | |
| | **7)** ILS RWY 23R | √ | √ | √ | |
| | **8)** WINDSHEAR - GO AROUND - RESTORE | √ | √ | √ | |
| | **9)** VISUAL CIRCUIT | | | √ | √ |
| | **10)** VISUAL APPROACH AND LANDING | | | √ | √ |
| | **INIT TAKE-OFF** | | | | |
| | **11)** TAKE-OFF - ENGINE 1 FAIL BETWEEN V1 AND V2 | | √ | √ | |
| | **12)** VISUAL CIRCUIT | | | √ | √ |
| | **13)** LANDING ONE ENGINE OUT | | | | |
| | **INIT TAKE-OFF** | | | | |
| | **14)** TAKE-OFF - FLAPS JAMMED, DURING RETRACTION **1)** | | √ | √ | |
| | **15)** ILS RWY 05C | | √ | √ | |
| | **16)** LANDING | | √ | √ | |
| | **INIT TAKE-OFF/ REJECTED TAKEOFF/EVACUATION** | | | | |
| | **17)** TAKEOFF – CROSSWIND | | √ | √ | |
| | **18)** VISUAL CIRCUIT | | | √ | √ |
| | **19)** GO-AROUND **2)** | | | √ | √ |
| | **20)** VISUAL CIRCUIT | | | √ | √ |
| | **21)** LANDING – CROSSWIND | | | | |

| TIME | UPGRADE TO CAPTAIN A320 FFS 3 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| | **TRAINEE 2** | | | | |
| | **INIT TAKE-OFF** | | | | |
| | **22)** TAKE-OFF | | √ | √ | |
| | **23)** RADAR VECTORS | √ | √ | √ | |
| | **24)** ILS HECA 05R | √ | √ | √ | |
| | **25)** WINDSHEAR - GO AROUND - RESTORE | √ | √ | √ | |
| | **26)** VISUAL CIRCUIT | | | √ | √ |
| | **27)** LANDING | | | | |
| | **INIT TAKEOFF** | | | | |
| | **28)** TAKE-OFF - ENGINE 2 FIRE AT V2 | | √ | √ | |
| | **29)** ILS HECA 05R | | | √ | √ |
| | **30)** LANDING ONE ENGINE- OUT | | | | |
| | **INIT TAKEOFF/REJECTED TAKEOFF/EVACUATION** | | | | |
| | **31)** TAKEOFF - CROSSWIND | | | √ | √ |
| | **32)** VISUAL CIRCUIT | | | √ | √ |
| | **33)** GO-AROUND | | √ | √ | |
| | **34)** VISUAL CIRCUIT | | | √ | √ |
| | **35)** LANDING- CROSSWIND **3)** | | | | |
| | **36)** AFTER LANDING | | | | |
| | **37)** TAXI **4)** | | | | |
| | **38)** PARKING | | | | |
| | **39)** SECURING AIRCRAFT | | | | |

## SESSION EVALUATION

| | | | |
|---|---|---|---|
| **Trainee Information:** | | | |
| **Rank / Name** | | **Staff Number** | |
| **Session Information:** | | | |
| **Aircraft type** | | | |
| **PF/PM** | | **Date( / / )** | |
| **Simulator Owned by** | | **Location** | |
| **Instructor Information:** | | | |
| **Rank / Name** | | **Staff Number** | |
| **General Comments:** | | | |

ATIS:

| | |
|---|---|
| RWY.......................... | QNH....................... |
| WIND......................... | RWY COND............ |
| VISI........................... | AIR COND............... |
| CELING..................... | ANTI ICE................. |
| TEMP............................ | |
| DEW POINT................... | |

**Pilot Assessment Markers:**

| **5-Very Good, 4-Good, 3-Acceptable, 2-poor, 1-Very Poor** | **5** | **4** | **3** | **2** | **1** |
|---|---|---|---|---|---|
| (M) Flight Deck Management | | | | | |
| (K) Knowledge of Systems and Procedures | | | | | |
| (P) Procedural Execution and Adherence | | | | | |
| (H) Handling | | | | | |
| (C ) Communication | | | | | |
| (D) Decision Making / Problem Solving | | | | | |
| (S) Situation Awareness | | | | | |
| (L) Leadership / Follower Ship | | | | | |

Note : Markers that are unseen within the session are to be left blank

**Progress: [ ]** **5-Very Good, 4-Good, 3-Acceptable, 2-poor, 1-Very Poor**

| | | | |
|---|---|---|---|
| Trainee Signature | | Instructor Signature | |

## UPGRADE TO CAPTAIN A320 FFS 4

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **3600m** | **320/20** | **25/20** | **1003** | **RA** |
| RWY CONDITION | | **WET.** | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **58.0T** | **31.2** | **7500T** |

**NOTES**

- AIR COND OFF
- RWY COND WET
- ANTI ICE ON

## SESSION PREPARATION

**1) SESSION OBJECTIVE**

- Practice high altitude handling
- Review dual hydraulic failure procedure and handling
- Review one engine out operation

**2) TRAINING TOPICS**

**G. REVIEW**

- Flight control reconfiguration laws
- Dual hydraulic failures
- One engine out pattern

**H. INTRODUCE**

- High altitude handling

**3) SESSION PROFICIENCY CRITERIA**

**The competencies criteria are:**

- **All criteria**

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**4) SESSION GUIDE**

**INIT FL350**

When clean configuration, INIT at FL350, M=0.78. Select a weight that results in a recommended maximum altitude (REC MAX) of approximately FL370.Low altitude.

**1)** High altitude handling :( refer to FOT 999.0077/09 for more details) **8)**

- Normal Law: Set AP/FD and A/THR to OFF, ask the pilot to perform some maneuvers, for example a turn with 20° bank angle and a climb to a higher level.
- Observe V alpha max and V alpha protection indications. Demonstration of Pitch/Thrust settings for Unreliable speed:
- Fly the recommended speed for turbulence using the predetermined thrust setting from QRH
- Then, from the QRH UNRELIABLE SPEED INDICATION/ADR CHECK PROC, set the pitch and thrust corresponding to the actual conditions for level flight.
- Once aircraft conditions are stabilized, observe that the resulting stabilized speed is close to the recommended turbulence speed.
- Compare the GPS altitude indications to the BARO altitude indications
- Increase pitch by 2 degrees and set 15 degrees of bank. Observe that airspeed remains well within the limits between Vls and VMO.
- The same exercise may be performed with light to medium turbulence levels
- **Alternate Law:** Set AP/FD and A/THR to OFF, ask the pilot to perform some maneuvers, for example a smooth turn with 20° bank angle and a climb to a higher level.
- Observe V stall warning indications
- Fly the speed and thrust setting for recommended turbulence speed from QRH or the pitch and thrust for initial level off given by the UNRELIABLE SPEED INDICATION/ADR CHECK PROC for the current weight and altitude.
- Then, apply the stall recovery procedure and return to the previous flight parameters in this particular situation, avoid rapid side stick movement.
- The same exercise may be performed with light to medium turbulence levels. In this case, an aural stall warning might be triggered even without a control input from the pilot.

**2)** IR 2 fault then PITCH or ROLL discrepancy between two remaining IRs, with IR 3 remain valid. **9)**

- Review the various reconfiguration laws (Direct then Alternate).

**3)** High altitude handling **11)**

**INIT FL100:**

**4)** Fail Blue HYD and ELAC 2. Carry out ECAM actions and point out that the remaining computers are still able to control the aircraft. The crew must be prepared for mechanical back-up (probability 10-9). Fail SEC 2 in order to obtain mechanical back-up. Let the trainees fly the aircraft then restore all systems. **12)**

**5)** Insert second HYD RSVR Lo Level when crew reads status page. **16)**

**INIT TAKE OFF Fuel 10 t**

**6)** Insert second HYD RSVR Lo Level when crew reads status page. **23)**

**7)** After Engine stall, engine available at idle only. **26)**

**8)** Insert inextinguishable fire at 100 kt. **33)**

# UPGRADE TO CAPTAIN A320 FFS 4

| TIME | UPGRADE TO CAPTAIN A320 FFS 4 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 1** | | | | | |
| **Reconfiguration Controls Laws - Hydraulics - One engine out** | | | | | |
| | **INIT COCKPIT PREPARATION** | | | | |
| | **1)** TRANSIT COCKPIT PREPARATION | | | | |
| | **2)** BEFORE START | | | | |
| | **3)** ENGINE START | | | | |
| | **4)** AFTER START | | | | |
| | **5)** TAXI | | | | |
| | **6)** BEFORE TAKEOFF | | | | |
| | **7)** TAKEOFF | | √ | √ | |
| | **INIT FL350** | | | | |
| | **8)** HIGH ALTITUDE HANDLING **1)** | | | | √ |
| | **9)** IRS 2 FAULT THEN IRS 1/3 ATT DISCREPANCY **2)** | | | | √ |
| | **10)** TRANSFER CONTROLS TO OTHER TRAINEE | | | | √ |
| | **11)** HIGH ALTITUDE HANDLING **3)** | | | | √ |
| | **INIT FL100** | | | | |
| | **12)** B HYD - ELAC 2 - SEC 2 FAULT MECHANICAL BACK-UP **4)** | | | | √ |
| | **13)** CLIMB FL110 THEN TURN 90° BANK 15° MAX | | | | √ |
| | **14)** TRANSFER CONTROLS TO OTHER TRAINEE - RESTORE | | | | √ |
| | **15)** RADAR VECTORS | | | √ | |
| | **16)** HYD G + Y RSVR LO LVL **5)** | | | √ | |
| | **17)** ILS RWY 05R | | | √ | |
| | **18)** LANDING NO FLAPS | | | | |
| | **INIT TAKE OFF / REJECTED TAKEOFF/EVACUATION** | | | | |
| | **19)** TAKEOFF - ENG 1 STALL BETWEEN V1 AND V2 | | √ | √ | |
| | **20)** VISUAL CIRCUIT | | | √ | √ |
| | **21)** LANDING 1 ENGINE-OUT | | | | |

| TIME | UPGRADE TO CAPTAIN A320 FFS 4 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| TIME | UPGRADE TO CAPTAIN A320 FFS 4 | AP | FD | ATHR | TRK - FPA |
| | **TRAINEE 2** | | | | |
| | **INIT HOLDING POINT** | | | | |
| | **22)** TAKEOFF<br>CLIMB 4000 FT. | | √ | √ | |
| | **23)** HYD G + B RSVR LO LVL **6)** | | √ | √ | |
| | **24)** ILS RWY 05R | | √ | √ | |
| | **25)** OVERWEIGHT LANDING NO SLATS | | | | |
| | **INIT TAKEOFF** | | | | |
| | **26)** TAKEOFF - ENG 2 STALL BETWEEN V1 AND V2 **7)** | | √ | √ | |
| | **27)** VISUAL CIRCUIT | | | √ | √ |
| | **28)** LANDING 1 ENGINE-OUT | | | √ | √ |
| | **INIT TAKEOFF** | | | | |
| | **29)** TAKEOFF | | | | |
| | **30)** ELAC 1+2 FAULT ALTERNATE | | | | √ |
| | **31)** ILS RWY 05R | | | √ | √ |
| | **32)** LANDING IN DIRECT LAW | | | √ | √ |
| | **INIT TAKEOFF** | | | | |
| | **33)** TAKEOFF - ENG FIRE AT 100 KT **8)** | | √ | √ | |
| | **34)** REJECTED TAKEOFF - EMERGENCY EVACUATION | | | | |

INSTRUCTORS ONLY

INSTRUCTORS ONLY

INSTRUCTORS ONLY

INSTRUCTORS ONLY

# SESSION EVALUATION

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Trainee Information:** | | | | | | | |
| **Rank / Name** | | **Staff Number** | | | | | |
| **Session Information:** | | | | | | | |
| **Aircraft type** | | | | | | | |
| **PF/PM** | | **Date( / / )** | | | | | |
| **Simulator Owned by** | | **Location** | | | | | |
| **Instructor Information:** | | | | | | | |
| **Rank / Name** | | **Staff Number** | | | | | |
| **General Comments:** | | | | | | | |
| ATIS: | | | | | | | |
| RWY........................ | | QNH...................... | | | | | |
| WIND........................ | | RWY COND........... | | | | | |
| VISI.......................... | | AIR COND.............. | | | | | |
| CELING.................... | | ANTI ICE................ | | | | | |
| TEMP........................... | | | | | | | |
| DEW POINT.................. | | | | | | | |
| **Pilot Assessment Markers:** | | | | | | | |
| **5-Very Good, 4-Good, 3-Acceptable, 2-poor, 1-Very Poor** | | | **5** | **4** | **3** | **2** | **1** |
| (M) Flight Deck Management | | | | | | | |
| (K) Knowledge of Systems and Procedures | | | | | | | |
| (P) Procedural Execution and Adherence | | | | | | | |
| (H) Handling | | | | | | | |
| (C ) Communication | | | | | | | |
| (D) Decision Making / Problem Solving | | | | | | | |
| (S) Situation Awareness | | | | | | | |
| (L) Leadership / Follower Ship | | | | | | | |
| Note : Markers that are unseen within the session are to be left blank | | | | | | | |
| **Progress: [ ]** | | **5-Very Good, 4-Good, 3-Acceptable, 2-poor, 1-Very Poor** | | | | | |
| Trainee Signature | | Instructor Signature | | | | | |

## UPGRADE TO CAPTAIN A320 FFS 5

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **2000m** | **130/20** | **30/25** | **1023** | **-** |
| RWY CONDITION | | **DRY.** | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **58.0T** | **31.2** | **7500T** |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF

## SESSION PREPARATION

### 1) SESSION OBJECTIVE

- Review PRO-SUP Adverse Weather
- Be able to execute normal and abnormal procedures and handling.

### 2) TRAINING TOPICS

**I. REVIEW**

- Adverse Weather operations
- Crosswind take-off procedure
- Engine-out non precision approaches
- Windshear recovery
- Circling procedure
- Dual malfunction and landing in direct law
- Engine out visual pattern approaches and landings
- Use of STBY navigation

**J. INTRODUCE**

- Stall recovery exercise
- TCAS traffic and resolution advisories.

### 3) SESSION PROFICIENCY CRITERIA

**The competencies criteria are:**

- **All criteria**

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**4) SESSION GUIDE**

**1)** Select 30 kt XWIND then restore as per METAR. High altitude handling. **7) 19)**

**2)** Below FL100 TCAS exercises should be briefed and inserted if simulator features are available. **8) 11)**

**3)** Set VISI 8 km - OVC011 **13)**

**4)** Set CAVOK **15)**
Select windshear after VR.

**5)** Stall recovery exercise: **16)**
- Select a weight equivalent to the Maximum Landing Weight (MLW) and select CAVOK conditions.
- Establish the aircraft in a visual circuit, in downwind, abeam the runway in CONF 1 with all systems in normal configuration to commence the standard visual circuit. Perform a visual pattern and configure the aircraft in accordance with the Standard Operating Procedure (SOP).
- Set the aircraft in Alternate Law.
- When commencing the base turn, request the trainee to reduce thrust to idle, maintain the current altitude and continue the approach visually.
- As soon as any stall indications are recognized (e.g. aural warning, buffet, etc.) the trainee must apply the actions as stated in FCOM/QRH.
- After recovery from the stall, stop the exercise.
- Continue to configure the aircraft.

**6)** Below FL100: TCAS exercises should be briefed and inserted if simulator features are available **20)**

**7)** Set VISI 8 km - OVC011 **28)**

**8)** Set CAVOK **30)**
Select windshear after VR.

**9)** Stall recovery exercise **31)**

INSTRUCTORS ONLY

# UPGRADE TO CAPTAIN A320 FFS 5

| TIME | UPGRADE TO CAPTAIN A320 FFS 5 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| | **TRAINEE 2** | | | | |
| | **Navigation - Reconfiguration Laws - One engine out – Stall recovery** | | | | |
| | **INIT COCKPIT PREPARATION** | | | | |
| | **1)** TRANSIT COCKPIT PREPARATION | | | | |
| | **2)** BEFORE START | | | | |
| | **3)** ENGINES START | | | | |
| | **4)** AFTER START | | | | |
| | **5)** TAXI | | | | |
| | **6)** BEFORE TAKEOFF | | | | |
| | **7)** TAKEOFF (CROSSWIND) **1)** | | √ | √ | |
| | **8)** TCAS TRAFFIC ADVISORY **2)** | | | √ | |
| | **9)** CLIMB FL 180 | √ | √ | √ | |
| | **10)** FMGS EXERCISES (USE STBY NAV - RESTORE) | √ | √ | √ | |
| | **11)** TCAS RESOLUTION ADVISORY **2)** | | | √ | |
| | **12)** ENGINE FIRE | | | | |
| | **13)** VOR RWY 23 – CIRCLING RWY 05 – ONE ENG OUT **3)** | √ | √ | √ | √ |
| | **14)** LANDING 1 ENGINE-OUT | | | | |
| | **INIT TAKEOFF** | | | | |
| | **15)** TAKEOFF - WINDSHEAR – RESTORE **4)** | | √ | √ | |
| | **16)** STALL RECOVERY EXERCISE RESTORE **5)** | | | | √ |
| | **17)** DUAL FCU FAULT | | | | |
| | **18)** LANDING | | | | |

| TIME | UPGRADE TO CAPTAIN A320 FFS 5 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 1** | | | | | |
| **Navigation - Reconfiguration Laws - One engine out – Stall recovery** | | | | | |
| | **INIT TAKEOFF** | | | | |
| | **19)** TAKEOFF (CROSSWIND) 1) | | √ | √ | |
| | **20)** TCAS RESOLUTION ADVISORY 6) | | | √ | |
| | **21)** CLIMB FL 180 | √ | √ | √ | |
| | **22)** ADR 3 + 2 FAULT (ALTERNATE LAW) | | | | √ |
| | **23)** RETURN TO DEPARTURE | | | | √ |
| | **24)** ILS RWY 05R | | | | √ |
| | **25)** LANDING DIRECT LAW | | | | |
| | **INIT TAKEOFF** | | | | |
| | **26)** TAKEOFF - ENGINE 1 FIRE AT V2 | | √ | √ | |
| | **27)** RADAR VECTORS | √ | √ | √ | |
| | **28)** VOR RWY 05R - CIRCLING RWY 23R - ONE ENG OUT 7) | √ | √ | √ | √ |
| | **29)** LANDING - 1 ENGINE-OUT | | | | |
| | **INIT TAKEOFF** | | | | |
| | **30)** TAKEOFF - WINDSHEAR – RESTORE 8) | | √ | √ | |
| | **31)** STALL RECOVERY EXERCISE RESTORE 9) | | | | √ |
| | **32)** DUAL FCU FAULT | | | | |
| | **33)** LANDING | | | | |
| | **34)** AFTER LANDING | | | | |
| | **35)** TAXI | | | | |
| | **36)** PARKING | | | | |

# SESSION EVALUATION

| | | | |
|---|---|---|---|
| **Trainee Information:** | | | |
| **Rank / Name** | | **Staff Number** | |
| **Session Information:** | | | |
| **Aircraft type** | | | |
| **PF/PM** | | **Date( / / )** | |
| **Simulator Owned by** | | **Location** | |
| **Instructor Information:** | | | |
| **Rank / Name** | | **Staff Number** | |
| **General Comments:** | | | |

ATIS:

| | |
|---|---|
| RWY.......................... | QNH...................... |
| WIND........................ | RWY COND........... |
| VISI.......................... | AIR COND.............. |
| CELING.................... | ANTI ICE................ |
| TEMP.......................... | |
| DEW POINT.................. | |

| **Pilot Assessment Markers:** | | | | | |
|---|---|---|---|---|---|
| **5-Very Good, 4-Good, 3-Acceptable, 2-poor, 1-Very Poor** | **5** | **4** | **3** | **2** | **1** |
| (M) Flight Deck Management | | | | | |
| (K) Knowledge of Systems and Procedures | | | | | |
| (P) Procedural Execution and Adherence | | | | | |
| (H) Handling | | | | | |
| (C ) Communication | | | | | |
| (D) Decision Making / Problem Solving | | | | | |
| (S) Situation Awareness | | | | | |
| (L) Leadership / Follower Ship | | | | | |

Note : Markers that are unseen within the session are to be left blank

| | | | |
|---|---|---|---|
| **Progress: [ ]** | **5-Very Good, 4-Good, 3-Acceptable, 2-poor, 1-Very Poor** | | |
| Trainee Signature | | Instructor Signature | |

## UPGRADE TO CAPTAIN A320 FFS 6

| FROM | TO | CEILING/VIS | WIND | TEMP | QNH | WX |
|---|---|---|---|---|---|---|
| **HECA** | **OEJN** | **RVR600m** | **CALM** | **25/23** | **1023** | **RA** |
| RWY CONDITION | | **WET.** | | MEL | **-** | |

| ZFW | ZFWCG | FOB |
|---|---|---|
| **58.0T** | **31.2** | **7500T** |

**NOTES**

- AIR COND OFF
- RWY COND WET
- ANTI ICE ON

## SESSION PREPARATION

**1) SESSION OBJECTIVE**

- Be able to execute abnormal and emergency procedures
- Attain sufficient proficiency for the recurring Evaluation

**2) TRAINING TOPICS**

**K. REVIEW**

- Turbulence penetration procedure
- Dual hydraulic malfunction
- Emergency descent
- Rejected takeoff
- Emergency evacuation

**L. INTRODUCE**

- NIL

**3) SESSION PROFICIENCY CRITERIA**

**The competencies criteria are:**

- **All criteria**

INSTRUCTORS ONLY

INSTRUCTORS ONLY

**4) SESSION GUIDE**

- Below FL100: TCAS exercises should be briefed and inserted if simulator features are available. **8)**
- Enter severe turbulence and check that the crew reacts accordingly. (procedure and handling) [Ref : QRH + FCOM supplementary techniques]. **9)**
- Insert a malfunction (SLAT or FLAP stuck by WTB) that covers the opposite of the one selected in the Trainee 1 part. **23)**
- Activate a traffic or any problem to justify a go-around. **28)**
- Enter inextinguishable fire at V1 at 100 kt. **34)**

# UPGRADE TO CAPTAIN A320 FFS 6

| TIME | UPGRADE TO CAPTAIN A320 FFS 6 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| **TRAINEE 1** | | | | | |
| **Emergency descent - RTO – Emergency evacuation, including LOFT(LOS)** | | | | | |
| | **LOFT(LOS) at any time for 40 MIN** | | | | |
| | **1)** TRANSIT COCKPIT PREPARATION | | | | |
| | **2)** BEFORE START | | | | |
| | **3)** ENGINE START | | | | |
| | **4)** AFTER START | | | | |
| | **5)** TAXI | | | | |
| | **6)** BEFORE TAKEOFF | | | | |
| | **7)** TAKEOFF | | √ | √ | |
| | **8)** TCAS RESOLUTION ADVISORY **- 1856759088** | | | √ | |
| | **INIT FL310** | | | | |
| | **9)** SEVERE TURBULENCE EXERCISE **-1856759088** | √ | √ | | |
| | **10)** STRUCTURAL DAMAGE - EMERGENCY DESCENT | √ | √ | √ | |
| | **11)** RESTORE AT FL100 | √ | √ | √ | |
| | **12)** HYD : G RSVR LO LVL | √ | √ | √ | |
| | **13)** HYD : B OR Y RSVR LO LVL | | √ | √ | |
| | **14)** DUAL HYD SYS LOW PRESS PROCEDURE | | √ | √ | |
| | **15)** ILS RWY 05R – DIRECT LAW | | √ | √ | |
| | **16)** LANDING NO SLATS OR NO FLAPS | | | | |
| | **INIT TAKEOFF** | | | | |
| | **17)** TAKEOFF | | | | |
| | **18)** RADAR VECTOR | | √ | √ | √ |
| | **19)** ELAC 1 + 2 FAULT | | | | √ |
| | **20)** ILS RWY 05L – DIRECT LAW | | | | √ |
| | **21)** LANDING DIRECT LAW | | | | |

| TIME | UPGRADE TO CAPTAIN A320 FFS 6 | AP | FD | ATHR | TRK - FPA |
|---|---|---|---|---|---|
| | **TRAINEE 2** | | | | |
| | **Emergency descent - RTO – Emergency evacuation, including LOFT (LOS)** | | | | |
| | **LOFT(LOS) at any time for 40 MIN** | | | | |
| | **22)** TAKEOFF | | √ | √ | |
| | **23)** FLAPS OR SLATS LOCKED DURING RETRACTION (WTB) - 1856759088 | √ | √ | √ | |
| | **24)** ILS RWY 05R ( FLAPS OR SLATS LOCKED) | | √ | √ | |
| | **25)** LANDING | | √ | √ | |
| | **INIT TAKEOFF** | | | | |
| | **26)** TAKEOFF - ENG 2 FAIL BETWEEN V1 AND V2 | | √ | √ | |
| | **27)** ILS RWY 05R 1 ENGINE-OUT | | √ | √ | |
| | **28)** GO-AROUND – RESTORE - 1856759088 | | √ | √ | |
| | **INIT FL 350** | | | | |
| | **29)** STRUCTURAL DAMAGE | √ | √ | √ | |
| | **30)** EMERGENCY DESCENT - RESTORE FL 100 | √ | √ | √ | |
| | **31)** RADAR VECTORS | √ | √ | √ | |
| | **32)** VOR RWY05L | √ | √ | √ | √ |
| | **33)** LANDING | | | | |
| | **INIT TAKEOFF** | | | | |
| | **34)** TAKEOFF ENG FIRE AT 100KT - 1856759088 | | √ | √ | |
| | **35)** REJECTED TAKEOFF | | | | |
| | **36)** EMERGENCY EVACUATION | | | | |

INSTRUCTORS ONLY

# SESSION EVALUATION

| | | | |
|---|---|---|---|
| **Trainee Information:** | | | |
| **Rank / Name** | | **Staff Number** | |
| **Session Information:** | | | |
| **Aircraft type** | | | |
| **PF/PM** | | **Date( / / )** | |
| **Simulator Owned by** | | **Location** | |
| **Instructor Information:** | | | |
| **Rank / Name** | | **Staff Number** | |
| **General Comments:** | | | |

ATIS:

RWY.........................
WIND........................
VISI..........................
CELING....................
TEMP...........................
DEW POINT...................

QNH......................
RWY COND............
AIR COND...............
ANTI ICE................

| **Pilot Assessment Markers:** | | | | | |
|---|---|---|---|---|---|
| **5-Very Good, 4-Good, 3-Acceptable, 2-poor, 1-Very Poor** | **5** | **4** | **3** | **2** | **1** |
| (M) Flight Deck Management | | | | | |
| (K) Knowledge of Systems and Procedures | | | | | |
| (P) Procedural Execution and Adherence | | | | | |
| (H) Handling | | | | | |
| (C ) Communication | | | | | |
| (D) Decision Making / Problem Solving | | | | | |
| (S) Situation Awareness | | | | | |
| (L) Leadership / Follower Ship | | | | | |

Note : Markers that are unseen within the session are to be left blank

**Progress: [ ]** **5-Very Good, 4-Good, 3-Acceptable, 2-poor, 1-Very Poor**

| | | | |
|---|---|---|---|
| Trainee Signature | | Instructor Signature | |

INSTRUCTORS ONLY

**THIS PAGE INTENTIONALLY LEFT BLANK**

# Contents

L.V. O. FFS STANDARD CREW ........ 5
L.V.O. FFS CREW OF TWO CAPTAINS ........ 21
L.V.O. FFS CREW OF TWO F/O ........ 31

# (APPENDIX D) Low Visibility Operations (L.V.O.)

## INTRODUCTION

## GENERAL

The Airbus Low Visibility Operations (L.V.O.) course is designed as a Low Visibility Training Course for Airbus aircraft, following the requirements laid down in EU Air operation Regulation Annex V subpart E: Part-SPA.LVO, and in accordance with the EASA Aircrew regulation. The course is compliant with the section 6 of the Appendix 9 to Part-FCL.
The instructor has to fill in the Practical Training part in the section 6 of the TRF (Training and Report Form).
As this course is generic, it may need to be supplemented by the specific rules of the operator to fulfill the requirements of an operator's course

## COURSE DURATION

| | Training practice | Number of session |
|---|---|---|
| Standard Crew: | | |
| 1 Captain + 1 F/O | 6 hours / crew | 1 x 3:00 ground course<br>1 x 1:00 Briefing<br>1 x 3:00 FFS session |
| Non Standard Crew: | | |
| • 2 Captains | 7 hours / crew of two captains | 1 x 3:00 ground course<br>1 x 1:00 Briefing<br>1 x 4:00 FFS session |
| • 2 First Officers | 7 hours / crew of two F/O | 1 x 3:00 ground course<br>1 x 1:00 Briefing<br>1 x 4:00 FFS session |

**COURSE PREPARATION**

The LVO Training is divided into two parts:

- A ground course part
- One simulator Session

The ground course contains a detailed presentation covering the following topics:

- Definitions
- Weather
- Airport/Ground Equipment
- Aircraft Technical Considerations
- Crew Requirements
- Normal Operating Procedures
- Abnormal Operating Procedures

If during the session briefing the Instructor gets the impression that the theoretical knowledge of the trainees is inadequate he shall discontinue the training and file a Progress Incident Report. The Head of Training of the ATO will conduct further action.

## A. STANDARD CREW

**DAY 1**

***3:00***

***FFS session:***

**1x 1:00 Briefing**

- Training practice 3:00

## B. CREW OF TWO CAPTAINS

**DAY 1**

***3:00***

***FFS session:***

**1x 1:00 Briefing**

- Training practice 4:00

## C. CREW OF TWO FIRST OFFICERS

**DAY 1**

***3:00***

***FFS session:***

**1x 1:00 Briefing**

- Training practice 4:00

## L.V. O. FFS STANDARD CREW

| | | | |
|---|---|---|---|
| **WEATHER** | | | |
| LFPG 27005KT Visi/Ceiling: CATII Q1020 | | | |
| **INITPAGE** | | | |
| FLTNBR:- Nesma 123 | | | |
| FROM LFPG | TO LFBO | ALTN LFLL | |
| CO RTE - | ALTN/CO RTE | | |
| CRZ FL 34000 ft. | CRZTEMP - 45°C | | |
| CI 30 | TROPO 36090 | | |
| TRIPWIND - | TRIP DIST 350 NM | | |
| INITNEXTPAGE | | | |
| ZFW 58T | ZFWCG 30% | FOB 6T | GW 64T |
| NOTES<br>RWYCONDWET FPLN<br>AIR COND ON<br>ANTI ICE ENG ON | | | |

**AIRLINE OPERATIONAL MINIMUM :**

LOW VISIBILITY TAKE-OFF

APPROACH CAT II

| *Time* | | *EVENTS* |
|---|---|---|
| | | **INIT GATE – LFPG 27L** |
| | ⓘ | 1 - FAST COCKPIT PREP, ENG QUICK START |
| | ⓘ | 2 - LOW VISIBLITY (LV) TAXI OUT |
| 0:25 | ⓘ | 3 - LOW VISIBILTY TAKEOFF (LVTO) |
| | | **INIT FINAL APP** |
| | ⓘ | 4 - DEMO OF VISUAL SEGMENTS WITH DIFFERENT MINIMA |
| 1:00 | ⓘ | 5 - DEMO OF DEFINED TECHNICAL FAILURES ON FINAL |
| | | **INIT HOLDING POINT** |
| | ⓘ | 6 - TAKE OFF-FOLLOW YAW BAR- ANTI SKID FAILURE ON DOWNWIND |
| | ⓘ | 7 - CAT III DUAL TO MINIMUM 100 ft - NO CONTACT - G/A - ENGINE FAIL ON G/A |
| 1:40 | | 8 - CAT III SINGLE - ONE ENGINE OUT – AUTOMATIC LANDING |
| | | **INIT TAKEOFF** |
| | ⓘ | 9 - TAKEOFF BY F/O - AUTOPILOT AND ATHR #1 FAILURE AFTER LIFT OFF |
| | ⓘ | 10 - CAT III SINGLE - AUTOLAND LIGHT AT 100FT - (BOTH A/P AND ATHR FAIL) - NO VISUAL CONTACT - |
| 2:10 | ⓘ | 11 - CAT II MANUAL THRUST - LANDING - AUTOBRAKE FAILURE AT 80 KTS |
| | | **INIT TAKEOFF** |
| | | 12 - TAKEOFF - ENGINE FAILURE AT VR - RESTART |
| | ⓘ | 13 - CAT III DUAL, AT DH -EXCESSIVE BEAM DEVIATION ON FINAL – G/A |
| 2:35 | ⓘ | 14 - CAT III DUAL TO DH - WINDSHEAR ON APPROACH – G/A |
| | | 15 - CAT III DUAL LANDING |
| | | **INIT TAKEOFF** |
| | ⓘ | 16 - TAKEOFF BY F/O - CAPT INCAPACITATED ON ROTATION - SELECT CAT I WEATHER - F/O AUTOLAND APPROACH |
| | | **INIT TAKEOFF** |
| | | 17- TAKEOFF RVR150M - ENGINE FIRE AT 110KTS - RTO - VIS 0 - FOLLOW YAW BAR |
| 3:00 | | 18- TAXI IN |

L.V.O. SESSION PREPARATION

## 1. SESSION OBJECTIVE

To complete L.V.O. training so that the crew reaches the required level of proficiency for CAT II / III approaches and low visibility taxi and take-off operations. F/O auto land training in case of captain's incapacitation.

## 2. - TRAINING TOPICS

### A) INTRODUCE

- CAT II / III approaches and low visibility taxi and take-off

training. **B. EXERCISES / REFERENCES**

| EVENTS | FCOM | QRH |
| --- | --- | --- |
| • AUTOFLIGHT LIMITATIONS | LIM-22 | |
| • VISUAL GROUND SEGMENTS | PRO-NOR-SOP-19 | |
| • TASK SHARING AND FAILURES FOR CAT II APPROACHES | PRO-NOR-SRP-01-70 | |
| • REQUIRED EQUIPMENT | | OPS.04 |

### C) SUPPORT

- FCOM
- Ground course Low Visibility Operations (LVO).
- PDP: L.V.O
- Getting to grips with CAT II / III operations on DVD (Additional documentation chapter)

Session briefing: 1 hour (50 minutes briefing, 10 minutes break). A PDP is provided to facilitate the briefing. In the ground course, all theoretical, regulatory and background information are taught. In the simulator session, the operational aspects of L.V.O. are trained.
Therefore the session briefing shall concentrate on the operational aspects of L.V.O.

**3. COMPETENCIES CRITERIA**: All criteria

BRIEFING GUIDE

To assure proper time management of the session briefing:

- Avoid overloading trainees with regulations and basic information.
- Emphasize the operational side of LVO.
- It is not necessary to brief all “common errors” in detail (see PDP).
- It is not necessary to brief technical malfunctions in detail. A thorough presentation of the most likely malfunctions is given in the ground course and will be demonstrated or trained in the simulator session (receiver failure, transmitter failure, RA failure, AP failure …).

The recommended session briefing should contain the following elements.

## A. GROUND COURSE

Ask trainees about any open questions after finish the ground course.

## B. Low Visibility Taxi and Takeoff (LVTO)

- Verify Take Off Alternate
- Basics for Low Visibility ground operations:
  - Both heads up (but watch GS on ND regularly)
  - **No checklist/administrative work** when aircraft is moving
- Both pilots have to be **familiar** with the intended Taxi Route before starting Taxi (Briefing).
- Crew has to pay special attention to **Hot Spots** (Areas of possible error/conflict with other traffic) and identify them on the airport chart.
- Ask for **ATC assistance** (Mode S) or Follow Me if uncertain about position.
- Use all means to **identify T/O Runway** - e.g. switch LS to on and monitor LLZ centering when lining up (if RWY ILS equipped) - off again when lined up to get yaw bar.
- Describe function and use of **Yaw Bar** (NOTE: YAW-BAR will appear only if the ILS/LOC is available for the same RWY direction) and thrust is advanced.
- Use TCAS before entering runway to check the approach area clear and / or the preceding A/C has vacated the RWY.

- **Common Errors**
  - No thorough preparation of both pilots before starting taxi manoeuvers
  - Taxi speed too fast
  - One or both pilots head down/doing checklists etc.
  - PNF not ready to brake
  - Not considering Take Off alternate

## C. Approach Preparation

The preparation for the approach should start with a brief review of the elements that have to be considered before starting an LVO:

- Aircraft
- Airport
- Crew
- Weather

- **Aircraft**
  - **Certified** for the intended operation (where to find? - FCOM Limitations).
  - **Technical Status** must allow the LVO (where to find? - Aircraft Log, MEL for preflight check - ECAM and QRH for in-flight failures).
  - **Limits for autoland:** Check FCOM/LIM-22

- **Airport**
  - To be **certified** for LVO (where to find? - Route Documentation).
  - Low Visibility Procedures must be in force (Check ATIS or ask ATC to confirm).

- **Crew**
  - Both pilots must be **qualified** for LVO.
  - LVO certification must be **current** (Crew Briefing!).

- **Weather**
  - Check RVR to be above **company LVO limit.**
  - **Check local requirements** (e.g. some states require also Ceiling to be above a certain limits).
  - Always plan for the full use of automation and brief for **downgrade options** (e.g. plan for CAT III dual autoland even when the minimum is CAT II).
  - Check endurance to hold and diversion options.

- **Common Errors**
  - Not checking Technical Aircraft Log if there is a LVO restriction
  - Not confirming that Low Visibility Procedures are enforced by the ATC/Airport
  - Not planning for the lowest possible minimum

## D. Operational particularities for LVO approach

- **Task sharing**

  - CM1 is PF, and supervises the approach. When below 350 ft to 100 ft, he starts to look for visual reference. CM2 is PNF and monitors the AFS. He is head down until roll out is completed
  - Mention **importance of CM2** especially below 400ft (he has to check the flight path and the Auto flight Modes, call deviations, Takeover in case of incapacitation of CM 1).

- **Autobrake is recommended**
- **Early Stabilized Approach is recommended**
- **Major differences to conventional ILS approach below 400 ft**

  - **LAND Mode** to be checked (called out) ; if not available: G/A (at 350 ft).
  - **ILS Course** on PFD to be in agreement with published figure (at 350 ft).
  - **Call outs** similar to conventional ILS approach

    **CONTINUE Call at 100 ft if no failures detected** and visual cues are identified.

  - **FLARE mode** to be checked and announced by CM2.
  - **RETARD**: Brief the difference between the RETARD call for autoland and manual landing: In manual landing RETARD is a reminder, in autoland **with ATHR RETARD is an ORDER** (**no** retard of thrust levers **before** RETARD call).
  - **Reverse on main wheel touch down**. Remind that 2 items have to be done manually in Autoland: Reverse and A/P disconnect after Rollout.
  - **ROLL OUT mode** to be checked and announced by CM2.
  - **Keep AP** when engaged until Taxi speed.

INSTRUCTOR ONLY

Common Errors

- Not checking the ILS course at 350ft.
- No continue call on the DH with visual cues.
- No Go Around decision is taken if no contact at DH
- Retarding Thrust Levers too early (i.e. before RETARD Call) - esp. if visual.
- Disconnecting AP too early (after Touch down).
- Forgetting to disconnect A/P.

Disconnecting AP in case of GA.

- PNF does not stay on instruments
- Not considering the important functions of the F/O for LVO O

**E) <u>Normal Operation in LVO</u>**

- **Failures above 1000 ft. AAL:**

  - all ECAM actions performed and
  - weather permits and
  - briefing and DH are updated and
  - aircraft is stabilized before 1000 ft. AAL

The approach may be continued

- **Failures below 1000ft**

  **As a general rule a Go Around has to be performed. The approach may only be continued**

  - **If** the pilot has the runway in sight **and** the type of failure does not impair the landing

This does not impair the emergency authority of the commander - e.g. low fuel, cabin fire

- **Briefing for the "Autoland Light"**

  - Description :

Facilitates decision
making Is active below
200 ft
Is required for all Autoland Approaches

- Conditions for Autoland Light
  Illuminations : Both A/P fail or
  Both LLZ or GP receivers fail
  Both LLZ or GP transmitters fail
  Difference between RA is more than 15 feet
  gets too far of the beam (LOC and G/S Flash on PFD)

INSTRUCTOR ONLY

Aircraft

- ATTENTION: there are failures that are **not monitored** by the autoland light but nevertheless require a G/A. e.g. Eng failure

Common Errors

- Not realizing the Autoland Light.
- Not observing FMA that a mode change did not take place (LAND, FLARE, ROLL OUT).

SESSION GUIDE

INSTRUCTOR ONLY

- Three session-options are available, differing for various crew complements: This is the scenario for Normal crew complement (i.e. one Captain, one F/O) For other crew complements see end of chapter.

- The scenario starts with Demo-Parts and one Ops part. The Demo-parts show

  **1.** The various visual aspects at different minima and in different ambient conditions
  **2.** Various failures on final approach.

  For the Demo-Parts extensive use of repositioning and freeze functions should be made.

- The Ops part should be conducted in real-time; no reposition on final, no freeze and no slew should be used (with exception of repetitions of unsatisfactory items). The crew shall have the opportunity to experience the different tasks in real time and assimilate the various failures they encounter.

  Short vectors are appropriate and will allow the completion of the program within the given timeframe.

- For better time management the Captain may advise "Briefing as before except…." This is acceptable for this session.

- Taxi operations in L.V.O. are **mandatory** items.

- Altering the program should be avoided.
- Incapacitation of pilot exercises :

  F/Os are given the opportunity to conduct one Autoland approach with Captain incapacitated. Target of the exercise is not to train LVO single pilots operation, but to give the F/O the demonstration and confidence that an Autoland (also in good weather conditions) is a reasonable option if the other pilot becomes incapacitated. Legally the F/O succeeds in the command of the aircraft and would even be allowed to conduct LVO approaches exercising his Emergency Command Authority.

  To distinguish this exercise from LVO training, increase weather to

  CAT I or better for this approach. For Captains, only the initial

  handling of the incapacitation is sufficient (no approach).

- The session ends with an uneventful CAT II Approach and taxi in. Thus a positive training effect will be reinforced after training the various failure cases.

SESSION FOR STANDARD CREW

☐ 1 Ensure that the trainees do not waste time in setting-up the cockpit. An appropriate take-off alternate has to be announced by the crew.

☐ 2 RVR 150m, watch that both pilots are head up and show good CRM in LVO, no administrative work, no checklist during motion of the aircraft

☐ 3 90 meters visual segment has to be confirmed by the pilots before starting T/O roll

☐ 4 Reposition on long final, demonstration of visual segments.

Select RVR 550 m

- Freeze the approach at DH 200 ft and review visual segment (day and night)
- Ask crew to switch landing lights ON and OFF to show the change in visual cues.
- Vary the flight deck lighting to illustrate the necessity of low intensity

Select RVR 300 m,
freeze at 100ft…

… and review visual segment (day and night, lights on and off))

INSTRUCTOR ONLY

□ 5 **Setup:**

- You may freeze the simulator for failures not depending on aircraft movement, to show the mode switching and the change on displays
- Freeze the Simulator after G/A (acceleration height) and reposition to T/O for next exercise (Note: Demo counts as first LVO Approach)

Insert **transmitter fault** (G/S then LOC)

- The corresponding index is lost
- The LOC and/or G/S scales flash
- The corresponding FD bars flash
- Above 200 ft RA, if the transmitter failure lasts less than 7 seconds, the FGS retains the LOC and G/S modes (or the LAND mode) and autopilots continue to work
- CAUTION: NO RED WARNING. If the failure lasts longer than 7 seconds, the APs disengage and the FDs revert to HDG-V/S or TRK-FPA mode.
- Below 200 ft RA, the autoland warning will appear.

Insert ILS **receiver failure**

- The PFD and ND (rose ILS mode) display red LOC and G/S flags
- LOC and G/S scales disappear from PFD.
- If LOC or G/S modes are engaged and at least one AP/FD is engaged:
- The APs disengage.
- The FDs revert to HDG-V/S or TRK - FPA mode.

Insert **RA 2** failure to demonstrate downgrading of the approach capability.

- A triple-click aural warning sounds
- The FMA changes to the new approach capability (boxed white).

Insert rudder **travel system2 fault**

- No change in the FMA landing capability
- Crew has to check QRH OPS.04 if the failure happens above 1000 ft

Demonstrate the **AUTOLAND warning** and Low Level Go around capability

- Insert loss of LOC signal at 150 ft and visual minima zero.
- Go around when AUTOLAND warning is flashing
- Demonstrate the capability of a low level Go Around

After Clean Up freeze and INIT TAKE OFF

☐ 6 Brief the crew that visibility will be reduced to zero above 100 kts to illustrate the effectiveness and convenience of the YAW-BAR for directional control

(**NOTE :** YAW-BAR will appear only if the ILS/LOC is available for the Runway used)

On downwind select ANTI SKID fault. Crew has to consult the QRH to verify that this system is monitored by the FMGS and that CAT III dual capability is still available.

 7 Set weather to 0/0

Engine failure when applying TOGA for G/A

The aircraft reverts to CAT 3 single capability in the event of one engine failed, due to the loss of electrical power split (device ensuring that both FMGCs are powered by independent electrical sources). Even if the APU generator is used, the FMGCs electrical supply split is not recoverable, due to the A320 electrical system architecture.

 9 For F/O Take Off select 400m RVR. Fail Autopilot #1 and ATHR# 1 after Liftoff

 10 Show crew that STS reverts to CAT III single and that landing capability changes to CAT II when arming the APP and selecting second A/P (reason : FMGS # 1 is master when 2 A/P engaged)
Select A/P 2 only to regain CAT III single
Select weather 0/0. AP and FAIL ATHR 2 at 100f
AP 2 is available again after Clean Up but ATHR 1 + 2 stay lost

 11 CAT II Autoland with manual thrust:

Difference to Autothrust

- **"RETARD"** will be triggered for the first time at 10ft instead of 20ft
- RETARD is an **ORDER** in Autothrust, a **REMINDER** in manual thrust.
- depending on the external conditions, the pilot will decide at what point to retard (earlier or later) in manual thrust

Insert auto Brake Failure at 80 Kts

□ 13 Insert **excessive beam deviation** on final
Controls will be handed over and G/A will be flown by F/O

□ 14 Insert **Windshear** on final

□ 16 For F/O Take Off select 400m RVR. Brief Captain to be incapacitated on rotation.
Select CAT I Weather. Autoland by F/O.

INSTRUCTOR ONLY

**INTENTIONALLY LEFT BLANK**

## L.V.O. FFS CREW OF TWO CAPTAINS

| | | | |
|---|---|---|---|
| **WEATHER**<br>LFPG 27005KT Visi/Ceiling CATII Q1020 | | | |
| **INITPAGE** | | | |
| FLTNBR:- Nesma 123 | | | |
| FROM<br>LFPG | TO<br>LFBO | ALTN<br>LFLL | |
| CO RTE<br>- | ALTN/CO RTE | | |
| CRZ FL<br>34000 ft | CRZTEMP<br>- 45°C | | |
| CI<br>30 | TROPO<br>36090 | | |
| TRIPWIND<br>- | TRIP DIST<br>350 NM | | |
| **INITNEXTPAGE** | | | |
| ZFW<br>58T | ZFWCG<br>28% | FOB<br>6T | GW<br>64T |
| **NOTES**<br>RWYCONDWET<br>AIR CONDON<br>ANTIICEENG ON<br>**FPLN** | | | |

**AIRLINE OPERATIONAL MINIMUM :**

LOW VISIBILITY TAKE-OFF

APPROACH CAT II

| *Time* | *EVENTS* | |
|---|---|---|
| | | |
| | **INIT GATE** | |
| | ⓘ 1 - FAST COCKPIT PREP, ENG FAST START | |
| | ⓘ 2 - LOW VISIBILITY (LV) TAXI OUT | |
| 0:20 | ⓘ 3 - LOW VISIBILITY TAKE OFF (LVTO) | |
| | | |
| | **INIT FINAL APP** | |
| | ⓘ 4 - DEMO OF VISUAL SEGMENTS WITH DIFFERENT MINIMA | |
| | ⓘ 5 - DEMO OF DEFINED TECHNICAL FAILURES ON FINAL | |
| | ⓘ 6 - CAT III DUAL TO MINIMUM 100FT- NO CONTACT - G/A - ENGINE FAIL ON G/A | |
| 1:10 | 7 - CAT III SINGLE - ONE ENGINE OUT – | |
| | | |
| | **INIT TAKEOFF** | |
| | ⓘ 8 - TAKE OFF-FOLLOW YAW BAR- ATHR 1 FAILURE AFTER CLEAN | |
| | ⓘ 9 - CAT III SINGLE A/P AND ATHR FAIL AT 150FT AUTOLAND LIGHT NO VISUAL CONTACT - MANUAL G/A | |
| 1:45 | ⓘ 10 - CAT II MANUAL THRUST - LANDING - AUTOBRAKE | |
| | | |
| | **INIT TAKEOFF** | |
| 1:50 | ⓘ 11 - TAKEOFF RVR150M - F/O INCAPACITATED BEFORE “100 KNOTS” CALL OUT- ENGINE FIRE AT 110 kt RTO - VIS 0 - FOLLOW YAW BAR | |
| | **INIT TAKEOFF** | |
| | 12 - TAKEOFF - ENGINE FAILURE - RESTART | |
| 2:10 | 13 - CAT III DUAL DH - LONG FLARE - | |
| | **SEAT CHANGE** | |
| | | |

## L.V.O. FFS CREW OF TWO CAPTAINS

| | | | |
|---|---|---|---|
| **WEATHER**<br>LFPG 27005KT Visi/Ceiling CATII Q1020 | | | |
| **INITPAGE** | | | |
| FLTNBR:- Nesma 123 | | | |
| FROM<br>LFPG | TO<br>LFBO | ALTN<br>LFLL | |
| CO RTE<br>- | ALTN/CO RTE | | |
| CRZ FL<br>34000 ft | CRZTEMP<br>- 45°C | | |
| CI<br>30 | TROPO<br>36090 | | |
| TRIPWIND<br>- | TRIP DIST<br>350 NM | | |
| **INITNEXTPAGE** | | | |
| ZFW<br>58T | ZFWCG<br>28% | FOB<br>6T | GW<br>64T |
| **NOTES**<br>RWYCONDWET<br>AIR CONDON<br>ANTIICEENG ON | **FPLN** | | |

**AIRLINE OPERATIONAL MINIMUM :**

LOW VISIBILITY TAKE-OFF

APPROACH CAT II

| Time | EVENTS |
|---|---|
| | |
| | **INIT HOLDING POINT** |
| | 14 - TAKEOFF |
| | □□15 - CAT III DUAL TO 150f EXCESSIVE BEAM DEVIATION - G/A |
| 2:45 | □□16 - CAT III APPROACH- R/A 2 FAILURE ON DOWNWIND NO ROLL OUT MODE |
| | |
| | **INIT TAKEOFF** |
| | □□17 - TAKEOFF-FOLLOW YAW BAR- F/O INCAPACITATED (REANIMATED ON DOWNWIND) |
| | □□18 - CAT III DUAL TO MINIMUM 100FT - NO CONTACT - LOW G/A - ENGINE FAIL ON G/A |
| 3:20 | 19 - CAT III SINGLE - ONE ENGINE OUT - LANDING - LONG FLARE |
| | |
| | **INIT TAKEOFF** |
| 3:25 | 20 - TAKEOFF - ENGINE FAILURE AT 110KTS - RTO - VIS 0 - FOLLOWING YAW BAR |
| | |
| | **INIT TAKEOFF** |
| | 21 - TAKEOFF - ENGINE FAILURE - RESTART |
| | □□22 - CAT III DUAL TO DH 100 - WINDSHEAR ON APPROACH – G/A |
| | 23 - CAT III DUAL - LANDING |
| 4:00 | 24 - TAXI IN LOVIS |
| | |

INSTRUCTOR ONLY



SESSION GUIDE

- Three session-options are available, differing for various crew

  complements: This is the syllabus for a crew consisting of two captains

- The session starts with two Demo-Parts and one Ops part. The Demo-parts show

  1. The various visual aspects at different minima and in different ambient conditions
  2. Various failures on final approach.

  For the Demo-Parts extensive use of repositioning and freeze functions should be made.

- The Ops part should be conducted in real-time; no reposition on final, no freeze and no slew should be used (with exception of repetitions of unsatisfactory items). The crew shall have the opportunity to experience the different tasks in real time and assimilate the various failures they encounter.

  Short vectors are appropriate and will allow the completion of the program within the given timeframe.

- For better time management the Captain may advise "Briefing as before except…." This is acceptable for this session.

- Taxi operations in L.V.O. are **mandatory** items.

- Altering the program should be avoided

- Incapacitation of pilot exercises :
  For Captains, only the initial handling of the incapacitation is sufficient (no approach).

- The session ends with an uneventful CAT II Approach and taxi in. Thus a positive training effect will be reinforced after training the various failure cases.

SESSION FOR CREW WITH TWO CAPTAINS

— 1 Ensure that the trainee does not waste time in setting-up prior to start. An appropriate take- off alternate has to be announced by the crew.

— 2 RVR 150m, watch that both pilots are head up and showing good CRM in LVO, no administrative work, no checklist during motion of the aircraft.

— 3 90 meters visual segment has to be confirmed by the pilots before starting T/O roll.

— 4 Reposition on long final, demonstration of visual segments.

Select RVR 550 m

- Freeze the approach at DH 200 ft and review visual segment (day and night)
- Ask crew to switch landing lights ON and OFF to show the change in visual cues.
- Vary the flight deck lighting to illustrate the necessity of low intensity

Select RVR 300 m, freeze at 100ft…

… and review visual segment (day and night, lights on and off))

INSTRUCTOR ONLY

□ 5 **Setup:**

- You may freeze the simulator for failures not depending on aircraft movement, to show the mode switching and the change on displays.
- Freeze the Sim after G/A (acceleration height) and reposition to T/O for next exercise (Note: Demo counts as first LVO Approach)

Insert **transmitter fault** (G/S then LOC)

- The corresponding index is lost
- The LOC and/or G/S scales flash
- The corresponding FD bars flash
- Above 200 ft RA, if the transmitter failure lasts less than 7 seconds, the FGS retains the LOC and G/S modes (or the LAND mode) and autopilots continue to work
- CAUTION: NO RED WARNING.
- If the failure lasts longer than 7 seconds, the APs disengage and the FDs revert to HDG-V/S or TRK-FPA mode.
- Below 200 ft RA, the autoland warning will appear.

Insert ILS **receiver failure**

- The PFD and ND (rose ILS mode) display red LOC and G/S flags
- LOC and G/S scales disappear from PFD.
- If LOC or G/S modes are engaged and at least one AP/FD is engaged :
- The APs disengage.
- The FDs revert to HDG-V/S or TRK - FPA mode.

Insert **excessive beam deviation**.

- Warning is shown by the flashing the LOC and G/S scales
- Occurs whenever:
  - G/S deviation is greater than 1 dot (above 100 feet RA)
  - LOC deviation is greater than

1/4 dot (above 15 feet RA) Insert warning

associated with ILS landing capability:

Insert **RA 2** failure to demonstrate downgrading of the approach capability.

- A triple-click aural warning sounds
- The FMA changes to the new approach capability (boxed white).

Insert loss of **RUDDER TRAVEL LIMITER FAULT**

- No change in the FMA landing capability
- Crew has to check QRH OPS.04 if the failure happens above 1000 ft

Demonstrate the **AUTOLAND warning** and Low Level Go around capability

- Insert loss of LOC signal at 150 ft and visual minima zero.
- Go around when AUTOLAND warning is flashing
- Demonstrate the capability of a low level Go Around

Vector for CAT III dual

□ 6 Set weather to 0/0

Engine failure when applying TOGA for G/A

The aircraft reverts to CAT 3 single capability in the event of one engine failed, due to the loss of the electrical power split (device ensuring that both FMGCs are powered by independent electrical sources). Even if the APU generator is used, the FMGCs electrical supply split is not recoverable, due to the A320 electrical system architecture.

□ 8 Brief the crew that visibility will be reduced to zero on the take-off run to illustrate the effectiveness and convenience of the YAW-BAR for directional control

(**NOTE :** YAW-BAR will appear only if the ILS/LOC is available for the Runway used)

**Step 8 only**:

Fail ATHR # 1 after clean up.

Show crew that STS reverts to CAT III single (even when using A/P 2) and that landing capability changes to CAT II when arming the APP and selecting second A/P (reason : FMGS # 1 is master when 2 A/P engaged)

Select A/P 2 only to regain CAT III single

□ 9 Select weather 0/0. AP and ATHR fail at 150 ft.

One AP is available after Clean Up, both ATHR remain unserviceable

□ 10 CAT II Autoland with manual thrust:

Difference to Autothrust

- **"RETARD"** will be triggered for the first time at 10ft instead of 20ft
- RETARD is an **ORDER** in Autothrust, a **REMINDER** in manual thrust.
- depending on the external conditions, the pilot will decide at what point to retard (earlier or later)

Insert auto Brake Failure at 80 kts

□ 11 Tell Captain in the right seat to be incapacitated (no 100kts call). The fire warning at 110 Kts

Will trigger the RTO additionally.

□ 15 Insert excessive beam deviation on approach to trigger a go around

□ 16 Insert failure of ROLL OUT MODE or fail A/Ps on Touch Down if the simulator does not allow this failure.

□ 17 Brief the crew that visibility will be reduced to zero on the take-off run to illustrate the effectiveness and convenience of the YAW-BAR for directional control

(**NOTE :** YAW-BAR will appear only if the ILS/LOC is available for the Runway used)

**Step 8 only**:

Fail ATHR # 1 after clean up.

Show crew that STS reverts to CAT III single (even when using A/P 2) and that landing capability changes to CAT II when arming the APP and selecting second A/P (reason : FMGS # 1 is master when 2 A/P engaged)

Select A/P 2 only to regain CAT III single

□ 18 Set weather to 0/0

Engine failure when applying TOGA for G/A

The aircraft reverts to CAT 3 single capability in the event of one engine failed, due to the loss of the electrical power split (device ensuring that both FMGCs are powered by independent electrical sources). Even if the APU generator is used, the FMGCs electrical supply split is not recoverable, due to the A320 electrical system architecture.

□ 22 Insert Windshear on final

INSTRUCTOR ONLY

**INTENTIONALLY LEFT BLANK**

## L.V.O. FFS CREW OF TWO F/O

| WEATHER | | | |
|---|---|---|---|
| LFPG 27005KT Visi /Ceiling :CATII Q1020 | | | |
| INITPAGE | | | |
| FLTNBR:- NESMA123 | | | |
| FROM<br>LFPG | TO<br>LFBO | ALTN<br>LFLL | |
| CO RTE<br>----- | ALTN/CO RTE<br>----- | | |
| CRZ FL<br>34000 ft | CRZTEMP<br>- 45 °C | | |
| CI<br>30 | TROPO<br>36090 | | |
| TRIPWIND<br>- | TRIP DIST<br>350NM | | |
| INITNEXTPAGE | | | |
| ZFW<br>58T | ZFWCG<br>28% | FOB<br>6T | GW<br>64T |
| NOTES | | | |
| RWYCONDWET<br>AIR CONDON<br>ANTI ICE ENG ON | FPLN : | | |

| AIRLINE OPERATIONAL MINIMUM :<br>LOW VISIBILITY TAKEOFF<br>APPROACH CAT II | | |
|---|---|---|
| **Time** | **EVENTS** | |
| | | |
| | **INIT FINAL APP** | |
| | ⓘ 1 - DEMO OF VISUAL SEGMENTS WITH DIFFERENT MINIMA (FREEZE) | |
| 0:35 | ⓘ 2 - DEMO OF DEFINED TECHNICAL FAILURES ON FINAL (PARTLY: FREEZE) LANDING | |
| | LANDING INSTRUCTOR TO TAKE LEFT SEAT | |
| | | |
| | **INIT FINAL APP - INSTRUCTOR TAKES LH SEAT** | |
| | ⓘ 3 - REPOS ON FINAL 2500FT - CAT III DUAL - G/A DUE TO EXCESSIVE BEAM DEVIATION ON FINAL -AUTOLAND LIGHT | |
| 0:55 | 4 - CAT III DUAL - LANDING | |
| | | |
| | **INIT TAKEOFF** | |
| | ⓘ 5 - TAKEOFF BY F/O | |
| | ⓘ 6 - CAT III DUAL – 100f DH - ADR 1 FAILURE AT 300 FT – G/A | |
| | ⓘ 7 - CAT III SINGLE - AP1+2 FAULT AT 1 50FT- NO VISUAL CONTACT – MANUAL G/A | |
| 1:45 | 8 - CAT III SINGLE- AUTOMATIC LANDING | |
| | | |
| | **INIT TAKEOFF** | |
| | ⓘ 9 - TAKEOFF RVR 150M - ENGINE FIRE AT 110KTS - RTO - AUTOBRAKE FAILURE | |
| | | |
| | **INIT TAKEOFF** | |
| | ⓘ 10 - TAKEOFF BY F/O - CAPT INCAPACITATED ON ROTATION - SELECT CAT I WEATHER AUTOLAND APPROACH BY F/O | |
| | | |
| | **INIT DOWNWIND** | |
| | 11 - CAT III DUAL TO 100f DH - LANDING | |
| 2:15 | 12 - TAXI IN LOVIS | |
| | | |
| | **SEAT CHANGE** | |

## L.V.O. FFS CREW OF TWO F/O

| WEATHER | | | |
|---|---|---|---|
| LFPG 27005KT Visi /Ceiling :CATII Q1020 | | | |
| **INITPAGE** | | | |
| FLTNBR:- NESMA123 | | | |
| FROM<br>LFZZ | TO<br>LFZZ | ALTN<br>LFLL / AIBLYS | |
| CO RTE<br>----- | ALTN/CO RTE<br>----- | | |
| CRZ FL<br>4000 ft. | CRZTEMP<br>- 5 °C | | |
| CI<br>30 | TROPO<br>36090 | | |
| TRIPWIND<br>- | TRIP DIST<br>LOCAL | | |
| **INITNEXTPAGE** | | | |
| ZFW<br>48T | ZFWCG<br>28% | FOB<br>10T | GW<br>58 T |

**NOTES**

RWYCONDWET FPLN :
AIR CONDON
ANTI ICE ENG ON

**AIRLINE OPERATIONAL MINIMUM :**

LOW VISIBILITY TAKEOFF

APPROACH CAT II CAT III

| Ti | | EVENTS | |
|---|---|---|---|
| | | **INIT FINAL APP** | |
| | 13 - REPOS ON FINAL 25000FT - CAT III DUAL 100f DH – G/A DUE TO ILS | | |
| 2:4 5 | 14 - CAT III DUAL TO 100f DH - | | |
| | | | |
| | | **INIT TAKEOFF** | |
| | 15 - TAKEOFF BY F/O | | |
| | 16 - CAT III DUAL - DH 100 FT – NO | | |
| | 17 - CAT III SINGLE - WINSHEAR ON FINAL - | | |
| 3:3 5 | 18 - CAT II - LANDING | | |
| | | | |
| | | **INIT TAKEOFF** | |
| | 19 - TAKEOFF - ENGINE FIRE AT 110KTS RTO - NO SPOILERS | | |
| | | | |
| | | **INIT TAKEOFF** | |
| | 20 - TAKEOFF BY F/O - CAPT INCAPACITATED ON ROTATION - SELECT CAT I WEATHER AUTOLAND APP BY F/O | | |
| | | | |
| | | **INIT DOWNWIND** | |
| 4:0 0 | 21 - CAT III DUAL TO 100fDH - LANDING | | |
| | | | |

SESSION GUIDE



- Three session-options are available, differing for various crew complements:

  Crew consisting of two first officers:
  The session starts (without T/O) directly with the two Demo Parts (Repos Final).

  To give the F/Os optimum training benefit, the instructor will take the left hand seat after the Demo Parts. The instructor screens can be handled on all simulators from the captain's seat by swiveling them forward (simulators not capable of being controlled from the captains seat will if possible be avoided for LVO sessions with 2 F/Os).

- The scenario starts with Demo-Parts and one Ops part. The Demo-parts show

  1. The various visual aspects at different minima and in different ambient conditions
  2. Various failures on final approach.

  For the Demo-Parts extensive use of repositioning and freeze functions should be made.

- The Ops part should be conducted in real-time; no reposition on final, no freeze and no slew should be used (with exception of repetitions of unsatisfactory items). The crew shall have the opportunity to experience the different tasks in real time and assimilate the various failures they encounter.
  Short vectors are appropriate and will allow the completion of the program within the given timeframe.
- For better time management the Captain may advise "Briefing as before except…." This is acceptable for this session.
- Taxi operations in L.V.O. are **mandatory** items.
- Altering the program should be avoided (exercises are legal requirements of EASA).

INSTRUCTOR ONLY

- Incapacitation of pilot exercises :

  F/Os are given the opportunity to conduct one Autoland approach with Captain incapacitated. Target of the exercise is not to train LVO single pilots operation, but to give the F/O the demonstration and confidence that an Autoland (also in good weather conditions) is a reasonable option if the other pilot becomes incapacitated. Legally the F/O succeeds in the command of the aircraft and would even be allowed to conduct LVO approaches exercising his Emergency Command Authority.

  To distinguish this exercise from LVO training, increase weather to CAT I or better for this approach.

- The session ends with an uneventful CAT III Approach with NO DH and taxi in. Thus a positive training effect will be reinforced after training the various failure cases.

SESSION FOR CREW WITH TWO FIRST OFFICERS

□ 1 Reposition on long final, demonstration of visual segments (adapt minima to lowest minima of customer if required).

Select RVR 550 m

- Freeze the approach at DH 200 ft and review visual segment (day and night)
- Ask crew to switch landing lights ON and OFF to show the change in visual cues.
- Vary the flight deck lighting to illustrate the necessity of low intensity

Select RVR 300 m, freeze at 100ft…

… And review visual segment (day and night, lights on and off)

□ 2 **Setup**:

- You may freeze the simulator for failures not depending on aircraft movement, to show the mode switching and the change on displays
- Freeze the Sim after G/A (acceleration height) and reposition to T/O for next exercise (Note: Demo counts as first LVO Approach)

Insert **transmitter fault** (G/S then LOC)

- The corresponding index is lost
- The LOC and/or G/S scales flash
- The corresponding FD bars flash
- Above 200 ft RA, if the transmitter failure lasts less than 7 seconds, the FGS retains the LOC and G/S modes (or the LAND mode) and autopilots continue to work
- CAUTION: NO RED WARNING.
- If the failure lasts longer than 7 seconds, the APs disengage and the FDs revert to HDG-V/S or TRK-FPA mode.
- Below 200 ft RA, the autoland warning will

appear. Insert ILS **receiver failure**

- The PFD and ND (rose ILS mode) display red LOC and G/S flags
- LOC and G/S scales disappear from PFD.
- If LOC or G/S modes are engaged and at least one AP/FD is engaged :
  - The APs disengage.
  - The FDs revert to HDG-V/S or TRK - FPA mode.

INSTRUCTOR ONLY

INSTRUCTOR ONLY

Insert **RA 2** failure to demonstrate downgrading of the approach capability.
A triple-click aural warning sounds.
The FMA changes to the new approach capability (boxed white).

Insert l **rudder travel limiter fault.**

- No change in the FMA landing capability.
- Crew has to check OPS.04 if the failure happens above 1000 ft

Demonstrate the **AUTOLAND warning** and Low Level Go around capability.
Insert loss of LOC signal at 150 ft and visual minima zero.
Go around when AUTOLAND warning is flashing.
Demonstrate the capability of a low level Go Around.

After Clean Up freeze and INIT APP.

Seat Change -Instructor Takes the Left Hand seat for the rest of the session.

*3* Insert **excessive beam deviation**
Set RVR 75 m

*5* For F/O Take Off select 400m RVR (or Company minimum if different).

*6* Insert ADR 1 FAILURE AT 300 FT

*7* Set RVR 0
Set AP 1+2 FAILURE at 100ft
Perform manual G/A.
AP 1+2 available again after Clean Up. Set CAT II weather minima

*9* F/O to call NO DECEL resp. NO SPOILERS.

*10* Select CAT I weather or better, autoland by F/O.

*15* For F/O Take Off select 400m RVR.

*16* G/A by F/O after handover of controls.

*17* Insert **Windshear** on final.
Perform G/A.
Insert **RA2 fault leading to CAT II landing.**

*19* F/O to call NO DECEL resp. NO SPOILERS.

*20* Select CAT I weather or better, autoland by F/O.

