

Form 12000-43

MANUAL ACCEPTANCE

Subject:Acceptance For General Maintenance Manual (GMM)

1- Owners Name Nesma Airlines	2- operator Nesma Airlines
3- Mailing Address of Company 5,El Madina St.,El Nozha El gedida Cairo Egypt.	4- Telephone # 20226217591/2/3/4 5- Fax # 20226246919

Dear Sir.

With reference to your application concerning the above subject.

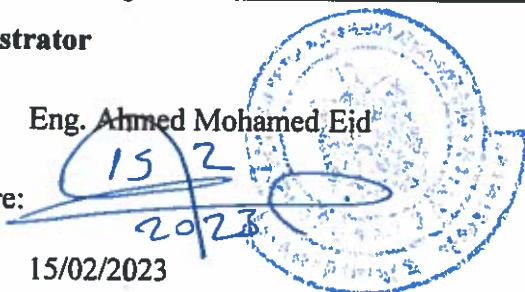
We have the pleasure to inform you that the requested GMM Issue 04 Rev.01 Dated Oct. 2022 is Accepted.

Administrator

Name: Eng. Ahmed Mohamed Eid

Signature:

Date: 15/02/2023



Nesma Airlines
نسماء طيران

Nesma Airlines

General Maintenance Manual (GMM)

5 Madinah St. Elnozha Elgededa

CAIRO - EGYPT

Issue: 04

Revision: 01

01- October- 2022

Chapter 0

General

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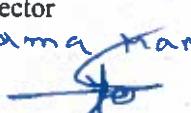
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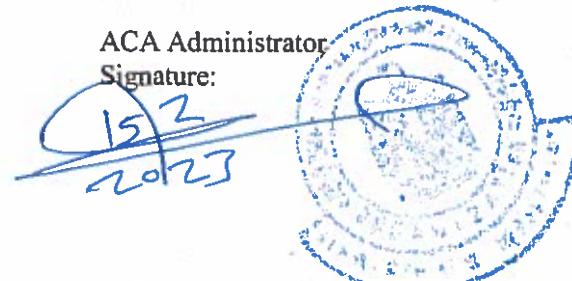
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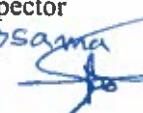
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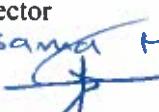
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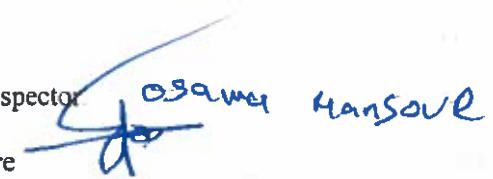
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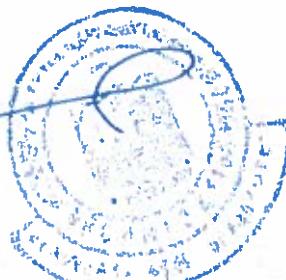
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8	206-18	1-Mar-22	0
8	206-19	1-Mar-22	0

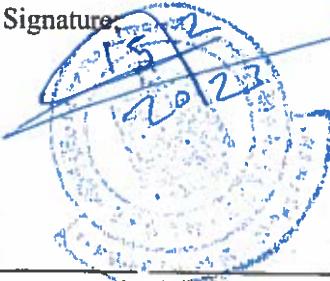


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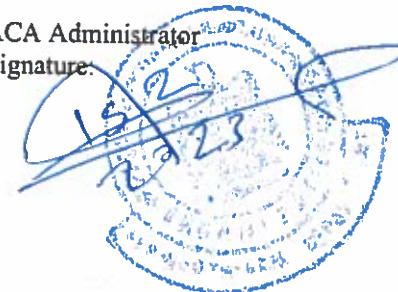
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Revision Date: 01 Oct 22

Chief Inspector
Name Osama Mansour
Signature 

ACA Administrator
Signature 

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Chief Inspector
Name osama mansour
Signature 

ACA Administrator
Signature: 

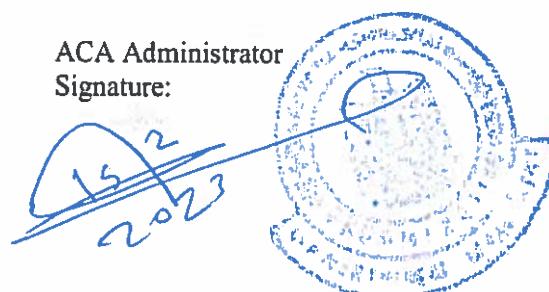
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Chief Inspector

Name Osama Mansour
Signature 

ACA Administrator

Signature:



Revision Transmittal Letter

This Revision of General Maintenance Manual „ Issue 04 Revision 1 dated 15th Of October 2022“ is the fourth Issue for Nesma airlines.

This revision issued in accordance with amending GMM according to:

- Nesma Airlines Capability List changed updated as per new AMO.
- Nesma Airlines Chief inspector & Quality Manager changed.
- Nesma Airlines MCC manager changed.
- Nesma Airlines Fleet updated .
- Quality Engineer Duties added.
- Engine health mentoring vendor changed from MTU to CFM.

Chief Inspector and quality Manager

Eng.Osama Mansour

Record of Revision

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1	2	15 November 2010	10 MAY 2011	M. Barakat
1	3	01 AUG 2011	6 FEB 2012	M. Barakat
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1	5	1 SEP 2012	01 OCT 2013	M. Barakat
1	6	1 JAN 2013	20 APR 2013	A. Salah
1	7	1 AUG 2013	01 SEP 2013	M. Barakat
2	0	1 JAN 2014	01 MAR 2014	M. Barakat
2	1	15 AUG 2014	1 DEC 2014	M. Barakat
2	2	1 FEB 2016	1 MAR 2016	M. Barakat
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2	4	1 NOV 2016	1 JAN 2017	M. Barakat
2	5	15 MAR 2017	1 NOV 2017	M. Barakat
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TR01/15Apr15	1 May 2015	Barakat	Barakat
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TR 05/ 30 May 17	30 May 2017	Barakat	Barakat

	Name	Signature	Position	Date
Prepared by	Sherif Ahmed		Supervisor of Technical LIB	15 August 22
Reviewed by	Ali Mostafa		Technical Director	15 August 22
Approved By	Osama Mansour	 Osama Mansour	Chief Inspector and Quality Manager	15 August 22

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1.2. INDEX OF USED ABBREVIATIONS

A/C	Aircraft
A & C	Airframe and Engine Category
ADDL	Aircraft Deferred Defect Log
AD	Airworthiness Directive
AMK	Airborne Maintenance Kit
AMM	Aircraft Maintenance Manual
AMO	Approved Maintenance Organizations
APU	Auxiliary Power Unit
ARC	Authorized release certificate
ATA	Air-Transport Association
ATEC	Automatic Testing Equipment Complex
AWB	Air way bill
AWM	Awaiting Maintenance
AWP	Awaiting Parts
BSI	Borescope Inspection
C of A	Certificate of Airworthiness
C of C	Certificate of Compliance
C of R	Certificate of Registration
CA	Cabin Appearance
CAA	Civil Aviation Authority
CAP	Civil Aviation Publication
CAT	Category
CDL	Configuration Deviation List
CM	Condition Monitoring
CMM	Component Maintenance Manuals Cycle
CSN	since New
CSO	Cycles since Overhaul
DD	Deferred Defect (Discrepancy)
DDG	Dispatch Deviation Guide
DDL	Deferred Defect Logbook
ECAA	Egyptian Civil Aviation Authority
ECAR	Egyptian Civil Aviation Regulation
ECM	Engine Condition Monitoring
EGT	Exhaust Gas Temperature
EICAS	Engine Indicating and Crew Alerting System
EO	Engineering Order
FAA	Federal Aviation Administration (USA)
FAK	Fly Away Kit
FAR	Federal Aviation Regulation
FOD	Foreign Object Damage
FSR	Flight Summary Report

GM G	General Manager
GMM	General Maintenance Manual
GSE	Ground Support Equipment
HT H	Hard Time
IATP	International Airline Technical Pool
IAW	In Accordance With
IB	Information Bulletin
ICAO	International Civil Aviation Organization
ID	Identification Number
IDG	Integrated Drive Generator
IERA	Instrument, Electric, Radio, Avionics
IFSD	In Flight Shut Down
IPC	Illustrated Parts Catalogue
ISO	International Standard Organization
ISM	IOSA standard manual
JAA	Joint Aviation Agencies/Authorities (Europe)
JAR	Joint Aviation Requirements
JCN	Job Control Number
JIC	Job Instruction Card
LM	Line Maintenance
LN	Line Number
LOEP	List Of Effective Pages
LRU	Line Replaceable Units
LWTR	License without Type Rating
MCR	Manual Change Request
MEL	Minimum Equipment List
MGR	Manager
MMEL	Master Minimum Equipment List
MPD	Maintenance Planning Data/Document
MSC	Maintenance Service Check
NA	Not Applicable
NCR	No Calibration Required
NDT	Non Destructive Inspection
OC	On Condition
OH	Overhaul

OJT	On Job Training
PFR	Post Flight Report
PN	Part Number
QA	Quality Assurance
QC	Quality Control
QEC	Quick Engine Change
RII	Required Inspection Item
SB	Service Bulletin
SL	Service Letter
SMS	Safety Management System
SN	Serial Number
SPM	Standard Practices Manual
SR	Structure Repair
SRM	Structural Repair Manual
TAT	Turn Around Time
TBC	Time Between Calibrations
TR	Temporary Revision
TSN	Time Since New
TSO	Time Since Overhaul
US	Unserviceable

0.3. TERMS AND DEFINITIONS

Aircraft	Means an airplane or airship
Aircraft Maintenance Manual	A manual developed by the manufacturer of a particular airplane that contains information necessary for the continued airworthiness of that airplane.
Airworthiness Data	Means any information necessary to ensure that the A/C or A/C component to be maintained in a condition such that Airworthiness of the A/C, or serviceability of operations and emergency equipment as appropriate, is assured
Alteration	Means a permanent engineering change to original Airworthiness data
Approved Standard	Means a manufacturing / maintenance / quality standard approved by the Authority
Audit Standard	Is the description of essential characteristics of audits, which reflects current thought and practice
Auditee	Is the organization to be audited
Auditing Organization	Is a section or function that carries out the audit. The auditor is appointed by the Quality Control Department
Base Maintenance	Periodic maintenance of aircraft
Certifying Staff	Mean those personnel who are authorized by the approved maintenance organization in accordance with a procedure acceptable to the Authority to certify A/C and A/c components for release to service.
Commercial Air Transport	Means the carriage of passengers / cargo / mail for remuneration.
Company Approval	Is a Approval issued to the company IAW rules approved by the Airworthiness authority
Deviation	Means a specific written authorization, granted prior to a repair or manufacture of an item, to depart from a particular performance or design requirement of a specification, drawing, OEM document, technical order, or other documents, for a, specific number of units or for a specific period of time
Engineering Change	Means a permanent deviation (alteration) from the original Airworthiness data.
Findings	Is an observation during an audit substantiated by evidence

Hangar	Means and A/C maintenance building
Inspection	Means the examination of an A/C or A/C component to establish conformity with an approved standard
Lead Auditor	Is the person who has the responsibility for the audit performance, both for internal and external audits
Line Maintenance	Any scheduled maintenance including servicing and necessary defect rectification that must be carried out before flight to ensure that the aircraft is fit for the intended flight. For intend of the Technical Procedures Manual, it means performance of: Pre-flight inspection and / or Daily check and / or Service check and / or A checks.
Maintenance	Means any one or combination of overhaul, repair, inspection, replacement, modification or defect rectification of an A/C or an A/C component
Major Repair	Means an important repair or a repair on A/C structure for which the Authority approval is needed
Manufacturer	Means a company who designs and/or manufactures A/C or A/C components
Modification	Means the alteration of an A/C or A/C component with an approved standard
Non-Compliance	Is an observed deviation from the existing regulations
Non-Conforming Materials	Are all parts, processes, documents, activities that are not conform to the official aircraft manuals
Overhaul	Means the restoration of an aircraft or aircraft component by inspection test, repair and/or replacement of parts in conformity with the overhaul manual or the detailed description of this task in the Overhaul Manual. The TSO becomes zero after each overhaul
Periodic Maintenance	Means performance of A /C checks
Pre-Flight Inspection	Means the inspection carried out before every flight to ensure that the aircraft is fit for the intended flight. It does not include defect rectification
Quality Assurance	All those planned and systematic actions necessary to provide adequate confidence that a product or service will satisfy both the Airworthiness' Authorities requirements and any specific company or customer's requirements for quality
Quality Audit	Is a systematic examination of the acts and decisions by people with respect to quality in order to independently verify or evaluate and report degree of compliance to the operational requirements of the quality program, or the specifications or contract requirements of the product or service.

Quality Plan	A description of all the quality checkpoints in a process to ensure that it proceeds under controlled conditions in the specified manner and sequence. Controlled conditions include appropriate controls for materials, production equipment, processes and procedure, computers, computer software, personnel, and associated supplies, utilities and environments
Quality System	Are the collective plans, activities and events that are provided to ensure that a product, process, or service will satisfy given needs
Quality System Audit	Is a documented activity performed to verify, by examination and evaluations of objective evidence, that applicable elements of the quality system are appropriate and have been developed, documented, and effectively implemented in accordance and conjunction with specified requirements.
Repair	Means the restoration of an A/C or A/C component to a serviceable condition in conformity with an approved standard.
Required Inspection Items	Designate the items of maintenance and alterations that must be inspected (required inspections), including at least those that could result in a failure, malfunction, or defect endangering the safe operation of the aircraft, if not performed properly or if improper parts or materials are used.
Responsible System Engineer	Is the engineer who has been assigned the responsibility of a number of systems to extend the technical coordination to all the continuing parts of the concerned airplane and thus warrant joint decisions also concerning the items, which are handled individually
Restoration	Must be understood to mean the work necessary to return the aircraft component to an approved standard
State License	Is a license issued by the country Airworthiness authority
Supplier	Is a company who supply components / parts which itself did not manufacture.
Syllabus	Means a map containing all relevant information concerning the performed training, per individual
Waiver	Means a written authorization to accept an item or service which during production or after having been submitted for inspection, is found to depart from specified requirements, but nevertheless is considered suitable for use "as is" or after repair by an approved method.
Workshop	Means an A/C components maintenance building

0.4. Distribution List

- COMPANY GMM DISTRIBUTION LIST

Distribution list	Copy controlled Number	Remarks
ECAA	1	Hard copy
Technical library	2	Hard copy / CD
Accountable Manager	3	Soft copy / Servers
Onboard	NMG,NML	Soft copy / Laptop
Operations library	4	Soft Copy / Servers
Company servers	5	Soft Copy / Servers
Maintenance station	CAI	Soft Copy / CD
Contracting Agencies	7	Soft Copy / Mails
Safety and quality	8	Soft Copy / Servers
Chief inspector and Quality Manager	9	Soft Copy / Servers
Certifying staff	10	Soft Copy / Servers

0.5 Statement of compliance with ECAR

This Manual defines the Organization and Maintenance procedures upon which Nesma airlines is approved by ECAA.

These procedures are accepted by ECAA complied with ECAR 121, 145 and ensures:

- Each aircraft is maintained in an airworthy condition reference to ECAR 121.367.
- Operational and emergency equipment necessary for flight is serviceable ECAR 121.309.
- The Certificate of Airworthiness of each aircraft remains valid.

ECAR Reference mentioned against all GMM Items.

It is accepted that these procedures do not override the necessity of complying with any new or amended regulation published by the ECAA from time to time where these new or amended regulations are in conflict with these procedures.

Chief Inspector & Quality Manager:

Eng.

0.6 Corporate Policy Statement**Nesma Airlines**
نسمة للطيران**Corporate Policy Statement**

The quality of our management system is essential for our business functions. Our commitment is to ensure measuring and evaluating on a continuing basis, and making changes that improve the management system and the culture. Ideas for improvement may come from internal and external sources; therefore we are constantly monitoring all sources and willing to make changes as necessary to keep the management system refreshed and strongly focused on improving operational safety and security performance.

All levels of management and all employees are accountable for the delivery of this highest level of performance, starting with the Accountable Executive

We are committed to:

- ◆ Comply with all applicable regulations and the company standards;
- ◆ Provide the necessary resources to satisfy operational safety and security outcomes.
- ◆ Ensure continual improvement of quality, safety and security management systems;
- ◆ Ensure continual improvement of operational performance;
- ◆ Perform regular review of performance-based indicators by senior management;
- ◆ Perform regular analysis of malfunctions or undesirable operational results;
- ◆ Perform continuous training of the Nesma airline's employees to reach the highest levels of efficiency in the implementation of the company operations.
- ◆ Implement the team work in all areas to perform the company operations with high efficiency.
- ◆ Promote the safety and security awareness as Nesma airlines primary goal is safety and security.
- ◆ Follow-up of corrective actions and their effectiveness in improving operational performance.
- ◆ Use the good practices to minimize and eliminate risks.
- ◆ Optimum use of safe personal protective equipment.
- ◆ Communicate all our policies throughout the organization.
- ◆ Review all company policies every 2 years to ensure continued relevance to the company standards.
- ◆ Inform the operational personnel throughout the organization of their responsibility to comply with the applicable laws, regulations and procedures in all locations where operations are conducted. In the event of willful or negligent disobedience to those rules, regulations, policies, and/or procedures, the person concerned shall become subject to disciplinary, legal or penal action however nothing contained shall prevent personal from exercising their own best judgment during any situation for which the company standards make no provisions or in an emergency.

Accountable Executive
Nesma Airlines
الخطوط الجوية
Quality Department

Revised Mar. 2022

0.7 **Corporate Quality policy statement****Nesma Airlines**
نسما للطيران**Corporate Quality Policy Statement**

Quality and customer satisfaction are important subjects that receive increasing attention worldwide. Nesma Airlines encourages managing the Quality aspects of our service activities in a proactive and effective manner. In doing so, it recognizes that a failure to meet the quality objectives can have consequences that may adversely affect the customer and the organization. The independent Quality Audit Reports and feedback system shall ensure that prevention of such failures is a management responsibility.

Our commitment is to

- ◆ Comply with all applicable customers, statutory and regulatory requirements and to continually improve the effectiveness of our Quality Management System;
- ◆ Continually improving the management systems in support of ensuring continued compliance.
- ◆ Identify the necessary resources and expertise to meet the customer specified needs with due consideration to compliance and environment;
- ◆ Evaluate the efficiency of the management system by prioritized quality system related internal audits;
- ◆ Apply maximum communication with customers and suppliers in support of product compliance and traceability;
- ◆ Motivate and encourage inclusion of all technical and administration personnel at all levels;
- ◆ Regularly reviews the Quality Management System at which, appropriate measurable quality objects are established and reviewed.

Within Nesma Airlines we emphasize the self-responsibility of our employees, considering every one part of the Quality Assurance Management System, obliged to uphold and improve the quality standards of the organization within their areas of responsibility. Every employee is personally accountable for the quality of his performance and shall make suggestions for improvement where appropriate.

Accountable Executive

K

Nesma Airlines
Quality Department

Revised Mar. 2022

0.8 Corporate safety policy statement

Nesma Airlines
نسما للطيران**Corporate Safety Policy Statement**

Safety is one of our core business functions, we are committed to developing, implementing, maintaining and constantly improving strategies and processes to ensure that all our aviation activities take place under an appropriate allocation of organizational resources, aimed at achieving the highest level of safety performance and meeting regulatory requirements, while delivering our services.

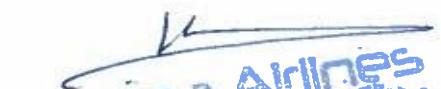
All levels of management and all employees are accountable for the delivery of this highest level of safety performance, starting with the Accountable Executive

Our commitment is to:

- ◆ support the management of safety through the provision of all appropriate resources that will result in an organizational culture that fosters safe practices, encourages effective safety reporting and communication, and actively manages safety with the same attention to results as the attention to the results of the other management systems of the organization;
- ◆ ensure that the management of safety is a primary responsibility of all managers and employees;
- ◆ clearly define, for all staff, managers and employees alike, their accountabilities and responsibilities for the delivery of the organization's safety performance and the performance of our safety management system;
- ◆ establish and operate hazard identification and risk management processes, including a hazard reporting system, in order to eliminate or mitigate the safety risks of the consequences of hazards resulting from our operations, to achieve continuous improvement in our safety performance;
- ◆ ensure that no action will be taken against any employee who discloses a safety concern through the hazard reporting system, unless such disclosure indicates, beyond any reasonable doubt, gross negligence or a deliberate or willful disregard of regulations or procedures;
- ◆ comply with and, wherever possible, exceed, legislative and regulatory requirements ensure that sufficient skilled and trained human resources are available to implement safety strategies and processes;
- ◆ ensure that all staff are provided with adequate and appropriate aviation safety training, are competent in safety matters, and are allocated only tasks commensurate with their skills;
- ◆ establish and measure our safety performance against realistic safety performance indicators and safety performance targets;
- ◆ continually improve our safety performance through continuous monitoring and measurement, regular review and adjustment of safety objectives and targets, and diligent achievement of these;
- ◆ ensure that externally supplied systems and services to support our operations are delivered meeting our safety performance standards.

Accountable Executive

Revised Mar. 2022


Nesma Airlines
Quality Department

0.9 Corporate safety reporting policy statement

Corporate Safety Reporting Policy Statement

The key objective of Nesma Airlines safety reporting system is to enhance the safety of our company's aviation activities through the collection of reports on actual or potential safety deficiencies that would otherwise not be reported through other channels. Such reports may involve occurrences, hazards or threats relevant to the safety of our aviation activities. This system does not eliminate the need for formal reporting of accidents and incidents according to our company SOPs, as well as the submission of mandatory occurrence reports to the relevant regulatory authorities.

The Safety reporting system is a voluntary, non-punitive, confidential occurrence and hazard reporting system administered by the Safety & Quality Department. It provides a channel for the voluntary reporting of aviation occurrences or hazards relevant to our organization's aviation activities, while protecting the reporter's identity.

All levels of management and all employees are accountable for the delivery of this highest level of safety performance, starting with the Accountable Executive

Our commitment is to:

- ◆ Achieve the safest flight operating standards possible. To achieve this, it is imperative that we have uninhibited reporting of all incidents and occurrences that compromise the safe conduct of our operations. To this end, every employee is responsible for communicating any information that may affect the integrity of flight safety. Such communication must be completely free of any form of reprisal.
- ◆ Encourages and perhaps even provides incentive for individuals to report hazards and operational deficiencies to management.
- ◆ Assures personnel that their candid input is highly desired and vital to safe and secure operations.
- ◆ Do not take disciplinary action against any employee who discloses an incident or occurrence involving flight safety. This policy shall not apply to information received by the company from a source other than the employee, or which involves an illegal act, or a deliberate or willful disregard of promulgated regulations or procedures.
- ◆ Develop our methods of collecting, recording and disseminating information obtained from Safety Reports to protect to the extent permissible by law, the identity of any employee who provides flight safety information.
- ◆ Urge all staff to use our flight safety program to help Nesma Airlines become a leader in providing our customers and employees with the highest level of flight safety.
- ◆ Review periodically the safety reporting policy to ensure continuing relevance to our company.

Safety Office Contacts:

Mail: safety@nesmairlines.com

Phone: + (202) 26217591/2/3/4 ext. 201 & 207

Mobile: + (2) 01000012905

Accountable Executive



Nesma Airlines
Safety & Quality Department
Quality Department

Revised Mar. 2022

Issue No.: 04

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Chapter 1

Introduction

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1.2 Corporate Commitment by the **Accountable Executive**

Reference: ECAR 145.29

This GMM defines the organization and procedures according to Egyptian Civil Aviation Regulations (ECAR-145, 121.) and in accordance with GMM acceptance Job Aids Form 12000-35.

These procedures are approved by the undersigned and must be complied with, as applicable, when work orders are being progressed under the terms of ECAR-145, 121 approvals.

It is accepted that these procedures do not override the necessity of complying with any new or amended regulation published by ECAA from time to time where these new or amended regulations conflict with these procedures.

It is understood that ECAA will approve this organization whilst ECAA is satisfied that the procedures are being followed and work standards maintained. It is further understood that ECAA reserves the right to suspend, vary or cancel ECAR-145, 121 approval of the organization if ECAA has evidence that procedures are not followed, or standards not upheld. I also commit to provide ECAA auditors the access to NESMA Airlines facilities at any time without any restriction to determine continued compliance with ECAR-145, 121.

I recognize flight safety as a prime consideration at all times and I commit to provide full support to improve safety culture within Technical Department. I also commit to provide full compliance with work safety requirements.

Knowing that the success may only be achieved through the contribution of all staff, and that compliance with procedures, quality standard, safety standards and regulations is the duty of all personnel, I strongly encourage all to support our policy and to report any maintenance related errors they observed.

Signed:
Karim Baky
Accountable Executive

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1.3. Notification Procedure to the ECAA regarding changes to the organization's activities approval/location/personnel.

Reference: ECAR 145.41

1.3.1 General

NESMA Airlines shall formally inform within ten days the Egyptian Civil Aviation Authority (ECAA) with any significant change (listed below). Those changes are subjected for approval.

- I. Organization Name
- II. Location of the organization
- III. Additional location of the organization
- IV. The **Accountable Executive**
- V. ECAR required Management personnel.
- VI. The Facilities, Equipment, Tools, Materials, Procedures, Work scope and Certifying Staff that could affect the approval.

1.3.2 Procedure

1. **Accountable Executive**
 - a. Any change in the post of **Accountable Executive** will be notified to ECAA by submission of a relevantly completed Notification forwarded to the ECAA for acceptance.
 - b. Only after ECAA acceptance, change in the (a.) above will require revision and re-signing of the Corporate Commitment by the **Accountable Executive** (Part 1.1) and Management Personnel (Part 1.2)
2. Senior Nominated Personnel
 - a. Any changes in Senior Nominated Personnel will be notified to ECAA within ten days by submission of a relevantly completed Notification Form to the ECAA for approval.
 - b. Only after ECAA approval, changes as in (a.) above will require revision of the Management Personnel and may require changes to the Management Organization Chart or if Nesma air lines adopt any title for the foregoing managerial positions.
3. Changes of Approved Locations/Maintenance Bases:
 - a. Any changes of approved Company locations or the maintenance base will be advised to the ECAA within 15 days before changes.
 - b. Changes as in (a.) above will require the revision of all relevant sections.
4. Changes in the Company activities will be prepared, approved, published and amended as follows:
 - a. Each Section Manager will compile procedures to cover the significant activities in his section and pass these to Chief inspector and Quality Manager.
 - b. All initial and amended activities are distributed for review to the Quality Control Manager, Manager Aircraft Maintenance. Where applicable, the activities are distributed to other Managers or supervisors. This distribution will be accompanied by a covering memo which clearly identifies the activity as a draft for approval. The memo will also include the distribution list.
 - c. An activity will initially be approved by a Technical Procedures Approval Committee (TPAC) which will meet as and when required to review all new or revised activities. This committee will consist of

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- the Director of Maintenance; Chief inspector and Quality; and Maintenance Director plus Managers of other Sections which are affected by the activity.
- d. When an activity change affects the Approval Certificate (Form 1110-057) a submission for Approval variation (1110-054) is to be prepared by the Chief inspector and Quality Manager and forwarded to Accountable Executive for approval. Then to ECAA for final Approval.
 - e. Only following ECAA Approval of the variation may be revised to reflect the change.
 - f. The Capability List referred may only be revised following a capability proving to ensure that adequate airworthiness data (manuals), training and/or qualified staff and tooling is available.

1.4. GMM Changes/Amendments procedure

Reference: ECAR 145.29, 145.7

Responsibility:

- Chief inspector and Quality Manager

1.4.1 General Policy

The Chief inspector and Quality Manager responsible for monitoring the amendment of the Manual, including associated documents and the submission of proposed amendments to ECAA.

Any change of this Manual requires prior acceptance by ECAA. Changes are made by Chief inspector and Quality Manager and forwarded to ECAA for accepted.

GMM Changes/Amendments are made to keep the information contained update regarding:

- (i) changes to maintenance or airworthiness requirements.
- (ii) Changes in the organization or activities.
- (iii) Inadequacy identified through internal or external audit.
- (iv) Conformity to applicable requirements.

The amendments shall be sufficiently comprehensive such that any and all relevant guidance and information is available to any maintenance organization or person that performs maintenance for the Operator under that portion of the manual.

1.4.2 Procedure

A. Nesma airlines General Maintenance Manual shall be revised when necessary, and all manual holders will receive copies of all revisions issued.

B. A Revision Transmittal Letter shall be attached to the revision advising the reasons of the new revision.

C. ECAA acceptance should be required; this acceptance is secured prior to printing and distribution. **The Chief inspector and Quality Manager** shall be responsible for determining if ECAA acceptance is required before the revision is published.

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- D. Revisions to the manual shall be distributed in accordance with the manual location registry. It is expected that the manual holder will read and insert the revisions promptly. Its responsibility of training department to notify the manual holder by training order with read and sign form F206-06 R1
- E. The manual holder shall cross check periodically his copy to the GMM Master Copy in the technical department. It shall be the responsibility of each manual holder to keep this manual current at all times, then he shall fill the receipt form and resend it to Chief inspector and Quality Manager by any convenient method within 15 days after amendment acquisition.
- F. The Chief inspector and Quality Manager is responsible for monitoring by sampling / auditing that there is full compliance with the requirements of this General Maintenance Manual within the Maintenance Department. He is also responsible for monitoring the amendment of this manual in accordance with the ECAR 145.29.
- G. Nesma Airlines shall incorporate, by reference in the GMM, detailed procedures manuals prepared by the Maintenance organization
- H. Revision to controlled copies of this GMM will be issued by Chief inspector and Quality Manager.
- I. The Revision to GMM should be revised and accepted by ECAA, before printing and distribution.
- J. An electronic copy is available On Nesma airlines Computer Network revised regularly By Chief inspector and Quality Manager. This Copy is easy accessed by All Nesma airlines Departments.
- K. This manual is in a format easy to revise with sections and page numbers shown at the footer of each page and paragraph numbers.
- L. This manual contains information that is clear, legible and accurately represented.
- M. This manual is written in a language understood by maintenance personnel.
- N. The manual contains a comprehensive description of the scope, structure and functionality of the management system for maintenance operations, to include a description of departments, positions, authorities, duties, responsibilities and the interrelation of functions and activities within the system.

Form: 206-06 R1

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1.5. Description Of Facility

Reference: ECAR 145.11

Nesma airlines has facilities, workspace, equipment, personnel and supporting services, as well as work environment, as necessary to ensure the implementation of the following maintenance management and control functions:

1. The initial development of the maintenance schedule
2. Scheduling maintenance, elementary work and servicing to be performed within the time constraints specified in the approved maintenance schedule.
3. Scheduling the accomplishment of Airworthiness Directives (ADs)
4. Operation of an evaluation program to ensure that all required procedures and, in particular the maintenance schedule, continue to be effective and in compliance with the applicable regulations.
5. The proper dispatch of aircraft, with regard to:
 - a) Control of defects
 - b) Availability of spare parts
 - c) Conformity with the type design
 - d) Requirements of other applicable operating rules.
6. Liaison with approved maintenance organizations for the performance of maintenance.
7. The development and update of the Maintenance Management Manual.

1.5.1. Communications Facilities

A- Main Office For:

- Accountable Executive
- Accounting & Administration Department
- Flight Safety Department
- Sales Department
- Operation & Dispatcher Department
- Technical Department

Street Address: 5 El Madinah St. Elnozha Elgededa- Heliopolis, Cairo, Egypt

All office accommodation are provided for the whale facility including disks, chairs, good illumination, Computers, cabinets for holding and storing records, copy machines, Fax, air condition and enough room and work space to carry out assigned tasks.

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B- Company Main Base (At Cairo Airport)

Located over 653 m² to accommodate all the requirements.

- ◆ Building arrangement contains the following:

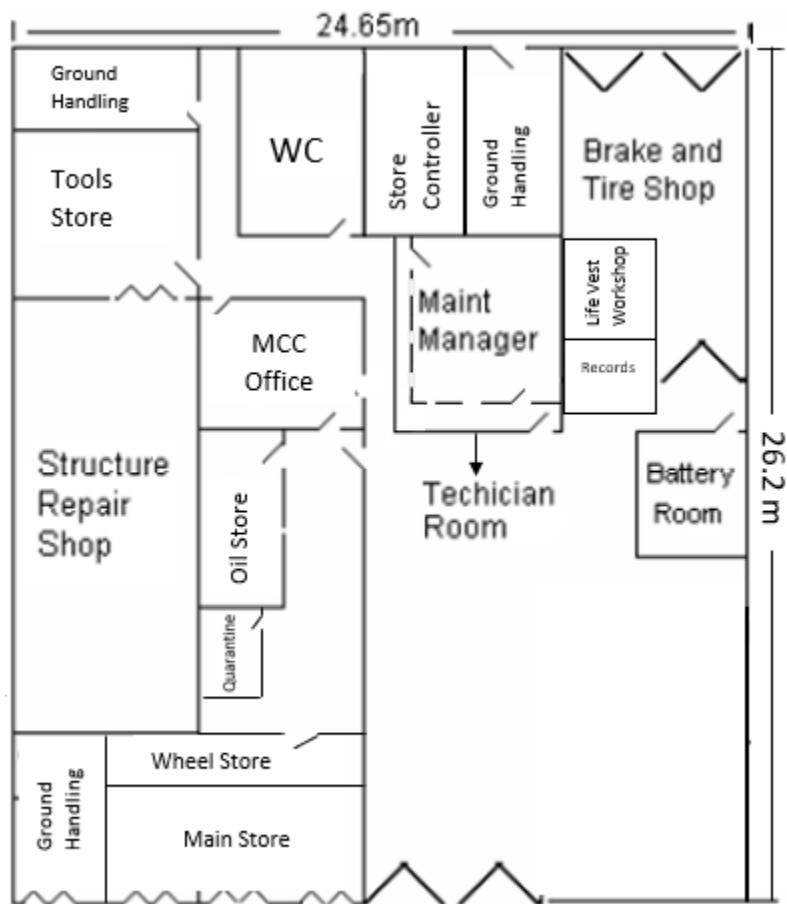
1. Spare parts store.
2. Quarantine store.
3. Wheels & Brake units' store.
4. Oil, Grease & Tools store.
5. Brake and tire shop
6. Battery servicing room
7. Life Vest
8. Structure repair shop
9. Maintenance Control Center (MCC); equipped with telephone, fax, computer and all necessary manuals & documents.

1.5.2: Servicing & Maintenance Facilities

Reference: ECAR 145-11

- A- As required Nesma airlines may lease hanger space for sheltering the aircraft during maintenance. This Hanger shall have adequate facilities and an appropriate working environment for the task to be performed. If technical assistance required Nesma airlines would use only ECAA approved agencies to do the required maintenance.
- B- Nesma airlines have a procedure for maintaining detailed information on the various locations where aircraft maintenance is to be performed.

I- Nesma Airlines Main Base Cairo Facility.