**SECTION 4 TYPE RATING CHECK A320 ........ 2**
TYPE RATING CHECK A320 ........ 2

# TYPE RATING CHECK A320

## TYPE RATING CHECK A320

```
PLAN 5360                HECA TO HEGN C320   C25/F IFR  12/11/15
NONSTOP COMPUTED 1152Z  FOR ETD 0600Z  PROGS  1200ADF  SU-NMA   KGS

REMARKS:


STA . . . . ATA . . . .  LDG     . . . .  CAPT . . . . . . . . . . .
STD . . . . ATD . . . .  T.OFF   . . . .  F/O  . . . . . . . . . . .
SBT . . . . ABT . . . .  F.TIME . . . .  S/O  . . . . . . . . . . .
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
FUEL PLAN
GROUND DIST  219NM    AV WC P008 FL250/M24  MXSH  3/TOC
TRIP               1570  0.38  . . . .     MDF     1621
CONTINGENCY (5 %)   400  0.02  . . . .
ALTERNATE           753  0.21  . . . .   HESH
FINAL RESERVE       868  0.30  . . . .           APMS/ +03.0 PCNT
ADDIT/CFS             0                          DEGREDATION VALUE
MIN T/O FUEL       3591 01.31  . . . .           AS A %
TAXY/APU            500                          EFF: .. .. ..
EXTRA/TANKER        400        . . . . REASON .. .. .. .. ..
TOT   FUEL         4491        . . . .
FOUR FOUR NINE ONE KGS

                         MSA  TTK  DIST  FL   W/C   TIME  ETA   FUEL
ALTERNATE - 1  HESH  105  033  0082  110  P008  0.21  0659  000753

ROUTE TO FIRST ALTERNATE
HEGN..HGD R650 SHM..HESH


FUEL BURN ADJUSTMENT FOR 2000FT INCREASE IN CRZ ALTITUDE :   -21 KGS
FUEL BURN ADJUSTMENT FOR 2000FT DECREASE IN CRZ ALTITUDE :    27 KGS
FUEL BURN ADJUSTMENT FOR 2000KGS INCREASE/DECREASE IN TOW :    23 KGS

          E.WT    ACT. WT       STRUC/OPS LIMITS
BASIC WT  044096  . . . . .
PLD       002000  . . . . .
ZFW       046096  . . . . .     061000
TOF       004191  . . . . .     018700
TOW       050287  . . . . .     077000
TRIP FUEL 001570  . . . . .               FUEL BURN . . . . . . . . .
LAW       048717  . . . . .     064500    CAPT SIGN . . . . . . . . .
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
ROUTE DESCRIPTION : COMPANY ROUTE CAI-HRG

CLEARANCE

HECA..CVO L315 HGD..HEGN

FL  250



(FPL-TEST-IS
-A320/M-SDFHIRWY/S
-HECA0600
-N0426F250 DCT CVO L315 HGD DCT
-HEGN0038 HESH
-PBN/B3B4B5 COM/CPDLCX DAT/V DOF/151113 REG/SUNMA SEL/QRCF
 CODE/010140 PER/C
-E/0131 P/TBN R/E S/M J/L D/0 0
 A/WHITE)
```

```
ATC FILING ADDRESSES
HECAZPZX HECCZQZX HEGNYFYX HEGNZAZR HEGNZIZX HEGNZTZX HECAYDYX
HECAYUYX HECAZATC HECAZIZX HECAZTZX HECCZQZR

HECA ELEV  00467FT   ALT IND 1......    ALT IND 2...... ST BY ......

AWY   W/P     FREQ     SR OAT TAS G/S -TTK-LEG DIST TM   ACTM FOB XTR
FL  LAT/LONG          MSA W/V     COMP IMT DIS TOGO ETA  ATA  REQ
                                                    RETA
..    CVO     115.2      .. ..   ..  -227-002 0217 001 00.01 ... ....
CLB N3005.5 E03123.3 ... .. . .. . .. 223           ... .....  3298
CAIRO                -------------------------------- ... --------------
L315  TOC              03 24  426 449 -143-046 0171 008 00.09 ... ....
250 N2928.8 E03154.6 115 27/046 P020  139           ... .....  2573
                     -------------------------------- ... --------------
L315  TOD              03 24  426 449 -143-093 0078 012 00.21 ... ....
250 N2813.2 E03257.0 115 27/046 P023  139           ... .....  2050
                     -------------------------------- ... --------------
L315  OBTAV              .. ..   ..  -143-015 0063 002 00.23 ... ....
DSC N2801.3 E03307.0 115 28/034 P020  139           ... .....  2008
                     -------------------------------- ... --------------
L315  HGD     116.5      .. ..   ..  -144-062 0001 015 00.38 ... ....
DSC N2710.7 E03347.8 115 06/007 M002  140           ... .....  1825
HURGHADA             -------------------------------- ... --------------
..    HEGN               .. ..   ..  -090-001 0000 000 00.38 ... ....
DSC N2710.7 E03348.1 ... .. . .. . .. 086           ... .....  1821
                     -------------------------------- ... --------------
     ELEV   00052FT


ALTERNATE HESH/SSH    (CRUISE LRC)

AWY   W/P     FREQ     SR OAT TAS G/S -TTK-LEG DIST TM   ACTM FOB XTR
FL  LAT/LONG          MSA W/V     COMP IMT DIS TOGO ETA  ATA  REQ
                                                    RETA
..    TOC         03      P05 240 246 -360-014 0014 004 00.04 ... ....
110 N2724.8 E03348.0 ... 23/009 P006  356           ... .....  1437
                     -------------------------------- ... --------------
..    HGD     116.03      P05 283 289 -360-007 0021 001 00.05 ... ....
110 N2710.7 E03347.8 ... 23/009 P006  356           ... .....  1388
                     -------------------------------- ... --------------
R650  TOD         03      P05 215 224 -034-016 0037 003 00.08 ... ....
110 N2724.0 E03357.8 088 08/007 P009  030           ... .....  1261
                     -------------------------------- ... --------------
R650  SHM     114.03      P15 216 211 -034-043 0080 012 00.20 ... ....
DSC N2759.9 E03424.8 088 08/007 M004  030           ... .....  1077
                     -------------------------------- ... --------------
..    HESH        03      P15         -360-002 0082 001 00.21 ... ....
DSC N2758.7 E03423.6 ... 09/008  000  356           ... .....  1068
                     -------------------------------- ... --------------

WINDS/TEMPERATURES ALOFT FORECAST
FD DATA BASED ON  1200ADF
        12000   18000   24000   30000   33000   35000   37000   39000
CVO    0312P02 2832M08 2746M23 2659M36 2666M43 2667M47 2666M51 2664M55
OBTAV  1913P02 2729M08 2744M22 2759M35 2666M43 2669M47 2668M51 2668M55
HGD    2412P03 2824M08 2739M20 2759M35 2767M42 2671M46 2671M50 2672M55
HEGN   2311P03 2923M07 2738M20 2758M35 2766M42 2669M46 2670M50 2671M55



                      MSA  TTK  DIST  FL   W/C   TIME  FUEL
ALTERNATE  - 1  HESH   105 033   082  110  P008  00.21 753
```

```
PLAN 5362                HEGN TO HECA C320   C25/F IFR  12/11/15
NONSTOP COMPUTED 1154Z   FOR ETD 0600Z  PROGS   1200ADF  SU-NMA   KGS

REMARKS:


STA . . . . ATA . . . .  LDG      . . . .  CAPT . . . . . . . . . . . .
STD . . . . ATD . . . .  T.OFF    . . . .  F/O  . . . . . . . . . . . .
SBT . . . . ABT . . . .  F.TIME . . . . .  S/O  . . . . . . . . . . . .
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
FUEL PLAN
GROUND DIST  277NM   AV WC M023 FL240/M20  MXSH  8/CVO
TRIP               2079  0.48   . . . .     MDF      1906
CONTINGENCY (5 %)   400  0.02   . . . .
ALTERNATE          1045  0.26   . . . .   HEBA
FINAL RESERVE       861  0.30   . . . .          APMS/ +03.0 PCNT
ADDIT/CFS             0                          DEGREDATION VALUE
MIN T/O FUEL       4385 01.46   . . . .          AS A %
TAXY/APU            500                          EFF: .. .. ..
EXTRA/TANKER        100         . . . . REASON .. .. .. .. ..
TOT   FUEL         4985         . . . .
FOUR NINE EIGHT FIVE KGS

                      MSA  TTK  DIST  FL   W/C   TIME  ETA   FUEL
ALTERNATE - 1  HEBA   027  298  0124  240  M030  0.26  0714  001045

ROUTE TO FIRST ALTERNATE
HECA..MENKU A727 NOZ..ALPAM..HEBA


FUEL BURN ADJUSTMENT FOR 2000FT INCREASE IN CRZ ALTITUDE :   -36 KGS
FUEL BURN ADJUSTMENT FOR 2000FT DECREASE IN CRZ ALTITUDE :    47 KGS
FUEL BURN ADJUSTMENT FOR 2000KGS INCREASE/DECREASE IN TOW :    21 KGS

          E.WT    ACT. WT       STRUC/OPS LIMITS
BASIC WT  044096  . . . . .
PLD       002000  . . . . .
ZFW       046096  . . . . .     061000
TOF       004785  . . . . .     018700
TOW       050881  . . . . .     077000
TRIP FUEL 002079  . . . . .               FUEL BURN . . . . . . . . . .
LAW       048802  . . . . .     064500    CAPT SIGN . . . . . . . . . .
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
ROUTE DESCRIPTION : COMPANY ROUTE HRG-CAI

CLEARANCE

HEGN..HGD V603 GIDID..KAPIT UL677 MENLI..CVO..N2944.3E03117.5..
N2958.2E03113.5..N3005.5E03123.3..HECA

FL  240



(FPL-TEST-IS
-A320/M-SDFHIRWY/S
-HEGN0600
-N0424F240 DCT HGD V603 GIDID DCT KAPIT UL677 MENLI DCT CVO DCT
 2944N03117E DCT 2958N03114E DCT 3005N03123E DCT
-HECA0048 HEBA
-PBN/B3B4B5 COM/CPDLCX DAT/V DOF/151113 REG/SUNMA SEL/QRCF
 CODE/010140 PER/C
-E/0146 P/TBN R/E S/M J/L D/0 0
```

```
 A/WHITE)

ATC FILING ADDRESSES
HEGNZPZX HECAZPZX HECCZQZX HECAYDYX HECAZTZX HECAYUYX HECAZATC
HECCZQZR HEGNYFYX HEGNZAZR HEGNZIZX HEGNZTZX

HEGN ELEV  00052FT   ALT IND 1......    ALT IND 2...... ST BY ......

AWY   W/P     FREQ    SR OAT TAS G/S -TTK-LEG DIST TM   ACTM FOB XTR
FL  LAT/LONG         MSA W/V     COMP IMT DIS TOGO ETA  ATA  REQ
                                                   RETA
..    HGD     116.5      .. ..   ..  -270-001 0276 001 00.01 ... ....
CLB N2710.7 E03347.8 ... .. . .. . .. 266           ... .....  4242
HURGHADA             ------------------------------ ... --------------
V603  TOC             03 20  424 415 -352-050 0226 008 00.09 ... ....
240 N2800.0 E03340.2 115 27/040 M009  348           ... .....  3425
                     ------------------------------ ... --------------
V603  GIDID           03 20  424 415 -352-013 0213 002 00.11 ... ....
240 N2813.0 E03338.1 115 27/040 M009  348           ... .....  3345
                     ------------------------------ ... --------------
..    KAPIT           03 21  423 394 -320-084 0129 013 00.24 ... ....
240 N2917.0 E03236.1 115 27/043 M029  316           ... .....  2797
                     ------------------------------ ... --------------
UL677 MENLI           03 22  421 386 -308-049 0080 007 00.31 ... ....
240 N2947.0 E03152.1  56 27/045 M035  304           ... .....  2473
                     ------------------------------ ... --------------
..    TOD             02 23  421 385 -307-010 0070 002 00.33 ... ....
240 N2952.8 E03142.6  43 27/046 M036  302           ... .....  2407
TOD                  ------------------------------ ... --------------
..    CVO     115.2     .. ..   ..   -307-021 0049 003 00.36 ... ....
DSC N3005.5 E03123.3  43 30/029 M020  302           ... .....  2352
CAIRO                ------------------------------ ... --------------
..    CA442             .. ..   ..   -193-022 0027 004 00.40 ... ....
DSC N2944.3 E03117.5  43 06/005 P007  189           ... .....  2313
                     ------------------------------ ... --------------
..    CA416             .. ..   ..   -346-014 0013 003 00.43 ... ....
DSC N2958.2 E03113.5  43 07/015 M002  342           ... .....  2282
                     ------------------------------ ... --------------
..    CA418             .. ..   ..   -049-011 0002 004 00.47 ... ....
DSC N3005.5 E03123.3  43 07/016 M015  045           ... .....  2226
                     ------------------------------ ... --------------
..    HECA              .. ..   ..   -047-002 0000 001 00.48 ... ....
DSC N3006.7 E03124.8 ... .. . .. . .. 043           ... .....  2206
                     ------------------------------ ... --------------
     ELEV   00467FT


ALTERNATE HEBA/HBE    (CRUISE LRC)

AWY   W/P     FREQ    SR OAT TAS G/S -TTK-LEG DIST TM   ACTM FOB XTR
FL  LAT/LONG         MSA W/V     COMP IMT DIS TOGO ETA  ATA  REQ
                                                   RETA
..    TOC         02      M23 334 305 -316-044 0044 008 00.08 ... ....
240 N3038.1 E03049.1 027 35/015 M028  312           ... .....  1450
                     ------------------------------ ... --------------
..    TOD         02      M23 264 234 -316-005 0049 001 00.09 ... ....
240 N3010.3 E03120.8 027 35/015 M029  312           ... .....  1396
                     ------------------------------ ... --------------
..    MENKU       02        00 266 254 -316-033 0082 007 00.16 ... ....
DSC N3105.5 E03018.1 027 35/015 M011  312           ... .....  1293
                     ------------------------------ ... --------------
A727  NOZ     115.02      P07 263 266 -288-019 0101 004 00.20 ... ....
DSC N3111.3 E02957.0 018 03/011 P003  283           ... .....  1234
                     ------------------------------ ... --------------
..    ALPAM       02      P09 263 278 -215-021 0122 005 00.25 ... ....
DSC N3054.0 E02943.0 021 05/015 P015  211           ... .....  1168
```

```
                                   ------------------------------- ... --------------
..     HEBA         02      P09          -360-002 0124 000 00.25 ... ....
DSC N3055.1 E02941.8 ... 04/015  000  356            ... .....  1162
                                   ------------------------------- ... --------------

WINDS/TEMPERATURES ALOFT FORECAST
FD DATA BASED ON   1200ADF
        10000    24000    30000    32000    34000    36000    38000    40000
HGD    2207P07 2738M20 2758M35 2763M39 2768M44 2670M48 2671M53 2670M57
GIDID  2107P06 2740M20 2760M35 2765M39 2770M44 2671M48 2672M53 2671M57
KAPIT  1807P06 2743M21 2760M35 2765M40 2669M45 2670M49 2670M53 2669M57
MENLI  1306P05 2745M22 2760M36 2664M40 2669M45 2668M49 2667M53 2666M57
CVO    0805P05 2746M23 2660M36 2664M41 2668M45 2667M49 2666M53 2664M57
CA442  0605P05 2746M23 2660M36 2664M41 2668M45 2667M49 2665M53 2663M57
CA416  0505P05 2646M23 2659M36 2664M41 2668M45 2667M49 2665M53 2664M57
CA418  0605P05 2746M23 2660M36 2664M41 2668M45 2667M49 2665M53 2663M57
HECA   0705P05 2746M23 2659M36 2664M41 2668M45 2667M49 2665M53 2663M57



                          MSA  TTK  DIST  FL   W/C   TIME  FUEL
ALTERNATE  - 1  HEBA     027 298   124  240  M030  00.26 1045

END OF JEPPESEN DATAPLAN
REQUEST NO.  5362
```

**WEATHER**

HECA CALM CAVOK 13/10 Q1013

**FLIGHT DATA**

| FLT NBR | FROM | TO | ALT |
| --- | --- | --- | --- |
| NMA ------- | HECA | HEGN | HESH |

| CI | CRZ FL | CRZ TEMP |
| --- | --- | --- |
| 25 | FL 070 | +2 C |

| TRIP WIND | TRIP DIST |
| --- | --- |
| 220/11 | 82 NM |

**FUEL & LOAD**

| ZFW | ZFW CG | FOB | GW |
| --- | --- | --- | --- |
| 46.1 | 31.2 | 3600 | 49.5 |

**NOTES**

- AIR COND ON
- RWY COND DRY
- ANTI ICE OFF

**THIS PAGE INTENTIONALLY LEFT BLANK**

**(APPENDIX F) CCQ Flight Training A330/A340 to A320 .......... 2**

Curriculum .......... 2

Simulator Training .......... 5

**(APPENDIX F) CCQ Flight Training A330/A340 to A320**

**Curriculum**

| | |
| --- | --- |
| **Course Title** | **:** Flight Crew CCQ Flight Training |
| **Trainees/Prerequisites** | **:** Pilot should be rated on the same family with flying experience at least 300 hrs. |
| **Type** | **:** Airbus A320 (from A330 or A340) |
| **Course Objective** | **:** The objective of the course is to train crewmembers in performing procedures, managing and handling of the aircraft during normal and no normal operation, without any assistance in reasonable time and provide the necessary knowledge for the aircraft system differences |
| **Duration** | **:** 20 hrs./crew |
| **Training Device** | **:** Full Flight Simulator (FFS) |
| **Place of Training** | **:** Egypt air training center or any Approved Training Center |
| **Course Handouts** | **:**<br>• FCOM<br>• FCTM<br>• QRH |
| **Course References** | **:**<br>Nesma Airlines Curriculum |

**Flight Training Subject Outline**

| Session No. | FBS/FFS | Subjects | References |
|---|---|---|---|
| 1 | FFS | • All regular normal procedures<br>• Side stick priority<br>• ILS app<br>• VOR app<br>• Go-around<br>• Crosswind landing | |
| 2 | FFS | • Dual Hydraulic Failure<br>• Stall recovery<br>• Steep turn<br>• RA 1+2 failed<br>• Rejected T.O.<br>• Evacuation | |
| 3 | FFS | • Dual generator failure<br>• Engine start failure<br>• Engine Failure After V1<br>• One engine VOR – circling – go-around<br>• One Eng. visual<br>• Avionics smoke | |
| 4 | FFS | PRACTICAL TEST<br>• Engine start faults<br>• Engine failure after v1<br>• One engine (ILS – VOR – circling – go-around)<br>• Dual Hydraulic Failure<br>• Dual FAC failure (*)<br>• Decompression – emergency des<br>• Stall recovery<br>• Steep turn<br>• Rejected T.O.<br>• Evacuation | |

| | | |
|---|---|---|
| **5** | **FFS** | BASE TRAINING<br><br>• Touch & go<br>• T.O. & landing (dry rwy – wet rwy – crosswind – headwind –Tailwind-one engine)<br><br>(*) Capt. item only<br>(**) Demonstration only |

1 session = 4 hrs./crew (2hrs/pilot)

| | | | | | | |
|---|---|---|---|---|---|---|
| Total FFS Sessions/Crew | = | 5 | sessions | = | 20 | hrs./crew |

| | |
|---|---|
| Total Sessions/Crew = | 5 |
| Total Hours/Crew = | 20 |

## Simulator Training

| A320 EVALUATION | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Trainee Name** | | | | **Date** | | | |
| **A/C DATA** | | | | | | | |
| **ZFW** | 48T | **ZFW C.G.** | | 28.4% | **THRUST RED. Alt.** | | 1500" AGL |
| **TOTAL FUEL** | 10T | **TAKEOFF FLAPS** | | 2 | **ACCEL. Alt.** | | 3000" AGL |
| **TAKEOFF WEIGHT** | 58T | **CRUISE ALTITUDE** | | FL | **TAKEOFF FLEX** | | |
| **COST INDEX** | 30 | **SPEEDS** | $V_1$ : | | $V_R$ : | | $V_2$ : |

| SESSION DATA AND WEATHER | | | |
|---|---|---|---|
| **DEPARTURE AIRPORT** | **AIRPORT**<br>HECA | **RUNWAY IN USE**<br>05R | |
| **WEATHER** | " To Be Selected By The Instructor According To The Manoeuvre " | | |
| **ATC** | To Be Selected By The Instructor | | |
| **ARRIVAL AIRPORT** | **AIRPORT**<br>HELX | **RUNWAY IN USE**<br>20 | |
| **WEATHER** | " To Be Selected By The Instructor According To The Manoeuvre " | | |
| **ATC** | To Be Selected By The Instructor | | |

**Comments:**

**CCQ – A320 Evaluation Page 1 of 2**

| TIME | EVALUATION FFS | AP | FD | ATHR | TRK-FPA |
|---|---|---|---|---|---|
| | **PF – CM1** | | | | |
| | 1. TRANSIT COCKPIT PREPARATION | | | | |
| | 2. BEFORE START | | | | |
| | 3. ENGINE START (ABNORMAL) | | | | |
| | 4. AFTER START | | | | |
| | 5. TAXI | | | | |
| | 6. BEFORE TAKEOFF | | | | |
| | 7. TAKEOFF ENGINE FAILURE ABOVE $V_1$ | | X | X | |
| | 8. ILS APPROACH ONE ENGINE OUT | | X | X | |
| | 9. GA ONE ENGINE OUT | X | X | X | |
| | 10. VOR APPROACH ONE ENGINE OUT | X | | X | X |
| | 11. CIRCLING TO LAND ONE ENGINE OUT | | | | X |
| | 12. LANDING | | | | X |
| | 13. TAKE OFF | | | | |
| | 14. FMGS EXERCISES DURING CLIMB | X | X | X | |
| | 15. LEVEL AT FL 100 | | | | |
| | 16. STEEP TURN + STALL RECOVERY | | | | |
| | 17. CONTINUE CLIMB TO FL 350 | | | | |
| | 18. EMERGENCY DESCENT | X | X | X | |
| | 19. RESTORE | | | | |
| | 20. RETURN TO DEPARTURE AIRPORT | | | | |
| | 21. HYD. BLUE SYSTEM LOW LEVEL | | | | |
| | 22. HYD. GREEN SYSTEM LOW LEVEL | | | | |
| | 23. HYD. DUAL SYSTEM LOW PRESSURE ILS APPROACH | | X | | |
| | 24. LANDING | | | | |
| | **PF – CM2** | | | | |
| | 1. TAKEOFF ENGINE FAILURE ABOVE $V_1$ | | X | X | |
| | 2. ILS APPROACH ONE ENGINE OUT | | X | X | |
| | 3. GA ONE ENGINE OUT | X | X | X | |
| | 4. VOR APPROACH ONE ENGINE OUT | X | | X | X |
| | 5. LANDING | | | X | X |
| | 6. TAKE OFF | | | | |
| | 7. FMGS EXERCISES DURING CLIMB | x | x | X | |
| | 8. LEVEL AT FL 100 | | | | |
| | 9. STEEP TURN + STALL RECOVERY | | | | |
| | 10. CONTINUE CLIMB TO FL 350 | | | | |
| | 11. EMERGENCY DESCENT | x | x | X | |
| | 12. RETURN TO DEPARTURE AIRPORT | | | | |
| | 13. RADAR VECTOR FOR ILS APPROACH | | | | |
| | 14. FLAPS OR SLATS LOCKED | | | | |
| | 15. ABNORMAL FLAPS OR SLATS ILS APPROACH | | | | |
| | 16. LANDING | | | | |
| | **PF – CM1 OR CM2** | | | | |
| | TAKEOFF ENGINE FIRE AT V1 – 15KT ( IN EXTINGUISHABLE) | | | | |
| | REJECTED TAKEOFF | | | | |
| | ON GROUND EVACUATION | | | | |

| **SATISFACTORY** o | | **UNSATISFACTORY** o |
|---|---|---|
| Trainee Name | Code | Signature |
| Instructor Name | Code | Signature |

**CCQ – A320 Evaluation Page 2 of 2**

# CCQ A330 / A340 TO A320 FFS-1

| Trainee Name | | ID No. | ☐ Capt. | ☐ F/O |
|---|---|---|---|---|

| FLIGHT TRAINING TIME | TIME PF | TIME PNF | DATE |
|---|---|---|---|
| | | | |

**A/C DATA**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| ZFW | | ZFW C.G. | | | THRUST RED. Alt. | | |
| TOTAL FUEL | | TAKEOFF FLAPS | | | ACCEL. Alt. | | |
| TAKEOFF WEIGHT | | CRUISE ALTITUDE | | | TAKEOFF FLEX | | |
| COST INDEX | | SPEEDS | $V_1$ : | | $V_R$ : | | $V_2$ : |

**SESSION DATA AND WEATHER**

| | | | |
|---|---|---|---|
| DEPARTURE AIRPORT | AIRPORT<br>HECA | RUNWAY IN USE<br>05C | ATC |
| WEATHER | 010/5 CAVOK 25/12 1015 | | |
| ATC | | | |
| ARRIVAL AIRPORT | AIRPORT<br>HECA | RUNWAY IN USE<br>05C | ATC |
| WEATHER | 010/5 CAVOK 25/12 1015 | | |
| ATC | | | |

| PF SESSION | US | S1 | S2 | S3 |
|---|---|---|---|---|
| ECAM SEQUENCE | | | | |
| VISUAL PATTERN | | | | |
| PRECISION APPROACH | | | | |
| GO – AROUND TWO ENGINE | | | | |
| NON PRECISION APPROACH | | | | |
| CIRCLING APPROACH | | | | |

| PNF SESSION | US | S1 | S2 | S3 |
|---|---|---|---|---|
| NORMAL PROCEDURES | | | | |
| USE OF CHECKLIST | | | | |
| USE OF ECAM | | | | |
| SUPPORT OF PF | | | | |

| GENERAL PERFORMANCE | US | S1 | S2 | S3 |
|---|---|---|---|---|
| FLYING ACCURACY | | | | |
| USE OF FMS | | | | |
| USE OF FLIGHT GUIDANCE SYSTEM | | | | |
| USE OF FD – FPV – FPD CROSS POINTERS | | | | |
| IFR PROCEDURES | | | | |
| CREW COORDINATION | | | | |
| GENERAL PROGRESS | | | | |
| GENERAL PERFORMANCE | | | | |
| BRIEFINGS | | | | |

**Comments:**

CCQ – A330/A340 to A320 FFS-1 Page 1 of 2

| TIME | CCQ A330 / A340 TO A320 | AP | FD | ATHR | TRK-FPA |
|---|---|---|---|---|---|
| | **Trainee 1** | | | | |
| | 1 - PRELIMINARY COCKPIT PREP | | | | |
| | 2 - BEFORE START | | | | |
| | 3 - ENGINE START | | | | |
| | 4 - TAXI | | | | |
| | 5 - BEFORE TAKE OFF | | | | |
| | 6 - TAKE OFF | | X | X | |
| | 7 - CLIMB FL 100 - RETURN TO DEPARTURE | X | X | X | |
| | 8 - FUEL UNBALANCE - Restore | X | X | X | |
| | 9 - EIS DMC SWITCHING | X | X | X | |
| | 10 - RETURN TO DEPARTURE | X | X | X | |
| | 11 - ILS APPROACH | X | X | X | |
| | 12 - AUTOLAND | X | X | X | |
| | **INIT HOLD** | | | | |
| | 13 - TAKE OFF (CROSSWIND) | | | | |
| | 14 - VISUAL PATTERN | | | X | X |
| | 15 - GO AROUND (BELOW 30 FT) | | X | X | |
| | 16 - VISUAL PATTERN | | | X | X |
| | 17 - LANDING (CROSSWIND) | | | X | X |
| | **INIT TAKE OF** | | | | |
| | 18 - TAKE OFF (CROSSWIND) | | X | X | |
| | 19 - NON PRECISION APPROACH | X | X | X | X |
| | 20 – CIRCLING | | | X | X |
| | 21 – LANDING | | | | |
| | **Trainee 2** | | | | |
| | **INIT HOLD** | | | | |
| | 22 - TAKE OFF | | X | X | |
| | 23 - CLIMB FL 80 - RETURN TO DEPARTURE | X | X | X | |
| | **DUAL FMGS FAILURE DEMO** | | | | X |
| | 24 - RETURN TO DEPARTURE | X | X | X | |
| | 25 - ILS APPROACH | X | X | X | |
| | 26 – LANDING | | | | |
| | **INIT TAKE OFF** | | | | |
| | 27 - TAKE OFF (CROSSWIND) | | X | X | |
| | 28 - VISUAL PATTERN | | | X | X |
| | 29 - GO AROUND (BELOW 30 FT) | | X | X | |
| | 30 - VISUAL PATTERN | | | X | X |
| | 31 - LANDING (CROSSWIND) | | | | |
| | **INIT TAKE OFF** | | | | |
| | 32 - TAKE OFF (WINDSHEAR) | | X | X | |
| | 33 - NON PRECISION APPROACH | | X | X | X |
| | 34 - CIRCLING | | | X | X |
| | 35 - LANDING | | | | |
| | 36 - AFTER LANDING | | | | |
| | 37 - PARKING | | | | |
| | | | | | |

| | | |
|---|---|---|
| **PROGRESS IS NORMAL** o | | **MAY NEED EXTRA TRAINING** o |
| Trainee Name | ID No. | Signature |
| Instructor Name | ID No. | Signature |

**CCQ – A330/A340 to A320 FFS-1 Page 2 of 2**

# CCQ A330 / A340 TO A320 FFS-2

| Trainee Name | | ID No. | ☐ Capt. | ☐ F/O |
|---|---|---|---|---|
| FLIGHT TRAINING TIME | TIME PF | TIME PNF | DATE | |

| A/C DATA | | | | | |
|---|---|---|---|---|---|
| ZFW | | ZFW C.G. | | THRUST RED. Alt. | |
| TOTAL FUEL | | TAKEOFF FLAPS | | ACCEL. Alt. | |
| TAKEOFF WEIGHT | | CRUISE ALTITUDE | | TAKEOFF FLEX | |
| COST INDEX | | SPEEDS | $V_1$ : | $V_R$ : | $V_2$ : |

| SESSION DATA AND WEATHER | | | |
|---|---|---|---|
| DEPARTURE AIRPORT | AIRPORT<br>HECA | RUNWAY IN USE<br>05C | ATC |
| WEATHER | 020/15 OVC 800 VIS 2000M 20/10 1020 | | |
| ATC | | | |
| ARRIVAL AIRPORT | AIRPORT<br>HECA | RUNWAY IN USE<br>05C | CAT |
| WEATHER | 020/15 OVC 800 VIS 2000M 20/10 1020 | | |
| ATC | | | |

| PF SESSION | US | S1 | S2 | S3 |
|---|---|---|---|---|
| ALTERNATE LAW | | | | |
| DIRECT LAW | | | | |
| DUAL HYDRAULIC FAILURE | | | | |
| NO FLAPS LANDING | | | | |
| REJECTED TAKEOFF | | | | |
| EVALUATION | | | | |
| **PNF SESSION** | **US** | **S1** | **S2** | **S3** |
| NORMAL PROCEDURES | | | | |
| USE OF CHECKLIST | | | | |
| USE OF ECAM | | | | |
| SUPPORT OF PF | | | | |
| **GENERAL PERFORMANCE** | **US** | **S1** | **S2** | **S3** |
| FLYING ACCURACY | | | | |
| USE OF FMS | | | | |
| USE OF FLIGHT GUIDANCE SYSTEM | | | | |
| USE OF FD – FPV – FPD CROSS POINTERS | | | | |
| IFR PROCEDURES | | | | |
| CREW COORDINATION | | | | |
| GENERAL PROGRESS | | | | |
| GENERAL PERFORMANCE | | | | |
| BRIEFINGS | | | | |

**Comments:**

CCQ – A330/A340 to A320 FFS-2 Page 1 of 2

| TIME | CCQ A330 / A340 TO A320 | AP | FD | ATHR | TRK-FPA |
|---|---|---|---|---|---|
| | **Trainee 2** | | | | |
| | INIT GATE | | | | |
| | 1 - TRANSIT COCKPIT PREPARATION | | | | |
| | 2 - BEFORE START | | | | |
| | 3 - ENGINE START | | | | |
| | 4 - TAXI | | | | |
| | 5 - BEFORE TAKE OFF | | | | |
| | 6 - TAKE OFF | | X | X | |
| | 7 - CLIMB FL 100 - RETURN TO DEPARTURE | X | X | X | |
| | 8 - FLT CTL : ALTERNATE / DIRECT LAW | | | X | X |
| | 9 - ILS APPROACH - ALTN LAW | | | X | X |
| | 10 - LANDING - DIRECT LAW | | | | |
| | **INIT TAKE OFF** | | | | |
| | 11 - TAKE OFF | | | | |
| | 12 - CLB - HYD (G + Y LO LVL) | | X | X | |
| | 13 - ILS APPROACH - ALTN LAW - | | X | X | |
| | NO FLAPS | | X | X | |
| | 14 - LANDING - DIRECT LAW - NO FLAPS | | | | |
| | **INIT TAKE OFF (Set low visibility)** | | | | |
| | 15 - TAKE OFF ENG FAILURE BEFORE V1 | | | | |
| | 16 - REJECTED TAKE OFF | | | | |
| | **Trainee 1** | | | | |
| | **INIT HOLD** | | | | |
| | 17 - TAKE OFF | | X | X | |
| | 18 - CLIMB FL 80 - RETURN TO DEPARTURE | X | X | X | |
| | 19 - FLT CTL : ALTERNATE / DIRECT LAW | | | | X |
| | STALL RECOVERIES | | | | |
| | 20 - ILS APPROACH - ALTN LAW | | | | X |
| | 21 - LANDING - DIRECT LAW | | | | |
| | **INIT TAKE OFF (RA 2 FAULT)** | | | | |
| | 22 - TAKE OFF | | X | X | |
| | 23 - ILS APPROACH (RA 1 FAULT) | | | X | X |
| | 24 - LANDING - DIRECT LAW | | | | |
| | **INIT TAKE OFF (LOW VISIBILITY)** | | | | |
| | 25 - TAKE OFF ENGINE FIRE BEFORE V1 | | | | |
| | 26 - REJECTED TAKE OFF | | | | |
| | 27 - EMERGENCY EVACUATION | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| | | |
|---|---|---|
| **PROGRESS IS NORMAL** o | **MAY NEED EXTRA TRAINING** o | **NEEDS EXTRA TRAINING NOW** o |

| | | |
|---|---|---|
| Trainee Name | ID No. | Signature |
| Instructor Name | ID No. | Signature |

**CCQ – A330/A340 to A320 FFS-2 Page 2 of 2**

| CCQ A330 / A340 TO A320 | | | | | FFS-3 |
|---|---|---|---|---|---|
| Trainee Name | | | ID No. | ☐ Capt. | ☐ F/O |
| FLIGHT TRAINING TIME | TIME PF | | TIME PNF | DATE | |

| A/C DATA | | | | | |
|---|---|---|---|---|---|
| ZFW | | ZFW C.G. | | THRUST RED. Alt. | |
| TOTAL FUEL | | TAKEOFF FLAPS | | ACCEL. Alt. | |
| TAKEOFF WEIGHT | | CRUISE ALTITUDE | | TAKEOFF FLEX | |
| COST INDEX | | SPEEDS | $V_1$ : | $V_R$ : | $V_2$ : |

| SESSION DATA AND WEATHER | | | |
|---|---|---|---|
| DEPARTURE AIRPORT | AIRPORT<br>HECA | RUNWAY IN USE<br>05C | ATC |
| WEATHER | 090/10 OVC800 VIS 1500 22/15 1002 | | |
| ATC | | | |
| ARRIVAL AIRPORT | AIRPORT<br>HECA | RUNWAY IN USE<br>05C | ATC |
| WEATHER | 090/10 OVC800 VIS 1500 22/15 1002 | | |
| ATC | | | |

| PF SESSION | US | S1 | S2 | S3 |
|---|---|---|---|---|
| ENGINE OUT AT $V_R$ | | | | |
| APPROACH WITH ONE ENGINE | | | | |
| EMERGENCY DESCENT | | | | |
| EMERGENCY ELECTRIC CONFIG | | | | |
| SMOKE REMOVAL | | | | |
| ALL ENGINE OUT | | | | |
| | | | | |
| **PNF SESSION** | **US** | **S1** | **S2** | **S3** |
| NORMAL PROCEDURES | | | | |
| USE OF CHECKLIST | | | | |
| USE OF ECAM | | | | |
| SUPPORT OF PF | | | | |
| **GENERAL PERFORMANCE** | **US** | **S1** | **S2** | **S3** |
| FLYING ACCURACY | | | | |
| USE OF FMS | | | | |
| USE OF FLIGHT GUIDANCE SYSTEM | | | | |
| USE OF FD – FPV – FPD CROSS POINTERS | | | | |
| IFR PROCEDURES | | | | |
| CREW COORDINATION | | | | |
| GENERAL PROGRESS | | | | |
| GENERAL PERFORMANCE | | | | |
| BRIEFINGS | | | | |

**Comments:**

**CCQ – A330/A340 to A320 FFS-3 Page 1 of 2**

| TIME | CCQ A330 / A340 TO A320 | AP | FD | ATHR | TRK-FPA |
|---|---|---|---|---|---|
| | **Trainee 1** | | | | |
| | **INIT GATE** | | | | |
| | 1 - TRANSIT COCKPIT PREPARATION | | | | |
| | 2 - BEFORE START | | | | |
| | 3 - ENGINE START | | | | |
| | 4 - TAXI | | | | |
| | 5 - BEFORE TAKE OFF | | | | |
| | 6 - TAKE OFF - ENGINE FLAME OUT AT VR | | X | X | |
| | 7 - RETURN TO DEPARTURE | X | X | X | |
| | 8 - NON PRECISION APPROACHONE ENGINE OUT | X | X | X | X |
| | 9 - GO AROUND - ONE ENGINE OUT | X | X | X | |
| | 10 - ILS APPROACH - ONE ENGINE OUT | X | X | X | |
| | 11 - LANDING - ONE ENGINE OUT | | | | |
| | **INIT FL 350** | | | | |
| | 12 - EMERGENCY DESCENT | X | X | X | |
| | 13 - FL 100 - ALL GEN FAULT | | | | X |
| | 14 - EMER ELEC | | | | X |
| | 5 - ILS APPROACH - ALTN LAW | | | | X |
| | 16 - LANDING - DIRECT LAW | | | | |
| | **INIT FL 350** | | | | |
| | 17 - ONE ENGINE FLAME OUT | X | X | X | |
| | 18 - OBSTACLE STRATEGY | X | X | X | |
| | 19 - 2nd ENGINE FLAME OUT | | | | X |
| | 20 - ENGINE RELIGHT (WITH APU) | X | X | X | |
| | 21 - VISUAL APPROACH - ONE ENG OUT | | | X | X |
| | 22 - LANDING - ONE ENGINE OUT | | | | |
| | **Trainee 2** | | | | |
| | **INIT HOLD** | | | | |
| | 23 - TAKE OFF - ENGINE FLAME OUT | | X | X | |
| | 24 - NON PRECISION APPROACHONE ENGINE OUT | X | X | X | X |
| | 25 - GO AROUND - ONE ENGINE OUT | X | X | X | |
| | 26 - ILS APPROACH - ONE ENGINE OUT | X | X | X | |
| | 27 - LANDING - ONE ENGINE OUT | | | | |
| | **INIT FL 350** | | | | |
| | 28 - AVIONIC SMOKE | X | X | X | |
| | 29 - EMERGENCY DESCENT | X | X | X | |
| | 30 - SMOKE REMOVAL | | | | X |
| | 31 - ILS APPROACH (RAW DATA) | | | | X |
| | 32 - LANDING - DIRECT LAW | | | | |
| | **INIT TAKE OFF (RA 2 FAULT)** | | | | |
| | 33 - TAKE OFF | | X | X | |
| | 34 - ILS APPROACH (RA 1 FAULT) | | | X | X |
| | 35 - LANDING - DIRECT LAW | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| | | |
|---|---|---|
| **PROGRESS IS NORMAL** o | **MAY NEED EXTRA TRAINING** o | **NEEDS EXTRA TRAINING NOW** o |

| | | |
|---|---|---|
| Trainee Name | ID No. | Signature |
| Instructor Name | ID No. | Signature |

**CCQ – A330/A340 to A320 FFS-3 Page 1 of 2**

## Content

APPENDIX G (CRM Material) .......... 3
Chapter 1 Glossary of Terms .......... 3
Chapter 2 The Need to consider Human Factors .......... 7
Chapter 3 Statistics and examples of Human Factor related accidents .......... 26
Chapter 4 Human Error .......... 39
Chapter 5 The Human Element .......... 70
Chapter 6 Situational Awareness .......... 102
Chapter 7 Management of workload, tiredness or fatigue, vigilance & management of stress 108
Chapter 8 Company safety culture, SOPs, organizational factors .......... 116
Chapter 9 Leadership and team behavior, synergy .......... 125
Chapter 10 Conflict .......... 127
Chapter 11 Decision Making .......... 140
Chapter 12 COMMUNICATION .......... 146
Chapter 13 Automation .......... 162
Chapter 14 Controlled Flight into Terrain .......... 175

**PREFACE**

According to recent publications, reports, etc., on aviation safety, between 70 and 80 per cent of aircraft accidents are due to human factors. In a significant part of them, a cockpit crew error is one of the main causes or at least a contributing factor.

Furthermore, recent statistics show a relative of increase of accidents where the flying crew is a primary factor. Many of these accidents could have been avoided if basic human factors concepts had been observed

Although accidents have reduced over the years to about 1 per 5 million departures in Western Europe, it has remained at this level with no signs of declining.

With the foreseeable increase of air traffic in the coming years, the number of fatal accidents per year will undoubtedly increase, giving the public the wrong impression that the skies are becoming less safe.

This manual has been prepared to be used as a guide for the study of the “Crew Resource Management” in Aviation (including threats and error managements), with the intention of enhancing Aviation Safety levels. The contents of this manual are well selected and developed to cope as much as possible with the requirements of Aviation Authorities.

Several resources were used to develop this manual including relevant Aviation Authorities requirements, textbooks, seminars, presentations, web sites Etc. Most of these resources are listed at the end of this manual.

CRM training materials shall be revised periodically every three years or less to take into account feedback, updates and/or comments from safety and quality department, instructors, LOSA and others. The review process shall be done through the Training Review Committee (TRC) as outlined in the Operations Manual, part D section 1.6.

# APPENDIX G (CRM Material)

## Chapter 1 Glossary of Terms

| | |
|---|---|
| AAIB | Air Accidents Investigation Branch |
| AANC | (US) Ageing Aircraft Inspection Validation Centre |
| ACJ | Advisory Circular (Joint) (JAA) |
| ADAMS | (Human Factors) in Aircraft Dispatch and Maintenance |
| ADREP | Aviation Data Reporting (ICAO) |
| AMC- | Acceptable Means of Compliance |
| AME | Aircraft Maintenance Engineer |
| AMSD | Aircraft Maintenance Standards Department (UK CAA) |
| AMT | Aircraft Maintenance Technician |
| AN | Airworthiness Notice |
| ANO | Air Navigation Order |
| AOG | Aircraft On the Ground |
| APU | Auxiliary Power Unit |
| ASA | Aero skills Alliance |
| ASAP | Aviation Safety Action Programme (US) |
| ASRS | Aviation Safety Reporting System (USA) |
| ATA | Air Transport Association of America |
| ATC | Air Traffic Control |
| AWN | Airworthiness Notice |
| BASIS | British Airways Safety Information System |
| BASIS | MEI BASIS Maintenance Error Investigation |
| BCAR | British Civil Airworthiness Requirements |
| CAA | (UK) Civil Aviation Authority |
| CAA | Civil Aviation Authority |
| CAAP | CAA Paper |
| CAIR | Checklist for Assessing Institutional Resilience |
| CAMC- | Canadian Aviation Maintenance Council |
| CAP | Civil Aviation Publication (CAA) |
| CAP | Civil Aviation Publication |
| CASA | (Australian) Civil Aviation Safety Agency |
| CBT | Computer Based Training |
| Cd | candela |
| CEO | Chief Executive Officer |
| CFS | Chronic Fatigue Syndrome |
| CHIRP | Confidential Human Factors Incident Reporting |
| CMI | Computer Managed Instruction |
| CRM | Crew Resource Management |
| CRMI | CRM Instructor |

| | |
|---|---|
| CRMIE | CRM Instructor Examiner |
| dB | decibels |
| DI | Duplicate Inspection |
| Dti | Department of Trade and Industry |
| EASA | European Aviation safety Agency |
| EC | European Commission |
| ECCAIRS | European Coordination Centre for Aviation Incident Reporting System |
| ERNAP | Ergonomics Audit Programme |
| ETOPS | Extended Twin Operations |
| EU | European Union |
| FAA | (US) Federal Aviation Authority |
| FAA | Federal Aviation Administration |
| FAQ | Frequently Asked Questions |
| FEMA | Failure Modes and Effects Analysis |
| fL | Foot Lambert |
| fL | foot Lambert |
| FOD | Foreign Object Damage |
| FODCOM | Flight Operations Department Communication |
| GAIN | Global Aviation Information Network |
| GM | Guidance Material |
| HAZOP | Hazard and Operability study/ assessment |
| HF | Human Factors |
| HFAMI | Human Factors in Aviation Maintenance and Inspection |
| HFCAG | Human Factors Combined Action Group |
| HFRG | (UK) Human Factors in Reliability Group |
| HFRG | Human Factors in Reliability Group |
| HRA | Human Reliability Assessment |
| HSE | (UK) Health and Safety Executive |
| HSE | Health and Safety Executive |
| Hz | Hertz |
| IATA | International Air Transport Association |
| IBT | Internet Based Training |
| ICAO | International Civil Aviation Organization |
| IEM | Interpretative/ Explanatory material (for JARs) |
| IES | (US) Illuminating Engineering Society |
| IFA | International Federation of Airworthiness |
| IFE | In-flight entertainment (systems) |
| IMIS | Integrated Maintenance Information System |
| IR | Implementing Rule |
| JAA | Joint Aviation Authorities |

| | |
|---|---|
| JAR | Joint Aviation Requirement |
| JAROPS | Joint Aviation Requirement ([Flight] Operations) |
| LAE | Licensed Aircraft Engineer |
| LAME | Licensed Aircraft Maintenance Engineer |
| lm | lumen |
| Lm | lumen |
| LOFT | Line Oriented Flying Training |
| LOSA | Line Operations Safety Audit |
| Lux | lumens/$m^2$ |
| MARSS | Maintenance and Ramp Safety Society |
| MEDA | Maintenance Engineering Decision Aid |
| MEMS | Maintenance Error Management System |
| MESH | Maintenance Engineering Safety Health |
| MHF | Maintenance Human Factors |
| MHFWG | (JAA) Maintenance Human Factors Working Group |
| MM | Maintenance Manual |
| MOE | Maintenance Organization Exposition |
| MOR | (UK) Mandatory Occurrence Report |
| MORS | Mandatory Occurrence Report Scheme |
| MRM | Maintenance Resource Management |
| NAA | National Aviation Authority |
| NASA | (US) National Aeronautics and Space Administration |
| NASA | TLX NASA Task Loading Index |
| NDI | Non-Destructive Inspection |
| NDT | Non-Destructive Testing |
| NDT | Non-Destructive Testing |
| NIHL | Noise Induced Hearing Loss |
| NPA | Notice of Proposed Amendment (for JARs) |
| NTSB | (US) National Transportation Safety Board |
| NTSB | National Transportation Safety Board |
| OEM | Original Equipment Manufacturer |
| OJT | On-the-job Training |
| OMS | Occurrence management System |
| ORS | Occurrence Reporting System |
| OSHA | (US) Occupational Safety and Health Administration |
| PC | Personal Computer |
| PRA | Probabilistic Risk Assessment |
| PSA | Probabilistic Safety Assessment |
| REM | Rapid Eye Movement |
| ROI | Return on Investment |
| SA | Situational Awareness |

| | |
|---|---|
| SEMTA | Science, Engineering and Manufacturing Technologies |
| SHEL | Model Software, Hardware, Environment, Liveware |
| SHoMe | Safety Health of Maintenance Engineering (Tool) |
| SIE | Safety Information Exchange |
| SMM | Shift Maintenance Manager |
| SMS | Safety Management Systems |
| SRG | Safety Regulation Group (UK CAA) |
| STAMINA | (Human Factors) Safety Training for the Aircraft Maintenance Industry |
| SWAT | Subjective Workload Assessment Technique |
| TC | holder Aircraft Type Certificate holder |
| TGL | Temporary Guidance Leaflet (for JARs) |
| TNA | Training Needs Analysis |
| TQM | Total Quality Management |
| TWA | Time Weighted Average sound level |
| TWA | `Time Weighted Average |
| UK HFCAG | UK Human Factors Combined Action Group |
| UK OTG | UK Operators' Technical Group |
| UK RAF SAM | UK Royal Air Force School of Aviation Medicine |
| VIRP | (US) Visual Inspection Research Programme |
| VWF | Vibratory - Induced White Finger |

**Aviation Common Language**

**Phonetic Alphabet**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| A | Alpha | H | Hotel | O | Oscar | V | Victor |
| B | Bravo | I | India | P | Papa | W | Whiskey |
| C | Charlie | J | Juliet | Q | Quebec | X | X-ray |
| D | Delta | K | Kilo | R | Romeo | Y | Yankee |
| E | Echo | L | Lima | S | Sierra | Z | Zulu |
| F | Foxtrot | M | Mike | T | Tango | | |
| G | Golf | N | November | U | Uniform | | |

## Chapter 2 The Need to consider Human Factors

- In the early days of powered flight, the design, construction and control of aircraft predominated. The main attributes of the first pilots were courage and the mastery of a whole new set of skills in the struggle to control the new flying machines.
- As the technical aspects of flight were overcome bit b bit, the role of the people associated with aircraft began to come to the fore. Pilots were supported initially with mechanisms to help them stabilize the aircraft, and later with automated systems to assist the crew with tasks such as navigation and communication. With such interventions to complement the abilities of pilots, aviation human factors were born.
- As aircraft grew larger and operations grew more complex, a co-pilot was added to the flight crew. Those first co-pilots were considered redundant pilots. Their function was simply to provide an operational backup in the extremely rare condition that the Captain for any reason became incapacitated and to provide support and reduce the workload for the Captain if they were asked by that Captain to do so.
- Initially most Captains did not particularly like the idea and for several years the co-pilot did little more than make out the flight plans for the Captain to approve and sign. Their main job was to handle the radio communications.
- In the 1980's as accidents and incidents were evaluated, it became clear that the technical ability of the crew was very seldom the sole cause of the accidents and incidents.
- It appeared that frequently there was:
  - Considerably less than optimum communication within the cockpit.
  - Crew interface problems that included:
    - Inadequate leadership
    - Poor cockpit management
    - Less than optimum group decision-making.

- From 60 – 80% of aircraft hull loss accidents in commercial air transport have been attributed to the flight crew for almost as long as records have been kept. Something different had to be done. Despite improvements in the overall safety record, neither industry nor regulatory efforts had been able to change the disheartening and unsatisfactory relationship between accidents and the operational behavior of the cockpit crew.

- As a result, of much investigation and soul searching by virtually all aspects of the industry, the Cockpit resource management concept developed. This has since grown, been modified and refined and expanded and is now as previously mentioned is now called Crew resource management or in some cases the C stands for Company or communication.
- Crew Resource Management was introduced by the CAA in 1993 for the practical application of Flight Deck Management techniques.
- This was reinforced in 1995 for recurrent training.

CRM was developed as a response to new insights into the causes of aircraft accidents, which followed from the introduction of flight recorders and cockpit voice recorders into modern jet aircraft. Information gathered from these devices has suggested that many accidents result not from a technical malfunction of the aircraft or its systems, nor from a failure of aircraft handling skills or a lack of technical knowledge on the part of the crew; it appears instead that they are caused by the inability of crews to respond appropriately to the situation in which they find themselves. For example, inadequate communications between crew members and other parties lead in turn to a loss of situational awareness, a breakdown in teamwork in the aircraft, and ultimately to a bad decision or series of decisions which result in a serious incident or a fatal accident.

The widespread introduction of the dynamic flight simulator as a training aid allowed various new theories about the causes of aircraft accidents to be studied under experimental conditions. Based on these results, and in an attempt to remedy the apparent deficiency in crew skills, additional training in flight deck management techniques was been introduced by some airlines. Following a period of experimentation and development, the techniques embraced by the new training became known collectively as CRM. The importance of the CRM concept and the utility of the training in promoting safer and more efficient aircraft operations have now been recognized worldwide.

**Crew Resource Management Training**

Crew Resource Management (CRM) used to be called Cockpit Resource Management in the unenlightened days when airlines thought that the only way to a safe flight was to ensure that the Pilot & F/O were working together. Now the C stands for Crew

Some airlines like to refer to it as Communication or Company Resource Management; this implication includes everyone who works either for, or on behalf of the company.

Now we have realized that the safe operation of a flight – which is, the aim of every airline, relies not only on the flight crew but also the cabin crew and indeed all personnel involved in the daily operation of flights.

Crew Resource Management (CRM) is the effective utilization of all available resources (e.g.. All crewmembers, aeroplane systems and supporting facilities) to achieve a safe and efficient operation.

The successful containment of aircraft emergencies depends heavily upon effective co-ordination and two-way communication between flight crew and cabin attendants.

CAP 737 describes the objectives of CRM as being:

- To enhance crew and management awareness of human factors which could cause or exacerbate incidents which affect the safe conduct of air operations.
- To enhance knowledge of human factors and develop CRM skills and attitudes which when applied appropriately could extricate an aircraft operation from incipient accidents and incidents whether perpetrated by technical or human factor failings.
- To use CRM knowledge, skills and attitudes to conduct and manage aircraft operations, and fully integrate these techniques throughout every facet of the organization culture, to prevent the onset of incidents and potential accidents.
- To use these skills to integrate commercially efficient aircraft operations with safety.
- To improve the working environment for crews and all those associated with aircraft operations.

**Relevant Egyptian Civil Aviation Regulations (ECAR)**

Extracts from ECAR Part 121, CERTIFICATION AND OPERATIONS: AIR CARRIERS and AIR TAXI, Issue 5, Rev. 10 Dated October 2016 that are relevant to CRM training are shown hereafter

**121.419 Pilots and flight engineers: Initial, transition, and upgrade ground training**

**(a)** Except as provided in paragraph (b) of this section, initial, transition, and upgrade ground training for pilots and flight engineers must include instruction in at least the following as applicable to their assigned duties:

**1)** General subjects:

- **(i)** The certificate holder's dispatch or flight release procedures;
- **(ii)** Principles and methods for determining weight and balance, and runway limitations for takeoff and landing;
- **(iii)** Enough meteorology to ensure a practical knowledge of weather phenomena, including the principles of frontal systems, icing, fog, thunderstorms, and high altitude weather situations;
- **(iv)** Air traffic control systems, procedures, and phraseology;
- **(v)** Navigation and the use of navigation aids, including instrument approach procedures;
- **(vi)** Normal and emergency communication procedures;
- **(vii)** Visual cues prior to and during descent below DA/DH or MDA;
- **(viii)** Approved crew resource management initial training; and
- **(ix)** Other instructions as necessary to ensure pilot competence.

**121.421 Cabin crew: Initial and transition ground training**

**(a)** Initial and transition ground training for cabin crew must include instruction in at least the following:

**1. General subjects:**

- i. The authority of the pilot in command;
- ii. Passenger handling, including the procedures to be followed in the case of deranged persons or other persons whose conduct might jeopardize safety; and
- iii. Approved crew resource management initial training.

### 121.422 Aircraft dispatchers: Initial and transition ground training

**(a)** Initial and transition ground training for aircraft dispatchers must include instruction in at least the following:

(1) General subjects:

**(i)** Use of communications systems including the characteristics of those systems and the appropriate normal and emergency procedures;

**(ii)** Meteorology, including various types of meteorological information and forecasts, interpretation of weather data (including forecasting of enroute and terminal temperatures and other weather conditions), frontal systems, wind conditions, and use of actual and prognostic weather charts for various altitudes;

**(iii)** The NOTAM system;

**(iv)** Navigational aids and publications;

**(v)** Joint dispatcher/pilot responsibilities;

**(vi)** Characteristics of appropriate airports;

**(vii)** Prevailing weather phenomena and the available sources of weather information;

**(viii)** Air traffic control and instrument approach procedures; and

**(ix)** Approved dispatcher resource management (DRM) initial training.

**(x)** made, within the preceding 12 months, at least a one qualification flight in the flight crew compartment of an aircraft over any area for which that individual is authorized to exercise flight supervision. The flight should include landings at as many aerodromes as practicable;

**121.427 Recurrent training**

(b) Recurrent ground training for crewmembers and dispatchers must include at least the following;

- **CRM**

**(i)** Elements of CRM should be integrated into all appropriate phases of recurrent training.

**(ii)** A specific modular CRM training programme should be established such that all major topics of CRM training are covered over a period not exceeding 3 years, as follows:

**a)** human error and reliability, error chain, error prevention and detection;

**b)** operator safety culture, standard operating procedures (SOPs), organizational factors;

**c)** stress, stress management, fatigue and vigilance;

**d)** information acquisition and processing, situation awareness, workload management;

**e)** decision making;

**f)** communication and coordination inside and outside the flight crew compartment;

**g)** leadership and team behavior, synergy;

**h)** automation and philosophy of the use of automation (if relevant to the type);

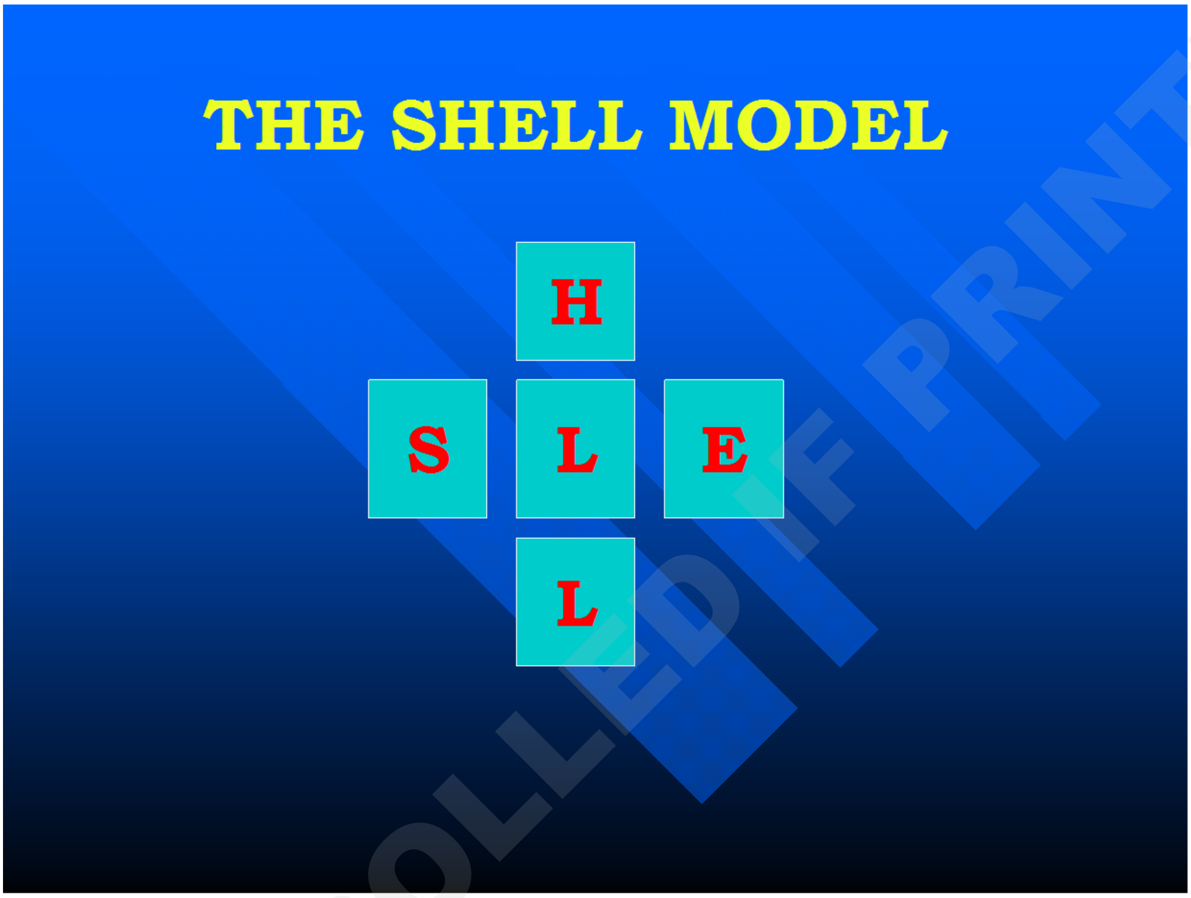
**i)** specific type-related differences;

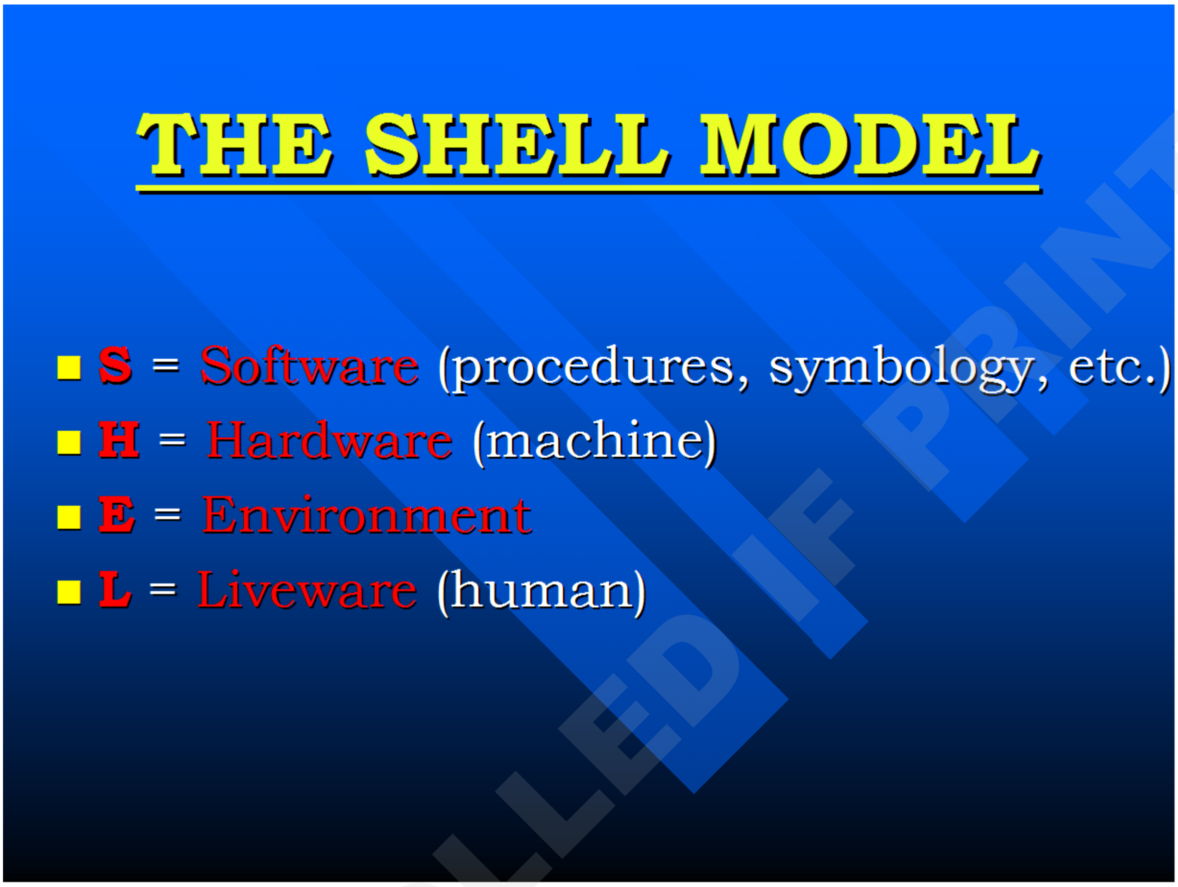
**j)** case studies;

**k)** additional areas which warrant extra attention, as identified by the safety management system.

**(iii)** Operators should establish procedures to update their CRM recurrent training programme. Revision of the programme should be conducted over a period not exceeding 3 years. The revision of the programme should take into account the de-identified results of the CRM assessments of crews, and information identified by the safety

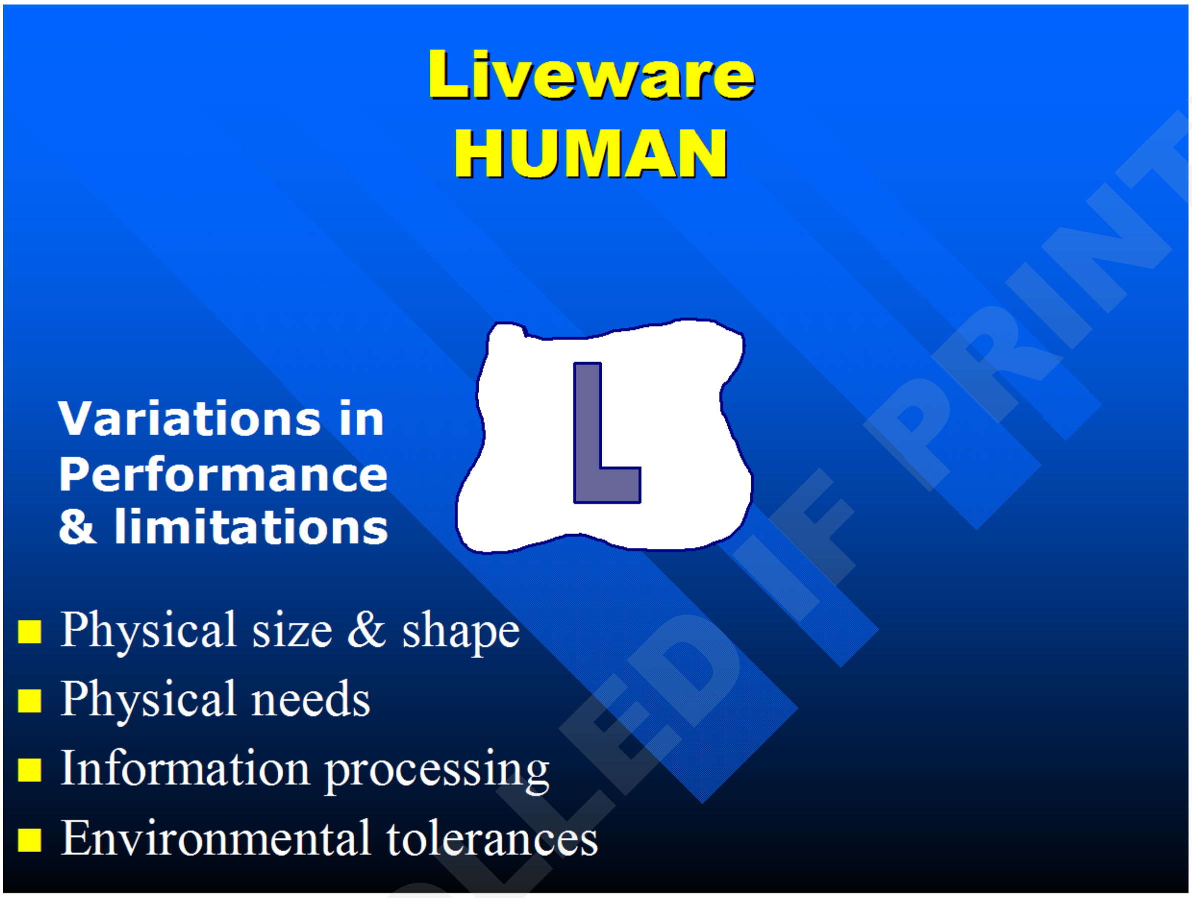
**ICAO SHELL model**



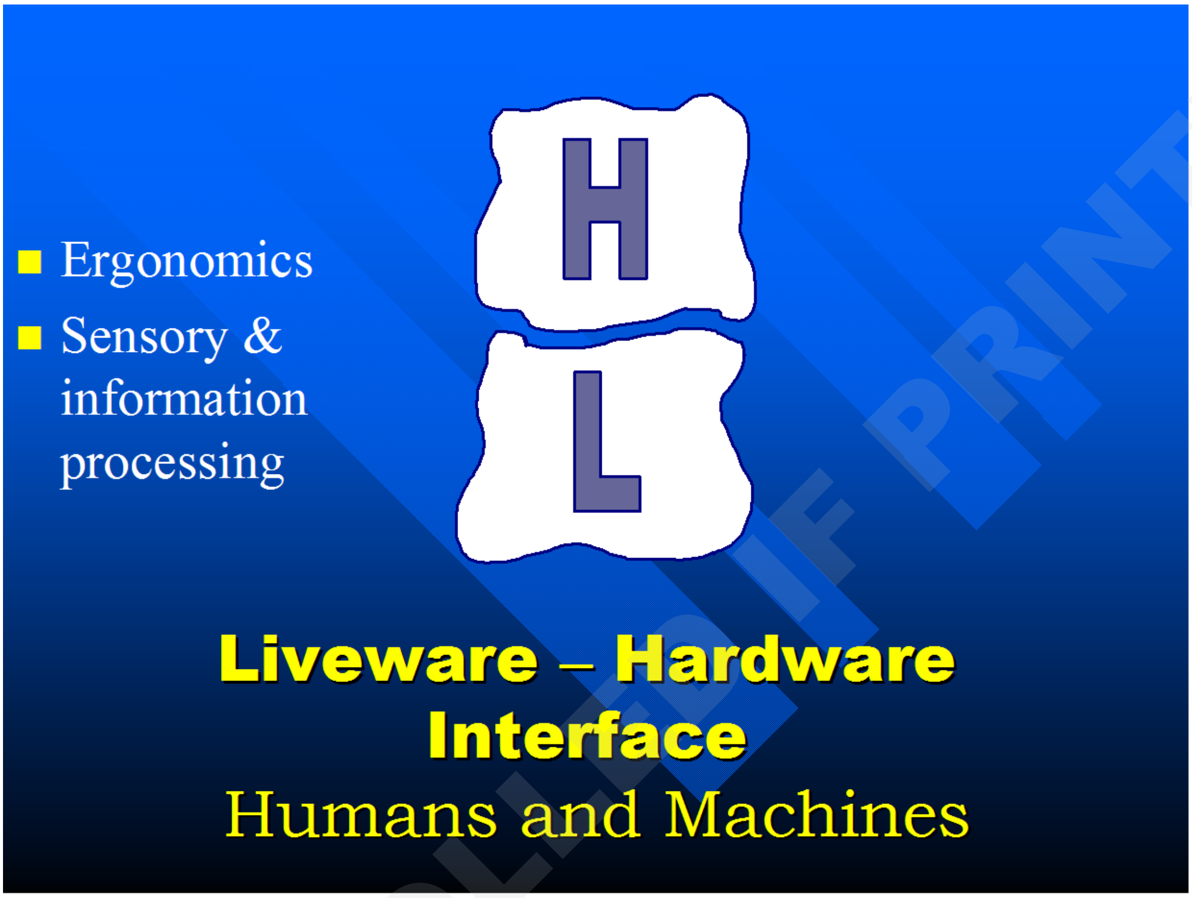


THE SHELL MODEL
S = Software (procedures, symbology, etc.)
H = Hardware (machine)
E = Environment
L = Liveware (human)