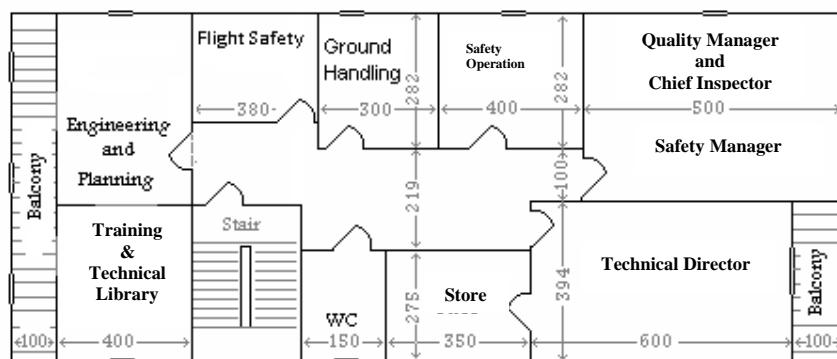


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Nesma Airlines Main Office.
5 El Madinah St. Elnozha Elgededa- Heliopolis, Cairo, Egypt



Nesma Airlines
TECHNICAL DEPARTMENT
TOP PROJECTION
3rd FLOOR

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Chapter 2

Organization & Management

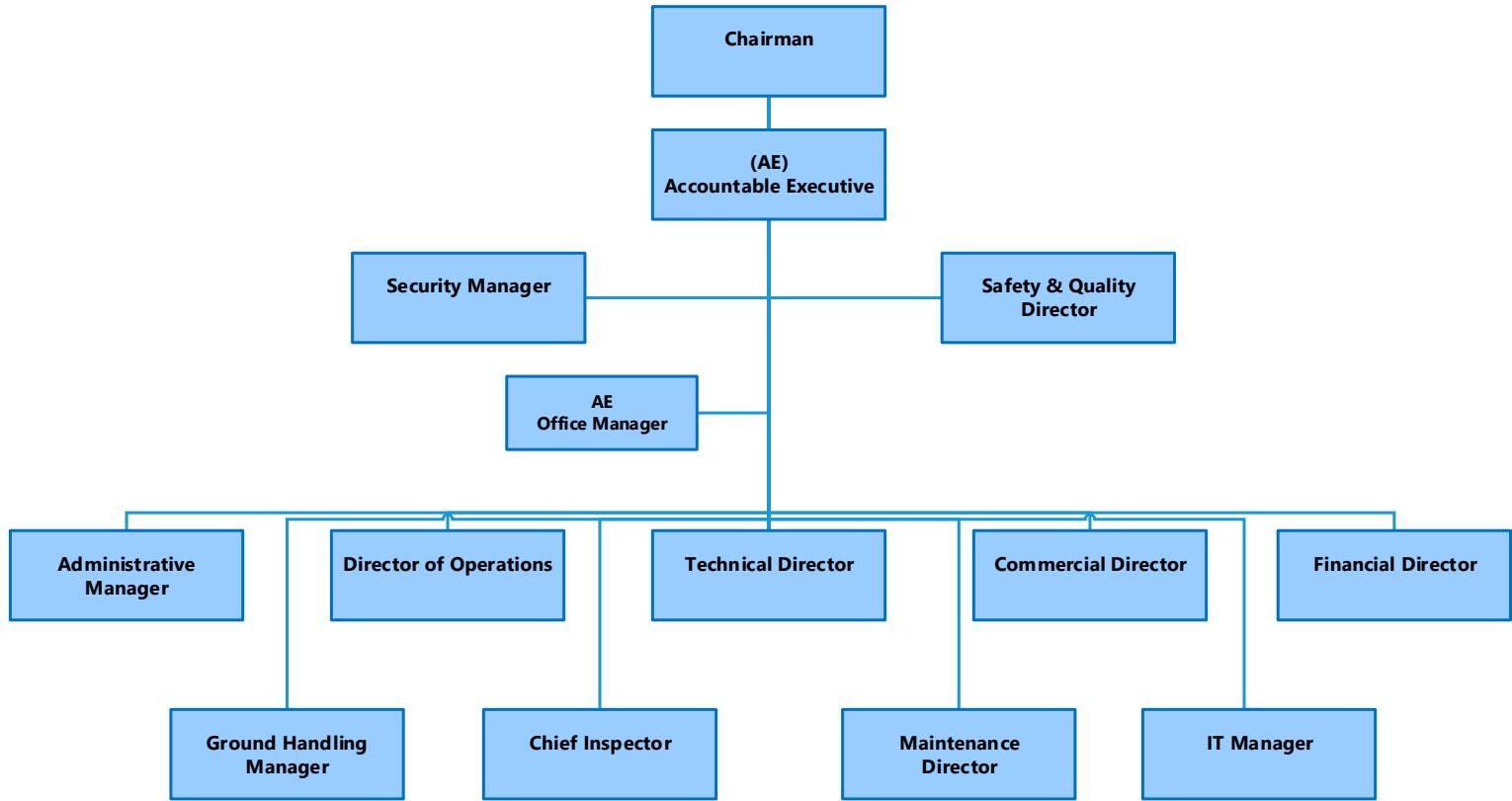
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2.1. Table of Contents

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2.2. Management Organization Chart:

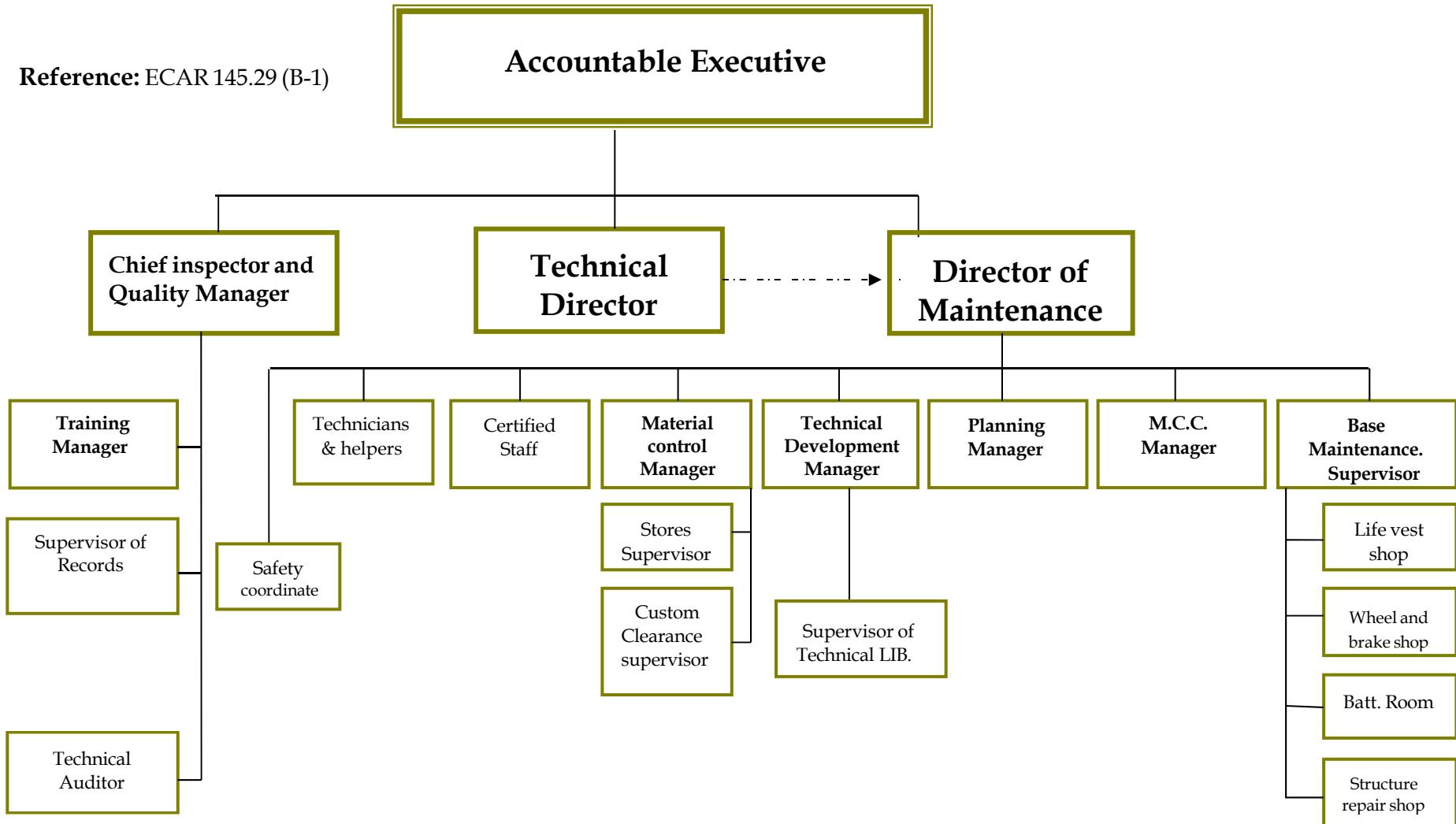
Reference: ECAR 121



Refer to Corporate Manual chapter 2

2.2.1 Technical Management Chart:

Reference: ECAR 145.29 (B-1)



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2.3. Management Personnel List

Reference: ECAR145.15, 145.29, 121.71, 121.59

Names of NESMA Airlines ECAA Authorized Personnel (ECAR 121.59)

Karim Baky	Accountable Executive
Bahy Metkies	Safety and Quality Director
Medhat Sayed Ahmed	Director Of Maintenance
Osama Mansour	Chief Inspector and Quality Manager

Names of NESMA Airlines Management Personnel

Ali Mustafa	Technical Director
Oraby Teleb	Manager Maintenance Control Manager
Ahmed Saied	Technical Development Manager
Mostafa Magdy	Planning Manager
Mostafa Abdel Aziz	Training Manager
Sherif Ahmed	Quality Engineer
Ahmed Abdelzaher	Safety Coordinator

The above persons are shown in the organization chart (2.2) along with their duties and responsibilities as described in 2.4.

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2.4. Duties, Responsibilities and Qualification of the Management

Personnel Reference: ECAR 145 .13

- GMM documents the management system in controlled company media at both the corporate and Operational levels.
- Nesma air lines GMM Chapter 2 provides a comprehensive description of the scope, structure and functionality of technical management system and depicts lines of accountability throughout the organization, as well as authorities, duties, responsibilities and the interrelation of functions and activities within the system for ensuring safe and secure operations.
- Nesma air lines GMM provides; organization charts (GMM Chapter 2.2), job descriptions and other descriptive written material that defines and clearly delineate the management system. It also reflects a functional continuity within the management system that ensures the entire organization works as a system and not as a group of independent or fragmented units.
- Nesma air lines management system ensures compliance with all applicable standards and regulatory requirements. And comply with Egyptian Civil Aviation Authority.
- Nesma air lines have a management system for maintenance operations, supervision, and control maintenance activities, comprising a staff of personnel suitably matched to the scale and scope of maintenance operations, to ensure maintenance of all aircraft is performed in accordance with Approved Maintenance Program and all maintenance is carried out in accordance with policies and procedures contained in the GMM Maintenance procedures (Chapter 4).
- Nesma air lines ensure the management system for maintenance operations defines authorities and responsibilities of management and non-management personnel that perform functions relevant to aircraft maintenance. The management system shall also specify:
 - The levels of management with the authority to make decisions that affect the safety of Maintenance operations. See chapter 2.2.1 & 2.2.3
 - Responsibilities for ensuring maintenance operations are conducted in accordance with Conditions and restrictions of the AOC, Applicable regulations, and standards of the operator.
- Nesma airlines ensure management and non-management positions within maintenance operations that require the performance of functions relevant to aircraft airworthiness are filled by personnel based on knowledge, skills, training, and experience appropriate for the position through qualification required for each position.
- Nesma airlines ensure management of safety and quality in maintenance Operations

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2.4.1. Accountable

Executive Reference: ECAR

121.71

Job description:

- The term 'Accountable Executive' used to describe the single individual who is designated as the person responsible to a Egyptian Civil Aviation Authority in respect of the functions which are subject to regulation, and carried out by an aircraft operator, an air navigation service provider, and aircraft maintenance and repair organization. That person is normally expected to be the person who has corporate authority for ensuring that all operations activities, safety and security can be financed and carried out to the standard required by the ECAA.
- The accountable executive shall be accepted by ECAA.

Responsibilities

1. The Accountable Executive is the single senior management official is typically designated as the individual with overall accountability for ensuring the safety and security of operations.
2. The Accountable Executive is responsible for establishing and promoting the safety and quality policy specified in Part 145
3. The Accountable Executive shall ensure that any charges are paid, as prescribed by the ECAA in respect of ECAR 145 approval.
4. The Accountable Executive is responsible for ensuring that the necessary finance, manpower resources and facilities are available to enable the company to perform the maintenance to which it is committed for contracted operators, and any additional work which may be undertaken.
5. The Accountable Executive is responsible for nominating the senior person for monitoring of the quality system.
6. The Accountable Executive responsible for ensuring the competence of all personnel including management personnel has been assessed.
7. Establishing a communication system that ensures effective communication of Regulatory requirements, company policies and operational information to the employee groups. This communication system shall also enable employees to forward operational suggestions and safety concerns upward to the management team.
8. Ensuring the establishment of Emergency Response plan within the company and continually train assigned staff to ensure its adequacy.
9. Ensuring the SMS is properly implemented in all areas of the organization and performing in accordance with applicable specified requirements. see SMM.

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10. Ensuring the following programs in compliance with the regulatory requirements and company policy:
- Drug testing program.
 - Alcohol misuse prevention program

Qualification

- Must have technical experience and understanding of how to establish and manage safety.
- Must have a complete knowledge of all AOC operational requirements
- Acquire training courses in ECARs and safety management system as a minimum
- Having good command of English language.

2.4.2. Technical Director

Job description:

Technical director is the single individual who is designated as the person responsible for overseeing and providing detailed technical direction to a team of Aircraft Maintenance Engineers, technical planning and technical development engineers. Ensuring the safety and quality policy established in this manual. technical director delegates Chief inspector and Quality Manager to do his duty in case of his absence

Responsibilities

1. The Technical Director is the Administrative Head of the technical department The Technical Director shall report to the Accountable Executive.
2. Technical Director shall Supervise Overalls proper running of the department
3. Technical Director shall develop the required operational plans to assure proper allocation of resources.
4. Technical Director shall ensure the safety task and property.
5. Technical Director shall ensure that Safety and Quality policy, established in this GMM are continuously implemented and promoted.

Qualification

- University degree in engineering or equivalent in the field required.
- Hold an aircraft maintenance license without type rating.
- Having good command of English language.
- Have at least 8 years in managerial experience in equivalent position.

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2.4.3. Chief inspector and Quality

Manager Reference: ECAR 145 .13, 121.71

Job description:

Chief inspector and Quality Manager is the single individual who is manages the quality in maintenance operation. And developing standard operating procedures, establishing policies, systems and standards related to quality Control activities through maintenance department.

Responsibilities

1. Reporting directly to the accountable executive for the overall operation of the maintenance Quality Control Section.
2. He manages the quality in maintenance operation.
3. He notifies ECAA in case of change of NESMA Airlines activity by filling ECAA Approve Form 1110-054
4. He is responsible for directing, planning, and laying out details of inspection standards, methods, and procedures used by NESMA Airlines in compliance with the applicable regulations and manufacturer's recommendations.
5. He administrates and issue amendments of General Maintenance Manual (GMM), and an appropriate amendment in GMM shall be made as soon as practical when it is requested by ECAR-145, 121.
6. He supervises the amendment of Nesma air lines approved maintenance program.
7. He supervises proper use of approved Minimum equipment list and configuration deviation list.
8. He assists, supervises, and direct all personnel assigned to the quality Control section. It will be his duty to ensure that all inspection is properly performed on all completed work before it is released, and that the proper inspection records, reports, and forms used by NESMA Airlines are properly executed and to assure all work performed in compliance with ECAR 145 requirements.
9. He is responsible for arrange for maintenance of any aircraft or aircraft component for which it is approved at another organization reference to ECAR 154-37b
10. He is responsible for developing standard operating procedures; establishing policies, systems and standards related to quality Control activities and collecting necessary information and developing corrective actions for improvement.
11. Responsible for ensuring maintenance operations are conducted in accordance with Conditions and restrictions of the AOC, Applicable regulations, and standards of the operator.
12. He Ensures/verifies technical data on all units. These approved data consist of manufacturers overall manuals, airworthiness directives, service bulletins and ECAR.

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13. He is Responsible the Certificate of Airworthiness of each aircraft remains valid.
14. He is responsible for Maintenance technical training
15. Controlling Nesma air lines maintenance records.
16. reporting of unairworthy conditions "ECAR 145.27"
17. issuing directives and notices to the subcontracted AMOs as required
18. Making periodic checks on all inspection tools and the calibration of precision test equipment. He is responsible to advise a system of keeping records of checks and calibration of inspection tools and precision test equipment, taking steps to ensure that the established check periods are not exceeded.
19. He controls of Aircraft certification and equipment and instrument requirements and responsible for the final acceptance of all incoming material including new parts, supplies, and the airworthiness of articles on which work has been performed under contract.
20. He defines qualification requirements/policy in accordance with ECAR-65 for certifying staff.
21. Supervision over the maintenance and preventive maintenance personnel training programs.
22. Authorizing and issuing approval to NESMA Airlines staff to certify work, in conformity with regulations as applicable to ECAR-145, 65 and conducting technical examinations.
23. He is responsible for liaison with the ECAA on the matters related to ECAR-145, 121 requirements.
24. Investigation non-compliance of airworthiness requirements of GMM and taking appropriate action against the errant individuals such as issuing warnings/reprimands or to suspend / withdraw approvals or recommending to Accountable Executive.
25. He is responsible for auditing, performing the internal audit program, AMO auditing and continuous surveillance of organization.
26. The quality control of all the operator's maintenance responsibilities performed by AMOs.
27. He is responsible of Mechanical reliability reports and Reliability program control.
28. Maintaining the validity of all documents required by ECAA/ECAR, for operation of aircraft.
29. Acting as the principal channel of communication between all departments of the organization and Airworthiness Authorities on all airworthiness matters.
30. He is responsible of Alteration and repair reports.
31. Notifying occurrences reports to ECAA.

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32. Maintaining continuous links with the authority and manufactures.

Qualification.

- University degree in engineering or equivalent in the field required.
- Hold an aircraft maintenance license without type rating and have successfully achieved the training requirements for a type rating on Airbus A 320 type planned for the operation having good command of English language.
- Have at least 3 years of maintenance experience on different types of aircraft with an air carrier or certificated repair station, 1 year of which must have been as maintenance inspector.
- Have at least 1 year of experience in a supervisory capacity maintaining A320 aircraft.

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2.4.4. Director of Maintenance

Reference: ECAR 145 .13

Job description:

Director of Maintenance is the single individual who is Directs and coordinates the overall function of the Aircraft Maintenance Department, and responsible for the airworthiness of the aero plane and its serviceability and management of safety in maintenance operation.

Responsibilities

1. Reported to the Accountable Executive for the efficient productive and airworthy maintenance and production work.
2. Director of maintenance shall pass ECAA approval test before gaining his approval.
3. Director of maintenance shall assure compliance with Egyptian Civil Aviation requirements all over the Organization functions.
4. Director of Maintenance is responsible for ensuring that the organization has:
 - facilities appropriate to the planned work
 - office accommodation appropriate to the management of the planned work
 - a working environment appropriate to the tasks being undertaken
 - storage facilities for parts, tools, equipment, and materials
 - sufficient competent personnel to plan, perform, supervise, inspect, and certify the work being performed
 - tools, equipment, and materials to perform the planned tasks
 - all necessary maintenance data as required by Part 145
5. He controls the administration of all personnel in the subsections, regulating training requirements, leaves conduct, etc.
6. Planning, directory, lying out and coordinating the activities of all maintenance performed in the line station to minimize delays and increase efficiency, safe aircraft of departure and arrival services for international flights.
7. Technical handling and servicing of all aircraft at any location whilst in service.

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8. Responsible for the airworthiness of the aero plane and the serviceability of both operational and emergency equipment by:
 - The accomplishment of preflight inspections.
 - The rectification to an approved standard of any defect or Damage.
 - The accomplishment of all maintenance in accordance with approved Nesma air lines Maintenance program.
 - Follow up the emergency equipment for validity and presence
 - The analysis of the effectiveness of the operator's approved Nesma air lines AMP.
 - The accomplishment of any operational directive, airworthiness directive and any other continued airworthiness requirement made mandatory by the ECAA
 - Director of maintenance is responsible for Maintenance, modification, and repair of aircraft to approved maintenance schedules and appropriate manuals by planning section to standards approved by the Chief inspector and Quality Manager.
9. He ensures that the Certificate of Airworthiness for each aero plane operated remains valid in respect of:
 - Airworthiness and serviceability of the aero plane.
 - Any calendar expiry date specified in the Certificate; and
 - Any other maintenance condition specified in the Certif.
10. Making ready accessible necessary approved data to those concerned with maintenance/handling/of the aircraft and ensuring that this data is kept amended up to date.
11. He is responsible for engineering and planning all maintenance activities.
12. He is responsible for approving, controlling, monitoring, and scheduling non-routine and deferred maintenance activities, including MEL/CDL requirements
13. He is responsible for contract AMOs according to ECAA requirements.
14. Organizing manpower to give adequate maintenance cover on a 24-hour basis to aircraft.
15. Compiling spares requirements and arranging satisfactory storage.
16. Recommending spares for flight kits.
17. Organizing, maintaining, and provisioning aircraft ground handling equipment.
18. Maintaining all equipment and tools serviceable and working condition.
19. Supervise and liaison personnel for production of line maintenance, providing all materials, technical data, tools, and equipment's necessary to carry the maintenance in airworthy condition while maintaining the highest standard of work possible.

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- 20. Studying and providing -with the Material Supervisor-the materials minimum stocks and optimum economic control on material purchase and maintenance of productive procedures in storing and ground equipment.
- 21. The cleanliness and maintenance of aircraft servicing equipment.
- 22. Responsible for aircraft cabin appearance and cleanliness.
- 23. Responsible for management of safety risks in maintenance operation.
- 24. Shall conduct Maintenance operations in accordance with conditions and restrictions of the Air Operator Certificate (AOC), and in compliance with ECAR and standards of Nesma Airlines.

Qualification.

- University degree in engineering or equivalent in the field required.
- Hold an aircraft maintenance license without type rating and have successfully achieved the training requirements for a type rating on A 320 type planned for the operation having good command of English language.
- Have 1 year of experience in a position responsible for returning aircraft to service.
- Have at least 1 year of experience in a supervisory capacity maintaining A320 aircraft.
- Have 3 years' experience within the past 6 years in one or a combination of the following:
 - 1. Maintaining or supervising the maintenance of aircraft, including at the time of appointment as Director of Maintenance, experience in A320
 - 2. Repairing aircraft in a certificated airframe repair station that is rated to maintain A320.

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2.4.5. Technical Development Manager (Engineering Manager)

Job description:

Technical Development Manager is the single individual who is responsible for ensuring an aircraft operates properly and safely and develops Aircraft maintenance program and customized Minimum Equipment lists. Also, Studies CN's / AD's and issue E.O's.

Responsibilities:

1. The Technical Development Manager is reported to the Director of maintenance.
2. Develop AMP and maintain customized Minimum Equipment lists for all aircraft types operated by Nesma airlines.
3. Preparation and publication of fleet performance and engineering reliability report.
4. Reporting trends and alerts to Reliability Control Committee, recommending remedial action.
5. Investigation defects on aircrafts, systems, engines, and components which are outside the scope of normal maintenance procedures which require special information and corrective action.
6. Recommend local modification and repair schemes as and when required.
7. Study CN's / AD's and issue E.O's.
8. Evaluation of Manufacturers service Bulletins.
9. Liaison with other airlines, approved maintenance organization, vendors and manufacturers of aircraft, engines and components on service problems and other operationally relevant external entities.
10. Contact manufactures in case of un-airworthy conditions, major repair, major modificationetc.

Qualification.

- University degree in engineering or equivalent in the field required.
- Hold an aircraft maintenance license without type rating and have successfully achieved the training requirements for a type rating on A 320 type planned for the operation having good command of English language.
- The candidate engineers shall perform the support functions in relevant area of responsibility under direct supervision of designated qualified engineers for a suitable period to cover all the required activities.
- At the end of the successful practical experience period, the designated sponsors will issue a report for each candidate indicating his performance and any recommendation.

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2.4.6. Planning Manager

Job description:

Planning Manager is the single individual who is responsible for ensure completion of maintenance tasks for maintenance inputs according to the Approved Maintenance Schedules and Airworthiness Directives or planned intervals/ time limits and/or legally laid down as per Manufactures requirements, Airworthiness and design authorities ensuring all required work is performed.

Responsibilities

1. The Planning manager is reported to the Director of maintenance for the organization and operation of the planning Section.
2. Tracks NESMA Airlines Fleet Hours and Cycles and compute the accumulated Hours and Cycles for Nesma Aircrafts.
3. Ensure completion of maintenance programs, schedules, task cards and E.O's for each aircraft, engine and component type operated by Nesma airlines.
4. He is responsible for scheduling NESMA Airlines Fleet in cooperation with commercial Department.
5. Compiling aircraft maintenance schedules and amending same in conjunction with Quality for ECAA Approval, Planning the overhaul / repair / modification of aircraft units including engines.
6. Planning aircraft maintenance checks to the approved schedules.
7. Control of Man-hour Planning Versus Schedule Maintenance Work.
8. Plan embodiment of CN/AD.
9. Controlling and tracking the time-controlled item.

Qualification.

- University degree in engineering or equivalent in the field required.
- Hold an aircraft maintenance license without type rating and have successfully achieved the training requirements for a type rating on A 320 type planned for the operation having good command of English language.
- Planners shall be able to interpret maintenance requirements into maintenance tasks and have an appreciation that they have no authority to deviate from the aircraft maintenance program.
- The candidate planning shall perform the support functions in relevant area of responsibility under direct supervision of designated qualified planning engineers for a suitable period to cover all the required activities.
- At the end of the successful practical experience period, the designated sponsors will issue a report for each candidate indicating his performance and any recommendation.

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2.4.7. Material Control

Manager Job description:

Material Control Manager is the single individual who is responsible for wide range of materials activities, including purchasing, shipping, receiving, and materials storage operations. Aviation materials managers must ensure material requirements are identified and communicated in a timely fashion to the materials suppliers.

Responsibilities

1. Administrating spare Parts Pool Agreements and Spare Parts Loan/Borrow Program.
2. Maintaining a stock of rotable and repairable components.
3. Maintaining a stock of material and expendable spares needed to support Nesma airlines operations and maintenance plans by establishing and updating minimum stock levels and economic reorder levels.
4. Administrating warranty programs with manufacturers, suppliers, and repair agencies.
5. Establishing and maintaining procedures for the control of shelf life on shelf-life limited material.
6. Processing and tracking purchase and repair orders from external and local sources.
7. Distracting a receiving inspection program on all airplane parts and material recurred by NESMA.

Qualification.

- University degree in engineering or equivalent in the field required.
- Hold an aircraft maintenance license without type rating. Having good command of English language.

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2.4.8. Training Manager

Training Manager is the single individual who is responsible for preparation of all the maintenance Training course contents, materials, and syllabus. Also, he follows up the personnel training history to provide any more training needed.

Responsibilities

1. The training manager is reported to Chief inspector and Quality Manager.
2. The training manager response for sending all the maintenance training course contents, materials, and syllabus to the ECAA for study and approval by maintenance manual.
3. The training manager should assure that all maintenance personnel receive initial, continuation and any additional training appropriate to individual assigned tasks and responsibilities.
4. Follow up training history for all technical personnel to provide any more training needed
5. Plan the maintenance training schedule every 3 months
6. Coordinate with quality manager and chief inspector for Basic Indoctrination course for any new maintenance personnel.
7. Coordinate with any ECAA approved training center for any courses needed.
8. Control all approved courses separately with its approved syllabus and training hours.
9. Control all record training and qualification status of personnel performing maintenance tasks for the company and to forecast needs for additional and recurrent training programs.
10. Responsible for MTM amendment.

Qualification.

- University degree in engineering or equivalent in the field required.
- Hold an aircraft maintenance license without type rating and have successfully achieved the training requirements for a type rating on A 320 type planned for the operation having good command of English language having good command of English language.
- A Certificate, Diploma or Degree following completion of a teacher training or an instructional techniques course
- Experience in course design and development.

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2.4.9. Supervisor of Records

Job description:

The Supervisor of Record is responsible for supervision and control of all Airframe, Engines maintenance records for which Nesma airlines.

Responsibilities:

1. This position reports directly to the Chief inspector.
2. Review of all aircraft Log-Book pages to assure accuracy and completeness of data.
3. Establishment and maintaining of filing system for maintenance records, to provide adequate security and efficient organization.
4. Filing, storage and retrieval of all maintenance records, as required by Company and Egyptian Civil Aviation Authority regulations.
5. Review and control of Airworthiness Directive records, maintenance Check records and Hard Time Component records.
6. Accomplishment of data entry for all maintenance records requiring computer input.
7. Review and assembly of maintenance records for aircraft coming into or leaving the Nesma airlines operation.
8. Collect and process daily aircraft and performance data; parts change information, maintenance delays and repair report information to support the monthly fleet reliability report.
9. Receive documentation and data from external resources via Mail or Internet for study and analysis.

Qualification.

- University degree in engineering or equivalent in the field required.
- Having good command of English language.

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2.4.10. Supervisor of Technical library

Job description:

The Supervisor of Technical library is responsible for supervision and control of technical publications, maintenance documents and Company manuals used by Nesma air lines maintenance department.

Responsibilities

1. Establishment and maintaining of a Technical Library, for housing and control of Nesma air lines technical records in an orderly and efficient manner. This position reports directly to the Director of maintenance.
2. Identifies the current version of maintenance documents.
3. Distributes the current version of applicable maintenance documentation and technical data to the appropriate personnel in all areas where maintenance is performed.
4. Reviews and revision as necessary to maintain the currency of information contained in the GMM and other maintenance documents.
5. Administration of the Technical Library C-D and hard copy maintenance manuals, component manuals, airworthiness directives and manufacturer's Service bulletins.
6. Retention of engineering and maintenance documents that permits easy reference and accessibility.
7. Identification and destroy an obsolete document
8. Retention and dissemination of documentation received from external sources, to include manuals and documents from ECAA

Qualification.

- University degree in engineering or equivalent in the field required.
- Hold an aircraft maintenance license without type rating and have successfully achieved the training requirements for a type rating on A 320 type planned for the operation having good command of English language having good command of English language.

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2.4.11. Certifying Staff.

Job description:

Certifying Staff (maintenance engineers) are responsible for ensuring an aircraft operates properly and safely.

A maintenance engineer may make repairs, troubleshoot problems, conduct inspections, and make upgrades to aircrafts. Also work with equipment that includes specialized aviation tools, diagnostic equipment, computers...etc... Work conditions may involve working on ladders or scaffolds, long hours working on emergency repairs and managing other maintenance staff.

Responsibilities:

1. The Certifying Staff report directly to the director of maintenance.
2. Maintain aircraft in airworthy condition that includes Trouble shooting, Inspection and Repair.
3. Comply with the appropriate Policy and Procedures in the Nesma Airlines GMM.
4. Responsible for the Airworthiness Release of the aircraft in accordance with GMM.
5. Assure that only approved aircraft parts are installed on Nesma Airlines aircraft.
6. Assure that all required technical documentation of maintenance tasks are completed.
7. Act as liaison between Nesma Airlines and Maintenance Contractors.
8. Maintain contact with Maintenance Planning for timely repair of all maintenance discrepancies.
9. Recommend improvements to the processes and procedures used by Nesma Airlines.
10. Mention PDC and MSC for proper scheduling, acceptance & sign this item in the related approved form & technical log entries.
11. The Maintenance Engineer when aboard must comply with laws, regulation, and precaution of these state where the operation is conducted through the contracted handling agent.
12. Procedures to prevent the personnel who performed maintenance work on aircraft from also conducting required inspections of such work
13. Other duties as assigned by the director of maintenance.

Qualification.

- University degree in engineering or equivalent in the field required.
- Age 21 Or over
- Hold an aircraft maintenance license without type rating and have successfully achieved the training requirements for a type rating on A 320 type planned for the operation having good command of English language having good command of English language.
- Maintenance Certified Engineers are able to carry out Maintenance Tasks to any standard specified in GMM 2.4

Certifying Staff

Reference: ECAR 145.13, 145.15

Nesma airlines identification of maintenance personal that are approved to be perform and certify maintenance refer to **NMA Certifying staff list** available at Chief inspector and Maintenance director.

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2.4.12. Base Maintenance Supervisor and workshop Manager

Job description:

Base maintenance supervisor and workshop Manager responsible for ensuring an aircraft Base maintenance and aircraft component maintained properly. Ensuring that all personnel under his control are fully informed of the required workload to be carried out within the specified limits and, times according to update-controlled documentation pertaining to component maintenance and complied with ECAA requirements.

Responsibilities:

1. Reported directly to director of maintenance.
2. All activities related to base maintenance and heavy inspection
3. Coordinates the base maintenance and inspection activities of Nesma aircraft and contracted AMO by:
 - a. Reviewing aircraft status and upcoming events with Maintenance Control.
 - b. Maintaining a general knowledge of all work and inspections performed.
 - c. Ensures that all maintenance and inspections performed on Nesma aircraft is accomplished in accordance with ECAR, manufacturer maintenance publications, Nesma General Maintenance Manual and Operations Specifications.
4. Coordinates with the quality manager and chief inspector on deficiencies discovered with the contracted AMO.
5. All activities associated with the maintenance of all components within the limitation of the Company's approved capabilities.
6. Ensuring that all personnel under his control are fully informed of the required workload to be carried out within the specified times.
7. Maintaining close contact with material control for spares demands or existing shortages causing delays in work progress.
8. Managing workload priority, spares shortages, and shops capability development.
9. Ensuring the implementation of all laid down safety procedures and compliance with ECAA requirements.
10. Strict supervision on the compilation of relevant component and availability of other relevant documentation pertaining to component maintenance.
11. Ensuring that corrective actions resulting from audit program are pursued.
12. Ensuring the safe handling and security of Workshops.
13. The periodic monitoring of assigned workshops to ensure adequate standards of safety. Cleanliness, security and serviceability of equipment is maintained.
14. Coordinating training programs to improve the proficiency of Workshop personnel with training department.
15. Recommending procurement or fabrication of equipment and tools to fulfill work requirements.
16. Executing any other assignment as directed by the director of maintenance.
17. Responsible for tool control system.

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Qualification.

- University degree in engineering or equivalent in the field required.
- Age 21 Or over
- Hold an aircraft maintenance license without type rating and have successfully achieved the training requirements for a type rating on A 320 type planned for the operation Having good command of English language Having good command of English language.
- Maintenance Certified Engineers are able to carry out Maintenance Tasks to any standard specified in GMM 2.4

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2.4.13. Technical Auditor

Job description:

A technical auditor job involves developing and implementing audit plans of internal business processes, application systems, general controls, and technical infrastructure. A technical auditor develops recommendations to business based on audit findings to enhance and improve operations and achieve Nesma airlines business objective.

Responsibilities:

1. Develop and implement audit plans of internal business processes, application systems, general controls, and technical infrastructure.
2. Conduct Technical Audit in telecommunication, Maintenance activities, Operations, constructions, etc.
3. Conduct inspection and audit of Nesma airlines activities, contracted AMO and supplier material in compliance with ECAR, material specifications and technical descriptions.
4. Ensure that company employees are adhering to, and following, safely and security guidelines as established by management.
5. Prepare written audit reports and recommendations to improve the efficiency in its operation.
6. Following up the corrective action plan and ensuring that it is done within the time frame.
7. Reporting all results of audits carried out to the Quality manager and chief inspector
8. Compile the working papers and document properly to substantiate the audit reports.

See GMM Chapter 6

Qualification.

- University degree in engineering or equivalent in the field required.
- Has completed Quality Auditor course or equivalent from recognized training center, institute, or University.
- A technical auditor must have a minimum of 4 months experience in internal Audit.
- A technical auditor must have good communication skills (written and oral) and excellent interpersonal skills.

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2.4.14. Maintenance Control Center

Manager Job description:

Maintenance control manager is responsible for Technical support to aircraft maintenance certified staff in case of technical malfunctions. Initiation, control, and coordination of all actions necessary to solve technical malfunctions at line stations.

Responsibilities:

1. He is functionally and administratively responsible to the Director of Maintenance.
2. responsible for approving, controlling, monitoring, and scheduling non-routine and deferred maintenance activities, including MEL/CDL requirements.
3. Ensure coordination with Maintenance, Engineering, Flight Operations and Stores Department to ensure:
 - Timely rectification of defects,
 - Arranging spares, equipment and skills required,
 - Preparing of aircraft on-time departures by minimizing the impact of unscheduled maintenance and technical delays.
 - Troubleshooting procedures control.
 - ensure MEL/CDL restricted items are tracked and corrected within the required time intervals
4. Record trouble-shooting difficulties at line stations and provide concerned section with inputs for improvements on such issues.

Qualification.

- University degree in engineering or equivalent in the field required.
- Age 21 Or over
- Hold an aircraft maintenance license without type rating and have successfully achieved the training requirements for a type rating on A 320 type planned for the operation having good command of English language having good command of English language.
- Maintenance Certified Engineers are able to carry out Maintenance Tasks to any standard specified in GMM 2.4

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2.4.15. Safety coordinator

Job description:

Safety coordinator is single individual how is responsible for maintaining safety data collection and processing system that Provide the identification of hazard and analysis and assessment of risks.

Responsibilities:

1. Safety coordinator is reported to director of maintenance.
2. Responsible for hazard identification and risk management process within the technical department.
3. Monitor SMS activities in the organization. See SMM.
4. Coordinate with safety department for SMS activities.
5. Help to enhance the safety culture within the technical staff.

Qualification.

- University degree in engineering or equivalent in the field required.
- Age 21 Or over
- Hold an aircraft maintenance license without type rating and have successfully achieved the training requirements for a type rating on A 320 type planned for the operation having good command of English language having good command of English language.
- Maintenance Certified Engineers are able to carry out Maintenance Tasks to any standard specified in GMM 2.4
- Knowledge of safety management principles and practices, through training and experience.

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2.4.16. Quality Engineer

Job description:

Act as a technical auditor job involves developing and implementing audit plans of internal business processes, application systems, general controls, and technical infrastructure. A technical auditor develops recommendations to business based on audit findings to enhance and improve operations and achieve Nesma airlines business objective.

Responsibilities:

1. Develop and implement audit plans of internal business processes, application systems, general controls, and technical infrastructure.
2. Conduct Technical Audit in telecommunication, Maintenance activities, Operations, constructions, etc.
3. Conduct inspection and audit of Nesma airlines activities, contracted AMO and supplier material in compliance with ECAR, material specifications and technical descriptions.
4. Ensure that company employees are adhering to, and following, safely and security guidelines as established by management.
5. Prepare written audit reports and recommendations to improve the efficiency in its operation.
6. Following up the corrective action plan and ensuring that it is done within the time frame.
7. Reporting all results of audits carried out to the Quality manager and chief inspector
8. Compile the working papers and document properly to substantiate the audit reports.
See GMM Chapter 6.
9. Prepare and amend technical manuals such as Maintenance Organization Manual (GMM)
10. Monitor and control company and A/C's approvals and certificates expiration due dates.
11. Assist for renewal and issue of company AOC (Air Operator Certificate) and repair station certificates in addition for A/C's certificate of Airworthiness.
12. Analyze and determine root causes of external audits findings, performed by ECAA, EASA, SAFA, customers' quality audits, and establish the corrective actions and preventive actions based on the root causes analysis;
13. Update quality and technical procedures to comply with ECAA and EASA regulations changes; and
14. Train technical staff on GMM (Egyptian, & EASA) procedures and subsequent amendments.

Qualification.

- a. University degree in engineering or equivalent in the field required.
- b. Has completed Quality Auditor course or equivalent from recognized training center, institute, or University.
- c. A technical auditor must have a minimum of 4 months experience in internal Audit.
- d. A technical auditor must have good communication skills (written and oral) and excellent interpersonal skills.

2.4.17. Delegation Table.

This table shown below identifies the delegated qualified individuals they can substitute the direct charge managers in their absence.

Direct charge Manager	Delegated manager
Quality manager and chief inspector	Senior Auditor
Director of maintenance	Maintenance engineer by seniority
Technical development Manager	Planning Manager
Material control Manager	Planning Manager
Planning Manager	Technical development Manager
Training Manager	Planning Manager/ Technical development Manager
Maintenance control center Manager	Maintenance engineer by seniority

2.4.16.1 Delegation Procedures.

- 1- A documented procedure is mentioned in each manager authority & responsibilities nominate the delegated person during his absence
- 2- A notification of such delegation of duties shall be communicated throughout the management system using e-mail to ensure all departments will coordinate with delegated person during the absence period
- 3- The delegated person name and position shall be recorded in Vacation form, submitted by the manager who will be absent from the workplace. the delegated person shall sign for delegation acceptance on the vacation form submitted by the manager.

See Corporate Manual 1.2.3

NOTE: ALL DELEGATED MANAGER SHALL HAVE EQUIVELENT EXPIREANCE AND QULIFICATIONS OF THIER DUPTY

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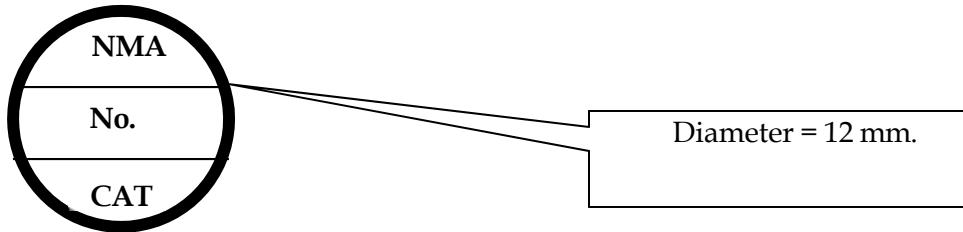
2.5. Certifying Staff

Reference: ECAR 145.13, 145.15

Nesma airlines identification of maintenance personnel that are approved to perform and certify maintenance: See Appendix D

2.5.2. Certifying Staff Stamps:

- Chief Inspector issues stamps to each authorized maintenance personnel. To be used for certifying the maintenance release to service and maintenance work on Aircraft, engines, and appliances.
- Individuals are responsible for the safe keeping of stamps issued to them. They must immediately report the loss of a stamp to the Chief Inspector by a report. Certifying staff stamps should be in BLACK/ BLUE INK.
- Chief Inspector Stamp should be RED INK (12 mm Max).



NMA: company three letter

code No: license No.

CAT: A&C or Xe/Xa

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2.6. Manpower Resources

Reference: ECAR 145.15

General

The Director of maintenance is responsible for ensuring that sufficient manpower resources are available for the maintenance activities undertaken by NESMA Airlines Company.

Director of maintenance is in charge of the Manpower plan to give adequate maintenance cover 24 hours basis to the aircraft and weekly, monthly rotations schedule depending online station workload.

The Manpower resources of NESMA Airlines Company consists of both production and support services, which ensures that Company is able to meet the requirements of ECAR 145 and any other mandatory requirements as deemed necessary to legislative bodies.