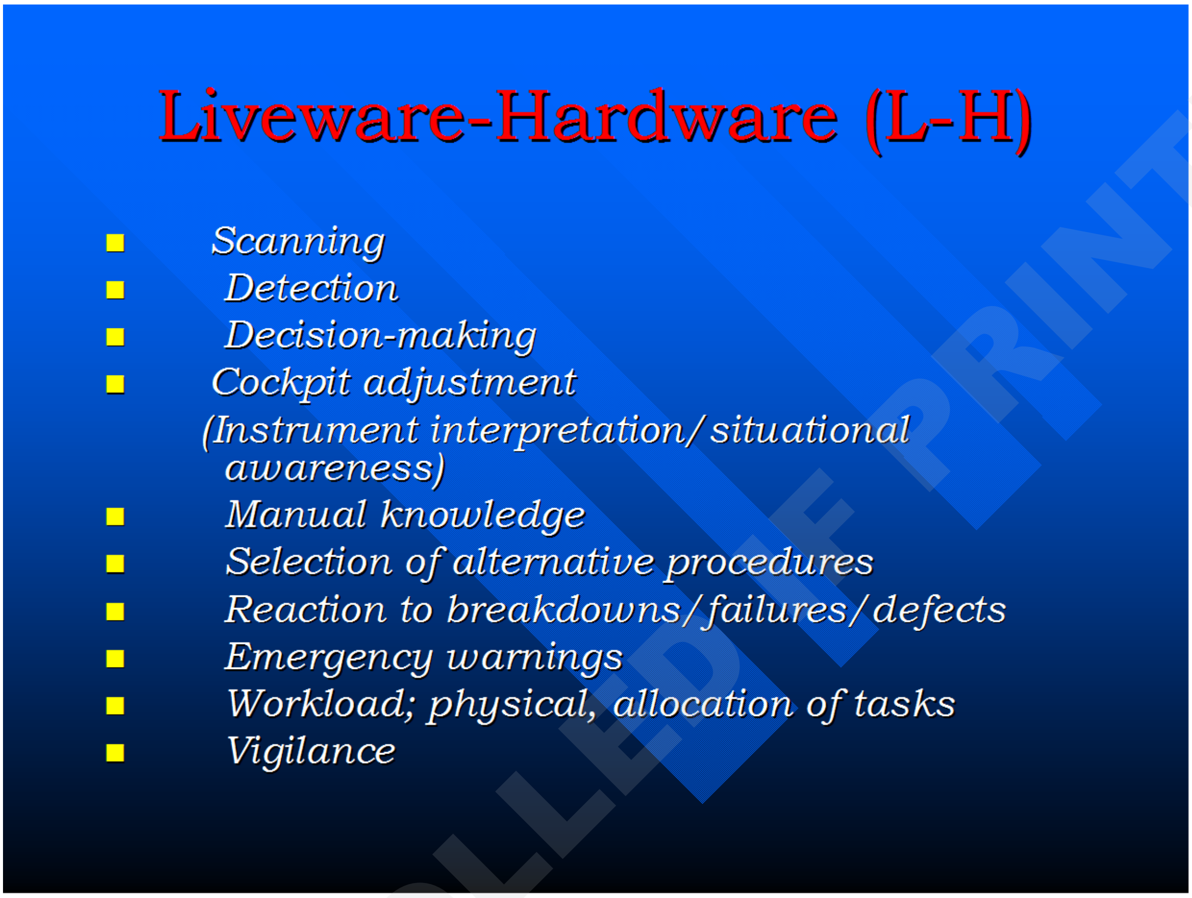
H
S
L
E
L



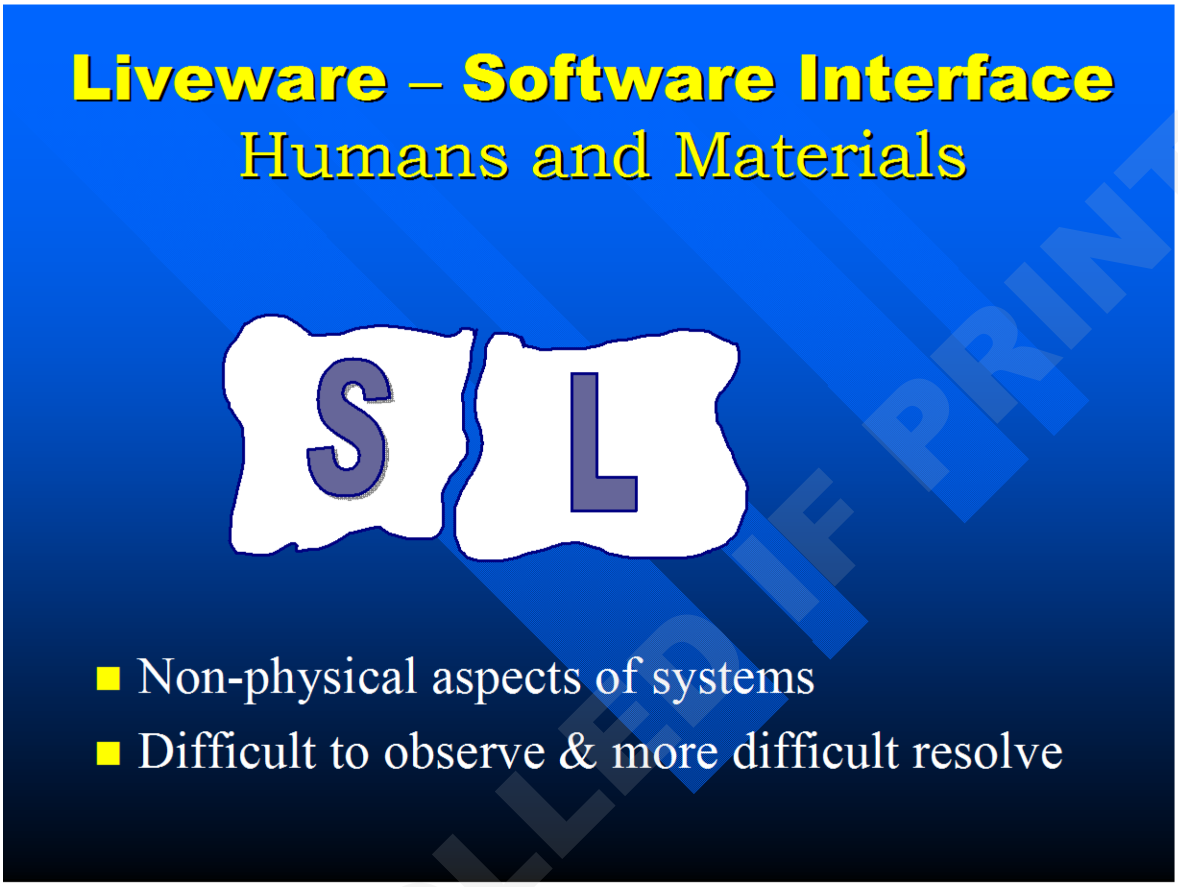
Liveware
HUMAN
L
Variations in Performance & limitations
Physical size & shape
Physical needs
Information processing
Environmental tolerances



Ergonomics
Sensory & information processing
H
L
Liveware – Hardware Interface
Humans and Machines



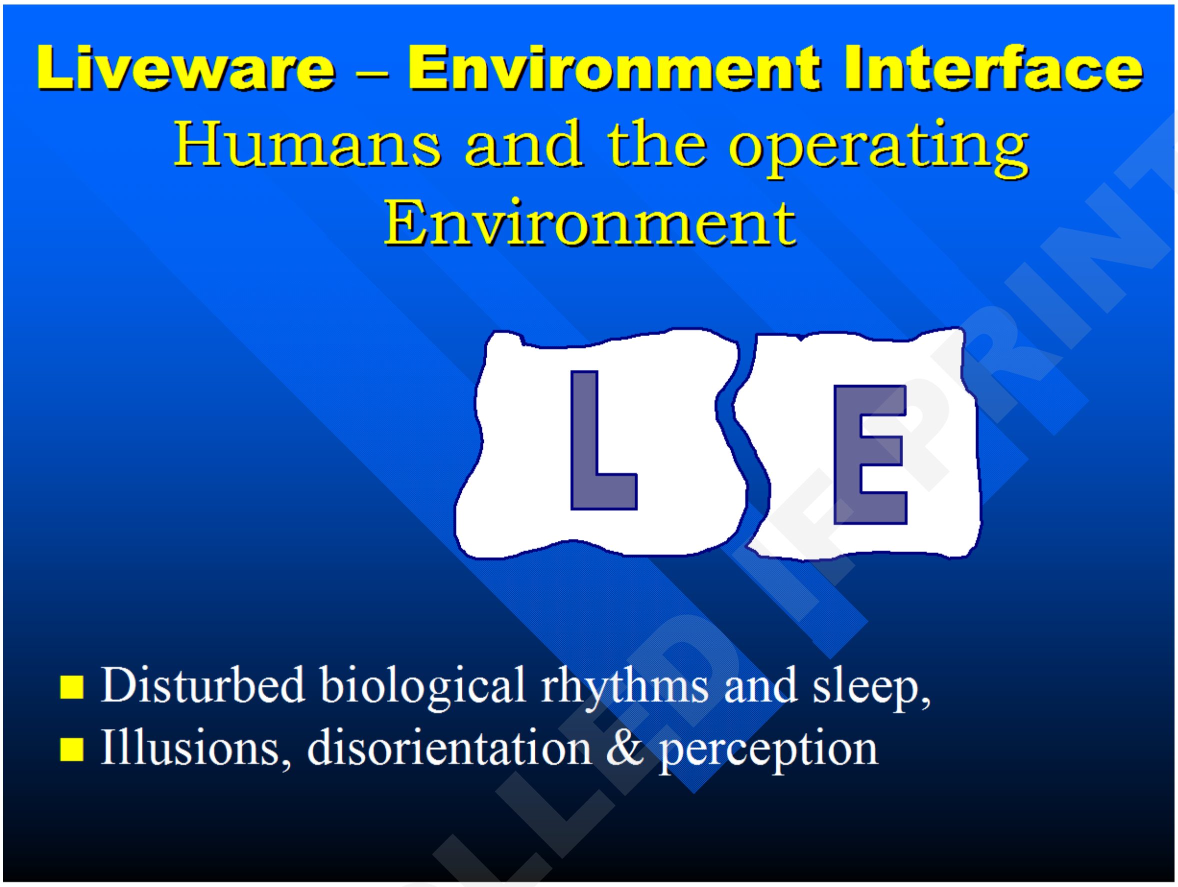
Liveware-Hardware (L-H)
Scanning
Detection
Decision-making
Cockpit adjustment
(Instrument interpretation/ situational awareness)
Manual knowledge
Selection of alternative procedures
Reaction to breakdowns/ failures/ defects
Emergency warnings
Workload; physical, allocation of tasks
Vigilance



Liveware – Software Interface
Humans and Materials
S
L
Non-physical aspects of systems
Difficult to observe & more difficult resolve

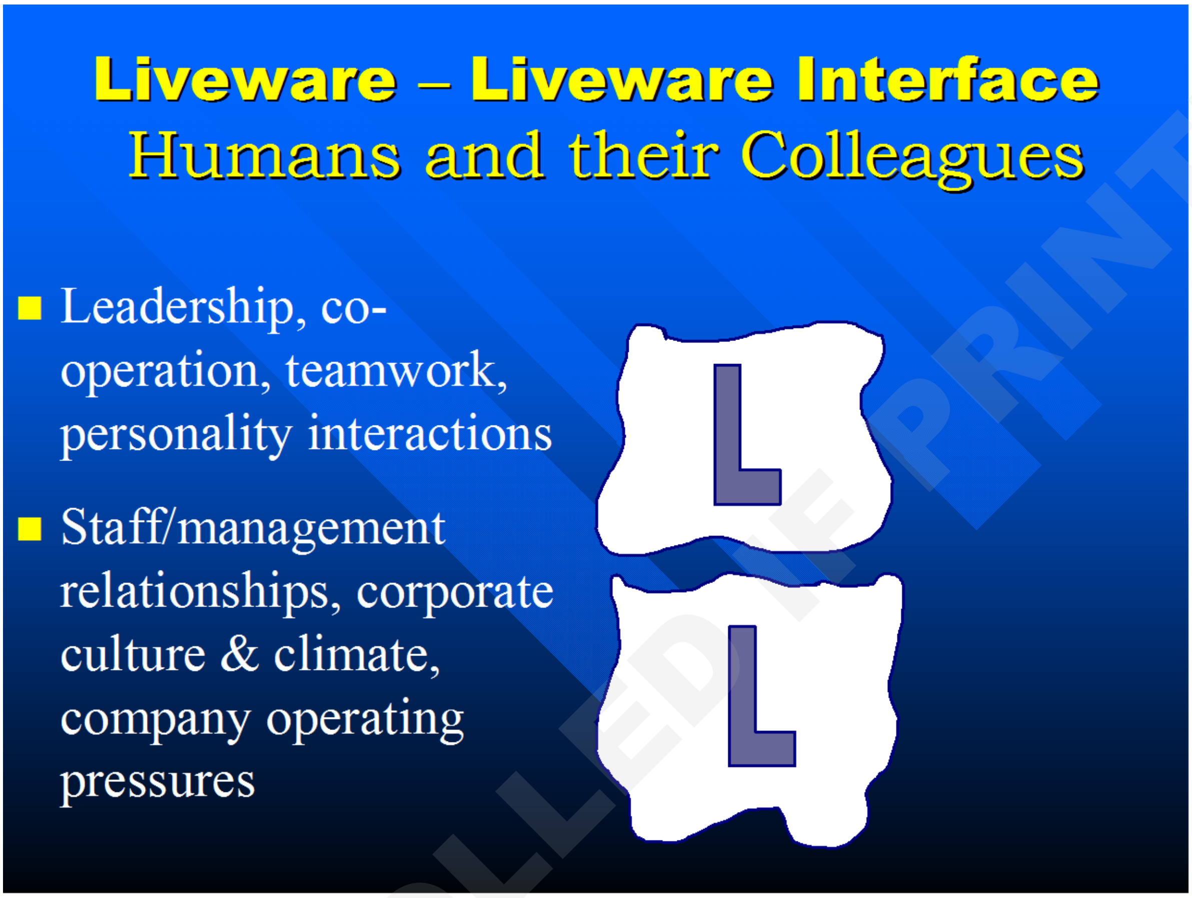
## Liveware-Software (L–S)

- Self- discipline and procedural behaviour
- Interpretation
- Time management
- Self motivation
- Task allocation


Liveware – Environment Interface
Humans and the operating Environment
L
E
Disturbed biological rhythms and sleep,
Illusions, disorientation & perception

# Liveware-Environment (L-E)

- Adaptation
- Observation
- Situational awareness
- Stress management
- Risk management
- Attention management
- Coping/emotional control
- Decision making

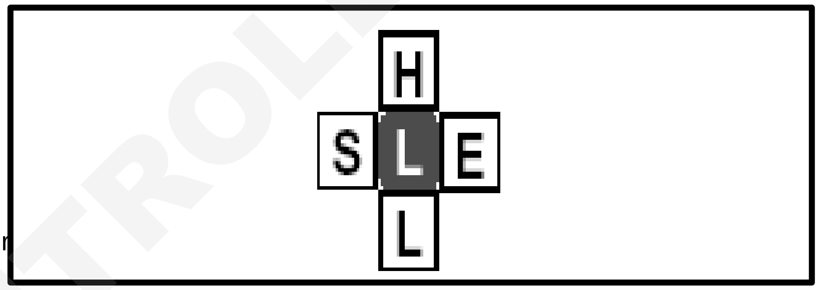


Liveware – Liveware Interface
Humans and their Colleagues
Leadership, co-operation, teamwork, personality interactions
Staff/management relationships, corporate culture & climate, company operating pressures
L
L

- It can be helpful to use a model to aid in the understanding of human factors, or as a framework around which human factors issues can be structured. A model which is often used is the SHEL model, a name derived from the initial letters of its components:

  - **S**oftware (e.g. maintenance procedures, maintenance manuals, checklist layout, etc.);
  - **H**ardware (e.g. tools, test equipment, the physical structure of aircraft, design of flight decks, positioning and operating sense of controls and instruments, etc.);
  - **E**nvironment (e.g. physical environment such as conditions in the hangar, conditions on the line, etc. and work environment such as work patterns, management structures, public perception of the industry, etc.);
  - **L**ive ware (i.e. the person or people at the centre of the model, including maintenance engineers, supervisors, planners, managers, etc.).

**Figure 1-2** SHEL Model. Source: Edwards, 1972 (as referenced in ICAO Human Factors Digest No 1, Circular 216 (1989))



- Human factors concentrate on the interfaces between the human (the 'L' in the centre box) and the other elements of the SHEL model (see Figure 1-2), and - from a safety viewpoint - where these elements can be deficient, e.g.:

> **S**: misinterpretation of procedures, badly written manuals, poorly designed checklists, untested or difficult to use computer software
>
> **H**: not enough tools, inappropriate equipment, poor aircraft design for maintainability
>
> **E**: uncomfortable workplace, inadequate hangar space, extreme temperatures, excessive noise, poor lighting

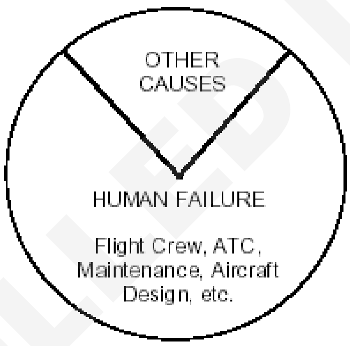
- As will be covered in this document, man - the "Live ware" - can perform a wide range of activities. Despite the fact that modern aircraft are now designed to embody the latest self-test and diagnostic routines that modern computing power can provide, one aspect of aviation maintenance has not changed: human beings are still doing maintenance tasks. However, man has limitations. Since live ware is at the center of the model, all other aspects (Software, Hardware and Environment) must be designed or adapted to assist his performance and respect his limitations. If these two aspects are ignored, the human - in this case the maintenance engineer - will not perform to the best of his abilities, may make errors, and may jeopardize safety.
- Thanks to modern design and manufacturing, aircraft are becoming more and more reliable. However, it is not possible to re-design the human being: we have to accept the fact that the human being is intrinsically unreliable. However, we can work around that unreliability by providing good training, procedures, tools, duplicate inspections, etc. We can also reduce the potential for error by improving aircraft design such that, for example, it is physically impossible to reconnect something the wrong way round.

## Chapter 3 Statistics and examples of Human Factor related accidents

**Contribution of human factors to aviation accidents**

- In 1940, it was calculated that approximately 70% of all aircraft accidents were attributable to man's performance, that is to say human error1. When the International Air Transport Association (IATA) reviewed the situation 35 years later, they found that there had been no reduction in the human error component of accident statistics**2** (Figure 1-1).

**Figure 1-1** The dominant role played by human performance in civil aircraft accidents Source: IATA, 1975



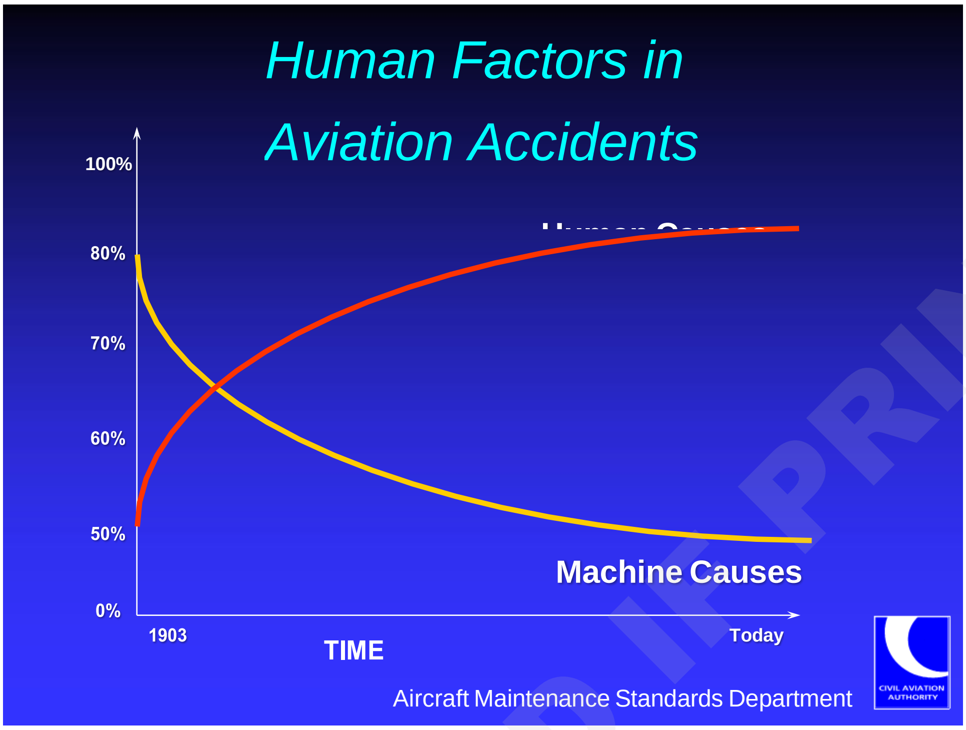


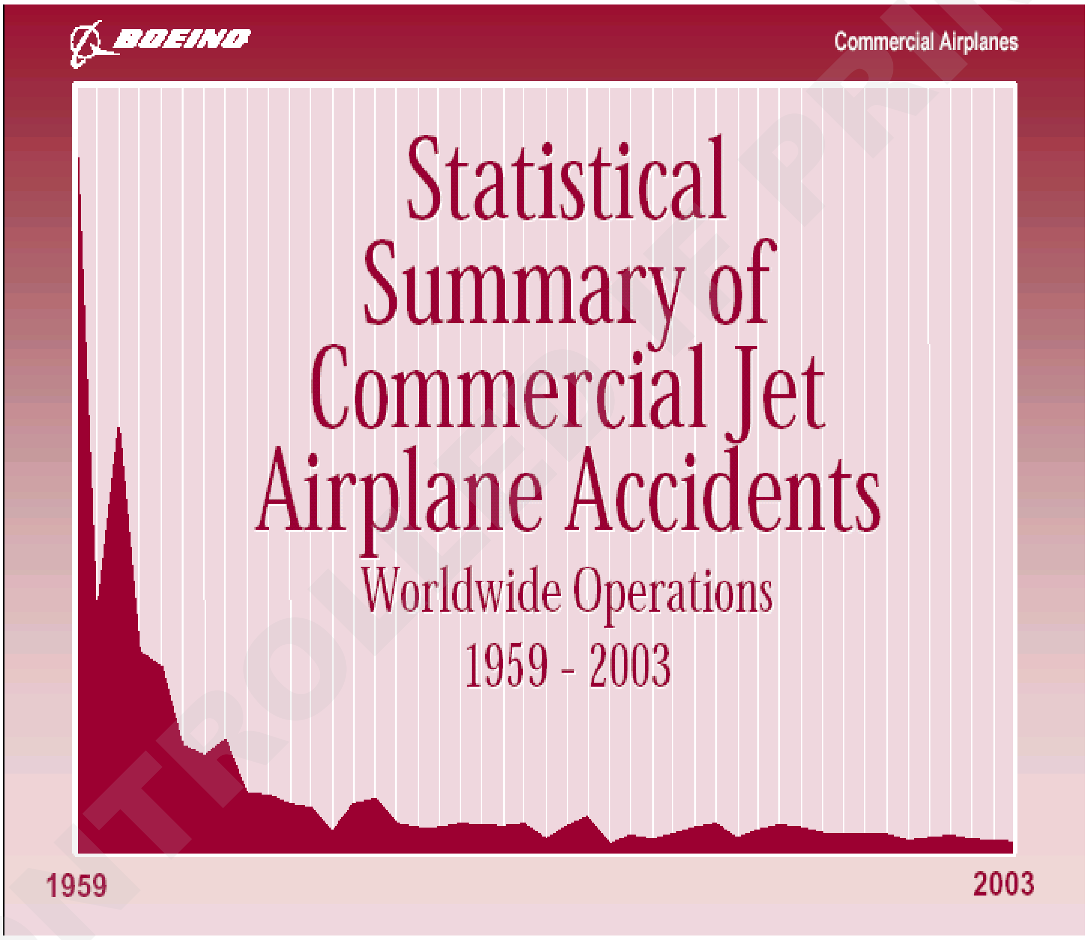

**Figure 1-2.** Trends in accident causation

- A study was carried out in 1986, in the USA by Sears, looking at significant accident causes in 93 aircraft accidents. These were as follows:

| Causes/ major contributory factors | % of accidents in which this was a factor |
|---|---|
| Pilot deviated from basic operational procedures | 22 |
| Inadequate cross-check by second crew member | 18 |
| Design faults | 8 |
| Maintenance and inspection deficiencies | 8 |
| Absence of approach guidance | 7 |
| Captain ignored crew inputs | 7 |
| Air traffic control failures or errors | 6 |
| Improper crew response during abnormal conditions | 6 |
| Insufficient or incorrect weather information | 4 |
| Runways hazards | 4 |
| Air traffic control/crew communication deficiencies | 4 |
| Improper decision to land | |

- The UK CAA carried out a similar exercise3 in 1998 looking at causes of 621 global fatal accidents between 1980 and 1996. Again, the area "maintenance or repair oversight / error / inadequate" featured as one of the top 10 primary causal factors.
- It is clear from such studies that human factors problems in aircraft maintenance engineering are a significant issue, warranting serious consideration.

**Commercial Jet Airplane Accidents (Boeing Summary)**



# Airplane Accidents

## Worldwide Commercial Jet Fleet - 2003

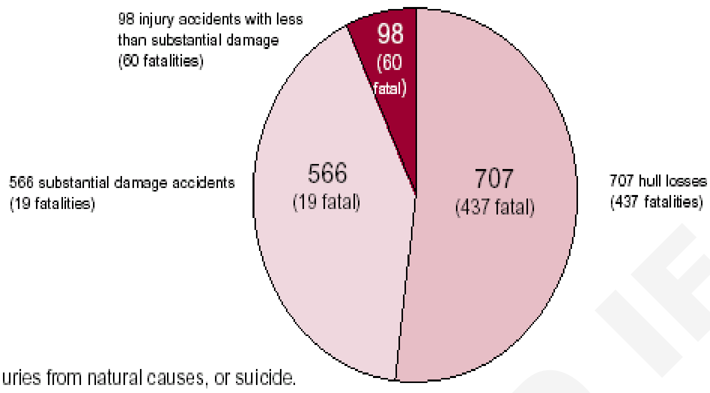
| Date | Airline | Airplane Type | Accident Location | Hull Loss | Fatalities | Phase | Description |
|---|---|---|---|---|---|---|---|
| 1/8/2003 | Turkish Airlines (THY) | RJ100 | Diyarbakir, Turkey | X | 75 | Final approach | CFIT crashed into mountain |
| 1/8/2003 | TAN Airlines | F-28 | Chachapoyas, Peru | X | 46 | Initial approach | CFIT crashed into mountain |
| 1/17/2003 | TAME | F-28 | Quito, Ecuador | | 0 | Takeoff | RTO/runway excursion |
| 1/23/2003 | Star Air | 737-200 | Jakarta, Indonesia | | 0 | Landing | Runway excursion |
| 1/26/2003 | VASP Airlines | 737-200 | Rio Branco, Brazil | X | 0 | Initial approach | Hit tree on approach to land |
| 2/15/2003 | Evergreen International Airlines | 747-200 | Catania, Italy | | 0 | Landing | Runway overrun on landing |
| 3/6/2003 | Air Algerie | 737-200 | Tamanrasset, Algeria | X | 103 | Takeoff | Crashed after takeoff |
| 3/12/2003 | Singapore Airlines | 747-400 | Auckland, New Zealand | | 0 | Takeoff | Tailstrike on takeoff |
| 3/21/2003 | Royal Air Maroc | 737-400 | Marrakech, Morocco | | 0 | Landing | Landing overrun |
| 3/21/2003 | Transasia Airways | A321 | Tainan, Taiwan | | 0 | Landing | Runway excursion |
| 3/26/2003 | Royal Air Maroc | 737-400 | Oujda, Morocco | | 0 | Landing | Runway excursion |
| 3/31/2003 | AirTran Airways | 717-200 | New York, USA | | 0 | Parked | Evacuation injuries |
| 4/18/2003 | Weirafa Airlift | DC-9-32 | Brazzaville, Congo | X | 0 | Landing | Intentional off runway gear-up landing |
| 6/17/2003 | Onur Air | MD-88 | Groningen, Netherlands | | 0 | Takeoff | RTO overrun |
| 7/6/2003 | Cielos del Peru | DC-10-30 | Curitiba, Brazil | | 0 | Landing | Landing overrun |
| 7/8/2003 | Sudan Airways | 737-200 | Port Sudan, Sudan | X | 116 | Initial climb | Crashed after takeoff |
| 7/11/2003 | Air Memphis | 707-300C | Dacca, Bangladesh | X | 0 | Takeoff | RTO overrun |
| 8/11/2003 | Garuda Indonesia | F-28 | Jakarta, Indonesia | | 0 | Landing | LMLG collapse |
| 8/15/2003 | EasyJet | 737-300 | Geneva, Switzerland | | 0 | Climb | Hail damage in flight |
| 9/12/2003 | Northwest Airlines | DC-9-15 | Norfolk, USA | | 1 | Tow | Tug driver fatally injured |
| 10/1/2003 | Cargo Air Lines | 747-200C | Liege, Belgium | | 0 | Landing | Landing overrun |
| 10/3/2003 | Garuda Indonesia | 737-500 | Semarang, Indonesia | | 0 | Landing | Runway departure |
| 11/1/2003 | EgyptAir | A321-230 | Moscow, Russia | | 0 | Taxi | Skidded off runway |
| 11/6/2003 | TAME | A320 | Florianopolis, Brazil | | 0 | Landing | Runway offside excursion |
| 11/29/2003 | Hydro Air | 747-258C | La Guaira, Venezuela | | 0 | Landing | Runway offside excursion |
| 12/7/2003 | East African Safari Air | F-28 | Lokichokio, Kenya | X | 0 | Landing | Runway excursion |
| 12/13/2003 | Aero Continente | 737-200 | Lima, Peru | | 0 | Landing | Landed with all landing gear retracted |
| 12/18/2003 | FedEx | MD-10-10 | Memphis, USA | X | 0 | Landing | RMLG collapse, fuselage burned |
| 12/18/2003 | Lineas Aereas Suramericanas | DC-9-15F | Mitu, Colombia | X | 3 | Descent | Crashed into jungle |
| 12/19/2003 | Air Gabon | 737- 300 | Libreville, Gabon | X | 0 | Landing | Landing overrun during heavy rain |
| 12/20/2003 | GOL Transportes Aereos Ltda | 737- 700 | Navegantes, Brazil | | 0 | Landing | Landing overrun |
| 12/25/2003 | Union Des Transports Africains | 727- 200 | Cotonou, Benin | X | 139 | Takeoff | Hit building on takeoff |
| 32 | | | | 12 | 483 | | |

6
2003 STATISTICAL SUMMARY, MAY 2004

## Accident Summary by Damage and Injury

**All Accidents - Worldwide Commercial Jet Fleet - 1959 through 2003**

### 1,371 accidents worldwide




Excludes:

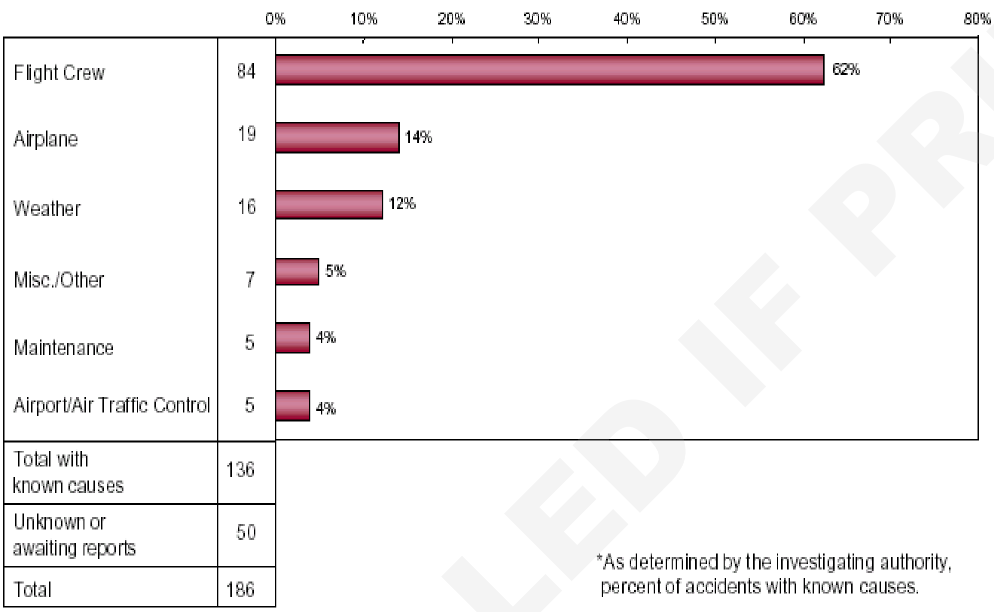
- Fatal injuries from natural causes, or suicide.
- Experimental test flights.
- Military airplanes.
- Sabotage, hijacking, terrorism, or military action.
- Non-fatal injuries involving:
  - Atmospheric turbulence, maneuvering, or loose objects.
  - Boarding, disembarking, or evacuation.
  - Maintenance or servicing.
  - Persons not onboard the airplane.

9

2003 STATISTICAL SUMMARY, MAY 2004

## Accidents by Primary Cause*

**Hull Loss - Worldwide Commercial Jet Fleet - 1994 through 2003**




*As determined by the investigating authority, percent of accidents with known causes.

BOEING

17
2003 STATISTICAL SUMMARY, MAY 2004

**Accidents Definitions/ Terms and Exclusions**

**Definitions:**

The following definitions are consistent with those of the National Transportation Safety Board (NTSB) and the International Civil Aviation Organization (ICAO).

**Airplane accident:** An occurrence associated with the operation of an airplane that takes place between the time any person boards the airplane with the intention of flight and such time as all such persons have disembarked in which:

- Airplane sustains substantial damage.
- Death or serious injury results from:
- Being in or upon the airplane.
- Direct contact with the airplane or anything attached thereto.
- Direct exposure to jet blast.

**Hull loss**: Airplane damage that is substantial and is beyond economic repair. Hull loss also includes events in which:

- Airplane is missing.
- Search for the wreckage has been terminated without it being located.
- Airplane is substantially damaged and inaccessible.

**Substantial damage**: Damage or structural failure that adversely affects the structural strength, performance, or flight characteristics of the airplane and would normally require major repair or replacement of the affected component. Substantial damage is not considered to be:

- Engine failure or damage limited to an engine if only one engine fails or is damaged.
- Bent aerodynamic fairings.
- Dents in the skin.
- Damage to landing gear.
- Damage to wheels.
- Damage to tires.
- Damage to flaps.

**Fatal accident**: An accident that results in fatal injury.

**Fatal injury**: An injury that results in death within 30 days as a result of an accident.

**Serious injury**: An injury sustained in an accident that:

- Requires hospitalization for more than 48 hours that begins within 7 days of the date of injury.
- Results in a fracture of any bone (except simple fractures of fingers, toes, or nose).
- Produces lacerations that result in severe hemorrhage or nerve, muscle, or tendon damage.
- Involves injury to any internal organ.
- Involves second or third degree burns over 5 percent or more of the body.
- Involves verified exposure to infectious substance or injurious radiation.

**Terms and Exclusions Excluded events:**

- Fatal and nonfatal injuries from natural causes.
- Fatal and nonfatal self-inflicted injuries.
- Fatal and nonfatal injuries of stowaways hiding outside the areas normally available to the passengers and crew.
- Experimental test flight accidents. (Maintenance test flights, ferry, positioning, training and demonstration flights are included).
- Nonfatal injuries resulting from atmospheric turbulence, maneuvering, loose objects, boarding, disembarking, evacuation, and maintenance and servicing.
- Nonfatal injuries to persons not onboard the airplane.

**Regional identification:** Events are identified by the operator's national domicile and by event location.

**Airplane collisions:** Events involving two or more airplanes are counted as separate events, one for each airplane. For example, destruction of two airplanes in a collision is considered two separate hull loss accidents.

**Accident rates:** In general, this expression is a measure of accidents per million departures. Departures (or flight cycles) are used as the basis for computing rates, since there is a stronger statistical correlation between accidents and departures than there is between accidents and flight hours, or between accidents and the number of airplanes in service, or between accidents and passenger miles. Airplane departures data are continually updated and revised as new information and estimating processes become available. These form the baseline for the measure of accident rates and, as a consequence, rates may appear to vary between editions of this publication.

**Examples of Human Factor related accidents**

**Air Ontario Flight 1363 at Dryden:**

- Flight 1363 took off from Winnipeg on March 10, 1989. It was a Fokker F-28 recently bought from a Turkish airline.
- Weather was deteriorating and it experienced delays due to de-icing.
- It flew to Dryden then to Thunder Bay and back to Dryden.
- It experienced additional delays, then took off and crashed.
- The plane crashed in woods off the end of the runway. The post-crash fire was so fierce that the voice and data recorders were destroyed.

**Gulf A320 OF GF 072 CRASHNEAR BAHRAIN AIROPRT:**

- At 19 21 Alt was 14000 about 30 NM from airport.
- DMM approach ATC cleared the aircraft for self- navigation for RWY 12 and descent to 3500 ft. and change frequency to Bahrain approach.
- The CAPT confirm RWY 12 only in the hear back!!
- He changed to Bahrain approach and confirmed again RWY 12.
- Bahrain approach confirmed the previous clearance again to the crew.
- The CAPT believed that their clearance was to 7000 ft. not 3500 ft. (although he was cleared to 3500 before)
- The CAPT asked F/O to confirm with controller that they were cleared to 7000 ft. and the F/O complied. ATC replied “CONTINUE DESCENT TO 3500”.
- At 19 23 the controller cleared them to 1500 ft. and to report when established on final approach course VOR / DME RWY 12.
- Bahrain airport is almost sea level, has high intensity approach light and a long RWY.
- At the time of accident the weather was CAVOK (no clouds below 5000 ft., Vis. At least 10,000 ft.), wind 090/ 07 kts.
- At 19 25 the aircraft was about 7.7 MN from RWY 12 and FAF was at 5 NM from RWY, when the CAPT told the F/O to “ CALL ESTABLISHED”. The controller replied “ CLEAR FOR VOR/ DME 12 AND CALL BAHRAIN TOWER”
- At that time airspeed was 272 kts (which was excessive compared to standard)
- The CAPT asked for flaps 1 and gears down, speed was 224, Alt 1678.
- At FAF:
- Speed was 223 kts instead of 136 Alt 1662 ft. instead of 1500
- At 19 26 the aircraft was cleared to land by Bahrain tower.
- The CAPT disengaged the autopilot, F/D and but not the auto throttle and said “VISUAL WITH AIRPORT”
- At that point:
- Aircraft was 2.8 NM from RWY 976 AGL Speed 207 kts.
- The CAPT said “I HAVE TO BE STABILIZED BY 500 FT.” then flaps 2 was selected
- At 19 27 the CAPT said “WE ARE NOT GOING TO MAKE IT” and repeat it six seconds later.
- The CAPT told the F/ O to request clearance to conduct a 360º left turn and was approved.
- The CAPT began the turn at 0.9 NM at 584 AGL, speed 177 KTS.

- During the turn flaps 3 was selected then flaps full .Alt ranged from 965 to 332 AGL and the bank angel reached 36º.
- There was no callouts from F/O on CVR during the turn
- At 19 28,57 the CAPT rolled the aircraft wings level at heading 211.
- At 19 28 the CAPT called for landing check list.
- At the time the aircraft was crossing the RWY centerline the CAPT said "WE OVERSHOOT IT" then he rolled the aircraft into a left turn and engine power was increased.
- At 19 29,07 the CAPT decided to G/A and the A/T was disengaged and TOGA power was selected.
- The controller asked if they need radar vectors to final approach and the F/O said " YES"
- The ATC clears the aircraft to 2500 ft. and HDG 300º.
- Flaps was selected to "3" and gears up.
- The CAPT flew the aircraft to shallow climb to 1504 ft.
- At 19 29,41 the aural flap over speed warning sounded at airspeed of 191 kts while the limit airspeed is 185 kts for flaps 3
- The F/O called "SPEED, OVERSPEED LIMIT".
- There was no moonlight and no lights visible on the horizon.
- At 19 29,43 the CAPT side stick control was held forward of the neutral position for about 11 seconds.
- Aircraft pitch attitude decreased from about 5º nose up to 15.5º nose down and the speed was increased from 193 Kts to 234 Kts.
- At 19 29,51 the aircraft was descending through 1004 ft. at 221 Kts when the GPWS generated "SINK RATE" warning.
- At 19 29,52 the GPWS generated "WHOOP WHOOP PULL UP" and repeated once every second for 9 seconds.
- At same time 19 29,52 the CAPT said "FLAPS UP" and moved his side stick aft of the neutral position and the aircraft continued to descend and then said "FLAPS ALL THE WAY".
- The F/O replied "ZERO" and that was the last crew statement on the CVR.
- The aircraft hits the gulf water with a 6º nose down pitch and speed 282 Kts with maximum engine thrust retained.
- The aircraft broke into several pieces upon impact and all the occupants were killed (135 passengers and 8 crew members)

**SINGAPORE AIRLINES TAIL STRIKE DURING TAKE OFF**

- ON WEDNESDAY 12 MARCH 2003 AT 15:47
- FLIGHT SQ 286 B747-412 (REG. 9 V-SMT) STARTED ITS T/O AUCKLAND INT. AIRPORT FOR A DIRECT 9 HRS FLIGHT TO SINGAPORE
- ON BOARED WERE 369 PAX, 17 CABIN CREW AND 3PILOTS.
- HISTORY
  - 14:15 FLT PLANNING PREPARATION FUELING(100 Ts HAS BEEN REFUELED AUTOMATICALLY)
  - THE PILOTS ESTABLISHED EXACT FUEL REQUIREMENT AND REQUEST EXTRA FUELWHICH HAS BEEN DISTRIBUTED WRONGLY (4.5 Ts IN THE CENTER TANK WHILE THE MINIMUM FUEL IN THE CENER TANK SUPPOSE TO BE 7.7 Ts
  - 1500 FUELER BOARDED THE AIRPLANE TO CONFORM THE FINAL FUEL.
  - THE CAPT. REQUESTED ADDITIONAL FUEL FOR THE CENTER TANK AND AREVISED LOAD SHEET WHICH DELAYED THE FLIGHT 13 M
- LOAD SHEET
  - T/O &TRIP FUEL 116.4T TRAFFIC LOAD 42.939T.
  - THE AIRPLANE EMPTY WEIGHT 188.637T. ZFW 230.94T.(MAX.244.939T).
  - TOW 347.34T.(MAX 396.893T).
  - MAX LDG WT 247.04T.(MAX. 285.762T).
- THE CAPT. REFERED TO LOAD SHEET AND CALLED OUT CERTAIN INFORMATION TO THE F/O TO WRITE ON BUG CARD (WEIGHTS, SPEEDS)
- F/O GOT THE FOLLOWING SPEEDS FROM THE AIRPORT ANALYSIS FOR AUCKLAND AIRPORT RUNWAY 23 LEFT WITH FLAPS 20.WERE WROTE ON THE BUG CARD
- BY USING THE REAL AIRPLANE T/O WEIGHT 353.7 WE SHOULD HAVE THE T/O SPEEDS:
  - V1 151kts.
  - VR 163Kts.
  - V2 172Kts.
- THE OPERATOR B747-400 SOP STANDERD BEFORE START OPERATING PROCEDURES CALLED FOR F/O TO COMPUTE THE T/O DATA AND TO PREPARE THE BUG CARD.
- FOR THE CAPT. TO CHECK THE BUG CARD DATA & ENTER THE V SPEEDS INTO THE FMC.
- THE CAPT. DID NOT VERIFY THE TOW & USED THE ERRONEOUS TOW TO CONFORM THE V SPEEDS.
- THE CAPT. CHECKED COMPUTATION OF THE FMC SEEING THE

WEIGHTS WERE SIMILAR.

- THEN HE ENTERED THE ZFW FROM THE LOAD SHEET TO THE FMC.
- THEN FMC AUTOMATICALLY ADDED ZFW TO IT IS OWN COMPUTED AIRPLANE ON BOARD FUEL&DISPLY UNIT CORRESPONDS TO THE T/O WEIGHT RECORDED ON THE LOAD CHEET.
- THE CAPT. ENTERED MANUALLY CALCULATED V SPEEDS (V1, VR, V2) REPLACING THE V SPEEDS THE FMC HAD ITSELF COMPUTED AND WAS DISPLAYING ON ITS DISPLAY UNIT.
- THE F/E WOULD NORMALLY CROSS CHECK THE BUG CARD DATA & COMPUTATIONS.
- HE JUST STOWED THE AIRPORT ANALYSIS WITH OUT ANY VERIFICATION.
- HE WAS EXPLAINING THE DEPARTURE DELAY TO THE OPERATOR STATION MANAGER.
- THE CAPT. STARTED TO TAXI IT WAS HIS T/O
- EVERYTHING SEEMS TO BE NORMAL.
- AIRPLANE WAS ACCELERATING ON THE RUNWAY.
- THE F/O CALLED V1 AT 123KTS.
- THEN VR AT 130KTS.
- AT 137KTS THE CAPT. START TO PITCH THE AIRPLANE NOSE UP.
- AT150KTS PITCH ATT. 10.8 DEG.
- AT 151KTS PITCH ATT.11.8 DEG.
- AT 151KTS PITCH ATT. 12.7 DEG.
- THE AIRPLANE BECAME AIRBORNE AT 151KTS WITH PITCH ATTITUDE OF 12.9 DEG.(NORMALLY 8.5 TO 10 DEG) BODY ANGLE.
- BECAUSE THE AIR SPEED WAS TOO LOW WHEN THE AIRPLANE ROTATED IT IS INITIALLY REMAINED ON THE GROUND WITH TAIL PITCHING DOWN AND STRIKING THE RUNWAY.
- THE TAIL REMAINED IN COTACT WITH THE RUNWAY &SCRAPED ABOUT 7 SEC. OVER ADISTANCE OF 490M GIVING OFF WHITE SMOKE.
- THE AIRPLANE MOVED ACROSS TO THE RIGHT EDGE OF THERUNWAY BEFORE BECOMING AIRBORNE.
- PILOTS FELT A BUFFET DURING ROTATION BUT THEY DID NOT CONFORM IT.
- THREE SECONDS LATER APU FIRE WARNING WAS ACTIVATED.
- FOLLOWED ONE SEC. LATER BY STICK SHAKER FOR 6 SEC. (SPEED 154KT TO 158KT).
- AIRPLANE PITCH ATTITUDE WAS 8.5 DEG THEN 11 DEG.THRUST WAS NOT INCREASED.
- F/O MADE A DISTRESS CALL ADVISING MAY DAY.
- ATC CLEAR THE AREA FOR THEM.THEY WANTED TO DUMP FUEL THEN THEY DECIDE TO MAKE OVER WEIGHT LANDING.
- THE CAPT. OVERSHOOT THE RUNWAY IN THE FIRST ATTEMPT, THEN HE LANDED THE AIRPLANE AT 15:58.
- NO PAX WERE INJURED FORTUNATELLY. (THANKS TO GOD).

- THE TAIL SECTION WAS EXTENSIVELY DAMAGED.

## Chapter 4 Human Error

**Introduction:**

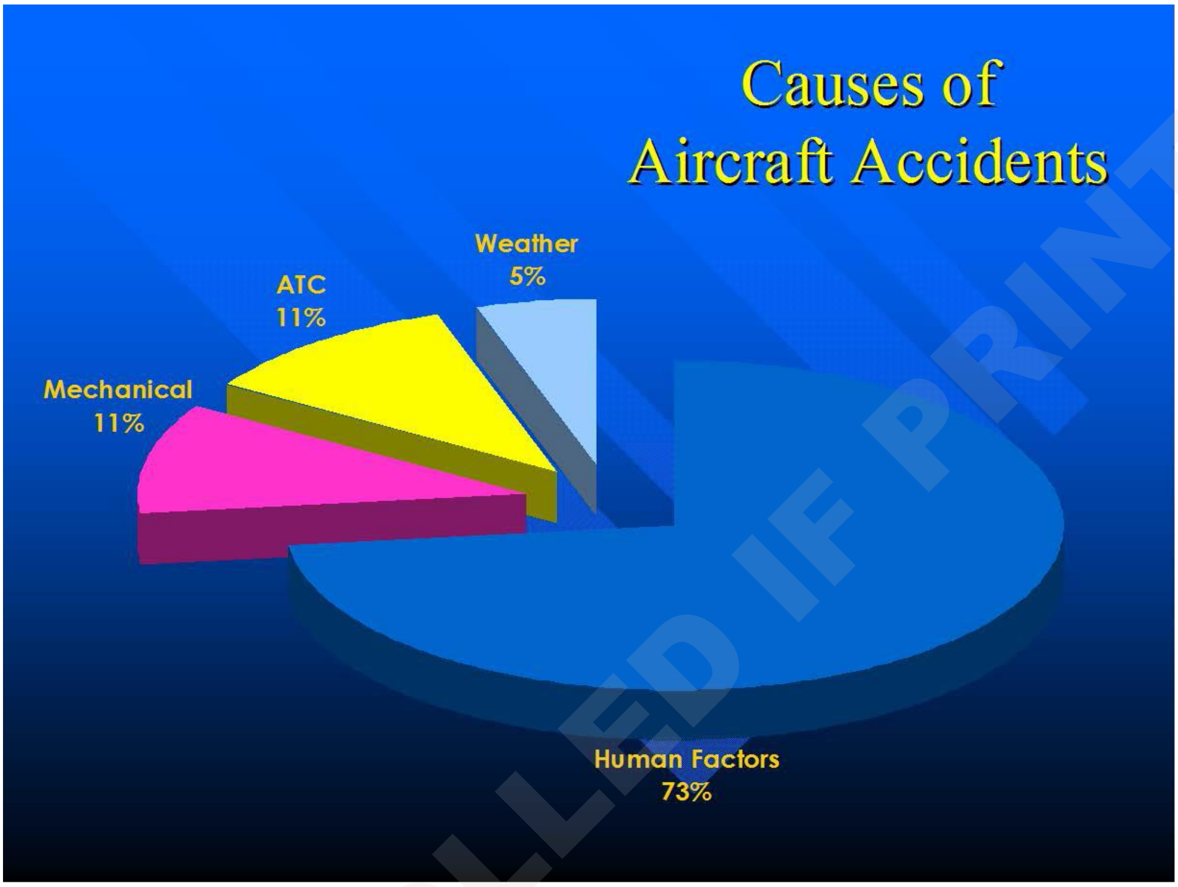
It has long been acknowledged that human performance is at times imperfect. Nearly two thousand years ago, the Roman philosopher Cicero cautioned "It is the nature of man to err". It is an unequivocal fact that whenever men and women are involved in an activity, human error will occur at some point.

***In his book "Human Error", Professor James Reason defines error as follows: "Error will be taken as a generic term to encompass all those occasions in which a planned sequence of mental or physical activities fails to achieve its intended outcome, and when these failures cannot be attributed to the intervention of some chance agency".*** [1]

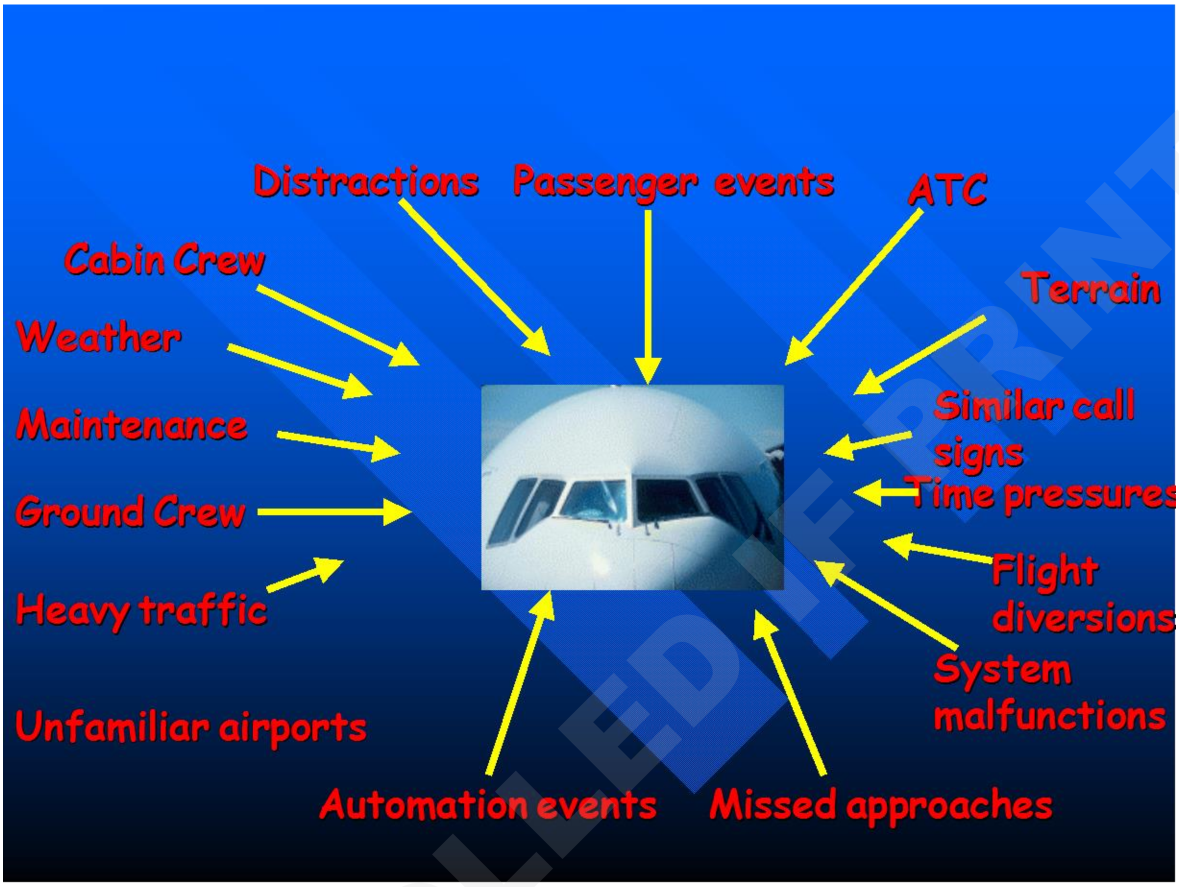

In the days of early technology,
human error was the cause of many
safety related incidents


WT & BALANCE
FEDERAL EXPRESS

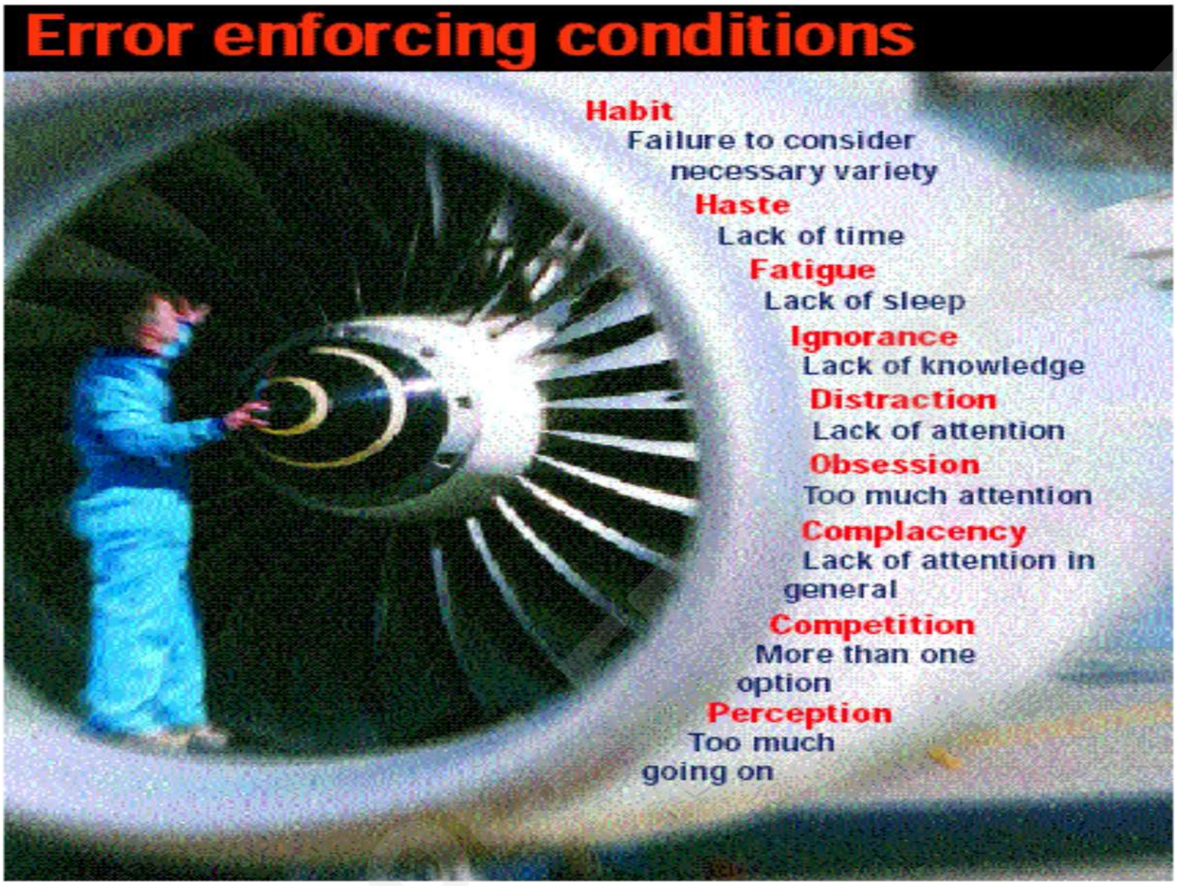
711



Causes of
Aircraft Accidents
Weather
5%
ATC
11%
Mechanical
11%
Human Factors
73%



Distractions
Passenger events
ATC
Cabin Crew
Terrain
Weather
Similar call signs
Maintenance
Time pressures
Ground Crew
Flight diversions
Heavy traffic
System malfunctions
Unfamiliar airports
Automation events
Missed approaches


Error enforcing conditions
Habit
Failure to consider necessary variety
Haste
Lack of time
Fatigue
Lack of sleep
Ignorance
Lack of knowledge
Distraction
Lack of attention
Obsession
Too much attention
Complacency
Lack of attention in general
Competition
More than one option
Perception
Too much going on

## Error Models and Theories

To appreciate the types of error that it is possible to make, researchers have looked at human error in a number of ways and proposed various models and theories. This attempt to capture the nature of the error and its characteristics. To illustrate this, the following models and theories will be briefly highlighted:

- design- versus operator-induced errors;
- variable versus constant errors;
- reversible versus irreversible errors;
- slips, lapses and mistakes;
- skill-, rule- and knowledge-based behaviors and associated errors;
- the 'Swiss Cheese Model'.

## Design-Versus Operator-Induced Errors

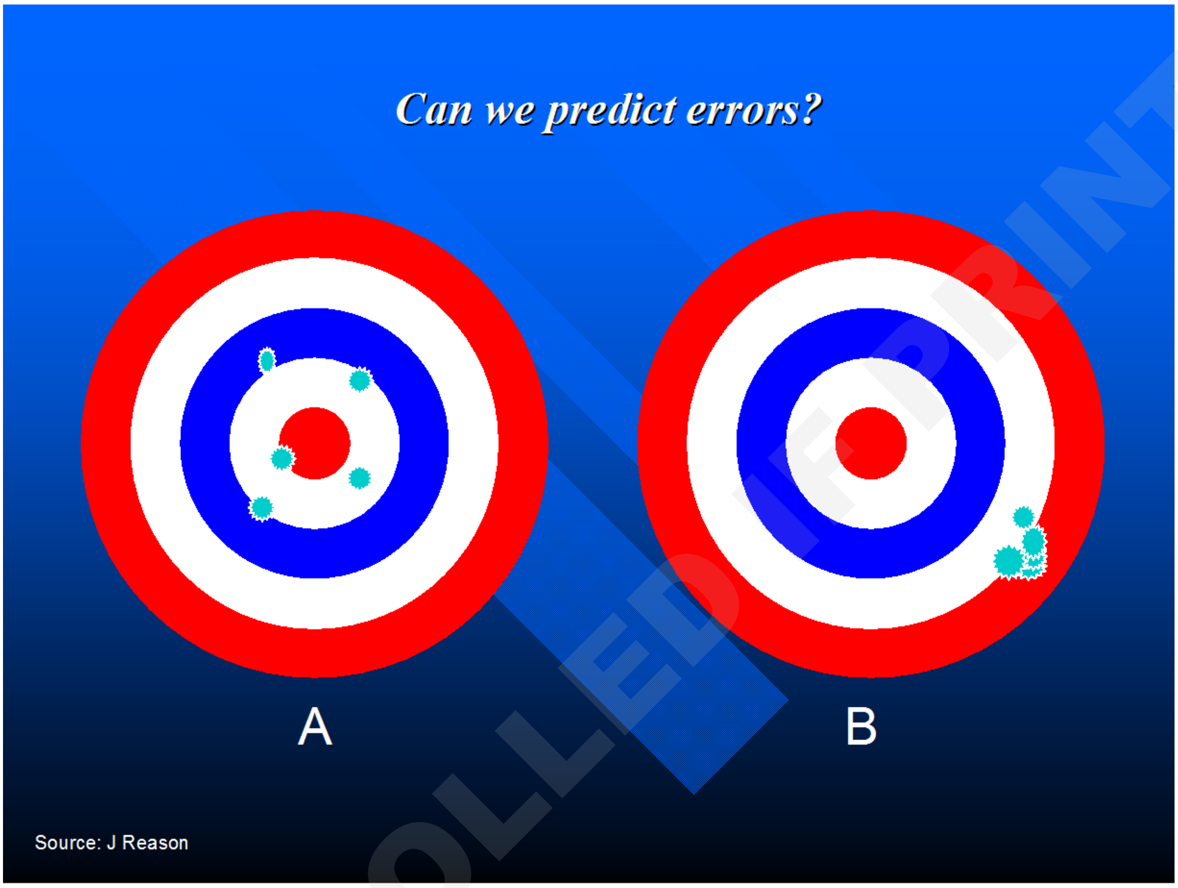
In aviation, emphasis is often placed upon the error(s) of the front-line operators, who may include flight crew, air traffic controllers and aircraft maintenance engineers.

However, errors may have been made before an aircraft ever leaves the ground by aircraft designers. This may mean that, even if an aircraft is maintained and flown as it is designed to be, a flaw in its original design may lead to operational safety being compromised. Alternatively, flawed procedures put in place by airline, maintenance organization or air traffic control management may also lead to operational problems.

It is common to find when investigating an incident or accident that more than one error has been made and often by more than one person. It may be that, only when a certain combination of errors arises and error 'defenses' breached (see the 'Swiss Cheese Model') will safety be compromised.

## Variable versus Constant Errors

In his book "Human Error", Professor Reason discusses two types of human error: variable and constant. It can be seen in Figure 4-1 that variable errors in (A) are random in nature, whereas the constant errors in (B) follow some kind of consistent, systematic (yet erroneous) pattern. The implication is that constant errors may be predicted and therefore controlled, whereas variable errors cannot be predicted and are much harder to deal with. If we know enough about the nature of the task, the environment it is performed in, the mechanisms governing performance, and the nature of the individual, we have a greater chance of predicting an error.



Can we predict errors?
A
B
Source: J Reason

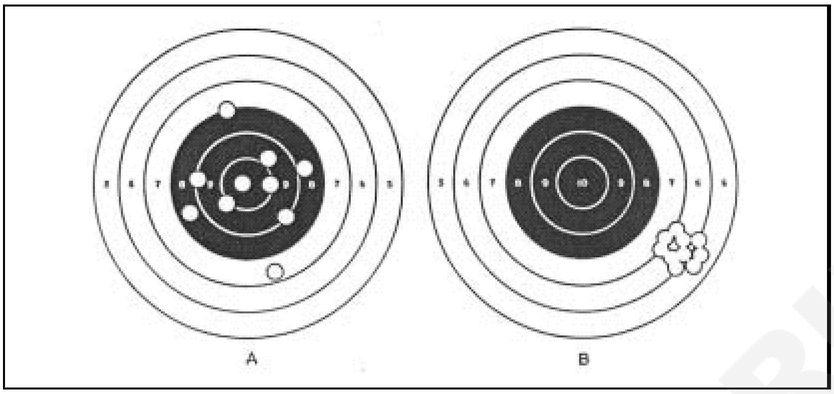



**Figure 4-1 Variable** versus Constant Errors.

Target patterns of 10 shots fired by two riflemen. Rifleman A's pattern exhibits no constant error, but large variable errors; rifleman B's pattern exhibit is a large constant error but small variable errors. The latter would, potentially, be easier to predict and to correct (e.g. by correctly aligning the rifle sight). Chapanis, 1951

However, it is rare to have enough information to permit accurate predictions; we can generally only predict along the lines of "re- assembly tasks are more likely to incur errors than dismantling tasks", or "an engineer is more likely to make an error at 3 a.m., after having worked 12 hours, than at 10 a.m. after having worked only 2 hours". It is possible to refine these predictions with more information, but there will always be random errors or elements, which cannot be predicted.

**Reversible versus Irreversible Errors**

Another way of categorizing errors is to determine whether they are reversible or irreversible. The former can be recovered from, whereas the latter typically cannot be. For example, if a pilot miscalculates the fuel he should carry, he may have to divert to a closer airfield, but if he accidentally dumps his fuel, he may not have many options open to him.

A well-designed system or procedure should mean that errors made by aircraft maintenance engineers are reversible. Thus, if an engineer installs a part incorrectly, it should be spotted and corrected before the aircraft is released back to service by supervisory procedures in place.

**Slips, Lapses and Mistakes**

The notion of 'intention' when considering the nature of error was highlighted, asking the questions:

- Were the actions directed by some prior intention?
- Did the actions proceed as planned?
- Did they achieve their desired end?

Reason then suggests an error classification based upon the answers to these questions as shown in Figure 4-2.

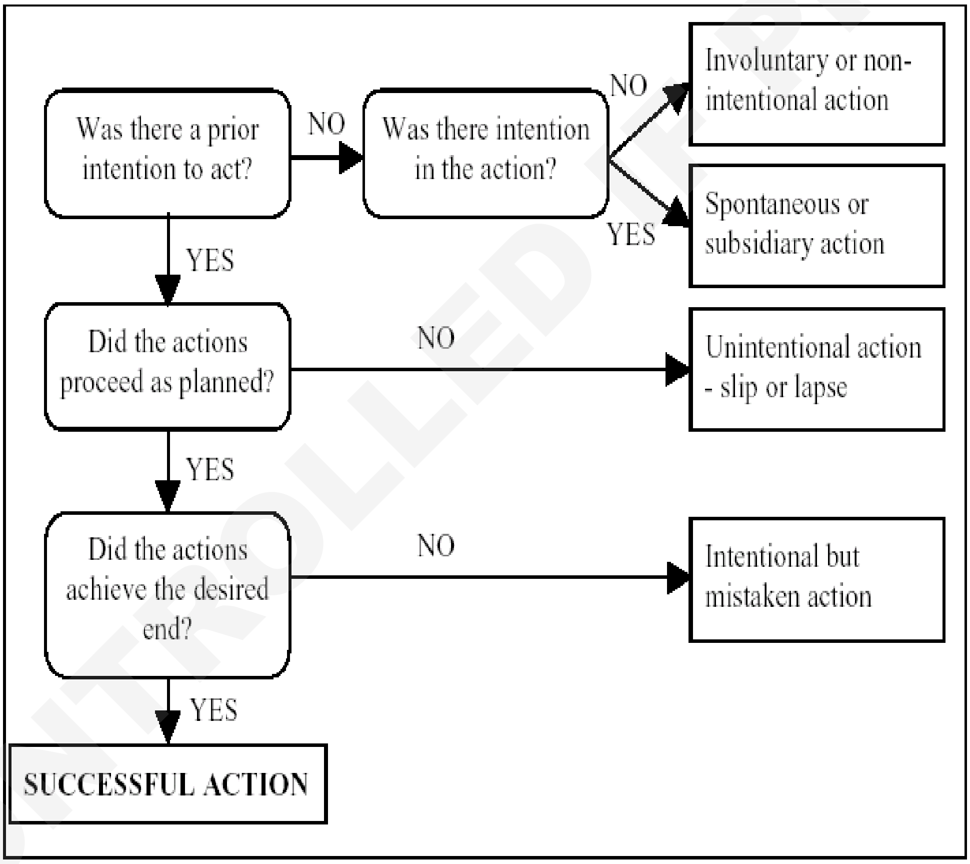



**Figure 4-2** Error types based on intention. Source: Reason,

The most well-known of these are slips, lapses and mistakes.

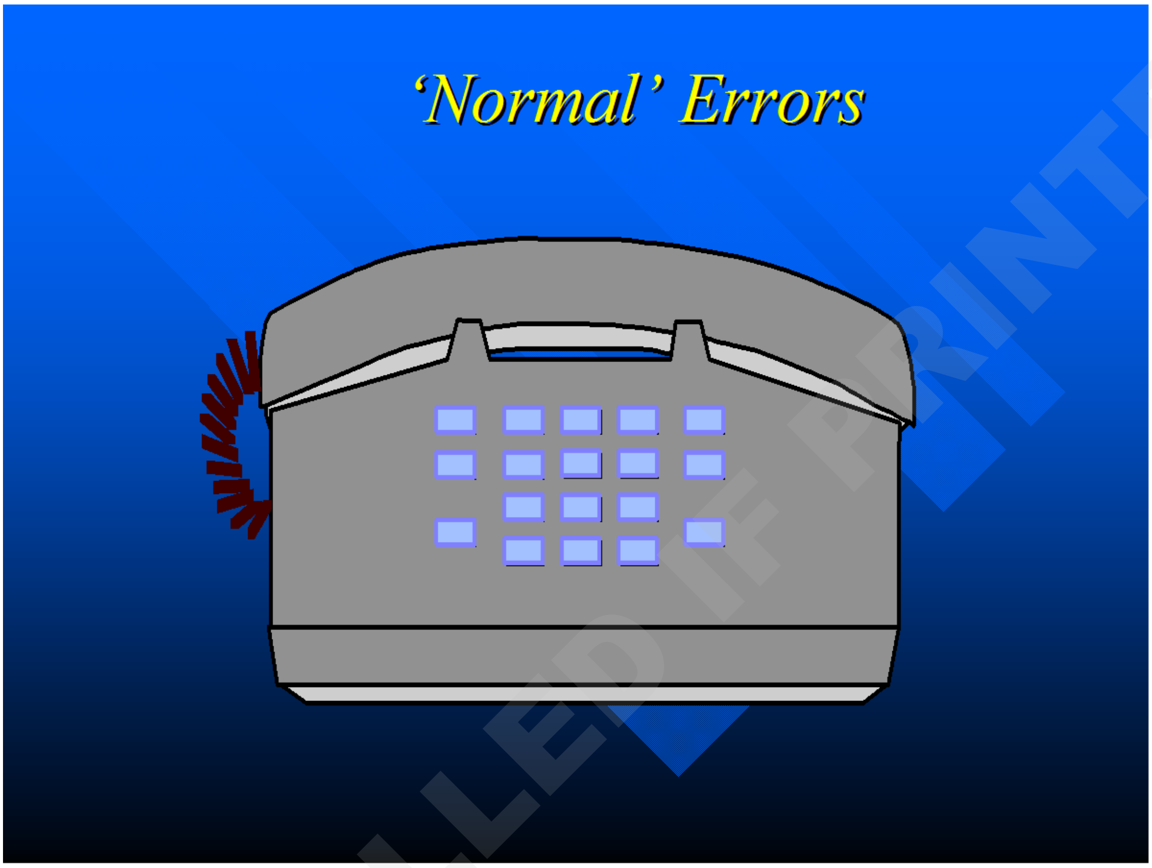
Slips can be thought of as actions not carried out as intended or planned, e.g. ‘transposing digits when copying out numbers, or mis ordering steps in a procedure.

Lapses are missed actions and omissions, i.e. when somebody has failed to do something due to lapses of memory and/or attention or because they have forgotten something, e.g. forgetting to replace an engine cowling.

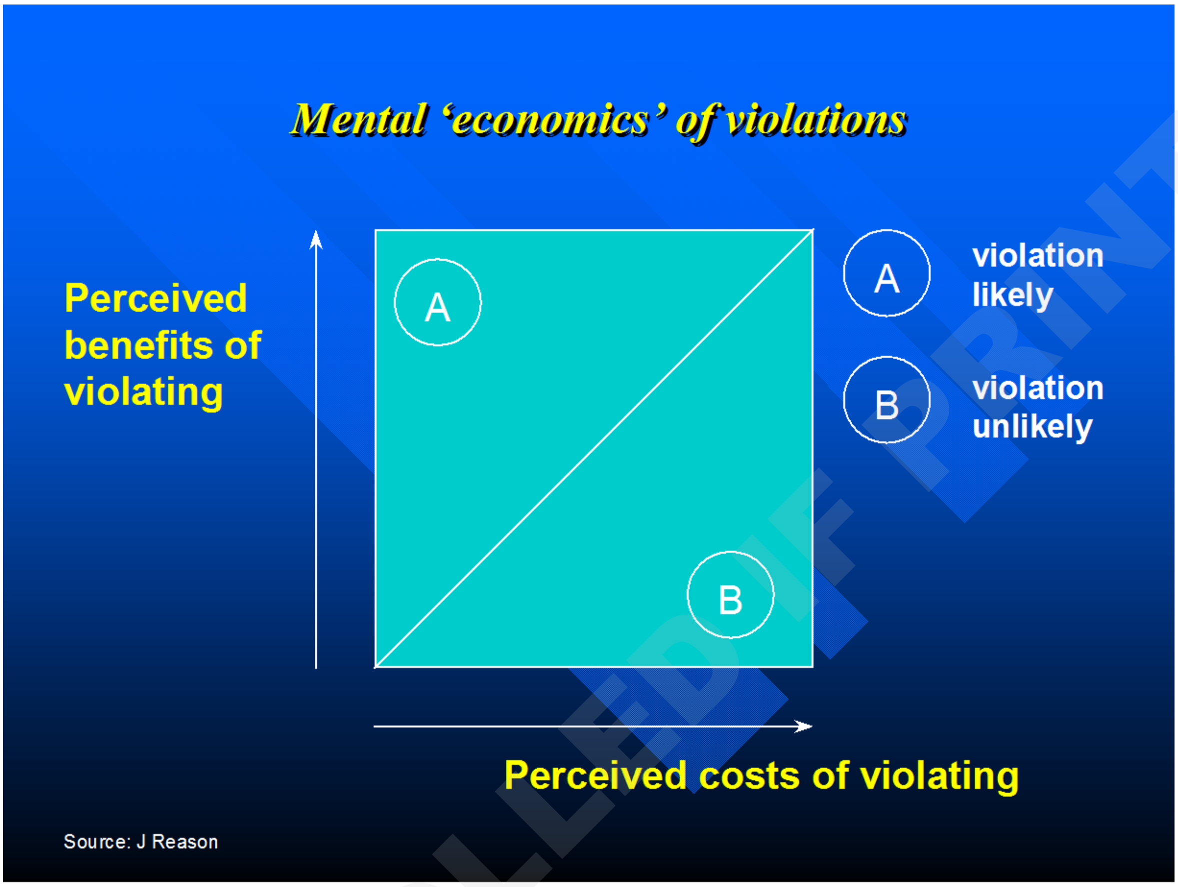
Mistakes are a specific type of error brought about by a faulty plan/intention, i.e. somebody did something believing it to be correct when it was, in fact, wrong, e.g. an error of judgment such as mis-selection of bolts when fitting an aircraft windscreen.

Slips typically occur at the task execution stage, lapses at the storage (memory) stage and mistakes at the planning stage.

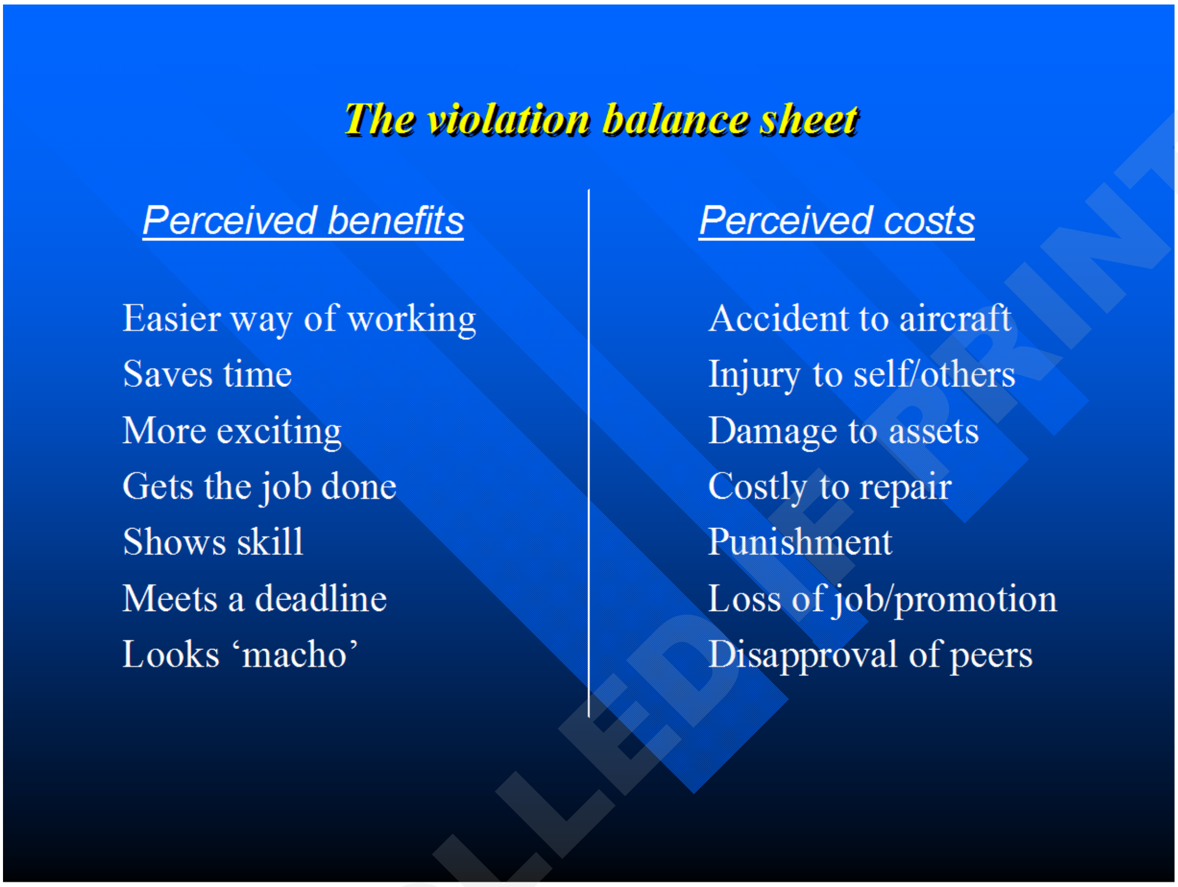
Violations sometimes appear to be human errors, but they differ from slips, lapses and mistakes because they are deliberate ‘illegal’ actions, i.e. somebody did something knowing it to be against the rules (e.g. deliberately failing to follow proper procedures). Flight crews, aircraft maintenance engineers may consider that a violation is well-intentioned, i.e. ‘cutting corners’ to get a job done on time. However, procedures must be followed appropriately to help safeguard safety.



'Normal' Errors



Mental 'economics' of violations
Perceived benefits of violating
A
B
A
violation likely
B
violation unlikely
Perceived costs of violating
Source: J Reason



The violation balance sheet
Perceived benefits
Easier way of working
Saves time
More exciting
Gets the job done
Shows skill
Meets a deadline
Looks ‘macho’
Perceived costs
Accident to aircraft
Injury to self/others
Damage to assets
Costly to repair
Punishment
Loss of job/promotion
Disapproval of peers

**Skill-, Rule- and Knowledge-Based Behaviors and Associated Errors**

The behavior of aircraft maintenance engineers can be broken down into three distinct categories: skill-based, rule-based and knowledge- based behavior.

Green et al define these:

"Skill-based behaviors are those that rely on stored routines or motor programmes that have been learned with practice and may be executed without conscious thought. Rule-based behaviors are those for which a routine or procedure has been learned. The components of a rule-based behavior may comprise a set of discrete skills. Knowledge-based behaviors are those for which no procedure has been established. These require the cockpit crew, aircraft maintenance engineer to evaluate information, and then use his knowledge and experience to formulate a plan for dealing with the situation."

Each of these behavior types has specific errors associated with them.

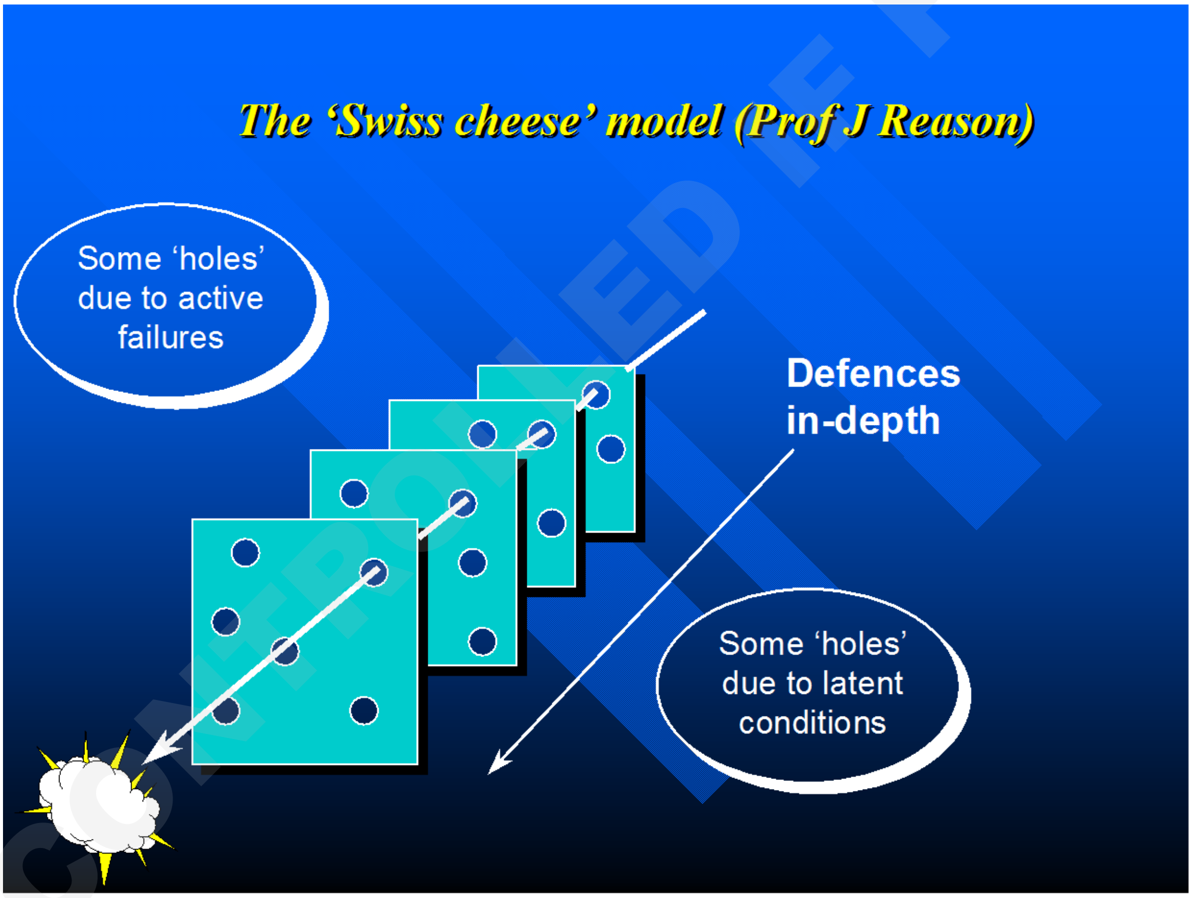
Reversion can occur once a certain pattern of behavior has been established, primarily because it can be very difficult to abandon or unlearn it when it is no longer appropriate.

Rule-based behavior is generally fairly robust, and this is why the use of procedures and rules is emphasized in aircraft maintenance. However, errors here are related to the use of the wrong rule or procedure.

Errors at the knowledge-based performance level are related to incomplete or incorrect knowledge or interpreting the situation incorrectly.

**The ‘Swiss Cheese Model’**

In his research, Reason has highlighted the concept of ‘defenses’ against human error within an organization and has coined the notion of ‘defenses in depth’. Examples of defenses are duplicate inspections, pilot pre-flight functional checks, etc., which help prevent to ‘trap’ human errors, reducing the likelihood of negative consequences. It is when these defenses are weakened and breached that human errors can result in incidents or accidents. These defenses have been portrayed diagrammatically, as several slices of Swiss cheese (and hence the model has become known as Professor Reason’s “Swiss cheese” model) (see Figure 4-3).



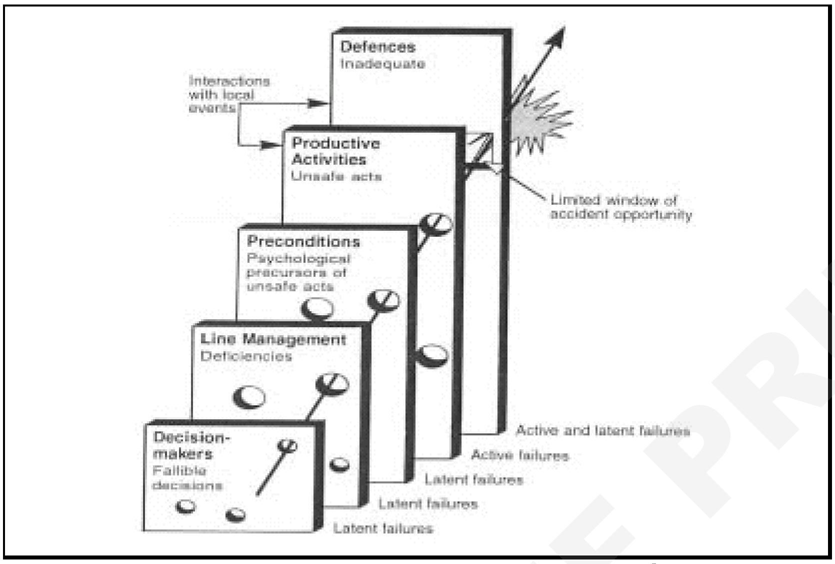



**Figure 4-3** Reason's Swiss Cheese Model. Source: Reason, 1990[3]

Some failures are latent, meaning that they have been made at some point in the past and lay dormant. This may be introduced at the time an aircraft was designed or may be associated with a management decision. Errors made by front line personnel, such as aircraft maintenance engineers, are 'active' failures. The more holes in a system's Defenses, the more likely it is that errors result in incidents or accidents, but it is only in certain circumstances, when all holes 'line up', that these occur. Usually, if an error has breached the engineering Defenses, it reaches the flight operations Defenses (e.g. in flight warning) and is detected and handled at this stage. However, occasionally in aviation, an error can breach all the defenses (e.g. a pilot ignores an in flight warning, believing it to be a false alarm) and a catastrophic situation ensues.

**Avoiding and Managing Errors**

**'manage' errors**

Error management seeks to:

- prevent errors from occurring;
- eliminate *or mitigate the bad effects of errors*

**Error management classification**

Reason refers to the two components of error management as:

**(i)** error containment and
**(ii)** error reduction.

**Error management measures**

According to Reason[4], error management includes measure to:

- minimize the error liability of the individual or the team;
- reduce the error vulnerability of particular tasks or task elements;
- discover, assess and then eliminate error-producing (and violation- producing) factors within the workplace;
- diagnose organizational factors that create error-producing factors within the individual, the team, the task or the workplace;
- enhance error detection;
- increase the error tolerance of the workplace or system;
- make latent conditions more visible to those who operate and manage the system;
- improve the organization's intrinsic resistance to human fallibility.

# Error Management Strategies

- Understanding the nature and extent of error or risk
- Changing the conditions that induce the error
- Determining the behaviours that prevent or mitigate error

**Human Reliability**

The Performance Shaping Factor term, (usually called by its acronym PSF), was introduced in the late 1960's to help conceptually frame the idea of human reliability. In its most general meaning, a Performance Shaping Factor is anything that can affect human performance. Theoretically, Performance Shaping Factors can have either a positive or negative effect on human performance. However, discussion of Performance Shaping Factors is often limited to those elements that adversely affect performance. For example, poor training is a Performance Shaping Factor that is known to increase errors.

Performance Shaping Factors are usually categorized as either internal or external. External Performance Shaping Factors are outside the individual worker or user, usually some characteristic of the workplace, the task, or the organization. Internal Performance Shaping Factors come from within the person and are typically related to skills, stress, or other physiological, psychological, or social element. Typical examples of external Performance Shaping Factors are poor workspace layout, adverse environmental conditions, inadequate training, poorly designed tools, etc. Common internal Performance Shaping Factors are high stress, a disruptive social environment, and low skill.

Anything that causes human performance levels to increase or decrease can be considered a Performance Shaping Factor and thus subject to analysis and mitigation using human factors techniques. This is true even for topics not traditionally considered within the scope of human factors, such as sexual harassment, substance abuse, etc. At least one study has shown that stress like that caused by such emotional factors can increase the probability of human error by a factor of 2 to 5.

**Error Chain concept**

The error chain is a concept that describes human error accidents as the result of a sequence of events that culminate in mishap.

There is seldom one overpowering cause, but rather a number of contributing factors or errors, hence the term "error chain". The links of these so-called errors are identifiable by means of 11 clues. Just as no chain is stronger than its weakest link, breaking any one link in the chain might potentially break an error chain and prevent a mishap.

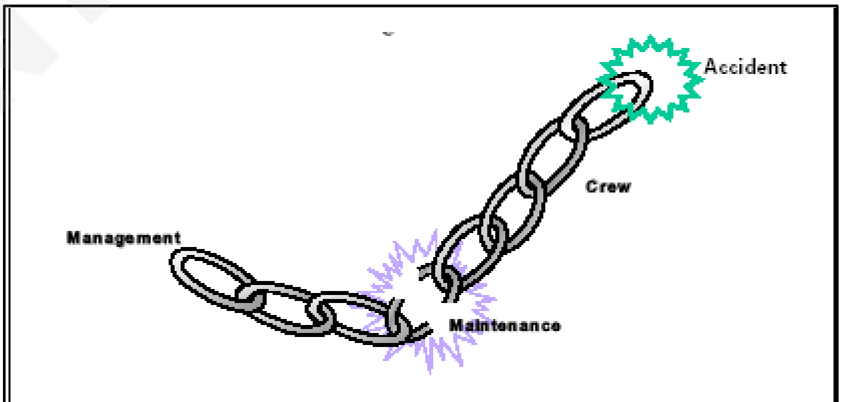
It could be suggested that flight crews, unknowingly progressing toward mishap, might interrupt that sequence of events such that it would not occur. More than 30 accidents and incidents have been examined in testing the concept of error chains. Each was considered from the following perspective:

"If the flight crew had been trained to be proficient in recognizing links in error chains, if such links were present in the operating environment and were subsequently found, would it have caused a different response and outcome"?

In each event considered, the answer was "yes". The fewest links discovered in any one accident were four, the average was seven. Yet, recognizing and responding to only one link is all that is potentially necessary to change an outcome. The presence of more than one link serves to enhance the potential for timely recognition of an error chain.

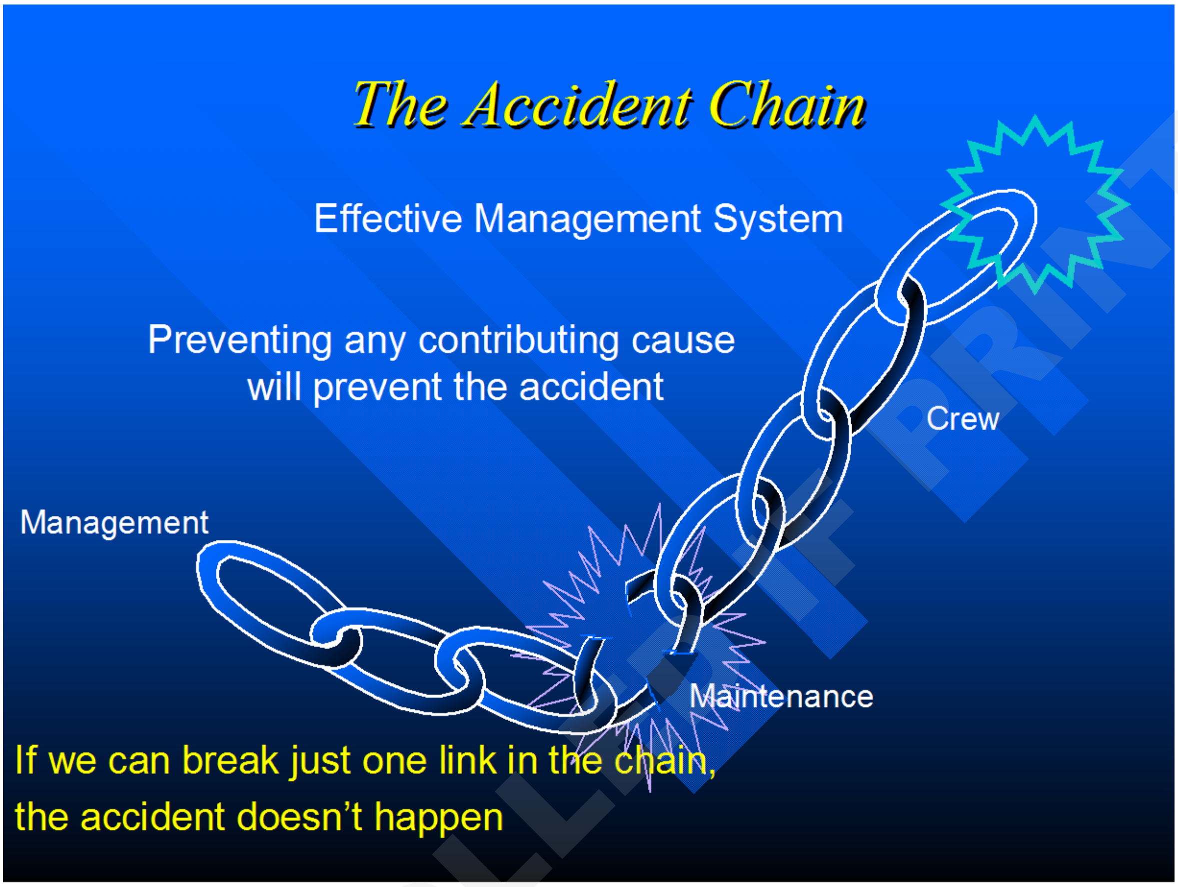
While an error chain might be relatively easy to reconstruct during accident investigation, the presence of one may be difficult for a flight crew to detect as it occurs. Familiarizing flight crews with the concept of the error chain will help to improve matters in this respect.

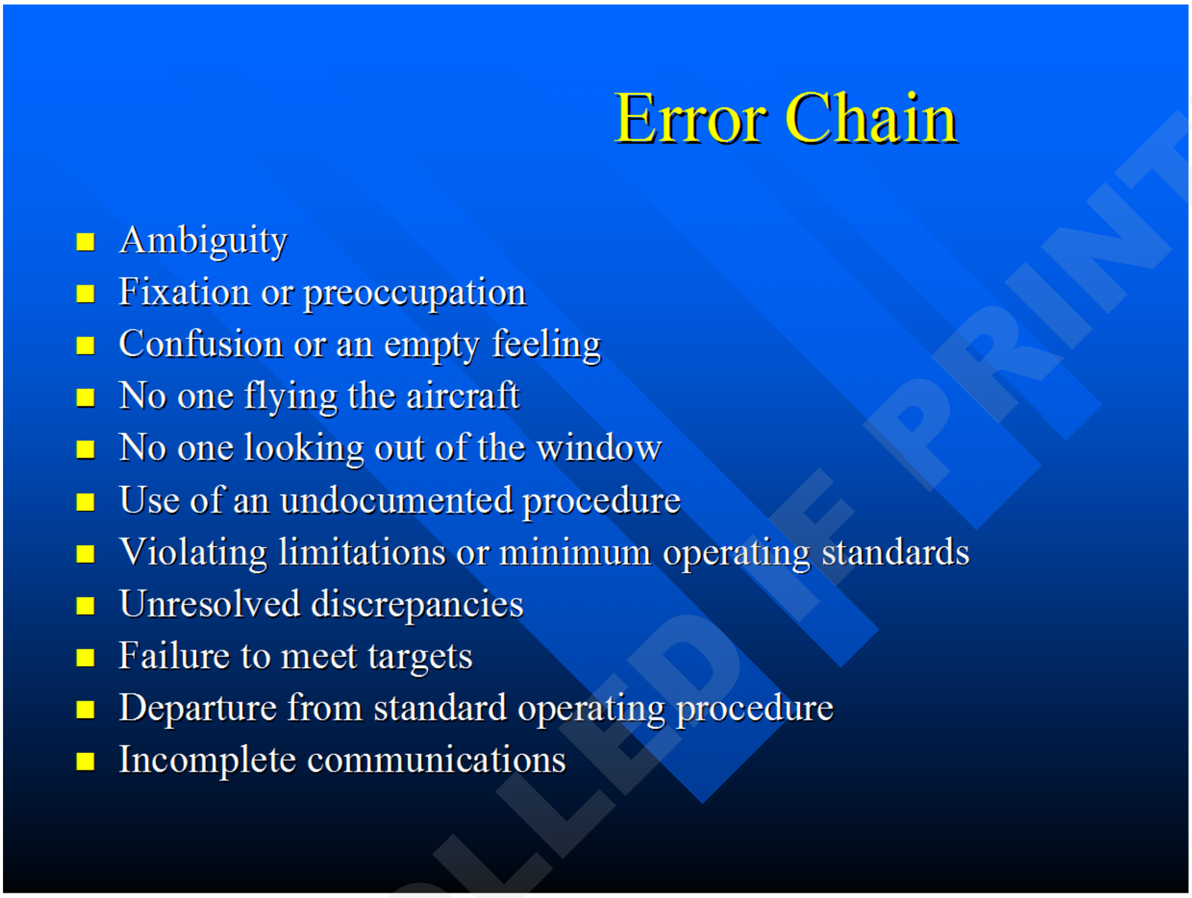
As with many incidents and accidents, they involved a series of human factors problems, which formed an error chain (see Figure 4-4). If any one of the links in this 'chain' had been broken by building in measures, which may have prevented a problem at one or more of these stages, these incidents may have been prevented.




If we can break just one link of the chain, the accident does not happen

The Accident Chain
Accident
• Chain of events
• Multiple contributing causes that can lead to an accident.
• Rarely does an accident have a single cause.


The Accident Chain
Effective Management System
Preventing any contributing cause
will prevent the accident
Crew
Management
Maintenance
If we can break just one link in the chain,
the accident doesn't happen


Error Chain
Ambiguity
Fixation or preoccupation
Confusion or an empty feeling
No one flying the aircraft
No one looking out of the window
Use of an undocumented procedure
Violating limitations or minimum operating standards
Unresolved discrepancies
Failure to meet targets
Departure from standard operating procedure
Incomplete communications

This handout gives a description of the 11 clues to identifying links in an error chain. The presence of any one, or more, indicates rising risk in the operation of an aircraft and that the flight crew must maintain control through proper management of resources.

**1) Ambiguity**

Ambiguity exists any time two or more independent sources of information do not agree. This can include instruments, gauges, people, senses and controls that do not correspond with associated indicators.

**2) Fixation or Preoccupation**

The focus of attention on any one item or event to the exclusion of all others. These may include any number of distractions that can draw attention away from the progress of a flight.

Distractions can be the result of high workload brought about by the demands of flight within high-density traffic areas or inclement weather, or by abnormal and emergency conditions. Distraction can also be the result of personal problems, inattention, complacency, and fatigue.

**3) Confusion**

A sense of uncertainty, anxiety or bafflement about a particular situation. It may be the result of falling behind the aircraft, lack of knowledge or experience. Perhaps it is being pushed to the limit of one's ability or experience.

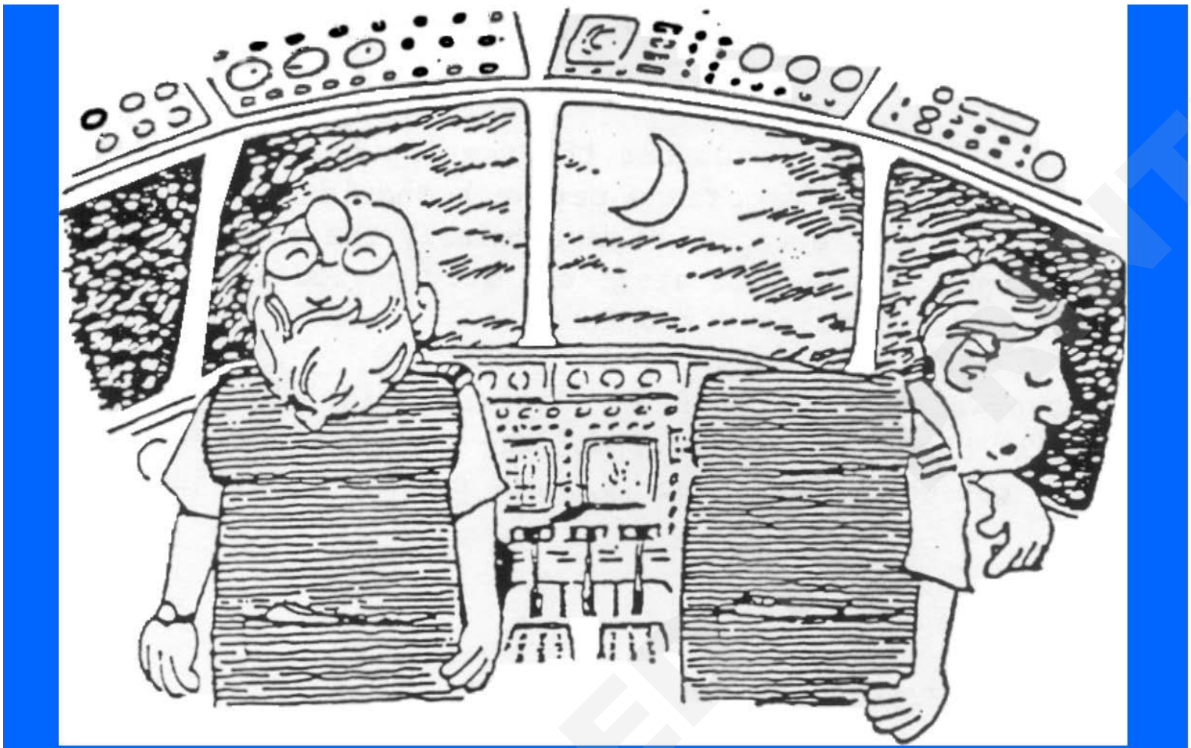
It can be evidenced by physiological symptoms such as a stomach discomfort, throbbing temple, headache or nervous habit. Researchers suggest that these signals are symptomatic of uneasiness and should be trusted as indicators that all my not be right.

**4) No One Flying The Aircraft**

No one monitoring the current state of progress of the flight.

**5) No One Looking Out of The Window**

One of the hazards to flight safety is the threat of mid-air collision in the terminal area. It’s easy to be tempted to keep one's head down in the cockpit rather than maintaining a careful eye outside. The introduction of new automated cockpit technologies can compound this problem.



Constantly vigilant for any system malfunction the Captain scans the overhead panel as the F/O checks the window heat system with his forehead – at 03:00 pilots can't be too careful...

### 6) Use of An Undocumented Procedure

The use, in order to deal with abnormal or emergency conditions, of a procedure that is not prescribed in approved flight manuals or checklists. Does the flight crew have a thorough understanding of the problem? Have all resources been used to their fullest potential?

### 7) Violating Limitations or Minimum Operating Standards

Intent to violate, or actual violation of defined minimum operating conditions or specifications, as prescribed by regulations, flight operations manuals or directives. These can include weather conditions, operating limitations, crew rest or duty limitations, systems limitations, airspeed restrictions and so on.

### 8) Unresolved Discrepancies

Failure to resolve conflicts of opinion, information, changes in conditions.

### 9) Failure To Meet Targets

Failure of the flight crew to attain and/or maintain identified targets. Targets include ETAs, airspeeds, approach minima, altitudes and heading, configuration requirement, plans, procedures, or any other goals established by or for the flight crew.

### 10) Departure from Standard Operating Procedures

Intent to depart or inadvertent departure from prescribed standard operating procedure. Well defined SOPs are the result of a synergistic approach to problem solving with the influence of time removed.

As a result, in difficult situations, standard operating procedures represent an effective means of problem resolution without the sacrifice of time, which is often not available. This is not to suggest that SOPs will resolve all problems. However, they are an effective starting point.

### 11) Incomplete Communications

Incomplete communications are the result of withheld information, ideas, opinions, suggestions or questions, and of failure to seek resolution of misunderstandings, confusion or disagreements.

The presence of one or more of these clues is an indication that an error chain might be in progress and that appropriate caution is advised.

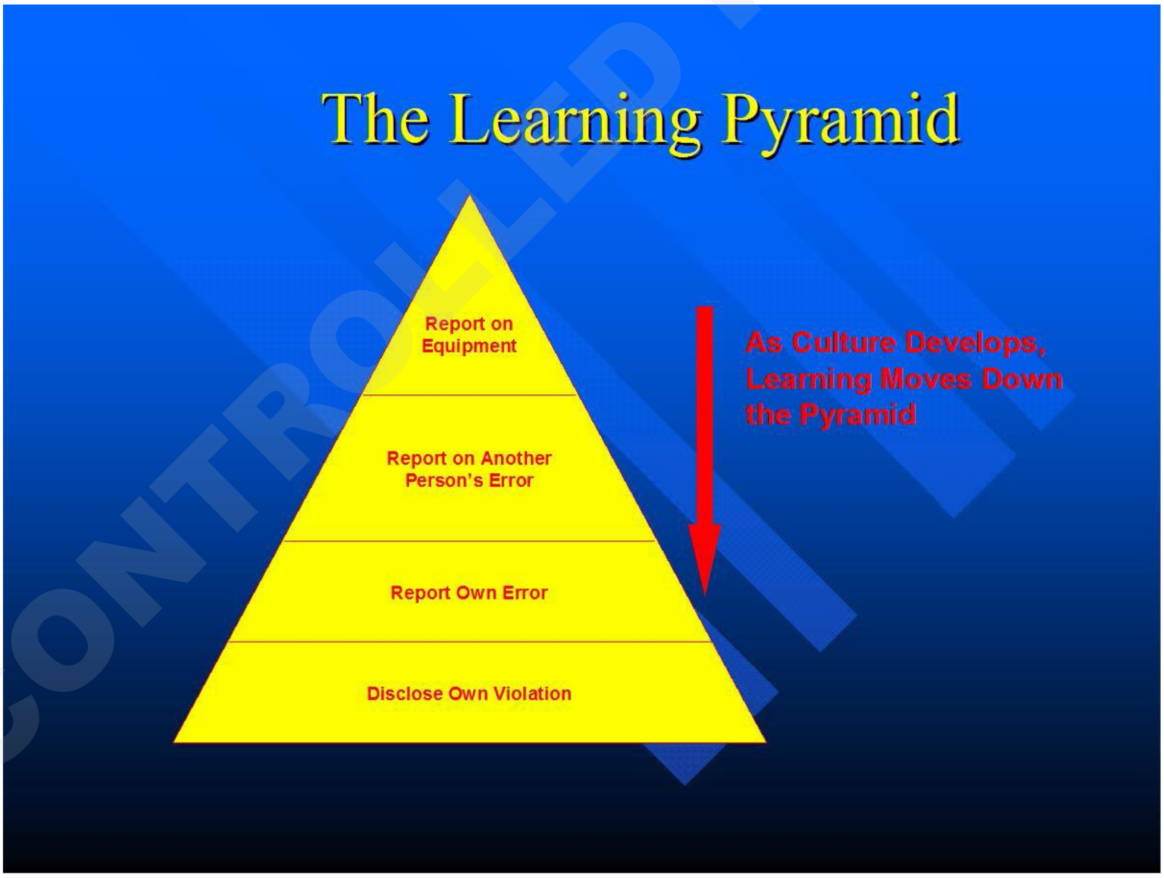
Recognition of the presence of error chain links provides flight crews with a tool to better manage risks associated with flight. Eliminating error chain links reduces corresponding risk.

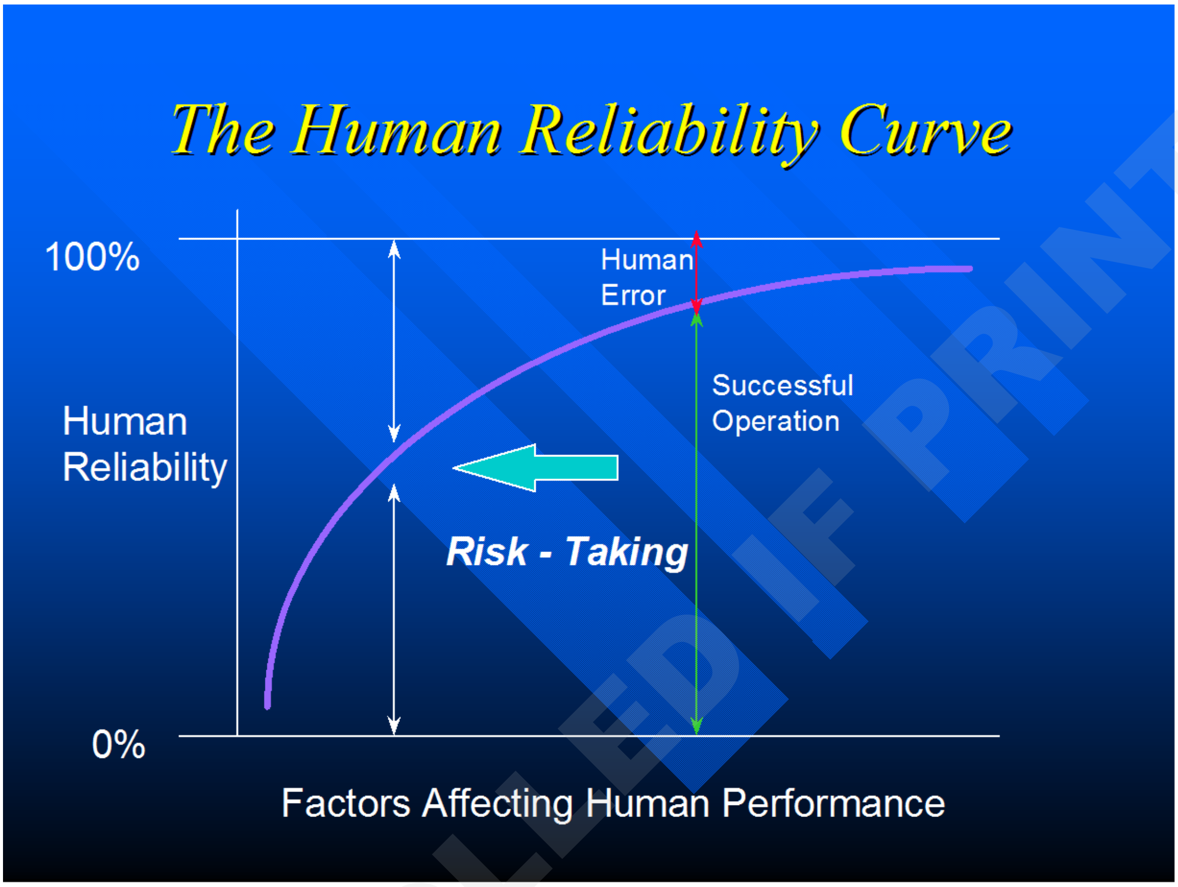
**Murphy's Law**

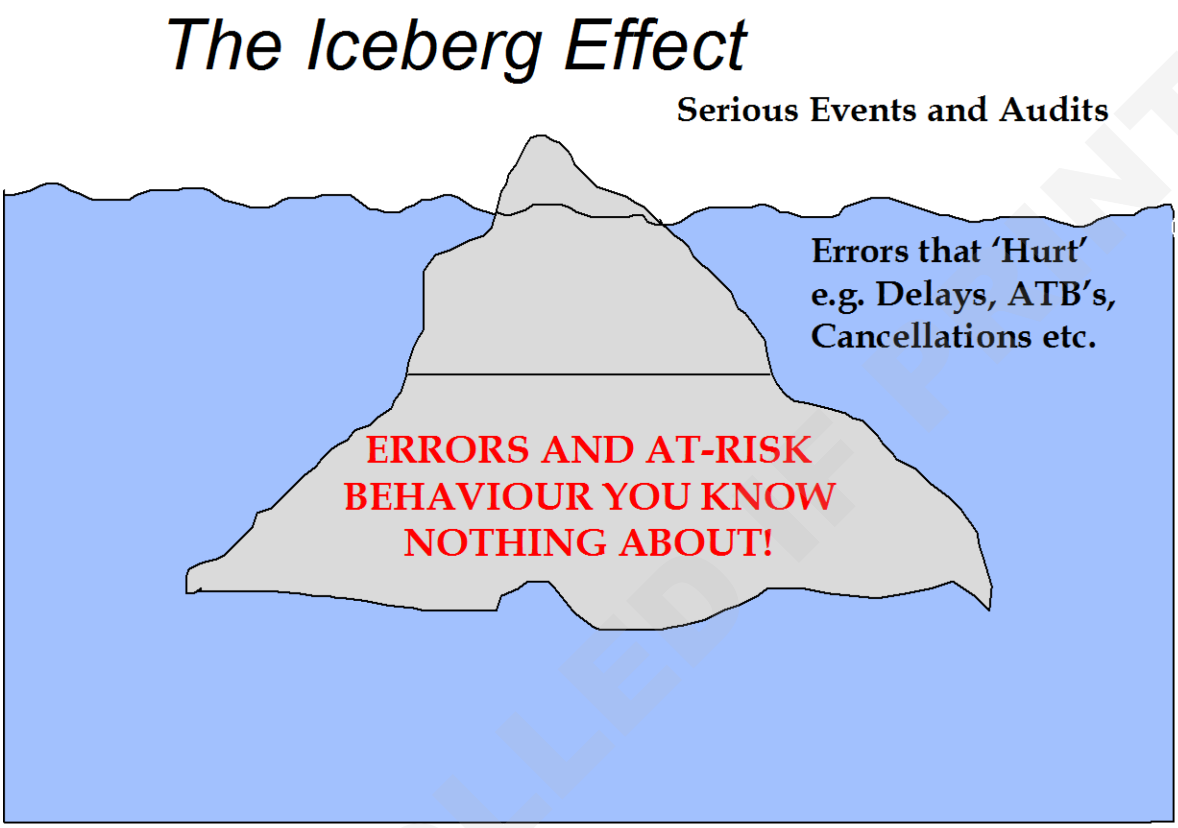
- There is a tendency among human beings towards complacency. The belief that an accident will never happen to "me" or to "my Company" can be a major problem when attempting to convince individuals or organizations of the need to look at human factors issues, recognize risks and to implement improvements, rather than merely to pay 'lip-service' to human factors.

**"Murphy's Law" can be regarded as the notion: "If something can go wrong, it will."**

- If everyone could be persuaded to acknowledge Murphy's Law, this might help overcome the "it will never happen to me" belief that many people hold. It is not true that accidents only happen to people who are irresponsible or 'sloppy'. The incidents and accidents described in this section show that errors can be made by experienced, well-respected individuals and accidents can occur in organizations previously thought to be "safe".




The Human Reliability Curve
100%
Human Error
Successful Operation
Human Reliability
Risk - Taking
0%
Factors Affecting Human Performance



The Iceberg Effect
Serious Events and Audits
Errors that 'Hurt' e.g. Delays, ATB's, Cancellations etc.
ERRORS AND AT-RISK BEHAVIOUR YOU KNOW NOTHING ABOUT!

## Chapter 5 The Human Element

### Human Perception, Illusions & Information Processing

The task of flying an aircraft involves observing and reacting to events that take place within the cockpit and in the environment outside the aircraft.

The pilot is continually being bombarded with information that requires prompt and accurate interpretation, he is required to use the information that he senses in order to make the decisions and take the actions which will ensure the safe path of the aircraft at all times.

Although the cabin crew will not have so much technical data coming their like the pilots, they will still have information coming from various sources within the cabin which needs processing.

Information processing in all of us is entered in our minds by the senses, (sight, motion, hearing etc.), as well as the memory and although sight is the predominant sense it is also fallible and easily fooled. For example, brightness and contrast can affect sight.

Without an object on which to focus, the eye will itself focus at a default distance of about 3 feet. But should the windscreen become contaminated with insects, oil etc., focus will be drawn to the contamination and a very positive effort will be required in order to adjust to a longer distance when scanning for other aircraft or features.

Illusions can be another failing. There are:

- Geometric optical illusions,
- Depth and distance illusions and
- Velocity and height illusions

**Examples of illusions we can suffer from:**

- At night, a bright star may be mistaken for the light of another aircraft
- Ground lights have been mistaken for stars
- A single light in a dark field may appear to move – known as an autokinetic illusion
- Black hole effect – Approaching an airport in the dark without any visual reference on the approach
- Have you experienced the vehicle alongside you which is moving gently away but gives you the illusion that it is you who is moving
- The illusion caused by the effect of height on velocity. As height increases, apparent velocity decreases
- There is also an illusion when approaching a short, narrow runway, which leads us to 'see' one of normal dimensions
- Sloping cloud banks either base or top can be mistaken for a level horizon

Incorrect eye height, rain on the windscreen, mist, fog, blowing snow and cloud shadow over the sea all contribute to illusions which require confirmation from other sources.

Motion is another very important sense, which may be induced either visually or by feel or balance. The balance cues which, whilst sensing both acceleration and deceleration changes, cannot be relied upon without confirmation from other sources as it is very imprecise. This may not be a particular problem on the ground, but in the air full use must

be made of the aircraft instruments and systems, (autopilot and flight director), to control the aircraft and use the human senses to monitor and manage.

Whenever there is a miss-match between what is seen and what is felt there is a likelihood of motion sickness. This is more so in a confined space where the eye tells you that relative to the immediate surroundings, you are stationary - yet feel, tells you that you are bouncing around. In this case the senses are out of phase and may induce sickness.

Our other senses, such as taste, smell and sound all provide theme cues, but their importance is not as great or critical as sight and motion in the flying context.

Perception is an element in information processing that converts information from the senses into meaningful structures although this is only valid if we are able to draw on what we have already seen, heard or experienced.

I.e. the pattern of light or sound would be meaningless to a person who has never had sight or hearing. In other words, we can only perceive that which we can conceive.

**Information Processing**

A person receives information from the environment through their senses and then processes this into the brain. The question is whether the person can process more than one channel of information at a time. I.e. whether they are single channel or multi-channel processors.

Despite the fact that people can do things like drive a car whilst carrying on a conversation on their mobile telephone or ride a bike whilst eating a chocolate bar and talking to someone at the same time, most contemporary evidence, at least for higher order mental processing is that people have a single channel. This channel has a limited capacity.

Information processing is critical in the operation of today's aircraft. Whilst we have remarkable sensing capabilities, every individual's information processing capability has limitations.

A problem with glass cockpits is the amount of information available; it does very little good to provide more information than can be assimilated. This is a continuing problem for the design engineers.

In some of the newer aircraft, a continuous flow of massive amounts of data can be easily obtained. Unfortunately, attention can be devoted to only a part of that information.

There is inevitably a tradeoff between speed and accuracy of those tasks that have not become essentially automatic. We know that when manual operation is required and speed is increased, errors also increase and when accuracy is required, time increases.

Sometimes when we are thinking about a problem or a situation, we are usually so immersed in it that we rarely check the way we are solving it. Having said that, we cannot always solve problems by deliberately choosing a course of action different to the one we think is going to give us the solution.

**Main factors influencing the thinking processes:**

- Distraction
- Fatigue
- Stress

**Information**

- Information is the key to Error Prevention.
- We receive information about the external world through our senses (known as Exteroceptors) and we receive information about our own internal state through Interceptors (e.g. kinesthetic feedback from joints, proprioceptive feedback from muscles). This information is processed by the brain.
- Information can be described simply as the reduction of uncertainty.

The brain is an active sifter of information; we sort the important signals we receive which contain valuable information from the background 'noise'.

Highly probable events convey little information; they merely confirm what is anticipated.

Highly improbable events convey more information. Therefore the 'unusual' gets attention.

**Memory**

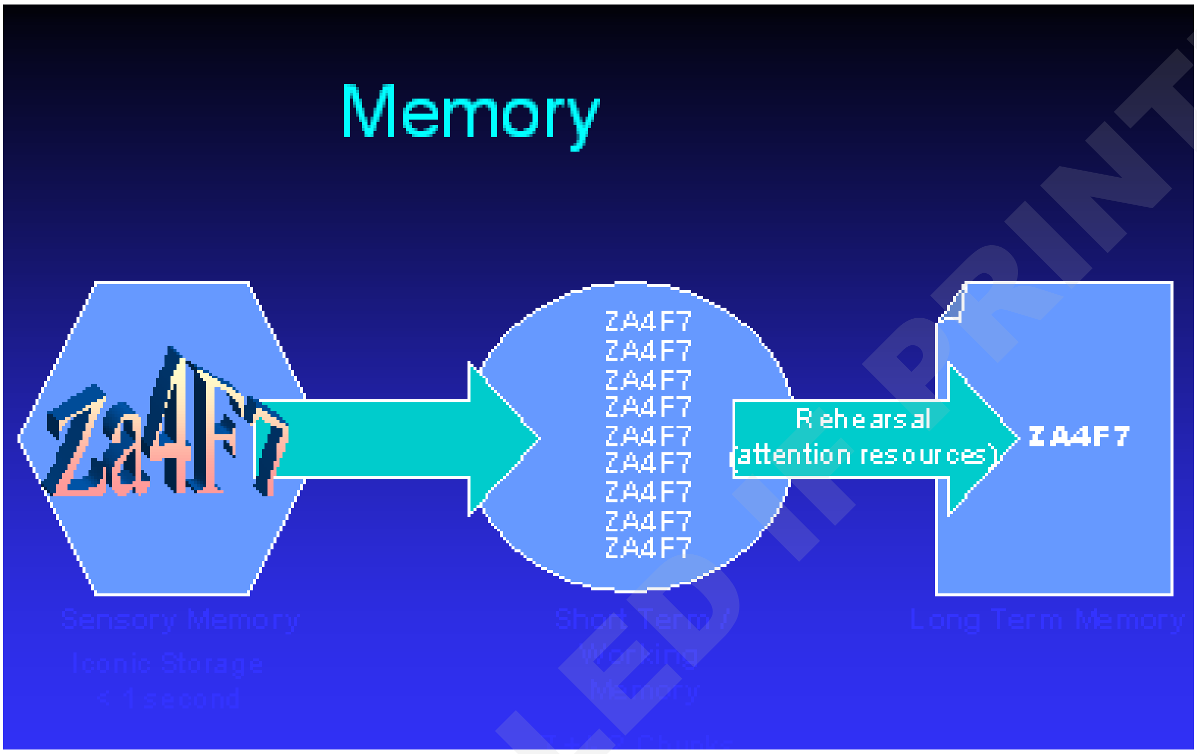



**Fig 5-1 Memory**

Information takes a perilous journey from your sense organs on its way into long-term memory, where, if all goes well, it gets permanently stored for later retrieval.

Generally, cognitive psychologists divide memory into three stores:

1) **Sensory store**

Information enters the sensory store from our senses. The sensory store is automatic temporary storage for each sensory channel. Mechanisms exist which prolong the representation of sensory stimuli in the sensory store.

The most important of these are

**Iconic - Visual Storage** - Visual representation is stored for less than 1 second.

**Echoic - Auditory-** Degraded image of reality can last a few seconds.

### 2) Short-term store / Working Memory

After entering the sensory store, some information proceeds into the short-term store. This short-term store is commonly referred to as short-term memory.

Short-term memory has two important characteristics.

First, short-term memory can contain at any one time seven, plus or minus two, items of information.

Second, items remain in short-term memory around twenty seconds. These unique characteristics, among others, suggested to researchers that short-term memory was autonomous from sensory and long-term memory stores.

### 3) Long-term store

There are three main activities related to long term memory: "Storage, deletion and retrieval"

Information from short term working memory is stored in long-term memory by rehearsal.

The repeated exposure to a stimulus or the rehearsal of a piece of information transfers it into long-term memory. This process requires use of part of our attention resources.

Experiments suggest that learning time is most effective if it is distributed over time.

Deletion is mainly caused by decay and interference. Emotional factors also affect long- term memory. However, it is debatable whether we actually ever forget anything or whether it becomes increasingly difficult to access certain items from memory.

Having forgotten something may just be caused by not being able to retrieve it! Information may not be recalled sometimes but may be recognized, or may be recalled only with prompting.

**Chunking**

Have you ever looked up a telephone number in the phone directory and then try to rush to the phone before you forget what you just looked up?

The average person can retain about seven items, give or take two in short term memory. Notice how a telephone number is often written down. It is "chunked". Chunking is the grouping of items.

When you chunk, each chunk is managed in short term memory as one item. By chunking you can enlarge the capacity of your short-term memory.


**Fig 5-2 Chunking**

**Working Memory**

More recent models develop the concept of the short-term memory as working memory. As in traditional models of short-term memory, working memory is limited in the amount of information that it can store, and the length of time that it can store information.

Additionally it is now assumed that a major functions of working memory are to perform processing on sensory information and to temporarily store the outcomes of intermediate computations when problem solving.

For example, when mentally multiplying two-digit numbers like 38 × 19, we may first compute and store the partial product 8 × 9 = 72 and later use this.

One example of the limitations of working memory is the classic "Party Conversation" which everyone has experienced:

You are at a party and having a conversation with someone. You understand the words of your partner. You are also aware of the buzz of other conversations, although they are unintelligible.

In terms of information processing, the system is only decoding these conversations as far as the sensory level and not for meaning.

We are so fast at interpreting speech sounds, that we are generally unaware that detecting the sounds and interpreting them are separate mental processes. The buzz sounds come into working memory, but you do not have the capacity to interpret both your partner's "sounds" as well as those of other conversations in the room.

However, someone behind you might say your name. This automatically attracts your attention to this other conversation. You can now understand that conversation but your partner's words become a meaningless buzz. If you try to switch back to your partner, the first thing out of your mouth will likely be "What did you just say?" because his last words, detected as a meaningless buzz, if at all, are already gone.

This limitation is very important and it should be noted by all the crew that if the Captain is making a PA the c/crew should listen carefully to ensure there is no information in the PA that could relate to flight safety. Such as impending turbulence or a possible emergency situation.

It is worth remembering the British Midland aircraft, which crashed on the motorway near East Midlands Airport, the Captain made a PA to advise the pax that they had a problem with the right engine and were going to shut it down. However, they had miss identified the engine and it was the left engine that had the problem. Smoke and flames were seen coming out of the back of the left engine but neither the pax nor crew told the flight deck crew. Had the crew have listened carefully to the PA and then noted the engines, they could have informed the flight crew of the problems with the left engine and possibly have prevented the aircraft from crashing and killing many people.

Recognizing the fact that you can only process limited information can help you to avoid missing what could be vital information.

**A Working Memory Model of a Common Procedural Error**

Systematic errors in performance are an important aspect of human behavior that has not received adequate explanation.

One such systematic error is termed post-completion error; a typical example is leaving one's card in the cash point machine after withdrawing cash.

This type of error seems to occur when people have an extra step to perform in a procedure after the main goal has been satisfied.

The fact that people frequently make this type of error, but do not make this error every time, may be explained by considering the working memory load at the time the step is to be performed.

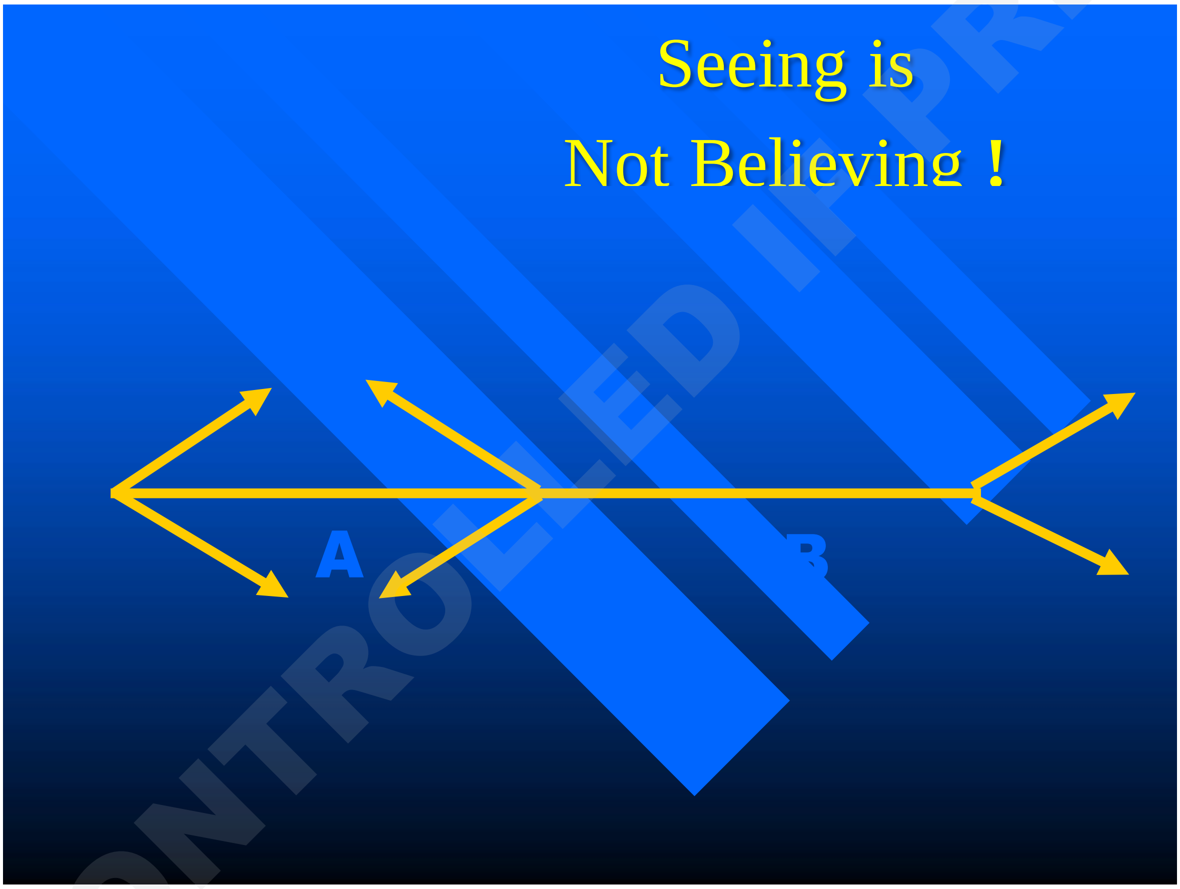
Laboratory experiments seem to confirm that the error is made when the load on working memory is high but will not be made when the load is low.

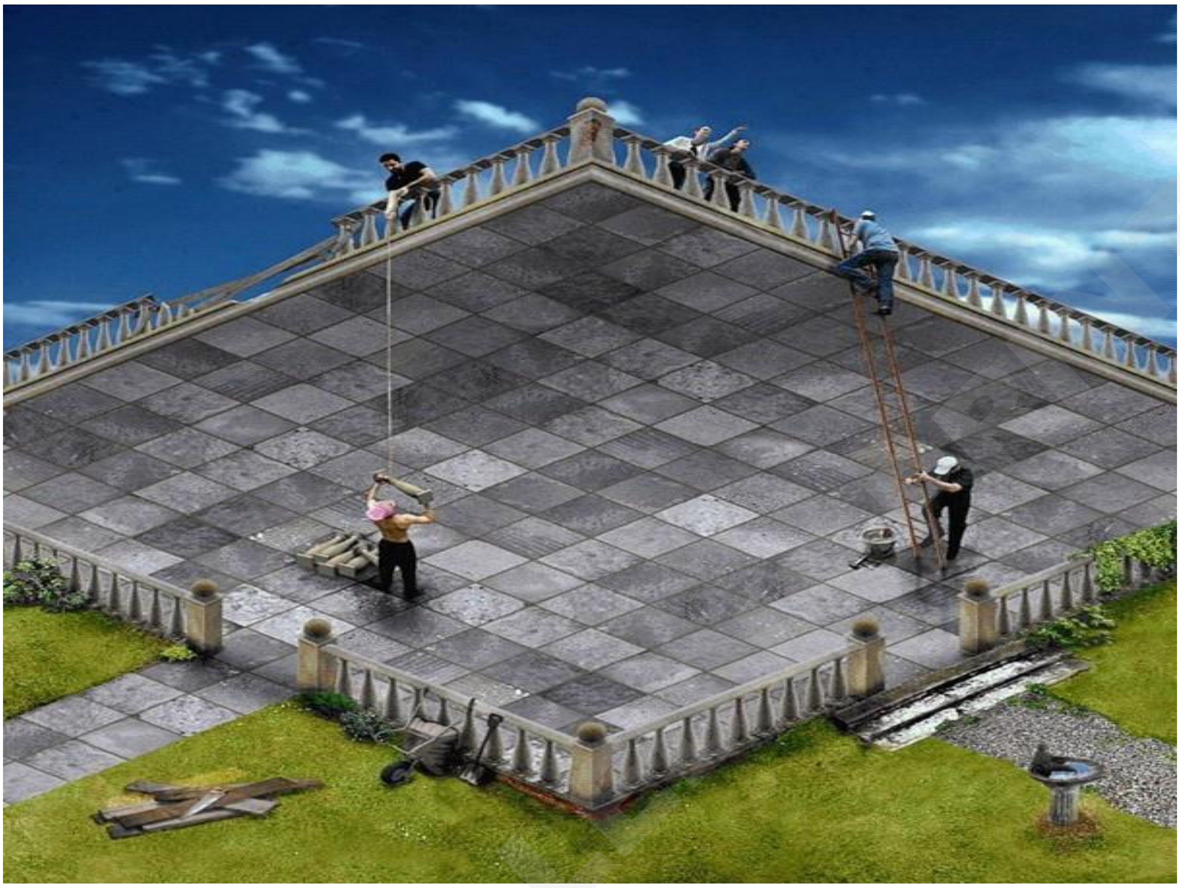
**Perception and Mental Models**

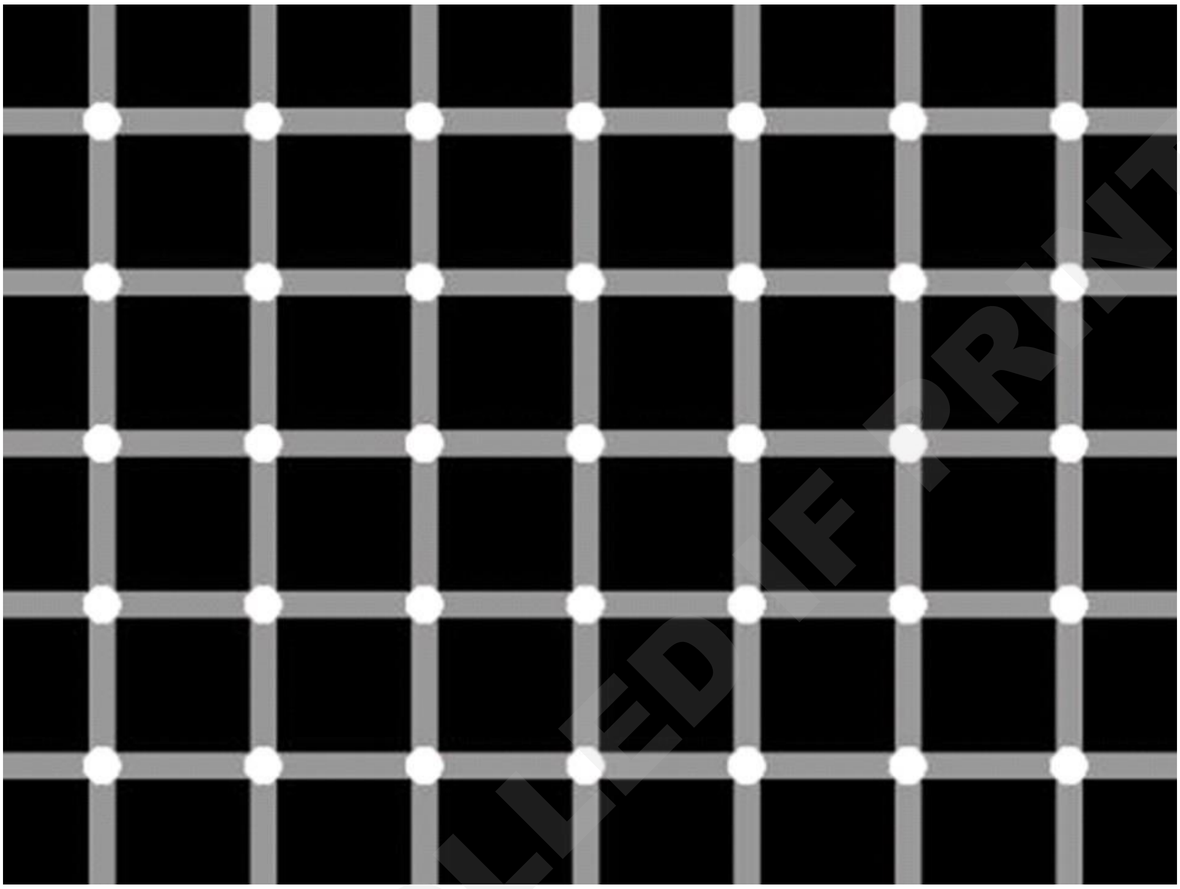
The brain copes with different information types in different ways:

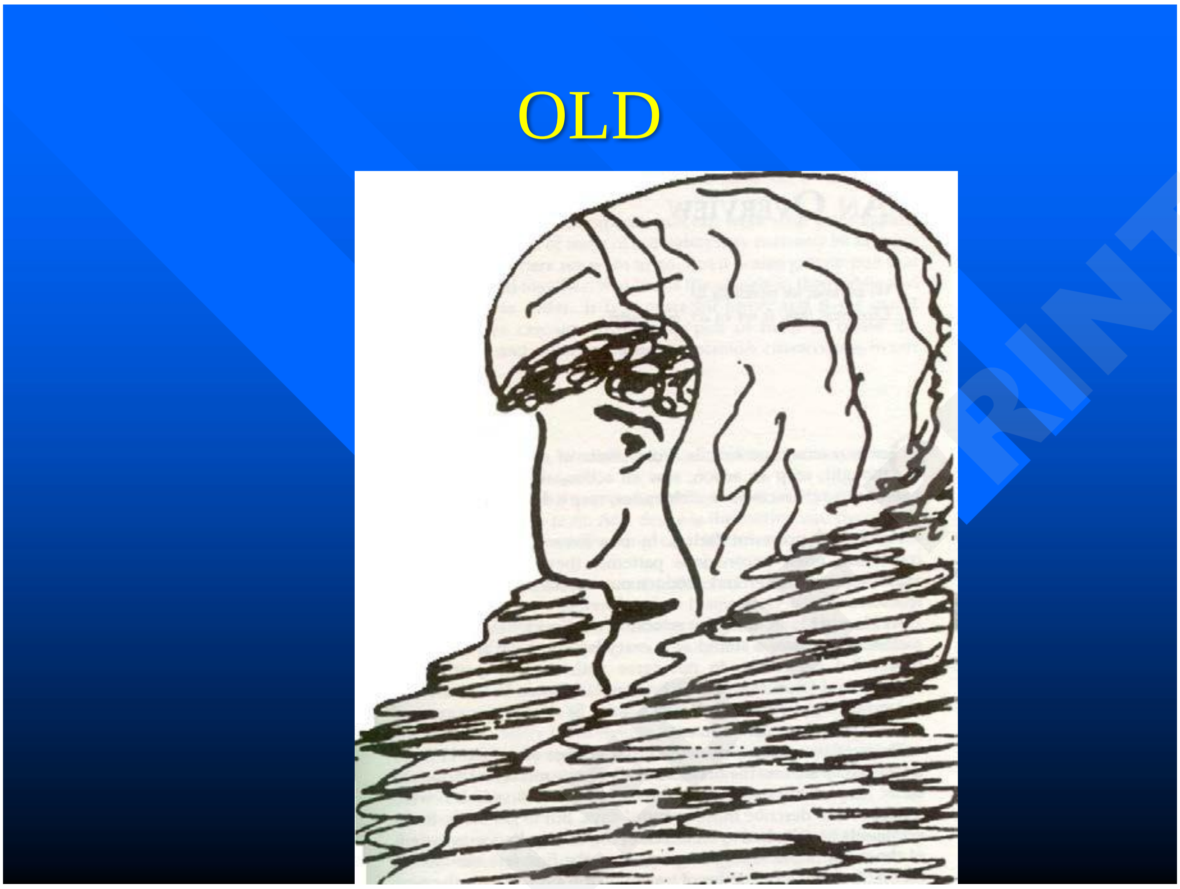
- Sight is the predominant sense.
- Auditory information is most easily shut out.
- We can shut out visual information by closing our eyes, for example on a roller coaster

**Illusions**



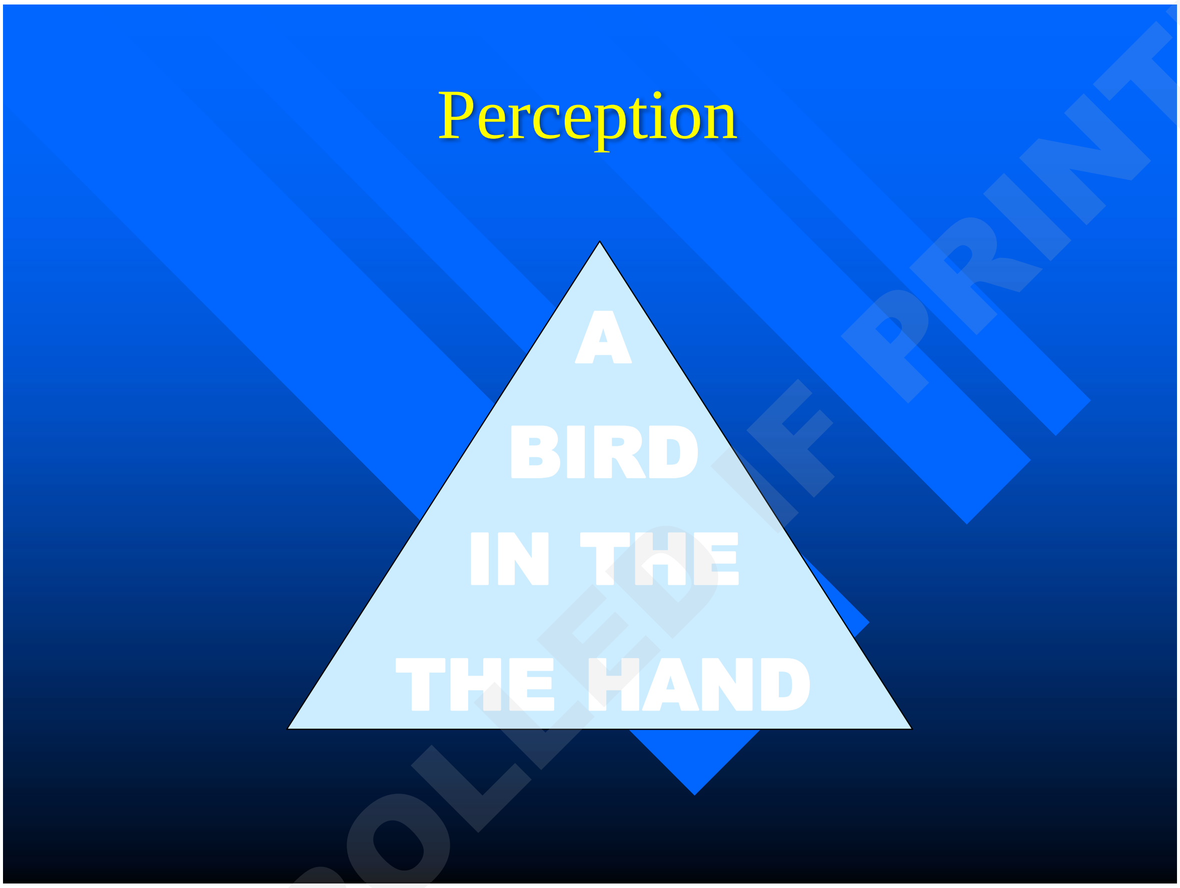






OLD

# YOUNG



Perception
A
BIRD
IN THE
THE HAND

There are many well-known visual ‘illusions’ which illustrate the limits of human perception. Figure 5-3 shows how the perceptual system can be misled into believing that one line is longer than the other, even though a ruler will confirm that they are exactly the same Illusions can occur when the brain tries to make sense out of conflicting information or when the brain adds information based on experience or cultural conventions which isn't based on reality.

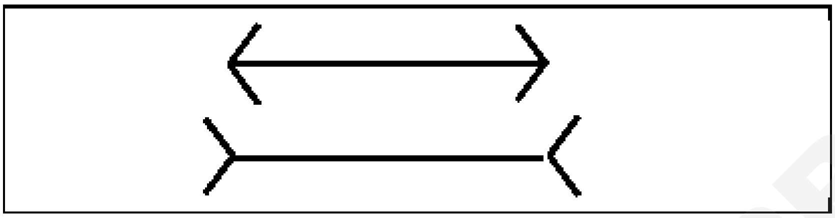


**Figure 5-3** The Muller-Lyer Illusion

Figure 5-4 illustrates that we can perceive the same thing quite differently (i.e. the letter “B” or the number “13”). This shows the influence of **context** on our information processing.