Current manpower resources of NESMA Airlines Company are as follows:

No. of staff	Break down	Remarks
5	Management	Number of
14	Licensed and Supervisory	Maintenance Staff in
12	Technician	subject to increase or
2	Storekeeper	decrease depending on
1	custom clearance	the Station workload.

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2.6.1 Employment process

Nesma airlines has an employment process that ensure management and non-management positions within the organization that require the performance of functions relevant to the safety or security of aircraft operations are filled by personnel on the basis of competence to accept responsibilities and undertake required duties, and having appropriate levels of knowledge, training, experience, qualification and demonstrated skills appropriate to the position.

The Employment process will be as follows:

1. Prerequisite criteria for each position are developed by Nesma Airlines department's directors/managers.
 2. The qualifications and job description required for each position is documented in the corporate manual (1.2) and each department manual, these qualifications may have a regulatory requirement especially for post holders and/or to be set by each department director/manager.
 3. Qualifications and job descriptions will be reviewed and approved according to the manual review and approval process.
 4. All departments shall coordinate with Administration department for their needs and requirements for new employees. Department's managers should have a preliminary acceptance from the CEO for initiating the employment process
 5. Each department director/manager will interview relevant applicants after Receiving and reviewing their personal C.V, all necessary documents, certificates, and written test results (if applicable). Administrative required documents will be reviewed by the admin-dept.(in coordination with the concerned dept.) also; the admin-dept. will review medical check if required for all candidates including Drug and Alcohol test (if applicable).
 6. Department's director/manager will ensure that employee's qualifications are in compliance with the job requirements by interview the applicant person, a full review to be done by administration department to ensure compliance with company requirements as per corporate manual policy that required personnel performing safety or security related work are physically and mentally fit for duty. These personnel are subjected to medical fitness screening.
 7. After the concerned department assign successful applicant for the required position, he/she will fill the employment application (form no.9) which will be signed by applicant and the department director/manager, and to be presented to the Vice president (CEO) for approval.
Nesma airlines ensure that responsibilities and activities assigned to the new employee within the
 8. management systems are practical, appropriate, and can be reasonably accomplished. This includes positions that require either multiple functional responsibilities or maintenance of a specific technical proficiency.
 9. According to the vice president approval the administration department will prepare the contract to be signed by the new employee and the vice president (CEO).
- see corporate Manual 1.6.3

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2.7. Organization intended Scope of Work Reference:

ECAR 145. 37, 145.49

2.7.1. General Policy

- Nesma Airlines Company will only carry out work on large aircraft of all-metal construction with Turbine engines for which it is approved, at the locations identified in this Manual.
- Nesma Airlines may carry out work on an aircraft for which it is approved at any location subject to the need for such work arising only from unserviceability of the aircraft.
- Nesma Airlines shall perform work on aircraft for which it holds the required technical data, necessary tooling and trained personnel. Reference to ECAR-145
- A description of the Company's scope of work relative to the extent of this approval is detailed hereinafter. The full capability listing for the Company will detailed in Capability List which is an ECAA approved document.
- NESMA Airlines has a contract with Egypt Air and for some maintenance support that is not yet established in NESMA Airlines basically Hangar facilities, tire build up, structure repair.
- In especial cases Nesma Airlines may arrange for maintenance of any aircraft or aircraft component for which it is approved at another organization that is under the quality control reference to ECAR 145.37
- NESMA Airlines has the resources to perform all levels of maintenance work on the following aircraft. This will include maintenance up to "A" Check level

The scope of aircraft approvals are as follows:

Aircraft Manufacturer	Type	Limitation	Line
Airbus	A320-214	Line Maintenance Up to and include 6A CHK for A320 (CFM56-5B4/3)	X

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Nesma Airlines Components Capability List

Item	ATA	Component Description	Part Number	Maintenance Level	Concerned W/S	A/C TYPE
1	32-41-13	Nose Wheel	3-1531-X	Overhaul	Wheels & Brakes	A320
2	32-47-46	Main Wheel	C20195162	Overhaul	Wheels & Brakes	A320
3	32-47-61	Brake Unit	C20225XXX	Overhaul	Wheels & Brakes	A320
4	24	Battery	2758	Overhaul	Battery	A320
5	25-60-12	Life Vest	P0723EXXX P0640-1XX	Test	Safety	A320

Structure Capability List

Item	ATA	Component Description	Part Number	Maintenance Level	Concerned W/S	A/C TYPE
1	Structure Repair	<ul style="list-style-type: none"> - Repair Small Dents by filling - Removal of scratches - Blending of rework - Press out of dents - Fastener replacement - Composite repair by filling 	Structure Repair	A320

Nesma Airlines Special Services

Item	ATA	Component Description	Part Number	Maintenance Level	Concerned W/S	A/C TYPE
1	NDT	EDDY Current Insp. Magna Flux Insp.	NDT	A320

2.8. Aircraft/Engine Types and Models:

Type	Model	Engine Type	MSN	Registration
A320	A320-214	CFMI- CFM56-5B4/3	05171	SU-NMG
A320	A320-214	CFMI- CFM56-5B4/3	05175	SU-NML

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2.9. Technical Department Communication Introduction

- Nesma Airlines technical department exchange the information to conduct the maintenance operations by oral and documented means.
- For oral communication all Nesma Airlines technical department connected by phone network for exchange the urgent information regarding Nesma Airlines aircrafts maintenance operations.
- E-mail is an approved communication is fused for spreading data among the department and to other Nesma Airlines departments or with any contractors, suppliers, vendors, etc.
- Documented communication shall take place in all maintenance procedure have been mentioned in this General Maintenance Manual amendment via regular forms, circular and memos "F206-16 F206-24".
- Meetings shall be furnished at least once a month or due to technical department needs as mentioned in this General Maintenance Manual amendment or conducted due to any department request according to normal maintenance operation, work performance, significant issues arising from the maintenance operations, AMP review result . etc.
- The technical departments contact list: Refer to PDF File - NMA Tech Dept/ Contact List Available at Maintenance technical director and station.

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Chapter 3

Planning & Engineering

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3.1

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3.2. Procedure for Aircraft Maintenance Program Development.

Reference: 121.374

Responsibility:

Chief Inspector and Quality Manager.

Technical Development dept.

3.2.1. Introduction

Nesma air lines provides, for the use and guidance of relevant maintenance and operational personnel, a Maintenance Program, and maintenance data, approved by the Authority, which contains information for each aircraft, in accordance with specifications below:

- a) Maintenance tasks and the intervals at which these tasks are to be performed, taking into account the anticipated utilization of the aircraft.
- b) A system that identifies mandatory maintenance tasks, and their corresponding intervals, for tasks that have been specified as mandatory in the approval of the type design.
- c) Continuing structural integrity program.
- d) Procedures for changing or deviating from (a), (b) and (c) above.
- e) Condition monitoring and reliability program descriptions for aircraft systems, components, and power plants.
- f) System identifies frequency schedules of each check, overhaul or inspection of airframes, engines, equipment, instruments, and component systems
- g) Including procedures and standards for maintenance, inspection, and servicing
- h) Approved service life for various components, parts, accessories, etc.
- i) Any particular maintenance task requires specific environmental conditions different to the foregoing and identified in clear maintenance instructions.

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Nesma air lines ensure the design and application of the Maintenance Program observes human factors principles such as:

- Layout of the Maintenance Item.
- Language used shall be in English and easy to comprehend.
- Maintenance item shall be clear instructions that are as brief and succinct as possible.
- Standardization of all task cards at the beginning to include the appropriate personnel safety warnings and cautions.
- All notes, warnings and cautions are apparent by the suggested use of boxing, bolding, italicizing, and underlining text.
- Clear instructions for the mechanic/inspector as to where to sign, certify, initial, date the task.
- Where a Maintenance Item has important graphic details, the graphics are included.
- Full amplification of some tasks rather than referral to a separate document that may distract the mechanic.
- Referral to the applicable Approved Data.

Nesma air lines ensure amendments to the Maintenance Program are furnished to all persons to whom the Maintenance Program has been issued, and such amendments are conveyed within a timeframe that will permit implementation of changes to the Maintenance Program prior to the effective date of the amendment. By engineering audit check list

3.2.2. Procedures

This procedure defines the instructions to be followed by Nesma Airlines for developing a customized maintenance program and to approve this program from the ECAA

- Technical Development Manager receives the manuals revisions from Airbus Company reference to the revision service contract between Nesma Airlines and Airbus.
- The Technical Development Manager studies the Master Maintenance Program, The Maintenance Review Board Meetings to customize the Maintenance Program with the task cards applicable to Nesma Airlines Aircraft.
- The Technical Development Manager also uses the components manufacturer recommendation, ECAA requirement, Reliability reports & the applied Supplemental Type Certificate recommendation while making the customized maintenance program.
- After issuing, The Chief Inspector and Quality Manager reviews the Customized Maintenance Program & sign the applicable pages to be sent to the ECAA for approval.
- The Chief Inspector & the Technical Development Manager have to fulfill all the ECAA requirements to receive the approval for the Maintenance Program.
- After receiving the approval from the ECAA, **The Chief Inspector and Quality Manager shall insure that the Approved Maintenance Program (AMP) is correctly distributed reference to the distribution list in the AMP**

Refer to Corporate Manual chapter 2

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3.2.3. Revision Procedures

- A revision of the Approved Maintenance Program is originated from changes to the MRB, and/or the MPD.
- As a new revision of the master MPD and/or MRB is released, a copy from the CD shall be received by the Technical Development Manager through the Technical Library officer.
- The Technical Development Manager studies the revision highlights of the MPD and/or MRB to make a new revision of the Approved Maintenance Program.
- The repetitive EO's have to be inserted in the new revision of the AMP after the first accomplishment of the EO
- The Chief Inspector and Quality Manager reviews the new revision of the Maintenance Program & sign the applicable pages to be sent to the ECAA for approval.
- After the Chief Inspector and Quality Manager review the new revision, he will prepare The ECAA approval application and submit to ECAA for approval.

Forms: ECAA Maintenance Program approval application

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3.3. Procedures for Compliance with Maintenance Program.

Reference: ECAR 145.29 (d) 10 and 121. 374

Responsibility:

Chief Inspector and Quality Manager.

Planning dept.

3.3.1. Introduction

This procedure defines the instructions to be followed by Nesma air lines for complying with the approved maintenance program for ensuring that the routine maintenance performed IAW procedures described there and IAW procedures acceptable to ECAA

3.3.2. Procedures

- Planning Manager receives a copy from the approved maintenance program IAW the distribution list of the AMP
- Planning monitors and record A/C, Engines, APU (hours and cycles) which written in A/C tech. log.
- Planning forecasts and track required maintenance activities according to A/C hours, cycle and calendar against the A/C operation schedule.
- Planning tracks hours, cycles and calendar time for aircraft, engines, the life limited part- and hard-time components by calculating the accumulated flight hours, cycles which recorded in A/C Technical Log.
- According to hours and cycles the Planning Manager decides time and type of A/C check.
- Before time of check with suitable time period, Planning Manager shall prepare the work package (Routine and Non-Routine Tasks) that includes task cards and relevant associated documentation.
- The generated task cards identify by a serialized card number. The whole work package shall cover by Master Index sheet which includes all task cards and shall be signed by Planning Manager.
- Chief Inspector and Quality Manager reviews the work package. Then the work package shall be routed to the Director of maintenance for work implementation on the specific time determined by the Planning Manager.
- After completion each maintenance work, The Planning Manager updates Aircraft, Engine, APU & Components records. **Forms:** F203-18

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3.4. Reliability Program

References: ECAR 121.373 and Nesma airlines program

Responsibility:

Chief Inspector and Quality Manager.

Technical Development Manager.

3.4.1 General:

Reliability Program is the tool that uses both operations and maintenance data to measure the aircraft operations, components, systems and powerplant.

This tool is oriented towards the following:

- The assessment of in-service reliability performance (failure/occurrence rate) which should be maintained within predetermined values, which are the target to achieve an acceptable reliability level.
- Quality improvement for safety reasons and economic operations.
- The identification of maintenance problems areas.
- The compliance with regulatory requirements.
- Feedback for manufacturers to improve

reliability. The Reliability Program is designed to:

- Provide a summary of aircraft performance to reflect the way maintenance is being done, and how the aircraft type behaves.
- Provide accurate and valuable technical information to help in case the Company needs to change Maintenance Program or maintenance practices.
- Ensure continuous airworthiness.

3.4.2 Procedure:

As per Maintenance Reliability Program Manual MRP-M Issue.1 Rev 0 Date Mar 2022

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3.5. Airworthiness Directives / Mandatory Modifications Procedure

Reference: ECAR 39.05, 121. 367

Responsibility:

Chief Inspector and Quality Manager

Technical Development Manager.

3.5.1 General

Nesma airlines has a process to obtain and assess continuing airworthiness information such as Airworthiness Directives (ADs) issued by the Primary Certification Authority of the Aircraft or Engine for the A320, by EASA/ ECAA, Alert Service Bulletins and recommendations from the organizations responsible for the type design issued by the Primary Certification Authority of the Aircraft or the engines.

Nesma Airlines ensure all modifications and repairs:

- i) Are carried out using approved data.
- ii) Comply with airworthiness requirements of ECAA.

Airworthiness Directives are mandatory, therefore a missed implementation of any of those applicable AD on the company aircrafts will automatically suspend the aircraft Airworthiness Certificate.

3.5.2. Airworthiness Directives Subscription

- Technical development Manager is responsible to download and check periodically (biweekly) for EASA Airworthiness Directives from the EASA Web Site <http://ad.easa.europa.eu>
- Technical development Department is responsible to study and evaluate the Airworthiness Directives.
- A Biweekly processing form includes the status of the Applicable and Non-Applicable AD is issued from the technical development department signed by technical development Manager.
- A notification from the Biweekly Processing Form "F203-01" will be sent to the Chief Inspector and Quality Manager and Planning Manager for the purpose of follow up will be issued and the form is signed by Chief Inspector and Quality Manager to confirm reception.
- An AD Evaluation form "F203-03" will be issued by the technical development Manager for each applicable AD

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- The AD Status is updated biweekly after issuing the Biweekly Processing Form.
- The AD which has an operation impact will be sent attached to letter and/or e-mail to the Flight Operation Department through internal Communication to take the necessary actions and feedback shall be returned to ensure the accomplishment of the AD (No EO will be issued for such AD).
- A copy from the Biweekly, Biweekly Processing Form, and AD Evaluation Sheet shall be kept on the company server for record keeping.

Note: For the open AD, This AD will remain open in the AD Status till the Technical development department receives prove of compliance from the planning department or review the compliance E.O.

3.5.3. Processing Of Airworthiness Directives

1. After ensuring applicability of the AD, Technical development department issues the relevant Engineering Order document for compliance with the requirements of the AD.
2. In case the AD updates manuals, The Technical development Manager is responsible to update the affected manuals as indicated in the Engineering Order and a copy from the modified manuals or the amendments of the affected manuals is to be sent to the technical library for update.
3. The material & tool pages of the Engineering Order is sent to the Material Manager to insure the presence of special materials and tools requested to perform the EO prior the EO effective date.
4. Planning Manager is in charge to prepare the Engineering Order implementation by routing them to the Director of maintenance.
5. The signed engineering order (dirty fingerprint) to be sent to the Planning Manager to confirm implementing the EO and notification of compliance to the technical development Manager for Status update.

3.5.4. Inspection and Records of AD

Nesma airlines has a process to monitor and assess maintenance and operational experience with respect to continuing airworthiness of A320, as prescribed by ECAA by its audit program part "D"

Chief inspector and Quality Manager monitors the AD's to ensure that they are complied with within the required time period. Chief inspector and Quality Manager is in charge to certify the validity of the AD's & SB's status forms "F203-02, F203-04".

After completion each of maintenance work related to Airworthiness Directive (including,

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inspection, modifications, etc.) Planning Manager is responsible for updating Aircraft, Engine & APU components records.

- A separate file will be opened for each applicable AD contains:
 - AD number, Revision and relative EO
 - EO dirty fingers in respect to date of accomplishment regarding Nesma air lines
 - Historical accomplishment
- After receiving the signed engineering order (dirty fingerprint) from "F3-10" the maintenance department, the original signed EO will be kept in the AD records section
- A copy from the signed EO will be kept with the work package to confirm accomplishing the EO at the specified time with the package
- These records will be available for inspection by the Chief Inspector and Quality Manager or by any ECAA Inspector
- All AD's and SB's shall save on AD's & SB's electronic folders.

Forms: F203-01, F203-02, F203-03, F203-04, F203-10

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3.6. Optional Modification

procedures Reference: ECAR 145.

29(d)12 Responsibility:

Chief Inspector and Quality Manager

Technical Development Manager.

3.6.1 General

Non-Mandatory modifications are those recommendations from the Manufacturer for which Nesma Airlines is not obliged by the National Airworthiness Authority to accomplish.

Non-mandatory modifications may become mandatory based on National Airworthiness Authorities decision. The non-mandatory modifications are usually issued as Service Bulletins, Service Letters, or other media.

All modifications producing a configuration change to the aircraft, its components, and engines, causing a physical

change in fit, form and function are always required through documentation approved by the Manufacturer and the TC Holder Authority (SB's) or approved by ECAA based on Manufacturer documentation and engineering evaluation.

3.6.2 Criteria for Decision

The criteria to decide on a non-mandatory modification embodiment are:

- All Service Bulletins ranked as "Alert & Recommended" which contribute to safety or airworthiness of the aircraft are normally adopted. Where the effect on safety or airworthiness is questionable, experience and technical judgment become a determining factor.
- Modifications ranked as "Recommended" and "Optional", will not be performed unless requested by the CEO, Technical or Operations Director or has Airbus Free of charge retrofit.
- All Modifications; are carried out using approved data; and comply with airworthiness requirements of ECAA.

3.6.3 Procedure

1. Technical development Manager is responsible to check and download periodically (biweekly) for new issued service bulletins, & service letters from the Airbus company Web Site.
2. Technical development Manager is responsible to study and review all the applicable Service Bulletins and stamp as Reviewed within 90 days from the issue date of the Service Bulletin.
3. The Technical development Manager shall update the Service Bulletin/ Modification Status form.
4. A copy from The Service Bulletin & Service Bulletin Evaluation shall be kept on the company server for Record Keeping

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3.7. Production Planning

Procedure Reference: ECAR

145.55

Responsibility:

Chief Inspector and Quality Manager.

Planning Manager.

Director of maintenance

3.7.1 Control of Man-Hour planning versus Scheduled Maintenance Work

Director of maintenance develops the man-hour plan and submit it to the planning Manager.

Development of the plan will take into account the following:

- The normal working hours for the workers do not exceed 8 hours/ day.
- The maintenance person performing maintenance or preventive maintenance from duty for a period of at least 24 consecutive hours during any seven consecutive days, or the equivalent thereof within any one calendar month.
- Availability according to the needs of technician.
- Determination of staff required to ensure quality functions.
- Anticipated vacations, holidays, training, and absences.

Planning Manager shall compare the man-hour provided by maintenance versus the plan man-hour required to perform the estimated workload plan.

The planning of the man-hours must be related to:

- The planning of occupation of hangar.
- Other factors such as historical data, high seasons, and extent of planned scheduled maintenance
- Workloads that should take into account all the schedule maintenance on A/C that must be carried out by the declared staff and will not be released according to AUTHORITY Part 145.

3.7.2 Work Package Preparation

Planning Manager tracks hours, cycles and calendar time for aircraft, engines and life-limited components based on Aircraft journey book hours and cycles accumulation to forecasts and tracks required maintenance Activities

The Planning Manager prepares the work package that includes task cards and relevant associated documentation.

The generated task cards identify by a serialized card number. The whole work package shall be covered by Bill of Work Indexes which includes all task cards Form "F203-18".

Chief Inspector and Quality Manager reviews the work package. Then the work package shall be routed to the Director of maintenance for work implementation on the specific time determined by the Planning Manager.

The check work package is divided to Routine and Non-Routine tasks

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3.7.2.1. Routine Tasks

They are resulting from analysis of the aircraft systems, structure, and zone concept of the aircraft.

These tasks are to be performed referenced to Nesma air lines approved maintenance program intervals quoted are:

- Calendar.
- Flight Cycles.
- Flight Hours.

A320 Routine tasks intervals:

- PDC
- Daily check every 36 Hours
- Weekly check every 8 days
- A check (system) 1000 Flight hours
- A check (structure) 1000 Flight cycles
- C check 7500 Flight hours, 5000 Flight cycles or 24 months which ever come first

3.7.2.2. Non-Routine Tasks

They are resulting from particular additional requirements from:

- Nesma air lines as the aircraft Operator (optional modifications, operational specific instructions, rectification of defect...)
- Authorities (Airworthiness Directives, operational requirement)
- Manufacturers (Modification recommendations, cancellation of production concessions, Equipment limitations, etc.).

Most of them are:

- AD's.
- Service Bulletins.
- Continuous follow up of Maintenance deferred items.
- Nesma air lines engineering's inputs requiring modification/ periodical check/ inspection/ Repairs.

The technical development manager shall issue an Engineering Order (E.O) to cover the non-routine tasks generated from AD's, and SB's, for other non-routine maintenance item NRC" none routine Card" shall be generated.

Forms: F203-18, F206-09

NOTE: F20 SHALL REFLECT NESMA AIRLINES AMP REVISION NUMBER

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3.7. 3 CVR and DFDR Read Out

Procedures Reference: ECAR 91.

appendix E Responsibility:

Chief Inspector and Quality Manager.

Planning Manager.

Director of maintenance

3.7.3.1 General

Nesma airlines has a maintenance program shall ensure checks and/or evaluation of the recording systems:

- 1- annually or an extended interval approved by ECAA for cases of demonstrated high integrity of recording system serviceability
- 2- Include analysis of recorded data validity, quality, and system calibration in according to manufacturing requirements or as required by ECAA

3.7.3.2 Procedures:

- Planning Manager tracks calendar time for CVR and DFDR to forecasts time of readout
- The Planning Manager prepares the task cards of removal and installation for CVR & DFDR to be sent to maintenance.
- Director of maintenance responsible for sending DFDR to be contacted AMO for read out.
- Chief Inspector and Quality Manager responsible for sending CVR to ECAA for read out.
- After data download and the data analysis, a report shall issue for both CVR and DFDR data
- The removed CVR and DFDR Back to Nesma store with a copy with its read-out reports, to be ready to reinstall when need it.
- Planning manager shall update the CVR& DFDR status

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3.8. Engine Condition Monitoring.

Responsibility:

Planning Manager.

3.8.1. General.

Condition monitoring of engine involves tracking the level of different parameters during operation.

When a parameter level changes then the analyst must determine what is happening and take appropriate action. Nesma airlines contracted CFM to perform Engine condition monitor

3.8.2. Procedures:

Collecting data.

Nesma air lines record engine parameter on Personal Computer Memory Card International Association (PCMCIA CARD) Installed in Flight Data Interface Management Unit (FDIMU)

. Uploading the PCMCIA card's data and transfer that data to CFM.

Data Entry.

CFM shall feed the engine monitoring system data and print out the engine trend charts. Data Analysis.

- CFM inform the Nesma airlines about Engines fleet condition via ECM report.
- If any of engine parameter changes the engine's data shall be analyzed to determine what happening and the causes of parameter change. CFM shall inform Nesma team with the change and its probable causes.
- Director of maintenance shall perform a maintenance corrective action to ensure all parameters return to its normal level.
- Planning manager follow up the next reports to ensure all parameters return to its normal level after the maintenance rectification.
- If the parameters remain out of normal level the Planning manager shall inform the manufacturer "CFM" with the case for analyzing the causes and for taking the corrective actions.

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3.8.3. oil consumption

In order to keep the engines working with best permanence. Nesma technical assure there are a sufficient oil quantity before each flight. as per AMM 12-13-79-610-011-A (oil level) by performing PDC check list according to Nesma airlines approved maintenance manual.

3.8.4. Procedures

- 1- Data of oil collected via TLB
- 2- On monthly bases Oil consumed by aircrafts in Quarts divided by the flown hours during the same month to calculate the oil consumption and crate oil consumption Trent.
- 3- Any drift of the Trent of oil consumption the director of maintenance and MCC manger shall be notified by e-mail for taking the proper action.

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3.9. Engineering Order Responsibility:

Chief Inspector and Quality Manager. Planning

Manager.

Technical Development Manager Material control

manager

3.9.1. General.

The Engineering Order (E.O.) shall be used to direct specific production or inspection action. The E.O. is the only means of documenting and authorized the accomplishment of "major repairs and alteration). The Engineering order shall be used to document the following actions:

A. Modification

Any alteration to the design configuration of an airplane, engine, component or necessary will be authorized with an engineering Order. Most of the modifications accomplished by Nesma air lines are based on information provided by the manufacturers in the form Service Bulletins.

B. Inspections

Engineering Orders will be used to direct the accomplishment of one time or repetitive inspections in compliance with Service Bulletin, Airworthiness Directive or other requirements.

C. Maintenance Program Changes

Engineering Orders will be used to authorize changes to existing Maintenance programs. These may include changes to established task or check intervals, addition, or deletion of tasks, change to the content of a task and component process changes. Such E.O's will be used to introduce changes to the Maintenance program until the next revision cycle of the program

3.9.2. Procedure

Engineering Order shall be handled as per the following procedures:

A. Issue:

1. All EO's shall be issued 6 months before the due date of the reference AD, ASB or SB. All E.O's related to AD shall stamp with AD stamp in red color in addition to the blue or black stamp of the engineering order.

B. Approval:

1. The approval will be based on the technical accuracy of the information contained in the E.O.
2. E.O's shall be approved by the Egyptian Authority (ECAA) if the works to be performed by these E.O's have no approved references (AD, ASB, SB).

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C. Planning/Scheduling:

1. The planning Manager is responsible for planning and scheduling the accomplishment of all Engineering Orders.
2. Material control manager provides all materials or kit need for accomplishment of E.O.
3. Planning manager depending on operations flight hours, flight cycles and to calendar, scheduling the E.O. execution in the maintenance plan.
4. Planning Manager has to include the E.O's into check package and for tracking their accomplishment.
5. For E.O's which will be accomplished by line Maintenance, Planning Manager has to coordinate for scheduling with the Director of maintenance.

D. Sign-Off and close-out Requirements:

1. Implementation of E.O's will be ordered by the licensed Engineer's sign-off individual steps. Steps which require an inspector's concurrence shall be signed off by the RII approved engineer.
2. After accomplishment of an E.O on an affected airplane, engine or component, Planning Manger shall update the records.

F. Record Keeping:

1. The Planning Manager maintains running records of all outstanding E.O's. The records will indicate the current status of each E.O. on each affected airplane, engine or component.
2. The Planning Manager retains completed and signed off E.O's in the permanent file for the effected airplane, engine or component.
3. For E.O's which cover the requirements of Airworthiness Directives (AD's) the Planning Manager shall maintain additional running records of all outstanding AD's and SB's . The records will indicate the current status of each AD and SB' mandatory on each affected airplane, engine or component.
4. For E.O's which are based on manufacture's service bulletins (SB's) The record shall indicate the current status of each SB on each affected airplane, engine or component

Forms: F203-10

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3.10. Minimum Equipment List Preparation

Procedure Reference: ECAR 121. 139, 121.304

Responsibility:

Chief Inspector and Quality Manager.

Technical development Manager

Technical lib. supervisor.

3.10.1. General

Minimum Equipment lists are supplied by the aircraft manufacturer. For ease of use, operators extract the lists and include additional restrictions accordance with the Egyptian Civil Aviation Regulations and A/C equipment configuration and operation conditions.

The minimum equipment list is designed to provide the ability to operate the aircraft with inoperative equipment for a specified period of time.

3.10.2. Procedures

1. Upon receipt of Master Minimum Equipment List (MMEL) published by A/C Manufacturer.
2. Technical development department proceed with the customization of MEL Items of manual in accordance with the Egyptian Civil Aviation Regulations (ECAR's), A/C modification standard taking into consideration A/C equipment configuration, operation conditions, routes being flown, and requirements set by this MEL will not deviate from any applicable Airworthiness Directives or any other mandatory requirements and will not be less restrictive than MMEL.
3. The aircraft system shall be listed in ATA chapter order.
4. Technical development department shall forward the customized of MEL Items to Technical Pilot to customize the MEL Operational Procedures and assemble the whole manual.
5. Technical Pilot shall forward the complete CMEL to technical department for review.
6. After reviewing the CMEL, Chief inspector and Quality Manager shall submit the CMEL along with CMEL application Form for ECAA approval
7. After getting the Approval of CMEL, Chief inspector and Quality Manager shall distribute the CMEL to Technical and operational department via distribution list form F-300.
8. Technical Lib. Supervisor shall distribute the manual according to CMEL distribution list

Forms: MEL ECAA Application Form, F-300

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Chapter 4

Maintenance Procedures

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4.2. Maintenance Instructions & relationship to Aircraft / Aircraft Component Manufacturer's Instructions including updating Availability to Staff

Reference: ECAR 145.17

Responsibility:

- Chief inspector and quality manager.
- Library

4.2.1. Introduction

All manuals, rules, regulations shall be referred to as Approved Data, all documentation used by Nesma airlines weather in hard copies or on softcopies shall be updated version.

Nesma Airlines has a documentation system for the management and control of documentation and/or data used directly in the conduct or support of operations.

The primary purpose of this system is to ensure necessary, accurate and up-to-date documents are available to maintenance staff required to use them, to include, in the case of outsourced operational functions.

Nesma Airlines is committed to maintain and implement the documentation system to ensure that all staff has the right information available to them at all times allowing them to perform their role to its full extent, thus facilitating a smooth and compliant operations.

The importance of reference documentation, data and the control of this information is vital to the smooth, safe operation at Nesma Airlines and the maintenance of regulatory compliance.

Refer to Corporate Manual chapter 2(Documentation and Records)

4.2.3 Control of documents.

- The purpose of document control is to ensure that the necessary, accurate and up-to-date documents are available to technical department members.
- The importance of reference documentation, data and the control of this information is vital to the smooth, safe operation at Nesma Airlines and the maintenance of regulatory compliance.
- All information whether received or issued internally or externally which has an impact on safe operations and the airworthiness of Nesma airlines aircraft will be accurately documented and are readily available for all relevant staff to refer to.
- All reference documentation shall be reviewed to ensure that its identity, accuracy and continuity are maintained. The consequence of obsolete reference information is a compromise of the safety and integrity of our operations.

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- NESMA Airlines is committed to maintain and implement controls on documents and manuals. Controlling our documentation will ensure that all staff have the right information available to them at all times allowing them to perform their role to its full extent, thus facilitating a smooth and compliant operations.

4.2.3.1 Scope.

The scope of the document control system encompasses all documentation utilized by Nesma Airlines including documents of an external origin that affect the safety, security and quality of our operations.

Nesma airlines will ensure that the processes of documents review and according to the assigned responsibilities that the documentation used in the conduct or support of operations:

- i. Contains legible and accurate information.
 - After preparation of each document/manual, it will be subjected to a review by concerned department director/manager before approval phase to verify the legibility and accuracy of the document.
 - The ECCA approval for the documents/manuals will require the document to be subjected to a review process by ECCA inspectors to verify the legibility and accuracy of the document.
 - The corporate approval (if applicable) for the company documents/manuals will require the document to be reviewed by quality to verify the legibility and accuracy of the document.
 - Adding legible references to the manual contents will ensure legibility.

- ii. Is presented in a format appropriate for use in operations.

As per **ECAA advisory circular # 00-7** manuals should be clear, concise, and easy to understand. The following suggestions will assist during manual development:

- Whenever possible, short, common words should be used.
- When a word has more than one meaning, the most common meaning should be used.
- Operators should standardize terminology whenever practical.
- To provide appropriate degrees of emphasis on specific points in the text, "cautions," "warnings," and "notes" should be used.
- Descriptions in the manual should not be overly complex and difficult to understand.
- Long and detailed sentences should be avoided.

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- Manuals and revisions in Nesma Airlines are supplied to authorized personnel in paper or CD in PDF version
- iii. If applicable, is accepted or approved by the Authority.

"Approved" is used to describe a document, manual, or checklist that is required by the ECARs and must be evaluated and approved by the ECAA.

"Accepted" is used to describe a document, manual, or checklist that is not required to have ECAA approval.

Only a portion of company's manuals is required to have ECAA approval. The remaining portions are "accepted" by the ECAA or may be approved internally as per ECAA requirement. The company is required to submit the manual to the ECAA for evaluation and review. If the ECAA concludes that an accepted section manual is not in compliance, they will formally notify the company of the deficiency. Upon notification, the company must take appropriate action to resolve the deficiency

- iv. In accordance with **ECAA Advisory Circular #00-10** for Human factor requirements

It must typically address the following as minimum:

- Preparation of documentation in a useable format for information presentation, at the appropriate reading level and with the required degree of technical sophistication and clarity.
- Improving user performance through the use of effective and consistent labels, symbols, colors, terms, acronyms, abbreviations, formats and data fields.
- Ensuring the availability and usability of information to the user for specific tasks, when needed, and in a form that is directly usable.
- Designing operational procedures for simplicity, consistency and ease of use.
- Enabling operators to perceive and understand elements of the current situation and project them to future operational situations.
- Minimizing the need for special or unique operator skills, abilities, tools or characteristics.
- Assessing the net demands or impacts upon the physical, cognitive and decision-making resources of the operator, using objective and subjective performance measures.

All reference documentation, manuals and information whether received or issued internally which has an impact on safe operations and the airworthiness of Nesma Airlines aircraft.

All documents, manuals, rules and regulations shall be referred as Approved Data mentioned below:

- Documents and revisions issued by the ECAA, defining the rules that apply to aircraft equipment (ECAR).
- Nesma air lines internal Technical Publications (GMM, MEL, AMP, MTM)

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- Specific documents for aircraft and aircraft components undergoing maintenance. (AD, SB, MMEL, CMM, SRM, MPD, NTM, AMM)

All documentations used by Nesma air lines shall be the latest revision.

Refer to Corporate Manual chapter 2(Documentation and Records)

4.2.4. Applicability

This system is applicable to all Nesma Airlines used documentations and to be followed by all company personnel managers where appropriate.

Documents that are controlled include but are not limited to.

- Company corporate Manual
- Company Safety management system Manual
- Flight Operations Manuals (flight, dispatch, cabin, ground, cargo)
- General Maintenance Manual
- Emergency Response Manual
- Security Manual
- Standard operating procedures

The following documents from external sources, as a minimum:

- Regulations from ECAA and other states relevant to operations, as applicable; (applicable regulations imposed on NESMA Airlines by other states)
- Airworthiness Directives.
- Aeronautical Information Publications, including NOTAMS.
- Manufacturer's documents
- Approved Flight Manual (AFM), including performance data
- Aircraft Operating Manual (FCOM)
- Weight and Balance Data/Manual
- Checklists and MMEL/CD.
- Checklists (Quick reference handbook)
- Other manufacturer's operational communications, as applicable.

(Bulletins or transmissions distributed by the manufacturer for the purposes of amending aircraft technical specifications and/or operating procedures)

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2.4.5. Documentation System Elements

Nesma Airlines documentation system comprises from the following elements:

1) Identification of the version and effective date of relevant documents/manuals

- The issue no., issue date, revision no. and revision date written in all document pages footer except the cover page as follows:
 - The document version is identified by the issue number & revision number.
 - The issue number is related to a newly developed manual or a major change for the previous issue.
 - The revision number is related to minor or moderate changes for the current issue.
- The record of revisions which indicates the latest revision published
- The list of effective pages which indicates the latest issue/revision number and date for each part/chapter/page according to the change criteria
- Record of approval will verify if document, is accepted or approved either internally or by the Authority.

2) Identification of the title and sub-titles of relevant documents/manuals

- Nesma Airlines lines documents must be identified by the following:
 - A title page that generally identifies the operational applicability and functionality.
 - A table of contents that identifies parts and sub-parts.
 - A preface or introduction outlining the general contents of the manual.
 - Reference numbers for the content of the manual.
 - Each document/manual should have a header for each document/manual pages to identify the following:
 - Company logo.
 - Manual/document name.
 - Chapter/section name & number.
 - Page number

	Manual/Document Name Chapter/Section Name	Chapter	#
		Page	#

3) Documents/manuals distribution and dissemination procedures

Nesma Airlines has the following distribution and dissemination procedures that ensure all users are provided relevant documents and/or data on or before the effective date:

- a) Throughout appropriate areas of the organization:

- Each manual includes a distribution list which includes all recipients required to receive the document, the recipient may be belongs to Nesma airlines, ECAA or outsourced organization.
- The distribution list will mention the type of copy (hard Or soft) and a controlled copy number for each recipient.
- The department's document control responsible will use the distribution list form No. F300 which will include all data related to the document/Revision required to be distributed in addition to the column of recipient signature and date, this form used for every manual included in the document list form No F301 which includes all departments' used manuals.
- After distributing the document/Revision the department's document control responsible will have a complete signed distribution list form No. F300 for each department's manual.
- The distribution list form No. F300 after completing signatures will ensure availability at points of use.
- Master copy will be retained forwarded to the quality department.
- A controlled electronic copy is included in each manual distribution list for IT department to be uploaded on company server in the company electronic library to be available for company personnel through access to the company electronic library.
- Within 15 days of receipt, manual recipients (internal or external) will comply with the issuance/revision instructions contained on the Form F300 for insertion of updates and disposition. (Refer to form F300)
- Upon receiving an electronic copy of the manual, and as described on the Form F300, manual recipients will send verification that:
 - The manual has been received.
 - The manual has been inserted.
 - Previous revision was disposed.

The verification may be by receiving signed form (internal recipients) or by an E-mail (external recipients)

- Department's document control responsible will follow up verifications, to ensure within 30 days the verifications are completed., department document control responsible will maintain a file of the distribution records for each revision.
- URL site is provided by IT department for flight crew to allow an external access by using a username and password, this to facilitate an easy access to flight crew to all documents required for their activities. The update and revising of these documents is done by the technical pilot.

- b) To external service providers that conduct outsourced operational functions by applying the following:

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External service providers in agreement /contract with any company department will be provided (if required) with a PDF copy has the department manager-controlled copy number. The service provider receives the document by E-mail will and responsible to comply with the procedure of confirmation through e-mails, faxes, or letters.

Updating procedure

When a change is made to a manual and the new revision is distributed. Apply manual changes using the following technique:

i. Hard copies:

1. Remove and destroy the updated pages.
2. Replace with the new revision pages.
3. Record the “INSERTION DATE” and “INSERTED BY” in the Record of Revisions page.
4. For the Transmittal Sheet highlights the changes to the manual. Replace the old Transmittal Sheet with the new Transmittal Sheet.

ii. Electronic media (CD'S)

When a revision to the manual is published, the CD will be replaced with the new CD, which will contain the entire revised manual. The old CD must be destroyed, and confirmation feedback done as described in a (6).

4) Specific media type(s) designated for presentation or display of the controlled version of relevant documents and/or data.

Documentation in Nesma Airlines may be displayed via electronic or paper media, and may serve various purposes (e.g., communicating, presenting processes and procedures, proving conformity, knowledge sharing).

Electronic Documentation

Documents that are developed and maintained electronically and presented or displayed to users either through electronic media or as printed output.