**Figure 5-4** The importance of context.

In aviation maintenance it is often necessary to consult documents with which the engineer can become very familiar. It is possible that an engineer can scan a document and fail to notice that subtle changes have been made. He sees only what he expects to see (**expectation**). To illustrate how our eyes can deceive us when quickly scanning a sentence, read quickly the sentence below in Figure 5-5.

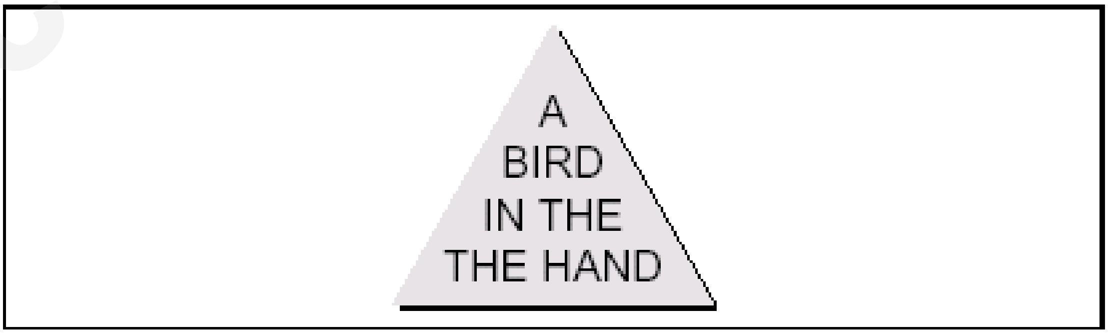


**Figure 5-5** The effects of expectation

At first, most people tend to notice nothing wrong with the sentence. Our perceptual system sub-consciously rejects the additional “THE”.

***As an illustration of how expectation, can affect our judgment, the same video of a car accident was shown to two groups of subjects. One group were told in advance that they were to be shown a video of a car crash; the other were told that the car had been involved in a ‘bump’. Both groups were asked to judge the speed at which the vehicles had collided. The first group assessed the speed as significantly higher than the second group.***

Source: Loftus, E.F. and Palmer, J.C., 1974[1]

**Perception**

Perception involves the conversion of the sensory information into meaningful structures. The 'percept' is not a complete representation of the information in the sensory store, but an immediate interpretation of it.

The process is influenced by the amount of processing capacity that the person is able to give to the information arriving at the sensory store and the nature of the information being received.

The purpose of our perceptual processes is to create an internal model of the outside world. Our percept or mental model is based both on the information sensed by our receptors and on our expectations of the world.

There are many cues available in the visual system to enable our mental model to be three-dimensional or include an impression of depth. Our experience and expectations together with inputs from the senses help us form a mental model.

**Human Causes of Error**

Errors of human performance may fall into three principle categories.

- **Perceptual error** - Sometimes critical information was below the threshold for seeing - the light was too dim, the operator was blinded by glare, or the critical information had low contrast. In other cases, the operator made a perceptual misjudgment perhaps as a result of one of the types of perceptual illusion we discussed.
- **Response Error -** The operator may correctly process the information but fail to choose the correct response ("I'm skidding, so I'll turn away from the skid") or make the correct decision yet fail to carry it out ("I meant to hit the break, but I hit the gas").
- **Attention error -** The critical information was detectable but that the operator failed to attend/notice because his mental resources were focused elsewhere. Surprisingly, it has been demonstrated that we may be less likely to perceive an object if we are looking directly at it than if it falls outside the center of the visual field (Mack and Rock 1998).

This "inattentional blindness" phenomenon is doubtless the cause of many errors and incidents.

This last case may be described as 'Inattentional Blindness'. It is a major cause of error and accident; lets consider it in a little more detail.

**Inattentional Blindness**

Consider the following cases:

1) A submarine commander looks through his periscope and sees no ships nearby. He orders the ballast blown and the submarine to surface. He then hears the sound of a ship hitting his deck and realizes that he has surfaced with another ship directly overhead. The ship overturns, killing 9 people aboard.
2) An airline crew notice a failed warning light on the control panel. They become so concerned with the cause, that they don't notice the plane approaching the ground. The crash kills 100 people.

All of these real accidents and a large number of others occur under strikingly similar circumstances; someone performing a task simply fails to see what should have been plainly visible. Afterwards, the person cannot explain the lapse.

To understand how inattentional blindness occurs, it is necessary to accept a very unintuitive idea: most of our perceptual processing occurs outside of conscious awareness.

Our senses are bombarded with such a large amount of input, sights, sounds, smells, etc., that our minds cannot fully process it all. The overload becomes even worse when we recall information from memory and engage in deep thought.

To cope with the problem, we have evolved a mechanism called attention, which acts as a filter that quickly examines sensory input and selects a small percentage for full processing and for conscious perception. The remaining information is lost, unnoticed and unremembered - we are intentionally blind to it since it never reached consciousness.

This all happens without our awareness, so it is not a behavior which people can bring under conscious control.

Inattentional blindness causes accidents when attention mistakenly filters away important information.

**Factors affecting inattentional blindness:**

1) **Conspicuity**

When we are just casually looking around, sometimes an object will jump out of the background. The term "conspicuity" refers to this ability to capture attention. Since getting people to notice information can literally be "a matter of life and death," there have been many studies that have examined the factors that underlie conspicuity.

### 2) Mental Workload and Task Interference

Since attention is roughly fixed, the more attention we focus on one task, the less there is for others. Inattentional blindness often occurs because part of our attention is devoted to some secondary task.

**Low Workload and the Effects of Automation**

Ironically, inattentional blindness can be caused by too little mental load. When confronted with a monitoring task where the chance of an important event is low, people become bored, and they cease paying close attention. Arousal level drops and attention wanders. People may also go on "auto-pilot" when performing highly practiced tasks, such as driving.

### 3) Expectation

Past experience exerts a strong control on attention because it teaches us what is and isn't relevant. For example, think about your breathing. You can now sense the movement of your chest.

Of course, the movement was always there but you were intentionally blind to it because it is highly uninformative. Nothing new ever happens, so attention filters away the sensation to conserve mental processing.

Errors often occur when there is a new and unusual combination of circumstances in a highly familiar circumstance.

It is one of the ironies of inattentional blindness that highly skilled and highly practiced "experts" are more susceptible than are beginners. In fact, when we say someone is skilled and experienced, we usually mean that he has developed expectations, which allow fast and accurate prediction and behavior.

**Confirmation Bias**

The human tendency toward confirmation bias, strengthens expectancy effects. Humans who hold a belief or expectation tend to seek evidence which confirms and ignore or avoid evidence which refutes.

For example, people who favor one political candidate will listen to his/her speeches but immediately turn off the TV if someone starts extolling the virtues of the opponent. The same effect occurs unconsciously.

There are some amazing instances of confirmation bias in accident cases. A ship carrying 1500 people ran aground because the GPS was in the wrong mode, and the crew, for 34 hours, failed to notice that the screen contained the wrong information.

Moreover, they simply ignored the presence of lights and buoys located in the wrong places. One crewmember appears to have imagined a buoy being in the "right place" even though it wasn't really there - just because he expected it to be there. Expectation not only makes us miss what is there, but it can make see what is not.

## Capacity

Attentional capacity varies from person to person and from time to time. It is lessened by drugs, alcohol, fatigue and age. Under these conditions, likelihood of noticing important events declines.

## Attention

It is the taking possession by the mind, in clear and vivid form, of one out of what seem several simultaneously possible objects or trains of thought.

It implies withdrawal from some things in order to deal effectively with others" William James 1890.

The concept of attention is relevant to a broad range of human performance tasks. The limitations of human attention represent one of the bottlenecks in human information processing.

We can probably all relate to an event when we neglected to notice or attend to stimuli because we were distracted, or occasions when we had so many tasks to perform that some were neglected.

These sorts of everyday experiences suggest that attention can somehow be directed to objects or activities, and that things to which we are not paying attention are often not perceived.

The searchlight metaphor is one of the most common metaphors used to explain the utility of attention.

This metaphor describes attention as a searchlight due to the fact that the attentional window or the area to which an individual pays attention can change size and the fact that the direction of attention can be changed.

For example, an individual may concentrate on and pay attention to a single object and at a later stage to another object. Everything within the searchlight beam is processed whether the individual wants to or not.

There are two features of the searchlight metaphor that are important: The breadth of the beam and

The direction of the searchlight.

The breadth of the beam and the distinction if any, between the desired focus and that which is processed but not wanted, represents the issues of divided and focused attention respectively. The direction of the searchlight describes the properties of selective attention, namely, how it knows what to focus on, when to focus on it and where the object is.

## Limited Channel Capacity

The brain operates as a single-channel processor, at any given instant of time there can be only one primary task.

- Primary task - on which we focus attention.
- Secondary tasks - ancillary activities that we don't focus attention on but that can overload our capacity.

**Types of Attention**

1) Selective
2) Focused
3) Divided
4) Sustained.

**1) Selective Attention**

Selective Attention involves an individual monitoring several channels or sources of information at the same time in order to perform a single task.

The task is normally to note if there has been a change or if something has occurred. For example, a pilot has to monitor all the cockpit instruments in order to detect any problems.

**Stressors**

There are two factors that may affect selective attention and these are called stressors.

The first stressor is Load Stress, which is associated with the number of channels that are involved. The more channels that the individual needs to look at, the greater the load stress.

The second stressor is Speed Stress, and refers to the speed at which the stimuli are presented to the individual. The quicker the stimuli are presented to the individual, the higher the speed stress.

Selective Attention performance on a task is affected by load stress rather than speed stress.

This is because the individual is required to scan a number of different channels and the more channels that need to be scanned the longer the search will take.

It may also be because people have a bias to looking toward the channels where signals occur more frequently, rather than scanning those channels on which signals occur infrequently

Selective attention can be Visual or Auditory.

**Visual Selective Attention**

This explains the Stroop Effect. We are slower to name a color when the word says a different color. Reading is an automatic process, color naming is a controlled process which requires attention, the automatic process of reading interferes with our ability to selectively attend to the text color

**Auditory Selective Attention**

In a typical selective listening test, the subject hears two messages simultaneously; one message in one ear and one message in the other; as they are listening, they are asked to "shadow" one of the messages (i.e. repeat back the words from one message only); most people can do this.

Experiments of this type reveal the following:

- very little about the unattended message is processed
- the listener can tell whether it was a human voice or a noise
- the listener can tell whether the voice was male or female
- the listener cannot tell what language was spoken
- the listener cannot report any of the words spoken, even if the same word was repeated over and over again

This can show that:

Theoretically, it is difficult to attend to two things at once. We can draw attention...such as hearing your name in the unattended ear but when your attention gets drawn to the unattended ear, you lose information from the "attended" ear (the party effect.)

Practically, don't think you can do more than one thing at a time without one or both tasks suffering.

### 2) Focused Attention

Focused attention allows one to select a certain object from all available for further elaboration. Focused attention may be visual or auditory.

Visual Focused Attention

The most critical variable in predicting performance is the degree of spatial separation of relevant from irrelevant items, not the spatial separation between items themselves

i.e. close objects will lead to perceptual competition / display clutter, which in turn leads to competition for processing resources.

For example, it was found that the ability to locate and respond to a stop sign in a cluttered display is directly inhibited by the proximity of other irrelevant signs in the field of view.

Auditory Focused Attention

Auditory focused attention on one channel is disrupted when there is increased similarity with competing messages that are to be ignored. The amount of disruption differs along dimensions such as: pitch, location, loudness and semantic content.

Improving performance in Focused Attention Tasks

- Make competing channels as distinct as possible from the focus channel
- Separate competing channels in space.
- Decrease the number of competing channels (distractions).
- Make channel to be attended larger, brighter, louder, and centrally located.

### 3) Divided Attention

Divided attention occurs when we are required to perform two or more tasks at the same time and attention is required for the performance of each of the tasks.

Examples include driving a car whilst carrying on a conversation with a passenger and eating dinner whilst watching the news.

We achieve this with our single channel brain by time-sharing the resources we need to complete the tasks.

An individual's ability to successfully time-share may be influenced by:

- their ability to schedule tasks so that they do not interfere with one another
- their ability to effectively switch between tasks in order to complete them in parallel.
- Confusion – this result when elements of the tasks become confused due to their similarity, e.g. trying to listen to two speakers at once who are delivering similar messages.
- the difficulty of the tasks to be completed.

When people are required to do more than one task at a time, performance on at least one of the tasks usually declines.

We have a limited capacity to process information and when several tasks are performed at the same time, that capacity can be exceeded.

Improving performance in Divided Attention Tasks:

- Decrease number of potential sources of information.
- Give information on relative priorities between tasks to decrease time- sharing stress.
- Keep task difficulty as low as possible.
- Make tasks as dissimilar as possible in terms of information processing, input/output modalities.
- For time-shared manual tasks, the greater the learning of the motor task the less its effect on performance.

**4) Sustained attention**

Sustained attention (also referred to as vigilance or monitoring) involves maintaining attention over a prolonged period in order to detect infrequent signals (examples may include a long-distance truck driver, a security officer in a carpark, or a nuclear power plant control room operator).

The number of jobs that involve some type of vigilance task seems to have increased with technological innovation, as workers become "passive" monitors of processes rather than "active" doers. As one would expect, performance (both in terms of speed of responses and accuracy of responses) decreases as time passes.

Improving performance in Sustained Attention Tasks

- Choose appropriate task variation and work-rest schedule.
- Increase the conspicuousness of the signal (larger, more intense, longer duration, more distinctive).
- Decrease the uncertainty as to when and where the signal will occur.

- Give operators feedback on detection performance, perhaps with artificial signals.
- Give adequate training on signals to be identified.
- Improve motivation and emphasize importance of performance.
- Maintain noise, temperature, illumination, and other environmental factors at optimal levels.

**Circadian Dysrhythmia**

Time Zone Crossing, Circadian Dysrhythmia and resynchronization:

The Problems of crossing time zones and jet lag are a way of life for long haul crews. Time zone shifts can lead to considerable cumulative sleep deprivation in some adverse tours of duty. Although such sleep deficits can build up they are unlikely to get to extreme levels since the body will sleep when it needs it even in the least likely of places.

Long-haul crews have constantly to adjust and readjust their circadian rhythms. it is possible that continual disruption may incur some physical penalty and suggestions have been made of associations with stomach and bowel disorders.

The main problem of both time zone shifts and shift work, however, is that they cause resynchronization of body rhythms. For example, the normal rhythms of the alimentary canal and urinary system can serve as a source of sleep disruption in new time zones.

The associated shifting of zeitgebers helps resynchronization to the new local time, but as most rhythms resynchronize at a rate of about one to one and a half hours a day (and some are slower) many crews will not resynchronize in the new time zone unless they are stationed there for extended periods.

There may be cases of some members of long-haul flight crews never attaining circadian stabilization throughout their flying careers, except during periods of leave or extended training in one place.

Differences in ease of resynchronization can be demonstrated using the example of flights to the west coast of the US. Most flights from UK to the west coast occur during the day. With an 1100h departure time from UK the crew arrives at Los Angeles at 1400h US time (2200h UK time). The fact that the body temperature rhythm free runs to a period greater than 24 hours helps to enable the crew to extend his/her day and stay awake for longer.

This effect is combined with the effect of local zeitgebers, eg daylight, which are also working in the right direction to extend the day. The crew therefore, will probably cope reasonably well with this time shift, and experience a good initial sleep. Their second sleep period, however, may be poorer than their first, because they will have been awake for only a normal waking duration, will consequently not be in sleep debt, but will be trying to sleep at a time of low circadian sleepiness.

The situation for the crew returning to UK is not so favorable. Flights back to UK often leave the US in order to arrive as UK airfields open. A typical flight might leave at 1400h US time and arrive 0700h UK time.

After such an overnight flight the crew member will arrive sleep deprived, may therefore gain a reasonable initial sleep, experience a poor subsequent sleep because his circadian rhythm is out of phase with local day, and take a long time to resynchronize his circadian rhythms because they must be shortened in order to match his environment (ie against their natural tendency to run long)

There are many personal differences in sleep requirements. The amount of sleep required varies according to age, amount of physical and mental energy used prior to sleep and individual differences.

The average adult requires approximately 8 hours in every 24. The only answer to individual requirements is simply "sleep as much as you need". Sleep deprivation will, however, result in irritability, upset digestion, slower thought process and an increase in micro sleep, (nodding off for a few seconds) this ultimately results in a deterioration of performance. The timing and quality of sleep is far more important than the actual amount of sleep.

Sleep loss or partial sleep deprivation is an occupational hazard of commercial flying and any other form of shift work. Inevitably, there will be times when you will have to work when you would normally be asleep and conversely times at which you have to sleep when you would normally be awake.

It is at these times that sleep problems may be affected by circadian rhythms. The sleep/wake cycle affects your readiness for sleep and the timing of your sleep relative to body temperature, is critical in influencing the duration of your sleep.

Individuals with a sleep dept will lose the ability to rationally criticize situations and may act in an appropriate manner. Sleep loss has effects on mental processing, mood state and alters tasks.

***Sleep Loss Effects***

Effects on mental processing

- Lack of concentration
- Periods of inattention
- Reduced vigilance
- Reduction in alertness level
- Slow actions
- Alteration in short term memory
- Loss of critical analysis and advocacy
- Interpretation errors
- Visual illusions and Disorientation

***Effects on mood***

- Sensation of fatigue
- Depressive state
- Irritability
- Loss of interest in people and events
- Increasing and irresistible longing for sleep

***Most altered tasks***

- Sustained tasks
- Tasks without stimuli
- Routine work
- Supervisory monitoring tasks
- Insufficient learnt tasks
- Tasks with a high workload
- Tasks requiring a high workload
- Tasks requiring complex decision making

***Steps can we take to manage disturbed or unnatural sleep patterns?***

- Avoid emotional stress
- Take a warm, milky drink at bedtime
- Avoid caffeine and daytime naps
- Avoid intellectual stimulation before sleeping
- Avoid a large meal, but don't go to bed hungry
- Do not rely on alcohol, as this will impair quality and quantity of sleep

Fatigue is a direct result of prolonged or strenuous physical or mental effort, the effect of which is to deplete the body's resources at a greater rate than that at which they are being replaced.

It seriously impairs our vigilance and judgment, especially in critical situations. Remember it isn't just tiredness, which can cause fatigue, intense concentration, or performing complex operations may also be the cause.

The result is a body that will not function unless revitalized by rest or nourishment.

***Results of varying levels of fatigue***

- Mild fatigue results in some degree of performance impairment although this may not be significant.
- Moderate fatigue, however, does impair performance and flying is not to be recommended.
- Severe fatigue certainly will impair performance and flying is certainly not recommended.

Tiredness is a constant factor in aviation, as we work around the clock. Our Circadian Rhythm (body clock) is often severely affected as we switch from night to early morning etc.

Our bodily functions such as temperature, adrenaline production and sleep generally obtain their cues from daylight, mealtimes etc. These are confused when we switch shifts. Our bodies accommodate them, but sometimes not before we switch yet again to a different working schedule. We are in constant flux and this is why regulations governing our hours of work are strict, and for safety reasons, must be adhered to. This is not to say we are not safely capable of working to our limits, but we must take care not to do this all the time.

Sleep is essential. During a sleep period, the body is not only recuperating from the physical activity of the day but it is, according to some authorities, also carrying out essential Organization of the mental processes.

Performance on different tasks is affected differently by the time of day. Simple tasks, requiring low working memory loads, follow the pattern of body temperature. Performance improves as temperature increases and declines as the temperature peaks or decreases.

Performance on short-term memory tasks declines throughout the day. Verbal reasoning and mental arithmetic skills peak around midday.

Accident statistics have been examined to detect a correlation between time of day and accidents. In aviation accidents, the time of day has been noted as a causal factor in a number of incidents.

**Vigilance**

It obviously important that the crew remain vigilant at all times in flight. Various operators have differing policies on crewmembers sleeping on the flight.

***Question – What are your policies/thoughts on this?***

What are the positive/negative points to sleeping on the flight (pilots / cabin crew)?

There have been instances of flight crew members agreeing to one sleeping whilst the other maintains watch, but unfortunately the other pilot nods off too. If a warning or emergency occurs, it may take you longer to orientate yourself and deal with the problem

There is probably less chance of the cabin crew sleeping unless on an aircraft with crew rest stations, however if the crew are curled up asleep, is someone monitoring the cabin regularly to check on passengers and toilet areas, some pax have been known to wait until the crew are out of sight and they try to have a sneaky cigarette in the toilet

Being vigilant ties in very well with situational awareness, the Crew to be aware of and anticipate in advance the various stages of development in flight for example, getting the weather, speaking to ATC, checking on times and way points, fuel, allowing time to programme automation etc.

The cabin crew should be vigilant and aware of timing with regards to their service so if possible they can avoid being out in the cabin with hot drinks or meal carts during times when turbulence is expected and so they finish their service with plenty of time to secure the cabin for the descent and landing stages of flight.

Vigilance assists your overall situational awareness. It is important that the picture or model of what is happening is shared and communicated with the crew. This will ensure that all the crew are aware of what is happening and when.

In the event of any problems, queries or discrepancies, these must be made known and quickly resolved.

The Crew should be aware of and anticipate in advance the various stages of development in flight for example, getting the weather, speaking to ATC, checking on times and way points, fuel etc. Always allow time to Programme automation.

Tiredness & fatigue play an important part with regard to diminishing our vigilance.

**Shiftwork**

Sleep loss or partial sleep deprivation is an occupational hazard of commercial aviation. There will be times when the Crewmember has to work when he would rather be asleep, and other times when he has to sleep when he would rather be awake.

At these times sleep problems may be aggravated by circadian rhythms and the body cycle of temperature, which is critical in determining the duration of the sleep.

As an example, if you rostered for a night duty, the Crewmember may attempt to get some

sleep during the afternoon prior to reporting for duty. It will, however, be difficult to get any satisfactory sleep if a normal night's sleep had been achieved the night before, plus an increasing body temperature does not facilitate sleep.

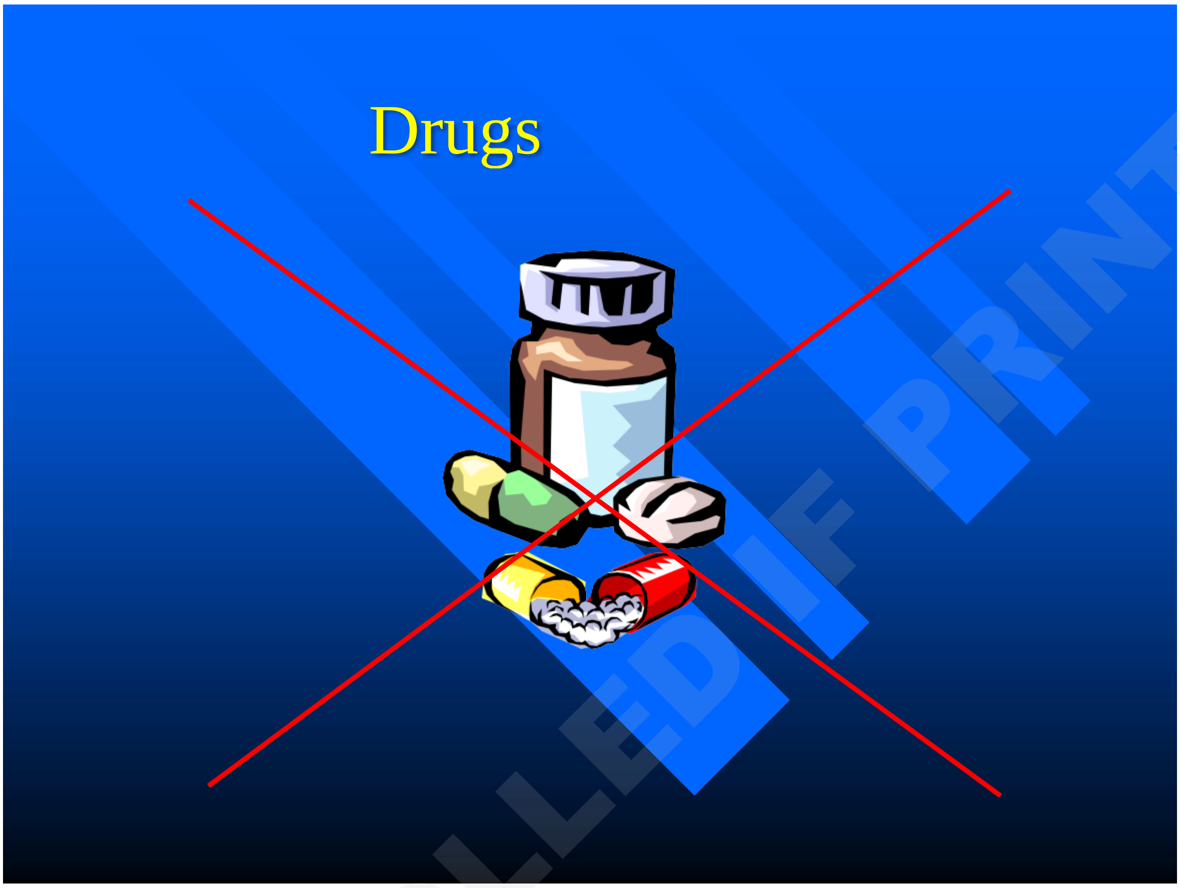
There are basically two options in this case

- Firstly, one could go to bed early the previous night and set the alarm for an early call so that by the afternoon the body will be approaching sleep deficit and be ready for sleep.
- The second alternative would be to go to bed late the previous night, sleep late, relax in the afternoon and still have a good sleep credit for the night duty.

Both solutions have limitations, in the first case, having gone to bed in the afternoon, sleep may be impossible due to outside noise, daylight entering the room, or if in a hotel, construction work or domestic work in the corridors. In which case one may go on duty with an even greater sleep deficit.

The second solution will prove useless if, having prepared oneself for five to six hours duty, the trip is delayed for a few hours for technical, weather, or air traffic reasons.

**Drugs and Sleep Management.**

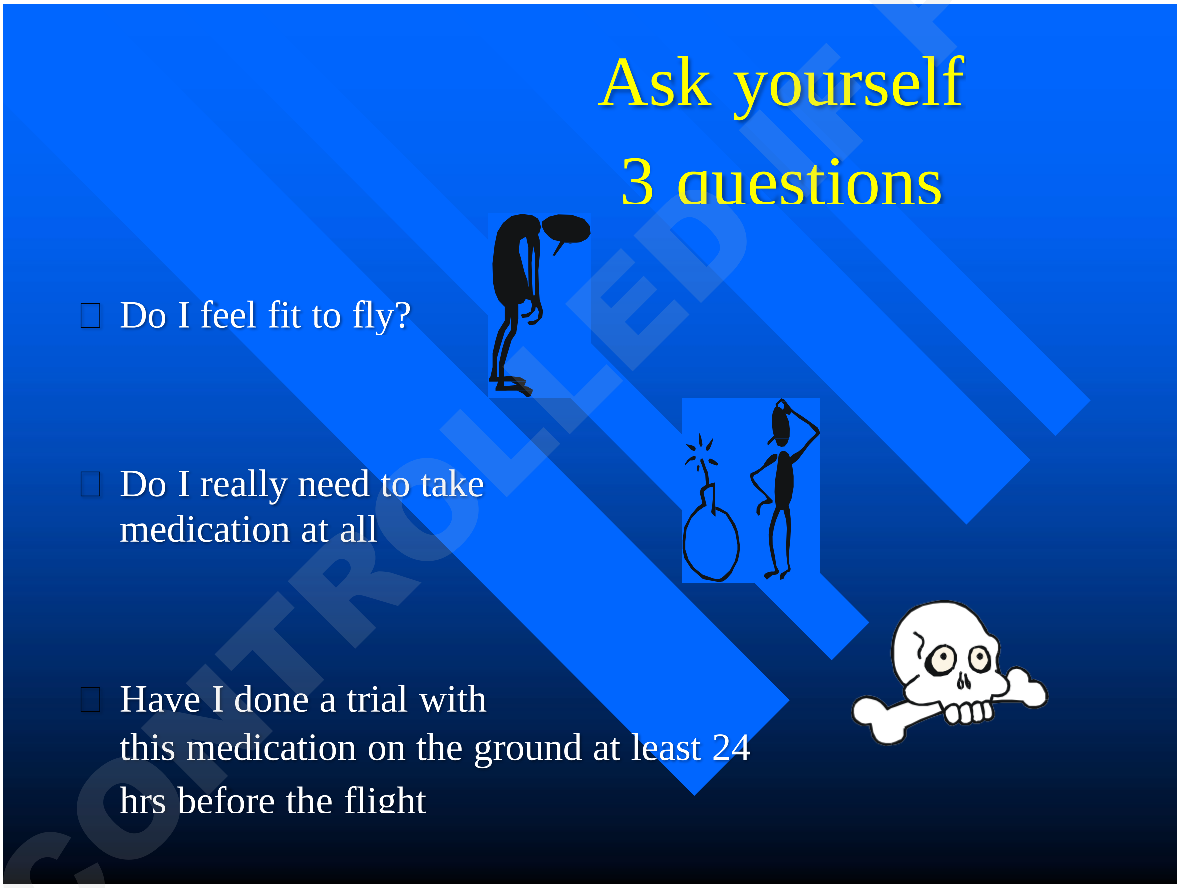


People's tolerance to sleep disturbance varies and some crew may encounter serious problems with their sleep management, which ultimately affects their performance and consequently the safety of the flight. These individuals may resort to using the assistance of drugs.

Some of the drugs used to promote sleep have serious effects on performance and accumulations may build up in the body.

As each individual differs in their reaction to and metabolism of the drugs, it is imperative that if sleep management becomes a problem and drugs are considered they should only be used when prescribed by the company doctor.

**Fitness & Health**



Following on from the mention of drugs to aid sleep, there are other drugs not designed for sleep control, e.g. cold remedies and anti- histamines, which may cause drowsiness as a side effect. The use of these drugs to induce sleep is strongly discouraged.

Non-prescription drugs that are acceptable on the ground can have a more powerful effect in the air. In addition to obvious forbidden drugs, uppers/downers, drugs to combat jet lag and certain common cold remedies can have a detrimental effect on performance.

Our general fitness and health can have an effect on information processing so therefore the maintenance of good health is a prerequisite to greater information processing.

**JAR FCL**

Do not fly if you are not physically fit. Or if you are taking any medication which does not have prior approval

**Alcohol**

Alcohol and smoking are mild forms of physical abuse and care must be taken to keep the intake within reasonable boundaries.

Alcohol should never be consumed whilst on duty or 8 hours previously and large amounts of alcohol should be limited to 14 hours beforehand. Crew must not commence a flight duty period with a blood alcohol level in excess of 0.2 promille. (JAR Op's Pg 1-B-4)

Alcohol abuse can have very serious consequences in an emergency and will considerably impair your ability to perform even normal duties. If you know you are taking in more alcohol than is safe, you **must** remove yourself from the roster and seek help.

**Smoking**

Smoking is now prohibited on certain flights, however if you happen to be a smoker on a smoking flight, especially in the odd circumstance where smoking is actually permitted on the flight deck or crew rest areas be aware of the potential discomfort this can cause to your nons moking colleagues especially in such confined spaces.

***Problems may be associated with smoking.***

There is a greater chance of becoming hypoxic at lower altitudes. The hemoglobin which transports the oxygen around the body has a greater affinity for carbon monoxide than oxygen and so in smokers it doesn't have the capacity to carry as much oxygen around.

**Diving & flying**

Decompression sickness is rare but the incidence is greatly increased for individuals who have been diving shortly before a flight.

When scuba diving, air under pressure is used as a source of breathing gas and this increases the body's store of nitrogen. On the subsequent ascent, the ambient pressure is abruptly reduced and this may give rise to decompression sickness as the nitrogen comes out of solution as bubbles.

The symptoms vary according to the site involved. Bubbles in the joints are termed the bends, bubbles in the skin are the creeps, in the respiratory system they are known as the chokes and in the brain are the staggers.

Ultimately the individual may collapse and if the condition is severe it can cause death.

Even if you feel fine on the ground, the further decompression associated with flight at altitude may be sufficient to bring on an attack. Therefore, do not fly within

- 12 hours if diving to a depth of up to 10 meters
- 24 hours if diving to a depth in excess of 10 meters

**Hypoxia**

It is of great importance that we are aware of the consequences of hypoxia and remain vigilant with respect to recognizing the potential causes and the signs and symptoms.

At high altitudes when no pressurization is evident, passengers and crew alike will suffer the effects of Hypoxia. Some people namely older people or those who smoke can suffer the effects at relatively low altitudes and it has been known for some people to suffer at as little as 6,000ft.

Hypoxia is an oxygen deficiency to the brain the effects of which are: Apparent Personality Change – euphoria, aggression & loss of inhibitions

Impaired Judgment – loss of self-criticism, unaware of reduced performance, overconfidence

Muscle Impairment - difficulty in co-ordination, speech and concentration will also become cold, clammy and perspire

Memory Impairment – loss of short-term memory making drills difficult to complete unless drilled into long term memory

Impairment of sensory functions – vision especially color, hearing, touch, orientation, and other

Difficulty in respiration - sleepiness, fatigue and cyanosis

Impairment of consciousness – As Hypoxia progresses the individual's level of consciousness drops until he becomes confused, then semi –conscious, then unconscious and unless he is given oxygen he will very quickly die.

## Chapter 6 Situational Awareness

**General**

Situational awareness involves conscious recognition of all the factors and conditions - operational, technical and human -, which affects the safe operation of an aircraft. In order to establish situational awareness, human beings take in information through the 5 senses

touch, hearing, smell, sight and taste - and sub-consciously or intuitively. This information is then transformed by the brain into a mental model of the situation, a process known as perception. The perceptive process depends not merely on current information for its evaluation of the situation but also takes account of past experience and sensations. Perception is therefore a product not only of immediate sensations but also of cultural and social influences acquired through a lifetime of experiences. Accordingly, because of the different factors, which have shaped their lives, individuals interpret situations differently.

Furthermore, they can also be unduly influenced by false information derived from the senses, such as illusions. Because of these factors, a high degree of situational awareness can be said to be achieved only when an individual's perception of events approaches the reality of the situation.

For the pilot of an aircraft, much of the information from which situational awareness is

derived comes from the flight instruments and the navigational equipment on board, so the process of constructing an accurate mental model of the position of the aircraft in space, its condition, and the condition of the crew, is subject to a number of degrading influences such as inattention, distraction, under-arousal, stress, boredom, fatigue, etc, etc. In these circumstances, confirming the accuracy of mental models with other crewmembers by sharing information and perceptions about the situation, and by stating intentions, becomes of paramount importance in the safe and effective management of the flight. Furthermore, sharing knowledge and information not only helps to avoid the more obvious incidents and accidents arising from loss of situational awareness, such as controlled flight into terrain, but also lays a firm foundation for high quality decisions regarding the overall management of the flight.

**Meaning of situational awareness**

Situational awareness is maintaining an accurate mental model or 3-dimensional picture of the environment, in other words having an appreciation of what is going on around you at all times so that the many signs available are utilized to remain ahead of the game.

Effective situational awareness refers to the ability to:

- Identify the source and nature of problems
- Extract and interpret essential information
- Maintain an accurate perception of the external environment
- Detect a situation requiring action

From the first lesson, crews learn that swift reactions are good, but not necessarily good enough. Getting ahead of the aircraft is better; staying ahead of the aircraft is best. Situation Awareness can help you achieve this status; it is a key component of safe flight

Scan a list of recent aircraft accidents and you quickly find situational awareness-related tragedies for example American Airlines Flight 965 that crashed near Cali, Columbia, Dec 1995. There was an incorrect data entry, which programmed the flight management system to fly the B-757 into a mountain.

Distractions and misplaced priorities prevented the crew from noticing that the FMS had changed their intended routing until it was too late.

This and other accidents hammer home the fact that even a highly trained professional crew, flying advanced technology aircraft, can find themselves in circumstances where situational awareness has diminished to the point of disaster.

Cabin crew who are not situationally aware may not notice the passenger who has been drinking his/her own alcohol and is becoming extremely drunk and which may lead to them becoming disorderly and out of control in the cabin.

They could become distracted or preoccupied and may not realize that the aircraft is well into the descent and that they are going to struggle to stow all of their equipment and secure the cabin in time for landing.

You can see examples of lack of situational awareness in everyday life by watching people driving Cars stopping well ahead and the people behind them not realizing and their brake lights come on at the last minute.

Cars changing lanes without realizing someone was just in the process of overtaking them, cars cruising slowly down the outside lane of the motorway oblivious to the large queue of traffic behind wanting to get past.

Elements enhancing Situational awareness

- Experience – Past experience or what we have read
- Expectations – The more we are prepared the greater the chance of handling the situation
- Briefing – This prepares and focuses our mind. It provides the shared mental model that we need for effective communication.
- Proper communication between crew members plays a large part in effective situation awareness.
- Vigilance and active monitoring of Instruments
- ATC
- Crew

- You have to be aware at all times Who is responsible for specific activities, What is happening,
- When events are supposed to occur, and Where the aircraft is in three-dimensional space.
- You can't expect to make a clear and quick decision out of an emergent situation in flight unless you're aware.
- Pilots should direct attention to the plane, the path and the people. What's going on right now? And what's likely to happen ahead?
- The cabin crew should also be focusing on not only the current situation but what is likely to happen ahead, for example a possible need to brace or evacuate.
- To focus on the present, a crew should monitor and evaluate current status-both the big picture and all the details. But it's important to remember that knowing and understanding the current state of affairs simply keeps you up with the aircraft. It doesn't put you ahead.
- To get ahead, you must project into the future, anticipating what will happen with the plane, the path and the people involved if the current situation continues. Consider what-ifs. What if you have to make a missed approach? What if the weather goes down at your destination?
- A NASA study of the cockpit voice recorder of transcript United Airlines Flight 232 (DC10 Sioux City) revealed that Capt. Al Haynes, shifted his attention and communications with the crew in a continuous loop.
- How much damage was there to the plane? How was it behaving? Could they control it? What was the status of the troubled flight path? Where could they land? And how might they do it? What were each of the people doing as they worked their way toward a common solution?
- Round and round again. "Effective SA management demands that kind of attention," "a continuous rotation from plane to path to people."

**Situation awareness traps**

- I would think that anyone with reasonable flying experience has been caught off guard or unprepared. We're probably all familiar with the feeling of being on ahead of or behind a situation.
- Unfortunately, in non-emergency situations, human beings aren’t the best of monitors. Attention meanders away from the business at hand or becomes preoccupied with one troublesome aspect of a flight.
- There are cues, which can warn of the onset of a loss of situational awareness, Pilots should also learn to read these cues and take appropriate action.
- Since SA is a state of mind, we can't see when somebody has it or doesn't. But it’s possible to see SA exhibited in words and actions. Some of the cues which may indicate loss of SA are:

- Ambiguity-information from two or more sources that doesn't agree.
- Fixation-focusing on any one thing to the exclusion of everything else.
- Confusion-uncertainty or bafflement about a situation
- Failure to fly the plane everyone is focused on non-flying activities.
- Failure to look outside-everyone heads down.
- Failure to meet expected targets - checkpoint on flight plan/profile- ETA/fuel burn
- Failure to adhere to SOP's.
- Failure to comply with limitations, minimums, etc.
- Failure to resolve discrepancies- contradictory data or personal conflicts.
- Failure to communicate fully and effectively- vague or incomplete statements.

**Research**

The ASRS (Aviation Safety Report System) database was searched for situation awareness incidents. This search was done to increase information about situation awareness incidents and to determine who is most likely to lose awareness and what conditions are most likely to result in a loss of awareness.

Over 300 reports were included in the analysis. The analysis of the collected incidents showed that approximately 85% of all the incident reports included mention of a loss of awareness. The most common factors contributing to the loss of awareness were:

- High workload
- Distractions
- Lack of crew communication and coordination
- Execution of an improper procedure
- Lack of experience
- Weather
- Fatigue

With situational awareness we create a mental model based on

- Experience – Past experience or what we have read
- Expectations – The more we are prepared the greater the chance of handling the situation
- Briefing – This prepares and focuses our mind. It provides the shared mental model that we need for effective communication.

With situational awareness we share a mental model by:

Effective communications. Proper communication between crew members also plays a large part in situation awareness

We maintain situational awareness by active monitoring of

- Instruments
- Evidence from our senses
- ATC
- Crew

Situational awareness demands vigilance and good monitoring at all times and may easily be degraded whenever recommended actions or SOP's are not followed or do not have the expected effect.

Ignoring the facts and/or new information through having preconceived ideas will also devalue your awareness.

Use the following techniques to maintain a correct image of the flight:

- Detect and comment on deviations
- Provide information in advance
- Identify potential problems
- Demonstrate an awareness of task performance and flight status

PAC US UP

To maintain and/or recover situational awareness remember to:

**P**repare through a comprehensive brief **A**cknowledge potential problems **C**ommunicate

**US**e all information sources

**UP**date and revise your flight image

## Chapter 7 Management of workload, tiredness or fatigue, vigilance & management of stress

**General:**

We are going to look at the management of another factor, which plays an important part with regard to our behavior and our performance in the cockpit - Workload

Recite the alphabet (time them) - Count from 1 to 26 (time them)

Now do both, interleaving the alphabet with the counting, A-1, B-2, C-3 etc (time them)

This is a very difficult task, however if I give you a pen & paper and tell you to write it down it becomes a relatively easy task. The pen & paper reduce the heavy burden on short-term memory.

The same task can be easy or difficult depending on how we do it. Research indicates that people are able to perform two tasks concurrently only in limited circumstances, even if they are skillful in performing each task separately

During periods of head-down activity, such as programming the FMS, the pilot's eyes are diverted from other tasks. Some FMC entries involving one or two keystrokes can be performed quickly and may be interleaved with other cockpit tasks. However, attempting to perform longer programming tasks, such as adding waypoints or inserting approaches during busy segments of flight, increases the risk of error in one task or the other.

It is not possible for the Pilot Not Flying to reliably monitor the Pilot Flying or the aircraft status during longer programming tasks, and it is difficult to suspend the programming in midstream without losing one's place.

In many incidents' crews have failed to turn as directed by ATC on the SID or STAR they were following. The crews reported various activities competing for their attention; including searching for traffic called out by ATC or the TCAS. Searching for traffic takes the pilot's eyes away from monitoring aircraft position and status, and also demands substantial mental attention. If the conflict is close the urgency may further narrow the focus of attention.

Cabin crew have reportedly been stood up in the aisles when the aircraft has been on the take- off roll due to trying to deal with passenger requests, securing excess baggage which has found its way into the cabin and distributing infant seat belts.

When the workload is too high, difficulty, discomfort and anxiety can be experienced. Invariably, there is a performance failure.

**Factors affecting performance and workload**

- Training - Crew who are well and appropriately trained find it much easier to perform a task than those who have not received adequate training.
- Crew with relevant experience find it easier to perform a task than those for whom it's a new experience.
- Ability of the individual, some folk perform easily and well whilst others have difficulty doing the same task.
- Circadian dysrhythmia, sleep deficits and excessive fatigue
- Poor schedules
- Company procedures
- Internal and external environment
- The operational demands of the phase of the flight
- Time and pressure
- Stress

The actual workload experienced will vary on the individual and the conditions in existence at the time. For example, assuming there are no individual differences, the workload for a given piloting task will be quite different for a rested crew on a sunny afternoon than at 03:00hrs on a stormy night at the conclusion of a long period of operations.

**Implications of an excessive workload:**

Appreciating what causes an increase in workload and the implications that an excessive workload can have, should cause us to make a concerted effort to ensure the factors that we have some control over keep our workload to an acceptable limit, that doesn't degrade our performance.

For example, ensuring: We are fit to fly and not ill, too tired or fatigued. Our training is adequate and we received regular training as required. We remain ahead of the aircraft and various stages of flight with planning, preparation and situational awareness.

**Strategies of reducing Vulnerability to interruptions and Distractions:**

These are not perfect, but in combination they may reduce crews' vulnerability to error.

1 **Recognize that conversation is a powerful distracter.**

In high workload situations, conversation should be kept brief and to the point.

Unless a conversation is extremely urgent, it should be suspended momentarily as the aircraft approaches an altitude or route transition, such as altitude level-off or a SID turn.

2 **Recognize that head-down tasks greatly reduce one's ability to monitor the other pilot and the status of the aircraft.**

If possible, reschedule head-down tasks to low workload periods.

The strategies report suggests that you "Announce that you are going head-down"

3 **Schedule/reschedule activities to minimize conflicts, especially during critical moments.**

Crews can reduce their workload during descent by performing some tasks while still at cruise, for example, obtaining ATIS, briefing the anticipated instrument approach, and inserting the approach into the FMS (for aircraft so equipped). Also, it may be useful for companies to review their operating practices for optimal placement of procedural items.

4 **When two tasks must be performed concurrently, set up a scan and avoid letting attention linger too long on either task.**

In some situations, pilots must perform two tasks concurrently, for example, searching for traffic while flying the airplane.

With practice, pilots can develop the habit of not letting their attention linger long on one task, but rather switch attention back and forth every few seconds between tasks. It requires discipline and practice, for our natural tendency is to fixate on one task until it is complete.

Pilots should be aware that some tasks, such as building an approach in the FMC, do not lend themselves to time-sharing with other tasks without an increased chance of error.

5 **Treat interruptions as red flags.**

Knowing that we are all vulnerable to preoccupation with interruptive tasks can help reduce that vulnerability.

**6 Explicitly assign Pilot Flying and Pilot Not Flying responsibilities, especially in abnormal situations**.

The Pilot Flying should be dedicated to monitoring and controlling the aircraft.

The Pilot Flying must firmly fix in mind that he or she must concentrate on the primary responsibility of flying the airplane.

This approach does not prevent each pilot from having to perform concurrent tasks at times, but it does ensure that someone is flying the airplane and it guards against both pilots getting pulled into trying to solve problems.

**Management of Stress**

We should have an understanding of the elements which affect our physical and mental function as crew

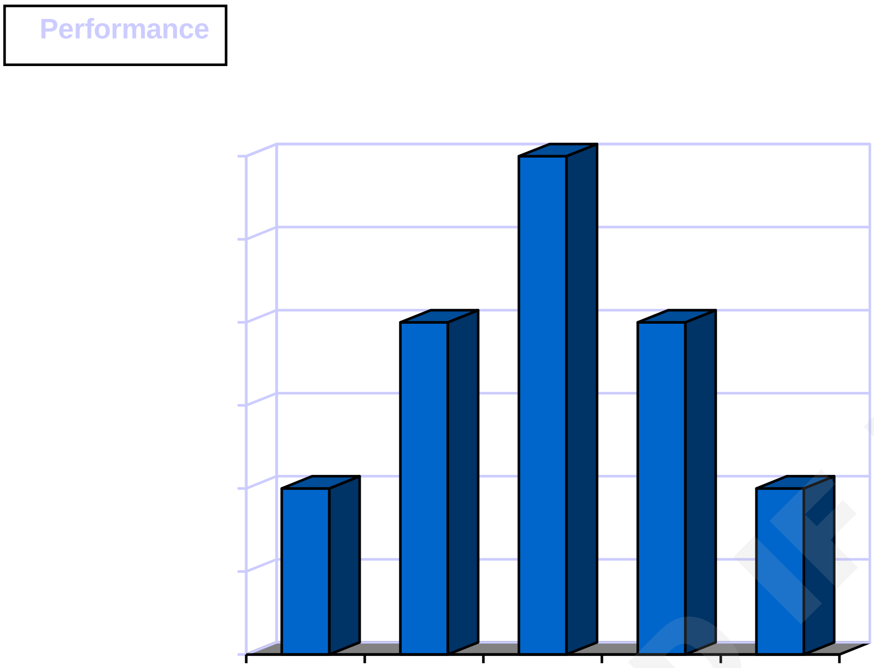
One of the main detractors from performing to the best of our ability is **STRESS.**
This can be mental or physical – either of which can contribute to HUMAN ERROR, which can contribute to an ACCIDENT or INCIDENT.
Stress can have both positive and negative effects on the body, small amounts of stress can act as a stimulant making us feel alert and, on our toes, giving us a sense of well-being and giving much needed stimulation. However, high levels of stress can cause anxiety, depression and other unwelcome effects.
The effects of high stress can reduce performance. If a person chooses not to attempt a task because he fears he is incapable, he also has to deal with the stress associated with refusing to meet the demand – fear of having failed. Long-term stress effects can lead to nausea, indigestion, diarrhea and ulcers. There is also evidence for a connection between stress and heart disease.
One of the features of stress is that an event, which causes a high level of stress in one person, may not have the same effect in another, and something, which is stressful on one occasion, may not be stressful on another occasion.
The amount of stress that we experience influences both the way we feel and also our ability to perform tasks.
Stress arises as a result of the way individuals evaluate the demands placed on them and the ability, they feel they have to cope with these demands. It is the individuals own perception and interpretation of the demands rather than the actual demands, which will be used in his evaluation, likewise it will be the individual’s perception of his abilities rather than his actual abilities that contribute to the stress experience.
People with far greater ability than they believe or are prepared to accept, frequently show signs of stress when confronted with a task, which is well within their limits. Conversely when an individual perceives a demand that he believes is well within his capabilities then the associated stress will be low.
High stress is associated with unpleasant psychological and physiological responses such as fear anxiety, sweating and fatigue, and so the effects of high stress can reduce performance.

If the evaluation process causes a pilot to decide not to undertake a difficult task, he will have to cope with the stress associated with refusing to meet the demand. For example, refusing to undertake a flight in marginal weather. Alternately the Pilot may attempt to change the demand to lessen the stress for instance in bad weather he may renegotiate the time of the flight.

If a person successfully completes a task, which they had initially perceived as being extremely difficult, his perceptions of his abilities to perform tasks of this nature will change. When faced with a similar task in the future they will be able to tackle it with greater confidence.

Thus, the stress associated by our perceptions of particular demands will continuously change as we improve or change our abilities to cope with the situation.

**Stress and performance**




At low levels of arousal, such as just after waking or during extreme fatigue, the nervous system is not fully functioning and the processing of sensory information is slow.

Because the attention mechanism is not very active, the individual will have a slow environment scan and may miss information.

At optimal arousal, we are at our most efficient; we have enough demands to keep our attention and the capability to deal with complex tasks. We have an interest in external events and performing tasks.

At high arousal we experience overload as we reach the limit of processing capacity and restrict our attention to the events that we perceive to be the primary task.

Our performance starts to deteriorate, errors are made and information may be missed. We will suffer from a narrowing of attention, as we tend to focus on a limited source of data.

Once the source of stress has been removed the body will return to its normal state which it was in prior to the occurrence of the event. The stress reaction can occur without the actual occurrence of the event. Anticipation of the perceived demand can be enough to trigger the response.

Stress can be caused by both physical/environmental factors and by mental factors.

A study conducted among pilots showed some of the main identified mental sources of stress to be:

- A lack of control or disruption of events in their lives
- Scheduling and rostering
- Anxiety over courses / checks
- Home to work interface
- Career prospects and achievements
- Insufficient flying

- Lack of responsibility and decision making
- Fatigue and flying patterns

**Stress Effects**

Stress has effects on the body, mind and health of the individual. The short-term effects of high levels of stress are increased heart rate, sweating, dryness of the mouth and some difficulty in breathing.
The long-term effects can be damaging to the person's health leading to nausea, indigestion, diarrhea and after some time ulcers.
There is also evidence of a connection between stress and heart conditions and permanently raised blood pressure.
Those who suffer from stress can also have a higher than normal incidence of asthma, headaches, sleep disorders and neurosis. They are also much more likely to have allergies and suffer more from colds and influenza

**Flight Deck Stressors of a Physical / Environmental Nature**

On the flight deck there are a number of possible physical sources of stress, which are:
Heat: A comfortable temperature for most people dressed in normal clothing is around 20 degrees C. Above 30 degrees C the heart rate, blood pressure and sweating increase. Attention becomes restricted or focused. Below 15 degrees C the individual becomes uncomfortable and may lose some feeling or control in their hands, especially the fine muscle movement.
Noise: In low arousal states, some noise can increase performance and maintain arousal levels during boredom and fatigue. Excessive noise will disrupt performance and cause annoyance and irritability. Excessive noise may also lead to a loss of attention and excessive focusing of attention. During the design of audible warnings for system failures, care must be taken to ensure that the noises selected to alert the pilot are sufficient to attract attention but not too loud as to startle them.
Vibration: Any vibration can affect both visual and motor performance leading to uncomfortable symptoms. Properly designed pilots' seats can offer relief and lessen any effects. The frequency and strength of the vibration determines the severity and effect it can have on you. The effects can include

- Breathing interference
- Chest and abdominal pains
- Backache
- Headache
- Eyestrain
- Speech difficulties and muscular tensions

Low humidity: The air conditioning systems of modern aircraft draws air in from outside. At operating altitudes, the temperature may be as low as minus 30 to minus 55. At these low temperatures, the air is very dry with a relative humidity as low as 5%. For comfort, the normal humidity should be around 40 to 60%. At low humidity the individual becomes more uncomfortable due to the drying out effect. The mucus membranes of the nose and throat become dryer, and eyes can become sore, as the tears tend to evaporate more rapidly. Water vapor is added to the cabin air through respiration but as the air is continually being replaced, this has only a limited effect.
The effects of stress are not just confined to the event, which caused the stress. Stress at home can affect the pilot at work and equally stress at work can affect the pilot's home life. Pilots suffering from stress should be aware that this could affect their concentration and performance when at the controls of an aircraft.

**Domestic Stress**

We are all supposed to leave our everyday problems at home when we fly, or at least compartmentalized in a place where we don't have to think of them.
Our troubles can be many and varied, particularly to do with relationships at home, compounded by the added strain of our loved ones having to plan around our rosters and having to accept frequent and/or unexpected separations.
There is good evidence for a relationship between stress and health and some evidence for a relationship between domestic stress and accident involvement. Additionally, poor relationships with a partner or other family members will affect one's overall stress level.
Much research has been done into stress and stressful events have been actually graded. It is possible, by completing the *Holmes Rahe Stress Scale* – to determine your level of stress.

**Military Pilot Stress Exercise**

20 years ago, a number of airlines and the military teamed up to carry out a series of tests on their Pilots to monitor their body reactions during different phases of operation.
The Pilots were wired up to monitors which observed various bodily reactions such as pulse rate, eye movement, etc. The joke at the time being that the Captains heart rate was at its fastest when the stewardess walked into the flight deck. They also had cameras tucked away discretely to monitor the Pilots scan flow.
The result showed that no matter how well trained or how experienced those Pilots were, at times of great stress the scan stopped and they ended up with tunnel vision fixated on one instrument. This is why today in modern glass cockpit aircraft as much information as possible is found directly in front of you. This allows you to fly the aircraft almost on this one instrument alone.
The problem now is that there is so much information on it and often what happens is that you have a mode control panel, a mode selector panel. It is even easier to select the wrong mode. This has been the cause of a number of accidents and it is important that you check the mode selected carefully

## Chapter 8 Company safety culture, SOPs, organizational factors

### Safety Culture and Organizational Factors

### 1. Introduction

ƒ An organization with a good safety culture is one which has managed to successfully institutionalize safety as a fundamental value of the organization, with personnel at every level in the organization sharing a common commitment to safety.

ƒ One of the key elements is effective support from the top levels of the organization, for safety. It is necessary for senior management to demonstrate their commitment to safety in practical terms, not just verbally or only as long as safety is a no-cost item. It is all very well for an organization to commit to putting in place, for example, a safety reporting and investigation scheme but if such a scheme is not resourced properly, or if safety recommendations are not acted upon, it will be ineffective. It is also important that such commitment to safety is long-term, and that safety initiatives are not the first items to be cut in terms of financial support when the organization is looking for cost savings.

Safety management within an organization should be addressed with as much commitment as financial management tends to be. CAP 712[2] describes the elements of a Safety Management System which should, if implemented properly and supported, lead to a good safety culture.

ƒ A good safety culture needs to be nurtured, and is not something which can be put in place overnight, or with a training course alone. It can be improved in the short term by putting staff through a training course dealing with the elements of safety culture. However, the improvement will only be sustained if the types of behaviors conducive to safety are rewarded and poor safety behavior is not condoned, or even punished (in the extreme cases). This relies on staff at all levels within the organization, especially middle management and supervisory levels, (i) recognizing what good and bad safety behavior is, (ii) good safety behavior being encouraged, and (iii) poor safety behavior being discouraged.

Sometimes the opposite occurs in that staff are rewarded for cutting corners in order to meet commercial deadlines and, in a few cases, punished for complying with procedures (e.g. refusing to sign off work which they have not had the opportunity to check[3]). This is characteristic of a poor safety culture. A good safety culture is based on what actually goes on within an organization on a day-to-day basis, and not on rhetoric or superficial, short term safety initiatives

1 Extracted from CAP 716

2 . CAP 712. Safety Management Systems for Commercial Air Transport Operations. June 2001.

3 CHIRP reports

ƒ It is possible to measure the safety culture of your organization by using a safety culture questionnaire survey. Care should be taken with the timing of such a survey, in that it may be positively or negatively affected by specific recent events such as industrial action, training courses, etc. It is important to be sure that you are measuring behavior, attitudes and fundamental beliefs, rather than morale.[4]

| |
|---|
| Support from the top |
| A formal safety policy statement |
| Awareness of the safety policy statements and buy-in from all levels within the organisation |
| Practical support to enable the workforce to do their jobs safely, e.g. in terms of training, planning, resources, workable procedures, etc. |
| A just culture and open reporting |
| A learning culture and willingness to change when necessary |
| Corporate and personal integrity in supporting the safety policy principles in the face or potentially conflicting commercial demands |

**Table 2-1** Key Elements Contributing Towards a Good Safety Culture

[4] A more detailed description of the elements which contribute towards a good safety culture can be found in Annex G of CAP 712.

## 2. Culture Issues

ƒ There can be a degree of mistrust of anything new in the workplace, (e.g. an individual joining a company whose expertise has not yet been proven, or contracting out maintenance to another company, etc.). There may be a tendency for groups within organization and the organization itself to think that their own methods are the best and that others are not as good. This viewpoint is known as the group's or organization's culture.

**The culture of an organization can be described as 'the way we do things here'. It is a group or company norm.**

ƒ Figure 2-1 indicates that there can be an overall organizational culture, and a number of different 'sub-cultures', such as safety culture, professional/technical culture, etc. It is possible for cultural differences to exist between sites or even between shifts within the same organization. The prevailing culture of the industry as a whole also influences individual organizations.

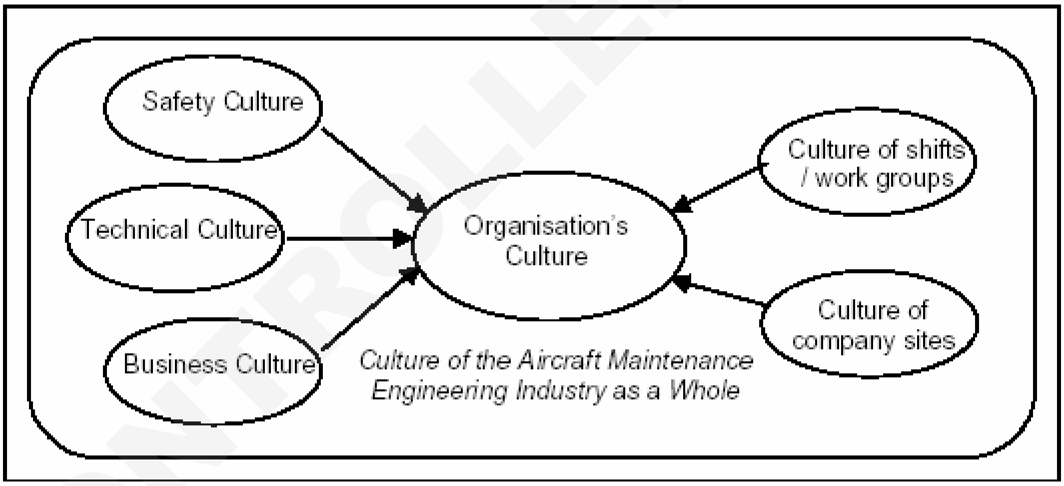



**Figure 2-1** The influences on an organization's culture

ƒ Culture is not necessarily always generated or driven from the top of an organization (as one might think), but this is the best point from which to influence the culture.

**3. Safety Culture**

ƒ **A safety culture is described as "a set of beliefs, norms, attitudes, roles and social and technical practices concerned with minimizing exposure of** ***employees, managers, customers and members of the general public to conditions considered dangerous or hazardous"***[5]

ƒ It is suggested that "A safety culture exists only within an organization where each individual employee, regardless of their position, assumes an active role in error prevention", stressing that "Safety cultures do not …spring to life simply at the declaration of corporate leaders".[6]

ƒ The culture of an organization can best be judged by what is done rather than by what is said. Organizations may have grand 'mission statements' concerning safety but this does not indicate that they have a good safety culture unless the policies preached at the top are actually put into practice at the lower levels. It may be difficult to determine the safety culture of an organization by auditing the procedures and paperwork; a better method is to find out what the majority of the staff actually believe and do in practice.

ƒ A method for measuring attitudes to safety has been developed by the Health and Safety Executive utilizing a questionnaire approach. Examples of the statements which employees are asked the extent to which they agree are:

- It is necessary to bend some rules to achieve a target;
- Short cuts are acceptable when they involve little or no risk;
- I often come across situations with which I am unfamiliar;
- I sometimes fail to understand which rules apply;
- I am not given regular break periods when I do repetitive and boring jobs;
- There are financial rewards to be gained from breaking the rules.

The results are scored and analyzed to give an indication of the safety culture of the organization, broken down according to safety commitment, supervision, work conditions, logistic support, etc. In theory, this enables one organization to be objectively compared with another.

ƒ The key components of a safety culture are described, summarized as follows:

7

- The 'engine' that continues to propel the system towards the goal of maximum safety health, regardless of the leadership's personality or current commercial concerns;
- Not forgetting to be afraid;

[5] The ICAO Human factors Digest No. 10, "Human Factors, Management and Organization" (Circular 247)

[6] Eiff, G. (1998) Organizational Culture and its Effect on Safety in 12th Symposium on Human Factors in Aviation

Maintenance.

[7] Reason, J.T. (1997) Managing the Risks of Organizational Accidents. Aldershot: Ashgate.

- Creating a safety information system that collects analyses and disseminates information from incidents and near-misses as well as from regular proactive checks on the system's vital signs;
- A good reporting culture, where staff are willing to report near-misses;
- A just culture - an atmosphere of trust, where people are encouraged, even rewarded, for providing essential safety related information - but in which they are clear about where the line must be drawn between acceptable and unacceptable behavior;
- A flexible culture;
- Respect for the skills, experience and abilities of the workforce and first line supervisors;
- Training investment;
- A learning culture - the willingness and the competence to draw the right conclusions from its safety information system, and the will to implement major reforms when their need is indicated.

**4. Social Culture**

ƒ The influence of social culture (an individual's background or heritage) can be important in determining how an individual integrates into an organizational culture. The way an individual behaves outside an organization is likely to have a bearing on how they behave within it. Internal pressures and conflicts within groups at work can be driven by underlying social cultural differences (e.g. different nationalities, different political views, different religious beliefs, etc.).

This is an extremely complex subject, however, and in-depth discussion is beyond the scope of this text.

**Whilst safety culture has been discussed from the organizational perspective, the responsibility of the individual should not be overlooked. Ultimately, safety culture is an amalgamation of the attitude, beliefs and actions of all the individuals working for the organization and each person should take responsibility for their own contribution towards this culture, ensuring that it is a positive contribution rather than a negative one.**

**5. Operators SOP's**

Experience has shown that adherence to SOP's helps to enhance the crew's situational awareness and allows a higher performance level to be attained.

One of the objectives of SOP's is to have standards to be agreed upon prior to the flight and then adhered to so that maximum crew performance can be achieved. It is important to always ensure that checklists and SOP's are fully actioned.

Crews should ensure they are aware of their role and responsibilities and familiarize themselves and abide by the **full procedures found in their own AOC Operations Manual and relevant company checklists.**

Crew should be aware of the:

- Allocation of duties: - Both in the cabin and flight deck
- Check list usage: - Normal, Emergency and Abnormal checks
- General procedures: - Pilots - Communications, Navigation aids, Configuration changes, Monitoring, Approach. Cabin crew - communications, monitoring and service
- Briefings: - Pilots take-off brief and approach brief. Cabin crew pre-flight brief and brief between pilots and cabin crew
- And the normal procedures for a typical sector

Something to remember when working together, is that you should be working together effectively. In the event of a problem remember to remember the **5 x R's:**

**R**emember the briefing

**R**emember who is responsible for what – where do '***your'*** responsibilities lie

**R**emember and use the checklists - Don't wind each other up with possible could be's, making rushed and potentially wrong decisions before you have assessed the situation and looked carefully at the check list.

**R**emember your company's standard operating procedures

**R**emember to work together – You may find in your company manual that there is much reference to "both pilots confirming or checking and communicating certain information to cabin crew and vice-versa"

**Checklists**

Checklists represent a convenient guide to pre-set sequences of essential actions. 2 types of checklists are normally carried (*a requirement on public transport flights*).

The **'Normal Procedures'** checklist deals with procedures, which are appropriate to the various stages of:

- Preparation for flight incorporating:
  - Before start
  - Engine start
  - Before taxi
  - Taxiing, take off
- The flight itself incorporating:
  - After take-off
  - Top of climb
  - Top of descent
  - Before landing
- Post flight incorporating:
  - After landing
  - Shutdown

The '**Emergency Procedures**' check list deals with procedures required to deal with aircraft malfunctions in a logical sequence.

Checklists need to be compact and have the ability to remain open at the correct page. They should be hand held whilst the checks and responses are carried out. There should be a proper stowage, which enables the list to be accessible when required, but out of the way when not in use.

**Briefings**

In addition to the use of checklists, briefings are another important element to operating procedures. Communication through briefings is important. Briefings should be a vital part of what you do to ensure procedures and responsibilities are determined. For example, the companies SOP with regards to a particular departure, arrival, or missed approach etc.

Briefings are important for two things, one is that you are communicating and the other is you are refreshing your own mind with the possibilities about to happen, for example a missed approach. Perhaps you are flying into LHR and at the last minute they change runways on you from 09L to 09R you continue your approach for the new runway and an aircraft taxi out onto the runway and sits there right in your way. You now have to carry out a missed approach. Etc.

Do your cabin crew share a short brief with your pilots?

***Why is it good to share a short brief together?***

Briefing brings the crew together as a whole and important information can be shared which may benefit either party. For example:

The pilots could inform the cabin crew of a shorter than normal flight time which will allow them to plan their service, or of turbulence expected at a certain time during the flight.

Cabin crew could inform the pilots of any specials they may know about such as disabled passengers who need special assistance, or perhaps the crew may have done the same flight last week that had a disruptive passenger on board and they are aware he is travelling back on the inbound. etc.

**Deliberate disregard of SOP's**

The deliberate disregard of SOP's is fortunately rare however, in some accidents there has been an almost certain disregard of established rules or procedures.
One reason for poor compliance is that sometimes the procedures themselves are poor. All procedures should be examined routinely they should be well developed and efficient, they also have to be realistic, advantageous, easy to use and reasonable.
Developing procedures that fulfill these criteria is not as easy as may sound. Differences in equipment, differences in operating cultures and operating long haul and short haul routes within the same airline can create genuine problems.
For example, procedures that are not a problem for a long-haul crew member may become a real nuisance for the short haul crew member who must use them frequently on short hop sectors, perhaps six or more times a day.
So, it is not surprising that crewmembers sometimes modify or ignore procedures that are not realistic, advantageous, easy to use or reasonable for their particular operation.
Good communications with the entire crew is essential however even good communications will not always be enough for the willful deviator

**Common reasons for willful deviations**

- The crew member may think the established procedure is simply wrong
- The crew member may think the established procedures are OK for the 'average' person but that he or she is different
- The crew member may think that his or her own procedure is either as good as or better than the one established

- The crew member may think that the procedure is not important or not necessary, or just not worth the bother – just this once, frequently or always
- In odd instances the crew member does may not really object to the established procedure but consciously or subconsciously wants to defy either the management or authority in general

In most cases the crewmember believes that safety is not jeopardized significantly by not following the procedure. Even if safety is slightly jeopardized, these individuals think it is worth the risk because they are completely convinced that an accident cannot happen to them – at least not this time.

Willful deviations have at least three common characteristics, in varying degrees:

1 Each one defies authority
2 Each one may mask a degree of insecurity; this can be displayed by overcompensating often with an overtly ‘macho’ image
3 Each one reinforces individual egos

## Chapter 9 Leadership and team behavior, synergy

### A. The Concept of a Team

A1 1 A lot has been written on the concept of a team, and it is beyond the scope of this document to give anything but a flavor of this.

***Whereas individualism encourages independence, teams are associated with interdependence and working together in some way to achieve one or more goals.***

A2 Teams may comprise a number of individuals working together towards one shared goal. Alternatively, they may consist of a number of individuals working in parallel to achieve one common goal. Teams generally have a recognized leader and one or more follower(s). Teams need to be built up and their identity as a team needs to be maintained in some way.

A3 There has been a great deal of work carried out on teamwork, in particular "Crew Resource Management (CRM)" in the cockpit context and, more recently, "Maintenance Resource Management (MRM)" in the maintenance context.

### B. Some Advantages and Disadvantages of Team Working

B1 The discussion on motivation suggests that individuals need to feel part of a social group. In this respect, team working is advantageous. However, the work on conformity suggests that they feel some pressure to adhere to a group's views, which may be seen as a potential disadvantage.

B2 Working as part of a team has a number of potential benefits, which include: individuals can share resources (knowledge, tools, etc.);

they can discuss problems and arrive at shared solutions;

they can check each others' work (either "officially" or "unofficially").

B3 Teams can be encouraged to take ownership of tasks at the working level. This gives a team greater responsibility over a package of work, rather than having to keep referring to other management for authorization, support or direction. However, groups left to their own devices need proper leadership. Healthy competition and rivalry between teams can create a strong team identity and encourage pride in the product of a team. Team identity also has the advantage that a group of engineers know one another's capabilities (and weaknesses).

## C. Important Elements of Team Working

For teams to function cohesively and productively, team members need to have or build up certain interpersonal and social skills. These include communication, cooperation, co-ordination and mutual support

### C1 Communication

Communication is essential for exchanging work-related information within the team. For example, a team leader must ensure that a team member has not just heard an instruction, but understood what is meant by it. A team member must highlight problems to his colleagues and/or team leader. Furthermore, it is important to listen to what others say.

### C.2 Co-operation

'Pulling together' is inherent in the smooth running of a team. Fairness and openness within the team encourage cohesiveness and mutual respect.
Disagreements must be handled sensitively by the team leader.

### C.3 Co-ordination

Co-ordination is required within the team to ensure that the team leader knows what his group members are doing. This includes delegation of tasks so that all the resources within the team are utilized. Delegated tasks should be supervised and monitored as required. The team leader must ensure that no individual is assigned a task beyond his capabilities. Further important aspects of co-ordination are agreement of responsibilities (i.e. who should accomplish which tasks and within what timescale), and prioritization of tasks.

### C.4 Mutual Support

a) Mutual support is at the heart of the team's identity. The team leader must engender this in his team. For instance, if mistakes are made, these should be discussed and corrected constructively.

## Chapter 10 Conflict

**General:**

The nature of our professional work often requires that we manage conflict with others. Conflict is a daily reality for everyone. Some conflicts are relatively minor and easy to handle. However, conflicts of greater magnitude require a strategy for successful resolution to prevent them from creating constant tension.

When conflicts arise, the crew remain focused on the problem or situation at hand. Crew members listen actively to ideas and opinions and admit mistakes when wrong, conflict issues are identified and resolved.

Conflict can have good sides and bad sides

**Good side of conflict**

- Properly managed, conflict can be beneficial
- Conflict is the root of change
- People learn and grow as a result of conflict
- Conflict stimulates curiosity and imagination
- Conflict helps to relieve monotony and boredom
- Conflict can provide diagnostic
- Information about problem areas
- After conflict, closer unity may be re-established

**Bad side of conflict**

- Prolonged conflict can create excessive stress and be injurious to your physical and mental health
- Conflict diverts time, energy and money away from reaching important goals
- Conflict often results in self-interest at the expense of the organization
- Intensive conflict may result in lies and distorted information

**The CRM Loop**

To assist with communication and flight management, a CRM loop is presented. It consists of the following factors; Inquiry, Advocacy, Conflict Resolution, Decision Making, Critique and Feedback. When a problem, discrepancy or issue comes up in the cockpit, guidance can be sought and achieved if you follow the CRM loop:

An example of this can be shown by the following Model

**CRM LOOP**

**Inquiry**

- Asking the right questions
- Collecting and validating data
- Continuously updating information
- Testing for accuracy

**Advocacy**

- Frankly stating opinions
- Expressing concerns
- Seeking ideas of others

**Conflict resolution**

- Working out differences
- Looking for reasons and underlying causes
- Emphasis on what is right instead of who is right

**Decision Making**

- Arriving at sound and safe decisions
- Changing one's mind when convinced to do so
- Working for understanding and support of crewmembers

**Critique**

- Constructively reviewing plans and results
- Using crew feedback for learning purposes
- Developing a basis for improvement

**Feedback** – (from all resources - people, instruments, senses etc)

Inquiry & Advocacy

**Inquiry**

- Asking the right questions

- Collecting and validating data
- Continuously updating information

**Advocacy**

- Frankly stating opinions
- Expressing concerns
- Seeking ideas of others
- Test for accuracy.

Crew members should speak up with appropriate persistence to resolve the problem

- All crew should be encouraged to state recommendations
- You should assess the information you have, ask questions and test assumptions
- Most importantly don't forget to question flight automation

Never hesitate to challenge, enquire or express concern. Use strong words such as: "I'm not happy" or "I'm concerned" or "I'm uncomfortable". This should alert the crew to rethink the situation.

**Conflict Cycles**

Conflict occurs whenever the concerns of two people appear to be incompatible. As a process, conflict begins when one party in an interaction perceives that another has prevented his/her needs from being met.
Conflict is a cyclical process. Overt conflict usually occurs only periodically when people's contrary values or goals surface through a triggering event.
The underlying issues lie dormant until something happens to trigger conflict behavior. Once triggered, the conflict usually becomes less pronounced over time, and the issues may not be apparent until the next triggering event causes the cycle to repeat itself.
Most conflict cycles are not static. Without conflict resolution, conflict cycles usually escalate either in frequency, intensity or both. Most conflicts are resolved by de-escalation of the cycle.
Rarely is resolution so successful and complete that the next triggering event has no impact on the behavior of the parties to the conflict. We can identify the conflict cycle elements in the scenario we mentioned earlier.
Conflict always produces stress. Stress is the response of the body to demands made upon it. Stress is not necessarily bad; in fact, stress is necessary for us to perform in life.

The outcome of stress is what is critical. Positive outcomes produce eustress with good after-feelings. In situation #1, there was stress when Laura objected to the operational plan; however, everyone felt good about the outcome producing eustress. The second situation produces distress or bad after-feelings because the issue is not being resolved.

We can develop skills to resolve conflicts to produce more eustress, less suspicions and distrust, and greater productivity.

**Conflict Management Model**

Strength Of View

| | |
|---|---|
| *Adopt if outcome critical to you – eg. Time critical or emergencies etc*<br>**AGGRESSIVE**<br>I Win/ You Lose | *Outcome critical to all*<br>**ASSERTIVE**<br>I Win / You Win |
| **COMPROMISING** | |
| *Adopt on temporary basis for example emotional grounds*<br>**AVOIDING**<br>I Lose / You Lose | *Adopt if contracted to or regulationss apply or if critical for you for another issue (a favour the next week)*<br>**ACCOMMODATING**<br>I Lose / You Win |

**Degree of Co-operation**

The model scale measures two factors

1 How strongly I express my view and
2 How co-operative I am towards the other person

**Conflict management styles**

Five conflict management styles are identified.

1 Competing/Aggressive
2 Collaborating/Assertive
3 Accommodating
4 Avoiding
5 Compromising

The styles may be considered as "tools" tools to use to resolve conflict situations. Specific conflict situations are best resolved with different conflict management styles.

Competing/Aggressive:

The competing style is used to meet one's own needs and concerns at the expense of other parties. The competitor puts forwards their views strongly and is uncooperative towards the

other persons need. It is the most assertive and least cooperative style.
To achieve the desired outcome, the competitor uses whatever power is available and acceptable, e.g., position or rank, information, expertise, persuasive ability or coercion.
Collaborating/Assertive
Collaborating involves the maximum use of both cooperation and assertiveness. A collaborative style is used when attempting to satisfy the needs and concerns of both parties.
The collaborator puts their views forward strongly but is very cooperative towards the other person’s needs. It requires the same approach by the other person. In this way we might both get what we want in an imaginative way.
Collaboration requires more commitment than the other styles and usually takes more time and energy. Collaboration is also the best style to use when it is essential that the parties involved in a conflict situation be committed to the agreed upon solution.
Accommodating:
The accommodating style is characterized by cooperative and unassertive behavior. Accommodation means placing the other party's needs and concerns above one's own. Those who use accommodation to excess may feel resentful that their own ideas, needs and concerns are not receiving the attention they deserve.
The accommodator is extremely cooperative toward the other person’s point of view but does not express their own views very strongly. This way the other person gets a lot of what they want.
Avoiding
The avoiding style is characterized by both uncooperative and unassertive behavior. Those employing this style simply do not address the conflict and are indifferent to other's needs and concerns. They evade the issue, withdraw from the discussion or may not even be present for the resolution.
Compromising:
It is very clear that if we are both competing i.e. We’re both uncooperative towards each others needs and we are both putting our views forward strongly, we are not going to solve the conflict.
The conflict may be solved by compromise but that would need both of us to become a little more cooperative towards the other person’s needs and to give away some of what we want by bargaining.
In other words, we would get less of what we want and we would become a little bit more cooperative towards the other person and we may reach a compromise.

**Conflict Resolution:**

If crewmembers are effectively advocating their positions, eventually there will be a conflict of opinion. An effective resolution process will help the flight crew to operate efficiently. Conflict can be constructive if cockpit issues are dealt with rationally. Problems may arise when the conflict becomes external to the task at hand. Outside issues should be deferred until another time while the crew deals with the task at hand.

The key principle in resolving conflict in the cockpit is the determination of

**What is right, not who is right**

When crewmembers advocate their position, a difference of opinion in the cockpit arises. CRM principles recognize this conflict as not only healthy, but expected. All crewmembers' input is a required ingredient for synergy to become active.

A problem begins when outside conflict enters the cockpit, when heated emotion, bias, or lack of respect taint the real issue.

- Is it a cockpit issue or does it pertain to something beyond the confines of this cockpit?
- If it is not a cockpit issue, set it aside and deal with it once you are on the ground. Maintain a professional attitude.
- If it is a cockpit issue, resolve it based on what is right and not who is right. Rely on an impartial source of information if possible, an Aircraft Operations Manual or Air Regulation. This is a constructive method of resolution versus the destructive method of who is right.

**Elements of Conflict resolution:**

- INQUIRY
- ADVOCACY
- ASSERTIVENESS

**INQUIRY**

- Respectfully asking about actions and requesting clarification
- An effective tool for increasing your own situational awareness
- Asking the right questions
- Collecting and validating data
- Continuously updating information

When to practice inquiry, How to practice inquiry

- Carefully directed
- Clear and concise questions
- Restate concerns accurately

- Specifically ask for feedback
- Keep an open mind
- Draw conclusions from valid information

ADVOCACY

- Stating what you believe to be the proper course of action under the circumstances
- A means for increasing someone else’s situational awareness
- Frankly stating opinions
- Expressing concerns
- Seeking ideas of others
- Test for accuracy.

Crewmembers should speak up with appropriate persistence to resolve the problem

- All crew should be encouraged to state recommendations
- You should assess the information you have, ask questions and test assumptions
- Most importantly don’t forget to question flight automation
- Never hesitate to challenge, enquire or express concern. Use strong words such as: “I’m not happy” or “I’m concerned” or “I’m uncomfortable”. This should alert the crew to rethink the situation.

When to practice advocacy, how to practice advocacy

- State position
- Suggest solutions
- Be present
- Timely
- Listen carefully
- Keep an open mind

ASSERTIVENESS

- To state boldly or forcefully

How to practice assertiveness

- Get listener’s attention
- Express an emotion and identify the subject
- Justify your emotion
- Suggest a solution
- Solicit a response-insist on feedback

Requirements for assertive behavior to be effective

- Authority with participation
- Advocacy through inquiry
- Assertiveness with respect

**How to Manage Angry Conflict**

There will be times, inside or outside the cockpit, that angry conflict will take place. Should this angry conflict take place during a critical phase of flight, it will constitute a serious hazard to safety. The following tips will help you to manage the angry conflict until the problem can be resolved at a more convenient time.

Maintain Control

- If possible, suggest another time (cool off)
- Avoid sharing the anger
- Objective: To Listen

Listen

- Objective: Allow other to explain
- Use listening skills
    - Open ended questions
    - Probe questions
    - Paraphrasing

Use Problem Sharing Approach

- Guide discussion to clarification of problem and constructive exploration of ways to resolve it
    - We have a problem
    - Define the problem-is it cockpit related? Cause vs effects
    - Explore the alternatives and consequences - elicit and suggest
    - What action should we take - pick the safest one
    - Mutual commitment
    - Follow-up Maintain respect
- The use of personal insults and put-downs must be eliminated. "I wonder if we can approach this issue without attacking each other."
- Objective: To clarify the issue as objectively as possible
- Feelings are facts - do not deny the other's experience
- Separate the facts from opinion; mentally separate facts from irate expressions

Avoid Hasty Responses

- Allow time for issues (facts vs opinions) to settle
- Wait and go back later

Seek Constructive Solutions

- Explore alternatives
- Have other choose, if possible

**Types of Conflict**

In the workplace (and almost any setting), there are two predominant forms of conflict.

Substantive conflict

It is conflict about decisions, ideas, directions and actions. We will call this "**substantive conflict**" since it deals with disagreements about the substance of issues.

**Personalized conflict**

"personalized conflict" is often called a personality conflict. In this form, the two parties simply "don't like each other much".

For example, if you and I disagree about how much you should pay me, we disagree on an issue "payment".

If, however you and I aren't getting along because I don't "like" you, this is a personality or emotion driven situation.

Substantive conflict can occur on just about any issue, but its moving force is that the two parties simply disagree about an issue. This can be a good thing or a bad thing. Handled

correctly parties in conflict can create, for themselves and those around them, the ability to resolve an issue with something creative, something better than either party's original position.

While substantive conflict, if handled correctly, can be very productive, personalized conflict is almost never a good thing. There are several reasons.

First personalized conflict is fueled primarily by emotion (usually anger, frustration) and perceptions about someone else's personality, character or motives. When conflict is personalized and extreme each party acts as if the other is suspect as a person.

Second, because personalized conflict is about emotion and not issues, problem solving almost never works, because neither party is really interested in solving a problem. In fact, in extreme cases, the parties go out of their ways to create new ones, imagined or real.

Third, personalized conflicts almost always get worse over time, if they cannot be converted to substantive conflict. That is because each person expects problems, looks for them, finds them, and gets angrier.

Identification

When involved in a conflict situation, it is important that you are aware of whether you and the other party are dealing with a substantive conflict or a personalized one.

It isn't always easy to tell them apart, and it is difficult to look honestly at oneself. Ask yourself the following questions:

- Do I dislike the other person or get frustrated with him/her?
- Do I see the other person as untrustworthy, and undeserving of respect?
- Is my emotional reaction to the conflict appropriate to it's seriousness or lack thereof?
- Do I really want to "win"?

If the answer to any of these questions is yes, you may be setting yourself up for a personalized conflict that nobody can win in the long term.

With respect to the other person, one good indicator of a personalized conflict situation is that the person will try to counter your substantive point on the issue with a series of DIFFERENT reasons why you are wrong.

Interpersonal conflict can become an emotionally corrosive process. When we investigate long-standing, deep-rooted hostility between people we find there are very few facts at the core. A few facts led to perceptions which then lead to more thoughts which created strong feelings, which affect perceptions….

Avoiding Personalization, Move to Substantive Issues

Even in situations where both you and the other party have personalized the conflict, you can work to focus on specific issues. You have no direct control over another person, but you have control over yourself. By moving to the issues, and staying there, you will also encourage the other person to do so.

It isn't easy, of course. The trick is to try to put aside your negative perceptions about the other person, and not to dwell on them. That's an internal thing. Every time you think to yourself "what an idiot"(or all the other negative things), you make it more difficult to stay

It is rare that personalization occurs just on the basis of two incompatible personalities. Usually, personalization occurs because conflict on substantive issues is handled badly. That is, one or both parties behave in non-cooperative ways.

Often, issue driven conflict turns into emotion-based conflict, and that's one thing we need to make sure doesn't happen. The reason is simple. Emotion based or personality-based conflicts are very difficult to deal with, with a relatively low probability of resolution. It's not impossible, but often it's unlikely.

Conflict Prevention

Conflict prevention isn't about preventing issue- based disagreements or keeping our mouths shut if we disagree.

Conflict prevention is about reducing conflict that comes from behavior and ways of communicating that create unnecessary, and difficult to resolve conflicts.

We can learn to say things in ways that do not get people's defenses up and so that others don't get incensed because of our choice or words, tone, phrasing or body language.

It's a tool for the resolution of issue-based conflict, not a way of avoiding it. The approach follows the principle:

If we are going to be in conflict, we want it to be about something that is important, and should occur in a way that brings a positive outcome.

We do not want to create conflict because of our tone, communication, behavior, etc, that has no issue except the WAY we are handling it.

**Cooperative Communication**

Some ways of communicating increase friction and anger. Other ways of communication tend to cause people to work with us, and not against us.

While it is clear that blatant accusations, name-calling and personal attacks are confrontational (the opposite of cooperative), there are many more subtle ways to ruin a communication.

To illustrate some of the techniques of cooperative communication, let's take a look at the following sentences:

"You never finish the work on time”

"It seems like you are having some difficulty with the timelines. What can I do to help?"

Which of these phrases do you think is more likely to elicit a productive dialogue? Clearly the first at least "sounds" antagonistic", while the second doesn't. Another example:

"If you had bothered to read the report, you would know."

"It might be that the report wasn't clear on those points. Would you like me to explain?"

What are the cooperative rules here? In our first set of examples, the initial statement uses an absolute word "never", and as a result tends to cause the other person to argue. In addition, the phrase sounds blaming.

The replacement phrase lacks those confrontational characteristics, uses a qualifier "seems", and offers to work together.

In the second phrase set, the key word is "bothered", which suggests that the person is lazy, or uncaring, and that is what will be heard. It also is a blaming statement. In the replacement phrase, we introduce another qualifier "might", followed by an offer to solve the problem.

In both phrase sets, the first phrases are likely to create argument and personalized conflict while the replacement phrases are more likely to result in real problem solving.

Using Positive Language

Language is an exceedingly powerful tool. Whether you communicate orally, or in written form, the way you express yourself will affect whether your message is received positively or negatively. Even when you are conveying unpleasant news, the impact can be softened by the use of what we call positive language.

Are you familiar with the term "Naysayer". The naysayer is the person who often offers criticism of ideas, or always provides reasons why something won't work. The extreme naysayer rarely offers suggestions or alternatives, but is very good at picking holes in the ideas of others.

If you have ever worked with such a person, (or if you are one), you will know that this kind of negative communication is very fatiguing for those around this person. The constant challenging of the naysayer, while it may stimulate discussion, also creates a negative environment, and increased confrontation.

Naysayers don't always have negative attitudes. In many cases they simply use language that gives the impression of negativity. They have not learned to phrase their comments in more constructive, positive ways.

**Negative & Positive Language**

It is very easy to fall into the negative language pattern. Many of us do so without being aware of it, particularly in written communication.

For example, it is not uncommon for government organizations to write negatively phrased letters to customers, applicants and those it regulates. Take a look at the following typical government memo.

"We regret to inform you that we cannot process your application to register your business name, since you have neglected to provide sufficient information. Please complete ALL sections of the attached form and return it to us."

While it is polite, it is also exceedingly negative. It includes several negative words -- cannot, and neglected, and it has a tone that suggests that the recipient is to blame for the problem.

Contrast this example with a re-written more positive approach.
"To register your business name, we need some additional information. If you return the attached form, with highlighted areas filled in, we will be able to send you your business registration certificate within two weeks. We wish you success in your new endeavor."

Note that the negative example tells the person what he or she has done wrong, and doesn't stress the positive things that can be done to remedy the problem. The information is all there, but it sounds bureaucratic, cold and negative.

The positive example sounds completely different, though it contains almost identical information, it has a more "upbeat" and helpful tone.

**Negative phrasing and language often have the following characteristics:**

- tells the recipient what cannot be done.
- has a subtle tone of blame.
- includes words like can't, won't, unable to, that tell the recipient what the sender cannot do.
- does not stress positive actions that would be appropriate, or positive consequences.

**Positive phrasing and language have the following qualities:**

- tells the recipient what can be done
- suggests alternatives and choices available to the recipient
- sounds helpful and encouraging rather than bureaucratic
- stresses positive actions and positive consequences that can be anticipated.

**Good Conflict in Teams**

There is an idealized view of high-performing teams as wonderfully harmonious groups of aligned and well-adjusted people, but there is a lot of evidence to the contrary.
Many of the best teams seem to thrive on conflict. Kathleen Eisenhardt of Harvard Business School researched hundreds of teams to come up with these key points about how great teams use conflict effectively to enhance performance.

- They focus on issues and fair process
- They use more rather than less information
- They develop multiple alternatives to enrich debate
- They establish common goals
- They try to inject humour

They maintain a balanced corporate power structure

## Chapter 11 Decision Making

**General:**

A central aim of CRM is to ensure that high quality decisions are taken across the whole spectrum of flight operations. In this context, thorough pre-flight planning will not only provide a yardstick against which in-flight decisions can be made but will also allow all members of the crew to manage successfully their own specific areas of responsibility. Understanding the plan also allows individual crewmembers to contribute in the most effective way to decisions made in flight. It is important, therefore, as the flight progresses, that the Captain updates the crew at regular intervals on any changes to the original plan, so that individual crewmembers can maintain good situational awareness. This is particularly important during abnormal operations or in an emergency situation, where conditions affecting the progress of the flight and the safety of the aircraft are likely to change rapidly. In these circumstances, regular updates on the status of the flight allow each individual crewmember to be sufficiently aware of the situation and needs of the moment to contribute in the most effective way to the decision-making process.

Allowing subordinate crewmembers to participate in the decision-making process does not mean that all decisions have to be made by committee. The degree of participation or otherwise from subordinate crew members depends to some extent on the type of behaviour which underpins the decision:

1 Skill-based behaviors rely to a large extent on prior learning and any associated decisions are made mainly subconsciously. In this situation, other crewmembers provide a passive monitoring role, although this may call for assertive intervention if the level of skill being displayed by the decision-maker falls below a safe standard (for example, if it is perceived by a non-flying crew member that the aircraft may be inadvertently descending in cloud towards high ground). Rule-based behaviors rely on previously- considered courses of action such as Standard Instrument Departures (SIDs), Standard Operational Procedures (SOPs), Flight Manuals, etc, and the associated decisions are made partly in the subconscious, where previous experience and training come into play, and also in the conscious mind, where previous learning is compared with the realities of the current situation. In these circumstances the participation of another crewmember may be required to provide verification of the situation and validation of the course of action being proposed by the decision maker. Finally, knowledge- based behavior is utilized in a situation, which has not previously been encountered. In these circumstances, the crew is called upon to make a decision based upon a rational appraisal of the facts, so there may be considerable scope for the involvement of other crewmembers and - if time and circumstances permit - even outside agencies such as ATC or Technical Control.

2 The degree of participation in the decision-making process also depends to a considerable extent on the organizational culture, as well as current social norms. These factors include the aircraft commanders' perception of his or her role and authority, and

the way in which this perception is shared by other crewmembers and the various supporting agencies. In today's climate, commanders who manage the flight in an open and affiliative style, and who state their intentions from time to time in the course of the flight, are more likely to secure the co-operation and participation of other crew members than those who are overbearing and autocratic. Command style, however, is normally based on a perception of what the company or organization expects from each individual crew member, and effective CRM will therefore flourish only where an organizational culture exists which empowers and encourages subordinate crew members to assist the Captain by participating appropriately in the decision-making process whenever the need for them to do so arises.

**What is decision making?**

Effective decision-making refers to the ability to choose a course of action using logical and sound judgment to make decisions based on available information. This includes

- Assessing the problem
- Verifying the problem
- Identifying solutions
- Anticipating consequences of decisions
- Informing others of decision and rationale
- Evaluating decisions

**Factors which promote good decision-making:**

- Teamwork
- Extra time to make a decision
- Alert crew members
- Decision strategies and experience

**Barriers to good Decision Making:**

| Barriers: | How to overcome |
|---|---|
| Time | Use SOPs and select the best decision using available information |
| Inaccurate or Ambiguous data | Cross-check data |
| Pressure to perform | Evaluate the rationale for making a decision |
| Rank Difference | Use assertive behaviors |
| Personal Attitudes | Be aware of negative attitude traps |

Conventional wisdom used to hold that judgment was something you were born with; it couldn't be taught. Although judgment is difficult to put into concrete terms, the elements that go to make up decision-making can be taught to enable the student to render decisions in a rational manner even under stressful conditions and high workload.

Also, the importance of the negative effect of personal attitudes on the ability to make wise judgments can be recognized.

**Decision-Making VS. Risk Management**

Judgment and decision-making must involve the assessment of risk. Risk management is an ongoing evolution; it starts in the brief and continues throughout the flight.

If risks aren't properly assessed good judgments and decisions won't be made.

- Judgment is the total mental process used to arrive at a decision.
- Decision-making is the process of identifying a problem, gathering data, and using sound judgment to reach a logical conclusion in a timely manner.
- Risk management is an individual measure for an acceptable outcome to a given decision or judgment.

**Structured Decision-making**

The decision-making process is a synthesis of the elements of good CRM and situational awareness. It involves an interface among communication, situational awareness and command authority. In defining decision-making in terms of CRM, all the resources available to the crew are pulled together to achieve synergy. Synergy is easier to achieve in an environment of good communications and leadership.

**Defective Decision-Making**

There are two basic principles that emerge in the analysis of aircraft mishaps that are caused by defective decision-making.

1 One bad decision often leads to another in a "snowball" effect.
2 A series of bad decisions reduces the alternatives for continued safe flight. As time goes by, available alternatives decrease.

Decisions are based on information the aircrew member has about situational variables dealing with the aircraft, the environment, operations and other crew members. A poor judgment is less likely to be made if this information is accurate.

However, every poor judgment made increases the availability of false data which may then negatively influence judgments that follow. As the poor judgment chain grows, the crew's situational awareness becomes more impaired and the alternatives decrease. If a poor alternative is selected, the chance to select other options may be lost.

**Recognition of Poor Judgment**

The aircrew must recognize when a poor decision has been made and admit the error. If recognition does not occur, the ability of the aircrew to prevent further poor judgments is reduced

- **Feedback.** To recognize poor judgment, feedback is needed. Asking another crewmember for feedback may be difficult because one may be hesitant to admit an error in judgment. Yet relevant feedback is necessary in order to break the poor judgment chain quickly.
- **Stress.** A high level of stress can reduce the ability of an aircrew to exercise good judgment. An awareness of each aircrew member's stress levels and self-awareness of each of their own stress is necessary to good decisions.
- **Challenge**. Identify hazardous situations resulting from poor judgments and rectify.
- **Identify** other poor decisions - Poor decisions tend to occur in chains. If a poor decision affecting the safe operation of an aircraft is recognized, others may be present.
- **Review** After the poor judgment chain has been broken, a review of the original bad decision should be made as soon as possible after the flight. This review will provide feedback to avoid similar poor judgment chains in the future.

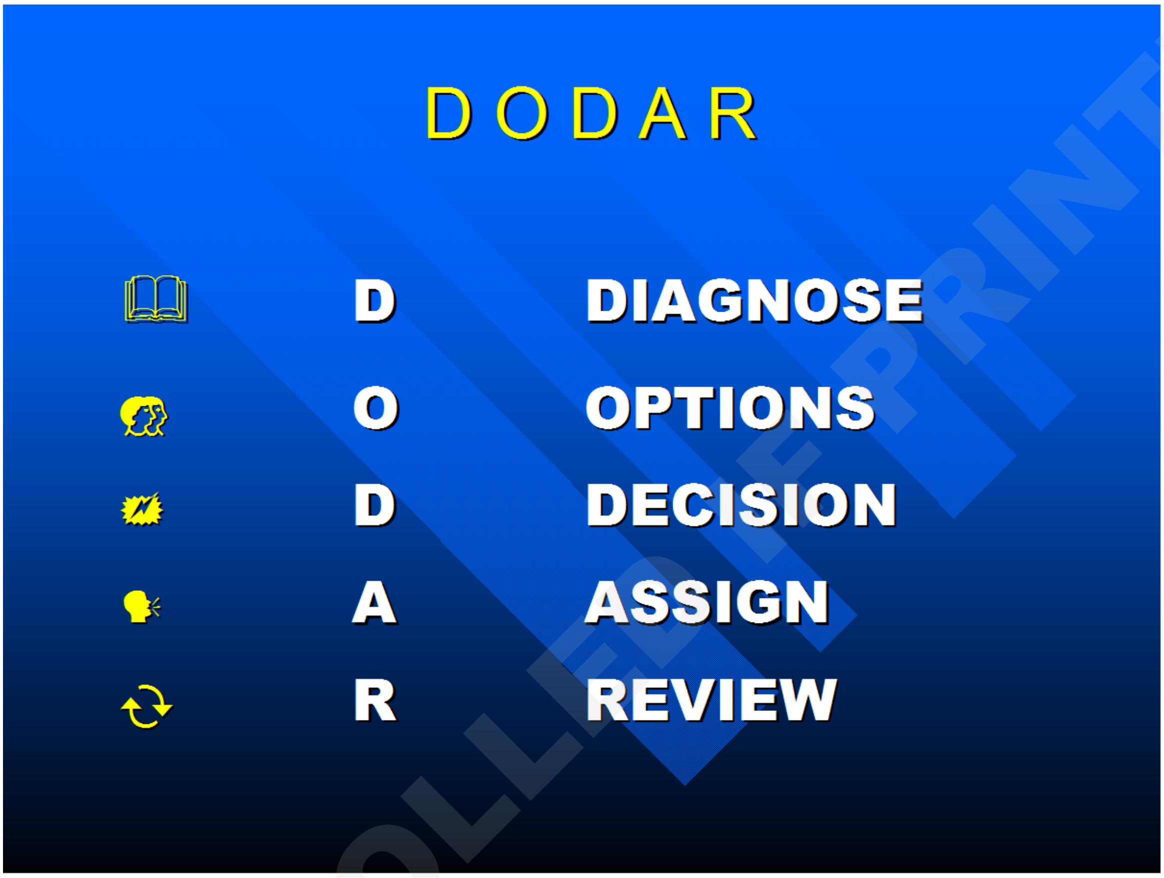
So, what are the traps we may fall into when making decisions?

**(1)** "Do something fast!". Jumping to conclusions and solutions. Beware of choosing a mental model of the situation which seems close enough and then bending the facts to fit the model.
**(2)** "Can Do" - Macho attitude. Risk taking to impress others. Being afraid to voice and share uncertainty or overload.
**(3)** Not being willing to challenge ‘Experts’.
**(4)** Complacency, Invulnerability, Denial. - "It can't happen to me."
**(5)** Anti-authority - "Don't tell me what to do."
**(6)** Resignation - "What's the use? Nothing I do makes any difference."

**Key Points**

- Don’t assume you don’t have the time - Decision-making is a structured process especially when faced with an unusual situation. Don’t assume you don’t have enough time to consider the problem. Time spent on diagnosis is time well spent.
- Consultation is not a sign of weakness - Use your resources and consult other crew members, ATC, maintenance etc.
- Decisions should always be reviewed
- Changing a decision is not indecision
- To assist with the decision-making process, use the acronym DODAR

**DODAR**



**DODAR**

| | | |
|---|---|---|
| **D**iagnose: | Make a diagnosis | Utilize all available resources and view differing opinions as being helpful and not a hindrance |
| **O**ptions: | Work out what your options are | Encourage all crew members to express opinions and air their doubts or objections without fear of being made to look foolish. |
| **D**ecision: | Make the decision | Always explain the reasons for a particular decision, deal only with the facts. Do not be indecisive but remember that any decision may be modified in the light of changing circumstances. |
| **A**ssign: | Tasks | Allocate the tasks and share the workload |
| **R**eview: | Your decision | Keep reviewing the decision at intervals |

## Chapter 12 COMMUNICATION

**General:**

Communication process is the process of transferring messages to others clearly, accurately, adequately and timely - both oral and written.

Communication includes several activities:

- Active and passive listening
- Assertive behavior - (*Not aggressive but positive, confident, respectful, empathic, persistent, clear, specific, questions, listens, understands, open, honest, expresses feelings, state's needs, compromises, relaxed*)
- Questioning / Checking understanding
- Aware of and managing own body language
- Reading body language
- Demonstrating empathy
- Giving criticism and praise constructively
- Receiving criticism and praise constructively
- Technical information processing

True and effective communication occurs when there is a sincere and conscious effort by all parties.

**Definitions**

- Effective communication is being able to communicate your thoughts and feelings in such a way that the other person shares the same meaning you do
- The imparting or interchange of thoughts, opinions, or information by speech, writing or signs
- The process of exchanging ideas and information by the use of a common system of verbal and non-verbal signals

A good example of poor communication is from list of instructions from an aircraft electronics manual as quoted by the Journal of the Institute of Scientific and Technical Communicators:

"The internal guidance system uses deviations to generate corrective commands to fly the aircraft from a position where it is to a position where it isn't."

"In the event that the position where it is now is not the same as the position where it originally wasn't, the system will acquire a variation. Variations are beyond the scope of this simple explanation."

**Key Facts about the Way We Communicate**

- We tend to protect, maintain and enhance ourselves when we communicate
- We defend against looking ignorant or foolish for fear of ridicule
- We wish to maintain consistency; we tend to support our opinion even when we suspect that we may not be totally correct
- We wish to feel valued, worthwhile, belonging and meaningful. This means that we must be acknowledged with respect and trust
- Reality is second to perception - and our mindset may be very difficult to change
- People behave according to their perceptions; may not be aware of the level of risk
- Emotions always take first place, feelings are facts
- Commitment comes from self-determination, people have their own motivations

**Modes of Communication**

**Verbal** - verbal communication occurs when words are used to communicate, either orally or in writing

**Non-Verbal -** non-verbal communication occurs when body language, eye contact, posture, gestures, touch, silence - anything other than words - is used to communicate

**Symbolic** - symbolic communication occurs as a result of our appearance - clothes, hair, jewelers, make of car, etc.

7% of all communication is accomplished Verbally.

38% of communication is the result of unconscious signals and readings, such as tone or sound of voice

55% of all communication is achieved through Non-Verbal And Symbolic means (body language.)

**Body Language**

Another way of communicating is by body language. Body language can speak just as strongly as verbal communication.
We can give off non-verbal signals that create impressions

| | |
|---|---|
| **Warmth**<br>Open posture & expansive gestures<br>Sympathetic gestures<br>Careful use of personal space<br>Relaxed warm tone of voice<br>Smile and crinkled eyes | **Hostility**<br>Aggressive posture<br>Harsh tone of voice<br>'Set' Mouth<br>Frowning<br>Staring eyes<br>Distance<br>Invading personal space |
| **Control and domination**<br>Talking loudly/quickly' - Controlling' tone of voice<br>Ignoring responses - Interrupting in a loud voice<br>Stern expression<br>Stabbing fingers and other forceful gestures<br>Invading personal space | **Submissiveness**<br>Closed posture<br>Talking very little/quietly, Meek tome of voice<br>Allowing<br>interruptions<br>Constant agreement<br>Downcast eyes<br>Hand-washing or other nervous gestures<br>Allowing personal space to be invaded |

Our body language is conveyed by our posture, gestures, the face and eyes, tone of voice and proximity

**Posture**

This comprises of: The angle of the head, shoulders, hips and feet. The direction of inclination and position of arms and legs
For example, if someone feels comfortable with a situation and comfortable with themselves, they may raise their heads and look openly at you, they may lean back slightly indicating relaxation or forwards to indicate interest.
Aggression may present itself as a full-frontal stance and an appearance of domination
Defensiveness presents itself as physically closed up. Hands and arms may protect mouth or abdomen, legs may be crossed tightly and attempts made to look smaller
Arrogance presents itself openly; the ankle of one leg may rest on the knee of the other leg hands may be clasped around the back of the head.

**Gestures**

People use their hands and arms in a variety of ways, some gesticulate frequently, others hardly at all. Some of this can be cultural.
Arms can be used to signify defensiveness in an attitude of self-protection or they can signal relaxation.
Hands can be used to hide facial expressions, they can demonstrate openness and honesty, and they can emphasize points aggressively
Fingers can be used to indicate impatience and they can be used accusingly or threateningly.

**Face and eye expressions**

Human beings have more control over their facial muscles than any other animal species making this the most expressive part of our bodies.

- Raised eyebrows and an "O" shaped mouth indicates surprise
- Raised eyebrows and an open smile signifies real pleasure
- A down-turned mouth suggests displeasure
- Knotted eyebrows and tightly pursed lips signify anger or displeasure
- Avoidance of eye contact can give the impression that we are shifty, disinterested or uneasy
- Too intense eye contact can appear aggressive and make others uncomfortable
- Immediate and moderate eye contact accompanied by a pleasant facial expression can give an impression of confidence, and a positive approach to communication.

**Tone of voice**

Tone of voice is an important aspect of our communication

- Too quiet and it infers nervousness
- Too loud fast and abrupt shows impatience
- Too low, slow and monotones infers boredom
- High, rapid and jerky may illustrate fear

**Proximity**

A gap of about: 4 feet generally mean that people are not in contact with each other, less than this and strangers may start to get edgy. 2 to 3 feet it generally means effective interaction or a joint activity. Less then 1.5 feet generally means friendly or intimate.
You will often find that if you go into an elevator with only one other person in it and stand right next to them, they will edge away. Likewise do the same in a library, pick a book off the shelf and stand immediately next to another person and they will edge away. There are some provisos. These can vary with country and culture.

Problems with proximity normally arise when people feel their personal space is being invaded, this is a favorite trick of aggressive people.

**How do people show negative messages?**

| Negative Messages | Shown By: |
|---|---|
| Boredom | Yawn, slouch, head in or on hands and leaning side on. |
| Lack of pride | Appearance |
| Over-casualness | Sloppy dress habits, posture, slouch, hands in pockets |
| Irritation | Rubbing the back of your neck |
| Impatience | Uneasy movements, shuffling from foot to foot, half turns away, tapping with toe or fingers |
| Superiority/Off hand | Arms folded in front of you, smirk on face, looking the other way when spoken to |
| I do not have time to talk | Looking at your watch, rubbing watch |
| Anxiety | Wringing of hands, shuffling form one leg to the other |

To use body language effectively we must ensure it is positive.

It is important that we have an *adult to adult* relationship between the flight crew in order to fulfil our everyday role successfully and to provide a stable platform of trust for co-operation in an emergency.

**Communication Process**

There are four elements in the communication process - the sender, the message, the receiver and the feedback.

Human beings acting as the sender or receiver are influenced by many factors - **their perceptions, attitudes, values, knowledge, expectations, language skills, experience** and their **relationship** to "the other person." These influences act like filters and can impact on the process of sending and receiving messages.

**Identifying Assumptions**

Crewmembers' clear understanding of cockpit communication is imperative to effective CRM and the ultimate safe operation of the aircraft. Obstacles in the communication process must be identified before they can be addressed and removed. Are you guilty of these assumptions?

**Assumption #1**

Do you assume that the message sent is the same as the message received? Or do you consider that the message sent is rarely the same as the message received? If you operate under the first assumption, you would be correct if you were communicating with a machine. However, almost all communication in organizational settings involves the sending of messages from one human to another. Consequently, the message sent is rarely the same as the message received. Each of us has our own unique set of attitudes, motivations, and perceptual frames and we filter incoming messages to some extent. The message we think we are sending may be substantially different from the message that is received.

**Assumption #2**

Do you assume that you communicate only when you consciously choose to do so? Or do you assume that communication is often unplanned and unconscious? The truth is, you cannot not communicate. Simply being in the presence of another person is to communicate with that person, even if you choose not to do so. Such non-verbal stimuli as physical stature, dress and gestures may all serve as unintended messages in the communication process. Furthermore, what others have heard about you and their mental image of you often contradicts the message you hope to transmit. The total message sent incorporates not only the intended messages, but the unintended messages as well. Remember, you cannot not communicate.

**Assumption #3**

Do you assume that meanings are inherent in words? Or do you assume that meanings originate in people? When structuring messages, we often assume that the words constituting the message have a fixed, predictable meaning. We are surprised when others do not understand what we believe to be obvious. If we assume that others may attach their own definitions and connotations to words, then we are not so surprised when semantic confusion arises. For example, "impending layoff" may mean "tomorrow I get axed" to one person, and "I wonder who will be cut" to another. Words have a fixed meaning only when one machine communicates with another.

**Assumption #4**

Do you assume that the communication process ceases after the message has been received? Or do you assume that feedback is an essential element of the communication process? Many people assume that the communication process ends when the message reaches its destination. Unfortunately, this assumption ignores the fact that feedback is necessary if the sender is at all concerned about the impact of that message. Has the message been understood? Has action been taken? How should the message have been structured in order to achieve the desired results? Each of these questions can be answered only by feedback from the receiver. Sending the message is only part of the communication process; the other part is being responsive to feedback from the receiver.

**Assumption #5**

Do you assume that if a communication breakdown occurs, it is invariably the recipient's fault? Or do you assume that a communication breakdown may be a function of your own communication style? There is a saying popular among public speaking teachers, "if the audience is falling asleep, someone should wake up the speaker." Is the communication problem with the sender's behavior rather than with the receiver's behavior? How can the message best be adapted to the receiver's attitudes, motivations and perceptual frame?

**Assumption #6**

Do you assume that most communication problems in your organization could be prevented with communication hardware? Or do you assume that most communication problems in your organization could be prevented with communications software? Hardware includes gadgets, gimmicks, procedures and techniques designed to facilitate information exchange. For example, information routing slips, suggestion boxes, and periodic feedback sessions are types of communication hardware. Software includes the assumptions, attitudes and knowledge you have about the communication process.

After analyzing the six common assumptions you have concluded that effective communication does not just happen, you have taken the first step in changing your own communication style. If you have concluded that effective communication requires concerted effort, you have taken the next step.

"The wonder is not that we communicate so well the wonder is that we communicate at all."

Samuel Johnson

Essential Verbal Communication Skills in CRM

Communication can affect the safety of the operation. Using five aspects of effective verbal communication will assist crewmembers to communicate in a clear and precise manner.

**Inquiry:** Good decisions are based on the quality of information that is assessed. In the cockpit environment we scan instruments to gain information. In varying degrees, the same seeking of information from flight crew, cabin crew, dispatch and ATC should also be brought under consideration when making complex cockpit decisions. One drawback of asking questions in the cockpit is the fear of embarrassment. Clarification of an action or intended action is a right among crewmembers.

**Advocacy:** Advocacy is the clear stating of one's position, even if it is contrary to the accepted position. Should a crewmember disagree with an action or an intended action, it is the crewmember's responsibility to advocate their position. Advocacy is also the attitude of an individual accepting another crewmember's perspective and rationalizing the different points of view for the best operational decision.

**Listening:** The art of listening appears to be a reoccurring failure in many accident reports. Active listening is an action, it is not a passive function. It requires the listener to actively inquire and respond, confirm to the transmitter that the message has been received and understood.

Barriers to effective listening

Verbal Barriers

- Interrupting the speaker
- Nit picking and getting bogged down with details on trivial points
- Talking to another person
- Asking closed questions which inhibits the flow, asking questions on another subject, changing the subject

Non-verbal barriers

- Avoiding eye contact by looking away or closing eyes
- Looking bored and yawning, Fiddling, fidgeting and constantly changing seating position
- Clock watching, Inattention, looking elsewhere, Tidying papers, re- arranging notes
- Switching off due to lack of understanding or perceived difficulty of subject
- Selective listening, listening only to ideas or facts that you want to hear or that you agree with

Becoming distracted this could be by sights or sounds for example a person's accent or repeated use of words or the color of their tie or any particular mannerisms they may have.

**Conflict Resolution:** If crewmembers are effectively advocating their positions, eventually there will be a conflict of opinion. An effective resolution process will help the flight crew to operate efficiently. Conflict can be constructive if cockpit issues are dealt with rationally. Problems may arise when the conflict becomes external to the task at hand. Outside issues should be deferred until another time while the crew deals with the task at hand.

**Critique:** Proper critique is an important element of the successful operation of flight. It begins in pre-flight, continues during the operation of the flight and ends in a post flight debriefing. Critique is an analysis of events, past or future. It is an impersonal survey of how the operation can be improved. All crew members' input to the critique process will improve total crew performance and ultimately improve the safety and efficiency of the operation.

**Active Listening**

The active listener attends to the words and projects their mind into that of the speaker, so that they can align their thoughts and feelings more closely to those of the speaker. Active listening consists of the following two skills:

**Non-Verbal - Attending (to build and maintain rapport)**

- Face the speaker, smile, look relaxed
- Maintain eye contact
- Encourage the other to speak

**Verbal - Questions**

**A. Closed Questions (for short answers)**

- Restrict the range of possible responses
- Useful in getting specific information quickly
- Improper use can make a person feel like hey are being interrogated

Example:

How many duty managers are there? How long are your shifts?

**B. Open-Ended Questions (for long answers)**

- Allows the person a lot of freedom of response
- Useful for identifying attitudes and beliefs
- Can be quite time consuming

Example:

What is your observation on the pilot's techniques in this area? Which other areas would you like to draw our attention to?

**C. Probe Questions (for more information)**

- Ask the person to clarify or elaborate
- Can be verbal or non-verbal

Example:

Tell me more about that?

I see...how did it work out?

**D. Paraphrasing (to show understanding and encouragement)**

Putting the other person's ideas or feeling into your own words

Example:

So, if I understand correctly, you've outlined two problems; double exits and the lack of a stop bar on the runway

Active Listening Is:

- The genuine desire to understand another person's perception
- Listening and expressing - understanding of what another person has said
- Sensitivity to another's thoughts and feelings Active

Listening Is Not:

- Passive or token
- Advice given
- Agreement or disagreement
- Judgmental or critical
- Argumentative

**The Art of Effective Listening**

Being an effective listener takes practice and a sincere effort on behalf of the listener. Problems in effective listening are:

- We speak at approximately 125 words per minute
- We have the capacity to listen at 900 words per minute Our brain spends this excess time:
- Pre-planning (anticipation) - preoccupation with formulating a response and not listening to what the sender is saying
- Detouring (wandering) - waiting for a key word and when it comes up, take the conversation into another area of interest
- Debating - playing the devil's advocate; regardless of what was said, they take the opposite point of view
- Tuning Out - when a message has been heard repeatedly, after a while the receiver does not listen because it is felt that the message is not important

**The effective listener is:**

- Caring
- Trustworthy with integrity
- Accepting
- Lets you talk
- Focuses on thoughts and feelings
- Constructive, focuses on problem solving, not blame
- Encourages self-determination
- Is capable of active listening Listen to More than Words

Effective listening takes into consideration all aspects of communication - verbal, non- verbal and symbolic. For pilots, most communication takes place in the cockpit. This environment is ripe for communication error and misunderstandings because words exclusively represents just 7% of total communication. The communication process can be enhanced by an additional 38% by paying particular attention to the individual's speech characteristics:

- **Rate of speech** Is the individual speaking quickly or slowly? Generally, people speak more quickly when they are excited, angry or upset. Speaking slowly generally suggests calmness and control
- **Inflection Which** words does the individual emphasize? Inflections can help indicate what is most important to the individual

- **Tone of Voice** Is the individual's voice loud or soft, harsh or smooth? Tone of voice can help to determine the individual's emotional state. It can be critical in determining the stress level of other crew members

**Communicating Criticism**

Critique is an efficiency or performance analysis of future, current or past events.

All crewmembers should be encouraged to give critique to enhance the flight operation. Critique is constructive. It is what we think will work best, monitoring of our decisions to ensure performance is as expected, and a debrief as to what will improve total crew performance next time. Critique is a continual process that challenges the dynamic environment of flight.

Occasionally, mistakes happen. Bear in mind that people do not make mistakes on purpose but they are the result of a multitude of factors that may be influencing the individual at any one time. Miscommunication, task overload, misunderstanding of targets, stress or fatigue are some of the factors which could induce errors. Perhaps just letting the person know the consequences of his or her behavior is enough the make the point. Other times, criticism must be communicated. The most effective way to do this is

- Avoid criticizing the person; focus on the behavior exhibited instead
- Describe the specific behavior you observed
- Avoid being sarcastic or parental
- Avoid using vague or general statements
- Avoid using anger
- Avoid asking questions for which you already know the answer
- Describe the impact of the behavior on others in the working environment
- Describe the consequences of the behavior. It is important to help the person see what type of consequences it might have for him or her personally over a period of time
- Reach an agreement on how to change behavior. If the person chooses not to change the behavior after being made aware of its negative impact and consequences, the person is either an intentional trouble maker or under severe emotional strain. Proper disciplinary action should be taken. If the person agrees to modify his or her behavior, then a process should be agreed upon to provide supportive and positive feedback.

**Do**

- Encourage others to talk
- Be tentative, explore
- Express your feelings objectively
- Focus on other's self-determination
- Use problem-sharing approach

**Do Not**

- Degrade the other person, especially in public
- Be dogmatic or self-righteous
- Ignore other's feelings or ideas
- Argue
- Interrupt Conflict

Resolution

The key principle in resolving conflict in the cockpit is the determination of

**What is right, not who is right**

When crewmembers advocate their position, a difference of opinion in the cockpit arises. CRM principles recognize this conflict as not only healthy, but expected. All crew member's input is a required ingredient for synergy to become active.

A problem begins when outside conflict enters the cockpit, when heated emotion, bias, or lack of respect taints the real issue.

- Is it a cockpit issue or does it pertain to something beyond the confines of this cockpit?
- If it is not a cockpit issue, set it aside and deal with it once you are on the ground. Maintain a professional attitude.
- If it is a cockpit issue, resolve it based on what is right and not who is right. Rely on an impartial source of information if possible, an Aircraft Operations Manual or Air Regulation. This is a constructive method of resolution versus the destructive method of who is right.

**How to Manage Angry Conflict**

There will be times, inside or outside the cockpit, that angry conflict will take place. Should this angry conflict take place during a critical phase of flight, it will constitute a serious hazard to safety. The following tips will help you to manage the angry conflict until the problem can be resolved at a more convenient time.

**Maintain Control**

- If possible, suggest another time (cool off)
- Avoid sharing the anger
- Objective: To Listen

**Listen**

- Objective: Allow other to explain
- Use listening skills
    - Open ended questions
    - Probe questions
    - Paraphrasing

**Use Problem Sharing Approach**

- Guide discussion to clarification of problem and constructive exploration of ways to resolve it
  - We have a problem
  - Define the problem-is it cockpit related? Cause vs effects
  - Explore the alternatives and consequences - elicit and suggest
  - What action should we take - pick the safest one
  - Mutual commitment
  - Follow-up

**Maintain respect**

- The use of personal insults and put-downs must be eliminated. "I wonder if we can approach this issue without attacking each other."
- Objective: To clarify the issue as objectively as possible
- Feelings are facts - do not deny the other's experience
- Separate the facts from opinion; mentally separate facts from irate expressions

**Avoid Hasty Responses**

- Allow time for issues (facts vs opinions) to settle
- Wait and go back later

**Seek Constructive Solutions**

- Explore alternatives
- Have other choose, if possible

Effective Communication

Effective communication encompasses the entire scope of the sender's verbal, non-verbal, symbolic message

Effective communication is a recognition that a variety of assumptions and other filters potentially could distort the message that is sent or received

Effective communication involves active listening for clear comprehension

Effective communication completes the circuit of sending, receiving and feedback with all parties sharing a common understanding of the message

**Barriers to Communication**

There are many barriers to communication but we can split them down into 4 areas: Language, Psychological, Physical and general

Following table indicates the main barriers that can affect proper communication

| Language | Psychological | Physical | General |
|---|---|---|---|
| Foreign speech & accent | Shy | Noise | Authority Gradient |
| Regional dialects | Aggressive | Too little space | Rank |
| Double meanings | Personality clash | Hot/Cold | Experience |
| Jargon | Lack of interest | Distance | Cultural differences |
| Technical language | Education | Time | Lack of knowledge |
| Rambling | Status | Disability (deaf/blind) | Company structure |
| Insufficient information given | Intelligence | Post Sept 11th, the locked f/deck door | Hardware failures resulting in emails or tel msgs not getting picked up |
| | Fear | Hygiene (body odour/bad breath) | Gender |
| | Stress | Discomfort | Lockeddoor policy. See next exercise below |
| | | Fatigue | Inaccurate perceptions – the cabin crew won't understand or the pilots won't be interested |

1. **Physical Barriers**

The physical barriers are normally barriers that prevents the communication from being received - items such as noise, hearing loss, confusion, fatigue, poor radio equipment. The pilot has some control over these barriers.

2. **Psycho-social**

The psycho-social barriers are much harder to detect and control; stemming from inside an individual, they encompass attitudes, feeling, bias and prejudice. For example, strong negative feelings in the cockpit can lead to a total lack of communication. Hostile environments create a safety hazard. Pilots must maintain a professional attitude to help to overcome the psycho-social barrier.

### 3. Technique-related

The technique employed to process information can be a barrier in itself. The professional who processes information does it the same way every time. The individual answers two questions before responding or acting on any information:

- What is the literal meaning?
- What is the contextual meaning?

If these questions cannot be answered to the receiver's satisfaction, then clarification should be sought. After this, the next question should be:

- What action is appropriate in response to this communication?

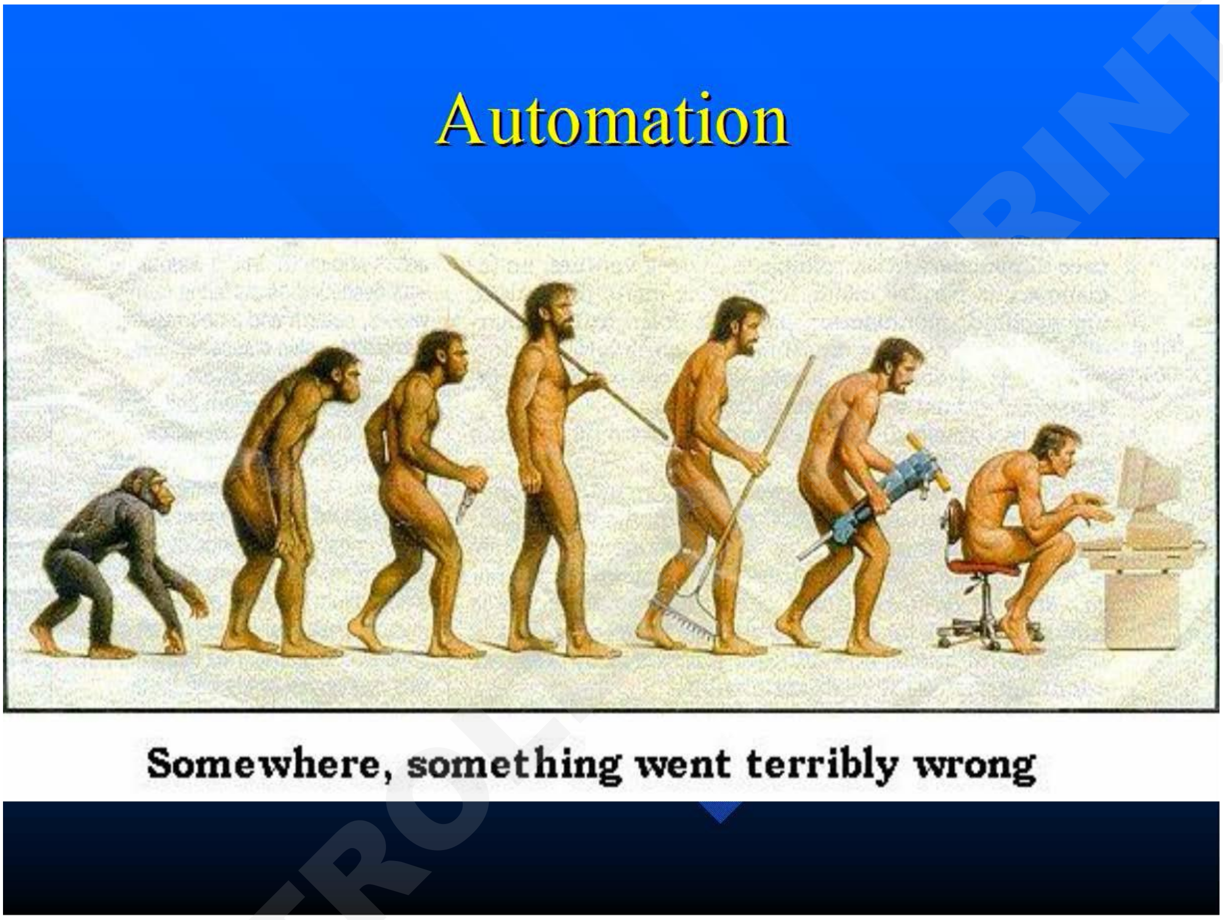
This type of controlled response creates a professional atmosphere and no matter what the feelings are between the crewmembers this professionalism cuts through much of the personality problems.

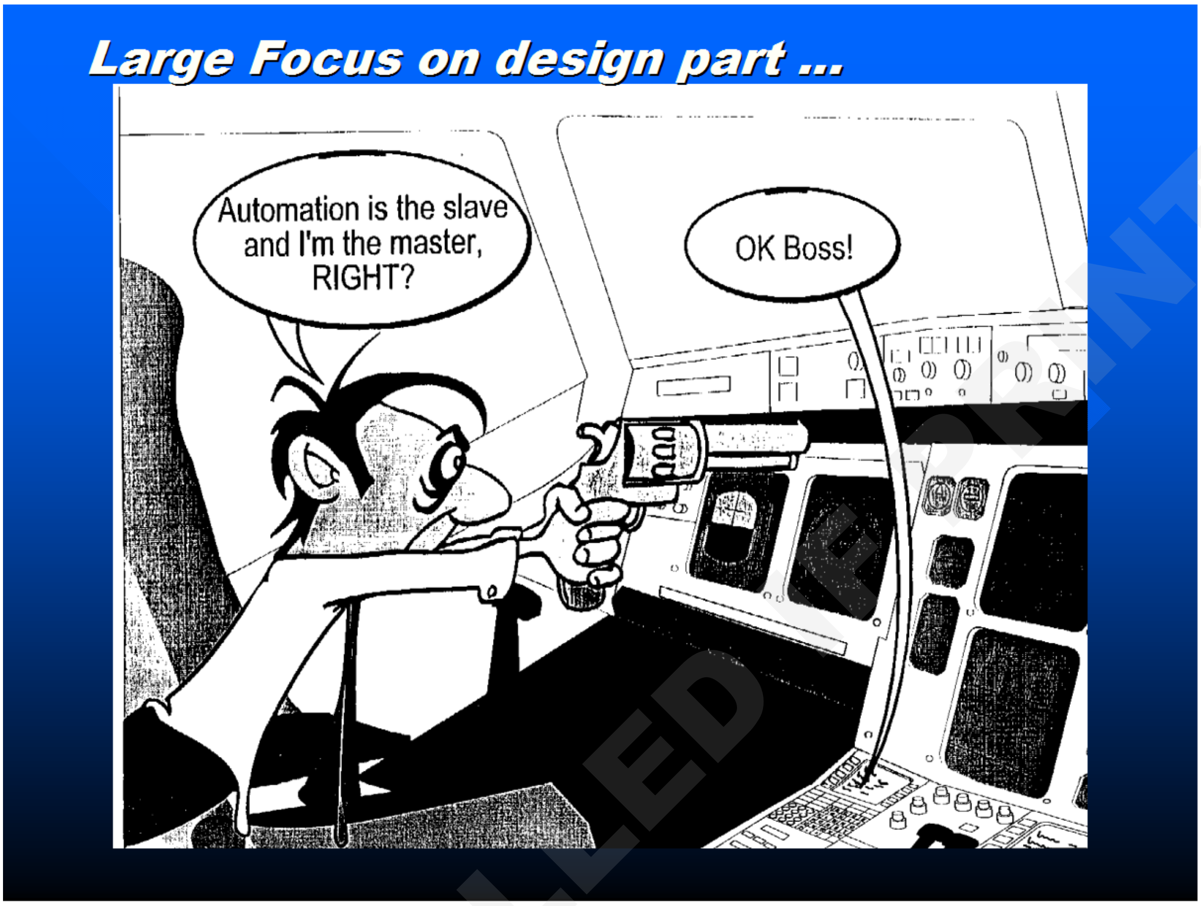
**The bottom line for Crew Resource Management skills in promoting good communication in the cockpit**

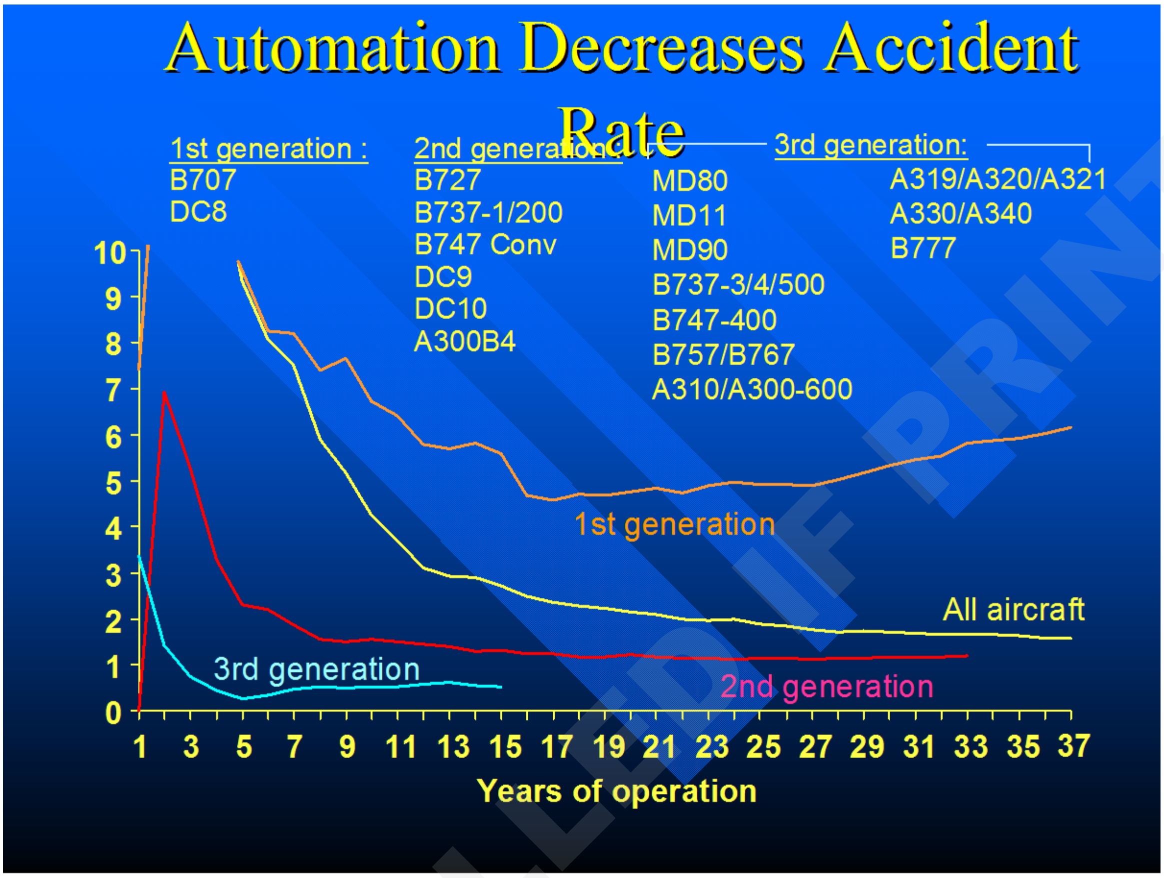
NASA tested 7,500 flight crews and determined that the two most significant factors in the promotion of good CRM principles were:

- The Captain giving a thorough briefing
- The First Officer making inquiries and advocating his/her position

## Chapter 13 Automation




Large Focus on design part ...
Automation is the slave and I'm the master, RIGHT?
OK Boss!


Automation Decreases Accident Rate
1st generation :
B707
DC8
2nd generation:
B727
B737-1/200
B747 Conv
DC9
DC10
A300B4
MD80
MD11
MD90
B737-3/4/500
B747-400
B757/B767
A310/A300-600
3rd generation:
A319/A320/A321
A330/A340
B777
1st generation
All aircraft
3rd generation
2nd generation
Years of operation

**General Design Considerations & Implications of automation**

**Cockpit design:**

General Design Considerations

The human being in the cockpit is the critical and the most flexible component of the aviation system. His/her performance in the cockpit is the last opportunity to compensate for any combination of weakened system defenses that can lead to accidents or incidents.

There are wide variations in individual size, individual limitations, and in individual performance. It is not surprising that a great deal of effort is made to maximize the performance of all crewmembers.

A major international problem in the cockpit involves the use of color. One of the reasons is that there are no international rules regarding the use of colors, although there is a growing recognition that this is a problem area that is rife with international complications.

A major difficulty is that not all cultures view some specific colors in the same light. In the US, the principal aviation colors of red, amber, and green are now specified as follows:

- Red for warning lights (lights indicating a hazard which may require immediate corrective action);
- Amber, for caution lights (lights indicating the possible need for future corrective action);
- Green, for safe operation lights; and

Other colors including white, can be used for other lights provided the colour differs sufficiently from the colors previously mentioned

There are 3 main elements involved in developing crew stations in a new aircraft. These are:

- The size and shape
- The reach
- Vision of the prospective population.

**The size and shape**

The size and shape of the prospective user population can become very involved both because of the number of combinations possible and because of the shortage of data for populations other than European and American males.

A typical computer model uses 14 external body dimensions of the 5$^{th}$, 50$^{th}$ and 95$^{th}$ percent of groups of potential pilots in order to ensure that all crew members are able to reach their controls from various positions in the flight compartment. The designer is forced to utilize all available data and then use informed judgment to cover gender and racial differences.

**Reach**

A second element is reach. Reach has three variables: restraint configuration (utilizing three positions of the shoulder harness), type of grip (fingertip, pinch, or grasp), and type of clothing. Twenty-seven combinations of reach can be simulated. One manufacturer has stated that it examined the sizes and shapes of 3,600 individuals in determining limits that were acceptable.

**Vision**

The third element involved in developing the crew station for a new airplane is vision. Here consideration must be given for both displays within the cockpit and for the external environment. External vision requirements can define the configuration of the windshield. Requirements consider among other things, the blocking obscuration of such items as fire handles and control wheels.

An interesting concept in the visual element involves the visual cone. It is well known that the field of vision narrows under periods of high concentration or stress. In order to recognize this phenomena, information necessary during critical periods of flight is displayed within what is known as the primary vision cone. This has been defined as the limits of vision associated with eye motion alone. The secondary vision cone includes the area that can be visually covered with a combination of both head and eye motion.

Recently, increased attention has involved crash injury protection. The National Highway Transportation Safety Board developed a computer program to analyze the reaction of passengers in automobile crash situations. The program was adapted by the Air Force to analyze aircraft crash scenarios and the program was later modified to extend to commercial transports. It has been used in recent times to specify acceptable locations for head-up displays in present aircraft.

**The 'sidestick' issue**

There have been many innovations in air transport cockpits with human factor implications in the past few years, but none that was more dramatic and initially controversial as the Airbus Industries sidestick.

The initial controversy about the sidestick is subsiding as experience with it has increased.

Question: What are the advantages of a sidestick?

Answer: Comfortable, frees up lots of space in front of the pilot

Question: Why did Boeing not introduce a sidestick?

Answer: Although the sidestick has many advantages it also brings a few problems. One is that the Pilot cannot monitor the pilot flying's control inputs through control movement. Also, the autopilot's input can be monitored more easily through observing the movements of the control yokes.

The use of a 'small displacement controller' also makes exerting high control forces to indicated the edges of the flight envelope nearly impossible. As a result, Boeing would have had to effect hard limits on the flight controls rather than the desired soft limits.

Boeing made a detailed analysis using an in- flight simulator and found the control yoke to work better. The Boeing 777 –300 uses a somewhat smaller yoke than other Boeing models.

It should be understood that there are many pilots who do prefer the sidestick controller and in general Airbus Aircraft. Certainly, both manufacturers have made significant contributions with their design elements and both produce excellent aircraft.

**Implications of automation**

One approach taken to improve the situation in the cockpit during high activity phases is automating as many processes as possible.

Flight deck automation on commercial transport aircraft has been well received by pilots and the aviation industry as a whole.

**Automated processes:**

The positive side to automation is the fact that accident rates for advanced technology aircraft are generally lower than those of comparable conventional aircraft.
Nevertheless, there is a negative side. Pilots, scientists, and aviation safety experts have expressed concerns about flight deck automation in that, to a certain degree, the control, or part of the control, is taken from the pilot and in some cases, decisions are made by computers. Transferring control from a human to a computer system is not always entirely favorable.
With backing from the FAA, a team of researchers from Oregon State University completed a study to address the deficiencies related to automation.
Their work produced a list of flight deck automation human factors issues, over 700 instances of evidence related to those issues. This study of flight-deck automation highlighted many perceived problems and concerns,

1. Automation may be poorly designed
2. Automation function and logic may be poorly designed
3. Automation may lack the functionality or performance desired by pilots
4. Automation may lack reasonable functionality
5. Workarounds may be necessary
6. Automation operation may be based on few variables
7. Design specifications may be inadequate
8. Automation performance may be limited
9. Automation performance may be limited
10. Automation performance may be reduced at margins of envelope
11. Operational knowledge may be lacking in design process
12. Testing may be inadequate

13. Automation requirements may conflict
14. Automation may fail to perform according to pilot expectations
15. Automation behavior may be unexpected and unexplained
16. Failure modes may be unanticipated by designers
17. Automation may not control the aircraft the way pilots do
18. Automation may use different control strategies than pilot
19. Automation may be too complex
20. Modes may proliferate
21. Automation may be too complex and tightly coupled
22. Complex automation may have overly simplistic interface
23. Automation design may not be human-centred
24. Human centred design philosophy may be lacking
25. Non-automated pilot tasks may not be integrated
26. Function allocation may be difficult
27. Automation may usurp pilot authority
28. Communication between computers may be unsupervise
29. Mode transitions may be uncommented
30. Envelope protections may limit pilot authority
31. Disengagement may be impossible
32. Pilots have responsibility but may lack authority
33. Automation protections which pilots rely upon can be lost
34. Protections may be lost though pilots continue to rely on them
35. Automation may not be standardized.
36. Standardization may be lacking
37. Software versions may proliferate
38. Similarity may be superficial
39. Automation may be poorly integrated
40. Automation documentation may be inadequate
41. Printed media may be inadequate
42. Pilot/automation interfaces may be poorly designed
43. Interface may be poorly designed
44. Programming may be difficult
45. Data input prompts may be poor
46. Automation controls may be poorly designed
47. Data entry errors on keyboards may occur
48. Data entry format may be inflexible
49. Data re-entry may be required
50. Inadvertent autopilot disengagement may be too easy
51. Automation displays may be poorly designed
52. Displays may be poorly designed
53. Data access may be difficult
54. Information integration may be required

55. Auditory displays may be poorly designed
56. Automation may obscure its own mode (state) and behaviour from pilots
57. Behavior of automation may not be apparent
58. Feedback may be poor
59. Side-sticks may not be coupled
60. Vertical profile visualization may be difficult
61. Mode awareness may be lacking
62. Pilots may misunderstand automation intent
63. Automation may obscure situation information from pilots
64. Trend information may be lacking
65. State prediction may be lacking
66. Data may be too abstract
67. Maintenance information may be inaccessible
68. Insufficient information may be displayed
69. Automation may provide too much information
70. Information overload may exist
71. Automation may not be compatible with the ATC system
72. Flight deck automation may be incompatible with ATC system
73. Automation may conflict with ATC
74. Traffic coordination requirements may increase
75. Cultural differences may not be considered in the design of automation
76. The use of automation may lead to problems
77. The fact that automation is used may lead to problems / problems for pilots
78. Pilots may not perform as well when using automation
79. Automation use may slow pilot responses
80. Pilots may have difficulty assuming control from automation
81. Manual operation may be difficult after transition from automated control
82. Pilots may have difficulty recovering from automation failures
83. Failure recovery may be difficult
84. Pilot roles may be different in automated aircraft.
85. Pilot's role may be changed
86. Pilot selection may be more difficult
87. Older pilots may be less accepting of automation
88. Job satisfaction may be reduced
89. Automation may be overemphasized in pilot evaluation
90. New tasks and errors may exist
91. Pilots may be out of the control loop when they use automation
92. Pilots may be out of the loop
93. Pilots may place too much confidence in automation
94. Pilots may be overconfident in automation
95. Pilots may become complacent
96. Pilots may be uncritical of automation actions

97. Pilots may be reluctant to assume control
98. Pilots may abdicate responsibility to automation
99. Pilots may use automation when they should not
100. Pilots may over rely on automation
101. Pilots may not place enough confidence in automation
102. Pilots may lack confidence in automation
103. False alarms may be frequent
104. Pilots may not use automation when they should
105. Pilots may under rely on automation
106. Pilots of automated aircraft may not acquire or maintain manual skills
107. Manual skills may not be acquired
108. Manual skills may be lost
109. Scan pattern may change
110. Pilots may lose automation skills if they do not regularly use automation
111. Pilots may experience more fatigue in automated aircraft
112. Fatigue may be induced
113. The fact that automation is used may lead to problems for airlines
114. Airlines may not adequately involve pilots in equipment selection
115. Pilots may not be involved in equipment selection
116. Airline automation policies and procedures may be inadequate
117. Automation use philosophy may be lacking
118. Procedures may assume automation
119. Use may be required by company
120. Airlines may assign two low automation time pilots to a crew
121. Crew assignment may be inappropriate
122. The use of automation function and logic may lead to problems for pilots
123. Pilot workload may be increased by automation
124. Planning requirements may be increased
125. Information processing load may be increased
126. Pilot workload may not be optimised by automation
127. Automation may adversely affect pilot workload
128. Pilots may focus too much attention on automation
129. Automation may demand attention
130. Monitoring requirements may be excessive
131. Pilots may have difficulty with automation complexity
132. Pilots may not understand automation adequately
133. Understanding of automation may be inadequate
134. Automation interaction may be misunderstood
135. Pilots may have difficulty deciding how much automation to use
136. Pilots may make mode selection errors / Mode selection may be incorrect
137. Pilots may have difficulty transitioning between automated and conventional
138. Transitioning between aircraft may increase errors

139. The use of automation function and logic may lead to problems for airlines
140. Airlines may not provide adequate non-automated operations training
141. Deficiencies in basic aircraft training may exist
142. Airlines may not provide adequate automation training
143. Training requirements may neglect automation
144. Training philosophy may be lacking
145. Automation management training may be lacking
146. Instructor training requirements may be inadequate
147. Transitioning between aircraft may increase training requirements
148. Airlines may not keep automation databases up to date
149. Database may be erroneous or incomplete
150. The use of pilot/automation interfaces may lead to problems
151. Pilot situation awareness may be reduced by automation
152. Situation awareness may be reduced
153. Pilots may have difficulty assessing automation failures
154. Failure assessment may be difficult
155. Crew coordination may be more difficult in automated aircraft
156. Crew coordination problems may occur
157. Cross checking may be difficult
158. Pilot control authority may be diffused
159. Inter-pilot communication may be reduced
160. PF may help PNF program automation

Examples of some automation perceived problems[1]

Pilots may be out of the loop:

Pilots may be out of the control loop and peripheral to the actual operation of the aircraft and

[1] Reference (ASRS = Aviation Safety Reporting System)

therefore, not prepared to assume control when necessary.