Nesma Airlines utilize (type 3) documentation that is available from server files (e.g. .doc, .pdf files) and accessed through organization-wide networks. The controlled version of documents may be presented or displayed either electronically or on paper. Each version of such documentation must display a version identifier and effective date.

Characteristics – Controlled content is displayed to users in conventional user files through an electronic medium or is displayed in printed form in a paper document; whether displayed electronically or on paper, must include a version identifier and effective date.

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5) Definition of documentation and/or data that is considered to be reproduced and/or obsolete.

1. As designated by the department's Directors/managers, when a temporary downloaded or reproduced copies was allowed, it will have uncontrolled stamp across it.

Reproduced documents

No reproduce of documents is allowed unless for an important reason approved by the department director/manager and coordinated with quality department.

The quality department will stamp the reproduced copy by the stamp as shown below



With the approved stamp in blue ink

2. The consequence of obsolete reference information is a compromise of the safety and integrity of our operations. So the following is applied:

- The department's document control responsible must receive the obsolete documents (hard or soft) which replaced by the new or revised copy.
- All obsolete documents are withdrawn from the premises and identified obsolete documents then delivered to quality department to be stamped the stamp in red ink of "OBSOLETE COPY" on the front page of the list of effective pages for the document and disposed under supervision of the quality department according to the following procedure:



Obsolete stamp in red ink

Disposal procedure

1. The disposal of obsolete Hard copies shall be performed according to the following:

- a) After replacing the document by the revised copy, the disposal of the old copy will be done directly through shredding.

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- b) In case the disposal is postponed collecting other copies the red ink (obsolete copy) stamp shall be used to ensure requirement of disposal.
2. The disposal of obsolete Digital copies shall be performed according to the following:
- a) After replacing the document by the revised copy, the disposal of the old copy will be done directly by destroy it directly
 - b) In case the disposal is postponed collecting other copies the red ink (obsolete copy) stamp shall be used to ensure requirement of disposal
 - c) IT Office Manager will support the disposal process of Digital Records

Note: in company stations (in country & out country) station manager will do the disposal directly for hard & soft copies without using stamping, this will be done under control & instructions of stations manager.

6) Review and revision procedures to maintain the currency of relevant documents and/or data.

Nesma Airlines documents/manuals are subject to continuous revision to cover any changes or updates in regulations or company standards and polices and to ensure they contain adequate content and are in compliance with applicable regulations, safe operating practices, and the company's **Ops Specs**. The development and production of an acceptable manual is solely the responsibility of the department issued the manual.

The review of documents for maintaining the currency of data/information included and revising as necessary will be according to the following but not limited to:

1. Issue of new authority regulations
2. Change of company policy or procedure.
3. Change in organization structure. Or nominated positions.
4. A result of an audit.
5. Compliance with IOSA new editions.
6. Required enhancements /improvements.
7. Compliance with new human factor principles.

Revisions procedure for documents/manuals issued internally:

- The amendments and revisions are published by the department after the approval of the director of department
- The concerned department director/manager is responsible for keeping the instructions and information of the documents/manuals up to date.
- For each amendment an updated "list of effective pages" shall be issued which will enable the user to check whether his manual is up to date.

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- In order to identify changes, additions or deletions, a vertical line shall be used to outline revised or newly published paragraphs on the pages, also a revision highlight should include to mention the inclusions of the revision briefly.
- Effective pages and record of revisions tables will reflect the change/revision number and date.

Temporary Revisions (TR):

- When it becomes necessary to cover urgent matters arising between normal revisions and it is limited to a defined period of time; a “Temporary Revision” may be published
- Temporary Revisions shall be brought to the attention of the ECAA immediately after review of the department’s director /manager through a letter attached with the TR issued.
- The TR shall clearly indicate that the information is of temporary nature and will be followed either by a permanent approved revision or will be withdrawn after a defined period of time
- Temporary revisions shall be printed in yellow papers for the ease of identification,
- In relation to the TR a filling instructions and temporary effective pages will be issued.

Refer to Corporate Manual chapter 2(Documentation and Records)

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7) Documents and/or data retention process that ensures access to their contents for a minimum period.

Nesma Airlines documents and/or data retention process are classified to:

- a) Documents and/or data with expiry date

In this case the document and/or data will be retained till its expiry date comes and it will be disposed after replacement with the renewed document and/or data if exist.
Examples of these documents and/or data:

- Air Operator Certificate
- Certificate of Approval
- Operations Specifications
- Flight permit
- Insurance certificate
- Radio Station Certificate

- b) Documents and/or data subjected to re-issue and/or revision

In this case the document and/or data will be retained till the new issue and/or new revision is in effect. Examples of these documents and/or data:

- Corporate Manual
- Safety Management Manual
- Operations Manuals
- General Maintenance Manual
- Ground Handling Manual
- Security program

Note: If it is required to retain an original copy of documents and/or data which had been expired or subjected to a reissue or a revision, the retention period and location well identified by the safety & quality department and the concerned department. After fulfilling the purpose of the retention, the documents and/or data will be disposed as per the disposal procedure.

8) Provision for a scheduled back up by copying and archiving relevant documents and/or data, to include validation of the documents or data being backed up.

- Nesma Airlines company server has an electronic library which includes all Nesma Airlines recent documents/manuals.
- All documents /manuals distribution lists shall include the IT department in its recipients list.
- The concerned department's document control responsible will provide the IT department with the recent controlled document in PDF format as per their distribution list. The IT department will upload a read only copy to the company electronic library. This will ensure the update and validity of the electronic library contents.

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- An Electronic system data backup will be used for the management and control of documentation by the IT department.
- A regular data backup will be done every 24 hours and a continuous backup system is to be updated on daily bases and shall be stored in a secure fireproof stowage away from the area in which the original computers are located.
- AIRFASE system data shall be backed-up by the IT department on weekly basis.
- The electronic library documents/manuals are updated according to issuance of new issues/revisions.

For more details refer to IT manual.

9) Identification and allocation of documentation access/user and modification rights.

- Nesma Airlines is committed to maintain and implement the documentation system to ensure that all staff has the right information available to them at all times allowing them to perform their role to its full extent, thus facilitating a smooth and compliant operations.
- All Nesma airlines head quarter departments' personnel have an internal access to the electronic library using their own desktop.
- URL site is provided by IT department for flight crew to allow an external access by using a username and password, this to facilitate an easy access to flight crew to all documents required for their activities. The update and revising of these documents is done by the technical pilot.

Modifications rights

The responsibility for issuance and incorporation of published revisions is assigned as follows:

- The departments Directors /Managers are responsible for issuance of revisions to the document/ manual.
- Upon operations bases, the respective Directors /Managers shall ensure that revisions are posted in all office and aircraft copies under his/her custody.
- Each custodian of this manual shall ensure that revisions are posted in a timely manner.
- Neither the manual nor any part thereof may be reproduced without the express permission of Nesma Airlines.
- It is the responsibility of the IT manager for updating the electronic library in reference to the issued revisions.

10) Dissemination and/or accessibility of documentation received from external sources such as regulatory authorities and original equipment manufacturers.

The documents /revisions are received by material manager who is managing the documents contract.

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The material manager informs the concerned department's document control responsible by e-mail (CC for the quality director) then provides him with the documents /revisions received (hard copy, soft copy...).

After receiving documents /revisions by the concerned department's document control responsible, he will directly forward the revision to be reviewed by the department's director/manager or assigned person then prepare the documents /revisions and update the record it in the document list forms No F301 and distribution list form No F300 then submit it to the Quality department to be reviewed and stamped with the controlled copy stamp.

The concerned department's document control responsible then will distribute the revisions copies according to the distribution list form F 300 and ensure receiving signature for each copy.

If the distribution list includes the IT department (electronic library) he will follow the following procedure:

- The concerned department's document control responsible will provide the IT department with controlled copy (Scanned to put in PDF format) according to distribution list.
- The IT will download it in the company electronic library for read only on the server of the company and available for all company departments and other areas determined by director/manager).
- Externally originated operational /technical airworthiness directives, service bulletins, telexes... will be received from the manufacture (Airbus) directly through e-mails to different company directors /managers in copy, then it will be distributed, filed and processed according to its subject and priority.

Note: Brief bulletin (About Program) on how to use the application is online.

4.2.7. Documentation System Quality Assurance process

Nesma Airlines quality assurance program ensure through quality audits using the IOSA checklist that the documentation system is applied on all Nesma Airlines documentation in a manner that comply with the ECAA requirements.

The quality assurance program ensures the documentation system elements (2.1.6) are applied on all Nesma Airlines documentation.

4.2.8. Nesma Airlines Operational & Safety Bulletins and Circulars

Bulletins and circulars shall be issued by the Director/Manager of the department any May be published via an electronic mean (department email)

Director/Manager of the department responsible to review the contents of each bulletin and/or circulars

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Any updating method either by adding, deleting and/or amending existing information shall be made by the director of department and under his responsibility

Externally originated operational /technical airworthiness directives, service bulletins, telexes... will be received from the manufacture (Airbus) directly through e-mails to different company Directors /Managers as a Carbonated Copy then it will be filed and processed according to its subject and priority.

Safety and Quality director controls the Carbonated Copy distribution through communication with manufacture. (Administrator)

Note: Brief bulletin (About Program) on how to use the application is online.

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4.2.9. Departments' documents Management

Documentation system ensures all controlled documents are centrally managed with the roll and responsibility of each department director/manager. These controlled manuals will include, but not limited to operations (flight, dispatch, cabin, ground handling) manuals, maintenance manuals, security manuals and other controlled manuals. These manuals will be but not limited to the following table:

No.	Department	MANUAL
1	Technical Department	General maintenance manual (GMM)
2	Operations Department	
	Flight operations	Flight Operations manual (FOM) Flight crew training manual FCTM)
	Operations Control Center	Operations Control & Dispatch Manual (OCDM)
	In-Flight Services	Cabin crew manual (CCM)
3	Safety & Quality Department	Safety Management System Manual (SMSM) Corporate Manual
4	Security	Security Program Security manual
5	Ground Handling Department	Stations operations manual (SOM)

Documents that are controlled include, but are not limited to:

- Corporate Manual
- Safety Management System Manual
- Operations Manuals (Flight, Dispatch, Cabin, Ground, Cargo).
- General Maintenance Manual
- Emergency Response Manual.
- Security Manual
- The following documents from external sources, as a minimum:

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- Regulations from ECAA and other states relevant to operations, as applicable; (applicable regulations imposed on NESMA Airlines by other states)
 - Airworthiness Directives.
 - Aeronautical Information Publications, including NOTAMS.
 - Manufacturer's documents
 - Approved Flight Manual (AFM), including performance data,
 - Aircraft Operating Manual (FCOM),
 - Weight and Balance data/manual,
 - Checklists and MMEL/CDL.
 - Quick Reference Handbook (QRH).
- Other manufacturer's operational communications, as applicable. (Bulletins or directives distributed by the manufacturer for the purposes of amending aircraft technical specifications and/or operating procedures).

4.2.10. Technical Library Management

Responsibility: Technical Library supervisor “Refer to GMM 2.4”

Procedures:

Technical Library contains a hard copy manual and documentation, CD media and soft wear media installed on company server.

1. All technical library media updated periodically by manufacture and supplier mailed media. e.g., SL, Manual on CD. etc.
2. Supervisor of Technical library shall send e-mail to concerned Department for any new manual revision.
3. After new revision insertion, the concerned department shall verify the insertion process via e-mail.
4. All communication between Nesma Airlines technical with manufacture, supplier and contractors shall be saved as an electronic copy.
5. Technical Library Index shall show all data mentioned below:
 - a. The Revision numbers
 - b. Revision date
 - c. Document control Number
 - d. the manuals media “Hard copy or electronic”
6. Library officer shall update and control all approved data and Manuals under supervision of Chief inspector and quality manager.
7. all manuals' copies shall distribute in according with distribution list.
8. All documents and manual are checked, reviewed, and updated at regular intervals.
9. All old document and superseded document shall discard

Refer to Corporate Manual chapter 2(Documentation and Records)

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4.3. Line Maintenance-Control of Aircraft Components, Tools, Equipment. Etc.

References: ECAR 145.23.

Responsibility:

- Record keeping
- Material Control Manager
- Chief inspector and quality manager

4.3.1. Introduction

Nesma air lines have a process to ensure that maintenance organization shall have the necessary equipment, tools and material to perform the work for which it has an approval.

1) Nesma air lines shows that all tools and equipment as specified in the approved data shall be made available. All such tools and equipment that require to be controlled in terms of servicing or calibration by virtue of being necessary to measure specified dimensions and torque figures, should be clearly identified and listed in a control register including any personal tools and equipment that the organization agrees can be used. Where the manufacturer specifies a particular tool or equipment, then that tool or equipment will be used; In case if required tools/equipment specified by aircraft or equipment manufacture are not available, Chief inspector and quality manager shall authorize the use of alternative tools or manufactured tools After acceptance of maintenance department to use.

2) The availability of equipment and tools indicates permanent availability except in the case of any tool or equipment that is so rarely needed that its permanent availability is not necessary. In this case these tools or equipment will be rented with accordance with section 6.19
(MAINTENANCE ARRANGEMENT WITH CONTRACTORS AND MAINTENANCE CONTRACT REVIEW)

3) The necessary material to perform the scope of work refers to readily available raw material and aircraft components, in accordance with the manufacturer's recommendations

4) Nesma airlines has a process to ensure that maintenance organization has procedures for controlling and preventing out-of-service and due-for-calibration tools and equipment from being used GMM 6-10.

5) A clear system of labelling all tooling, equipment and test equipment is therefore necessary giving information of when the next inspection or service or calibration is due. A register should be maintained for all precision tooling and equipment together with a record of calibrations and standards used.

6) Inspection, service or calibration of tools and equipment on a regular basis should be in accordance with the equipment manufacturers' instructions and in ECAA's approved laboratory.

7) Tools and test equipment, are that tooling and equipment necessary to measure/calibrate or test aircraft/ aircraft system/aircraft component to an approved standard

8) Nesma air lines shall ensure good lighting and illuminines for each inspection and maintenance task can be carried out

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9) Noise levels shall not be permitted to rise to the point of distracting personnel from carrying out inspection tasks. Using air plugs is mandatory for working in high noise level

10) Chief inspector and quality manager shall audit and monitor the process reference to Nesma airlines internal Audit program " appendix B"

4.3.2. Control of Aircraft Components

- 1) Spare parts to support the maintenance activities are obtained from Nesma air lines. Stores. Acceptance / inspection of components are performed by stores personnel in accordance with procedure detailed herein.
- 2) The Components and parts are properly identified, protected, and classified as to serviceable or unserviceable components.
- 3) Shelf-life limited items controlled in accordance with section 5 .8. b (control of shelf life) on this manual.
- 4) Life limited part installed shall have history demonstrate the time Inservice as authorized for that part in the type certificate governing the installation, has not been Exceeded and its history shall incorporate in technical records.
- 5) Used part or components removed from aircraft in line maintenance stations are identified by appropriate tag and routed to store by Line Maintenance Staff. Section 5.4 form "F205-03, F205-05 & F205-09"
- 6) Shipment of spares to out stations shall be done in accordance with section 5.11 (contracting procedures for buying or repairs).
- 7) The control of parts and components at out stations are the responsibility of certifying staff / Subcontracted Maintenance or subcontracted maintenance organization
- 8) Chief inspector and quality manager shall Audit and monitor the aircraft component acceptance/ rejection, store and shelf limited items, refence to Nesma airlines internal audit program.
- 9) Nesma airlines ensure that no used part is installed on an aeronautical product unless the part meets the standards of airworthiness applicable to the installation of used parts and is either:
 - An airworthy part that has been removed from an aircraft for immediate installation on another aircraft "GMM 4.3.2.1" or
 - An airworthy part that has undergone maintenance for which a maintenance release has been signed by an appropriately rated Approved Maintenance Organization (AMO).

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4.3.2.1. Cannibalization

Introduction:

Cannibalization has been defined as "removing serviceable parts, from one aircraft to render aircraft" Cannibalization should practice when it is faster to remove a needed part from one aircraft and install it in another Aircraft than to obtain the part from supplier.

The donor aircraft must be in an airworthy condition or in a controlled maintenance environment undergoing a scheduled maintenance check.

The part shall be inspected for satisfactory condition including, in particular, damage, corrosion or leakage and compliance with any additional manufacturer's maintenance instructions and the requirements of the aircraft's maintenance program and shall tagged with removed part tag "Form F205-09." To ensure the airworthy of removed part.

Once the action is complete, the aircraft that received the part is rendered operational, till the new part ordered and installed on the cannibalized aircraft.

The removed part (from donor Aircraft) shall be logged to TLB and identified in replacement sheet Cannibalization only becomes necessary in situations such as the following:

- Maintenance crew needs to get Aircraft up (on spot) to meet operation requirements
- AOG and having delay in supplying system
- For means of trouble shooting

Procedures:

1. When a unit is failed on an aircraft, the certifying staff is responsible to identify the part number of the failed unit and inform the director of maintenance.
2. The Director of Maintenance instruct one of the certifying staff to check the serviceability of the unit to be cannibalized through the Technical Logbook history during the last flights of the aircraft or through the MCDU PFR history.
3. After checking the history, the Director of Maintenance approves the cannibalization process, and instructs the certifying staff to replace the unit as per AMM instructions.
4. The removed unit from donor aircraft shall tag with removed part tag "Form F205-09."
5. The certifying staff shall replace the unit and identify in the TLB and the replacement sheet that this unit has been removed for cannibalization.
6. In trouble shooting case the cannibalized part shall be normalized if it's not confirmed the fault of removed part.
7. History of the cannibalized part is to be transferred to the new aircraft record keeping.

Forms: F205-09

4.3.3. Control of Tools and Equipment (Tractability)

1. Measuring instruments, tools and test equipment required to support the activities are in Serviceable and calibrated condition. They are identified, protected and stored properly.
2. No personal tools allowed to be used on Nesma airlines.
3. All tools kept in custody of storekeeper marked and identified on tools list
4. Any tools needed for aircraft shall be requested by Nesma's technicians from storekeeper using tool list form (F204-15)
5. After work done technician and storekeeper shall review the tool kits after its usage, to Ensure all tools returned (nothing missing or destroyed) form (F204-15)
6. In case of missing or destroyed tools; the storekeeper shall inform the base maintenance Manager for proper action taken.

Forms: F205-03, F205-05, F204-15

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4.4. Maintenance Control Of Defects And Repetitive Defects

References: ECAR 145.29g3, 91.213, 91.609, 121.139, 121.607(b), 121.628 & 121.304

Responsibility:

- Chief inspector and quality manager
- Authorized maintenance personnel
- MCC Manager

4.4.1. General

Nesma airlines has a Maintenance Base in International Cairo Airport, headed by the director of maintenance responsible for approving, controlling, monitoring, and scheduling non-routine and deferred maintenance activities, including MEL/CDL requirements.

4.4.2. Procedure

This procedure covers the control of defect reports arising from aircraft technical logbook Reported by crew or found during line inspections and during operation of A/C. Such defect reports shall record in the Aircraft Technical Log.

The Maintenance department Section is responsible for logbook defects investigation, rectification, and Follow-up.

Nesma air lines shall ensure that appropriate technical documentation (AMM, MEL...) are available in station (and on board of aircraft) for the purpose of compliance with all applicable procedures and precautions.

1. Defects Rectification Procedures:

- A.** When an A/C Equipment Malfunction is noted by the captain or found by engineer either during A/C operation or any check.
- B.** The defect shall record in the A/C technical log.
- C.** After troubleshooting has been carried out according to AMM and Troubleshooting Manual, the engineer may use an item LRU (Line Replacement Unit) from the store or cannibalized part to repair the defect.
- D.** The authorized maintenance person shall ensure that:
 - The new item has the correct part number according to IPC (Illustrated Parts Catalog).
 - The item has a serviceable label or removed part in good condition.
- E.** The authorized maintenance person shall refer to AMM to follow the steps of removal and installation of the LRU item.
- F.** The authorized maintenance person shall test the system according to AMM to ensure that a defect no more exists.
- G.** The authorized maintenance person shall:
 - Record the action taken in the A/C technical logbook, with the new and the old part

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number and serial number.

- Sign and stamp his license (or approval) number.
- Fill in the unit replacement sheet "F206-14"
- Fill in unserviceable label card and attach it with the removed item to be sent to quarantine store.

H. For chronic or repetitive snag, form F204-12 shall file to describe the snag, and the history of the snag and its repetitive period.

Notice to crew form F206-19 shall fill to notify the flight crew with all snags or defects differed on Aircraft. Maintenance department shall analyze the defects or the snag to know the probable causes to rectify the snag; for repetitive snag the methodology of previous repair shall be taken in consideration.

I. All trouble shooting logged to TLB as maintenance report and kept in maintenance and pilot report's history

Form: F206-14, F206-19 & F206-20

2. MEL/CDL Procedures:

- A. When an A/C Equipment Malfunction is noted by the captain or found by authorized maintenance person either during A/C operation or any check.
- B. The defect shall be written in the A/C technical log.
- C. If the authorized maintenance person found that the defect cannot be repaired at once he shall consult the MEL.
- D. If the item is listed in MEL. it must be written as deferred item in ADDL with its category mentioned, date, and expire date also the authorized maintenance person and captain shall heck if the deferred item requires a maintenance and/or operation procedures.
- E. The deferred shall be recorded into TLB with ADDL reference page and MEL reference Item and CAT. a copy form ADDL shall send to MCC for approval and follow up the ADDL item
- F. MCC shall control and monitor the defect differed item by follow up the maintenance action if any and arrange the necessary rectifications within required time limits intervals specified by MEL/CDL.
- G. Once a defect is rectified, an appropriate logbook and ADDL entry will be made.
- H. The Chief inspector and quality Manager shall follow up and monitor the whole process

3. MEL Management of time limits

- A. After a technical limitation is accepted by the captain, and the MEL opened and reported on the ADDL list, the defect must be rectified within the time limit specified in the MEL
- B. MEL item deferral extension. As described in **OpsSpecs**.
- C. MEL/CDL item Deferral Extension Procedures:
 - A concession "F206-08" shall fulfill by Director of maintenance/ MCC and directed to Chief inspector and quality manager
 - Chief inspector and quality manager Contact ECAA for concession Approval.
 - Chief inspector and quality manager Contact Director of maintenance/MCC with the concession approval by singing the concession form F206-08
 - After the concession approval the concession approval number and date shall log to ADDL F206-02
 - When ADDL has rectified; MCC manager fill the block of final action on concession form

Form: F206-08 & F206-02

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4. Repetitive Defects Procedure

- A. A great attention should be paid in mind, when the same defect is repeated at close intervals (defect reported twice on one Reliability report within 90 days).
- B. Chief inspector and quality manager shall monitor this type of defects through reliability reports.
- C. Maintenance department shall communicate with technical development department which can consult all possible means, to analyze and terminate this type of defects, by contact with manufacturer or other A/C type operators or approved professional maintenance organization.

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4.5. Procedure for Completion of Technical Log

References: ECAR 43.13, 121.375, 121.687 and 121.701.

Responsibility:

- Chief inspector and quality manager.

4.5.1 General.

The aircraft technical logbook used by Nesma airlines. Is in compliance with current Regulations for recording flight/ ground information and recording of all operational defects and their corrective actions.

A Nesma airline has four Logbooks onboard its aircrafts listed below:

- Aircraft Technical Logbook
- Cabin Logbook
- Deferred Defect Logbook
- Cabin Deferred Defect Logbook

4.5.1. Procedure

A. Aircraft Technical Logbook

Nesma air lines have a process to ensure that an aircraft technical logbook Is maintained for all aircraft operations and comprises elements specified below:

- aircraft nationality and registration.
- date.
- place of departure.
- place of arrival.
- time of departure.
- time of arrival.
- hours of flight.
- incidents, observations, as applicable.
- details of defects and rectifications/actions taken.
- signature and identity of the person recording the defect
- signature and identity of the person signing the release following maintenance
- Certificate of Release to Service.
- Technical Log Sheet serial number.
- Oil & Fuel quantity records.
- Preflight inspection, service check.

1. The following information, procedure and instructions are to be observed by all personnel who are specifically authorized to handle and use the Technical Logbook:
2. The blocks of the Technical Logbook when filled a white original, plus yellow, pink and green copies, printed on.
3. The aircraft shall not continue its next flight leg if the Aircraft Technical Logbook is not properly signed.

4. Before initiation of a flight, the Pilot in command is responsible to review reported defects and rectification actions taken including certification of aircraft release to service. When satisfied, he will sign in appropriate space and can start the flight process.
5. Technical log sheets are removed and distributed as follow (Prior to flight departure):
 - Green sheet routed to Planning Records Section.
 - Pink sheet to Quality Manager and Chief inspector and quality manager.
 - Yellow sheet routed to ramp agent.
6. In case of technical delay, delay shall be recorded by IATA delay code, delay time shall be recorded into delay block, and form F204-16 shall be filled for follow up
7. Nobody is allowed to make any deletion / correction for any statement using erasers or Corrector pen and when there is a need to correct the statement write an X on the statement, then write the required correction and put your signature or stamp beside it, errors that are corrected shall remain readable and identifiable, and identifiable. Appendix B part D
8. Nesma air lines retain completed aircraft technical log pages for the last six months of operations. Appendix B part D

B. Cabin Logbook

1. All cabin defects and remedial actions performed by the Certifying Staff in charge shall be entered in Cabin Logbook.
2. The blocks of the Cabin Logbook when filled a white original, plus yellow and pink copies, printed on.
3. The Certifying Staff in charge of issuing the release to service on the aircraft Technical Logbook shall review and ensure prior to release, that all defects of the Cabin Log have been correctly handled and certified in accordance with approved maintenance procedures.
4. If the cabin defect can't be correctly due to absence of spare part or for any reasons, it shall be deferred and logged to cabin deferred log.
5. Technical log sheets are removed and distributed as follow (Prior to flight departure):
 - Pink sheet to Chief inspector and quality manager.
 - Yellow sheet routed to chief of flight attendants.
6. All data entries shall not be erased or scratched out. the error corrected shall remain readable and identifiable
7. Nobody is allowed to make any deletion / correction for any statement using erasers or Corrector pen and when there is a need to correct the statement write an X on the statement, then write the required correction and put your signature or stamp beside it, errors that are corrected shall remain readable and identifiable, and identifiable. Appendix B part D

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C. Deferred Defect Logbooks

1. All defects' deferrals and remedial actions performed by the Certifying Staff in charge shall be entered in the ADDL, The Certifying Staff in charge issues the release to service of the aircraft and shall review and ensure prior to release, that all defects of the ADDL have been correctly handled and certified in accordance with approved maintenance procedures.
2. All cabin items shall defer to the CDDL, Aircraft item shall deferred to ADDL
3. DDL book has original plus three copies, yellow, pink and green and one cover page shows all entered item status.
4. Upon entering new deferral on the ADDL, Chief inspector and quality manager and MCC. shall be notified as quickly as possible.
5. Only one deferred item shall be entered in each DDL page
6. Yellow copy of the DDL page to be sent to the MCC Manager respectively after fully filled for follow-ups.
7. Green and pink copies of the DDL where the deferred defect cleared to be sent to the Chief inspector and quality manager and MCC. as proves of clearing the defect.
8. Upon completion of book, the original pages shall send to technical record department for keeping it as technical records.
9. Nobody is allowed to make any deletion / correction for any statement using erasers or Corrector pen and when there is a need to correct the statement write an X on the statement, then write the required correction and put your signature or stamp beside it, errors that are corrected shall remain readable and identifiable, and identifiable.
Appendix B part D
10. The cabin log shall hall retain for the last six months of operations.

Form: F206-01, F206-02, F206-03

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4.6. Control of defective component sent to outside contractors for maintenance

References: ECAR 145.29

Responsibility:

- Chief inspector and quality manager.
- Material Manager

4.6.1. General.

The aim of this procedure is to define Nesma airlines handling process for return of defective parts removed from aircraft during line maintenance.

4.6.2. Procedure.

1. In all line stations, when aircraft component is considered as defective, the maintenance personnel identify it with «unserviceable tag F5-05». At out stations defective part removal and tagging is performed under the responsibility of the «on-board» Certifying Staff or Contracted Maintenance Organization.
2. The corresponding task is recorded and certified in the Aircraft logbook, Unit replacement card" F206-14" shall fill out by Certifying Staff or Contracted Maintenance Organization.
3. The replacement cards and the replaced part serviceable label with its ARC return back to records for keep and to notify the Chief inspector and quality manager.
4. The US component with its unserviceable card is segregated in Stores Section from the serviceable components and after routed to Quarantine Stores under control of Chief inspector and quality manager.
5. The Material Manager shall choose the repair station at which the US component will be repaired at.
6. A packing slip shall be made with the US component Part Number, Serial Number and the shipping details for shipping.
7. Loaned components or parts are recorded by Material Department. When components or parts on loan are no longer required, they will be returned To their owners upon the request of a Material Department, covered by a specific "SERVICEABLE" tag Form F205-3.

Form: F205-3, F205-05, F206-14

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4.7. Return of Defective Aircraft Components to Store

References: ECAR 145.29

Responsibility:

- Maintenance Authorized personnel.
- Storekeeper.

4.7.1. General.

For the purpose of this procedure, the returned components are to be split into two classes:

- Defective component (unserviceable),
- Rejected component (unserviceable condemned)

4.7.2. Procedure.

A. Defective Component

1. In all cases, when an aircraft component is considered defective, the Maintenance Authorized person is responsible of establishing an **UNSERVICEABLE** Tag; this tag has to be completed before entry into the Quarantine Section.
2. Storekeeper shall store it in "Quarantine area" under his responsibility awaiting disposal instructions from the Chief inspector and quality manager "GMM section 5.4".

B. Rejected Component

1. When a component is rejected a red tag is raised" **UNSERVICEABLE** Tag" Form F205-5 and the Storekeeper shall store it in segregated quarantine area.
2. Storekeeper is responsible for managing the unserviceable units in the quarantine area waiting for disposal instruction." GMM section 5.3".

Form: F205-05

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4.8. Repair / Modification Procedure

References: ECAR 145.29& 145.31

Responsibility:

- Director of maintenance
- Chief inspector and quality manager.
- Technical development Manager

4.8.1. General

- A repair might be performed when damage has been discovered during maintenance checks or A/C operation.
- A modification is performed whenever Manufacturers / ICAO request is made IAW standards specifications
- All modifications and repairs carried out shall comply with airworthiness requirements acceptable to the Authority and procedures are established to ensure that technical records supporting compliance with the airworthiness requirements are retained.
- After repair / modification completion and final inspection a Certificate for Release to Service is delivered by Authorized certifying staff, if all work has been fully and correctly performed in conformity with approved data.

Nesma air lines shall assure:

- the major repair or major modification conforms to the requirements of technical data that have been approved; GMM section 3.9
- The approved technical data falls within the meaning assigned to the term “Approved Data”.

4.8.2. Repair Procedure

1. Defect identification

Defective shall be recorded on the appropriate defect report maintenance staff.

2. Damage assessment

During preliminary inspection, damage assessment is performed by relevant Nesma airlines. Engineer who records it on the dent chart, describing the nature of the discrepancy (measurements, depth, location, and sketch) and the results of NDT performed when required.

3. Repair solution classification

The definition of the corrective action is given in appropriate defect investigation report. After Technical development manager and/or Quality Systems investigation, two cases are to be encountered:

- Damaged part is simply replaced in accordance with the AMM.
- Repair solution exists in the relevant maintenance document and is therefore approved; reference to the manual part covering the repair is to be made as corrective action.

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4. Modification Introduction

Major modification or alteration:

Means an alteration or modification approved by the manufacturer, but not listed in the aircraft, aircraft Engine specifications.

(1) That might appreciably affect weight, balance, structural strength, performance, power plant operation, flight Characteristics, or other qualities affecting airworthiness; or

(2) That is not done according to accepted practices or cannot be done by elementary operations.

Minor modification or alteration:

Means an alteration or modification other than a major alteration or modification.

5. Modifications Sources

- Airworthiness Directives
- Operational requirement
- Design Organization
- Manufacturers, Modification recommendations, cancellation of production concessions, Equipment limitations, etc.
- Service Bulletins.

6. Responsibilities

- Minor structure Repair / Modification to be performed by contracted approved organization and according to structural Repair Manual.
- Major Repair / Modification has to be approved by ECAA
- Major Repair / Modification to be performed by contracted approved organization.
- Major Repair / Modification conform to the requirements of technical data that has been approved by ECAA.

4.8.3 Workshop test, inspection and repair procedure.

Responsibility:

- Workshop supervisor

General

Nesma airlines construct two workshops life vest, tires and brakes also has Battery servicing.

Procedures:

- All inspections, tests and repair done by Nesma airlines workshops shall record every single part on part repair history card
- All inspection, tests or repair shall be done in according with the manufacture maintenance manual
- All Manufacture SB's and SL's shall be managed the same way Nesma airlines mange Aircraft or Engines.
- Nesma airlines shall issue a serviceability form for all inspected, tested, or repaired parts according to its capability lists which approved by ECAA.

Form: 205-16

See GMM CHAPTER 9

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4.9. Release To Service

References: ECAR 43.1, 43.5, 43.7, 43.9, 43.13, 91.7, 91.407, 145.19, 121.153, 121.157, 121.361, 121.605 & 121.709

Responsibility:

- Director of maintenance
- Chief inspector and quality managers
- Certifying staff
- Contracted Approved AMO

4.9.1. General

ECAR 121.709 requires a maintenance release entry to be made in the Aircraft Technical Logbook following maintenance, preventive maintenance, or alteration.

The airworthiness release signifies that all work was done in accordance with the General Maintenance Manual, all Required Inspection Items have been accomplished, no known condition exists that renders the aircraft un-airworthy, the aircraft is in condition for safe operation and released for flight. It also means that the person releasing the aircraft has reviewed the log pages back to the last release to determine that no open items exist and that all closed items have been properly signed off.

Nesma airlines ensure each maintenance organization that performs maintenance for Nesma air lines aircrafts produces a completed and signed maintenance release that certifies all maintenance work performed has been completed satisfactorily and in accordance with the approved aircraft manuals and procedures described in the GMM; All deferred items, repairs, unit changes and other work have been accomplished by approved procedures outlined in Nesma air lines maintenance manuals and all work done shall comply with requirements for an approved maintenance organization accepted to ECAA. Appendix B Part M

4.9.2. Policy

- A. A certificate of release to service “CRS” is to be issued by appropriately authorized certifying staff, when satisfied that maintenance of the aircraft or aircraft component has been properly carried and shall be acceptable to ECAA.
- B. A maintenance engineer signature in the CRS block in the logbook signifies that all work was accomplished in accordance with Nesma air lines approved procedures and that all RII items have been inspected where applicable.

Note: Paragraphs B Thru. E Applies To Scheduled / Preventative Maintenance.

- C. Maintenance Discrepancy forms written as a result of an inspection, or written to accomplish previously deferred items, or written to defer a current item, must all be accounted for prior to releasing an aircraft to service.
- D. All deferred items shall transfer to the Aircraft deferred log.
- E. The Director of maintenance will ensure that:
 - Maintenance package specified by the Aircraft maintenance program

- Defect rectification, while the aircraft operates flight services between scheduled maintenance is properly recorded, including parts changes, and that all Maintenance Engineers are briefed on any items requiring follow-up or continuation, including special inspections, or work functions requiring additional maintenance or Quality Control. Parts changes, whether scheduled or unscheduled, must be recorded.

Note: The Maintenance Engineer who releases the aircraft for service will be responsible to assure that all work has been satisfactorily completed.

- F. The CRS must be signed and stamped legibly by an authorized Nesma air lines Engineer or Contract Approved Agency Representative and include:
- Basic details of the maintenance performed.
 - A reference of the approved data used.
 - The date such maintenance was completed.
 - Identity of the approved maintenance organization.
 - Date and time of maintenance was completed.
 - Maintenance tasks that were not accomplished.
 - Identity of the engineer whom signing the release, the signatures and license number.

4.9.3. Procedures

- 1- After all required maintenance of the aircraft or aircraft component, an authorized certifying staff should sign down the CRS block in the aircraft technical logbook, in order to ensure that all work was accomplished in accordance with Nesma air lines approved procedures and that all RII items have been inspected where applicable.
- 2- When an airworthiness release form is prepared the certificate holder must give a copy to the pilot in command and must keep a record thereof for at least two months.
- 3- Authorized certifying staffs that perform maintenance work on the aircraft shall not allow performing required inspection of such a work.
- 4- The certificate of release to service is necessary before flight at the completion any package of maintenance scheduled by the approved maintenance program.
- 5- The certificate of release to service for preflight "PDC" according to PDC Check List shall be singed on PDC block on TLB.
- 6- The certificate of release to service for weekly & daily check shall be singed on PDC block on TLB after accomplishment of weekly & daily check list "weekly & daily check list must be singed"
- 7- The certificate of release to service is necessary before flight, at the complete defect rectification, whilst the aircraft operates between maintenance checks.
- 8- An aircraft component that has been maintained off the aircraft requires the issue of a certificate of release to service for such maintenance and another certificate of release to service in regard to being installed properly on the aircraft when such action occurs.
- 9- The certificate of release to service basic details of the maintenance carried out, the date such maintenance was completed and the identity including authorization reference and certifying staff issuing such a certificate.
- 10- The certificate of release to service should relate to the task specified in the manufacturer's instruction or the aircraft maintenance program which itself may cross-refer to a manufacturer's instruction in maintenance manual, service bulletin etc.
- 11- When extensive maintenance has been carried out, it is acceptable for the certificate of release to service to summarize the work done to a unique cross-reference to the work-pack containing full

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details of maintenance carried out. Dimensional information should be retained in the work-pack record.

12- All procedures shall be accepted by ECAA through AMO authorization.

4.9.4 Certificate of Release to Service CRS

A. Nesma airlines ensures that maintenance release is completed and signed to certify that the work performed has been completed satisfactorily and IAW the procedures:

1. A Certificate of Release to Service (CRS) is necessary before flight at the completion of any package of maintenance specified by Nesma airlines and under its responsibility. The maintenance package shall include one or combination of the following elements: a check or inspection from the Operator's aircraft maintenance program, Airworthiness Directives, overhauls, repairs, modifications, aircraft component replacements and defect rectification. New defects or incomplete maintenance work orders identified during the above maintenance should be approved from the Chief inspector and quality manager. In the case where such maintenance is not carried out, provided that it does not affect the airworthiness of the aircraft, this fact must be entered in the aircraft CRS before issue of such certificate.
2. A CRS is necessary before flight, at the completion of any defect rectification.
3. A CRS is necessary at the completion of any maintenance on an aircraft component while off the aircraft. F206-21

B. Nesma airlines airplanes are released to service after maintenance by a release to service certificate signed and stamped by approved engineers or repair station.

4.9.5. CRS is issued:

- After completion of any package of maintenance scheduled.
- After completion of defect rectification.
- After component replacement.
- After component maintained off aircraft.
- After component maintained by another approved organization.

4.9.6. The CRS signature certifies that:

- Work package is performed and completed in accordance with the requirements of the approved maintenance program; Nesma Airlines may accept Approved AMO forms. e.g. Job cards, Non routine card, E.O's
- Signoffs in the completed work package is made by approved Engineers.

The certificate (CRS) may be signed and issued by an approved repair station provided that the job performed is controlled by the Quality department.

Approved maintenance repair station CRS form is accepted by Nesma Airlines Quality department

The Certificate is kept on board of the A/C until the next check.

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4.9.7. CRS Contains:

Chief inspector and quality manager ensures that the maintenance release contains:

- Basic details of the maintenance carried out.
- The date the maintenance was completed.
- When applicable, the identity of the approved maintenance organization.
- The identity of the person or persons signing the release.
- A reference to the approved data used.
- Total A/C hours and Cycles
- ECAA authorization number

4.9.8. Maintenance Release:

When extensive Maintenance is carried out, the Certificate of release to service summarizes the Maintenance action and refers to the Maintenance Program Manual; by signing the release the authorized engineer confirms that:

- Work done is performed in accordance with approved data.
- Work done is performed in an Airworthy manner.
- All parts and materials used comply with Airworthiness requirements.
- Any continuing defects found during this work have been documented.
- All defective components replaced are followed by a replacement sheet and unserviceable tag for defective parts.

Forms: F206-10 & F206-21

Block-By-Block Instructions for Completing Authorized release Certificate/ Airworthiness Approvals. F206-21

Block 1. Approving National Aviation Authority/Country. ECAA/ ARAB REPUBLIC OF EGYPT

Block 2. Authorized Release Certificate, Airworthiness Approval Tag. (Preprinted.)

Block 3. ECAA Form Tracking Number.

Block 4. Organization Name and Address. Nesma Airlines, CAI, Cairo Egypt.

Block 5. Work Order/Contract/Invoice Number. To facilitate traceability of the product or article, enter the work order number, contract number, invoice number, or similar reference number, and state the number of pages attached to the form, including dates, if applicable.

Block 6. Item. When Authorized release Certificate/ Airworthiness Approvals is issued, a single item number or multiple item numbers (for example, same item with different serial numbers) may be used for the same part number. Multiple items must be numbered in sequence.

Block 7. Description. Enter the name or description of the product or article. Preference should be given to the term used in the instructions for continued airworthiness or maintenance data (for example, illustrated parts catalog, aircraft maintenance manual, or service bulletin (SB)).

Block 8. Part Number. Enter each part number of the product or article. In the case of an aircraft engine or propeller, the model designation may be used.

Block 9. Eligibility. Enter "N/A."

Block 10. Quantity. Enter the quantity of each product.

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Block 11. Serial/Batch Number. If the product or article is required by 14 CFR part 45, Identification and Registration Marking, to be identified with a serial number, enter it here. Additionally, any other serial number not required by regulation also may be entered. If no serial number is entered in this block, enter "N/A."

Block 12. Status/Work. The following table describes what to enter in a specific situation. Only one term may be entered in Block 12, which should reflect the majority of the work performed.

Overhaul	A process that ensures the product or article is in complete conformity with the applicable service tolerances specified in the type certificate holder's or equipment manufacturer's instructions for continued airworthiness, or in the data approved or accepted by the authority. The product or article will be at least disassembled, cleaned, inspected, repaired as necessary, reassembled, and tested in accordance with the approved or accepted data.
"Repaired"	Repair of defect(s) using an applicable standard.
"Inspected" or "Tested"	Examination or measurement in accordance with an applicable standard (For example, visual inspection, functional testing, or bench testing).
"Modified"	Alteration of a product or article to conform to an applicable standard.

Block 13. Remarks. The use of upper or lower case in this block does not matter.

Describe the work identified in Block 12 and associated results necessary for the user or installer to determine the airworthiness of the product or article in relation to the work being certified. This can be done either directly or by reference to supporting documentation. If necessary, a separate sheet may be used and referenced from the main Authorized release Certificate/ Airworthiness Approvals Form. Each statement must clearly identify which product or article in Block 6 it relates to.

(2) Below are the conditions that could necessitate a statement in this block. These statements may or may not be appropriate depending on the form's purpose.

- (a) Data required including the reference and revision status. If other documents such as work orders, shop travelers, Major Repair and Alteration (Airframe, Powerplant, Propeller, or Appliance.
- (b) Compliance with ADs or service bulletins.
- (c) Repairs carried out.
- (d) Modifications carried out.
- (e) Replacement articles installed.
- (f) Life-limited parts status (for example, total time, total cycles, and time since new).
- (g) Deviations from the customer work order.
- (h) Release statements to satisfy a CAA maintenance requirement.
- (i) Information needed to support shipment with shortages or re-assembly after delivery.

Blocks 14 through 18. Shade, darken, or otherwise mark to preclude inadvertent or unauthorized use.

Block 19. Airworthiness Approval.

Block 20. Authorized Signature.

Block 21. Approval/Authorization No.

Block 22. Name. Enter the typed or printed name of the authorized representative or organization whose signature appears in

Block 23. Date (dd/mmm/yyyy).

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4.10. Cleanliness Standards of Maintenance Facilities

References: ECAR 145.29(d)7,

4.10.1. General.

The duty of every member of the Maintenance Organization is to maintain an acceptable standard of housekeeping at his workstation.

4.10.2 General Conditions

- Nesma airlines Storage facilities for serviceable aircraft components should be clean, well ventilated and maintained at a suitable dry temperature.
- Nesma airlines shall store all instrument rating must provide a reasonably dust free.
- Nesma airlines must keep Dust and any other airborne contamination to a minimum and not be permitted to reach a level in the work task area where visible aircraft/component surface contamination is evident.
- For line maintenance where dust/other airborne contamination results in visible surface contamination, all susceptible systems shall be sealed until acceptable conditions are re-established.
- All tires & all wheel and tire assemblies should be stored in a vertical position, preferably in a cool, dry, dark room. All spare wheel assemblies while in storage have a shelf life of 12 months. This time limit is imposed because of aging of the grease in the wheel bearings. By cleaning and re-greasing the old bearings with newly greased bearings, the shelf life can be extended an additional 12 months.
- No liquid drops/stain can be permitted on work area, floors, stored components or oil and grease store; it should be webbed away and cleaned.
- Office and working area should be clean and well ventilated; computers, technical library racks and technical records racks shall be dust free.

4.11 Maintenance and Preventive Maintenance Personnel Duty Time Limitation

References: ECAR 145.55

4.11.1 General

Within Egypt, any person working for Nesma air lines performing maintenance or preventive maintenance functions shall relieve each person performing maintenance or preventive maintenance from duty for a period of at least 24 consecutive hours during any seven consecutive days, or the equivalent thereof within any one calendar month.

A Nesma airline has a duty time limitation, and it must be 8 hours per day and with only one day off per week.

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4.12. Maintenance Procedures for Special Operations Authorization:

References: ECAR 91.706, 91 App G

4.12.1. RVSM Operations:

1- General

Nesma airlines has instituted appropriate procedures in respect of continued airworthiness (maintenance and repair) practices and programs for RVSM operation. These procedures shall comply with the aircraft manufacturers RVSM requirements.

Nesma air lines is subject to an approved maintenance program, that program should include, for each aircraft type, the maintenance practices stated in the applicable aircraft and component manufacturer's maintenance manuals. In addition, for all aircraft, including those not subject to an approved maintenance program, attention should be given to the following items:

- (a) All RVSM equipment should be maintained in accordance with the component manufacturer's maintenance instructions and the performance criteria of the RVSM approval data package.

An adequate parts control program should exist:

- All repairs & special tests are to be done at approved maintenance organizations.
- In case of loan components, assurance should be made that this loaned unit complies with RVSM requirements.
- Any modification or design change, which in any way affects the initial RVSM approval, should be subject to a design review acceptable to the ECAA.

(b) Any repairs, not covered by approved maintenance documents, that may affect the integrity of the continuing RVSM approval, e.g., those affecting the alignment of pitot/static probes, repairs to dents or deformation around static plates, should be subject to a design review acceptable to the ECAA.

(c) Built-in Test Equipment (BITE) testing should not be used for system calibration unless it is shown to be acceptable by the aircraft constructor or an approved design organization, and with the agreement of the ECAA.

(d) An appropriate system leak check (or visual inspection where permitted) should be accomplished following reconnection of a quick-disconnect static line.

(e) Airframe and static systems should be maintained in accordance with the aircraft constructor's inspection standards and procedures.

(f) To ensure the proper maintenance of airframe geometry for proper surface contours and the mitigation of altimetry system error, surface measurements or skin waviness checks will need to be made, as specified by the aircraft constructor, to ensure adherence to RVSM tolerances.

These checks should be performed following repairs, or alterations having an effect on airframe surface and airflow and will be then performed using Egypt Air assistance or any other approved maintenance organization.

(g) Whenever the performance of installed equipment has been demonstrated to be satisfactory for RVSM approval, the associated maintenance practices should be verified to be consistent with continued RVSM approval. Examples of equipment to be considered are:

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- (1) Altitude alerting.
- (2) Automatic altitude control system.
- (3) Secondary surveillance radar altitude reporting equipment.
- (4) Altimetry systems.

(h) Only the approved & trained engineer on RVSM is authorized to sign any defect rectification that affects RVSM, PDC & dispatch the A/C for RVSM flight.

2- Action for Non-compliant Aircraft. Those aircraft positively identified as exhibiting height keeping performance errors that require investigation, shouldn't be operated in RVSM airspace until the following actions have been taken:

- (a) The failure or malfunction is confirmed and isolated; and,
- (b) Corrective action is taken as necessary to comply and verified to support RVSM approval.

3- Maintenance Training:

New training may be necessary to support RVSM approval. Areas that may need to be highlighted for initial and recurrent training of relevant personnel are:

- (a) Aircraft geometric inspection techniques.
- (b) Test equipment calibration and use of that equipment.
- (c) Any special instructions or procedures introduced for RVSM approval.

4- Manuals affected

The following manuals were amended in order to comply with RVSM operation:

- Aircraft Flight Manual (AFM 2.05.00, & 4.03.00)
- Flight Crew Operating Manual (FCOM 2.04.50)
- Structure Repair Manual (SRM)
- Maintenance Program
- MEL

5- Components necessary for RVSM operation:

Required Equipment	Quantity
ADR 1	1
ADR 2	1
ATC Transponder	1
FWC (for Altitude Alert function)	1
AUTOPILOT	1
PFD 2	2
FCU (for altitude target selection and OP CLB/ OP DES mode engagement)	1

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It is mandatory to do the following checks in addition to the PDC sheet items before each flight in order to comply with the RVSM requirement:

- (a) - Ensure that above-mentioned equipment is operative.
- (b) - During the external inspection of the A/C, particular attention should be paid to the condition of the three Angle Of Attack sensors (AOA), the three pitot probes, the six static sources and the condition of the fuselage skin in the vicinity of each sensor/source and any other component that affects the altimetry system accuracy.

Note: In case of any discrepancy, where RVSM requirement cannot be fulfilled, snag must be cleared prior to next flight or Dispatcher section should be informed immediately to declare that this flight is a non RVSM flight and prepare the ATC flight plan accordingly.

6- NESMA Airlines have reviewed their maintenance procedure to differentiate these components affecting RVSM operation where:

- (a) Reliability of these units should be monitored on a monthly basis as a maximum.
- (b) Should any repeated malfunction occur more than 2-3 times. An immediate action must be taken, and this A/C may be subject to RVSM suspension.
- (c) Should any of these units send to the vendor for repair or modification, the defect report must declare that this unit is an RVSM item.
- (d) Spare of these units should be kept at store and isolated from any other similar component.
- (e) Swapping of these components are not allowed, unless approved by Chief inspector and quality manager.

7- To ensure that altimetry systems continue to meet RVSM approval criteria, approved maintenance program had been verified by scheduled tests and inspections in conjunction with an approved maintenance program.

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4.12.2. CAT II

Reference: ECAR part 91: Appendix D

Responsibility:

- Technical development Manager
- Chief inspector and quality manager.

General

A. Contents

This document presents the LOW VISIBILITY APPROACH "CAT II" operations applicable to the aircraft of Nesma Airlines

B. Purpose

This procedure describes the technical criteria established Nesma Airlines for assuring continuous monitoring of CAT II operations performed by its fleet, in accordance with the requirements established in ECAA regulations

1. Introduction

A. The-ILS CAT II operation is the procedure that permits the approach and landing in adverse, weather condition with low visibility. The CAT II operation is defined as following (ECAR part 91: Appendix D)

a) Category II

A precision instrument approach and landing with. a decision height lower than 200ft (60m). but not lower than 100ft (30m) and a runway visual range not less than 300m (1000ft)

Note: The Decision Height (DH) is the specific height at which a missed approach must be initiated if. the required visual reference to continue the approach to land has not been established.

C. GAT II Operational Concepts

CAT II operations are conducted with fail passive automatic landing systems that include at least a single autopilot engaged and DH minima not lower than 100ft (30m) and a runway visual range not less than 300m (1000ft).

D. The design of the cockpit instrumentation, system comparison and warning system should be adequate in combination to assure that the pilot can verify that-the aircraft 'will safety touchdown within the touchdown zone and safety-rollout if the controlling RVR is reported at or above minima.

E. The airplane: The airplane A320-200 has been produced and certified for CAT II operations, as described. on Airbus airplane Flight Manual.

Consequently, the trouble shooting Manual, the Airplane Maintenance Manual the Maintenance Planning Document, and the Minimum Equipment List, do not need any modification.

2. Equipment Configuration**Avionics System**

The components applicable for these airplanes listed in the IPC revisions, (See related paragraphs) constitute the approved Equipment Configuration for CAT II Operations.

All aircraft types have been certified for Low visibility Operations (CAT II) and all the related documentation (AFM/.RM/ IPC/ etc.)

The P/N's listed into Airbus IPC may be changed by Nesma Airlines If supported by approved data, If such a case may arise/ and this change is not reported into the IPC.

Airbus 320-200

The following list or systems and relevant quantity per a/c constitutes the approved Equipment Configuration for LOW VISIBILITY operations for Nesma Airlines A320 fleet

SYSTEM	CAT II
AP	1AP engaged
AP disconnect P/B	2
ILS/MLS Receiver	2
PFD/ND Displays	2/1
Attitude Indication	N1+N2+STBY
Auto Callout Radio Altimeter	1
Radio Altimeter	1 (but 2 display)
DH Indication	1
Flight warning computer	1
"AP OFF" warning	1
"AUTOLAND" light	1
Rain Repellent (if activated) or Windshield Wipers	1
Windshield Heat	1
Nose wheel steering	1
Antiskid	1
BSCU Channel	1
Beam Excessive Deviation	1
FMA 1	1
Rudder Travel Limit	1
Yaw Damper/Rudder Trim	1/1
ELAC	1
ADR/IR	2/2
FAC	1
Hydraulic Circuit	2

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3. Test equipment accuracy verification (test equipment/ calibration standard)

Nesma airlines shall verify the compliance of test equipment accuracy. Test equipment may require periodic re-evaluation to ensure it has the required accuracy and reliability to return the system and components to service. A listing of primary and secondary standards used to maintain test equipment that relate to low visibility operations should be maintained. It is Nesma airlines responsibility to ensure these standards are adhered to by contract AMO. Traceability to a national standard or the manufacture calibration standard should be maintained.

4. Documentation Service

The Documentation service has the responsibility to manage and coordinate the procedure to keep up-dated all Aircraft documentation, which is related to All Weather Operations.

5. Engineering Service.

The technical development manager shall monitor the Low Visibility Operations, evaluating especially repetitive failures and anomalies, reported In the Technical Logbook are analyzed and discussed, and entry related- to Special Operations are mandatory evaluated with comment from the Engineering. If necessary, Problem Log is open for deeper investigation. In case of repetitive problems lead to subsequent CAT II (CAT I) downgrading of an aircraft

The technical development manager evaluation all the Service Bulletin issued by Airbus and component manufactures related to CAT II equipment and, when required by the engineering judgment/ they will be embodied.

6. Maintenance Service

- Low visibility operation maintenance program is integrated with Nesma airlines AMP.
- Nesma Airlines maintenance personnel and Contracted Maintenance Organization performs functional and/or operational check related to the CAT II involved equipment, following the AMP tasks and within the scheduled intervals.
- Nesma airlines shall address the maintenance procedure to ensure continued air worthiness relative to low visibility operation.
- Procedures that ensure aircraft system status is placarded properly and clearly documented in aircraft TLB, in accordance with maintenance control, engineering, flight operations and dispatch or equivalent.
- Procedure to ensure the downgrade of an aircraft low visibility capability status. If applicable, when maintenance has been performed by persons other than those trained, qualified or authorized to use or approve procedure related to CAT II
- If a failure-occurs to a CAT II involved equipment, the- procedures to be applied are the MEL standard applications and TLB.
- Maintenance staff; Manages and analyses the crew Logbook entry, the ECAM Messages detected and displayed in the Post Flight Report related to the CAT II equipment / providing entry in the Logbook.
- Tests the failed equipment i.a.w. AMM, reporting the results in the Logbook pages
- Whenever it is not possible to eliminate the failure performs the downgrading.
- All the maintenance information will be transferred to the Chief inspector and quality manager and to technical development manager.
- Return to service procedures:

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Procedure should be included to upgrade or downgrade system status concerning low visibility operation capability. The method for controlling operational status of the aircraft should ensure that flight crews, maintenance and inspection departments, dispatch, and other administrative personnel as necessary are appropriately aware of aircraft and system status.

Contract facility or personnel should follow Nesma airlines approved maintenance program to approve an aircraft for return to service. Nesma airlines is responsible for ensuring that contract organizations and personnel are appropriately trained, qualification and authorized.

7. Data collection and analysis

For a better understanding and date analyses, the Reliability Report provides all data required to technical development Department for monthly evaluation of the following parameters.

- MTBUR & MTBF of the fleet, data provided by vendors in relation to MTBF and Airbus for MTBUR; moreover, pool parts data base are taken into consideration. Yearly, MTBF data are revised in consideration of company and vendor feedback,
- Total number of failures occurred to the CATII involved equipment
- Total number of cases in which during a CATII approach/ Autoland the minimum CAT II requirements are exceeded,
- Total number of missed approach / Autoland
- Evaluation of the possible or confirmed failures that lead to exceed the related tolerances or to a missed approach/Autoland and the related corrective action carried out.

8. Occurrence Reporting

In the event of an aborted CAT II approach below DH, ECAA has to be informed i.a.w. GMM

9. Continuous Monitoring

In accordance with GMM Reliability Program technical development manager monitors the system and equipment related to the CAT II operations, following a repair on CAT II equipment, a revalidation (upgrading) of the aircraft should be made in accordance, with. the corresponding AMM.

10. An automatic landing

may be considered to be successful if:

- a. No relevant system failure occurs.
- b. No flare failure occurs.
- c. No de-crab Failure occurs.
- d. lateral touchdown with the outboard landing gear is not outside the touchdown zone lighting edge,
- e. Sink rate is not excessive,
- g. Bank angle does not exceed a bank angle limit; and
- g. No roll-out failure or deviation occurs.

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11. Periodic aircraft system evaluations

Nesma airlines continuously assess or periodically evaluated aircraft system performance to ensure satisfactory operation for that system applicable to CAT II.

An acceptable method for assuring satisfactory performance of a low visibility flight guidance system (e.g., Auto land) is to periodically use the system and note satisfactory performance.

A reliable record such as TLB entry show satisfactory performance within the previous six months for CAT II is typically an acceptable method for assuring satisfactory system operation.

Simulated approaches/auto lands successfully performed the sentence

**Auto and successfully performed"* must be entered by the flight crew in the Technical Logbook under flight remarks. In case of real CAT II operation/ the approach category should be entered into the specific box of the Logbook.

The filling, of CAT II is required in simulated or real approaches.

Whenever a defect leads the aircraft out of the CAT II minima and the upgrading **is** not successfully performed / the downgrading of the aircraft must be reported in the ADDL

The CAT II monitoring program through the **Reliability process** is provided to with the" reliability trend achieved by every aircraft. The method called "Pass or Fail Method" with the applicable mathematical derivation has been chosen for this kind-of analysis A three monthly report Is issued and transmitted to the Authority This report includes the total number of performed approaches/auto lands, simulated' or not, in accordance with the minimum requirements/ and the list of removed LRU's. The continuous monitoring permits the-detection of any decrease in the level of safety before it becomes hazardous.

12. Training

Training on the maintenance procedure and operational procedure is accomplished by ECAA inspectors using this manual as guideline. See MTM

Maintenance personnel should be knowledgeable regarding the information contained in this Part related to any significant accept of lower landing minima that may pertain to maintenance. Nesma airlines and contract maintenance personnel including mechanics, maintenance controller, avionics technicians, personnel performing maintenance inspection or quality assurance or other engineering personnel if applicable, should receive initial and recurrent training as necessary for effective program.

13. Records.

Nesma airlines keep suitable records. This is to ensure that both Nesma airlines and ECAA can determine the appropriate airworthiness configuration and status of each aircraft intended for CAT II operation. Contract maintenance organization should have appropriate records and instructions for coordination of records with Nesma Airlines.

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4.12.3. ETOPS Operations:

Not applicable for the time being, as NESMA Airlines is not authorized for this type of operations.

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4.12.4. REQUIRED NAVIGATION PERFORMANCE RNP

References: ECAR 121.133

4.12.4.1. General Concept

The current navigation procedures are based on the availability of satisfactory ground navigation aids and infrastructure (VOR, DME, NDb...) as well as on the navigation systems installed on board the aircraft which allow essentially navaid to navaid navigation. This mandated large safety margins in aircraft separation, contributing to saturate the airspace in specific areas.

The air navigation structure for existing airways, SID's, STAR's, etc. does not take into account the availability of modern navigation systems with enhanced performance, nor the glass cockpits which allow the crew to have a better awareness when flying those procedures.

The international Civil Aviation Organization (ICAO) has recognized the need to take benefit of the available RNAV technology to improve the existing air navigation system, the goal being to increase the airspace capacity and to offer user advantages such as fuel savings, direct tracks, etc. The introduction of RNP will enable state to design and plan routes not necessarily flying over radio-navaid installations.

4.12.4.2. Definitions

Required Navigation Performance (RNP)

RNP is a statement on the navigation performance accuracy necessary for operation within a defined airspace. Note that there are additional requirements, beyond accuracy, applied to a particular RNP type.

RNP Airspace

Generic terms referring to airspace, route(s), procedures where minimum navigation performance requirements (RNP) have been established. Aircraft must meet or exceed this performance to fly in that airspace.

RNP Type

This is a designator established according to navigational performance accuracy in the horizontal plane, that is, lateral and longitudinal position fixing. This designator is expressed by an accuracy value given in nautical miles.

RNP-X

A designator used to indicate the minimum navigation system requirements needed to operate in an area, on a route or on a procedure (e.g., RNP-1, RNP-4). The designator invokes all of the navigation system requirements specified for the considered RNP RNAV type indicated by the value of X (in NM).

4.12.4.3. Performance requirement

Navigation Accuracy

Each aircraft operating in RNP airspace shall have a total system navigation position error that is **equal to or less than the RNP value during 95% of the flight time.**

See Fig. 1 for cross track error accuracy.

Containment integrity

The probability that the total system navigation position error in RNP airspace exceeds the specified cross track containment limit without annunciation shall be less than 10^{-5} per flight hour. **The cross-track containment limit is twice the RNP value.**

See Fig. 1 for cross track error containment limit.

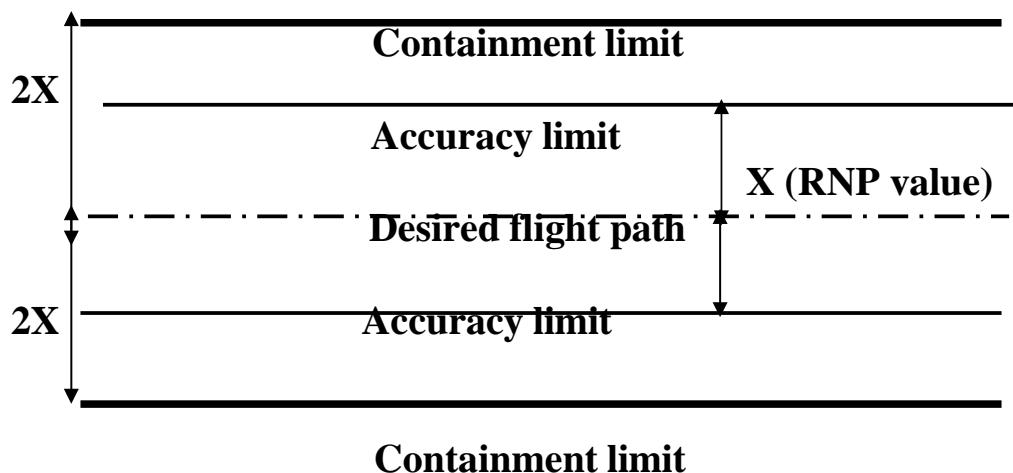


Fig. 1 RNP-X accuracy and containment limit

Containment continuity

The probability of annunciation loss of RNP-X capability (true or false annunciation) shall be less than 10^{-4} per flight hour.

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4.12.4.4. Functionality requirements

In addition, the accuracy, integrity and continuity requirements, the navigation system must comply with functionality requirements covering:

- FMS flight path definition and construction
- FMS functions
- Navigation Data Base
- Navigation Display
- AP and FD

4.12.4.5. Aircraft Navigation Systems

Aircraft Equipment

The following table illustrates component effecting RNP-5 operation:

ATA	Description	No. Required
34	FMGC (FM Lateral Guidance)	1
31	MCDU	1
23	RMP	2
34	IRS	2
34	VOR	1
34	DME	1
31	EFISCRT	5
31	ND VOR MODE	1
31	ND ROSE NAV or ND ARC MODE	1
34	NAV Data Base	1
34	ADF / VOR Selector FCU	1

A/C Without GPS Primary

The following aircraft is equipped with GPS:

The navigation system of these aircraft consists of 2 FM, 3 IRS and radio navaid sensors. The FM uses radio sensors for position update or the mixed IRS position if radio position is lost.
 This navigation system is certified in compliance with the TSO C 115 as indicated in the AFM.
 This navigation system also complies with JAA AMJ 20-X2 for European Basic RNAV.
 For these aircraft, **the navigation performance is mainly determined by the radio navaid ground infrastructure.**

Within radio navaid coverage, the navigation accuracy is function of the update type (VORDME or DMEDME) and the navaid distance.

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Outside radio navaid coverage (when in IRS ONLY), the RNP-X capability will be maintained during a lapse of time, which is a function of the demonstrated IRS drift rate, starting at last IRS ground alignment or at last FMS radio update.

2 hours since last radio update will be accepted for Basic RNAV RNP-5 in Europe

A/C With GPS Primary

NESMA Airlines has no A/C equipped with GPS for the time being.

4.12.4.6. MEL Requirements

MEL requirements are function of the type of RNP airspace.

For instance, within radio navaid coverage, one RNAV system is required, taking into account that conventional navigation from navaid to navaid and radar guidance remains available in case of system failure.

For airspace outside radio navaid coverage, two RNAV systems are required to ensure appropriate redundancy level.

MEL requirements for European Basic RNAV are given here below and are compared to the main MMEL navigation requirements.

For European Basic RNAV airspace the minimum equipment list has been revised to comply with RNP-5 requirement.

Equipment	Number installed	CMEC Requirement	MMEL Requirement
FM Lateral guidance	2	1	1
MCDU	2	1	1
RMP	3	2	2
IRS	3	2	2
VOR	2	1	1
DME	2	1	1
EFIS CRT	6	5	5
ND VOR Mode	2	1	1
ND ROSE NAV or ND ARC mode	2	1	1
NAV data base	2	1	1
ADF/VOR Selector on FCU	2	1	1

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4.12.4.7. Conditions to enter the RNP airspace

RNP airspace can be entered only if the required equipment is operative.

Only one RNAV system is required to enter RNP airspace within radio navaid coverage, which means basically for A320 aircraft that the following equipment is operative:

- 1 FMS (or IRS)
- 1 MCDU
- 1 VOR
- 1 DME
- 1 ND
- Navaid raw data on ND or DDRMI.

The expected RNP-5 capability must be available. This is done in verifying that the conditions of RNP capability loss (see above) are not present.

4.12.4.8. Aircraft Release for RNP-5 Operation Flight

- Prior to releasing the aircraft to RNP-5 subject flight A/C engineer shall review the A/C Technical Log and the deferred defect list and ensure that condition of aircraft is complying with RNP-5 requirement otherwise he must notify cockpit crew with the status of the Airplane.
- If A/C non-compliance with RNP-5 flight to install a placard in the A/C cockpit instrument panel that the A/C not RNP-5 and endorse the technical log and raised D.D.L. with statement A/C not in RNP-5 configuration.
- Related item or component reported defects from previous flights should be:
 1. The failure or malfunction is confirmed and isolated.
 2. Corrective action is taken as necessary to comply with RNP-5.

4.12.4.9. Component Performance Reliability:

RNP-5 component performance measurement monitors such as rate of defect repetition, MTBUR, and deferrals are monitored through NESMA AIRLINES reliability program.

4.12.4.10. Component Trouble Shooting:

- Swapping of component listed in paragraph 2.29.7 of this manual for troubles shooting are not recommended unless agreed by NESMA AIRLINES Chief inspector and quality manager.
- Repeated defects or pilot reports malfunction shall be cleared and certified by a certifying staff. If the defect still open, the defect will be raised as deferred defect according to MEL limitations.

4.12.4.11. RNP-5 Component Shop Maintenance

RNP-5 Component repair performed at its vendor according to the approved CMM standard and tolerance.

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4.12.4.12. RNP-5 Component / Part Release:

- RNP-5 component or part release document or tag shall be identified by RNP-5 statement to be controlled in store.
- Delegated inspector storekeeper is responsible to review RNP-5 related items list and identifies its serviceable tag by RNP-5.

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4.12.5. Ferry Flight Operation:

Reference: ECAR21.256.

Responsibility:

- Chief inspector and quality manager.
- Approved Contracted AMO

There are cases, when defects arise, that can jeopardize the full conformity of the A/C to the airworthiness requirements for its intended commercial, unrestricted use, but they do not jeopardize the safety of flight when adhering to peculiar restrictions or procedures, from time to time decided and approved.

In these cases, ferrying the A/C to a Station, where the reconditioning to the full airworthy state will be carried out, may be necessary.

A particular case is a ferry flight for storage. This case is applied when an A/C does not temporary meet the applicable airworthiness standards, but it is capable of carrying out safely the flight.

No revenue or corporate/business passengers or cargo should be carried on ferry flights, and persons on board should be limited to:

- Qualified Flight Crew
- Technical Staff whose presence is essential to the safe operation of the airplane
- ECAA Inspector (under request)

The Ferry Flight must be approved by ECAA.

Copy of the Authorization should be present on board of the aircraft at all times when operating under the terms of the Authorization.

Procedure

- When a defect exceeding the MEL limits becomes evident, Maintenance Staff on duty on the A/C shall immediately inform the Maintenance Manager giving full pertinent details.
- Director of maintenance should then evaluate the defects and if they are not locally repairable and also exceed the MEL already approved, he can decide a Ferry Flight.
- In this case Chief inspector and quality manager should be informed, in order to take the opportune actions.
- In order to obtain the ferry flight approval, Chief inspector and quality manager should apply to ECAA.:
 - The “letter for a ferry flight authorization” has to explain:
 - The reason for which the aircraft needs to perform a ferry flight,
 - The reason for which the airworthiness requirements have been lost,
 - Which restrictions are necessary to perform a safe flight,
 - The capacity of the A/C to perform the ferry flight requested under the necessary restrictions.
- A ferry flight can be performed only when and if ECAA has released the Authorization.

NOTE: The Flight Crew should be properly trained about the procedures to follow, before to be considered competent to undertake a ferry flight.

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4.12.6. CPDLC / ADS-C MAINTENANCE:

Reference: EAC 91-18-9.

- a. **General.** Maintenance procedures for data link communications are approved or accepted as part of an operator's initial maintenance manual approval or as a revision to that manual. To obtain ECAA authorization, Nesma must demonstrate that their data link communications maintenance procedures are consistent with the data link communications systems manufacturer's maintenance procedures and/or aircraft manufacturer's maintenance procedures for data link communications.
- b. **Maintenance Training.** Nesma Airlines should provide adequate data link communication maintenance training to ensure that their maintenance personnel or contract maintenance personnel at facilities not staffed by the operator are able to properly implement data link communications-related maintenance programs. This includes, but is not limited to, installation, modification, correction of reported system discrepancies, and use of test equipment, procedures, MEL relief, and "return to service" authorizations. The training procedures should address testing data link communications on the ground in such a way that correctly evaluates data link communications functions while not introducing hazards with respect to simulated message traffic with an air traffic facility.
- c. **Data Link Communications System Software Updates.** Nesma Airlines should assure that appropriate data link communication software updates are incorporated when necessary and that both air and ground systems are able to identify and properly respond to the installed level of data link communication capability.
- d. **Data Link Communications "Return to Service" Policies.** Data link communications "return to service" policies should be established to ensure proper data link communication functions when an aircraft is returned to service after a data link communication failure or maintenance action.

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4.13. Weight & Balance Procedures

References: ECAR 145.153b, 91-ah.1

Responsibility:

- Director of maintenance
- Chief inspector and quality managers
- Technical development Manager
- Technical Planning Manager

INTRODUCTION:

ECAR 121.153(b) defines that a certificate holder may use an approved weight and balance control system based on average, assumed, or estimated weight to comply with applicable airworthiness requirements and operating limitations.

- The Company's aircrafts will be weighed every 3 calendar years. In addition, an aircraft shall be weighed when deemed necessary due to modification or repair.
- The accumulated effects of modifications and repairs on the mass and balance are accounted and documented (Form F 204-14)
- Aircraft must be reweighed if the effect of modifications on the mass and Balance is not accurately known.

The Director of Maintenance is responsible for the following:

1. Ensure that Operations and Commercial departments of NESMA Airlines are kept informed of all data affecting Weight and Balance of aircraft.
2. Contact the contracted MRO for weighing the schedule aircraft as informed by the Technical Planning Manager

The Chief inspector and quality manager is responsible for the following:

1. Ensure that MRO is approved by ECAA
2. Perform aircraft weighing vendor audit, including training and calibration program (an external audit checklist)
3. Approving the new empty weight calculation from the ECAA.
4. Review and accept the Aircraft Weight and Balance forms used by the MRO.
5. Procedures for the completion and retention of required weight and balance documents.

The Technical Development Manager is responsible for the following:

1. Using data contained in Manufacturers Manuals, and ECAR's to add the weighting requirement in the Approved Maintenance Program.
2. Ensure that the procedures used for Weight and Balance computation are in accordance with the approved weight and balance manual procedures.
3. On receiving notification of an established or adjusted aircraft empty weight, computing and publishing initial or adjusted aircraft Basic Operating Weight and CG.
4. Schedule specific aircraft to be weighed in case of major modification or alteration.

The Technical Planning Manager is responsible for the following:

1. Weighing schedules in compliance with approved maintenance program.
2. Notify the Director of Maintenance with aircraft next weighing schedule to contact a contracted MRO to perform the weighing.

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4.13.2. WEIGHT DEFINITIONS:

The weight terms used throughout this manual are given below together with their respective definitions.

A. Manufacturer's Empty Weight

The weight of structure, power plant, systems, furnishings and other items of equipment that are an integral part of a particular aircraft configuration, including the fluids contained in closed systems.

NOTE: The weight of all operator's items are included.

B. Operator's Items:

These items include the following:

1. Unusable Fuel.
2. Oil for engines, IDG and APU.
3. Water for galleys and toilets.
4. Chemical fluid for toilets.
5. Aircraft documents and tool kits.
6. Passenger seats and passenger life jackets.
7. Tables and baby bassinets.
8. Galley structure and fixed equipment.
9. Catering.
10. Fly Away Kit
11. Emergency equipment including Evacuation aids, portable oxygen bottles and boxes, extinguishers, megaphones, flashlights, axes, first aid kits, emergency radio beacons, asbestos gloves and smoke goggles, demo kits, life jackets for crew and children.
12. Crew and their baggage.

C. Operational Empty Weight (OEW):

Sum of manufacturer's empty weight and operator's items weight.

D. Payload:

Sum of passengers, cargo and baggage.

E. Actual Zero Fuel Weight (AZFW):

Sum of operational empty weight and payload. The AZFW must never exceed the maximum design zero fuel weight (MZFW).

F. Operational Take-Off Weight (OTOW):

Maximum weight permitted at brake release for a given flight operation. This is a function of airport and operational restrictions.

The OTOW must never exceed the maximum design take-off weight (MTOW).

G. Operational Landing Weight (OLW):

Maximum weight permitted at touchdown for a given flight operation.

This is a function of airport and operational restrictions.

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The OLW must never exceed the maximum design landing weight.

H. Maximum Payload:

The difference between the maximum design zero fuel weight (MZFW) and operational empty weight (OEW).

I. Maximum Useful Load:

The difference between the maximum design take-off weight (MTOW) and operational empty weight (OEW). Useful load is the sum of payload and usable fuel.

J. Maximum Design Taxi Weight (MTW):

The maximum weight for ground maneuver (including the weight of the run-up and taxi fuel).

K. Maximum Design Take-Off Weight (MTOW):

The maximum weight at the start of take-off run.

L. Maximum Design Landing Weight (MLW):

The maximum weight at which the aircraft may land.

M. Maximum Design Zero Fuel Weight (MZFW):

The total maximum of operational empty weight (OEW) and payload.
It is also the maximum operational weight without usable fuel.

N. Minimum Weight:

The minimum weight at which the aircraft may be operated.

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4.13.3. AIRCRAFT WEIGHING PROCEDURES:

Aircraft Weighing shall be carried out in accordance with the manufacturer's instructions. Before an aircraft is weighed, it has to be prepared for weighing by emptying the fuel tanks, inventory checking equipment, all flight controls are to be in flying conditions, leveling the aircraft etc.

1. The Technical Planning Manager shall schedule the weighing process at the most suitable time within the approved maintenance program interval, and inform the Director of Maintenance & the Chief inspector and quality manager for the proper action
2. The Director of Maintenance shall contact the contracted MRO for the slot availability to perform the weighing.
3. The Chief inspector and quality manager shall ensure that the contacted MRO is approved from the ECAA.
4. The Chief inspector and quality manager shall perform an external audit in accordance with GMM Appendix B Part M.
5. The Chief inspector and quality manager and Technical Development Manager shall ensure that the weighing procedures used are in accordance with the Approved Weight & Balance Manual procedure.
6. The Chief inspector and quality manager shall ensure the weighing equipment used are serviceable, and calibrated.
7. The aircraft shall be weighted in accordance to the W&B procedures.
8. The weighing report issued by the contracted MRO shall be sent to ECAA for approval.
9. After receiving the weighing report approval, the Technical Development Manager shall use the data in order to calculate the Operating Empty Weight and Index.
10. A copy from the approved weighing report shall be added to the weight and balance manual (W&B Chapter 2).

4.13.4. PROCEDURE FOR CHANGE OF SEATING CONFIGURATION:

Note: ECAA Approval shall be granted prior to re-configuration.

Each seating configuration change is considered a modification to the aircraft and affects its airworthiness significantly.