"...the captain allowed himself to remain removed from the 'control loop' by leaving the autopilot engaged." (NTSB, 1986)

**Manual skills may not be acquired:**

Low time pilots assigned to advanced technology aircraft may not acquire manual flying skills, which are still required.

"'Standard' approaches are rarely made on the Air Inter network (about three per pilot per year), and pilots receive much less training in manual procedures than for ILS approaches. On this aircraft, the requirement to qualify on type is three VOR approaches and one NDB approach per crew. A VOR approach is required for the final check. Finally, the Air Inter route conversion instruction manual recommends to instructors that a VOR/NDB approach or an ILS approach without glide is practiced each time it is compatible with the airport traffic. Statistics of some 25 trainees show that each trainee practices only five or six VOR or NDB approaches before entering airline service." (Ministere de L'Equipement, des Transports, 1993)

**Information overload may exist:**

Large amounts and/or poor formatting of information may increase pilot workload.

"Advances in technology now make it possible to generate and display, in an unlimited variety of formats, much more information than the human operator can assimilate and interpret." (Air Transport Association of America, 1989)

**Failure recovery may be difficult:**

When automation fails, pilots may have difficulty taking over monitoring, decision-making, and control tasks.

"Two occasions going into Gatwick there were frequent re-programming on the descent. The CDU went blank showing ‘FMS’ indicating the Flight Management Computers had gone out of synch and were in the process of re-interrogating each other. This takes a couple of minutes and requires the pilot navigate horizontally and vertically by reference to the charts and raw data during this particularly busy time. When the computers come back they must be re-programmed and checked if they are to be used for the remainder of the arrival." (aviation safety analyst)

**Pilots may be reluctant to assume control:**

Pilots may be reluctant to assume control from automation. When automation malfunctions, this may lead to unsafe conditions.

"... some pilots remain reluctant to interfere with automated process, in spite of some evidence of malfunction." (ICAO, 1992)

**Sidesticks may not be coupled**:

Sidesticks may not be coupled with each other or the autopilot, possibly reducing awareness of the other pilot's or the autopilot's inputs and resulting in reduced situation awareness and/or improper control actions.

The Sidesticks aren't connected to each other. I don't know if unusual attitudes are being caused by turbulence or the other pilot." (A320 Captain)

**Controls of automation may be poorly designed:**

Automation controls may be designed so they are difficult to access and activate quickly and accurately, or easy to activate inadvertently.

The vertical speed and altitude selection knobs of the flight control unit (FCU) are close to each other, and instead of operating the vertical speed knob , the pilot CM.2 had inadvertently operated the altitude selection knob...the Court has specifically suggested a design change with respect to the two knobs..." (Ministry of Civil Aviation; Government of India, 1990)

**Scan pattern may change:**

Display layout in automated flight decks may change the traditional instrument scan pattern, possibly leading to loss of skills which may be needed upon transitioning to conventional aircraft.

"The only problem I can think of is dependence on it. A pilot's scan tends to slow down and narrow." (B737 captain)

**Interface may be poorly designed:**

The pilot automation interface may be poorly designed with respect to human factors considerations, possibly resulting in poor pilot performance or pilot dissatisfaction.

"Because of aircraft design I am not able to see the horizontal situation indicator when properly seated and aligned as it is positioned behind the control column." (asrs report number 60408)

**Disengagement may be impossible:**

Pilots may not be able to disengage automation, resulting in limits to pilot authority. "...the crew was unable to override the [braking system] lockout and to operate ground spoilers and engine thrust reversers." (Main Commission Aircraft Accident Investigation, 1994)

**Mode transitions may be un-commanded:**

Automation may change modes without pilot commands to do so, possibly producing surprising behavior.

"As identified in recent research, unanticipated mode changes are a concern, particularly when transitioning from climbing/descending to level flight." (B757 captain)

**Pilots may lack confidence in automation:**

Pilots may lack confidence in automation due to their experience (or lack thereof) with it. This may result in a failure to use automation when it should be used.
"I am beginning to distrust the alt arm mode of the autopilot to the point where I'd rather fly most approaches manually!" (asrs report number 62983)

**Manual operation may be difficult after transition from automated control:**

In some situations, flight control may be difficult after transition from automated to manual flight.
the captains lost control of the airplane when, after disengaging the autopilot, he failed to make the proper flight control corrections to recover the airplane." (NTSB, 1986, p. 34)

**Envelope protections may limit pilot authority:**

Envelope protections may prevent necessary correction maneuvers in critical situations, such as when recovering from unusual attitudes.
On board computers override a pilot's input ...-. An unusual or abrupt control maneuver may avoid an accident and potential loss of life." (B737300 captain)

## Chapter 14 Controlled Flight into Terrain

**General:**

Controlled flight into terrain – CFIT is one of the factors which is prominent as a cause of fatal accidents

CFIT accident is defined as

> It can occur during any stage of the flight.
>
> Regarding statistics, if during the approach and landing phase, the aircraft lands short of the runway this accident can be classed as both a CFIT and also an approach and landing accident, this sometimes leads to a misinterpretation of statistics.

It can occur during any stage of the flight.

Regarding statistics, if during the approach and landing phase, the aircraft lands short of the runway this accident can be classed as both a CFIT and also an approach and landing accident, this sometimes leads to a misinterpretation of statistics.

Virtually all CFIT accidents involve either

- An error in Navigation
- In-effective monitoring
- Failure to follow SOP's (standard operating procedures)

There is little question that the aircraft was not where it was though to be when it crashed. CFIT accidents are nothing new, in March 1931 the Southern Cloud, a tri-motor Fokker crashed into the snowy mountains 200 miles northeast of Melbourne. Since then over 30,000 pax and crew have lost their lives in terrain related accidents.

**Measures set in place to reduce the risk of a CFIT accident**

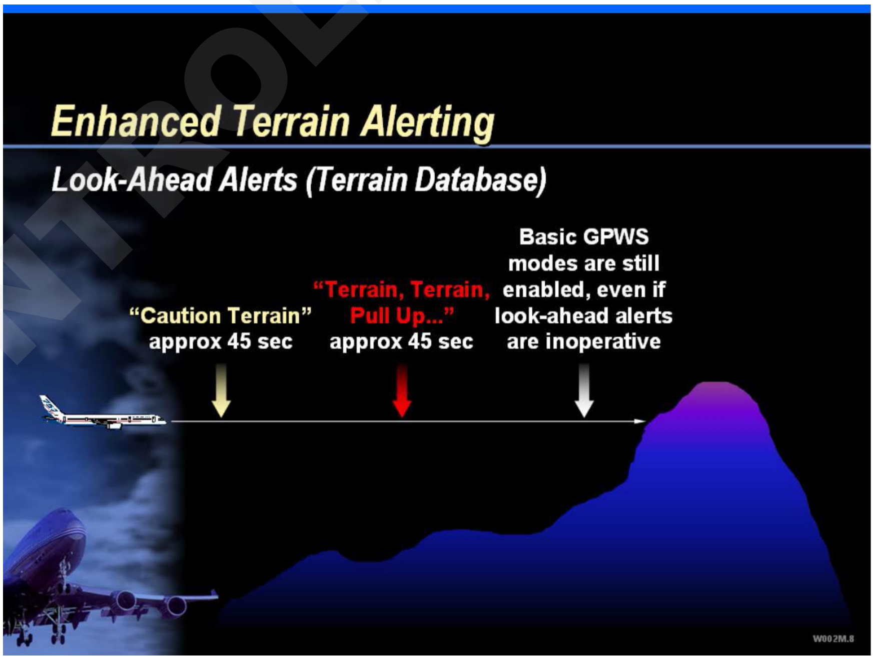
- In the late 1960's we had the introduction of the radio altimeter
- The introduction of the GPWS. Electronics engineer with SAS Scandinavian Airlines started this concept in Europe.
- In 1971 it had been voluntarily installed by a number of airlines.
- In 1973 Boeing offered GPWS as a recommended safety device and by 1974 the GPWS was a basic part of all aircraft Boeing, manufactured.
- In 1975 the FAA enacted a rule requiring all large transport aircraft to be fitted with a GPWS this followed a TWA B727 CFIT crash the previous December at Maryland
- Expanding and upgrading ATC radar and tools.
- Around the 1975 period FAA software experts designed an ATC software package called MSAW – Minimum Safe Altitude Warning.
- It was developed for use at ATC ARTS (Automatic Radar Terminal Systems) facilities in the US. The MSAW requires the ARTS radar capability and it is in part responsible for the good CFIT record in the US.
- MSAW's detect aircraft that are flying below minimum safe altitudes and enable the controller to warn the pilot. It is the controller's version of a GPWS.
- VASI, ILS, DME and other Nav aids. Glide slope guidance in the form of ILS glide slopes or VASI visual approach slope indicators.

An immediate drop off in CFIT accidents for large transport aircraft in the US followed the 1975 mandatory installation of GPWS.
Commercial airline CFIT losses dropped from 8 hulls per year to about 1 every 2 years. The actual figures are 17 fatal accidents during the 5 years preceding the introduction of GPWS and only 2 in the following 5 years. This clearly shows that CFIT ac-accidents can be better controlled with GPWS.

There are strong recommendations that the use of GPWS is mandatory for domestic commercial operations, including those of all regional and air taxi operations

71% of the worldwide CFIT accidents, which occurred between 1988 to 1994, happened to smaller aircraft authorized to carry no more than 9 passengers. To date no appropriate rule or regulation applies to this category of air transport.

Currently less than 5% of the world commercial aircraft fleet is not equipped with GPWS.
In order to meet the problem on a worldwide basis ICAO has issued standards that require GPWS to be fitted in all new commercial aircraft that fly internationally and with a maximum gross takeoff weight of 12,566lb or more and that carry more than 9 passengers.
Unfortunately, ICAO has no enforcement authority (its standards are recommended standards only) and its concerns are basically limited to international flying. But at least it's a step in the right direction.
The difficulty with the GPWS program that limited installation in the smaller commercial aircraft operations was the cost. The early GPWS had too many false warnings, late warnings and occasionally no warnings. The consequence was that pilots using the early GPWS frequently delayed response to a valid warning resulting in an unnecessary crash.
There have been modifications and improvements to the original system, which have eliminated virtually all of the original complaints. Unfortunately, the revised and advanced GPWS have not always been installed and some of the original Mark 1 systems are still in use.
The demonstrated reduction in CFIT risk is about 20 times even when using the early generation equipment and for the latest generation equipment the reduction is about 50 times. These are very significant reductions



**REFERENCES**

- Human Factors Training Manual ICAO Doc 9683 AN/950
- CAP 737 Crew Resource Management Training
- CAP 716 Aviation Maintenance Human Factors (EASA / JAR145 Approved Organizations) Guidance Material on the UK CAA Interpretation of Part-145 Human Factors and Error Management Requirements
- FAA National Plan for Civil Aviation Human Factors. An Initiative for Research and Application
- Boeing Statistical Summary of Commercial Jet Airplane Accidents, World Wide Operation 1959, 2003
- Crew Resource Management, Global Air Training.
- Human Factors Guide for Aviation Maintenance (1998), Dr. Michael Maddox, Editor, Prepared by Galaxy Scientific Corporation, Advanced Information Technology Division, Atlanta, Georgia, Prepared for Jean Watson, Office of Aviation Medicine, Federal Aviation Administration
- Presentation: Introduction to Safety and Human Factors in Aviation Maintenance, Cairo, April 2002, David Hall, david.hall@srg.caa.co.uk, Washington, DC 20591

**USEFUL WEB-SITES**

- http://www.safe-skies.com/airline_safety.htm
- http://www.boeing.com/commercial/safety/flash.html
- www.hfskyway.faa.gov
- www.raes-hfg.com
- www.boeing.com/commercial
- www.galaxyscientific.com
- www.ifairworthy.org
- www.camc.ca
- www.davidmarx.com
- www.marss.org
- www.air-transport.org
- www.system-safety.com

**USEFUL DOCUMENTS/ MATERIAL:**

- ATA Specification 113 for Maintenance Human Factors Program Guidelines. http://www.air-transport.org/public/publications/57.asp
- People, Practices and Procedures in Aviation Engineering and Maintenance: A Practical Guide to Human Factors in the Workplace. 1999. www.raes.org.uk
- Human-Centered Management Guide for Aircraft Maintenance: Aircraft Dispatch and Maintenance Safety (ADAMS). (2000)
- MRM Handbook. hfskyway.faa.gov
- GAIN. Operator's Flight Safety Handbook. Issue 1. June 2000. www.gainweb.org
- "Every Day" - video
- "Engineering Solutions to Human Problems" - videos and training package

- Boeing introduces MEDA: Maintenance Error Decision Aid. Rankin, W., Allen, J., Sargent, R. Airliner, April-June 1996
- Human Factors Process for Reducing Maintenance Errors. Allen J., Rankin W, Sargent B. http://www.boeing.com/commercial/aeromagazine/aero_03/textonly/m01txt.html
- The link between employee mishap culpability and commercial aviation safety. David Marx. hfskyway.faa.gov
- Marx D. Discipline and the "blame-free" culture. Proceedings of the Twelfth Meeting on Human Factors Issues in Aircraft Maintenance and Inspection, 1998
- Learning from our mistakes: A review of Maintenance Error Investigation and Analysis Systems. Marx D Jan 1998. On: FAA CD ROM "Human Factors in Aviation Maintenance and Inspection: Ten years of Research and Development" (1999) , and hfskyway.faa.gov
- Drury C, Sarac A, Driscoll D. Documentation Design Aid Development. Chapter 4, FAA/AAM Human Factors in Aviation Maintenance and Inspection Research Phase VII, Progress Report, 1997. hfskyway.faa.gov
- Documentation Design Aid. hfskyway.faa.gov
- Meghashyam G. Electronic Ergonomic Audit System for Maintenance and Inspection. Chapter 8, FAA/AAM Human Factors in Aviation Maintenance and Inspection Research Phase VI, Progress Report, 1996. hfskyway.faa.gov
- HSE. Improving Compliance with Safety Procedures: Reducing Industrial Violations.
- 195. Health & Safety Executive.
- HSE. Reducing Error and Influencing Behaviour. HSG48, 2nd Edition, 1999. HSE Books.
- Drury, C. Human Factors Good Practices in Flourescent Penetrant Inspection. FAA. August 1999. Hfskyway.faa.gov
- AECMA Simplified English Guide for the Preparation of Aircraft Maintenance Documentation

**SOURCES OF FURTHER INFORMATION**

- CAA HF Handbook
- ICAO HF Digests
- Conference/ workshop proceedings
- AAIB & NTSB reports
- Incident data and analyses
- IFA videos
- Jim Reason's books
- Magazines, newsletters, etc.
- Software tools
- HSE publications
- List of further references provided with this course

**THIS PAGE INTENTIONALLY LEFT BLANK**

## A320 Requalification Flight training

A320 Requalification Flight training from 12 to 35 months....................3
A320 Requalification Flight training from 36 to 59 months....................11

**This page intentionally left blank**

## A320 Requalification Flight training from 12 to 35 months

| FFS 1 | REQUALIFICATION - A 320 | | | | |
|---|---|---|---|---|---|
| **Trainee Name** | | | **Date** | | |
| **A/C DATA** | | | | | |
| **ZFW** | 54T | **ZFW C.G.** | 28.4% | **THRUST RED. Alt.** | 1500" AGL |
| **TOTAL FUEL** | 10T | **TAKEOFF FLAPS** | 2 | **ACCEL. Alt.** | 3000" AGL |
| **TAKEOFF WEIGHT** | 64T | **CRUISE ALTITUDE** | FL | **TAKEOFF FLEX** | |
| **COST INDEX** | 30 | **SPEEDS** | $V_1$ : | $V_R$ : | $V_2$ : |

| **SESSION DATA AND WEATHER** | | | |
|---|---|---|---|
| **DEPARTURE AIRPORT** | **AIRPORT**<br>HECA | **RUNWAY IN USE**<br>05R | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | TO LXR FLIGHT PLAN ROUT CLB FL 250 | | |
| **ARRIVAL AIRPORT** | **AIRPORT**<br>HESH | **RUNWAY IN USE**<br>04L | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | | | |

| **PF SESSION** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| NOPRMAL PROCEDURE | | | | |
| VISUAL APPROACH | | | | |
| ILS APPROPACH | | | | |
| R-NAV APPROACH | | | | |
| LANDING | | | | |
| SIDE STICK PRIORITY | | | | |
| WIND SHEAR | | | | |
| INITIATION OF CHECKLISTS | | | | |
| **PNF SESSION** | **US** | **S1** | **S2** | **S3** |
| NORMAL PROCEDURES | | | | |
| USE OF CHECKLIST | | | | |
| USE OF ECAM | | | | |
| SUPPORT OF PF | | | | |
| **GENERAL PERFORMANCE** | **US** | **S1** | **S2** | **S3** |
| FLYING ACCURACY | | | | |
| USE OF FMS | | | | |
| USE OF FLIGHT GUIDANCE SYSTEM | | | | |
| USE OF FD – FPV – FPD CROSS POINTERS | | | | |
| IFR PROCEDURES | | | | |
| CREW COORDINATION | | | | |
| GENERAL PROGRESS | | | | |
| GENERAL PERFORMANCE | | | | |
| BRIEFINGS | | | | |

**Comments:**

| TIME | REQUALIFICATION TRAINING FFS | AP | FD | ATHR | TRK-FPA |
|---|---|---|---|---|---|
| | MEMORY ITEMS (REVIEW) | | | | |
| | APPROACHES ( ILS & VOR & VISUAL& RNAV) | | | | |
| | REJECTED TAKE OFF | | | | |
| | **PF – CM1** | | | | |
| | FIRST ENG START (AUTO) | | | | |
| | SECOND ENG START (MANUAL) DUE TO FAULT | | | | |
| | AFTER START | | | | |
| | TAXI | | | | |
| | BEFORE TAKE OFF | | | | |
| | **TAKEOFF** | | | | |
| | SIDE STICK PRIORITY | | | | |
| | TCAS | | | | |
| | FMGC PRACTICE | | | | |
| | RADER VECTOR ILS APPROACH (SELECTED ESTABLISH FROM ABOVE) | | | | |
| | WIND SHEAR DURING FINAL APP | | | | |
| | RADER VECTOR VOR APPROACH (SELECTED) | | | | |
| | GPWS | | | | |
| | RNAV APPROACH | | | | |
| | LANDING | | | | |
| | T.O WIND SHEAR | | | | |
| | VISUAL APPROACH | | | | |
| | T.O | | | | |
| | REJECTED T.O | | | | |
| | **PF – CM2** | | | | |
| | **TAKEOFF** | | | | |
| | SIDE STICK PRIORITY | | | | |
| | TCAS | | | | |
| | FMGC PRACTICE | | | | |
| | RADER VECTOR ILS APPROACH (SELECTED ESTABLISH FROM ABOVE) | | | | |
| | WIND SHEAR DURING FINAL APP | | | | |
| | RADER VECTOR VOR APPROACH (SELECTED) | | | | |
| | GPWS | | | | |
| | RNAV APPROACH | | | | |
| | LANDING | | | | |
| | T.O WIND SHEAR | | | | |
| | VISUAL APPROACH | | | | |
| | T.O | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| **PROGRESS IS NORMAL** □ | **MAY NEED EXTRA TRAINING** □ | **NEEDS EXTRA TRAINING NOW** □ |
|---|---|---|
| Trainee Name | Code | Signature |
| Instructor Name | Code | Signature |

| FFS 2 | REQUALIFICATION - A 320 | | | | | | |
|---|---|---|---|---|---|---|---|
| **Trainee Name** | | | | **Date** | | | |
| | | | **A/C DATA** | | | | |
| **ZFW** | 50T | **ZFW C.G.** | | 27.7% | **THRUST RED. Alt.** | …." AGL | |
| **TOTAL FUEL** | 9T | **TAKEOFF FLAPS** | | 2 | **ACCEL. Alt.** | …." AGL | |
| **TAKEOFF WEIGHT** | 59T | **CRUISE ALTITUDE** | | FL250 | **TAKEOFF FLEX** | | |
| **COST INDEX** | 30 | **SPEEDS** | $V_1$ : ..... | | $V_R$ : ..... | $V_2$ : ….. | |

| **SESSION DATA AND WEATHER** | | | |
|---|---|---|---|
| **DEPARTURE AIRPORT** | **AIRPORT**<br>From "TRIP" menu | **RUNWAY IN USE**<br>From "TRIP" menu | |
| **WEATHER** | (Out of "WEATHER" menu I " *SUMMER* " or II " *WINTER* " ) | | |
| **ATC** | …………………………* | | |
| **ARRIVAL AIRPORT** | **AIRPORT**<br>From "TRIP" menu | **RUNWAY IN USE**<br>From "TRIP" menu | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | …………………………..* | | |
| **ALTERNATE AIRPORT** | **AIRPORT** | **RUNWAY IN USE** | |
| **WEATHER** | | | |
| **ATC** | | | |

**SESSION OBJECTIVE**

- ECAM SEQ
- TASK SHARING
- SINGLE ENG. APPS
- CRM
- COMPLYING WITH FOM AND GSOP
-
-

**Notes:**

| TIME | RECURREN TRAINING FFS | AP | FD | ATHR | TRK-FPA |
|---|---|---|---|---|---|
| | **CM 1** | | | | |
| | ENGINE START ENG. START PROBLEMS | | | | |
| | TAKE OFF (Low Visibility) engine fail before $V_1$ REJECTED T/O | | | | |
| | **INIT TAKE OFF** | | | | |
| | TCAS | | | | |
| | CLIMB FL 60 ENGINE STALL " RESTORE " | √ | √ | √ | |
| | UN STABILIZED APPROACH OR G/S INTERCEPT FROM ABOVE | | √ | √ | |
| | GO AROUND | √ | √ | √ | |
| | GPWS "CFIT" | | | | |
| | ILS APPROACH CAT I CONDITIONS | | | √ | √ |
| | LANDING | | | | |
| | **INIT TAKE OFF** | | | | |
| | TAKE OFF (Low Visibility) | | | | |
| | ENGINE FAIL AT $V_1$ | | √ | √ | |
| | STANDARD ILS APPROACH | √ | √ | √ | |
| | GO AROUND | √ | √ | √ | √ |
| | VOR APPROACH (Wind Change Opposite R/W) | √ | | √ | √ |
| | CIRCLING APPROACH | √ | | √ | √ |
| | LANDING | | | √ | √ |
| | **INIT TAKE OFF** | | | | |
| | TAKE OFF | | | | |
| | DUAL FAC FAILURE " RESTORE " | | | | |
| | **INIT TAKE OFF** "UP-SET Recovery | | | | |
| | VISUAL CIRCUIT | √ | | √ | √ |
| | ERROR RECOVERY FOR INSTRUCTOR | | | | |
| | **INIT TAKE OFF** (SIM Instructor On LH Seat**)** "RH Seat Training For Capt. | | | | |
| | VISUAL CIRCUIT | | | | |
| | T & GO –SINGLE ENGINE | | | | |
| | VISUAL CIRCUIT | | | | |
| | G/A | | | | |
| | LANDING | | | | |
| | **CM 2 (F.O.)** | | | | |
| | TAKE OFF | | | | |
| | GPWS "CFIT" | | | | |
| | CLIMB FL60 EPR MODE FAULT " RESTORE " | | | | |
| | TCAS | | | | |
| | UN STABILIZED APPROACH OR G/S INTERCEPT FROM ABOVE | | | | |
| | GO AROUND | | | | |
| | VISUAL APPROACH | √ | | √ | √ |
| | LANDING | | | √ | |
| | **INIT TAKE OFF** | | | | |
| | TAKE OFF (Low Visibility) | | | | |
| | ENGINE FAIL AT $V_1$ | | √ | √ | |
| | ILS APPROACH | √ | √ | √ | |
| | GO AROUND | √ | √ | √ | |
| | VOR APPROACH (Wind Change Opposite R/W) | √ | √ | √ | √ |
| | CIRCLING APPROACH | | | √ | √ |
| | LANDING | | | | |
| | **INIT TAKEOFF** | | | | |
| | DUAL FMGS FAIL | | | | √ |
| | ILS RAW DATA | | | | √ |
| | **INIT T/O** | | | | |
| | T/O | | | | |
| | ENG FIRE AT $V_1$ -15KTS (EXTINGUISHABLE) | | | | |
| | REJECTED TAKE OFF | | | | |

| **SATISFACTORY** □ | **UNSATISFACTORY** □ | |
|---|---|---|
| Trainee Name | Code | Signature |
| Instructor Name | Code | Signature |

| FFS 3 | REQUALIFICATION - A 320 | | | | | |
|---|---|---|---|---|---|---|
| **Trainee Name** | | | **Date** | | | |
| **A/C DATA** | | | | | | |
| **ZFW** | 58 T | **ZFW C.G.** | 30.3% | | **THRUST RED. Alt.** | ……" AGL |
| **TOTAL FUEL** | 7T | **TAKEOFF FLAPS** | 1 | | **ACCEL. Alt.** | ……" AGL |
| **TAKEOFF WEIGHT** | 65 T | **CRUISE ALTITUDE** | FL 370 | | **TAKEOFF FLEX** | |
| **COST INDEX** | 30 | **SPEEDS** | $V_1$ : …… | | $V_R$ : …… | $V_2$ : …… |

| **SESSION DATA AND WEATHER** | | | |
|---|---|---|---|
| **DEPARTURE AIRPORT** | **AIRPORT** From "TRIP" menu | **RUNWAY IN USE** From "TRIP" menu | |
| **WEATHER** | (Out of "WEATHER" menu I " *SUMMER* " or II " *WINTER* " ) | | |
| **ATC** | …………………………….* | | |
| **ARRIVAL AIRPORT** | **AIRPORT** From "TRIP" menu | **RUNWAY IN USE** From "TRIP" menu | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | …………………………….* | | |
| **ALTERNATE AIRPORT** | **AIRPORT** | **RUNWAY IN USE** | |
| **WEATHER** | | | |
| **ATC** | | | |

**SESSION OBJECTIVE**

- DRIFT DOWN PROC.
- EMER. DEC.
- FLT. ACCURACY
- ALT. LAW. DIRECT LAW.
- TASK SHARING
- CRM
-
-

**Notes:**

* ACCORDING TO THE TRIP

| TIME | RECURRENT TRAINING FFS | AP | FD | ATHR | TRK-FPA |
|---|---|---|---|---|---|
| | | | | | |
| | **CM2** | | | | |
| | T/O (WIND SHEAR) | | | | |
| | RNAV APPROACH | | | | |
| | LANDING | | | | |
| | | | | | |
| | **INIT TAKE OFF** | | | | |
| | T/O | | | | |
| | PILOT INCAPACITATION OR SIDE STICK FAULT | | | | |
| | CLB 330 | √ | √ | √ | |
| | ENG FAIL - DRIFT DOWN INITIATION | √ | √ | √ | |
| | ENGINE RELIGHT - CLB FL 350 | √ | √ | √ | |
| | RAPID DECOMP. EMERGENCY DES. | √ | √ | √ | |
| | FL 100 RESTORE | | | | |
| | STEEP TURN - STALL RECOVERY (ALT. LAW) | | | | |
| | RESTORE | | | | |
| | DUAL HYD. FAILURE (G+B) OR (G+Y) | | | | |
| | RADER VECTOR ILS APP. | | | | |
| | LANDING | | | | |
| | | | | | |
| | **CM1** | | | | |
| | T/O (WIND SHEAR) | | | | |
| | RNAV APPROACH | | | | |
| | LANDING | | | | |
| | T/O | | | | |
| | CLB 330 | √ | √ | √ | |
| | ENG FAIL - DRIFT DOWN INITIATION | √ | √ | √ | |
| | ENGINE RELIGHT AND CLB FL 350 | √ | √ | √ | |
| | RAPID DECOMP. – EMERGENCY DES. | √ | √ | √ | |
| | FL 100 RESTORE | | | | |
| | STEEP TURN - STALL RECOVERY (ALT. LAW) | | | | |
| | RESTORE | | | | |
| | DUAL HYD FAIL (G+B) OR(G+Y) | | | | |
| | RADER VECTOR ILS APP. | | | | |
| | | | | | |
| | **INIT T/O** | | | | |
| | T/O | | | | |
| | ENG FIRE AT $V_1$ -10KT ( UN- EXTINGUISHABLE ) | | | | |
| | REJECTED TAKE OFF | | | | |
| | EVACUATION | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| **SATISFACTORY □** | **UNSATISFACTORY □** |
|---|---|

| Trainee Name | Code | Signature |
|---|---|---|
| Instructor Name | Code | Signature |

| Nesma Airlines نسماللطيران | PROFICIENCY FORM | Training Department |
|---|---|---|

# PROFICIENCY FORM

**Day 1:** Training For Flight Manoeuvres required by ECARS 121 Appendix F (PC)
**Day 2:** Proficiency Check

| | | | |
|---|---|---|---|
| Name | | Code No. | ☐ Capt. ☐ F/O ☐ IP |
| Simulator Owned By<br>Egypt Air | Location<br>Cairo | Aircraft Type<br>A320 | Simulator Level |
| Flight Training Time | Time PF / Time PNF | Date | ☐A ☐B ☐C ☐D |

***This form is based on ECARS 121 Appendix F.***

*Enter ( S / U or NA) indicating Satisfactory / Unsatisfactory completion of each item or Not Applicable*

## PART 1: PC ORAL TEST

| Operational Oriented Questions | |
|---|---|
| • Aeroplane systems | |
| • Aeroplane performance | |
| • Normal and non-normal procedures[1] | |
| • ETOPS, North Atlantic or special routes | |
| • Company flight operations manual | |
| • Use of checklists | |
| • Windshear Review | |

## PART 2: PC FLIGHT CHECK

| *PRE FLIGHT AND TAXIING* | |
|---|---|
| • Pre-flight and cockpit preparation | |
| • Engine start | |
| • Low visibility taxiing (150/200m RVR)[2] | |
| *TAKE-OFFS* | |
| • Normal | |
| • Low visibility takeoffs (150/200m RVR)[2] | |
| ***- X- Wind with loss of visual cues at 100 Kt.*** | |
| ***- Rejected T.O with an engine failure before $V_1$*** | |
| ***- With simulated engine failure at $V_1$*** | |
| • Wind shear | |
| *INSTRUMENT PROCEDURES* | |
| • Area departure | |
| • Area arrival and Holding | |
| • ILS approach (Coupled) | |
| • Second ILS approach (Manual) | |
| • Missed approach | |
| • Non-precision approach | |
| • Second Non-precision approach (RNAV) | |
| • Circling approach | |
| • Engine failure missed approach | |
| *CAT II Approaches* | |
| • A min. of 3 CAT II approaches are required for | |
| • CAT II recurrent | |
| *SPECIAL TRAINING* | |
| • ETOPS | |
| • North Atlantic En-route diversion scenario | |
| • MNPS | |
| • Precision Radar Monitoring. | |
| • Pilot incapacitation | |
| • Upset / Bounce Recovery | |

## PART 2: PC FLIGHT CHECK (cont'd)

| *INFLIGHT MANEUVERS* | |
|---|---|
| • Steep turns (Min. 180° - Max. 360°)[3] | |
| • Approach to stalls (Two may be waived): | |
| ***- Take-Off configuration*** | |
| ***- Clean configuration*** | |
| ***- Landing configuration*** | |
| *Note: One Stall must be performed with bank angle 25°.* | |
| | |
| *APPROACHES & LANDINGS* | |
| • Normal Landing | |
| • From ILS | |
| • Cross Wind | |
| • Visual approaches With Manual Thrust. | |
| • With 50% power plant failure | |
| • (2 Eng.'s on one side for 4 Eng.'s aeroplanes)[4] | |
| • From circling approach | |
| • Un stabilized approach | |
| • GPWS (CFIT) | |
| • Rejected at 50' | |
| • Windshear | |
| *NORMAL AND ABNORMAL PROCEDURES* | |
| • Anti icing and De-icing | |
| • Hydraulics | |
| • Electrical | |
| • Pneumatic | |
| • Gears | |
| • Flaps | |
| • Flight Controls | |
| • Nav/Comm. Equipment | |
| *EMERGENCY PROCEDURES* | |
| • In-flight Fire and Smoke Control | |
| • Decompression | |
| • Emergency Descent | |
| • Emergency Landing (Partial L/G, No Flaps, etc...) | |
| • Emergency Evacuation | |
| • TCAS | |
| • Volcanic Ash Training | |
| *EMERGENCY PROCEDURES (SPECIFIC TYPE)* | |
| | |

1. ***Non-Normal Procedures: Are Abnormal, Additional, Alternate and Emergency Procedures***
2. ***150/200m RVR for category C/D aircrafts respectively.***
3. ***One direction may be waved.***
4. ***For Captains Only.***

Page 1 of 2

Issue No.: 05 issue date: Jan. 2020 Form No.: 159

| Nesma Airlines نسما للطيران | PROFICIENCY FORM | Training Department |
|---|---|---|

## PROFICIENCY FORM (cont'd)

| *RHS TRAINING FOR INSTRUCTORS* | | *RHS TRAINING FOR CAPTAINS* | |
|---|---|---|---|
| • Error recovery | | • Normal Take Off | |
| Lateral offsets | | • Manual ILS (CAT I minima) | |
| Vertical offsets | | • Minimum 3 Touch & Go | |
| • Minimum 3 Touch and Go | | *Note: Above manoeuvres are not required for instructors* | |

### EVALUATION

| **Knowledge** | **(US)** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| *Flight Operations Manual (FOM) and Relevant ECARs* | ☐ | ☐ | ☐ | ☐ |
| A/C Systems, Limitations and Performance | ☐ | ☐ | ☐ | ☐ |
| Normal, Non-Normal Procedures[1] | ☐ | ☐ | ☐ | ☐ |
| NESMA AIRLINES Operations Specifications | ☐ | ☐ | ☐ | ☐ |
| **Flying Skills** | **(US)** | **S1** | **S2** | **S3** |
| *Compliance with SOP (Flight Operations Manual & FCOM)* | ☐ | ☐ | ☐ | ☐ |
| Attitude flying and correct trim technique | ☐ | ☐ | ☐ | ☐ |
| Use of FMC, PMS, FMGS, etc.… | ☐ | ☐ | ☐ | ☐ |
| Aeroplane configuration, Altitude & Speed Control | ☐ | ☐ | ☐ | ☐ |
| Flying accuracy & Smoothness | ☐ | ☐ | ☐ | ☐ |
| **Management** | **(US)** | **S1** | **S2** | **S3** |
| *Compliance with Flight Operations Manual (FOM)* | ☐ | ☐ | ☐ | ☐ |
| Planning ahead and use of FMC, PMS, FMGS, etc… | ☐ | ☐ | ☐ | ☐ |
| Crew co-ordination and use of available resources | ☐ | ☐ | ☐ | ☐ |
| Adherence to clearances and safe heights | ☐ | ☐ | ☐ | ☐ |
| Cabin crew safety briefing | ☐ | ☐ | ☐ | ☐ |
| **General** | **(US)** | **S** | | |
| Situational Awareness | ☐ | ☐ | | |
| Discipline | ☐ | ☐ | | |

**Comments**
**Note:** *If remedial action is required, please submit a separate report to G.M flight training.*

| **Base Month** (Through Last Day of) :<br>Month Year | **License Valid** (Through Last Day of) :<br>Month Year | **Next Event**<br>☐ PC ☐ Recurrent. Training |
|---|---|---|

| **Date of Last 3 Takeoffs and Landings:** [2] | **1.** / / | **2.** / / | **3.** / / |
|---|---|---|---|
| Check Airman Name | Code No. | Check Airman's signature | Trainee's signature |

| **Checking Result**<br>Previous ☐ **US** ☐ **S**<br>Current ☐ **US** ☐ **S** | G.M Flight Training |
|---|---|
| **ECAA Inspector Name:-** | **ECAA inspector signature :** |

1. *Non-Normal Procedures: Are Abnormal, Additional, Alternate and Emergency Procedures.*
2. *Trainee is responsible for the accuracy of this data and he must sign the form.*
3. *Passing grade 70% - (S1 70% - 79%) - (S2 80% - 89%) – (S3 90% and above)..*
4. *For type rating, Transition, Upgrade.*

Page 2 of 2

Issue No.: 05 issue date: Jan. 2020 Form No.: 159

## A320 Requalification Flight training from 36 to 59 months

| REQUALIFICATION - A 320 FFS 1 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Trainee Name** | | | | **Date** | | | |
| **A/C DATA** | | | | | | | |
| **ZFW** | 54T | **ZFW C.G.** | 28.4% | **THRUST RED. Alt.** | 1500" AGL | | |
| **TOTAL FUEL** | 10T | **TAKEOFF FLAPS** | 2 | **ACCEL. Alt.** | 3000" AGL | | |
| **TAKEOFF WEIGHT** | 64T | **CRUISE ALTITUDE** | FL | **TAKEOFF FLEX** | | | |
| **COST INDEX** | 30 | **SPEEDS** | $V_1$ : | $V_R$ : | $V_2$ : | | |

| **SESSION DATA AND WEATHER** | | | |
|---|---|---|---|
| **DEPARTURE AIRPORT** | **AIRPORT**<br>HECA | **RUNWAY IN USE**<br>05R | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | TO LXR FLIGHT PLAN ROUT CLB FL 250 | | |
| **ARRIVAL AIRPORT** | **AIRPORT**<br>HESH | **RUNWAY IN USE**<br>04L | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | | | |

| **PF SESSION** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| NOPRMAL PROCEDURE | | | | |
| VISUAL APPROACH | | | | |
| ILS APPROPACH | | | | |
| R-NAV APPROACH | | | | |
| LANDING | | | | |
| SIDE STICK PRIORITY | | | | |
| WIND SHEAR | | | | |
| INITIATION OF CHECKLISTS | | | | |
| **PNF SESSION** | **US** | **S1** | **S2** | **S3** |
| NORMAL PROCEDURES | | | | |
| USE OF CHECKLIST | | | | |
| USE OF ECAM | | | | |
| SUPPORT OF PF | | | | |
| **GENERAL PERFORMANCE** | **US** | **S1** | **S2** | **S3** |
| FLYING ACCURACY | | | | |
| USE OF FMS | | | | |
| USE OF FLIGHT GUIDANCE SYSTEM | | | | |
| USE OF FD – FPV – FPD CROSS POINTERS | | | | |
| IFR PROCEDURES | | | | |
| CREW COORDINATION | | | | |
| GENERAL PROGRESS | | | | |
| GENERAL PERFORMANCE | | | | |
| BRIEFINGS | | | | |

**Comments:**

| TIME | REQUALIFICATION TRAINING FFS | AP | FD | ATHR | TRK-FPA |
|---|---|---|---|---|---|
| | MEMORY ITEMS (REVIEW) | | | | |
| | APPROACHES ( ILS & VOR & VISUAL& RNAV) | | | | |
| | REJECTED TAKE OFF | | | | |
| | **PF – CM1** | | | | |
| | FIRST ENG START (AUTO) | | | | |
| | SECOND ENG START (MANUAL) DUE TO FAULT | | | | |
| | AFTER START | | | | |
| | TAXI | | | | |
| | BEFORE TAKE OFF | | | | |
| | **TAKEOFF** | | | | |
| | SIDE STICK PRIORITY | | | | |
| | TCAS | | | | |
| | FMGC PRACTICE | | | | |
| | RADER VECTOR ILS APPROACH (SELECTED ESTABLISH FROM ABOVE) | | | | |
| | WIND SHEAR DURING FINAL APP | | | | |
| | RADER VECTOR VOR APPROACH (SELECTED) | | | | |
| | GPWS | | | | |
| | RNAV APPROACH | | | | |
| | LANDING | | | | |
| | T.O WIND SHEAR | | | | |
| | VISUAL APPROACH | | | | |
| | T.O | | | | |
| | REJECTED T.O | | | | |
| | **PF – CM2** | | | | |
| | **TAKEOFF** | | | | |
| | SIDE STICK PRIORITY | | | | |
| | TCAS | | | | |
| | FMGC PRACTICE | | | | |
| | RADER VECTOR ILS APPROACH (SELECTED ESTABLISH FROM ABOVE) | | | | |
| | WIND SHEAR DURING FINAL APP | | | | |
| | RADER VECTOR VOR APPROACH (SELECTED) | | | | |
| | GPWS | | | | |
| | RNAV APPROACH | | | | |
| | LANDING | | | | |
| | T.O WIND SHEAR | | | | |
| | VISUAL APPROACH | | | | |
| | T.O | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| PROGRESS IS NORMAL □ | MAY NEED EXTRA TRAINING □ | NEEDS EXTRA TRAINING NOW □ |
|---|---|---|
| Trainee Name | Code | Signature |
| Instructor Name | Code | Signature |

| REQUALIFICATION - A 320 FFS 2 | | | | | |
|---|---|---|---|---|---|
| **Trainee Name** | | | **Date** | | |
| **A/C DATA** | | | | | |
| **ZFW** | | **ZFW C.G.** | 28.4% | **THRUST RED. Alt.** | 1500" AGL |
| **TOTAL FUEL** | 10T | **TAKEOFF FLAPS** | 2 | **ACCEL. Alt.** | 3000" AGL |
| **TAKEOFF WEIGHT** | | **CRUISE ALTITUDE** | FL | **TAKEOFF FLEX** | |
| **COST INDEX** | 30 | **SPEEDS** | $V_1$ : | $V_R$ : | $V_2$ : |

| **SESSION DATA AND WEATHER** | | | |
|---|---|---|---|
| **DEPARTURE AIRPORT** | **AIRPORT**<br>HECA | **RUNWAY IN USE**<br>05R | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | TO LXR FLIGHT PLAN ROUT CLB FL 250 | | |
| **ARRIVAL AIRPORT** | **AIRPORT** | **RUNWAY IN USE** | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | STD VOR APPROACH RWY 20 | | |

| **PF SESSION** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| NORMAL PROCEDURES | | | | |
| ENGINE START PROBLEMS | | | | |
| ALTERNATE LAW HANDLING | | | | |
| DIRECT LAW HANDLING | | | | |
| ILS APPROACH | | | | |
| USE OF ECAM – TASK SHARING | | | | |
| INITIATION OF CHECK-LISTS | | | | |
| **PNF SESSION** | **US** | **S1** | **S2** | **S3** |
| NORMAL PROCEDURES | | | | |
| USE OF CHECKLIST | | | | |
| USE OF ECAM | | | | |
| SUPPORT OF PF | | | | |
| **GENERAL PERFORMANCE** | **US** | **S1** | **S2** | **S3** |
| FLYING ACCURACY | | | | |
| USE OF FMS | | | | |
| USE OF FLIGHT GUIDANCE SYSTEM | | | | |
| USE OF FD – FPV – FPD CROSS POINTERS | | | | |
| IFR PROCEDURES | | | | |
| CREW COORDINATION | | | | |
| GENERAL PROGRESS | | | | |
| GENERAL PERFORMANCE | | | | |
| BRIEFINGS | | | | |

**Comments:**

| TIME | REQUALIFICATION TRAINING FBS | | AP | FD | ATHR | TRK-FPA |
|---|---|---|---|---|---|---|
| | ECAM PHILOSOPHY | | | | | |
| | ECAM ACTIONS | DONE IN THE | | | | |
| | ABNORMAL EMERGENCY PROCEDURES | BRIEFING ROOM | | | | |
| | **PF – CM1** | | | | | |
| | TRANSIT COCKPIT PREPARATION | | | | | |
| | BEFORE START | | | | | |
| | ENG START PROBLEMS (HOT START – HUNG START ) | | | | | |
| | AFTER START | | | | | |
| | TAXI | | | | | |
| 00:45 | **BEFORE TAKEOFF** | | | | | |
| | TAKEOFF ADR 2 FAULT AFTER 100Kt | | | **X** | **X** | |
| | CLB TO FL100 | | | | | |
| | ADR 1 FAULT – STUDY OF ALTERNATE LAW | | | | | **X** |
| | ILS APPROACH | | | | | **X** |
| 01:10 | **G A – RESTORE** | | | | | |
| | CLB FL 350 | | | | | |
| | EMERGENCY DESCENT ENTRY HIGH SPEED | | **X** | **X** | **X** | |
| | EMERGENCY DESCENT ENTRY PRESENT SPEED | | **X** | **X** | **X** | |
| | EXCESSIVE CAB ALT EMERGENCY DESCENT FL 100 | | **X** | **X** | **X** | |
| 01:50 | **ILS APPROACH** | | **X** | **X** | **X** | |
| | **PF - CM 2** | | | | | |
| | TAKEOFF FAC 1 FAILURE AFTER 100 Kt | | **X** | **X** | **X** | |
| | CLB FL 100 | | | | | |
| | FAC 2 FAILURE – ALTERNATE LAW | | | | | **X** |
| 02:20 | ILS APPROACH | | | | | X |
| | **GA – RESTORE** | | | | | |
| | CLB FL 350 | | | | | |
| | EMERGENCY DESCENT ENTRY HIGH SPEED | | **X** | **X** | **X** | |
| | EMERGENCY DESCENT ENTRY PRESENT SPEED | | **X** | **X** | **X** | |
| | RAPID DECOMPRESSION – EMERGENCY DESCENT FL 100 | | **X** | **X** | **X** | |
| 03:00 | ILS APPROACH | | | **X** | **X** | |
| | **PF – CM1** | | | | | |
| | TRANSIT COCKPIT PREPARATION | | | | | |
| | BEFORE START | | | | | |
| | ENG START PROBLEMS (HOT START – HUNG START ) | | | | | |
| | AFTER START | | | | | |
| | TAXI | | | | | |
| 03:30 | BEFORE TAKEOFF | | | | | |

| **PROGRESS IS NORMAL** □ | **MAY NEED EXTRA TRAINING** □ | **NEEDS EXTRA TRAINING NOW** □ |
|---|---|---|
| Trainee Name | Code | Signature |
| Instructor Name | Code | Signature |

**REQUALIFICATION- A 320 FFS 3**

| **Trainee Name** | **Date** |
|---|---|

**A/C DATA**

| | | | | | |
|---|---|---|---|---|---|
| **ZFW** | 48T | **ZFW C.G.** | 28.4% | **THRUST RED. Alt.** | 1500" AGL |
| **TOTAL FUEL** | 10T | **TAKEOFF FLAPS** | 2 | **ACCEL. Alt.** | 3000" AGL |
| **TAKEOFF WEIGHT** | 58T | **CRUISE ALTITUDE** | FL | **TAKEOFF FLEX** | |
| **COST INDEX** | 30 | **SPEEDS** | $V_1$ : | $V_R$ : | $V_2$ : |

**SESSION DATA AND WEATHER**

| | | | |
|---|---|---|---|
| **DEPARTURE AIRPORT** | **AIRPORT**<br>HECA | **RUNWAY IN USE**<br>05R | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | TO LXR FLIGHT PLAN ROUT CLB FL 250 | | |
| **ARRIVAL AIRPORT** | **AIRPORT**<br>HESH | **RUNWAY IN USE**<br>04L | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | | | |

| **PF SESSION** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| NORMAL PROCEDURES | | | | |
| ENGINES START PROBLEMS | | | | |
| ONE ENGINE OUT PROCEDURES | | | | |
| ONE ENGINE OUT HANDLING | | | | |
| ONE ENGINE OUT ILS APPROACH | | | | |
| ONE ENGINE OUT VOR APPROACH | | | | |
| ONE ENGINE OUT CIRCLING | | | | |
| ONE ENGINE OUT GA | | | | |
| REJECTED TAKEOFF | | | | |
| EVACUATION PROCEDURES | | | | |
| INITIATION OF CHECK-LISTS | | | | |

| **PNF SESSION** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| NORMAL PROCEDURES | | | | |
| USE OF CHECKLIST | | | | |
| USE OF ECAM | | | | |
| SUPPORT OF PF | | | | |

| **GENERAL PERFORMANCE** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| FLYING ACCURACY | | | | |
| USE OF FMS | | | | |
| USE OF FLIGHT GUIDANCE SYSTEM | | | | |
| USE OF FD – FPV – FPD CROSS POINTERS | | | | |
| IFR PROCEDURES | | | | |
| CREW COORDINATION | | | | |
| GENERAL PROGRESS | | | | |
| GENERAL PERFORMANCE | | | | |
| BRIEFINGS | | | | |

**Comments:**

| TIME | REQUALIFICATION -TRAINING FFS | | AP | FD | ATHR | TRK-FPA |
|---|---|---|---|---|---|---|
| | | | | | | |
| | TAKEOFF DATA COMPUTATION | | | | | |
| | COCKPIT PREPARATION | | | | | |
| | BEFORE START BRIEFING | DONE IN THE | | | | |
| | VOR APPROACH BRIEFING | BRIEFING ROOM | | | | |
| | CIRCLING APPROACH BRIEFING | | | | | |
| | | | | | | |
| | **PF – CM1** | | | | | |
| | TRANSIRT COCKPIT PREPARATION | | | | | |
| | BEFROE START | | | | | |
| | ENGINE START PROBLEMS (START VALVE NOT OPEN ) | | | | | |
| | ENGINE START PROBLEMS (START VALVE NOT CLOSED ) | | | | | |
| 00:40 | AFTER START | | | | | |
| | **PF - CM 2** | | | | | |
| | TAXI | | | | | |
| | BEFORE TAKEOFF | | | | | |
| | TAKEOFF – ENGINE FAILURE AT V 2 | | | **X** | **X** | |
| 01:00 | ONE ENGINE OUT FAMILIARIZATION | | | **X** | **X** | |
| | | | | | | |
| | **INIT T/O** | | | | | |
| | TAKEOFF – ENGINE FAILURE AT V 2 | | | **X** | **X** | |
| | ENGINE RELIGHT | | **X** | **X** | **X** | |
| | ENGINE FIRE | | **X** | **X** | **X** | |
| 01:35 | ILS APPROACH (RADAR VECTOR) | | **X** | **X** | **X** | |
| | GA | | **X** | **X** | **X** | |
| | VOR APPROACH ( STD) | | **X** | | **X** | **X** |
| 02:00 | GA | | **X** | **X** | **X** | |
| | **PF - CM 1** | | | | | |
| | | | | | | |
| | TAKEOFF – ENGINE FAILURE AT V 2 (ENGINE RELIGHT + ENGINE FIRE) | | | **X** | **X** | |
| | ILS APPROACH ( RADAR VECTOR) | | **X** | **X** | **X** | |
| 02:35 | GA | | **X** | **X** | **X** | |
| | VOR – DME APPROACH (STD) | | **X** | | **X** | **X** |
| 03:00 | CIRCLING APPROACH | | | | | **X** |
| | GA – RWY HDG | | | **X** | **X** | |
| | RADAR VECTOR FOR VISUAL APPROACH | | | | | **X** |
| 03:15 | GA | | | **X** | **X** | |
| | **INIT T/O** | | | | | |
| | TAKEOFF – ENGINE FIRE (EXTINGUISHABLE) BEFORE V1 | | | | | |
| 03:25 | REJECTED TAKEOFF | | | | | |
| | **INIT T/O** | | | | | |
| | TAKEOFF – ENGINE FIRE (UN EXTINGUISHABLE) BEFORE V1 | | | | | |
| | REJECTED TAKEOFF | | | | | |
| 03:40 | EVACUATION | | | | | |
| | | | | | | |

| **PROGRESS IS NORMAL** □ | **MAY NEED EXTRA TRAINING** □ | **NEEDS EXTRA TRAINING NOW** □ |
|---|---|---|
| Trainee Name | Code | Signature |
| Instructor Name | Code | Signature |

| REQUALIFICATION - A 320 FFS 4 | | | | | |
|---|---|---|---|---|---|
| **Trainee Name** | | | **Date** | | |
| **A/C DATA** | | | | | |
| **ZFW** | | **ZFW C.G.** | 28.4% | **THRUST RED. Alt.** | 1500" AGL |
| **TOTAL FUEL** | 10T | **TAKEOFF FLAPS** | 2 | **ACCEL. Alt.** | 3000" AGL |
| **TAKEOFF WEIGHT** | | **CRUISE ALTITUDE** | FL | **TAKEOFF FLEX** | |
| **COST INDEX** | 30 | **SPEEDS** | $V_1$ : | $V_R$ : | $V_2$ : |

| **SESSION DATA AND WEATHER** | | | |
|---|---|---|---|
| **DEPARTURE AIRPORT** | **AIRPORT**<br>HECA | **RUNWAY IN USE**<br>05R | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | TO LXR FLIGHT PLAN ROUT CLB FL 250 | | |
| **ARRIVAL AIRPORT** | **AIRPORT**<br>HESH | **RUNWAY IN USE**<br>04L | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | | | |

| **PF SESSION** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| NORMAL PROCEDURES | | | | |
| ENGINES START PROBLEMS | | | | |
| FLAPS OR SLATS LOCKED PROCEDURES | | | | |
| DUAL HYD FAILURE PROCEDRE | | | | |
| HANDLING | | | | |
| ILS APPROACH | | | | |
| DUAL GENERATORS FAILURE | | | | |
| INITIATION OF CHECK-LISTS | | | | |
| | | | | |
| | | | | |

| **PNF SESSION** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| NORMAL PROCEDURES | | | | |
| USE OF CHECKLIST | | | | |
| USE OF ECAM | | | | |
| SUPPORT OF PF | | | | |

| **GENERAL PERFORMANCE** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| FLYING ACCURACY | | | | |
| USE OF FMS | | | | |
| USE OF FLIGHT GUIDANCE SYSTEM | | | | |
| USE OF FD – FPV – FPD CROSS POINTERS | | | | |
| IFR PROCEDURES | | | | |
| CREW COORDINATION | | | | |
| GENERAL PROGRESS | | | | |
| GENERAL PERFORMANCE | | | | |
| BRIEFINGS | | | | |

**Comments:**

| TIME | REQUALIFICATION - TRAINING FBS | | AP | FD | ATHR | TRK-FPA |
|---|---|---|---|---|---|---|
| | | | | | | |
| | SUMMARIES | | | | | |
| | LANDING WITH FLAPS OR SLATS JAMED CHECKLIST | DONE IN THE | | | | |
| | LANDING GEAR GRAVITY EXTENSION CHECHLIST | BRIEFING ROOM | | | | |
| | | | | | | |
| | **PF – CM 1** | | | | | |
| | TRANSIT COCKPIT PREPARATION | | | | | |
| | BEFORE START | | | | | |
| | ENGINE START PROBLEMS ( APU – AUTO SHUTDOWN DURING START) | | | | | |
| | AFTER START | | | | | |
| | TAXI | | | | | |
| 00:40 | BEFORE TAKEOFF | | | | | |
| | **TAKEOFF** | | | **X** | **X** | |
| | FLAPS LOCKED DURING RETRACTION | | **X** | **X** | **X** | |
| 01:10 | ILS APPROACH FLAPS LOCKED | | | **X** | **X** | |
| | **GA - RESTORE** | | | | | |
| | CLB FL 100 | | | | | |
| | G HYDRAULIC FAILURE | | | | | |
| | B HYDRAULIC FAILURE | | | | | |
| | HYDRAULIC G + B LOSS | | | **X** | | |
| | ILS APPROACH | | | **X** | | |
| 01:50 | **GA** | | | | | |
| | | | | | | |
| | **PF – CM 2** | | | | | |
| | **TAKEOFF** | | | | | |
| | CLB FL 100 | | | **X** | **X** | |
| | G HYDRAULIC FAILURE | | | | | |
| | Y HYDRAULIC FAILURE | | | | | |
| | HYDRAULIC G + Y LOSS | | | **X** | **X** | |
| | ILS APPROACH | | | **X** | **X** | |
| 02:35 | **GA - RESTORE** | | | | | |
| | CLIMB 3500FT | | **X** | **X** | **X** | |
| | SLATS – FLAPS LOCKED DURING APPROACH | | | | | |
| | ILS APPROACH | | | **X** | **X** | |
| 03:00 | **GA** | | | | | |
| | | | | | | |
| | **PF – CM 1** | | | | | |
| | **TAKEOFF** | | | | | |
| | CLB FL 100 | | | | | |
| | DUAL GENERATORS FAILURE – EMERGENCY CONFIG | | | | | **X** |
| | RADAR VECTOR ILS APPROACH | | | | | **X** |
| 03:40 | **GA** | | | | | |
| | | | | | | |

| **PROGRESS IS NORMAL** □ | **MAY NEED EXTRA TRAINING** □ | **NEEDS EXTRA TRAINING NOW** □ |
|---|---|---|
| Trainee Name | Code | Signature |
| Instructor Name | Code | Signature |

| REQUALIFICATION - A 320 FFS 5 | | | | | |
|---|---|---|---|---|---|
| **Trainee Name** | | | **Date** | | |
| **A/C DATA** | | | | | |
| **ZFW** | 48T | **ZFW C.G.** | 28.4% | **THRUST RED. Alt.** | 1500" AGL |
| **TOTAL FUEL** | 10T | **TAKEOFF FLAPS** | 2 | **ACCEL. Alt.** | 3000" AGL |
| **TAKEOFF WEIGHT** | 58T | **CRUISE ALTITUDE** | FL | **TAKEOFF FLEX** | |
| **COST INDEX** | 30 | **SPEEDS** | $V_1$ : | $V_R$ : | $V_2$ : |

| **SESSION DATA AND WEATHER** | | | |
|---|---|---|---|
| **DEPARTURE AIRPORT** | **AIRPORT**<br>HECA | **RUNWAY IN USE**<br>05R | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | TO LXR FLIGHT PLAN ROUT CLB FL 250 | | |
| **ARRIVAL AIRPORT** | **AIRPORT**<br>HELX | **RUNWAY IN USE** | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | | | |

| **PF SESSION** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| NORMAL PROCEDURES | | | | |
| ENGINE START PROBLEMS | | | | |
| ALTERNATE LAW HANDILING | | | | |
| DIRECT LAW HANDILING | | | | |
| ILS APPROACH (FPV) | | | | |
| STALL RECOVERY | | | | |
| STEEP TURN | | | | |
| DRIFT-DOWN PROCEDURES | | | | |
| INITIATION OF CHECK-LIST | | | | |
| | | | | |

| **PNF SESSION** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| NORMAL PROCEDURES | | | | |
| USE OF CHECKLIST | | | | |
| USE OF ECAM | | | | |
| SUPPORT OF PF | | | | |

| **GENERAL PERFORMANCE** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| FLYING ACCURACY | | | | |
| USE OF FMS | | | | |
| USE OF FLIGHT GUIDANCE SYSTEM | | | | |
| USE OF FD – FPV – FPD CROSS POINTERS | | | | |
| IFR PROCEDURES | | | | |
| CREW COORDINATION | | | | |
| GENERAL PROGRESS | | | | |
| GENERAL PERFORMANCE | | | | |
| BRIEFINGS | | | | |

**Comments:**

| M. REF. | REQUALIFICATION - TRAINING FFS | AP | FD | ATHR | TRK-FPA |
|---|---|---|---|---|---|
| | **PF - CM 1** | | | | |
| | | | | | |
| | TRANSIT COCKPIT PREPARATION | | | | |
| | BEFORE START | | | | |
| | ENGINE START PROBLEMS (ENGINE TAIL PIPE FIRE) | | | | |
| 00:30 | AFTER START | | | | |
| | | | | | |
| | **PF - CM 2** | | | | |
| | TAXI | | | | |
| | BEFORE TAKEOFF | | | | |
| | TAKEOFF CLB FL 100 | | **X** | **X** | |
| 00:50 | DUAL FAC FAULRE | | | | **X** |
| | | | | | |
| | **PF - CM 2 THEN CM 1** | | | | |
| | STALL RECOVERY (CLEAN – LANDING CONFIG) | | | | |
| 01:30 | STEEPTURNS | | | | |
| | **PF – CM2** | | | | |
| | DUAL FAC FAILURE | | | | |
| | ILS APPROACH RADAR VECTOR | | | | |
| 01:55 | **LANDING** | | **X** | **X** | |
| | | | | | |
| | **PF – CM 2** | | | | |
| | **TAKEOFF** CLB FL 300 | | | | |
| 02:10 | ENGINE FAIL – DRIFT-DOWN PROCEDURES | **X** | **X** | **X** | |
| | | | | | |
| | **PF – CM1** | | | | |
| | DUAL SFCC FAILURE | | | | |
| | ILS APPROACH (NO SLATS NO FLAPS) RADAR VECTOR | | | | |
| 02:35 | LANDING | | | | |
| | | | | | |
| | **PF - CM 1 THEN CM 2** | | | | |
| | **TAKEOFF** CLB FL 100 | | | | |
| | MECHANICAL BACK UP DEMONSTRATION | | | | |
| 03:00 | RESTORE | | | | |
| | **PF – CM1** | | | | |
| | **TAKEOFF** CLB FL 300 | | | | |
| 03:15 | ENGINE FAIL – DRIFT-DOWN PROCEDURES | **X** | **X** | **X** | |
| | RESTORE | | | | |
| | DUAL FAC FAILURE DURING APPROACH | | | | **X** |
| | LANDING (DIRECT LAW ) | | | | |
| | AFTER LANDING | | | | |
| O3:40 | PARKING | | | | |
| | SECURING | | | | |
| | | | | | |

| **PROGRESS IS NORMAL** □ | **MAY NEED EXTRA TRAINING** □ | **NEEDS EXTRA TRAINING NOW** □ |
|---|---|---|
| Trainee Name | Code | Signature |
| Instructor Name | Code | Signature |

| REQUALIFICATION - A 320 FFS 6 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Trainee Name** | | | | **Date** | | | |
| **A/C DATA** | | | | | | | |
| **ZFW** | 48T | **ZFW C.G.** | 28.4% | **THRUST RED. Alt.** | 1500" AGL | | |
| **TOTAL FUEL** | 10T | **TAKEOFF FLAPS** | 2 | **ACCEL. Alt.** | 3000" AGL | | |
| **TAKEOFF WEIGHT** | 58T | **CRUISE ALTITUDE** | FL50 | **TAKEOFF FLEX** | | | |
| **COST INDEX** | 30 | **SPEEDS** | $V_1$ : | $V_R$ : | $V_2$ : | | |

| **SESSION DATA AND WEATHER** | | | |
|---|---|---|---|
| **DEPARTURE AIRPORT** | **AIRPORT**<br>HECA | **RUNWAY IN USE**<br>05R | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | TO LXR FLIGHT PLAN ROUT CLB FL 250 | | |
| **ARRIVAL AIRPORT** | **AIRPORT**<br>HELX | **RUNWAY IN USE**<br>20 | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | | | |

| **PF SESSION** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| NORMAL PROCEDURES | | | | |
| ENGINE FAILURE PROCEDURE | | | | |
| ILS APPROACH ONE ENGINE OUT | | | | |
| GA ONE ENGINE OUT | | | | |
| VOR APPROACH ONE ENGINE OUT | | | | |
| CIRCILING APPROACH ONE ENGINE OUT | | | | |
| FMGS PRACTICE | | | | |
| EMERGENCY DESCENT | | | | |
| INITIATION OF CHECK-LISTS | | | | |
| **PNF SESSION** | **US** | **S1** | **S2** | **S3** |
| NORMAL PROCEDURES | | | | |
| USE OF CHECKLIST | | | | |
| USE OF ECAM | | | | |
| SUPPORT OF PF | | | | |
| **GENERAL PERFORMANCE** | **US** | **S1** | **S2** | **S3** |
| FLYING ACCURACY | | | | |
| USE OF FMS | | | | |
| USE OF FLIGHT GUIDANCE SYSTEM | | | | |
| USE OF FD – FPV – FPD CROSS POINTERS | | | | |
| IFR PROCEDURES | | | | |
| CREW COORDINATION | | | | |
| GENERAL PROGRESS | | | | |
| GENERAL PERFORMANCE | | | | |
| BRIEFINGS | | | | |

**Comments:**

| M. REF. | REQUALIFICATION - TRAINING FFS | AP | FD | ATHR | TRK-FPA |
|---|---|---|---|---|---|
| | | | | | |
| | **PF – CM1** | | | | |
| | COCKPIT PREPARATION | | | | |
| | BEFORE START | | | | |
| | ENGINE STARAT PROBLEM | | | | |
| | AFTER START | | | | |
| 00:40 | BEFORE TAKEOFF | | | | |
| | **TAKEOFF** ENGINE FAILURE AT V 2 | | **X** | **X** | |
| | ENGINE RELIGHT | | | | |
| | ENGINE FIRE EXTINGUISHABLE | | | | |
| | ILS APPROACH STD | | **X** | **X** | |
| 01:10 | **GA** | | | | |
| | VOR APPROACH ( RADAR VECTOR) | | **X** | **X** | |
| | CIRCLING | | | | **X** |
| 01:35 | **LANDING** | | | | |
| | TAKEOFF | | **X** | **X** | |
| | FMGS PRACTICE | | | | |
| | CLB FL 350 | | | | |
| | EMERGENCY DESCENT TO FL 100 (STRUCTUR DAMAGE) | **X** | **X** | **X** | |
| | ILS APPROACH | | **X** | **X** | |
| 01:55 | **LANDING** | | | | |
| | **PF – CM2** | | | | |
| | **TAKEOFF** | | | | |
| | ENGINE FLAME OUT AT V 2 (NO RELIGHT) | | **X** | **X** | |
| | ILS APPROACH STD | | **X** | **X** | |
| 02:25 | **GA** | | | | |
| | VOR APPROACH ( RADAR VECTOR) | | **X** | **X** | |
| 02:45 | **LANDINDG** | | | | |
| | **TAKEOFF** | | | | |
| | FMGS PRACTICE | | | | |
| | CLR FL 350 | | | | |
| 03:05 | EMERGENCY DESCENT TO FL 100 (EXCESSIVE CABIN ALT) | **X** | **X** | **X** | |
| | | | **X** | **X** | |
| | | | **X** | **X** | |
| | | | | | |
| | **PF – CM2** | | | | |
| | ENGINE FIRE | | | | |
| | ILS APPROACH 1 ENG | | | | |
| | LANDING | | | | |
| | AFTER LANDING | | | | |
| | PARKING | | | | |
| | SECURING | | | | |
| 03:40 | | | | | |
| | | | | | |

| **PROGRESS IS NORMAL** □ | **MAY NEED EXTRA TRAINING** □ | **NEEDS EXTRA TRAINING NOW** □ |
|---|---|---|
| Trainee Name | Code | Signature |
| Instructor Name | Code | Signature |

**REQUALIFICATION - A 320 FFS 7**

| | |
|---|---|
| **Trainee Name** | **Date** |

**A/C DATA**

| | | | | | |
|---|---|---|---|---|---|
| **ZFW** | 48T | **ZFW C.G.** | 28.4% | **THRUST RED. Alt.** | 1500" AGL |
| **TOTAL FUEL** | 10T | **TAKEOFF FLAPS** | 2 | **ACCEL. Alt.** | 3000" AGL |
| **TAKEOFF WEIGHT** | 58T | **CRUISE ALTITUDE** | FL | **TAKEOFF FLEX** | |
| **COST INDEX** | 30 | **SPEEDS** | $V_1$ : | $V_R$ : | $V_2$ : |

**SESSION DATA AND WEATHER**

| | | | |
|---|---|---|---|
| **DEPARTURE AIRPORT** | **AIRPORT** HECA | **RUNWAY IN USE** 05R | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | TO LXR FLIGHT PLAN ROUT CLB FL 250 | | |
| **ARRIVAL AIRPORT** | **AIRPORT** HESH | **RUNWAY IN USE** 04L | |
| **WEATHER** | *" To Be Selected By The Instructor According To The Manoeuvre "* | | |
| **ATC** | | | |

| **PF SESSION** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| NORMAL PROCEDURES | | | | |
| HYD G + B LOSS | | | | |
| HYD G + Y LOSS | | | | |
| HANDLING | | | | |
| ONE ENGINE OUT VOR APPROACH | | | | |
| STALL RECOVERY | | | | |
| STEEP TURN | | | | |
| REJECTED TAKEOFF | | | | |
| EVACUATION | | | | |
| INITIATION OF CHECK-LISTS | | | | |

| **PNF SESSION** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| NORMAL PROCEDURES | | | | |
| USE OF CHECKLIST | | | | |
| USE OF ECAM | | | | |
| SUPPORT OF PF | | | | |

| **GENERAL PERFORMANCE** | **US** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| FLYING ACCURACY | | | | |
| USE OF FMS | | | | |
| USE OF FLIGHT GUIDANCE SYSTEM | | | | |
| USE OF FD – FPV – FPD CROSS POINTERS | | | | |
| IFR PROCEDURES | | | | |
| CREW COORDINATION | | | | |
| GENERAL PROGRESS | | | | |
| GENERAL PERFORMANCE | | | | |
| BRIEFINGS | | | | |

**Comments:**

| TIME | REQUALIFICATION - TRAINING FFS | AP | FD | ATHR | TRK-FPA |
|---|---|---|---|---|---|
| | **PF – CM1** | | | | |
| | | | | | |
| | PRELIMENTRY COCKPIT PREPARATION | | | | |
| | COCKPIT PREPARATION | | | | |
| | BEFORE START | | | | |
| | ENGINE START PROBLEMS | | | | |
| | AFTER START | | | | |
| | TAXI | | | | |
| 00:30 | BEFORE TAKEOFF | | | | |
| | TAKEOFF CLB FL 100 | | X | X | |
| | HYD G LOSS | | | | |
| | HYD Y LOSS | | | | |
| | HYD G + Y LOSS | | | | |
| | ILS APPROACH | | X | X | |
| 01:10 | **LANDING** | | | | |
| | TAKEOFF ENG FAILURE AFTER V1 | | X | X | |
| | VOR APPROACH (STD) | X | X | X | |
| 01:40 | **LANDING** | | X | X | |
| | TAKEOFF ENG FIRE (UN EXTINGUISHABLE) BEFORE V1 | | X | X | |
| | REJECTED TAKEOFF | | | | |
| 01:50 | EVACUATION | | | | |
| | | | | | |
| | **PF – CM2** | | | | |
| | | | | | |
| | TAKEOFF CLB FL 100 | | X | X | |
| | HYD B LOSS | | | | |
| | HYD G LOSS | | | | |
| | HYD B + G LOSS | | | | |
| | ILS APPROACH | | X | | |
| 02:30 | **LANDING** | | | | |
| | TAKEOFF ENG FAILURE AFTER V1 | | X | X | |
| | VOR APPROACH (STD) | X | X | X | |
| 03:00 | **LANDING** | | X | X | |
| | TAKEOFF ENG FIRE (EXTINGUISHABLE) BEFORE V1 | | | | |
| 03:10 | REJECTED TAKEOFF | | | | |
| | | | | | |
| | **PF – CM1 THEN CM2** | | | | |
| | STALL RECOVERY | | | | |
| | STEEP TURN | | | | |
| | | | | | |
| | **PF – CM2** | | | | |
| 03:20 | AFTER LANDING | | | | |
| | PARKING | | | | |
| | SECURING | | | | |
| | | | | | |

| **NEEDS EXTRA TRAINING NOW** □ | **READY FOR EVALUATION** □ |
|---|---|

| | | |
|---|---|---|
| Trainee Name | Code | Signature |
| Instructor Name | Code | Signature |

| Nesma Airlines نسما للطيران | PROFICIENCY FORM | Training Department |
|---|---|---|