The aircraft's weight and balance is computed from the data provided by the seating configuration drawing which is the basic requirement for any changes in seating arrangement or locations. Seats in the vicinity of Emergency exists must strictly conform to the configuration drawing in respect of their back rest recline restrictions specified in certain cases, increased pitching to augment easy access to exits or clearance of seat back rests from exit openings to prevent obstruction. This shall satisfy the applicable ECAA regulations.

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Whenever a seating configuration change is required due to commercial or any other reason, the technical development Manager shall issue an engineering order with the commercial arrangement requirement including the new LOPA and the new Basic Empty Weight and Index.

The Reconfiguration Engineering Order shall be sent to ECAA for approval.

After E.O approval, The Technical Development Manager shall recalculate the Operating Empty Weight & Index.

The Reconfiguration E.O with the approval shall be added to the W&B Manual (chapter 2) as a reference to the new Empty Weight and Index.

4.13.5. W&B APPROVAL PROCEDURES:

1. Upon receipt of W&B manual new revision published by A/C Manufacturer.
2. The Chief inspector and quality manager shall forward the manual with its approval application to ECAA for approval
3. After getting the Approval of W&B manual, Chief inspector and Quality Manager shall Forward the approved manual to technical department
4. Technical Lib. Supervisor shall distribute the manual according to W&B distribution list

4.13.5 Fly Away Kit policy:

Nesma Airlines is authorized by ECAA to transport cargo, the function is not activated. in case of cargo function activation Nesma airlines may carry fly away kit onboard its aircrafts.

In case of having FAK onboard, fly away kit weight will be included in Nesma aircrafts Operational Empty Weight (OEW); and including the following:

Nesma Code	Part Number	Description	QTY
N1-1000	C20195162	Main Wheel Assy.	1
N1-1000-1	3-1531-3	Nose Wheel Assy.	1
N4-19	N/A	Axial Jack Assy.	1
N4-33	N/A	Toolbox	1
N3-4	BP2197	Engine Oil	1 Carton
N3-3	Hi Jet IV,	Hydraulic Fluid	1 Carton
Various	N/A	Spare Lamps Box in Cockpit	
N4-11	QD3R250	Torque Wrench	1
N4-4	7034	IDG Service Pump	1
N4-2	B54001-30	C-Duct Pump	1
	N/A	Spare Seat Cushions Cover	10
N4-1	14-6806-6011	Tire Pressure Gauge	1
N4-5	J47549	NLG Adapter	1
N4-6	J47548	NLG Protector	1
N4-7	H47682	MLG Axle Nut Adapter	1
N4-8	F46754-1000	MLG Protector	2
N4-10	FLUKE-179	Multi-Meter	1
N4-14	98A25207503000	Pulley Assembly	1
N4-27	98A28104000000	Water Drain Purge	1

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4.14. Line Maintenance Procedures Related To Servicing / Fueling / De-Icing, Etc.

References: ECAR 91.12, 121.629 & 145.29g4

Responsibility:

- Maintenance Director.
- Chief inspector and quality manager

4.14.1 Servicing

(1) Tire Servicing

(a) General

It is critical to the operation of aircraft that the tires and wheels are to be in good condition. No deviation from any requirement in this section is allowed without Specific authorization from the Chief inspector and quality manager. Tire in service condition and wear limits should meet the requirements stated in at A/C type Maintenance Manual Chapter 32.

(b) Policy

When a tire requires re-inflation, re-inflate with dry nitrogen only. Tire inflation checks accomplished by maintenance are to be done with a calibrated gauge.

- If tire inflation is required at a station where dry nitrogen is not available, Nesma Airlines. Maintenance Manger must be contacted prior to tire inflation. Director of maintenance will ensure person inflating the tire(s) carries out all Maintenance Manual procedures. A Deferred Maintenance Item will be issued by Director of maintenance to Purge tire(s) of air and inflate with dry nitrogen in accordance AMM Chapter12
- Airplane shall sustain a blowout or flat (even if aircraft is not moving), the deflated tire and one adjacent (on the axle), will be changed and routed to the tire shop. Tires removed for this reason are to be marked by painting Scrap on the sidewall of tire.

(2) Oxygen Cylinder Servicing

(a) General

- This section will outline the oxygen bottle servicing, fixed and portable, used on Nesma Airlines. aircraft. Oxygen is not flammable but will support combustion, so it is imperative that certain safety precautions are adhered to during servicing and reinstallation of the bottles.
- All oxygen used for breathing purposes must be “aviators breathing oxygen” and the supply bottles used to service the aircraft bottles must be clearly placarded as such. (Oxygen should never be used to service anything but an oxygen system).
- The minimum Oxygen pressures are listed in the A/C type Maintenance Manual chapter35.

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(b) Policy

- All bottles must be removed from the aircraft when servicing, and all oxygen Used by Nesma Airlines. Must comply with the approved Specification. Primarily, the difference between breathing oxygen and oxygen used for welding or other purposes are the moisture content. Moisture content of breathing oxygen must not exceed 5%. Line station personnel may service bottles but only in accordance with the A/C type Maintenance Manual chapter 35. Breathing oxygen available from other Part 121 certificated air carriers or repair stations may be used to service Nesma Airlines Aircraft.
- Check the hydrostatic test date on all oxygen bottles to servicing on the fixed cylinders the most recent date must not be older than 3 years. Portable cylinders must have a hydrostatic date not more than 5 years old. The date appears as a month number, a vendor code, and the last digits of the year.
- Any oxygen bottle that does not meet the requirements of the item above must be Removed and replaced in accordance with Maintenance Manual chapter 35, prior to departure.

4.14.2 Aircraft Fueling

(1) General

To describe the policies used to fuel aircraft.

(2) Policy

1. The requirements of this GMM Chapter be followed and respected.
2. Under wing pressure fueling the aircraft in accordance with the requirements of the ECAA and the Manufacturer instructions.
3. To suspend fueling immediately:
 - A spillage occurs.
 - At the request of the local Airport Authority.
 - A hazardous condition contrary to the acceptable safety standard is observed.
4. Not to overuse wing fueling with passengers onboard.
5. Those only qualified personnel perform fueling.
6. To inform Marketing:
 - 15 minutes prior to starting any fueling operation.
 - On completion of any fueling operation.
7. To record the quantity of fuel added to or removed from aircraft and its distribution
8. To use mechanical means to verify the contents of a fuel tank with an inoperative Gages.
9. That dipstick reading must be verified by two persons and recorded in the aircraft logbook.
10. To permit pressure refueling at remote stations with one engine running provided:

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- Only essential flight crew and maintenance personnel, remain onboard.
 - Only under wing sealed couplings are used.
 - No other aircraft servicing operation takes place.
11. To comply with the local airport authority regulations when they are more restrictive than Nesma Airlines.
12. For all stations permanently manned by Nesma Airlines. Personnel to perform a station fuel audit in accordance with the applicable rules.

(3) Procedure for Refueling and De-Fueling the A/C

1. Do not start re-fuel procedure if any part of the landing gear appears unusually hot. Wait for landing gear to cool.
2. Make sure the park BRK is on.
3. Move the aft NLG chocks away from the tires. During the refuel the NLG tires roll after, the MLG shock absorber compresses.
4. Make sure the chocks do not touch the MLG tire. The weight of the fuel can lower the A/C and cause tire to catch chocks.
5. Ensure presence of correct firefighting equipment with approved persons to use the firefighting equipment.
6. Make sure that the fuel tanker or hydrant contains the correct fuel.
7. For fuel tanker check the operator should check the fuel in the tanker for water contamination.
8. If the A/C is kept stationary for more than 1 hour (fuel settled) drain a quantity of fuel from each inboard tank and check for water contamination and take necessary action if any.
9. Make sure the fuel tanker or hydrant is in the correct position and that area is kept clear to allow tanker to be withdrawn in case of danger.
10. Do not operate the aircraft engines during a refuel procedure.
11. If it is necessary to operate the APU during the refuel procedure, do these steps:
12. Make sure that you start the APU before you start refueling procedure.
13. During the refuel procedure, do not stop the APU operation except in an emergency (for example fuel spillage).
14. If the APU stops during the refuel procedure, do not start the APU again until there is no danger of fuel vapor ignition.
15. Do not refuel in bad weather condition. Lighting is dangerous.

16. During the refuel procedure do not operate the aircraft external lighting.
17. During the refuel procedure do not fill the oxygen system.
18. During the refuel procedure do only essential aircraft maintenance and/or servicing that will not cause a spark to ensure wearing rubber role shoes and using properly insulated torches.
19. Does not use the microphone on the high frequency (HF) transmitter during refuel operations.
20. Immediately flush away with water, or remove, fuel spillage.
21. Make certain that the tanker and the aircraft are properly grounded. Connect a tanker grounding cable to the aircraft grounding point on the main landing gear.

4.14.3 Aircraft Deicing and Anti-Icing.

General

Before going into detailed procedures for aircraft Icing and anti-Icing, it is important to understand these conditions which are defined below:

A. Frost/Ice/Snow condition identification

1. Significant deposits of clear ice can form, in the vicinity of the fuel tanks, on wing upper surfaces as well as under wing. Aircraft are most vulnerable to this type of build-up when:-
 - Wing temperatures remain well below zero during the turn-around and transit.
 - Precipitation occurs while the aircraft is on the ground.

Note: The low wing temperatures, associated with this type of buildup, normally occur when large quantities of super-cooled fuel remain in wing tanks during the turnaround/transit, and any subsequent fuel uplift is insufficient to cause a significant increase in fuel temperature.

2. Frost and ice may form on both upper and lower wing surfaces under any ambient condition if the fuel in the tanks is sufficiently cold.
3. Ice cans buildup on control surfaces when descending through thick cloud or precipitation. When ground temperatures at the destination are low, it is possible for flaps to be retracted and for accumulations of ice to remain undetected between stationary and movable surfaces.

Procedure of Aircraft parking in icing condition

1. The area in which an airplane is to be parked must be cleared of Ice and snow. When possible, face the airplane into the prevailing wind. Set the airplane control surfaces so that melting snow and rain will not run into balance bay areas where subsequent freezing can lock the control.
2. Assure that flap mechanisms are free of slush or ice accumulation, and then position wing flaps to full up.
3. Position horizontal stabilizers in the airplane nose down position.
4. Install all plugs and covers, where available, for intake or exhaust ducts and various appendages such as pilot tubes. Covers can be prevented from freezing to airplane by a light brush application of anti-icing fluid to the airplane surface before installing the cover.

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Note: Examine engine intake areas immediately after shutdown for presence of ice, which should be removed while engine is cooling, and before engine protective plugs and covers are installed. If plugs are installed before the engine has cooled, residual heat within the engine will melt the ice to water which runs to the bottom of the fan section. This refreezes as the engine cools and locks the fan lower blade tips in ice.

5. Close all entrance and Cargo compartment doors as soon as possible and keep them closed to avoid precipitation entry into aircraft
6. Drain Potable water system, if required.

Procedure of Pre-Departure Check for the need to deice

1. During the PDC, certifying staff shall check the wing, horizontal and vertical stabilizer and control surfaces and fuselage surfaces for deposits of frost, ice or snow. Should any deposits other than those listed below, be found, the aircraft will require deicing
 - i. Thin hoar frost is permitted on the top surface of the fuselage, provided that all vents and ports are clear.
 - ii. Thin cooling of frost on the underside of the wing, provided it is confined to the general area of the fuel tanks and that the depth does not exceed 1/8" (3 mm.).
2. Certifying staff shall inform Pilot on command for the frost, Ice or snow deposit. For his/her action to be taken.

4.15. Line procedure for Pooled parts and Loan parts

References: ECAR 145.29e8

Responsibility:

- Material Control Manager.
- Chief inspector and quality manager.

4.15.1 General

- The borrowed part must be obtained from certified operator under Egyptian Civil Aviation Regulation Part 121 maintaining aircraft under continues airworthiness maintenance program or the type of manufacturer or vendors.
- A borrowed part having a higher time-in service overhaul than the certificate holder's approved overhaul time may be used as follow:
 1. The part must have at least 200 hours' time in-service remaining until overhaul (or 100 landing if the overhaul time limit is controlled by landing) in relation to the lender's overhaul time limit.
 2. The part may be used for a time period not to exceed 100 Hrs time in-service or 50 landings (if the overhaul time limit is controlled by landings).
- The certificate holder shall not use a "life limited" borrowed part beyond its approved lifetime.

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- Each pool item will be identified as serviceable by one of the following:
 1. By a JAA Form one issued by a JAR 145 approved organizations.
 2. By a FAA Form 8130-3, Airworthiness Approval Tag which identifies a part or group of parts that have been approved by an FAA approved organization.
 3. By a serviceable tag signed by the original manufacturer or a FAA certified repair station.
 4. By a shipping ticket, invoice or other document which provides evidence that the part was produced by a manufacturer holding an FAA Approved Production Inspection System issued under FAR Part 21, Subpart F or by a manufacturer holding an FAA Production Certificate issued under FAR Part 21, Subpart G.
 5. By a serviceable tag of an organization, not approved by the JAA nor the FAA issued I/A/W procedure approved by the Airworthiness Authority providing this organization has been accepted by the Chief inspector and quality manager and the pool item is removed as soon as the aircraft is returned to the main base.

The certified maintenance staff confirms the movement by Fax to the Material Manager.

4.16. Reference to Specific Maintenance Procedures

References: ECAR 145.29e8

Responsibility:

- Maintenance staff.

1. Introduction

The aim of this section is to establish policy and procedure for specific maintenance tasks in accordance with appropriate referenced regulatory requirements.

These procedures cover the following:

- Heavy landing check.
- Severe turbulence inspection.
- Engine ground run.
- Aircraft towing.
- Aircraft pressurization.
- Aircraft taxing
- Sand protection

The responsibility for the implementation of this procedure rests with the Maintenance Department. Authorized personnel shall certify the release to service following the special task.

2. Procedures

Nesma Airlines. use procedures issued by the Manufacturer (Aircraft Maintenance Manual) and either directly carried out or developed through internal Nesma Airlines. instructions.

4.16.1 Heavy Landing Check

The inspections to be perform after a heavy landing (recorded in aircraft logbook) are considered as non-routine task and carried out in accordance with appropriate Aircraft Maintenance Manual task

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and certified on release to service form on the aircraft logbook (where the finding has been recorded)

See Aircraft Maintenance Manual 05-51-25

4.16.2 Severe Turbulence Inspection

The inspections to be perform after a Severe Turbulence (recorded in aircraft logbook), are considered as non-routine task and carried out in accordance Maintenance Manual task, and release to service on the aircraft logbook.

See Aircraft Maintenance Manual 05-51-17

4.16.3 Engine Running Procedure

Maintenance staffs holding A & C license on the aircraft type have been cleared by Nesma Airlines quality department to run aircraft engines.

The maintenance staffs cleared for engine ground run are responsible for ensuring safety of the personnel involved in ground run.

The engine ground run is carried out in accordance with applicable Aircraft Maintenance Manual task.

4.16.4 Aircraft Pressurization leak test procedures

The aircraft structure shall be complete and fit for flight before any ground test is attempted. Generally, tests are required if large-scale repairs have been accomplished.

Personnel inside the pressurized areas shall be medically fit and only maintenance staff holding appropriate authorization is cleared by Chief inspector and quality manager performs such check

4.16.5 Aircraft towing

The purpose of this procedure is to ensure that the aircraft is moved safely, only authorized/ properly licensed persons are permitted to act aircraft towing crew leaders.

See Aircraft Maintenance Manual 09-10-00

4.16.6 Aircraft taxing procedures

Before attempting to taxi the airplane, round personnel should be checked out by a qualified pilot. Engine starting and shutdown procedures should be covered as well as. When it is ascertained that the Fan & Exhaust Areas and taxi areas are cleared, apply power to start the taxi roil and perform the following checks:

1. Taxi forwards a few feet and apply brakes to determine their effectiveness.
2. Taxi with engine low power and high RPM setting.
3. While taxing, make slight turns to ascertain the effectiveness of steering.
4. Observe wing clearances when taxing near building or other stationary objects. If possible, station a guide outside the airplane to observe.
5. When taxing on uneven ground, avoid holes and ruts.
6. Do not operate the engine at high RPM when running up or taxiing over ground containing loose stones, gravel or any loose materials that may cause damage to the Fan blades.

See Aircraft Maintenance Manual 09-20-00

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4.16.7. Sand Protection

1. General

- A. Engine sand and dust ingestion occurs when sandy material used for runway / taxiway traction enhancement goes into the engine. Sand or dust that goes into the engine can damage the engine core module, engine inlets and other areas of the engine
- B. Engine sand and dust ingestion occurs on the ground. The typical conditions that can cause engine sand and dust ingestion are use of high engine power, particularly with the thrust reverser deployed and low airspeed on snow / ice-covered runways or taxiways treated with traction enhancement material such as sand.

2. So we must install all the covers on the Aircraft:

- 1 . Covers for engines.
- 2 . Covers for windshields
- 3. Covers for all pitot and static ports as well as air intakes.
- 4. All doors lock

See Aircraft Maintenance Manual 05-51-25

4.16.8 Aircraft Parking

See Aircraft Maintenance Manual 10-11-00

4.16.9 Aircraft Short, Long-time storage

See Aircraft Maintenance Manual 10-11-00

PARKING – Normal

Up to 7 days the parking is considered Normal during which Maintenance Schedule Checks are Applicable.

PARKING – Prolonged

Beyond 7 days the aircraft shall enter Prolonged parking program starting with Initial first. During prolonged parking, maintenance schedule checks are Not Applicable.

4.16.10 Aircraft Lifting & Jacking

See Aircraft Maintenance Manual 07-10-00

4.16.11 Aircraft Hosting

See Aircraft Maintenance Manual

4.16.12. Electrostatic Device Handling Procedure:

General

This procedure applies to NESMA maintenance organization or any maintenance organization that performs maintenance for NESMA Airlines. When handling the devices, care must be taken to ensure that the devices are not damaged by an ESD event. The followings are recommended:

1. ensures that, where ESD parts are handled, shop floor grids are grounded.
2. ensures all ESD are only handled using approved "earthing" (grounding) wrist straps and conductive desk mats.
3. Devices are contained in ESD-approved conductive packaging sealed with conductive tape.
4. ESD are not to be stored on shelving covered with carpet, foam, vinyl or any other material that can store or produce an electrical charge.

5. appropriate warning and caution signs and decals are placed in areas where ESD are handled.
6. Wrist straps and earthing mats are tested to ensure conductivity at regular intervals or prior to use, and such test results are recorded.

Form: F205-17

Electrostatic Protected Area

A place designed to handle the ultra-sensitive ESD parts. This area is configured and maintained using the guidelines provided in ANSI/ESD S20.20. The guidelines recommend the following conditions are met and only trained personnel are allowed in the EPA:

- Floors with surface sensitivities in the range of 10E4 to 10E6
- All the necessary equipment properly grounded
- Air ionizers
- Antistatic work surfaces with proper equipment (wrist straps, smocks, shoe straps, and gloves)

Personal Grounding

A wrist strap or ESD cuff that is in constant contact with bare skin and has a cable for attaching it to the ESD ground must be worn at all times. In addition to a wrist strap, heel straps or ESD shoes must also be worn. The purpose of the wrist strap and heel straps is to drain off the operator's static charge. Wrist straps are tested to ensure conductivity at regular intervals or prior to use and such test results are recorded.

Antistatic Floor Mats

The floor mat works with the heel strap/ESD shoes to provide a ground path for the dissipation of electrostatic charge, further reducing the charge accumulation on the personnel. In addition to dissipating charges, the floor mat also reduces electric charging. The use of a floor mat is especially important in areas where increased personnel mobility is necessary. In addition, a floor mat can minimize charge accumulation on chairs, carts, and other objects that move across the floor. Floor mats are tested to ensure conductivity at regular intervals or prior to use and such test results are recorded.

Identification

All electrostatic sensitive devices are shipped with an ESD sensitivity sticker to identify the devices as ESD sensitive. The sticker was created based on the ESD Association Standard ANSI ESD S8.1-1993.



Note: ESD are not to be stored on shelving covered with carpet, foam, vinyl or any other material that can store or produce an electrical charge.

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4.17 Control of Manufacture's working teams

References: ECAR 145.29h9

Responsibility:

- Director of maintenance.

4.17.1. General

In case of major repair or major modification or special maintenance actions, Nesma airlines may negotiate with the manufacturer to support its working team.

This work is performed under the organization responsibility.

A work package shall set up with all necessary approved data to perform the work.

This file is dispatched for recording to Nesma air lines as operator.

4.17.2. Procedure

Manufacturer working, team operates under Nesma air lines supervision personnel.

The Maintenance Department shall ensure:

- Adequate facilities and working conditions
 - Availability of all necessary maintenance documentation
 - Necessary tools and equipment at their disposal
 - Skilled maintenance staff to support their tasks
- The Quality System is responsible for:
- Ensuring in coordination with the technical development Department that all maintenance instructions are approved
 - Checking that one of the manufacturers' working team is authorized to release the aircraft to service or to appoint a certifying staff from Nesma air lines organization.
 - Monitoring all deviations to maintenance instructions or Nesma air lines organization procedures
- Recording all maintenance tasks in accordance with Nesma air lines procedures.

4.18. Procedures to ensure that work interruptions don't adversely affect required inspection

References: ECAR 145.29b12

Responsibility:

- Director of maintenance.

A return to service to be issued in case of inspection interruption:

- a- The Director of maintenance alerts the Chief inspector and quality manager by :
 - The reason for interruption.
 - The inspection tasks which are interrupted.
- b- Also, The Director of maintenance advises the Planning Department by such situation to manage the task cards.

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4.19 Maintenance Documentation in use

References: ECAR 121.376, 145.21& 145.29

Responsibility:

- Chief inspector and quality manager
- Director of maintenance
- Technical development manager

4.19.1. Introduction

All documents and forms designed, produced, and used within the Maintenance and Technical development are officially recorded in the various maintenance procedures.

The maintenance staff is required to use the approved and or accepted documentation and forms and must comply with the following rules:

The evaluations, analysis, and issuance of all “definition documents” are under the responsibilities of technical development Department.

Any work package (minor check, major check) is established - based on definition inputs by planning, then after verification by the Chief inspector and quality manager the work package is routed to the Maintenance Staff

The work package mainly consists of the following:

- Routine Tasks (routine cards, check list for Transit, Service check, component cards)
- Non-Routine Tasks (modification, unscheduled removal, special inspection)

The Maintenance Staff shall ensure that all components, materials, tools required for maintenance tasks (called up by each task of the work package) are available- and conform in due time.

The purpose of this procedure is to provide:

- Policies for the availability of the various airworthiness data and Nesma airlines internal document and forms to be used by the maintenance staff.
- Instructions and rules to be followed for their completion and use.

Approved contract repair station work package form (task card s and task card index forms) is accepted by Nesma Airlines Quality department

Requirements

With respect to Airworthiness Authorities requirements, Nesma air lines Organization is in receipt of all necessary documentation to perform maintenance in accordance with the approved scope of work, data & documents produced by Airworthiness Authorities and / or documents produced by vendors and aircraft/engine manufacturers.

4.19.2. Rules For Use & Completion Of Documents

The procedure and instructions for completion of all different forms listed In the Nesma air lines Documentation Are Described in Each Relevant Maintenance Procedures (Airworthiness Directive Compliance Procedure, Repair Procedure Aircraft Maintenance Program Compliance Procedures... etc.)

The maintenance staff is required to use the approved documentation and forms. The certifying staff shall ensure prior to releasing the aircraft or component the validity and the completion of all documents and forms.

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4.20 Shift / Task Handover Procedures

Responsibility:

- Director of maintenance

This procedure has been created to ensure that when it is required to handover the continuation or completion of any task for reasons of a shift or personnel changeover.

- Handover of maintenance step of a job card, implementation of which has been initiated by a person or team and the implementation is required to be continued by another person or team within the identical workstation.
- Handover of certifying staff duties and responsibilities of an ongoing maintenance project, when a certifying member is leaving for a long period or in final phase of the maintenance project. Another, appropriately authorized, certifying staff member (incoming final release person) is required to take over relevant duties and responsibilities for an ongoing maintenance project.

Procedures to be followed during handover

- For effective task and shift handover the Director of maintenance is responsible for provisioning of a planned shift/ officer hours overlap. Planning shift/ office hours overlap is essential to enable outgoing and incoming personnel to meet at their workstation or workplace to carry out handover.
- During the handover outgoing and incoming personnel together shall review the pending maintenance step to be handed over, including relevant job cards, documentation, and circumstances as it is appropriate.
- When it is impossible to arrange meeting of outgoing and incoming personnel it shall be provided that all relevant information adequately provided to incoming personnel, which is the responsibility of the shift supervisor.

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4.21 Maintenance First Article.

Responsibility:

- Chief inspector and quality manager
- Director of maintenance
- Technical development manager
- Planning manager
- Material control manager

4.21.1 General

Maintenance first article is an event occurred In case of Adding new Capability or performing major modification, special maintenance actions, or any E/O performed for the first time.

4.21.2 Policy

- Technical Department Management s hall meet to discuss the first article and every department shall response according to its responsibility. And evaluate the event and assign senior personnel from all concerned departments to attend the event and notify The ECAA if necessary.
- The Quality Department shall monitor and evaluate the work done by the other departments.
- Technical development and planning Departments shall provide all assistance needed to perform the article e.g., Preparing EO's, WO's, schedule the event performing time and/or any requirements needed. Technical development department may Contact the manufacturer to support the work if needed.
- A copy from corresponding messages will be sent to ECAA if needed.

4.21.3 Fist Article Procedure

- Technical Department management head office will address for identify the First Article Items
- Planning and Technical development departments responsible for Preparing scope of work and all the documents needed to be performing the working task
- Material department in charge for Preparing the spare parts and tools needed to perform this task
- Technical Department will assign senior technical personnel in all specialties needed to perform the work
- Technical Department head office will brief the maintenance team with all task instructions and steps.
- The work will be done in presence of Nesma air lines. Technical departments managers" Chief inspector and quality manager, Technical development, Planning, Material, and Director of maintenance"
- Filling the first Article procedure form and recording all obstacle and difficulties arise during working the task.
- Planning department shall record the tasks time to be consider in next event if repeat.
- Final meeting will be set for evaluating the results to modify the working scope and task cards according to work done.
- Final working steps will be approved by Quality system after the modifications

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Form: F206-12

4.22. Navigation Data Base Downloading

Responsibility:

- Director of maintenance
- Technical development manager
- Planning manager

4.22.1. Procedure:

- Every 4 weeks prior to the Nav Data Base expiration date, the technical development section downloads the data to a floppy disk.
- Data in the floppy disk shall deliver to the maintenance section for insertion into A/C FMGC using data loader with instruction check list onboard Aircraft prior to the first flight on the effective date of the new database, however in exceptional circumstances and for a limited period of time, an A/C can continue to fly with an outdated navigation data base provided the conditions mentioned per approved MEL are met.
- Certifying staff shall record the Nav data base loaded to TLB.
- Planning manager shall follow up the Nav Data Base download date and the next due, by included it in daily serviceability report

4.23. EGPWS Data Base Downloading

Responsibility:

- Director of maintenance
- Technical development manager

4.23.1. Procedure:

- Technical development manager notified by Honeywell for EGPWS data updates.
- Technical development section downloads the data to memory disk, then notify director of maintenance to contact any of Nesma airlines contracted AMO to be uploaded on aircrafts.
- Certifying staff shall record the data base loaded to TLB.

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Chapter 5

Stores

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5.2 Store Facilities

Reference: ECAR 145.29 & 145.31

Nesma Airlines has facilities appropriate and its scope of work to the maintenance program for the storage of parts, equipment, tools and material. Those storage conditions secure and prevent the deterioration and damage of stored items, including:

- i) Clean work areas, including supervisor's offices.
- ii) Parts and material properly identified and properly stored.
- iii) Oxygen and other high-pressure bottles correctly identified and stored.
- iv) Flammable, toxic or volatile materials properly identified and stored.
- v) De-icing equipment maintained in good condition and glycol stored properly.

5.2.1 Company Main Base (At Cairo Airport)

Located in Cairo International Airport near Gate 35. The building is over 653m² to accommodate all the requirements.

The building arrangement contains the following:

- 1- Spare parts store.
- 2- Quarantine store.
- 3- Wheels & Brake units store.
- 4- Oil, Grease & Tools store.

5.3 Acceptance Inspection of Aircraft Components and Materials from Outside Contractors

Reference: ECAR 121& 145.29

Responsibility:

- Chief Inspector and Quality Manager.
- Material manager

5.3.1. Components Acceptance Procedures

Nesma airlines ensure that no new part is installed on an aeronautical product unless the part meets the standards of airworthiness applicable to the installation of new parts and any of the following:

- i) The new part has marking identifying it as a part specified in the type design conforming to a recognized national or international standard.
- ii) The part has been approved for use on an aeronautical product, in accordance with the type certificate/STC, if the part was originally designed and manufactured for non-aeronautical use.
- iii) The new part was manufactured under a Parts Manufacturer Approval.
- iv) No raw material used directly by Nesma airlines

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Components/ materials are accepted as per the following: -

- a) No external damage to package and component.
- b) Conformity to order specification, quantity, quality.
- c) State of preservation, general condition.
- d) Proper documentation/authorized Release Certificates.
- e) Approved sources.
- f) No doubt on tractability of parts for components received from non ECAR 145 approved sources.

5.3.2 Incoming Inspection "Quarantine" And Reject Procedures

a) Incoming Inspection/Responsibility

The Chief Inspector and Quality Manager the Stock room Supervisor are responsible to complete the inspection of all incoming parts / components / products as outlined in the "Check list for incoming material/parts Inspection".

b) Quarantine and Reject Procedure

1) Identification of Part:

Any part / component / product rejected during the incoming inspection must be identified with US Parts Tag, the reason for rejection.

2) Temporary Storage in Holding Area:

Such parts are temporarily stored in the designated "Holding area" for parts not conform to order specification, located in the stockroom until they are shipped back to vendor or until the discrepancy has been eliminated.

3) Follow Up:

The Material Manager must contact the supplier, to get the problem solved.

Form: F205-03, F205-05

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5.4. Storage, Tagging and Release Of A/C Components and Material to A/C Maintenance

Reference: ECAR 121 & 145.29d3

Responsibility:

- Chief Inspector and Quality Manager.
- Material Manager

5.4.1. Stores System

All parts / materials pass through Quarantine store. Stores inspection is responsible for each parcel W.R.T Good physical condition, approval certificates and serviceability tags. If the inspection is satisfactory, the inspector would sign the goods receipt and issue Nesma Airlines Serviceable label with inspection stamp and shelf time control card if applicable. The Material Control Manager carries out an audit inspection of incoming / outgoing materials. A regular audit of the materials area is also carried out by Chief Inspector and Quality manager to ensure that airworthiness and company approval requirements are maintained.

5.4.2. Release of Components to the Maintenance Department.

1. The storekeeper shall ensure that the new component which is requested by the engineer has the correct part number according to IPC (Illustrated Parts Catalog) and available in the store.
2. The storekeeper shall ensure that all of components in store have serviceable labels and in good conditions.
3. All spare parts (serviceable, Removed and unserviceable F205- 03, 05 & 09) should be recorded in store documents mentioning its description, part number, serial number, date of entry and date of outgoing.
4. The storekeeper shall check monthly all components have shelf time and calibration tools and then report to Chief Inspector and Quality manager
5. No one can enter the stores except the stock keeper supervisor, Chief Inspector and Quality Manager Director of maintenance.
6. All spare parts are classified according to ATA chapters, and well positioned on strong shelves
7. Consumable and Rotable parts should be separated for ease of access.

5.4.3. Procedures For Maintaining Satisfactory Storage Conditions

1. Observation of maintaining of the manufacturer instructions [If exist] concerning the temperature & relative humidity control for the storage of the products
2. Secure storage facilities are provided for serviceable aircraft components, whereas unserviceable aircraft components, material, tooling and equipment simply are separately stored. It is however recommended that separate and secure storage facilities be provided for unserviceable components, material, equipment and tooling. Storage facilities for serviceable aircraft components should be clean, well ventilated and maintained at a suitable dry temperature. Manufacturers and standards recommendations should be followed for specific aircraft components.
3. Storage racks should be strong enough to hold aircraft components and provide sufficient support for large aircraft components such that the component is not distorted during storage.

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4. All aircraft components, wherever practicable, should remain packaged in protective material to minimize damage and corrosion during storage.
 5. All aircraft components must be conditioned tagged.
 6. Observation of the following permanent instructions:
 - Be sure the ferrous metals are protected against corrosion by suitable methods such as protective oils, fluids, compounds & silica gel. etc.
 - Note that batches of materials or parts are issued in strict rotation, i.e. old stock should be issued before new stock, this is important for components which have definite storage limiting periods.
 - Open racks allow a free circulation of air and are preferable when the nature of the stock permits their use.
 - All materials of a flammable nature, toxic or volatile material should be identified and kept in a store isolated from the main buildings. The factory security precaution must be applied.
 - Care should be taken to isolate materials, which may have intentional effects on other materials.
 - Stock should be packed, and long lengths of materials such as tubes should generally be stored vertically.
 - Ball and roller bearings should be stored in their original wrappings' clean conditions.
 - A charged battery that is to be stored for any length of time is to be the fully charged condition.
 - Stores that are used for storage of sensitive parts, adhesive, sealant primer, paint, finishing, rubber hoses, O-rings, fire extinguishers squibs, oxygen system components (oxygen generators and bottles), and electrostatic sensitive devices are properly packaged, identified and stored to protect them from damage and contamination.
-
- Where electrical cables are stored in large reels it is necessary that the axes of the reels be in a horizontal position.
 - Any avionics components incoming as receiving part from the A/C AS REMOVED item or from OUTSIDE as serviceable items must be clearly check that the unit has no static charge by using the electric-static charger test table in the receiving station of the quarantine and ensure that the Avionics device be grounded, packed with conductive sealed and tape, not stored on shelf covered with carpet or any material that produce a static charge.
 - The smaller types of instruments are usually delivered in plastic envelopes, and these should be used during storage to minimize the possible effect of condensation.
 - Oil coolers and radiators are normally filled with an inhibiting fluid during storage; the fluid used should be in accordance with the manufacturer's instructions. The components should not be stored on the floor but placed on raised wooden supports to permit a free circulation of air and to minimize the possibility of damage to matrices.
 - All tires & all wheel and tire assemblies should be stored in a vertical position, preferably in a cool, dry, dark room.

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5.4.4. Tagging System with Records, Control and Retention of Documentation

a) Parts/components from manufacturers, suppliers or contractors

When being stored must be identified with an authorized release certificate, the original certificate is kept in the order file.

b) Tagging of Serviceable parts

- 1) Serviceable parts in store should have green label mentioning the unit's description, P/N, S/N and part condition (O/H, Repaired, removed serviceable or new).
- 2) Serviceable label should be signed by Chief Inspector and Quality Manager.
Material control Manager, Director of Maintenance or Workshop supervisor May sign the Serviceable label on behalf of Chief Inspector and quality Manager in case of his absence

c) Tagging Of Unserviceable Parts

- 1) Unserviceable parts must be tagged with a U.S label tag.
- 2) This tag is also used for new components /parts, failing the incoming inspection.
- 3) Scrap parts are tagged with the same parts identification tag.
- 4) If a rejected part is returned to the customer, a "Tag" will remain attached, and a record will be made in the work order showing that the part was returned to the customer.

Form: F205-03, F205-04, F205-05 & F205-09

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5.5. Acceptance of Tools and Equipment

Reference: ECAR 121.370 & 145.29d4

Responsibility:

- Chief Inspector and Quality Manager.

5.5.1. General

Tools and equipment:

- It is Standard tools, Access steps, platforms, Servicing tools, Ground Support Equipment, Measurement tools and instruments, Test equipment, Specific tools.
- No measuring equipment may be used without having its acceptance by the Calibration laboratory.
- All tools and measuring equipment used are identified (as applicable), Validated and managed according to the relevant procedures.
- All tools and equipment are first received by the Quarantine store.
- All tools and equipment out-of-service or due calibration must not be used.

5.5.2 Acceptance of Tools and Equipment

The received Tools and Equipment including:

- Newly purchased tools and equipment
- Tools and equipment sent back after calibration overhaul or repair acceptance of tools and equipment consists of an incoming inspection followed, as necessary, by a technical acceptance.
- The incoming inspection consists of checking the tool or equipment conformity to the shipping documents and certificate. Information appearing on these documents shall be consistent with information given by the identification plate as: Part Number, Part name, Serial number if applicable.

Forms F205-2

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5.6. Use of Tooling and Equipment By Staff (Including Alternate Tools)

Reference: ECAR 145.29d6

Responsibility:

- Chief Inspector and Quality Manager.
- Maintenance Authorized Personnel.
- Workshop Supervisor
- Technical Development Manager

5.6.1. General

There are two classes of tooling:

1. Tools, measurement equipment

(Tools and measuring equipment are released to maintenance staff by the storekeepers)

2. Access steps and servicing tools

(Access Steps and servicing tools are available at the line station)

5.6.2. Availability of Tools

The organization must ensure that all tools and equipment are:

Available to maintenance personnel for the purpose of accomplishing the assigned tasks and within valid calibration interval and in serviceable conditions.

If the required tools / equipment specified by Aircraft or equipment manufacturer are not available, In this case these tools or equipment will be rented with accordance with **Ch.6 (MAINTENANCE ARRANGEMENT WITH CONTRACTORS AND MAINTENANCE CONTRACT REVIEW)**. Some

Seldom used items are not permanently available but the Planning Department shall ensure the availability of such item before beginning a maintenance task.

Should any tool or equipment be found out of calibration due date, it is immediately removed from stores or working area and sent to the Calibration Laboratory for recalibration.

5.6.3. Use of Tools

A. The tool user is responsible to ensure that the tool is serviceable, and calibration due date is valid.

Prior to using any tool or equipment, user checks that:

- An identification tag is attached
- Calibration due dates are valid
- No apparent damage exists
- The measurement equipment precision is compatible with the work to be performed defective tools are immediately returned to store, tagged UNSERVICEABLE and routed for repair.

B. Alternate Tool procedure:

- For alternate tools, the tools shall be approved as equivalent tools by technical development Manager
- Technical development Manager shall issue an Engineering request for tools usage approval
- Alternate tools functionally tested by certified engineer or by workshop supervisor (if the tool usage is for workshop)
- Maintenance director/Workshop supervisor shall confirm the satisfactory of equivalent tool for the specific task in the engineering request

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- The chief inspector and Quality Manager is responsible to confirm all procedure above for approving work with this tool

5.6.4. Training

For specific tools and equipment, a specific in-house training to users is performed.

For specific technology, manufacturers also provide technical training courses to maintenance staff.

The Quality Department and relevant department administration unit keep training records.

5.7. Defective Components to Outside Contractors

5.7.1. General

The aim of this procedure is to describe dispositions taken by Nesma Air lines. Maintenance Organization to control the Purchase Order and the shipping of defective components to outside contractors on the occasion of aircraft maintenance carried out by Nesma Air lines.

5.7.2. Process to Return the Component to an Outside Contractor

When the decision to return the unserviceable component to outside contractor has been taken through the process described in GMM - the concerned part comes under the responsibility of Material Department.

1- The Receipt Section shall perform an analysis of the "Unserviceable" tag and associated component investigation report (if applicable):

The objective is to determine in accordance with the reason for removal, work status mentioned on the label, all Airworthiness data and all information useful to specify to the sub-contractor the maintenance task to perform.

2- Issuance of the Purchase Order

The Material department is in charge of preparing and issuing the P.O., is provided with the following information:

The designation, part number, serial number, quantity, eligibility and work status (inspected, modified, overhauled, repaired)

Any supplementary forms required by JAR OPS (if applicable)

The delivery documents (JAA Form 1, FAA 8130-3, serviceable tag, etc.)

The Material department responsible to prepare and issue all requested shipping documents: customs declarations and invoices. Issuance documents. Airway bill.

5.7.3. Shipping Of Defective Components to The Suppliers

The storekeeper is responsible to send the defective components with the attached "UNSERVICEABLE" tag in an adapted packaging.

Also, to ensure that all aircraft components and parts are shipped in suitable containers which ensure protection from damage. Where required, ATA-300

Containers or equivalent, as specified by the OEM, shall be used.

Loaned parts

Loaned components or parts are recorded by Material Department.

When components or parts on loan are no longer required, they will be returned to their owners upon the request of Material Department, covered by a specific "SERVICEABLE" tag.

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5.8 Storage Conditions for Shelf Lifetime Items

Reference: (8300-10)

A. Labeling:

- 1) Components / parts shall be identified by Part number and serial number. A copy of the Authorized Release Certificate shall be attached to it.
- 2) Shelf-life limited items / Parts/ products A label on which the expiring date is noted to be attached to it.
- 3) Batch to comply with the term company approval it is necessary to be able to trace the supply source of Aeronautical Materials and Parts and to assure Positive tractability to origin. This is accomplished by affixing a Shipment Label to each batch of parts received at stores.

Where a single Certificate is used to release a number of parts and those parts are subsequently separated out from each other, such as through a parts distributor, then a copy of the original Certificate should accompany such parts and the original Certificate should be retained by the organization that received the batch of parts. Failure to retain the original Certificate could invalidate the parts release status. Be sure the part Serial Number or Batch Number if applicable, if neither applicable, state 'N/A' in Authorized Release Certificate.

Sampling Plan Criteria. Sampling plans allow a lot, batch, or group of products to be accepted based on the inspection of a portion of that lot, batch, or group. To maintain confidence in the ability to predict the overall quality of the product based on the inspection of only a portion of those units of product unit having the same probability of being selected.

B. Control Of Shelf Life And Part Life

1. Products / consumable / Parts with limited shelf life as adhesive, sealant primer, paint, finishing, rubber hoses, O-rings, fire extinguishers squibs, etc., are regularly inspected monthly for shelf-life limit by the responsible personnel. Older products / parts have to be used first. The stockroom supervisor is the responsible for this job.
2. The company provides a system for the proper storage, preservation and handling of components identified as shelf-life affected items.
3. Components shelf life depends directly on handling, packaging and storage environments. Storing components beyond their recommended storage time or under unfavorable conditions can result in faulty component operation after installation.
4. A list with all (SLLI) include:
 - a. P/N
 - b. Date shelved
 - c. Shelf life
 - d. Date shelf life expires
5. Items with expired shelf life shall not be used on aircraft. They have to be removed from serviceable stock and tagged with red U.S tag. Parts may be sent to the manufacturer or to an appropriate shop as required for rectification. Or shall be scrapped. The Stock room Supervisor will dispose of any material found in the Stock room with expired shelf life.

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5.9 Storage Conditions For Tires & Materials:

Reference: ECAR 121& 145.11

Responsibility:

- Chief Inspector and Quality Manager.
- Material manager

5.9.1. General Storage Conditions:

1. Observation of maintaining of the manufacturer instructions [If exist] concerning the temperature & relative humidity control for the storage of the products
2. All materials of a flammable nature should be kept in an isolated area. The security precaution must be applied.
3. Care should be taken to isolate materials, which may have intentional effects on other.
4. Stock should be packed, and long lengths of materials such as tubes should generally be stored vertically.
5. Ball and roller bearings should be stored in their original wrappings' clean conditions.

Note that batches of materials or parts are issued in strict rotation, i.e., old stock should be issued before new stock, this is important for components which have definite storage limiting periods.

6. All tires & all wheel and tire assemblies should be stored in a vertical position, preferably in a cool, dry, dark room.

5.10 Quarantine Store Procedures

1 Return of Defective Aircraft Components to Store

All defective components and parts are routed, from line maintenance to Quarantine Section with a US Tag.

2. Defective Component Identification Status

For the purpose of this procedure, the returned components are to be split into two classes:

- Defective component (unserviceable),
- Rejected component (unserviceable condemned)

i) Defective Component

In all cases, when an aircraft component is considered defective, the Maintenance Department is responsible of establishing an UNSERVICEABLE Tag; this tag has to be completed before entry into the Quarantine Section.

In the case where an investigation has to be carried out to determine whether a modification / rectification / overhaul or scrapping is necessary, the component is stored in "Quarantine area" under the responsibility of the storekeeper awaiting disposal instructions from the Chief Inspector and Quality Manager. After completion of the investigation, the Store personnel complete the UNSERVICEABLE Tag, filling in the blocks "Repair / Modification / Test / etc."

ii) Rejected Component

When a component is rejected a Red tag is raised and the component is stored and segregated in the quarantine area.

NOTE: Quarantine store shall be secured area and controlled by storekeeper

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5.11 Contracting Procedures For Buying or Repairs

Reference: ECAR 121& 145.29

Responsibility:

- Material manager.

Nesma Airlines has documented purchasing procedures to ensure the following:

- i) Aircraft parts and materials are only obtained from approved sources.
- ii) Certification documentation requirements are specified.
- iii) Traceability for used or surplus parts.
- iv) A statement of conformity or certification test results is required for hardware, such as extrusions and sheet or bar stock.
- v) Inventory storage of consumable material should be managed to ensure traceability of batch control
- vi) Nesma airlines have a process to maintain a listing of external providers of maintenance services and products, to include:
 - Organizations that are currently approved to perform maintenance on the Operator's aircraft, engines, components and/or parts.
 - Vendors that are currently approved to supply parts, components and other materials for use in maintenance of the Operator 's aircraft.

5.11.1. Material Supply and Inspection

1- Material Supply:

- a. The spare parts lists include all NO-GO ITEMS and consumable requirements for line Maintenance.
- b. Materials, components or appliances will be purchased only from approved manufacturers and suppliers, e.g., spares of Line maintenance requirements as rotatable components and life limited items (see suppliers' list, Vendor List).
- c. The AOG Aircraft Recovery will be undertaken by the nearest possible certified agency or vendor equipped with equipment / parts support to this purpose.
- d. Spare parts will be borrowed only to meet an urgent requirement for the company aircraft likely to be grounded due to inability of the company resources to provide the required parts.
- e. During purchasing the spare part, the Material Control Manager shall ensure the following:
 - The vendor should submit the following:
 - Copy of Approval Certificates
 - Capability List for new parts/repair activities.
 - Commitment to deliver (EASA Form one or FAA equivalence in addition to breakdown reports and part history if available) attached with the equipment for rotatable items.
 - Commitment to deliver (Certificate of Conformance) attached to the product for consumables

Note:

- Extreme care should be exercised when borrowing parts to ensure that the parts are directly interchangeable and serviceable
- Borrowed parts will be, whenever possible, returned to the lending airline on or before the due date to avoid unnecessary loan charges
- All information related to this action must be recorded

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2- Material Receiving Inspections:

- a. Incoming rotatable units which acceptable to the company are identified with a parts manufacture Authorization symbol with manufacture's name, trademark, part Number, the make and model of the type certificate product Preliminary review by storekeeper.
- 1) Storekeeper will perform a preliminary review when receiving parts and material to ensure that no obvious damage has occurred during shipping and that the accompanying paperwork applies to the part or material being inspected
- 2) Storekeeper will prepare a new Serviceable Tag for rotatable units by transferring pertinent data from accompanying paperwork
 - b. The QC receiving Inspector will perform the following
 - 1) Ensure that all received parts and material conform to the company repair orders, purchase orders and the company requirements
 - 2) Ensure that rotatable units meet the criteria for units acceptable to the company and the paperwork is correct and that rotatable unit data plates agree with the paperwork
 - 3) Examine the packaging of consumable material to the extent satisfactory to him without necessarily breaking barriers or seals for inspection
 - 4) Ensure that items with shelf-life expiration dates have adequate life remaining at the time of receipt
 - c. After completion of receiving inspection of rotatable. The Chief Inspector and Quality Manager will sign the maintenance release on the serviceable tag of units which meet all of the above requirements
 - d. Any parts and material which does not meet the above requirements will be treated as follows: All rejected parts and material will be held in quarantine until its disposition is resolved by returned to the vendor for replacement
 - e. Ensure that all received hardware have statement of conformity or certification test results.
 - f. Batch control number of consumable material shall be registered for record control

3- Quarantine Areas

Storekeeper is responsible for maintaining oversight over the operation of the following quarantine areas

- a- Areas for unidentified material awaiting identification
- b- Areas for unacceptable material awaiting disposal instructions
- c- Areas for units under the serviceability acceptance via evaluation programs
- d- Areas for units unserviceable awaiting shipment instruction

4- Material storage and handling

- a- All ratable units stored in the company warehouses shall have serviceable tags firmly affixed to them. A unit with a missing or mutilated tag shall be assumed unserviceable, the Chief Inspector and Quality Manager and the storekeeper must work for re-certification
- b- Components in storage shall be preserved in accordance with manufacture's recommendations or other acceptable industry standards as a minimum component will be stored in suitable containers sealed in plastic bags and openings capped in order to promote protection against humidity, extreme temperature, dust rough handling and other damage

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- c- All adhesives sealant primers finishing and other material which have limited shelf life shall be disposed of when the shelf life expire
- d- Shelf life limited items (SLLI) control

5- Maintenance – Stores Interface Procedures:

- a. Parts requested from stores by the maintenance staff should be through certified engineer via a requisition form or by e-mail
- b. All Store issues will be through the storekeeper.
- c. All components removed from the A/C should be delivered to the quarantine store.
- d. All components installed / removed from the A/C should be recorded in the TLB.
- e. Defect Report should issue to describe defects of the repairable/ rotatable items before sending it to the workshop for repair and the workshop “Repair Report “ must be discussed
- f. Minimum stock levels must be controlled by the material manager and monitored by the director of maintenance and storekeeper

5.11.2. Dispatch of Components for Repair / Overhaul or Calibration

Unserviceable components supposed to be reinstalled in the aircrafts after repair / overhaul / calibration, are temporarily stored on the "Unserviceable Parts" shelf in stockroom. The Material Control Manager dispatches these parts with a repair order to the outside contractors.

Storekeeper should ensure that all aircraft components and parts are shipped in suitable containers which ensure protection from damage. Where required, ATA-300 containers or equivalent, as specified by the OEM, shall be used.

5-11-3 Receipt Inspection and Records

1. General:

This chapter establishes receiving inspection requirements. These procedures assure parts are ECAA approved and in an airworthy condition as specified in ECAR 43.13 these parts are classified as either standard, expendable, repairable or ratable.

2. Policy

The Materials Control Manager (or his designee) reports to the Chief Inspector. He verifies that all incoming materials are subject to receiving inspection to assure conformance to part purchase Order and / or other applicable specification. A record of such inspections is made by receiving inspectors. Any products that fail to meet applicable specifications are tagged as unserviceable, listing the discrepancy and be returned to the Quarantine return to Vendor. To preclude those parts from being used, the Quarantine store manager places such items in the holding area until they are repackaged for shipping back to the vendor.

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3. Procedures

- b) At Receiving of Materials / Parts / Components, the Chief Inspector and Quality Manager will conduct receiving inspections for all parts received. All parts will be kept in a holding area until Chief Inspector and Quality Manager completes acceptance of the part.
- c) The designated personnel in the stockroom have to make sure that the required documentation is received, and that the incoming inspection is carried out.
- d) All incoming parts will be visually examined for obvious defects, cleanliness
- e) , and proper safety wiring, missing placards, etc. The stock room supervisor will check for proper packaging of the part, reporting any damage to the Material Control Manager.
- f) The invoice and the original of the authorized release certificate are archived together with a copy of the purchase order, except the original invoice, which is forwarded to the accounting department.
- g) The Chief Inspector will ensure documents are present and accurately reflect the Condition and serviceability of the part (i.e., AD compliance, life limits, repair history, signature/stamps on serviceability documents, proper part number, serial number, etc.). He will also verify the above is in accordance with Nesma Airlines Illustrated Parts Catalog (IPC) and AD status of all Nesma Airlines aircraft.
- h) The Chief Inspector is responsible for the complete and efficient acceptance inspection in accordance with manufacturer specifications or ECAA approved technical data.
- i) New components manufactured under a type or production certificate, or in accordance with a technical standard order (or similar ECAA approved technical data), or components that have been rebuilt by the manufacturer to production specifications, require a special receiving inspection made by the Chief Inspector and Quality Manager personally.
- j) All adhesives, sealers, primers, finishing and other materials having limited life are identified by material control labels showing the expiration date. Inspectors and mechanics will dispose of any materials found in the storerooms without such identification or with expired shelf life. Indisposed expired shelf-life item is the responsibility of both the Stockroom Supervisor and the Chief Inspector and Quality Manager.
- k) All parts new or overhauled purchased from vendors will be checked for proper approval documentation prior to release for installation.

Parts Manufacturers Must either be holders of: The appropriate Type Certificate (TC) or A Production Certificate (PC) or A Manufacturer Certificate from the TC-holder's, National Aviation Authority for that particular purpose.

Identification of Approved Parts: Approved serviceable replacement parts are those which meet FAA Form 8130-3 or EASA Form 1 Airworthiness Approval Tag or equivalent which identifies a part or group of parts that have been approved by authorized FAA, JAR representatives.

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5.12 Calibration Of Tools And Equipment

Reference: ECAR 121 145.29d5 & 145.23

Responsibility:

- Chief Inspector and Quality Manager.
 - Storekeeper
1. The Tool and Test Equipment Calibration Program is used to control the currency of all measuring tools and equipment used by Inspection groups. All tools and test equipment, including precision tools, gages and scales, electrical measuring equipment used in line and shop facilities are subject to periodic checks and calibration and must be maintained, inspected and calibrated under a predetermined schedule revised on yearly basis.
 2. Current calibration of a unit will be indicated by a sticker. The sticker will identify the unit by part number or model, serial number, due date for the next calibration.
 3. No person may perform any work on A/C, engines, component or appliances using tools and test equipment which is out of calibration.
 4. Maintenance supervisors and inspectors will routinely check such equipment to assure that the equipment has a current calibration sticker attached. Any equipment with an expired calibration sticker will be immediately withdrawn from service and routed to the Calibration Laboratory approved by ECAA.
 5. Material control manager shall be responsible to check calibration status and send a status report for tools every month to the Chief Inspector and Quality Manager.
 6. Storeroom supervisor is responsible to send due tools to local approved calibration agency and notify the Chief Inspector and Quality Manager and Material Control Manager.

Form: F205-9, F206-11

5.13. Warranty Follow Up Procedures

Responsibility:

- Material Control Manager.

In order to maintain a good Warranty Management procedure, Nesma Airlines. Keeps historic data file Under name of Material follow up. The file contains data of All materials replaced on Nesma Airlines. Aircraft including the warranty parts Identified as a note and no further action for time being All material returned under warranty shall be sent with a defect report.

Form: F203-09

Chapter 6

QUALITY SYSTEM

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6.2 Details of Quality system specifications and Control Processes

Reference: ECAR 145.29h41

6.2.1 Objective and Policy

Nesma airlines shall ensure each maintenance organization that performs maintenance for Nesma airlines has an independent Quality Assurance Program that comprises the following specifications and control processes:

Specifications

- i) An internal audit/evaluation and surveillance program.
- ii) An established audit schedule.
- iii) A record of audit findings and corrective and/or preventive actions.
- iv) Assurance of appropriate corrective and/or preventive action.
- v) All elements necessary to confirm the maintenance organization is in compliance with the applicable regulations and the MPM.
- vi) The QA program confirms all referenced procedures remain applicable and effective.

Control Processes

1. An initial evaluation, using the published checklists that cover all aspects of Nesma air lines organization.
2. Procedures to ensure that the findings of the evaluations are communicated to the person appointed and made available to Nesma air lines
3. follow-up procedures, to ensure that necessary corrective/preventive actions (both immediate and long term) instituted by Nesma air lines are effective
4. A record-keeping system to ensure that details of evaluation findings, corrective actions, preventive actions and follow-up are recorded and that the records are retained for two complete evaluation cycles.
5. The audit for organization repeating every 6 months. See table page 8 in appendix B in GMM. For detailed sections for this auditing see check list pages 10 & 11 in appendix B in Nesma air lines have established a quality system based on an independent audits and quality feedback. Reporting system; to enable the Organization to ensure that it can deliver a safe product to remaining incompliance with the requirements.

Nesma airlines quality assurance program provides for auditing of all functions of the management system for maintenance operations to ensure:

- i) Complies with regulatory and internal requirements.
- ii) Produces the desired levels of operational safety and security

The Quality Systems presented in the GMM is compliant with PART 121 and 145 requirements and in Nesma airlines Corporate Manual chapter 3.

The audit system is the back bones of Quality Systems. The Quality Systems of Nesma airlines includes a quality audit remedial action procedure which defines the means by which audit reports containing observations about non-compliance or poor standards can be identified, analyzed and corrected.

It is the objective of the Quality Systems to be effective at all levels of all Nesma airlines Departments or any subcontractor that performs the following objectives:

- Adequacy of the organizational structure, verify that maintenance department organization, maintenance systems and results of maintenance work are effective and appropriate for achieving the prescribed quality objectives of maintenance.
- The Organization staff are sufficiently qualified and trained to carry out all tasks.
- All procedures are adequate for the respective tasks and respected by the staff.
- Maintenance data and documents are available, updated and accessible to the authorized staff, ensure that all maintenance activities are performed within scope of work.
- Monitor compliance with national civil aviation regulations, ECAA requirements and the Maintenance Procedures of the AMO.
- Evaluate the need for improvements or corrective actions to all maintenance procedures to ensure that they are in compliance with ECAR.

Chief Inspector and Quality Manager Incorporation with nominated auditors is to perform a surveillance inspection over the whole Technical Department to measure the results achieved by production section by sampling, auditing, analyzing and by these means shall ensure that the total system established for maintaining Airworthiness is functioning as intended (Appendix B).

Therefore, the Chief Inspector and Quality Manager shall perform a Quality Assurance Surveillance and Planned Audit Program.

Refer to Corporate Manual chapter 3

6.3 Quality Audit of organization Procedures**Reference:** ECAR 145.29**Responsibility:**

Chief Inspector and Quality Manager.

Technical Auditor

6.3.1 General

A quality Audit program that provides for the internal and external auditing and evaluation of the management system, and of operations and maintenance functions, to ensure the organization is:

- i. Complying with applicable regulations (ECAA) and standards of Nesma airlines.
- ii. Monitor and assess maintenance and operational experience with respect to continuing airworthiness of Nesma Airlines Aircraft, as prescribed by ECAA.
- iii. Satisfying stated maintenance operational needs.
- iv. Identifying undesirable conditions and areas requiring improvement.
- v. To evaluate the compatibility and alignment of the management system objectives with the management system policy and overall organizational objectives
- vi. Identifying hazards in maintenance operations
- vii. Assessing the effectiveness of safety risk control.

A quality assurance program serves to monitor, evaluate and continually improve operational safety and security performance, which are elements of the safety and security Assurance components of the SMS framework.

Information gained from quality assurance audits can be used in the management of operational risk. Additionally, the quality assurance program structured to serve as a safety performance monitoring and measuring activity in an SMS, this could be shown in the safety and quality department structure and responsibilities.

The quality assurance program designed as a combination of centralized audit program, and an individual audit program in maintenance department in addition to audits done by operational departments on contracted service providers this permits flexibility in the implementation of the quality assurance program

Refer to Corporate Manual chapter 3.1

6.3.2 The audit program includes:

- ~ Audit initiation, including scope and objectives
- ~ Planning and preparation, including audit plan and checklist development.
- ~ Observation and gathering of evidence.
- ~ Analysis, findings, actions.
- ~ Reporting and audit summary.
- ~ Follow-up and close out.

6.3.3 Responsibility:

The Chief Inspector and Quality Manager is appointed to oversee the implementation of the activities and processes associated with the quality program and have direct lines of communication to senior management to ensure the efficient reporting of safety and security issues, and to ensure such issues are appropriately addressed.

Quality system is completely independent, and the Chief Inspector and Quality Manager reports directly to the accountable manager.

Quality audits will cover the whole Part 145 subjects in addition to:

- ~ Administrative and supervisory maintenance activities including contracted work.
- ~ Performance of maintenance on aircraft systems including on-wing engines and components.
- ~ Adequacy of equipment and facilities
- ~ Protections and proper handling of the parts and material inventory.

6.3.4 Executers:

Chief Inspector and Quality Manager to assure that all the members of the auditing team are familiar with the quality program, and they are aware of the significant problem areas by making available for them the reports/findings /corrective actions from the historical files.

Audit will be accomplished either by a single auditor or auditing team according to the scope of the auditing and the size of the auditee.

Auditor / auditing team assigned by Chief Inspector and Quality Manager.

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Issue Date.: 01 MAR 22

Revision No.: 00
Revision Date.: 01 MAR 22

6.3.5 Planning of the audit:

Planning for the company's quality assurance program covering all activities in any locations will be every six months; the number of times to audit any activity depends on the degree of importance and frequency of non-conformity; audit be scheduled or unscheduled, the periods that suggested to plan for the annual implementation of audit program. See GMM Appendix B.

6.3.5.1 Scheduled audit:

Chief Inspector and Quality Manager shall approve the quality department's issued annual audit plan on form F 206-18 during the month of July of each year for the planning of annual audit for the following year that the plan includes an audit of all activities of the company taking into account the following:

- Results of previous audit.
- Degree of importance of the activity.
- Any inputs received.
- compliance with regulatory requirements and Nesma airlines standards

The audits scheduled is reviewed by the Chief Inspector and Quality Manager and approved by accountable manger.

Any change from this schedule must be approved by the Chief Inspector and Quality Manager and must be timely communicated officially to all concerned organization.

6.3.5.2 Unscheduled audit:

Quality program carried out outside the annual plan in the event of any change in the quality management system or the presence of important recommendations and the discovery of an urgent or non-conformity; Unscheduled audit carried out

6.3.5.3 The opening meeting:

The meeting at the beginning of the on-site assessment phase of the Audit that permits the Audit Team to discuss with the auditee the Audit Program and other arrangements, activities and information relevant to the conduct of the Audit.

6.3.5.4 The closing meeting:

The formal meeting at the conclusion of the on-site assessment phase of an Audit that permits the Audit team to discuss with the auditee information relative to Findings and Observations, the Corrective Action Plan form F206-22 and other subjects relevant to the audit process

6.3.6 PROCEDURE:**6.3.6. 1 Preparation of the audit**

-Prepare the audit documents: (Audit checklist F206-17, Corrective action request F206-23, Audit report form F206-20, Corrective Action Plan (form F206-22) - Audits will be conducted according to Annual audit plan F206-18

-The auditor shall prepare and issue of the audit checklists that form F206-17 will be used during the audits for different activities.

A. checklists

-The checklist shall be used for conducting the audit.

-The auditor is not limited by the items on the check list; but he has the authority and the obligation to investigate anything that would affect aircraft safety, Airworthiness or legality.

-The check list developed must verify the contractor /subcontractor compliance with applicable regulations and quality standards including the contractor /subcontractor's own quality manual.

-The auditor shall physically verify that all operations are in accordance with these requirements.

- Audit checklists that will be used during the audits shall be sent to the contractor at least three days before the date of audit

B. Observation and gathering of evidence; Analysis, findings, actions.

- Auditors prepare for an audit of a particular area of operations by:

~Conducting research into any relevant incidents or irregularities that may have occurred.

~ Reviewing reports from previous audits.

- Opening meeting

-The auditor will implement of the audit to cover all activities by the Auditor in accordance with the checklist-If more than one auditor is conducting the audit, all finding must be grouped and accepted as such by the team leader, who decides also the importance level of the finding.

-In case of any non-conformity the auditor recording the finding with witnessing in the corrective action request form F206-22 and Audit report form F206-20. using these forms and filling all the requested data in the forms will ensure that the results from audits conducted will have:

- i) Identification of root cause(s);
- ii) Development of accepted corrective actions for findings.
- iii) Implementation of the corrective actions in operational area(s);
- iv) Evaluation of corrective action to determine effectiveness.

- Audit Report would accurately present the record of audits or evaluations conducted, to include:

~Audit date(s).

~Findings and observations.

~Corrective action(s) implemented.

~Current conformance status.

The categories of findings (non-conformity) will be as follows:

Cat (III) Finding level 3 - Major nonconformity (item of the standard has not been implemented and have direct reflection on safety).

Cat (II) Finding level 2: Significant nonconformity (item of the standard has implemented but with deviation).

Cat (I) Finding level 1 - Minor nonconformity with item from standard is implemented but with observation.

- CAT III & CAT II findings shall be re-audited to ensure that corrective & preventive actions are adequate & implemented. The re-audited date shall be set after considering the implementation date of the proposed corrective actions; it may be done during the next audit.

- The auditor and responsible personnel from the audited area have a comprehensive discussion and reach agreement on the findings and corresponding corrective actions. Clear

procedures may be established to resolve any disagreement between the auditor and audited area.

- Obtain agreement on the due date for corrective action on the audit findings.
- Discuss with the responsible personnel from the audited area his status as to meet the requirements, i.e., he does/or does not meet the standard,
- When the audit is completed, the auditor will submit audit report of the findings to the company's representative.
- Closing meeting

6.3.6.2 Follow up the implementation of corrective actions:

- All action items require follow-up to ensure closeout within an appropriate period of time
- Chief Inspector and Quality Manager shall follow up the implementation of corrective actions and ensures the efficiency of the implementation, effectiveness.
- In case of failure to implement corrective actions within the time frame it is necessary to use corrective action plan (CAP) form F206-22 to identify the specific date of the last final to complete the corrective action request. The date for the follow up of the CAP (not to exceed three months) will be recorded in the audit plan to ensure that the corrective action will be followed up.
- The Chief Inspector and Quality Manager shall comply with the retention of all records and internal audits in accordance with the control records.

Forms: F206-17, F206-18, F206-20, F206-22 and F206-23 in addition to IMX forms

Refer to Corporate Manual chapter 3

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6.4 Quality Audit Of Aircraft

Reference: ECAR121.365, 121.369, 121.370& 145.29

Responsibility:

Accountable Executive

Chief Inspector and Quality Manager.

6.4.1 General

- Quality Audit in this subpart is a product audit on an aircraft / aircraft component (workshop) that has successfully undergone testing, inspection, preventive Maintenance and certified for release to service.
- Product audit means witnessing relevant testing, performing, visual inspection & review of associated documentation. Product audit does not involve repeated disassembly or in process testing or maintenance activity unless the product audit identifies findings requiring such action.
- General rules for audit, audit scheduling, carrying out audit, coordinating quality audit report, correction measures and evaluation quality audits and reporting will be performed as described in 6.3 quality audit of organization procedures.

6.4.2 Audit of Aircraft, Hangar & Support Facilities

Chief Inspector and Quality Manager is responsible for assuring the compliance with the following:

- ~ Adequacy and up keeping of facilities.
- ~ Adequacy and serviceability of ground support equipment.
- ~ Serviceability and calibration of special tools and test equipment.
- ~ Availability of skilled and qualified manpower to perform assigned work.
- ~ Availability of manufacturer technical data and process sheets needed to perform maintenance tasks, repairs, overhauls, tests and other shop work.
- ~ Existence and sufficiency of personnel records concerning adequacy, qualifications, authorization and training.
- ~ Adequacy of all maintenance activities paperwork / documentations.
- ~ Release to service is properly performed.

Form No F 206-20 "Quality audit Report and Corrective & Preventive Action request" will be used for the product audit reporting.

6.4.3 Response Time Scale

The relevant area person in charge shall respond within two days from the audit date for Cat III finding and within five working days from the report issue date for Cat II.

6.4.4 Audit Recording

- All audit documents will be kept in the audit department for 12 months.

6.4.5 Used Forms

- Form No. F 206-20: Quality Audit Report.

Check list pages 14, 18 and 19 in appendix B in GMM.

6.5. Quality Audit Remedial

Reference: ECAR121.365, 121.369, 121.370& 145.29

Responsibility:

Accountable Executive

Chief Inspector and Quality Manager.

6.5.1 General

Findings and discrepancies noted during quality assurance audit activities are dispatched to the head of the audited organization on Form No. F206-20 "Quality Audit Report". The report is uniquely numbered for identification purposes & includes the discrepancy, objective evidence found during the audit, date of the report & discrepancy number.

6.5.3 Remedial Corrective Action Follow up:

For CAT III & CAT II categories, the audited organizations are responsible to respond to the quality audit report within:

- ~ For CAT III immediate action will be taken and the response with preventive action must be submitted within 2days.
- ~ For CAT II:
 - A plan for the corrective and the preventive action is to be provided within 5days.
 - The plan implementation may take 2weeksto3months upon agreement between QA and auditee.
- If no response is received during the above-mentioned period; Chief Inspector and Quality Manager shall inform the Chief Inspector and Quality Manager to issue a reminder to the head of the concerned organization unit with a copy to the accountable manager.

• Response from Auditee:

The audited organization unit must respond to the discrepancies recorded on Form No. F206-20 Corrective & Preventive Action.

• Review of the Response:

Chief Inspector and Quality Manager will follow up then log the receipt of the response & forward it to the Chief Inspector and Quality Manager for review. CAT III & CAT II findings shall be re-audited to ensure that corrective & preventive actions are adequate & implemented. The re-audit date shall be set after considering the implementation date of the proposed corrective actions. Chief Inspector and Quality Manager is responsible to specify his comment indicating either accepted, rejected, open or close. He may indicate closed pending re audit & the re-audit date will be determined by audit scheduling section & the auditee will be notified. If the review of the response or the re-audit result is unacceptable, Chief Inspector and Quality Manager will inform in writing the head of the audited organization an Audit Notification, an additional time is provided for response & implementation.

• Closure of discrepancy (finding):

Only the accepted response & implementation will be closed. Chief Inspector and Quality Manager

will sign off the quality audit report & record the date. The status of the findings is reported to the Chief Inspector and Quality Manager & the Accountable Manager on 3 months basis. The acceptable closed findings are kept for 2 years at audit department.

6.5.4 Quality Review by Management

- A quality review by management is held twice a year, the objective of this meeting is to address quality matters arisen since the previous meeting & monitor the progress of previous meetings decisions / recommended actions.
 - ~ The prime objective of the quality review meeting is to review all Nesma Airlines activities to ensure the continuing effectiveness and improvement of the overall quality system within Nesma Airlines.
 - ~ Meeting will address quality matters which arisen since the previous meeting and monitor progress / resolution of previous meeting's decision / recommendations.
 - ~ Chief Inspector and Quality Manager shall convene such meetings, and advise attendees of the agenda in advance. Quality review by management meeting is attended by directors of all technical directorates and headed by the Accountable Manager or his deputy.
- topics of the quality review by management meeting will contain (but not limited to) the following:
 - ~ Follow up action from previous meeting.
 - ~ Results of internal and external audits.
 - ~ Non-conformance reports and status of corrective actions taken.
 - ~ Organizational unit process performance and product conformity.
 - ~ Planned changes that could affect quality matters.
 - ~ Recommendation for improvement (system, procedure, organizations ...etc).
 - ~ Safety issues investigations / occurrence reports.
 - ~ Quality planning for next quality review by management meeting.

6.5.5 Records

Quality review minutes of meeting will be kept for 12 months.

6.5.6 Used Forms

- Form No. F206-20, F206-22 and F206-23

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6.6. Quality Audit Personnel

Reference: ECAR 145.13& 145.31

Responsibility:

Chief Inspector and Quality Manager.

6.6.1 General

Nesma Airlines shall ensure functions related to the maintenance operations quality assurance program are Performed by qualified personnel Refer to General Maintenance Manual chapter 2

- Nesma Airlines primary quality objective is, and will always be, the safety of the aircraft and the components to be maintained. Reliability, efficiency, and productivity are other targets to be constantly reviewed and continuously developed for customers benefit.
- The quality system helps achieving the quality objective. It takes account of national and international rules, regulations and requirements to avoid errors, improve all services, and increase resultant cost benefits.
- To achieve our aims, Nesma Airlines will provide necessary premises, tools and equipment, and qualified personnel as a prerequisite for the work in preparation of the services to be offered.
- All personnel are adequately trained and have the necessary experience to fulfill the assigned task before an assignment is made and the proper procedures of authorization shall be followed.
- In order to assure adherence to regulations and GMM, auditors are to be assigned in an adequate number to all activities; they will fulfill the regulations and procedure supervision.

6.6.2 Management Procedures of the Quality System Personnel

- The Accountable Manager is responsible to assign a Chief Inspector and Quality Manager who will be in direct contact with him.
- The Chief Inspector and Quality Manager is responsible of the supervision of the maintenance system and therefore, to assign an Audit Manager and Quality Auditors (in sufficient number to supervise all maintenance activity) who will report to him.
- Nesma Airlines policy is not to subcontract the Quality Audit function to any organization or to a person(s) on part time basis with the agreement of the competent authority.
- The Chief Inspector and Quality Manager is responsible to set up an audit program, which will be conducted. The audit program compares present procedures with established company policies and procedures. This program is a part of continuous airworthiness maintenance program.

6.6.2.1 Quality Auditors Responsibilities

Refer to General Maintenance Manual chapter 2

6.6.2.2 Quality Auditors Qualifications

Refer to General Maintenance Manual

chapter 2 Additional Qualifications:

- ~ Satisfactorily completed the following courses:
 - A course on the effect of human factor and human performance limitations in maintenance
 - Course on GMM including responsibilities and privileges of the quality auditors
 - Course on PART 145 and the related

parts. Non dedicated Quality Auditors

- In case there is no quality employees designated to perform an audit Chief Inspector and Quality Manager will nominate candidates to perform this audit after approval from Chief Inspector and Quality Manager.
- Non-dedicated auditors must have the additional qualifications of the permanent auditor.
- Non-dedicated auditor is prohibited to share in the maintenance tasks, which he assigned to audit.

6.6.2.2 Assessment of Auditors Skills

The Quality Audit engineers performance is continuously assessed by the Chief Inspector and Quality Manager and Audit manager based on:

- ~ The auditor ability to discover and categorize the discrepancies in any organizational unit.
- ~ The auditor ability to support the organizational unit by the corrective actions to be done.
- ~ The auditor ability to follow up the guidelines of auditing process.
- ~ The spirit of the audit to assist the organizational units to comply with PART 145 via GMM must be fully understandable to the auditor.

6.6.2.3 Evaluation of the Quality System workload

- The Chief Inspector and Quality Manager is responsible to evaluate the quality audit workload against the appropriate available resource by reviewing every 6 months the quality audit program with respect to the executed audit and determine the need to have extra auditors or not.
- In case there is no quality employees designated to perform a production audit on aircraft "related to GMM" Chief Inspector and Quality Manager will nominate candidates to perform this audit after approval from Chief Inspector and Quality Manager.
- Non-dedicated auditor is prohibited to share in the maintenance tasks, which he assigned to audit.
- Those persons must have the additional qualifications of the permanent auditor.

6.6.3 List of Nesma airlines auditors:

Refer to NMA Quality Dept - auditor List available at Chief inspector and quality manager

Nesma Auditors are allowed to perform service provider audits only, all internal audits within technical department done by Chief inspector and quality manager

6.7. Required Inspection Items (R.I.I.)

Reference: ECAR121.367, 121.369, 121.371

Responsibility:

Chief Inspector and Quality Manager.

6.7.1. GENERAL

Required Inspection Items:

Items have been designated by Nesma airlines as "Required Inspection Items (RII's)". That could result in a failure, malfunction or defect, endangering the safe operations of the aircraft if not performed, or if improper parts or materials are used.

Nesma airlines is designating, training and maintaining a list of personnel authorized to perform RII inspections and to ensure these RII personnel are under the control of the Chief Inspector and Quality Manager while performing RII inspections.

6.7.2. POLICY

- A. Required Inspection Items will include, in addition to the items listed in this section, all aircraft major repairs and major alterations.
- B. RII Designees may perform RII inspection after getting authority from the Chief Inspector and Quality Manager.
- C. certifying staff approval identifies each person has receiving RII authorization, describing the extent of his / her responsibilities, authorities and limitations.
- D. Chief Inspector and Quality Manager shall designate persons, who have been properly trained, qualified and authorized to perform required inspections.
- E. RII Designees will be under the direct control of the Chief Inspector and Quality Manager Department when
 - performing a required inspection.
- F. No person may perform a required inspection if he/she has performed any portion of the work required to inspect.
- G. All unit/component changes requiring an RII will be functionally checked in accordance with applicable maintenance manual references.
- H. Decisions made by a RII Designee regarding a required inspection item cannot be countermanded by anyone
 - other than Chief Inspector and Quality Manager.

6.7.2.1 list of personnel authorized to perform RII inspections:

Refer to NMA Quality Dept - RII List available at Chief inspector and quality manager.

6.7.3 RII Listing:

The following items require (RII):

ATA	REQUIRED INSPECTION ITEM
05	Conditional Inspections Airframe Vibration Bird Strike Blown or flat spotted tires Brake seizure Cabin de-pressurization Engine and strut damage Exceeding design speed Exceeding flap down speed Exceeding maximum nose gear towing Angle Exceeding cabin pressure leakage Hard Landing Hot air duct rupture Hot brakes Landing with deflated nose strut Lightning strike Severe turbulence Strut overheat light Tire tread loss or tire burst
21	Air Conditioning Pressurization test
23	Communication Flight deck communications
24	Electrical Wiring (repairs after extensive damage)
25	Equipment Automatically deployed life raft or escape slide installation
27	Flight Controls
27-10	Aileron installation Aileron tab installation Control system rigging Power control unit installation Balance Panel installation

27-20	Rudder	Rudder installation Control system rigging Power control unit installation
27-30	Elevator	Elevator installation Control system rigging Power control unit installation Balance panel installation
27-40	Horizontal Stabilizer system	Stabilizer installation Control system rigging Jackscrew/gearbox installation
		27-50 Trailing Edge Flaps & L.E Flaps, Slats:
		Flap installation Control system rigging Hydraulic actuators
28	Fuel	Fuel Tanks repair
30	Landing Gear	Main Landing gear installation
32-10		Nose Landing gear installation
32-20		Extension/ Retraction system
32-30		Actuator installation Control system rigging Sequence / selector valve Unlock / down-lock assy installation Emergency extension system
33	Lights	Interior emergency lighting system
34	Navigation	Pitot System Compass Swing
51,53	Structure - General	Note: Major repairs, alterations, or installations of airplane primary structure are Required Inspections.
54		
71	Power Plant	Power Plant installation Accessory drive gear box installation Engine Control Thrust Reverser (T/R)

Critical Design Configuration Control Limitation which recommended by manufacture.

6.8 Supplier Evaluation Procedures

Reference: ECAR145.29

Responsibility:

Accountable Executive

Chief Inspector and Quality Manager.