# PROFICIENCY FORM

**Day 1:** Training For Flight Manoeuvres required by ECARS 121 Appendix F (PC)
**Day 2:** Proficiency Check

| | | | |
|---|---|---|---|
| Name | | Code No. | ☐ Capt. ☐ F/O ☐ IP |
| Simulator Owned By<br>**Egypt Air** | Location<br>**Cairo** | Aircraft Type<br>**A320** | Simulator Level |
| Flight Training Time | Time PF / Time PNF | Date | ☐**A** ☐**B** ☐**C** ☐**D** |

***This form is based on ECARS 121 Appendix F.***

*Enter ( S / U or NA) indicating Satisfactory / Unsatisfactory completion of each item or Not Applicable*

| PART 1: PC ORAL TEST | | PART 2: PC FLIGHT CHECK (cont'd) | |
|---|---|---|---|
| **Operational Oriented Questions** | | *INFLIGHT MANEUVERS* | |
| • Aeroplane systems | | • Steep turns (Min. 180° - Max. 360°)[3] | |
| • Aeroplane performance | | • Approach to stalls (Two may be waived): | |
| • Normal and non-normal procedures[1] | | ***- Take-Off configuration*** | |
| • ETOPS, North Atlantic or special routes | | ***- Clean configuration*** | |
| • Company flight operations manual | | ***- Landing configuration*** | |
| • Use of checklists | | *Note: One Stall must be performed with bank angle 25°.* | |
| • Windshear Review | | | |
| **PART 2: PC FLIGHT CHECK** | | | |
| *PRE FLIGHT AND TAXIING* | | *APPROACHES & LANDINGS* | |
| • Pre-flight and cockpit preparation | | • Normal Landing | |
| • Engine start | | • From ILS | |
| • Low visibility taxiing (150/200m RVR)[2] | | • Cross Wind | |
| *TAKE-OFFS* | | • Visual approaches With Manual Thrust. | |
| • Normal | | • With 50% power plant failure | |
| • Low visibility takeoffs (150/200m RVR)[2] | | • (2 Eng.'s on one side for 4 Eng.'s aeroplanes)[4] | |
| ***- X- Wind with loss of visual cues at 100 Kt.*** | | • From circling approach | |
| ***- Rejected T.O with an engine failure before $V_1$*** | | • Un stabilized approach | |
| ***- With simulated engine failure at $V_1$*** | | • GPWS (CFIT) | |
| • Wind shear | | • Rejected at 50' | |
| *INSTRUMENT PROCEDURES* | | • Windshear | |
| • Area departure | | *NORMAL AND ABNORMAL PROCEDURES* | |
| • Area arrival and Holding | | • Anti icing and De-icing | |
| • ILS approach (Coupled) | | • Hydraulics | |
| • Second ILS approach (Manual) | | • Electrical | |
| • Missed approach | | • Pneumatic | |
| • Non-precision approach | | • Gears | |
| • Second Non-precision approach (RNAV) | | • Flaps | |
| • Circling approach | | • Flight Controls | |
| • Engine failure missed approach | | • Nav/Comm. Equipment | |
| *CAT II Approaches* | | *EMERGENCY PROCEDURES* | |
| • A min. of 3 CAT II approaches are required for | | • In-flight Fire and Smoke Control | |
| • CAT II recurrent | | • Decompression | |
| *SPECIAL TRAINING* | | • Emergency Descent | |
| • ETOPS | | • Emergency Landing (Partial L/G, No Flaps, etc...) | |
| • North Atlantic En-route diversion scenario | | • Emergency Evacuation | |
| • MNPS | | • TCAS | |
| • Precision Radar Monitoring. | | • Volcanic Ash Training | |
| • Pilot incapacitation | | *EMERGENCY PROCEDURES (SPECIFIC TYPE)* | |
| • Upset / Bounce Recovery | | | |

1. ***Non-Normal Procedures: Are Abnormal, Additional, Alternate and Emergency Procedures***
2. ***150/200m RVR for category C/D aircrafts respectively.***
3. ***One direction may be waved.***
4. ***For Captains Only.***

Page 1 of 2

Issue No.: 05 issue date: Jan. 2020 Form No.: 159

| Nesma Airlines نسما للطيران | PROFICIENCY FORM | Training Department |
|---|---|---|

## PROFICIENCY FORM (cont'd)

| *RHS TRAINING FOR INSTRUCTORS* | | *RHS TRAINING FOR CAPTAINS* | |
|---|---|---|---|
| • Error recovery | | • Normal Take Off | |
| Lateral offsets | | • Manual ILS (CAT I minima) | |
| Vertical offsets | | • Minimum 3 Touch & Go | |
| • Minimum 3 Touch and Go | | ***Note: Above manoeuvres are not required for instructors*** | |

### EVALUATION

| **Knowledge** | **(US)** | **S1** | **S2** | **S3** |
|---|---|---|---|---|
| ***Flight Operations Manual (FOM) and Relevant ECARs*** | ☐ | ☐ | ☐ | ☐ |
| A/C Systems, Limitations and Performance | ☐ | ☐ | ☐ | ☐ |
| Normal, Non-Normal Procedures[1] | ☐ | ☐ | ☐ | ☐ |
| NESMA AIRLINES Operations Specifications | ☐ | ☐ | ☐ | ☐ |
| **Flying Skills** | **(US)** | **S1** | **S2** | **S3** |
| ***Compliance with SOP (Flight Operations Manual & FCOM)*** | ☐ | ☐ | ☐ | ☐ |
| Attitude flying and correct trim technique | ☐ | ☐ | ☐ | ☐ |
| Use of FMC, PMS, FMGS, etc…. | ☐ | ☐ | ☐ | ☐ |
| Aeroplane configuration, Altitude & Speed Control | ☐ | ☐ | ☐ | ☐ |
| Flying accuracy & Smoothness | ☐ | ☐ | ☐ | ☐ |
| **Management** | **(US)** | **S1** | **S2** | **S3** |
| ***Compliance with Flight Operations Manual (FOM)*** | ☐ | ☐ | ☐ | ☐ |
| Planning ahead and use of FMC, PMS, FMGS, etc… | ☐ | ☐ | ☐ | ☐ |
| Crew co-ordination and use of available resources | ☐ | ☐ | ☐ | ☐ |
| Adherence to clearances and safe heights | ☐ | ☐ | ☐ | ☐ |
| Cabin crew safety briefing | ☐ | ☐ | ☐ | ☐ |

| **General** | **(US)** | **S** |
|---|---|---|
| Situational Awareness | ☐ | ☐ |
| Discipline | ☐ | ☐ |

**Comments**

**Note:** ***If remedial action is required, please submit a separate report to G.M flight training.***

| | | |
|---|---|---|
| **Base Month** (Through Last Day of) :<br>Month Year | **License Valid** (Through Last Day of) :<br>Month Year | **Next Event**<br>☐ PC ☐ Recurrent. Training |

| | | | |
|---|---|---|---|
| **Date of Last 3 Takeoffs and Landings:** [2] | **1.** / / | **2.** / / | **3.** / / |
| Check Airman Name | Code No. | Check Airman's signature | Trainee's signature |

| | |
|---|---|
| **Checking Result**<br>Previous ☐ **US** ☐ **S**<br>Current ☐ **US** ☐ **S** | G.M Flight Training |
| **ECAA Inspector Name:-** | **ECAA inspector signature :** |

1. *Non-Normal Procedures: Are Abnormal, Additional, Alternate and Emergency Procedures.*
2. *Trainee is responsible for the accuracy of this data and he must sign the form.*
3. *Passing grade 70% - (S1 70% - 79%) - (S2 80% - 89%) – (S3 90% and above)..*
4. *For type rating, Transition, Upgrade.*

Page 2 of 2

Issue No.: 05 issue date: Jan. 2020 Form No.: 159

## Contents

Abbreviations and Acronyms ........ 2
Glossary ........ 3
1.0 Upset Prevention and Recovery Training (UPRT) ........ 9
1.1 Objective ........ 9
1.2 General ........ 9
1.2.1 Prevention ........ 9
1.2.2 Recovery ........ 9
1.3 Pre-Entry Requirements ........ 10
1.4 Training Syllabi and Documentation ........ 10
1.4.1 Syllabus ........ 10
1.4.2 Documentation ........ 12
1.4.3 Timescale ........ 13
2.0 Upset Prevention Recovery Instructor Training (UPRT-I) ........ 14
2.1 Objective ........ 14
2.2 General ........ 14
2.3 Pre-Entry Requirements ........ 14
2.4 Training Syllabi and Documentation ........ 15
2.4.1 Syllabus ........ 15
2.4.2 Documentation ........ 16
2.4.3 Timescale ........ 16
3.0 Upset Prevention and Recovery Training (UPRT) ........ 17
3.1 Conversion Course Syllabus ........ 17
3.1.1 Ground Phase ........ 17
3.1.1.1 Ground Training Daily Footprint ........ 18
3.1.2 Simulator Phase ........ 20
3.2 Recurrent Training Syllabus ........ 21
3.3 Upset Prevention and Recovery Instructor Training (UPRT-I) ........ 26
3.3.1 Syllabi ........ 26
3.3.1.1 Ground Phase ........ 26
3.3.1.1.1 Ground Training Daily Footprint ........ 27
3.3.1.2 Simulator Phase ........ 29
4.0 UPRT Specific Training Lesson (A320/319) ........ 30
4.1 UPRT SETUP 1 ........ 32
4.2 UPRT SETUP 2 ........ 35
4.3 UPRT SETUP 3 ........ 37

## Abbreviations and Acronyms

| | |
|---|---|
| ADI | Attitude director indicator |
| AOA | Angle of attack |
| A/P | Autopilot |
| ARC | Aviation rulemaking committee |
| A/T | Auto throttle (equivalent to A/THR depending on the aeroplane manufacturer) |
| ATC | Air traffic control |
| A/THR | Autothrust |
| ATO | Approved training organization |
| AURTA | Airplane upset recovery training aid |
| CAA | Civil aviation authority |
| CBT | Competency-based training |
| CG | Centre of gravity |
| CPL(A) | Commercial pilot licence — aeroplane |
| CRM | Crew resource management |
| EASA | European Aviation Safety Agency |
| EBT | Evidence-based training |
| FAA | Federal Aviation Administration |
| FBW | Fly-by-wire |
| FSTD | Flight simulation training device |
| ft | Feet |
| IAS | Indicated airspeed |
| IATA | International Air Transport Association |
| IOS | Instructor operating station |
| ISD | Instructional systems design |
| KSA | Knowledge, skills and attitudes |
| lb | Pound |
| LMS | Learning management system |
| LOCART | Loss of control avoidance and recovery training |
| LOC-I | Loss of control in flight |
| LOFT | Line-oriented flight training |
| LOS | Line-operational simulation |
| m | Metre |
| Mmo | Maximum operating Mach number |
| MOFT | Manoeuvre-oriented flight training |
| MPL | Multi-crew pilot licence |
| MTOM | Maximum take-off mass |
| OEM | Original equipment manufacturer(s) |
| PF | Pilot flying |
| PIO | Pilot-induced oscillation |
| PM | Pilot monitoring (equivalent to pilot not flying) |
| QA | Quality assurance |
| RAeS | Royal Aeronautical Society |

| | |
|---|---|
| SARPs | Standards and Recommended Practices |
| SME | Subject matter expert |
| SMS Safety management system | SMS Safety management system |
| SOP Standard operating procedure | SOP Standard operating procedure |
| SSP State safety programme | SSP State safety programme |
| TEM Threat and error management | TEM Threat and error management |
| TOGA Take-off/go-around | TOGA Take-off/go-around |
| UPRT Upset prevention and recovery training | UPRT Upset prevention and recovery training |
| Vc Cruising speed | Vc Cruising speed |
| Vmo Maximum operating speed | Vmo Maximum operating speed |
| Vref Reference speed in the landing configuration | Vref Reference speed in the landing configuration |
| Vs Vstall | Vs Vstall |
| vs. Versus | vs. Versus |
| VTE Valid training envelope | VTE Valid training envelope |

## Glossary

When the subsequent terms are used in this document, they have the following meanings:

***Academic training.*** Training that places an emphasis on studying and reasoning designed to enhance knowledge levels of a particular subject, rather than to develop specific technical or practical skills.

***Accountable executive*.** The individual who has corporate authority for ensuring that all training commitments can be financed and carried out to the standard required by the civil aviation authority (CAA), and any additional requirements defined by the approved training organization.

***Aerodynamic stall.*** An aerodynamic loss of lift caused by exceeding the critical angle of attack (synonymous with the term "stall").

***Aeroplane upset.*** An aeroplane in flight unintentionally exceeding the parameters normally experienced in line operations or training, normally defined by the existence of at least one of the following parameters:

**a)** pitch attitude greater than 25 degrees, nose up; or
**b)** pitch attitude greater than 10 degrees, nose down; or
**c)** bank angle greater than 45 degrees; or
**d)** within the above parameters, but flying at airspeeds inappropriate for the conditions.

***Airmanship*.** The consistent use of good judgement and well-developed knowledge, skills and attitudes to accomplish flight objectives.

***Angle of attack (AOA).*** Angle of attack is the angle between the oncoming air, or relative wind, and a defined reference line on the aeroplane or wing.

***Approach-to-stall.*** Flight conditions bordered by stall warning and aerodynamic stall.

***Approved training organization (ATO).*** An organization approved by and operating under the supervision of a Contracting State in accordance with the requirements of ICAO Annex 1 to perform approved training.

***Assessment.*** The determination as to whether a candidate meets the requirements of the expected performance standard.

***Auto flight systems.*** The autopilot, auto throttle (or autothrust), and all related systems that perform automatic flight management and guidance.

***Behaviour.*** The way a person responds, either overtly or covertly, to a specific set of conditions, which is capable of being measured.

***Behavioural indicator.*** An overt action performed or statement made by any flight crew member that indicates how an individual or the crew is handling an event.

***Bridge training.*** Additional training designed to address shortfalls in knowledge and skill levels so that all trainees possess the prerequisite levels upon which the approved training programme was designed.

***Competency.*** A combination of skills, knowledge, and attitudes required to perform a task to the prescribed standard.

***Competency-based training.*** Training and assessment that are characterized by a performance orientation, emphasis on standards of performance and their measurement and the development of training to the specified performance standards.

***Competency element.*** An action that constitutes a task that has a triggering event and a terminating event that clearly defines its limits, and an observable outcome.

***Contributing factor.*** A reported condition that contributed to the development of an aircraft accident or incident.

***Core competencies.*** A group of related behaviours, based on job requirements, which describe how to effectively perform a job and what proficient performance looks like. They include the name of the competency, a description, and a list of behavioural indicators.

***Critical angle of attack.*** The angle of attack that produces the maximum coefficient of lift beyond which an aerodynamic stall occurs.

***Critical system malfunctions.*** Aeroplane system malfunctions that place significant demand on a proficient crew. These malfunctions should be determined in isolation from any environmental or operational context.

***Developed upset.*** A condition meeting the definition of an aeroplane upset.

***Developing upset.*** Anytime the aeroplane begins to unintentionally diverge from the intended flight path or airspeed.

***Energy.*** The capacity to do work.

***Energy state.*** How much of each kind of energy (kinetic, potential or chemical) the aeroplane has available at any given time.

***Error.*** An action or inaction by the flight crew that leads to deviations from organizational or flight crew intentions or expectations.

***Error management.*** The process of detecting and responding to errors with countermeasures that reduce or eliminate the consequences of errors and mitigate the probability of further errors or undesired aeroplane states.

***Evidence-based training (EBT).*** Training and assessment based on operational data that is characterized by developing and assessing the overall capability of a trainee across a range of core competencies rather than by measuring the performance of individual events or manoeuvres.

*Note. — Guidance on EBT is contained in the* Procedures for Air Navigation Services — Training (*PANS-TRG, Doc 9868) and the* Manual of Evidence-based Training *(Doc 9995). EBT is competency-based and is applicable, as an option, to the recurrent training of flight crew members engaged in commercial air transport operations that is conducted in a flight simulation training device (FSTD).*

***Fidelity level.*** The level of realism assigned to each of the defined FSTD features.

***First indication of a stall.*** The initial aural, tactile or visual sign of an impending stall, which can be either naturally or synthetically induced.

***Flight crew member.*** A licensed crew member charged with duties essential to the operation of an aeroplane during a flight duty period.

***Flight management system.*** An aeroplane computer system that uses a large database to permit routes to be preprogramed and fed into the system by means of a data loader. The system is constantly updated with respect to position accuracy by reference to the most appropriate navigation aids available, which are automatically selected during the information update cycle.

***Flight path.*** The trajectory or path of an object (aeroplane) travelling through the air over a given space of time.

***Flight simulation training device (FSTD)***. A synthetic training device that is in compliance with the minimum requirements for FSTD qualification as described in Doc 9625.

***Instructional systems design (ISD)***. A formal process for designing training which includes analysis, design and production, and evaluation phases.

***Instructor.*** A person authorized to provide academic or practical training to a trainee or trainees for an aviation licence, rating or endorsement.

***Line-orientated flight training.*** Training and assessment involving a realistic, "real time", full mission simulation of scenarios that are representative of line operations.

***Load factor.*** The ratio of a specified load to the weight of the aeroplane, the former being expressed in terms of aerodynamic forces, propulsive forces or ground reactions.

***Manoeuvres.*** A sequence of deliberate actions to achieve a desired flight path. Flight path control may be accomplished by a variety of means including manual aeroplane control and the use of auto flight systems.

***Manoeuvre-based training.*** Training that focuses on a single event or manoeuvre in isolation.

***Motion turnaround bumps.*** A phenomenon associated with FSTD motion actuators when their direction of travel reverses, which results in acceleration spikes that can be felt by the pilot, thus giving a false motion cue.

***Negative training.*** Training which unintentionally introduces incorrect information or invalid concepts, which could actually decrease rather than increase safety.

***On-aeroplane training.*** A component of an upset prevention and recovery training (UPRT) programme designed to develop skill sets in employing effective upset prevention and recovery strategies utilizing only suitably-capable light aeroplanes.

***Performance criteria.*** Simple, evaluative statements on the required outcome of the competency element and a description of the criteria used to measure whether the required level of performance has been achieved.

***Phase of flight.*** A defined period within a flight, for example, take-off, climb, cruise, descent, approach and landing.

***Post-stall regime***. Flight conditions at an angle of attack greater than the critical angle of attack.

***Practical training.*** Describes training that places an emphasis on the development of specific technical or practical skills, which is normally preceded by academic training.

***Quality assurance (QA)***. All the planned and systematic actions necessary to provide adequate confidence that all activities satisfy given standards and requirements, including the ones specified by the approved training organization in relevant manuals.

***Note.*** *— This definition is specific to this manual.*

***Quality management.*** A management approach focused on the means to achieve product or service quality objectives through the use of its four key components: quality planning, quality control, quality assurance, and quality improvement.

***Note.*** *— This definition is specific to this manual.*

***Quality system.*** The aggregate of all the organization's activities, plans, policies, processes, procedures, resources, incentives and infrastructure working in unison towards a total quality management approach. It requires an organizational construct complete with documented policies, processes, procedures and resources that underpin a commitment by all employees to achieve excellence in product and service delivery through the implementation of best practices in quality management.

***Note.*** *— This definition is specific to this manual.*

***Scenario.*** Part of a training module plan that consists of predetermined manoeuvres and training events.

***Scenario-based training.*** Training that incorporates manoeuvres into real-world experiences to cultivate practical flying skills in an operational environment.

***Stall***. An aerodynamic loss of lift caused by exceeding the critical angle of attack.

***Note.*** *— A stalled condition can exist at any attitude and airspeed, and may be recognized by continuous stall warning activation accompanied by at least one of the following:*

***a)*** *buffeting, which could be heavy at times;*
***b)*** *lack of pitch authority and/or roll control; and*
***c)*** *inability to arrest the descent rate.*

***Stall event.*** An occurrence whereby the aeroplane experiences conditions associated with an approach-to-stall or an aerodynamic stall.

***Stall recovery procedure***. This refers to the manufacturer-approved aeroplane-specific stall recovery procedure. If a manufacturer-approved recovery procedure does not exist, the aeroplane-specific stall recovery procedure developed by the operator based on the stall recovery template contained in the FAA Advisory Circular, AC 120-109, *Stall and Stick Pusher Training*, could be referred to.

***Stall warning.*** A natural or synthetic indication provided when approaching a stall that may include one or more of the following indications:

**a)** aerodynamic buffeting (some aeroplanes will buffet more than others);
**b)** reduced roll stability and aileron effectiveness;
**c)** visual or aural cues and warnings;
**d)** reduced elevator (pitch) authority;
**e)** inability to maintain altitude or arrest rate of descent; and
**f)** stick shaker activation (if installed).

***Note.*** *— A stall warning indicates an immediate need to reduce the angle of attack.*

***Startle.*** The initial short-term, involuntary physiological and cognitive reactions to an unexpected event that commence the normal human stress response.

***Stick shaker***. A device that automatically vibrates the control column to warn the pilot of an approaching stall.

***Note.*** *— A stick shaker is not installed on all aeroplane types.*

***Stick pusher.*** A device that, automatically applies a nose down movement and pitch force to an aeroplane's control columns, to attempt to decrease the aeroplane's angle of attack. Device activation may occur before or after aerodynamic stall, depending on the aeroplane type.

***Note.*** *— A stick pusher is not installed on all aeroplane types.*

***Stress (response).*** The response to a threatening event that includes physiological, psychological and cognitive effects. These effects may range from positive to negative and can either enhance or degrade performance.

***Surprise*.** The emotionally-based recognition of a difference in what was expected and what is actual.

***Threat.*** Events or errors that occur beyond the influence of the flight crew, increase operational complexity and must be managed to maintain the margin of safety.

***Threat management.*** The process of detecting and responding to threats with countermeasures that reduce or eliminate the consequences of threats and mitigate the probability of errors or undesired aeroplane states.

***Train to proficiency*.** Approved training designed to achieve end-state performance objectives, providing sufficient assurances that the trained individual is capable to consistently carry out specific tasks safely and effectively.

***Note.*** *— In the context of this definition, the words train to proficiency can be replaced by training to proficiency.*

***Training event.*** Part of a training scenario that enables a set of competencies to be exercised.

***Training objective.*** A clear statement that is comprised of three parts, i.e.:

- **a)** the desired performance or what the trainee is expected to be able to do at the end of training (or at the end of particular stages of training);
- **b)** the conditions under which the trainee will demonstrate competence; and
- **c)** the performance standard to be attained to confirm the trainee's level of competence.

***Transport category aeroplane.*** A category of airworthiness applicable to large civil aeroplanes, which are either:

- **a)** turbojet aeroplanes with ten or more seats or having a maximum take-off mass (MTOM) greater than 5 700 kg (12 566 lb); or
- **b)** propeller-driven aeroplanes with greater than 19 seats or having an MTOM greater than 8 618 kg (19 000 lb).

***Unsafe situation.*** A situation, which has led to an unacceptable reduction in safety margin.

***Wake encounter.*** An event characterized by the aeroplane experiencing the effects of wake turbulence brought about by wingtip vortices or engine exhaust.

## 1.0 Upset Prevention and Recovery Training (UPRT)

- every 36 months

### 1.1 Objective

The objective of the UPRT course is to mitigate the risk for in-flight upset event.

The aim is to increase the ability of pilots to effectively ***recognize and avoid*** unexpected and unforeseeable situations that can lead to airplane upset and to improve their *ability to recover* control of an airplane that has exceeded the normal flight regime.

### 1.2 General

The training course is a means of training those critical areas of flight crew performance in conditions of flight during which pilots are likely to be exposed to an increased risk of in-flight upset.

The UPRT course is delivered within the existing initial and recurrent training activity and is developed in the framework of the competency-based training.

According to guideline provided in the ICAO doc. 10011, it has been designed into satisfying the following distinct areas of Aircraft upset training:

#### 1.2.1 Prevention

heightened awareness of the potential threats from events, conditions or situations and effective avoidance at early indication of a potential upset-causing condition;

#### 1.2.2 Recovery

effective and timely actions to recovery from an upset to restore the aeroplane to safe flight parameters in accordance with recommendations provided by Aircraft manufacturers.

It is conducted in an integrated manner including both Theoretical (Classroom) and Practical (FSTD) training components.

Each component includes elements on the ***Prevention*** (*knowledge to recognize and avoid*) and elements on the ***Recovery*** (*skill sets on recover the airplane to the originally intended flight path*).

**a)** ***<u>Theoretical training</u>***

Provide pilots with the knowledge and awareness needed to understand the threats to safe flight and the employment of mitigating strategies;

Theoretical training includes classroom and self-study in preparation for FSTD lessons;

It represents the baseline for the creation (initial training) or consolidation (recurrent training) of the required comprehensive level of UPRT related knowledge inclusive of, but not limited to, aerodynamics, flight dynamics, human limitations, startle effect.

**b) *Practical training***

Is the FSTD activity designed to provide pilots with the required skill sets to effectively employ upset avoidance strategies and, when necessary, effectively recover the Aeroplane to the originally intended flight path.

The practical training (FSTD) uses a combination of manoeuvre-based and scenario-based training.

The manoeuvre-based training is used to demonstrate the application of theoretical principles Scenario-based training (FSTD) is used to introduce flight crew to situation which, if not correctly managed, could lead to an upset condition.

***Note:*** *The practical training is completed from each seat in which a pilot's duties require him/her to operate.*

***Note:*** *All the FSTD Upset Prevention and Recovery Training exercises shall be conducted within the FSTD Valid Training limits.*

Threat and Error Management (TEM) and Crew Resource Management (CRM) principles are integrated into the UPRT. In particular, the surprise and startle effect, and the importance of resilience development are emphasised.

Training emphasises are put in place on that an actual upset condition may expose flight crew to significant physiological and psychological challenges, such as visual illusions, spatial disorientation and unusual g-forces, with the objective to develop strategies to deal with such challenges.

## 1.3 Pre-Entry Requirements

All Flight Crew members undergoes UPRT course that is relevant to the type of airplane on which they are rated to operate.

## 1.4 Training Syllabi and Documentation

### 1.4.1 Syllabus

**Airplane Upset Prevention syllabus**

According with EASA AMC1 ORO.FC.220&230 (a) and ICAO Doc. 10011 the Upset Prevention Training syllabus has been established including 9 main subjects and the training elements that compose them, providing the type of training demanded (Ground/ FSTD). See Table 1-1 below for Subject, Elements and Training Type demanded.

**Table 1-1: Subjects and Elements of Upset Prevention Training**

| Subject<br>Elements | Training Ground | Training FSTD |
|---|---|---|
| **A.** ***Aerodynamics***<br>**1.** General aerodynamic characteristics | ☒ | |
| **2.** Aerodynamics (high and low altitudes) | ☒ | |
| **3.** Aeroplane certification and limitations | ☒ | ☒ |
| **4.** Aeroplane performance (high and low altitudes) | ☒ | ☒ |
| **5.** Angle of attack (AOA) and stall awareness | ☒ | ☒ |
| **6.** Stick shaker or other stall-warning device activation (as applicable) | ☒ | ☒ |
| **7.** Stick pusher (as applicable) | ☒ | ☒ |
| **8.** Mach effects (if applicable to the Aeroplane type) | ☒ | ☒ |
| **9.** Aeroplane stability | ☒ | ☒ |
| **10.** Control surface fundamentals | ☒ | ☒ |
| **11.** Use of trims | ☒ | ☒ |
| **12.** Icing and contamination effects. | ☒ | ☒ |
| **B.** ***Causes of and contributing factors to upset***<br>**1.** Environmental | ☒ | ☒ |
| **2.** Pilot-induced | | |
| **3.** Mechanical (Aeroplane systems) | | |
| **C.** ***Safety review of accidents and incidents relating to Aeroplane upsets***<br>**1.** Safety review of accidents and incidents relating to Aeroplane upsets | ☒ | ☒ |
| **D.** ***g-load awareness and management***<br>**1.** Positive/negative/increasing/decreasing g-loads | ☒ | ☒ |
| **2.** Lateral g awareness (side-slip) | ☒ | ☒ |
| **3.** g-load management | ☒ | ☒ |
| **E.** ***Energy management***<br>**1.** Kinetic energy vs potential energy vs chemical energy (power) | ☒ | ☒ |
| **F.** ***Flight path management***<br>**1.** Relationship between pitch, power and performance | ☒ | ☒ |
| **2.** Performance and effects of differing power plants (if applicable) | ☒ | ☒ |
| **3.** Manual and automation inputs for guidance and control | ☒ | ☒ |
| **4.** Type-specific characteristics | ☒ | ☒ |
| **5.** Management of go-around from various stages during the approach | ☒ | ☒ |
| **6.** Automation management | ☒ | ☒ |
| **7.** Proper use of rudder | ☒ | ☒ |
| **G.** ***Recognition*** | ☒ | ☒ |

| Subject<br>Elements | Training | |
|---|---|---|
| | Ground | FSTD |
| **1.** Type-specific examples of physiological, visual and instrument clues during developing and developed upsets | | |
| **2.** Pitch/power/roll/yaw | ☒ | ☒ |
| **3.** Effective scanning (effective monitoring) | ☒ | ☒ |
| **4.** Type-specific stall protection systems and cues | ☒ | ☒ |
| **5.** Criteria for identifying stalls and upsets | ☒ | ☒ |
| **H.** ***System malfunction***<br>(including immediate handling and subsequent operational considerations, as applicable)<br>**1.** Flight control defects | ☒ | ☒ |
| **2.** Engine failure (partial or full) | ☒ | ☒ |
| **3.** Instrument failures | ☒ | ☒ |

**Airplane Upset Recovery syllabus**

In accordance with EASA AMC1 ORO.FC.220&230 (a) and ICAO Doc. 10011 the Upset Recovery Training syllabus has been established including the main subject and the training elements that compose it, providing the type of training demanded (Ground / FSTD). See Table 1-2 below for Subject, Elements and Training Type demanded.

**Table 1-2: Subject and Elements of Upset Recovery Training**

| Subject<br>Elements | Training | |
|---|---|---|
| | Ground | FSTD |
| **a)** ***Recovery from developed upsets***<br>**1.** Timely and appropriate intervention | ☒ | ☒ |
| **2.** Recovery from stall events, in the following configurations;<br>➢ take-off configuration,<br>➢ clean configuration low altitude,<br>➢ clean configuration near maximum operating altitude,<br>➢ landing configuration during the approach phase. | ☒ | ☒ |
| **3.** Recovery from nose high at various bank angles | ☒ | ☒ |
| **4.** Recovery from nose low at various bank angles | ☒ | ☒ |
| **5.** Consolidated summary of aeroplane recovery techniques | ☒ | ☒ |

### 1.4.2 Documentation

- AURTA - Appendices 3E and 3B;
- UPRT Pilot's Guide;
- OM B
- Airplane Manufacturer Operational Information's;
- Company's training Hand-outs.

### 1.4.3 Timescale

The UPRT course is included both in the conversion course, and recurrent training and checking (R.T.) training programme.

***Conversion Course***

For the Conversion Course all the upset prevention and recovery elements from both Table 1-1 and Table 1-2 are included.

| Subject | Days | Total Time |
|---|---|---|
| Ground Phase (Classroom) | 1 Day | 8 Hrs (*) |
| Simulator Phase | 1 Day | 4 Hrs (*) |

**Note:**

(*) In order to properly organize the amount of training for the initial UPRT, Nesma Airlines Training Department may consider the flight crew member's previous training on the same subject on different type to reduce the total time of initial UPRT training delivered both for Academic and FSTD training.

***Recurrent Training and Checking***

For the recurrent training programme the upset prevention and recovery elements from both Table 1-1 and Table 1-2 must be included, such that all the elements are covered over a period not exceeding 3 years (see Syllabus for details).

| Subject | Days | Total Time |
|---|---|---|
| Self-Study | 1 Day | 2 Hrs (*) |
| Ground Phase | | 1 Hrs (*) |
| Simulator Phase | 1 Day | 2/3 Hrs (**) |

**Note:**

(*) The Academic training shall be integrated yearly into daily RT classroom.

(**) 2(two) hours are normally assigned when only prevention elements are performed; 3(three) hours are normally assigned when both prevention and recovery elements are performed.

## 2.0 Upset Prevention Recovery Instructor Training (UPRT-I)

### 2.1 Objective

The objective of the UPRT-I course is to provide the Flight Instructors with the specific competence to delivery UPRT training (Academic and FSTD) for the relevant Aeroplane Type.

The UPRT-I training ensures that UPRT instructors have and maintain complete knowledge and understanding of the UPRT operating environment, and skill sets.

### 2.2 General

The training course ensures that personnel providing UPRT training:

- are able to demonstrate the correct upset recovery techniques for the specific aeroplane type;
- understand the importance of applying type-specific Original Equipment Manufacturers (OEMs) procedures for recovery manoeuvres;
- are able to distinguish between the applicable SOPs and the OEMs recommendations (if available);
- understand the capability and limitation of FSTD used for UPRT (*Valid Training Envelope limits)*;
- are aware of the potential of negative transfer of training that may exist when training outside the capabilities of the FSTD;
- understand and are able to use the IOS (Instructor Operating Station) of the FSTD in the context of effective UPRT delivery;
- understand and are able to use the FSTD instructor tools available for providing accurate feedback on flight crew performance;
- understand the importance of adhering to the FSTD UPRT scenarios that have been validated by the training programme developer; and
- understand the missing critical human factor aspects due to the limitations of the FSTD and convey this to the flight crew receiving the training.
- are able to point out how the Threat and Error Management (TEM) and Crew Resource Management principles can effectively be used in UPRT
- are able to emphasize the surprise and startle factor

At the successfully completion of the UPRT-I courses the candidate is assigned as UPRT Instructor for the relevant aircraft type by the delivery of successful accomplishment of UPRT-I course attestation.

The UPRT-I course is held by selected qualified instructors of the UPRT core-group.

### 2.3 Pre-Entry Requirements

Nesma Airlines Flight Crew Instructors TRI, TRE, LT.

### 2.4 Training Syllabi and Documentation

The UPRT-I initial qualification course contains Academic (Theoretical) and FSTD (Simulator practice) training. Initial Academic Training elements for the instructors include knowledge of the FSTD VTE, and instructional aspects specific to the delivery of UPRT.

The UPRT Instructor to maintain currency in knowledge and understanding of the UPRT operating environment is periodically trained on UPRT as per standard Flight Crew RT and He/she shall be yearly assessed on UPRT subject during yearly instructor's assessment session.

#### 2.4.1 Syllabus

The following subject is the list of minimum training elements (other training elements may be integrated by the Training Manager as applicable):

**Table 1-3:**

| Training Elements Upset Prevention Instructor Training | Training | |
|---|---|---|
| | Ground | FSTD |
| Knowledge of all the applicable training elements (see UPRT course) | ☒ | ☒ |
| Limitation of Training platforms (FSTD) | ☒ | |
| Review of accidents/Incidents | ☒ | |
| Understanding AoA | ☒ | |
| Energy management factors | ☒ | |
| Spatial Disorientation | ☒ | ☒ |
| Distraction | ☒ | ☒ |
| Aeroplane characteristics | ☒ | ☒ |
| UPRT recognition and recovery strategy | ☒ | ☒ |
| OEM recommendations and Intervention strategies | ☒ | |
| Recognition and corrections of trainee errors | ☒ | |
| Operating environment | ☒ | ☒ |
| How to induce startle factor | ☒ | ☒ |
| Value and benefit of demonstration | ☒ | |
| How to assess pilot performance | ☒ | ☒ |
| How to avoiding negative training - negative transfer of training | ☒ | ☒ |

Note: Greyed area are already taken as part of the Basic Instructor Training (TRI, TRE or LT). Refer to UPRT Specific Training Lesson (A320/319)

### 2.4.2 Documentation

- Relevant UPRT EASA Requirements (ORO.FC);
- IATA UPRT Guidance Material;
- ICAO Doc 10011 - Manual on UPRT;
- Airplane upset Recovery Training Aid (AURTA);
- OM B (Type related);
- Airplane Manufacturer Operational Information's (Type related);
- Company's Training hand-outs (Type related);

### 2.4.3 Timescale

***Initial Qualification Course***

For the Initial Qualification Course, the subjects listed in Table 1-3 are trained both in a Classroom and Simulators sessions as follows:

| Subject | Days | Total Time |
|---|---|---|
| Familiarization Self Study | 1 Day | 4 Hrs |
| Ground Phase | 1 Day | 8 Hrs |
| Simulator Phase | 1 Day | 6 Hrs |

***Recurrent Training***

For the UPRT-I Recurrent Training programme the subjects marked with an asterisk listed in Table 1-3 are refreshed in both classroom and simulator as applicable.

| Subject | Days | Total Time |
|---|---|---|
| **Ground Phase**<br>(limited to those items of table 2-3 not trained as part of Flight Crew RT) | ½ Day | 4 Hrs |
| Simulator Phase | ½ Day | 4 Hrs |

## 3.0 Upset Prevention and Recovery Training (UPRT)

### 3.1 Conversion Course Syllabus

The UPRT training program comprises the following two components:

- Theoretical Training (Ground Phase)
- Practical Training (Simulator Phase)

#### 3.1.1 Ground Phase

The theoretical training delineates the various causes of upsets and helps to generate a deeper understanding of the areas of threat.

Theoretical recovery strategy is also thought before the practical training as a helpful way to maximize resources.

To ensure sufficient retention, Academic Training (Ground phase) contents proceeds from the general to the specific and it must be taught by a qualified UPRT ground or flight instructor. The academic training elements directly related to a scheduled FSTD training session are briefed before the practical session.

A worldwide recognized source of UPRT theoretical knowledge is the AURTA to which the syllabus is referred to for selecting the theoretical content of elements being thought (see table below).

TEM and CRM principles are integrated into the Academic Training, with a particular emphasis on the “Startle Effect” and on the importance of “Resilience development”.

### 3.1.1.1 Ground Training Daily Footprint

| Ground Phase | | Reference |
|---|---|---|
| **Time** | **Theoretical Subject** | |
| **DAY 1 (7 HRS)** | **Aerodynamics**<br>➢ General aerodynamic characteristics<br>➢ Aerodynamics (high and low altitudes)<br>➢ Aeroplane certification and limitations<br>➢ Aeroplane performance (high and low altitudes)<br>➢ Angle of attack (AOA) and stall awareness<br>➢ Stick shaker or other stall-warning device activation<br>➢ Stick pusher (as applicable)<br>➢ Mach effects<br>➢ Aeroplane stability | AURTA Section 2.5 |
| | **g-load awareness and management**<br>➢ Positive/negative/increasing/decreasing g-loads.<br>➢ g-load management<br>➢ Lateral g awareness (side-slip) | AURTA Sections 2.5.3 and 2.6.2.2 |
| | **Energy management**<br>➢ Kinetic energy vs potential energy vs chemical energy (power) | AURTA Section 2.5.2 |
| | **Flight path management**<br>➢ Relationship between pitch, power and performance;<br>➢ Performance and effects of differing power plants (if applicable);<br>➢ Manual and automation inputs for guidance and<br>➢ control;<br>➢ Type-specific characteristics;<br>➢ Management of go-around from various stages during the approach;<br>➢ Automation management;<br>➢ Proper use of rudder; | OM B FCTM |
| | **Causes of and contributing factors to upset**<br>➢ Environmental<br>➢ Pilot-induced<br>➢ Mechanical (Aeroplane systems) | AURTA Section 2.4 |
| | **System malfunction** (including immediate handling and subsequent operational considerations, as applicable):<br>➢ Flight control defects;<br>➢ Engine failure (partial or full);<br>➢ Instrument failures; | AURTA Section 2.4.2 |
| | **Recognition** | AURTA Sections 2.5.5.5 and 2.5.5.9 |

| Ground Phase | | Reference |
|---|---|---|
| **Time** | **Theoretical Subject** | |
| | ➢ Type-specific examples of physiological, visual and instrument clues during developing and developed upsets;<br>➢ Pitch/power/roll/yaw;<br>➢ Effective scanning (effective monitoring);<br>➢ Type-specific stall protection systems and cues;<br>➢ Criteria for identifying stalls and upsets. | |
| | **Recovery from developed upset**<br>➢ Timely and appropriate intervention<br>➢ Recovery from stall events, in the following configurations:<br>❖ take-off;<br>❖ clean configuration low altitude;<br>❖ clean configuration near maximum operating altitude,<br>❖ landing configuration during approach.<br>➢ Recovery from nose high at various bank angles;<br>➢ recovery from noise low at various bank angles;<br>➢ Consolidated summary of aeroplane recovery techniques. | AURTA Sections 2.6.3.1 and 2.6.3.2 and 2.6.3.3 and 2.6.3.4 and 2.6.3.5 |
| | **Human Factors**<br>➢ Address the physiological responses in the event of flight path divergence or a sudden upset.<br>➢ Cognitive process (threat identification, deviation detection, decision on how to respond etc.)<br>➢ Decision on how to respond | TBD |
| | **Safety review of accidents and incidents** relating to Aeroplane upsets | TBD |

### 3.1.2 Simulator Phase

The simulator training syllabus addresses techniques to be used to recover an airplane that has been upset. Training practice are provided to allow the pilot as minimum to recover from nose-high and nose-down airplane upsets.

All the exercise will keep the simulator within the VTE limits and the data provided by the manufacturer.

Exercise will not result in negative or counterproductive training.

Exercise are initiated, as applicable by several means:

- Manual manoeuvring to the demonstration parameters;
- Automated simulator pre-set;
- Stabilizer trim to induce the demonstration parameters for the pilot training requirements;
- Other appropriate airplane-system, flight-control or engine malfunctions.

***Simulator Training Daily Footprint***

In the FFS UPRT session, all the required elements listed in 1.2.1 Prevention and 1.2.2 Recovery shall be performed according to the aircraft manufacturer procedures.

| FFS UPRT | |
|---|---|
| Advanced handling skills | 4Hrs |
| AOA and g-awareness | |
| Recovery from upsets including stall recovery | |
| Manual flight during normal operations (raw data approach, Go-Around, TCAS, Ground Proximity, OEI at high altitude, etc.) | |
| Scenario-based upset prevention training and recovery exercises. | |

For Syllabus refer to Type specific training details in 4.1 UPRT SETUP 1 (Recovering from Upset including stall recovering).

## 3.2 Recurrent Training Syllabus

The theoretical and practical recurrent training programme shall be performed at least every 12 calendar months, such that all elements listed in Section 1.2.1 Prevention and 1.2.2 Recovery are covered over a period not exceeding three years according to the following table:

| Session | UPRT Recurrent schedule Ground Training and FSTD/FFS | | |
|---|---|---|---|
| RT | YEAR 1 | YEAR 2 | YEAR 3 |
| A | Setup 1 (See 4-1) | Setup 2 (See 4-2) | Setup 3 (See 4-3) |
| B | | | |

***Note:*** *The Setups may be split in the two semi-annual FFS RT sessions (RT A and RT B) or completed in one single FFS RT sessions (RT A or RT B).*

***Note:*** *Some upset prevention elements and respective components may be prioritized according to OEM guidelines or to the Nesma Airlines safety risk assessment.*

The three setups have been built in a such a way to accomplish the objectives here below:

| SETUP 1 | Training objectives |
|---|---|
| Recovering from upsets<br>➢ Nose-low<br>➢ Nose-high<br>➢ High bank angle<br>➢ Stall event | ➢ Apply the OEM recommendations, apply correct control inputs, deliberately separate push/unload from roll, control thrust at the correct time during recovery<br>➢ Increase resilience by managing surprise and startle, and develop ability to apply counter-intuitive control inputs<br>➢ Apply the airplane specific STALL RECOVERY SOP correctly and deliberately |

| SETUP 2 | Training objectives |
|---|---|
| AOA awareness<br>Medium / High ALT | ➢ Transfer the Vn diagram into practical application<br>➢ Explore the function of loading and unloading (manipulation of Vs), understand that g-load controls Vs<br>➢ Understand that stall depends on AOA only and stall is not directly related to speed and/or attitude<br>➢ Understand that recovery from stall will be based on AOA reduction only and must be separated from the application of thrust<br>➢ Explore manoeuvring with reduced buffet margins at cruising altitude<br>➢ Perform Energy Trading at high altitude<br>➢ Consolidate smooth control inputs at high altitude |

| SETUP 3 | Training objectives |
|---|---|
| Basic/Advanced Manual Flying Skills Low / Medium / High ALT | ➢ Enhance the core competency "Aircraft Flight Path Management, manual control"<br>➢ Explore handling characteristics and airplane response to specific primary and secondary flight control inputs<br>➢ Gain confidence for appropriate application of manual flight control inputs required during upset prevention and recovery conditions<br>➢ Establish energy awareness, prepare for AOA awareness |

***Ground Phase***

The theoretical RT UPRT training programme is distributed over three different Setups (1,2 and 3) of Elements and Components to evenly include the full programme over the existing three-year recurrent cycle

The theoretical training is performed as follows:

- **(e-learning)**

Theoretical Training shall be taken on self-study by the trainee before the start of RT.

- **RT Classroom**

In this session the trainee shall review the theoretical subjects directly related to the scheduled FSTD training session;

- **SIM Briefing**

During the briefing the trainee shall review type related subjects directly related to the scheduled FSTD training session.

For the Ground Phase Syllabi refer to the contents of 3-1, 3-2 and 3-3.

***Simulator Phase***

The practical RT UPRT training programme is distributed over three different Setups (1,2 and 3) of Elements and Components to evenly include the full UPRT programme over the existing three-year recurrent cycle.

The simulator UPRT practical training is integrated in the existing RT simulator session on the basis of the scheme of the "**UPRT Recurrent schedule"**

For the Simulator Phase Syllabi refer to the contents of 3-1, 3-2 and 3-3.

***Training Setups***

The RT UPRT training programme is distributed over the Setup 1, Setup 2 and Setup 3 sets of Elements and Components.

The contents of the three setups cover the full UPRT programme as per 1.0 Upset Prevention and Recovery Training (UPRT)

**Table 3-1: SETUP 1**

| **Recovering from Upset including stall recovering** |
|---|
| ➢ Academic Training<br>- CBT - Airplane Upset Prevention Recovery<br>➢ Simulator<br>- Elements:<br>**→ Aerodynamics**<br>❖ Stick shaker or other stall-warning device activation (as applicable)<br>❖ Stick pusher (as applicable)<br>▪ Causes and contributing factors to upsets<br>❖ Pilot-induced<br>❖ Mechanical (aeroplane systems)<br>▪ Flight Path Management<br>❖ Type-specific characteristics<br>❖ Management of go-around from various stages during the approach<br>❖ Automation management<br>▪ Recognition<br>❖ Type-specific examples of physiological, visual and instrument clues during developing and developed upsets<br>❖ Pitch/power/roll/yaw<br>❖ Effective scanning (effective monitoring)<br>❖ Type-specific stall protection systems and cues<br>❖ Criteria for identifying stalls and upsets<br>▪ System malfunction<br>*(including immediate handling and subsequent operational considerations, as applicable)*<br>❖ Stall protection system failures including icing alerting systems<br>❖ Manual handling skills<br>(*no autopilot, no auto thrust/auto throttle and, where possible, without flight directors)*<br>❖ Visual approach<br>❖ Go-around from various stages during the approach<br>➢ Exercises (FFS)<br>▪ Timely and appropriate intervention;<br>▪ Recovery from stall in the following configurations:<br>✓ = Take-off configuration;<br>✓ = Clean configuration Low Alt,<br>✓ = Clean configuration near max operating Alt, and<br>✓ = Landing configuration during the approach phase |

| |
|---|
| ▪ Recovery from nose high at various bank angles;<br>▪ Recovery form nose low at various bank angles;<br>▪ Consolidated summary of airplane recovery techniques.<br>**Note**:<br>*Apply the OEM recommendation, apply correct control inputs, deliberately separate "push/unload" from "roll", control thrust at the correct time during recovery.*<br>*Increase resilience by managing surprise and startle, and develop ability to apply counter-intuitive control inputs.*<br>*Apply the airplane specific STALL RECOVERY SOP correctly and deliberately.* |

**Table 3-2:**

| SETUP 2 - AoA awareness Medium/High Alt |
|---|
| ➢ Ground Training<br>- Classroom/Self study<br>Review all the applicable Prevention Element and Components.<br>➢ Simulator:<br>- Prevention Elements and Components<br>**→ Aerodynamics**<br>❖ Angle of attack (AOA) and stall awareness<br>**→ Causes and contributing factors to upsets**<br>❖ Mechanical (aeroplane systems)<br>**→ g-load awareness and management**<br>❖ Positive/negative/increasing/decreasing g-loads<br>❖ Lateral g awareness (side-slip)<br>❖ g-load management<br>**→ Flight path management**<br>❖ Type-specific characteristics<br>❖ Automation management |

**Table 3-3:**

| SETUP 3 - Basic/Advanced manual Flying Skills |
|---|
| ➢ Ground Training<br>- Classroom/Self study<br>Review all applicable Prevention Element and Components and the Recovery exercises<br>➢ Simulator:<br>- Prevention Elements and Components and Recovery exercises<br>**→ Aerodynamics**<br>❖ Aerodynamics (high and low altitudes)<br>❖ Aeroplane performance (high and low altitudes)<br>❖ Mach effects<br>❖ Aeroplane stability<br>❖ Control surface fundamentals<br>❖ Use of trims<br>❖ Icing and contamination effects<br>**→ Causes and contributing factors to upsets**<br>❖ Environmental<br>❖ Mechanical (aeroplane systems)<br>**→ Safety review of accidents and incidents relating to aeroplane upsets**<br>❖ Safety review of accidents and incidents relating to aeroplane upsets<br>**→ Energy management**<br>❖ Kinetic energy vs potential energy vs chemical energy (power)<br>**→ Flight path management**<br>❖ Relationship between pitch, power and performance<br>❖ Performance and effects of differing power plants (if applicable)<br>❖ Manual and automation inputs for guidance and control<br>❖ Type-specific characteristic<br>❖ Automation management<br>❖ Proper use of rudder<br>**→ System malfunction**<br>*(including immediate handling and subsequent operational considerations, as applicable)*<br>❖ Flight control defects<br>❖ Engine failure (partial or full)<br>❖ Instrument failures<br>❖ Loss of reliable airspeed<br>❖ Automation failures<br>❖ Fly-by-wire protection degradations<br>**→ Manual handling skills**<br>*(no autopilot, no auto thrust/auto throttle and, where possible, without flight directors)*<br>❖ Visual approach<br>❖ Go-around from various stages during the approach<br>❖ Flight at different speeds, including slow flight, and altitudes within the full normal flight envelope<br>❖ Procedural instrument flying and manoeuvring including<br>❖ instrument departure and arrival<br>❖ Steep turns |

## 3.3 Upset Prevention and Recovery Instructor Training (UPRT-I)

### 3.3.1 Syllabi

The UPRT-I training program comprises the following two components:

- Pre-Study Phase (Familiarization with regulatory requirements and training elements)
- Theoretical Training (Ground Instruction on UPRT Academic elements)
- Practical Training (Simulator Exercises on recognize, avoid and recovery Airplane upset)

#### 3.3.1.1 Ground Phase

The ground phase will train all the Academic (Theoretical) elements of the UPRT programme with additional specific knowledge of the FSTD operating limitations, the related IOS functions for the UPRT, aspects specific to the delivery of UPRT and understanding the importance of achieving to the UPRT scenarios that have been validated by the training programme.

TEM and CRM principles are integrated into the Ground Training, with a particular emphasis on the “Startle Effect” and on the importance of “Resilience development”.

### 3.3.1.1.1 Ground Training Daily Footprint

| Ground Phase | | Reference |
|---|---|---|
| **Time** | **Theoretical Subject** | |
| **DAY 1** | **Aerodynamics**<br>➢ General aerodynamic characteristics<br>➢ Aerodynamics (high and low altitudes)<br>➢ Aeroplane certification and limitations<br>➢ Aeroplane performance (high and low altitudes)<br>➢ Angle of attack (AOA) and stall awareness<br>➢ Stick shaker or other stall-warning device activation<br>➢ Stick pusher (as applicable)<br>➢ Mach effects<br>➢ Aeroplane stability | AURTA<br>Section 2.5 |
| | **g-load awareness and management**<br>➢ Positive/negative/increasing/decreasing g-loads.<br>➢ g-load management<br>➢ Lateral g awareness (side-slip) | AURTA<br>Sections 2.5.3 and 2.6.2.2 |
| | **Energy management**<br>➢ Kinetic energy vs potential energy vs chemical energy (power) | AURTA<br>Section 2.5.2 |
| | **Flight path management**<br>➢ Relationship between pitch, power and performance;<br>➢ Performance and effects of differing power plants (if applicable);<br>➢ Manual and automation inputs for guidance and<br>➢ control;<br>➢ Type-specific characteristics;<br>➢ Management of go-around from various stages during the approach;<br>➢ Automation management;<br>➢ Proper use of rudder; | OM B<br>FCTM |
| | **Causes of and contributing factors to upset**<br>➢ Environmental<br>➢ Pilot-induced<br>➢ Mechanical (Aeroplane systems) | AURTA<br>Section 2.4 |
| | **System malfunction** (including immediate handling and subsequent operational considerations, as applicable):<br>➢ Flight control defects;<br>➢ Engine failure (partial or full);<br>➢ Instrument failures; | AURTA<br>Section 2.4.2 |
| | **Recognition** | AURTA<br>Sections 2.5.5.5 and 2.5.5.9 |

| Ground Phase | | Reference |
|---|---|---|
| Time | Theoretical Subject | |
| | ➢ Type-specific examples of physiological, visual and instrument clues during developing and developed upsets;<br>➢ Pitch/power/roll/yaw;<br>➢ Effective scanning (effective monitoring);<br>➢ Type-specific stall protection systems and cues;<br>➢ Criteria for identifying stalls and upsets. | |
| | **Recovery from developed upset**<br>➢ Timely and appropriate intervention<br>➢ Recovery from stall events, in the following configurations:<br>❖ take-off;<br>❖ clean configuration low altitude;<br>❖ clean configuration near maximum operating altitude,<br>❖ landing configuration during approach.<br>➢ Recovery from nose high at various bank angles;<br>➢ recovery from noise low at various bank angles;<br>➢ Consolidated summary of aeroplane recovery techniques. | AURTA Sections 2.6.3.1 and 2.6.3.2 and 2.6.3.3 and 2.6.3.4 and 2.6.3.5 |
| | **Human Factors**<br>➢ Address the physiological responses in the event of flight path divergence or a sudden upset.<br>➢ Cognitive process (threat identification, deviation detection, decision on how to respond etc.)<br>➢ Decision on how to respond | TBD |
| | **Safety review of accidents and incidents**<br>➢ relating to Aeroplane upsets<br>➢ Disorientation;<br>➢ Distraction;<br>➢ Workload management;<br>➢ How to induce Startle factor;<br>➢ Resilience development;<br>➢ The importance of adhering to the validated UPRT<br>➢ scenarios during the lesson. | TBD |
| | ➢ Limitation of training platforms;<br>➢ Specific IOS UPRT dedicated controls;<br>➢ Avoid the negative training transfer; | TBD |
| | ➢ UPRT recognition and recovery strategies<br>➢ OEM recommendation (fleet related)<br>➢ Distinguish in between generic UPRT strategies and OEM recommendation with respect to their | TBD |

| Ground Phase | | Reference |
|---|---|---|
| Time | Theoretical Subject | |
| | relevance to the device capabilities and limitations; | |

### 3.3.1.2 Simulator Phase

The simulator training syllabus addresses techniques to be used to recover an airplane that has been upset. Training practice are provided to allow the pilot as minimum to recover from nose-high and nose-down airplane upsets.

All the exercise will keep the simulator within the FSTD operating limits and the data provided by the manufacturer.

Exercise are initiated, as applicable by several means:

- Manual manoeuvring to the demonstration parameters;
- Automated simulator pre-sets;
- Stabilizer trim to induce the demonstration parameters for the pilot training requirements;
- Other appropriate airplane-system, flight-control or engine malfunctions.

***Simulator Training Daily Footprint***

For the detail of the Simulator setups refer to the applicable setup tables defined in paragraph.

| Simulator Phase | | |
|---|---|---|
| | Practical Subject | Time |
| DAY 1 | **SETUP 1**<br>(for the specific subjects refer to APP B1 Training Setups Table 4-1 (page SETUP 1)) | 6 Hrs |
| | **SETUP 2**<br>(for the specific subjects refer to APP B1 Training Setups Table 4-2 (page) | |
| | **SETUP 3**<br>(for the specific subjects refer to APP B1 Training Setups Table 4-3 (page) | |

## 4.0 UPRT Specific Training Lesson (A320/319)

| GENERAL SETUP/FLIGHT PLANNING DATA SHEET | |
|---|---|
| **Scenario Based Training**<br><br>Training that incorporates manoeuvres into real world experiences to cultivate practical flying skills in an operational environment; It is intended to recognize and manage threats, errors and undesired aircraft states successfully and to avoid or arrest a divergent from the intended flight path as early as possible and secure the intended flight path. | |
| **Maneuvers Based Training**<br><br>Training that focused on a single event or manoeuvre in isolation. The instructor, not the crew, takes the responsibility for the creation of the upset condition. Training starts after the upset condition has been established. | |
| **INIT PAGE DATA** | **FLIGHT PLAN DATA PAGE** |
| - **Route:** HECA-HEGN<br>- **Cost index:** 30<br>- **Cruise Altitude:** FL390<br>- **ISA déviation** (Cruise FL Temp): 0<br>- **Tropopause:** 39.000<br>- **Parameters:** A320<br>- **ZFW:** 58 T.<br>- **FOB:** 5 T.<br>- **ZFWCG:** 38% | - **Departure:** RWY 05C<br>- **Arrival:** RWY 34 |
| **Performance Data Page** | **Weather & Other SIM Setting** |
| - **Condition:** Rwy DRY, Packs ON, A/I<br>- **ON -** Configuration: 1+F | - **A/C starting Position:** 16R<br>- **Quick Engine start:** after MCDU entries completed<br>- **ATIS Alpha:** 040/05 CAVOK 21/15 QNH 1020 t° 21 Day; Turbulence light, Rwy DRY; Normal T/O; Climb FL 100. |

| GENERAL SETUP/FLIGHT PLANNING DATA SHEET | |
|---|---|
| **Program topic overview** | |
| **S1a** | **Normal law protection – Recovery from nose high**<br>**Normal LAW:** AP OFF; F/Ds ON; HDG ALT; A/THR ON; LEVEL FLIGHT; SPEED SELECTED 300 KT: FL 100 |
| **S1b** | **Normal law practice:**<br>**Recover from poorly executed go Around (Low Visibility)**<br>**Normal LAW:** AP OFF; F/Ds ON; APP; A/THR ON; ILS APPROACH 8 NM |
| **S1c** | **Alternate Law practice Handling and Stall Recovery (FL390)**<br>**Turn downwind ALTN LAW:** AP OFF; F/Ds OFF; HDG V/S; A/THR ON; SPEED SELECTED 250 KT: 3000 FT |
| **S1d** | **Alternate Law practice Handling and Stall Recovery (FL390)**<br>**Normal LAW:** AP OFF; F/Ds ON; HDG ALT; A/THR ON; LEVEL FLIGHT; SPEED SELECTED M 0.81: FL 350 |
| **S2a** | **Normal law protections – speed**<br>**Normal LAW:** AP OFF; F/Ds OFF; TRK FPA; A/THR ON; LEVEL FLIGHT; SPEED SELECTED 250 KT: FL 100, CAVOK |
| **S3a** | **Normal law protections – pitch roll**<br>**Normal LAW:** AP OFF; F/Ds OFF; TRK FPA; A/THR ON; LEVEL FLIGHT; SPEED SELECTED 250 KT: FL 100 |
| **S3b** | **Normal law protections – bank**<br>**Normal LAW:** AP OFF; F/Ds OFF; TRK FPA; A/THR ON; LEVEL FLIGHT; SPEED SELECTED 300 KT: FL 100 |

## 4.1 UPRT SETUP 1

**SETUP 1 - Recovering from upset including stall recovering**

| MANOUVRE BASED TRAINING | |
|---|---|
| **PREVENTION TRAINING** | |
| **Subject** | **Elements** |
| **Aerodynamics** | • Stick shaker or other stall-warning device activation (as applicable);<br>• Stick pusher (as applicable) |
| **Causes and contributing factors to upsets** | • Pilot-induced;<br>• Mechanical (aeroplane systems); |
| **Flight path Management** | • Type-specific characteristics;<br>• Management of go-around from various stages during the approach;<br>• Automation management; |
| **Recognition** | • Type-specific examples of physiological, visual and instrument clues during developing and developed upsets;<br>• Pitch/power/roll/yaw;<br>• Effective scanning (effective monitoring);<br>• Type-specific stall protection systems and cues;<br>• Criteria for identifying stalls and upsets. |
| **System malfunction** | *(including immediate handling and subsequent operational considerations, as applicable)*<br>• Stall protection system failures including icing alerting systems |
| **Manual handling skills** | *(no autopilot, no auto thrust/auto throttle and, where possible, without flight directors)*<br>• Visual approach;<br>• Go-around from various stages during the approach<br>*Go-around exercise from various altitudes are conducted during the approach with all engines operating, taking in account the following consideration;*<br>• Un-planned go-arounds with surprise and startle effect;<br>• Go-arounds with various aeroplane configurations and weight;<br>• Balked landings |

## SETUP 1 - Recovering from upset including stall recovering (Continued)

| Manoeuvre Based Training | |
|---|---|
| **Exercise** | **Recovery Training** |
| | Instruction actions |
| **S1a** | - **Recover from nose high**<br>**1.** Instructor - Pitch to 30° nose high Observe g load, automatic FD removal (pitch exceeds 25° up), pitch attitude (+30°, then +25° at low speed: Pitch attitude protection), automatic FD disengagement at VLS, V alpha prot (pitch trim frozen, pitch law is no more g load demand, but AOA demand: High AOA protection) When alpha floor is reached, observe A/THR activation and TOGA command, regardless of THR LVR position<br>**2.** Trainee should make appropriate intervention calls<br>**3.** HANDOVER CONTROL TO TRAINEE<br>**4.** Trainee - Recover to level flight using gentle application of pitch, and restore to normal flight, FD's ON, HDG VS A/THR ON, LEVEL FLIGHT, Speed selected 250 kt at original flight level.<br>**5.** INSTRUCTOR - TAKE CONTROL<br>**6.** Pitch to 25° nose high and Bank to 30°<br>**7.** HANDOVER CONTROL TO TRAINEE<br>**8.** Trainee - Recover to level flight using gentle application of pitch, and restore to normal flight, FD's ON , HDG VS, A/THR ON, LEVEL FLIGHT, Speed selected 250 kt at original flight level |
| **S1b** | - **Recover from poorly executed Go Around**<br>**1.** Fly ILS APP to DA and execute GA — FLY GA at VAPP + 10KT<br>**2.** At 1000' AAL, Set CLB detent, immediately pitch to 25°<br>**3.** Trainee should make appropriate intervention calls<br>**4.** HANDOVER CONTROL TO TRAINEE<br>**5.** Trainee - Recover to level flight using gentle application of pitch, and restore to normal flight FD's ON, Execute correct GA maneuver |

**SETUP 1 - Recovering from upset including stall recovering (Continued)**

| | |
|---|---|
| **S1c** | - **Alternate Law Practice and stall recovery (low altitude)**<br>**1.** Stall event recovery exercise are only conducted as approach-to-stall exercises<br>**2.** Trainee - Maneuver the aircraft clean and practice normal turns decelerating to GD speed<br>**3.** Observe<br>**a.** - Roll direct.<br>**b.** Yaw damping function is available<br>**c.** No bank angle protection, No pitch limit protection<br>**4.** Trainee - When commencing Base Turn, reduce thrust to IDLE, maintain LEVEL and continue approach visually<br>**5.** Trainee - Configure according to SOP<br>**6.** Trainee - At the onset of stall indications (buffet, stall warning, aural) Recover according to SOP |
| **S1d** | - **Normal Law practice**<br>**1.** Practice normal turns bank to 30° - Observe changes to VLS<br>**2.** Pitch 10° nose up - Observe rate of deceleration<br>**3.** Return to FL 350<br>**4.** Instructor - select ALTN Law<br>- **Alternate Law practice and stall recovery (high altitude)**<br>*High-altitude stall event training is included so that flight crew appreciate the aeroplane control response, the significant altitude loss during the recovery, and the increased time required*<br>**1.** Trainee - Manoeuvre the aircraft bank to 30°<br>**a.** Roll direct<br>**b.** Yaw damping function is available<br>**c.** No bank angle protection, No pitch limit protection<br>**2.** Trainee - FLY LEVEL, SET 1 KT/SEC DECEL<br>**3.** Trainee - At the onset of stall indications (buffet, stall warning, aural) Recover according to SOP<br>**4.** Repeat 2) and 3) |

### 4.2 UPRT SETUP 2

**SETUP 2 - AOA awareness Medium / High ALT**

| Manoeuvre Based Training | |
|---|---|
| **Prevention Training** | |
| **Subject** | **Elements** |
| **Aerodynamics** | • Angle of attack (AOA) and stall awareness |
| **Causes and Contributing Factors To Upsets** | • Mechanical (aeroplane systems) |
| **G-Load Awareness and Management** | • Positive/negative/increasing/decreasing g-loads<br>• Lateral g awareness (side-slip)<br>• g-load management |
| **Flight Path Management** | • Type-specific characteristics<br>• Automation management |

**SETUP 2 - AOA awareness Medium / High ALT (Continued)**

<table>
<tr><th colspan="2">Manoeuvres Based Training</th></tr>
<tr><td rowspan="2"><u>Exercise</u></td><td>Prevention Training<ul><li>Medium ALT: MEA FL 100 / Clean maneuvering speed;</li><li>High ALT: Recommended max altitude / Econ Cruise speed</li></ul></td></tr>
<tr><td><u>Instruction actions</u></td></tr>
<tr><td>S2a</td><td>
- Low speed<br><br>
1. Set CLB detent, apply full back side stick and maintain<br>
- Observe g load, automatic FD removal (pitch exceeds 25° up), pitch attitude (+30°, then +25° at low speed: Pitch attitude protection), automatic FD disengagement at VLS, V alpha prot (pitch trim frozen, pitch law is no more g load demand, but AOA demand: High AOA protection)<br>
2. When alpha floor is reached, observe A/THR activation and TOGA command, regardless of THR LVR position<br>
3. Maintaining side stick full back, apply max bank angle<br>
- Observe Alpha Max, no stall, bank limitation 45°<br>
4. Release side stick<br>
- Observe behavior (bank 33°, AOA returns to alpha prot)<br>
5. Level off and wings level SPD 250 KT<br>
- Observe TOGA LK when leaving alpha floor conditions<br>
- High speed<br>
1. Set THR LVR to IDLE detent, apply full forward side stick and maintain<br>
- Observe g load factor, pitch attitude (-15°: Pitch attitude protection)<br>
2. High speed protection: observe the two green bars symbol on speed scale, pitch trim frozen, nose up order can be overridden, the sidestick nose down authority is progressively reduced and a permanent nose-up order is applied<br>
3. Over speed ECAM warning (VMO + 4kts): For training purpose, instructor cancels warning using EMER CANC pb<br>
[EMER CANC PB SHOULD ONLY BE USED TO SUPPRESS MASTER CAUTIONS]<br>
4. Maintaining side stick full forward, apply max bank angle<br>
- Observe that, at approximately VMO + 15kts, no more acceleration, bank limitation 40°<br>
5. Release side stick<br>
- Observe positive spiral static stability to 0°, nose up order, deceleration to VMO.<br>
6. Level off, re-engage automation<br>
7. INSTRUCTOR - TAKE CONTROL
</td></tr>
</table>

## 4.3 UPRT SETUP 3

**SETUP 3 - Basic/Advanced manual Flying Skills**

| Manoeuvre Based Training | |
| --- | --- |
| Prevention Training | |
| Subject | Elements |
| **Aerodynamics** | ➢ Aerodynamics (high and low altitudes)<br>➢ Aeroplane performance (high and low altitudes)<br>➢ Mach effects<br>➢ Aeroplane stability<br>➢ Control surface fundamentals<br>➢ Use of trims<br>➢ Icing and contamination effects |
| **Causes and contributing factors to upsets** | ➢ Environmental<br>➢ Mechanical (aeroplane systems); |
| **Safety review of accidents and incidents relating to aeroplane upsets** | ➢ Safety review of accidents and incidents relating to aeroplane upsets |
| **Energy management** | ➢ Kinetic energy vs potential energy vs chemical energy (power) |
| **Flight path Management** | ➢ Relationship between pitch, power and performance<br>➢ Performance and effects of differing power plants (if applicable)<br>➢ Manual and automation inputs for guidance and control<br>➢ Type-specific characteristic<br>➢ Automation management<br>➢ Proper use of rudder |
| **System malfunction** | (including immediate handling and subsequent operational considerations, as applicable)<br>➢ Flight control defects<br>➢ Engine failure (partial or full)<br>➢ Instrument failures<br>➢ Loss of reliable airspeed<br>➢ Automation failures<br>➢ Fly-by-wire protection degradations |

**SETUP 3 - Basic/Advanced manual Flying Skills (Continued)**

| | |
|---|---|
| **Manual handling skills** | (no autopilot, no auto thrust/auto throttle and, where possible, without flight directors)<br>➢ Visual approach<br>➢ Go-around from various stages during the approach<br>➢ Flight at different speeds, including slow flight, and altitudes within the full normal flight envelope<br>➢ Procedural instrument flying and maneuvering including instrument departure and arrival<br>➢ Steep turns |

**SETUP 3 - Basic/Advanced manual Flying Skills (Continued)**

| MANOUVRES BASED TRAINING | |
|---|---|
| Exercise | **PREVENTION TRAINING**<br>• Gross weight = maximum landing weight |
| | Instruction actions |
| S3a | ➢ Pitch<br>1. Select speed variations (+/- 40kts).<br>- Observe flight path stability, automatic pitch trim<br>➢ Roll<br>**1.** Turn with bank angle of 30°<br>- Observe roll stability, turn coordination and automatic pitch trim<br>**2.** Wings level<br>**3.** Turn with bank angle of 45°<br>- When above 33° of bank, observe loss of roll stability, pitch trim frozen. Turn coordination still in progress<br>**4.** Release the side stick<br>- Observe bank angle is automatically reduced to 33°<br>**5.** Wings level ° |
| S3b | ➢ Bank<br>1. Increase bank smoothly to maximum<br>- Observe bank limited to 67° (Bank angle protection), g load factor indication (max 2.5g: Load factor limitation)<br>2. Wings level |