6.8.1. General

Suppliers and Contractors are selected as per the following criteria's:

1. Product quality and conformity to the type or production certificate, production specifications, to technical standard order or other specifications defined by ECAA approved technical data and Delivery of authorized release certificate/airworthiness approval tag or certificate of conformity to Approved data.
2. Suppliers/contractors ECAR 145-approval and maintenance capability for outside contracted Components. Term of delivery, availability.
3. Price, discount, conditions of payment and warranty.
4. Suppliers/contractors reliability.
5. If it appears that the level of quality is insufficient, the Chief Inspector and Quality Manager contacts the Suppliers and proceeds to an audit.

Supplier List:

Supplier lists refer to NMA Supplier & contractor list available at Chief Inspector and Quality Manager and Technical Development Manager.

6.9. Quality Audit Of Suppliers/Contractors**Reference:** ECAR145.29**Responsibility:**

Accountable Executive

Chief Inspector and Quality Manager.

Procedure :(REFERENCE: Audit procedure in 63)

1. If it appears that the level of quality is insufficient, the Chief Inspector and Quality Manager & Quality Control contacts the Suppliers Chief Inspector and Quality Manager and proceeds to an audit.
2. The audit for Contracting repeating every 24 months.
3. Corrective action may consist in requesting improvements from the supplier, making appropriate notes in the supplier's list and by advising the Stockroom personnel for a closer survey. In case of repetition, the responsible person forbids any further purchase from this supplier and informs each other. In very important cases ECAA must be informed.
4. Nesma Airlines shall ensure each contracted AMO that perform maintenance for Nesma Airlines has a process to report immediately report any defects, failure, malfunction and any un-airworthy condition as specified on Section 6.14
5. For any defects raised during operation out of Nesma station all capability, Nesma should arrange for maintenance of aircraft or aircraft components for which its approved another organization that is under the quality control of the approved AMO (ECAR 145.37)
6. For detailed sections for this auditing see check list in appendix B in GMM.
7. Due to unusual condition or critical situation the subcontractor / Supplier will do the audit by itself (Online).

6.9.1 Contractor List:

Contractor list refer to NMA Supplier & contractor list available at Chief Inspector and Quality Manager and Technical Development Manager.

6.10. Calibration Of Tools And Equipment

Reference: ECAR 121& 145.23

Responsibility:

Chief Inspector and Quality Manager.

Storekeeper

6.10.1. General

- Tools and equipment are the tooling necessary to measure or calibrate a component or equipment to an approved standard.
- The certificated laboratories are responsible for the policy of calibration and inspection of all measurement tools and equipment.
- Documents established by Manufacturer define methods and procedures to be used for the calibration and the periodic inspection of measurement tools and equipment.
- The calibration work is performed by the outside ECAA approved laboratories.
- Calibration records are kept by the Sore Keeper.

6.10.2 Certificated laboratories perform the calibration work.

Nesma air lines shall ensure each maintenance organization that performs maintenance On Nesma air lines A/C's has procedures to control and document the calibration and records of all tools, including personnel- owned tools, and preventing out-of-service and due-for calibration tools and equipment from being used.

Calibration certificate is issued by certified laboratories should include:

- calibration date.
- identity of individual or vendor that performed calibration or check.
- calibration due date.
- a calibration certificate for each item calibrated by an outside agency.
- details of adjustments and repairs.
- repair history of the tool.
- the part number and serial number of the standard used to perform the calibration.

6.10.3. Calibration Of Tools And Equipment

1. Identification

- Each tool or equipment is identified with a Serial Number as necessary.
- A list identifies that equipment calibrated / inspected or not. It precise the calibration or inspection intervals for each individual item and the entity in charge of the inspection or calibration.
- An identification sticker gives the due date for recalibration or inspection or informs users that Calibration Is Not Required.
- Chief Inspector and Quality Manager shall follow-up Calibration of tools and Equipment via Calibration due date alarm report FORM NO. F206-11

Calibration

2. Calibration is performed in accordance with the manufacturer's recommendation period or ECAA requirements.

3. Personal instruments

Use of any personal instrument to perform measurement tasks on aircraft or components is totally forbidden.

FORM NO. F 206-11

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6.11. Test Flight Procedure

Reference Documents

Certificate of fitness for test flight.

Responsibility:

Chief Inspector and Quality Manager.

Director of maintenance

6.11.1. General

This procedure defines conditions requiring test flight, test program establishment & approval preparation and performance procedure.

6.11.2. Test flight can be performed on flowing:

- After major check if the manufacturer documents required test flight
- On request of ECAA.
- After maintenance required by AMO "Nesma AMO or Contracted AMO" for varication a successful defect rectification or to assist with Fault Isolation or trouble shooting.
- After any major maintenance performed following an accident.
- After modifications and corrective work on important items the function of which may be influenced by flight environments and cannot be simulated by ground checks and measurements
- After modification and corrective work on item. The condition of which may affect the performance or handling characteristics of the aircraft and for which the optimum can only be established in flight.

6.11.3. Reduced test flight

1. Before any test flight, it must be assured through investigation, inspection, corrective work or ground testing, as applicable that any complained condition and function has been as far as possible corrected. Flight Test Fitness Certificate shall issue for test flight, This Certificate will be directed to ECAA for approval.

2. After getting the required approval the planning has to arrange with other department the schedule for the flight test, the technical personnel flying on board the A/C subject to flight test will be nominated by Director of maintenance and Chief Inspector and Quality Manager. After conducting the flight test, a report will be issued by the test pilot on the official Check List.

This form must be received by Chief Inspector and Quality Manager as required a copy of this form and the corrective action taken will be submitted to ECAA through Chief Inspector and Quality Manager.

6.12. Rectification Of Defects Arising During Base Maintenance

6.12.1. General

The Maintenance Department is responsible for ensuring that the whole maintenance, including any defect Rectification carried out during maintenance, is carried out according to the relevant maintenance procedures. This procedure describes the process for rectification of defects arising during all scheduled and unscheduled maintenance tasks as well as disposal of non-rectified defects.

The principle is as follow:

- Defect identification
- Defect investigation
- Defect rectification

6.12.2. Administration of Defect

1. Defect

Identification

Maintenance personnel on Non-Routine defect cards "NRC" record defects during line maintenance.

NRCs are serialized. An index of these cards shall be added to the check bill of Work. Once a defect card is raised it shall not be destroyed or replaced.

An unserviceable tag identifies defective components.

2. Defect

Investigation

When a defect is discovered or has occurred during the maintenance task, a trouble-shooting task is carried out. When the defect found is considered to be a serious/hazard to flight safety, it is the responsibility of the Head of Quality Systems to inform the ECAA.

3. Defect

Rectification

After determination of the corrective action the defect rectification is performed by Maintenance personnel and recorded in the Non Routine Card.

At the completion of base check the whole work package is collected, including all Non Routine Cards.

In case of the defect still open within Aircraft MEL, certifying staff shall record the defect to Technical Log Book and DDL.

The whole work package returns to Chief Inspector and Quality Manager to review the performed maintenance work, the open items and defects. Then the work package rerouted to the planning Department for updating records and rescheduling the open defects. Finally the work package is passed to Technical Records for filling

6.13. Technical Record Control**Reference:** ECAR 121.376.**Responsibility:**

Chief Inspector and Quality Manager

Supervisor of Records

General.

The purpose of record keeping, and control is to control of operational records to ensure the content and retention of such records is in accordance with requirements of ECAA, as applicable, and to ensure operational records are subjected to standardized processes for:

- i) Identification.
- ii) Retention and storage.
- iii) Accessibility and retrieval.
- iv) Legibility.
- v) Protection and security.
- vi) Maintenance.
- vii) Archiving, transfer, Disposal and/or deletion

Maintaining records in electronic files is a reliable and efficient means of short and long-term storage.

The integrity of this type of record-keeping system is ensured through secure, safe storage and backup systems.

- all records associated with Nesma Airlines operations, which includes personnel training records, and also includes any other records that document the fulfillment of operational requirements (e.g., aircraft maintenance).
- Nesma air lines maintenance record is a combination of paper and computer system.
- The Paper system use materials, which can withstand normal handling and filing. The records are legible throughout the required retention period.
- In an electronic records system, record files are managed and controlled (i.e. created, maintained, identified, updated, accessed, and deleted) using computer systems, programs and displays (e.g. a web-based system).
- To preclude the loss of records due to hardware or software failures, an electronic system is programmed to create backup files on a schedule that ensures records are never lost. Typically, an electronic system provides for file backup on a daily basis

Record management.

- All Nesma Airlines Technical records to be recorded on the assigned forms, these records are issued and modified according to the activities & procedures operational requirements. the forms identified by form number, title, issue number, issue date. This will be as shown below:

In Header:

Nesma Airlines نسماء للطيران	Form Title	Technical Department
---------------------------------	------------	----------------------

In Footer:

Issue No.:

Issue Date:

Form No.: 20X-XX

Technical Department forms/Records numbering will be according the following table:

No.	Section	Form number
1	Planning and Engineering	F203-XX
2	Maintenance	F204-XX
3	Store	F205-XX
4	Quality	F206-XX

- Records / files shall be subjected to reviewing at least once a year for checking updating requirements. these updates will be reflected by changing the issue number and the issue date of the concerned form.
- All Records are reviewed for legibility, update and have signature.
- Records / files to be maintained for a retention period as listed below in retention table.
- Disposal of records / files exceed the retention period and have no more retention requirement will be done after coordination between the technical department and the quality department to be disposed through shredding machine for hard copies to through destroying in coordinate with IT department for soft copies.
- Legal status and training records / files shall be kept permanently.
- All records shall have Legibility, updated and have signatures.
- All the records / files will be kept in suitable retention units.
- Nobody is allowed to make any deletion / correction for any statement using erasers or Corrector pen and when there is a need to correct the statement write an X on the statement, then write the required correction and put your signature or stamp beside it, errors that are corrected shall remain readable and identifiable, every department shall comply with the state regulations concerning the procedure of correction or deletion which applied to the records / files used by this department. the specific procedures shall be mentioned in the department's manual.
- -Electronic system data used for the management and control of records shall be backed up regularly with a memory keeping media every 24 hours and a continuous backup system is to be updated daily& shall be stored in a safe place away from the area in which the original computers are located.

Refer to Corporate Manual chapter 2(Documentation and Records)

- All detailed maintenance records with respect to the aircraft and any aircraft component fitted thereto are retained at least for 24 months after the aircraft or aircraft component was released to service.
- The records are / to be stored in a safe way with regard to fire & flood.
- All the following are / to be recorded:
 - (1) The total time and flight cycles, as appropriate, of the aircraft, engines, components, including the current status of all Life Limited Components. These records are retained for at least 12 months after the aircraft has been permanently withdrawn from service.
 - (2) The time and flight cycles as appropriate, since last overhaul of the aircraft or aircraft component subjected to an overhaul life. These records are / to be retained until the aircraft or aircraft component overhaul or inspection has been superseded by another overhaul or inspection as appropriate of equivalent work scope and detail.

- (3) The current aircraft inspection status such that compliance with the approved certificate holder's aircraft maintenance program can be established. These records are / to be retained until the aircraft or aircraft component overhaul or inspection has been superseded by another overhaul or inspection as appropriate of equivalent work scope and detail.
- (4) The current status of airworthiness directives applicable to the aircraft and aircraft components. These records are / to be retained for at least 12 months after the aircraft has been permanently withdrawn from service.
- (5) Details of current modifications and repairs to the aircraft, engines and any other aircraft component vital to flight safety. These records are / to be retaining for at least 12 months after the aircraft has been permanently withdrawn from service.
- (6) details maintenance records to show that all requirements for signing for a maintenance release have been met
- The aircraft technical logs are / to be retained for 24 months after the date of any flight recorded therein.
 - All paperwork is reviewed to ensure the following:
 1. The name of the person performing the work and the person's certificate type and number is listed.
 2. The name of the person approving the work and the person's certificate type and number is listed.
 3. All records are retained at the principal operation base and will be turned to the new owner in case a product or appliance is sold.
 - Monitoring flight hours, landings and cycles of all company aircraft and initiating due maintenance at the right time in accordance with the Approved Maintenance Program and the Manufacturer's instructions (system for tracking hours, cycles, and calendar time for aircraft, engines and life-limited components).
 - Nesma Airlines must ensure applicable aircraft maintenance records for aircraft currently listed on the AOC:
 1. in the event of a temporary change of operator, are made available to the new operator.
 2. In the event of a permanent change of operator, transferred to the new operator
 - Readout Aircraft Recorders Nesma airlines has a maintenance program that ensures the periodic conduct of Operational checks and evaluations of recordings from the Flight Data Recorder (FDR) and Cockpit Voice Recorder (CVR) to ensure the continued serviceability of the recorders.
- When an aircraft becomes involved in an accident or incident, the related flight recorder records and, to the extent possible, the associated flight recorders must be preserved and retained in custody of Egyptian civil aviation pending disposition in accordance with the appropriate investigation.

6.13.1 Record of Work

A detailed record shall be kept of all work performed by Nesma air lines as an ECAA Approved Maintenance Organization. A copy of each work order with all attached supplementary forms will be maintained in the record section. An approved person for work accomplished checks each work record, parts used signature of licensed engineer and inspectors who performed maintenance.

Records are maintained per the requirements of ECAR 145.

6.13.2. Aircraft Technical Logbook.

1 - It is maintained for Aircraft operations; the aircraft Technical Log includes the following:

- Aircraft nationality and registration.
- Aircraft type.
- Date.
- Names of crewmembers
- Duty assignments of crewmembers.
- Place of departure.
- place of arrival.
- time of departure.
- time of arrival.
- hours of flight.
- Flight number
- CRS authorized
- Engine take off rating
- Fuel QTY.
- Engine oil record
- IDG oil record
- Hydraulic oil record
- Pilot report
- Signature of person in charge.
- Details of any defects.

2 - That entries in the aircraft logbook are current and cannot be erased. Errors that are corrected shall remain readable and identifiable.

3- Ensure that the completed aircraft logbook pages are retained to provide a continuous record of the last six months of operations.

4- Nesma airlines has a procedure to maintain fuel and oil records, as required by ECAA.

5- Nesma air lines ensure that fuel and oil records are made available to appropriate department for the purpose of calculating performance correction and retained for a minimum period of

Three months.

Aircraft Logbooks in details

The A/C technical logbooks consist of:

- Technical Log
- Deferred Detect Log
- Engine Logbook
- APU Logbook
- A/C Technical Logbook stored in the cockpit.
Technical Log Defects must be rectified by authorized engineer.

By rectifying the defect, the engineer records:

- Work is performed in accordance with the AMM.
- Work is performed in an airworthy manner.
- Parts and materials used confirm to airworthiness requirements.
- No known condition exists that would make the aircraft unsafe for flight.

Recording Action to rectify a Defect:

- The action taken to clear any defect will be recorded in the rectification column.
- The description of airworthiness should be clear by naming parts replaced and their position. Any checks or test performed to verify correct operation of the repaired system should be recorded.
- Items that are allowed to be inoperative by the MEL or missing by the CDL must be recorded in the DDL.
- The item will be recorded in the DDL page exactly as written in the Technical Log.
- In the rectification field of the technical log a defect deferral to be made.
- The status of the discrepant part or system must be recorded by a placard affixed in the cockpit clear to the pilot in command and other appropriate crew members.

Clearing items in the DDL

- An authorized Engineer will record the defect rectification in DDL page.
- The Engineer will sign the DDL page.
- A note on the current technical log page that a deferred defect been cleared.
- All relative placards to be removed.

6.13.3 Retention table.

Nesma airlines ensure the following maintenance records are maintained:

Item	Retained
total time and flight cycles including the current status of all life limited components	12 Months
Current status of airworthiness directives applicable to the aircraft and aircraft components	12 Months
Details of current modifications and repairs to the aircraft, engines and any other aircraft component vital to flight safety.	12 Months
The time and flight cycles as appropriate, since last overhaul of the aircraft or aircraft component subjected to an overhaul life;	90 days
The current aircraft inspection status such that compliance with the approved certificate holder's aircraft maintenance program can be	90 days
All detailed maintenance records in respect of the aircraft and any aircraft component	24 months
certificate holder's aircraft technical log must be retained	24 months
Audit intervals	Only last Audit will be

- Refer to Corporate Manual chapter 2(Documentation and Records)

6.14. Reporting Of Defects to the ECAA/ Manufacturer

Reference: ECAR 39.13

Responsibility:

Chief Inspector and Quality Manager.

6.14.1. Introduction

This procedure aims for reporting of serious defects to Authority or Manufacturer when discovered. The Nesma air lines (A.M.O) shall report defect within three days.

Nesma air lines have a procedure for reporting defects or unairworthy conditions to ECAA, beside all letters between Nesma air lines and manufacture.

Nesma air lines have a procedure for reporting any other defect, failure or malfunction, which, in the opinion of a reporter, constitutes a reportable service difficulty to ECAA and the OEM.(high failure rate for a specific component, incorrect assembly of components or use of incorrect oil, hydraulic fluid or other essential fluid)

6.14.2. Defects Reporting Policy

The different defects, which may be encountered and shall be reported, are (but not limited to): -

- a- Serious cracks, permanent deformation, burning or serious corrosion of structure found during scheduled maintenance of the aircraft or engine.
- b- Failure of any emergency system during scheduled testing.
- c- Any specific maintenance finding required by AD requirement

6.14.3. Defects Reporting Process

- 1- The Maintenance Staff concerned shall report in detail the deficiency encountered to the Quality Department. A defect investigation report form is issued:
 - A. The Quality Department will initiate the investigation with the Engineering Department.
 - B. The engineering department in conjunction with Chief Inspector and Quality Manager will determine the category on defect in accordance with airworthiness criteria:
- 2- In case where the defect is identified as potentially hazard to the aircraft, the Chief Inspector and Quality Manager will inform the Certifying Staff and will transmit a copy of the report to the ECAA within 72 hours from the time the defect.
- 3- The aircraft / aircraft component manufacturer are / to be informed of faults, malfunctions, defects and occurrences identified as "serious defect" via e-mail and saved as records. They are also informed each time the Engineering Department needs a specific Assistance / Support to determine the appropriate corrective action and also inform ECAA.
- 4-In case of major repair required to be performed on A/C Chief Inspector and Quality Manager shall request ECAA approval for such repair.

6.14.4. Mandatory Occurrence Reporting System

The occurrence report is the feedback to ECAA which provides the most efficient data for effective decisions on matters of reliability and airworthiness information on faults, malfunctions, defects and other occurrences which could affect the continuing airworthiness of aircraft

This system is established to support the ECAA in its mandate to faster an Acceptable level of safety

Contents

- 1) A/C type and Serial No.
- 2) A/C Registration Marks
- 3) Operator / owner name
- 4) Date / time of occurrence
- 5) Phase of operations (Flight / ground)
- 6) Nature of Flight
- 7) Flight and weather details
- 8) Description of the occurrence
- 9) Affected system / parts / component info.

The inspector in-charge from ECAA will investigates the A/C on location and makes a Report the Company must submit a letter to notify ECAA that the recommendations are taken care of the following defects or un-airworthy conditions shall report to ECAA and type certificate holder if required:

According to ECAR 39.13:

This system is established to support the ECAA in its mandate to foster an acceptable level of safety. The report should be submitted on the attached form within 72 hours if any of the following occurrences happen:

(a) Occurrences shall be immediately notified to the ECAA by telephone or telex. The report (Refer to the form on the next pages for mandatory occurrence reporting system) shall be submitted within 72 hours if any of the following occurrences happen:

(1) Airworthiness occurrences

- (i) Primary structural failure.
- (ii) Engine structural failure.
- (iii) Control system failure.
- (iv) Aircraft structure that requires major repair.
- (v) Cracks, permanent deterioration or corrosion of aircraft structure, if more than the maximum acceptable to the manufacturer or to the ECAA.
- (vi) Engine(s) removed prematurely because of malfunction, failure or defect.
- (vii) Damage which necessitates repair before further flight.
- (viii) The use of any non-standard procedure by the ground crew to deal with an emergency.
- (ix) Use of incorrect oil, hydraulic fluid or other essential fluids.
- (x) Any other failure, malfunction or defect that may endanger the safe operation of the aircraft.

(2) Operational occurrences

- (i) The declaration an emergency situation
- (ii) The use of any non-standard procedure by the flight crew to deal with an emergency
- (iii) Abandoned take-off, over-running the ends, sides of the runway or go-around producing a hazardous or potentially hazardous situation.
- (iv) Each interruption to a flight, unscheduled change of aircraft enroute, unscheduled stop or diversion from a route caused by known or suspected difficulties or malfunctions
- (v) The use of any non-standard procedure by the crew to deal with an emergency volcanic activity.

(3) Flight Safety Occurrences

- (i) Pressurization system malfunction necessitating a change in flight plan or the use of emergency or stand by oxygen system
- (ii) Fires during flight and related fire warning system is operating properly
- (iii) An engine exhausts system that causes damage during flight to the engine, adjacent structure equipment or component.

- (iv) Fuel or fuel dumping system that affects fuel flow or causes hazardous leakage during flight
- (v) Abnormal landing gear extension or retraction, or un-programmed opening or closing of landing gear doors during flight
- (vi) Engine shutdown during flight due to flame out.
- (vii) Engine shutdown during flight due to foreign object ingestion or icing.
- (viii) Shutdown during flight of more than one engine.
- (ix) Failure in propeller feathering system or ability of the system to control over speed during flight.
- (x) Fuel or fuel dumping system that affects fuel flow or causes hazardous leakage during flight.
- (xi) Abnormal landing gear extension or retraction, or un programmed opening or closing of landing gear doors during flight.
- (xii) Brake system components that result in loss of brake actuating force when the aircraft is in motion on the ground.
- (xiii) An engine exhausts system that causes damage during flight to the engine, adjacent structure, equipment or components.
- (xiv) An aircraft component that causes accumulation or circulation of smoke, vapor, toxic or noxious fumes in the crew compartment or passenger cabin during flight.
- (xv) Engine shutdown during flight when external damage to the engine or aircraft structure occurs.
- (xvi) Each interruption to a flight, unscheduled change of aircraft enroute, unscheduled stop or diversion from a route caused by known or suspected difficulties or malfunctions.
- (xvii) Propeller feathering in flight.
- (xviii) Any part of the aircraft becoming detached in flight.
- (xix) Injury to a passenger as a result of turbulence, the scalding of a number of a cabin staff as a result of faulty design, inadequate servicing or incorrect handling of galley equipment.
- (xx) Precautionary, forced, emergency or heavy landing.
- (xxi) An emergency evacuation of the aircraft.
- (xxii) Inability to relight or restart a serviceable engine.
- (xxiii) Significant leakage of fuel, hydraulic fluid or oil.
- (xxiv) Pressurization system malfunction necessitating a change in flight plan, or the use of emergency or standby oxygen system.
- (xxv) Failure or malfunction of radio or navigational equipment beyond what is allowable in the MEL.
- (xxvi) A complete loss of more than one electrical power generating or hydraulic power system during a given operation of the aircraft.
- (xxvii) A malfunction of emergency equipment.
- (xxviii) Defects causing any abnormal vibration or buffeting.
- (xxix) Engine surging sufficient to cause loss of power or to require subsequent remedial action.
- (xxx) Abandoned take off, over-running the ends, sides of the runway or go-around producing a hazardous or potentially hazardous situation.
- (xxxi) Occurrence of stall warning.
- (xxxii) Poor height keeping while operating through RVSM airspace which displays:
- (xxxiii) Total vertical error equal to or greater than 300ft (90m);
- (xxxiv) Altimeter system error equal to or greater than 245 ft (75 m); and
- (xxxv) Assigned altitude deviation equal to or greater than 300 ft (90 m).
- (xxxvi) Incorrect fuel or cargo loading which endanger the aircraft in flight.
- (xxxvii) Balloon envelope tears in flight.
- (xxxviii) On a multi-engine rotorcraft, loss of drive of one engine.
- (xxxix) Operation of any rotorcraft transmission condition-warning system;
- (xl) Malfunction of any rotorcraft auto stabilization mode; and
- (xli) Fires during flight not protected by a related fire warning system.

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- (xlii) Aircraft components or systems that result in taking emergency actions during flight.
- (xliii) False fire warning during flight.
- (xliv) A complete loss of more than one electrical power generating or hydraulic power system during a given operation of the aircraft.
- (xlv) Pilot incapacitation during aircraft flight Phases.

(4) Airspace occurrences

- (i) Near collision
- (ii) Unauthorized airspace incursion
- (iii) Clearance/instruction deficiency
- (iv) Loss of separation
- (v) Breach of other clearance
- (vi) Flight information deficiency
- (vii) Unauthorized altitude penetration
- (viii) Pilot flight planning deficiency
- (ix) TCAS Alert (RA-TA intruder relative altitude in feet relative position o'clock)

(5) Facility malfunction

- (i) Failure/non availability
- (ii) Excessive bends/roughness
- (iii) Readability deficiency
- (iv) Coverage/intensity deficiency
- (v) False overhead/distance indication
- (vi) Interference
- (vii) Alignment/course deficiency
- (viii) Identification deficiency

(6) Aerodrome occurrences

- (i) Physical surface deficiency
- (ii) Physical obstruction
- (iii) Public protection deficiency
- (iv) Surface marking deficiency
- (v) Equipment/installation deficiency
- (vi) Wildlife incursion
- (vii) Apron management deficiency

(7) Dangerous goods

- (i) Spillage/leakage
- (ii) Fumes/gas/smoke/fire
- (iii) Missing / non declaration

(8) Bird hazard

- (i) Strike
- (ii) Near strike

(9) Accident/incident

In case of aircraft incidents or accidents refer to the minimum requirements mentioned in ECAR Part 801 for reporting and responsibilities. In those cases, similar reporting shall be filed to the ECAA following the same requirements of the requirements of this subpart.

- (b) Each organization established in Egypt shall establish a mandatory reporting system to facilitate the collection of details of occurrences as required in this regulation...
- (c) A list classifying occurrence to be referred to when reporting occurrences is attached to this Regulation. It includes a separate list classifying occurrences applicable to aircraft other than complex

motor-powered aircraft. This list shall be a simplified version of the list referred to in subparagraph (a) and shall, where appropriate, be adapted to the specificities of that branch of aviation.

- (d) The following responsible persons shall report the occurrences to their organizations through the system established in accordance with paragraph 2 or, failing that, through the system established by ECAA:
- (i) The pilot in command or, in cases where the pilot in command is unable to report the occurrence, any other crew member next in the chain of command of an aircraft registered in Egypt or an aircraft registered outside Egypt but used by an operator for which Egypt ensures oversight of operations or an operator established in Egypt.
 - (ii) A person engaged in designing, manufacturing, continuous airworthiness monitoring, maintaining or modifying an aircraft, or any equipment or part thereof, under the oversight of Egypt.
 - (iii) A person who performs a function which requires him or her to be authorized by Egypt as a staff member of an air traffic service provider entrusted with responsibilities related to air navigation services or as a flight information service officer.
 - (iv) A person who performs a function connected with the safety management of an airport.
 - (v) A person who performs a function connected with the installation, modification, maintenance, repair, overhaul, flight-checking or inspection of air navigation facilities for which Egypt ensures the oversight.
 - (vi) A person who performs a function connected with the ground handling of aircraft, including fueling, load sheet preparation, loading, de-icing and towing.
- (e) The persons listed in paragraph (d) shall report occurrences within 72 hours of becoming aware of the occurrence, unless exceptional circumstances prevent this.
- (f) Following notification of an occurrence, any organization established in Egypt which is certified or approved by Civil Aviation Authority shall report to Civil Aviation Authority, the details of occurrences collected in accordance with paragraph (b) of this Item as soon as possible, and in any event no later than 72 hours after becoming aware of the occurrence.

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6.15. Concession Control For Deviation From Organization's Procedures

Reference: ECAR145.29h7

Responsibility:

Chief Inspector and Quality Manager.

6.15.1 General

The main purpose of the General Maintenance Manual is to ensure that all maintenance work conforms to all specified requirements, defined in the GMM, and any other manuals or procedures. Deviations from this manual and the requirements of the Part-145 are subject to the approval of the ECAA.

Procedures.

When deviation from the GMM procedure is required.

- A. The responsible manager shall modify the process/procedure as necessary and submitted to Chief Inspector and Quality Manager
- B. Chief Inspector and Quality Manager shall review the modified process/procedure and discuss the new process/procedures with the responsible manager.
- C. If the modified procedure were accepted by Chief Inspector and Quality Manager, Chief Inspector and Quality Manager shall notify ECAA with new procedure via formal letter within 15 days.

Whenever deviation from Part 145 is required, following procedure must be followed.

- A. Initial application for such an exemption will only be made via the ECAA.
- B. The grant of any such exception will only be made where the ECAA is satisfied that:-
 1. A recognizable need exists.
 2. Compliance with any supplementary conditions the ECAA considers necessary have been made in that particular case.
- C. The Chief Inspector and Quality Manager is responsible for the preparation and presentation of any equivalent safety case to the ECAA for initial consideration.

6.16. Certifying Staff Record

Reference: ECAR145.15

Responsibility:

Accountable Executive

Chief Inspector and Quality Manager.

6.16.1 General

(a) Nesma air lines shall maintain a record of all certifying staff which must include details of the scope of their authorization:

- (1) The following minimum information shall be kept on record in respect of each certifying person:
 - (i) Name.
 - (ii) Date of birth.
 - (iii) Basic training.
 - (iv) Type training.
 - (v) Refreshing training.
 - (vi) Experience.
 - (vii) Qualifications relevant to the approval.
 - (viii) Scope of the authorization.
 - (ix) Date of first issue of the authorization.
 - (x) If appropriate - expire date of the authorization; and
 - (xi) Identification number of the authorization.
- (2) The record may be kept in any format but shall be controlled by the quality system department.
- (3) Persons authorized to access the system shall be maintained at a minimum to ensure that records cannot be altered in an unauthorized manner or that such confidential records become accessible to unauthorized persons.
- (4) The ECAA may investigate the records system for initial and continued approval or when there is a cause to doubt the competence of a particular certifying person; and
- (5) Nesma air lines shall keep the record for at least two years after the certifying person has ceased employment with Nesma air lines or withdrawal of the authorization, whichever is the sooner. In addition, the certifying staff shall be furnished on request with a copy of their record on leaving Nesma airlines

(b) Certifying staff must be provided with evidence of the scope of their authorization:

- (1) The authorization document shall be in a style that makes its scope clear to certifying staff and any authorized person that may require examining the document. Where codes are used to define scope, an interpretation document shall be readily available; and
- (2) Certifying staff are not required to carry the authorization document at all times but shall produce it within a reasonable time of a request from an authorized person. Authorized persons, apart from Quality System Department or Director of maintenance, include the ECAA.

(c) In addition to the records mentioned in items (a) or (b) of this paragraph, the applicant shall maintain a record of:

- (1) His supervisory personnel, including the names of the officials of Nesma air lines that are responsible for his management and the names of his technical supervisors.
- (2) His inspection personnel, including the names of the Chief Inspector and Quality Manager and those inspectors who make final airworthiness determinations before releasing an article to service; and
- (3) The organization shall change the record if any appreciable change in the duties and scope of assignment of any personnel changes.

6.17. Qualification Procedure For Specialized Activities

N/A

6.18. Exemption Process Control**Responsibility:**

Chief Inspector and Quality Manager

Planning Manager

Procedure.

In case of existence of some parameters that Nesma air lines can't perform Maintenance tasks as (non- availability of tools, parts ... etc), Planning Department shall request an approval from FORM NO. F206-8 and forward it for Chief Inspector and Quality Manager for exemption approval

- Exemption shall be granted by Chief Inspector and Quality Manager after ECAA approval.
- Only when the exemption / waiver approval is granted, the certifying staff who is responsible to issue the release to service certificate must reflect the exemption / waiver in the customer's technical log form or Form "Certificate of Release to Service".
- Approved exemption FORM NO. F6-8is handled as a maintenance record; it is kept at the Chief Inspector and Quality Manager

FORMS: FORM NO. F206-8**6.19. Control of Computer Maintenance Records Systems****Reference:** ECAR 145.29e7**6.19.1. Introduction And Administration**

Nesma air lines keep the records either on papers or on electronic format or any combination for both.

6.19.2. Subjects On Computer

The following subjects are recorded on the computer:

1. Aircraft Technical Status.
2. Airworthiness Directive Status.
3. Service Bulletins Status.
4. Engines Disk Sheets.
5. Components Records.
6. Technical Logbook Hours and Cycles Accumulation.
7. Aircraft Checks Indexes.
8. Computerized records kept updated and backed up on company server.

6.20. Continuing Control and Surveillance**Program Reference:** ECAR121.373**Responsibility:**

Chief Inspector and Quality Manager.

Objective:

To determine Nesma air lines Policy for establishing and maintaining a system for Continuing Analysis and Surveillance Program and follow up any deficiency in the maintenance and inspection program.

General:

- A. The system ensures the adequacy of Nesma air lines maintenance program and confirms that the program is properly followed and controlled. ECAR 121.43 allows the ECAA to require revisions to Nesma air lines Maintenance program based on deficiencies or irregularities revealed by the continuing analysis and surveillance system.
- B. Continuing analysis and surveillance program functions:
 1. A continuing analysis and surveillance system has two functions:
 - (a) The “audit function” which includes a follow-up for those components removed, and the teardown report must be a part of the continuing analysis and surveillance program. It must also include examining the administrative and supervisory aspects of the Nesma air lines program (including work done outside of the Nesma air lines basic organization). The audit must ensure that the main base, subbase, line station, and shops operate in accordance with company procedures. The audit function includes such things as:
 - Ensuring that all publications and work forms are current and readily available to the user.
 - Ensuring that major repairs/alterations are classified properly and accomplished with approved data.
 - Ensuring that carryover items and deferred maintenance are properly handled.
 - Ensuring that vendors are properly authorized, qualified, staffed, and equipped to the contractor function according to the Nesma air lines manual.
 - (b) The “performance analysis function” includes daily and long-term monitoring and emergency response related to the performance of affected aircraft systems, including aircraft engines and components. This function includes monitoring such things as:
 - Daily mechanical problems for affected (daily monitoring)
 - Pilot reports complied by air transport association (ATA) code (long-term monitoring)
 - Mechanical interruption summary reports (MIS) (long-term monitoring)
 - Contained engine failures (emergency response)
 - High number unscheduled component removals (long-term monitoring)
 2. The continuing analysis and surveillance program should include a system of data collection and analysis, which is a part of a reliability program.
- C. The continuing analysis and surveillance system also addresses operational matters, such as maintenance schedule, control and accountability of work forms, conformity to technical instruction, and compliance with procedural requirements. Additionally, it examines the adequacy of equipment and facilities, parts protection and inventory, mechanical competency, and shop orderliness.

- D. The Continuing Analysis and Surveillance Program shall monitor any deficiency in the maintenance program and provide for corrective action recommendation generated by deficiencies or regularities disclosed by Continuing Analysis and Surveillance Program which will be reflected as revisions to maintenance program.
- E. The Continuing Analysis and Surveillance Program shall include a feedback system to the Accountable manager to ensure that corrective action are identified and promptly addressed.

PROCEDURES

- A. A continuous internal audit and analysis system that accomplishes the following:
- Evaluates the organization performance
 - Identifies the performance deficiencies
 - Determines and implements corrective actions
 - Determines the effectiveness of corrective actions
 - The complete continuing analysis and surveillance program, ensure that the Program audits and analyzes the following:
 - Aircraft inspections
 - Scheduled maintenance
 - Unscheduled maintenance
 - Aircraft, engines, and appliance repair air and overhaul
 - Maintenance manuals
 - Mechanical reliability reports (MRRs)
 - Mechanical interruption summary reports (MISRs)
 - Vendor facilities and capabilities
 - Maintenance organization staffing
 - Required inspection item program (RIIs)
- B. The Program contains the following:
- An organizational chart that defines the lines of authority
 - Definitions of responsibilities and duties
 - The means by which the information will flow within the operator/ applicants Organization and between any contractor/ vendors and the operator/ applicant
 - Examples of forms or reports that are used
 - Procedures that include a record review covering the following items
 - Accountability for all inspection requirements
 - Routine and non-routine maintenance records
 - Overhaul records
 - Methods of airworthiness directives (ADs) compliance
 - Service bulletin compliance
 - Major repairs and alternation approval data
- C. Nesma air lines implement independent Maintenance reliability program to satisfy the requirements for data collection and analysis to monitor trends and to support the condition monitor process.

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6.21 Maintenance Arrangement with Contractors and Maintenance Contract Review

Reference: ECAR145.29

Responsibility:

Chief Inspector and Quality Manager.

Director of maintenance.

6.21.1 General Requirements

1. Nesma airlines may arrange with other agencies for the performance of any Maintenance, preventive Maintenance or alternation provided those agencies have an approval to perform the work contracted for.
2. Maintenance agencies / vendors used by Nesma airlines may perform only Maintenance for which they are rated. IOSA certification is required for service providers and IOSA standards for maintenance safety and quality are the key factors of Nesma airlines for hiring maintenance service provider.
3. The approved Maintenance agencies used by the company will be inspected periodically and performance monitored by the company's Director of maintenance, Chief Inspector and Quality Manager or a delegate to assure that the facility is adequately equipped to do Maintenance on Nesma air lines aircraft type
4. Chief Inspector and Quality Manager shall ensure each maintenance organization that performs Maintenance for Nesma Airlines has demonstrated compliance with all requirements for an approved maintenance organization acceptable to the ECAA.
5. Nesma Airlines shall ensure each maintenance organization that performs maintenance for Nesma Airlines provides for the use and guidance of relevant maintenance personnel a copy from GMM.
6. Director of maintenance is responsible for contract making and implementation.
7. All Maintenance & required Inspections performed by contracted agencies / vendors must be performed in accordance with Nesma air lines approved Maintenance program, specifies the maintenance requirement and clearly defines the tasks to be performed and complies with the procedures governing maintenance arrangements included in GMM.
8. All contract agencies are required to enter on the appropriate aircraft Maintenance Log, Inspection Form, O/H Form or Repair Tag the necessary information to complete the forms and then, in accordance with Nesma air lines policy, to route the forms to the designated office. This office retains the forms & records and delivers them when requested.
9. Nesma air lines will retain a copy of each written vendor / agency contract for at least one year after the date of execution of the contract.
10. Airworthiness Responsibility- As an approved facility, shall be responsible for the airworthiness of A/C, Engines and associated accessories which they Maintains, repairs, Inspections...etc., the prime responsibility remains with Nesma air lines
11. Contracts Affecting Technical Services are those contracts negotiated with other Airlines, Agencies, manufacturers with whom Nesma air lines arranges to provide goods or services which affect the airworthiness of an A/C component or appliance installed on or used during A/C operations or handling
12. The foreign repair station shall report Nesma air lines with any defects, un-airworthy condition and failure or malfunction immediately.
13. The foreign repair station shall inform ECA A within 72 hours, if it discovers any serious defect other than un-airworthy condition.
14. Nesma air lines will assure that any foreign AMO certificate is valid through the validity of Egyptian Certificate.
15. Work Package- Nesma air lines ensure the completion of all tasks defined in a maintenance arrangement by the manager (Inspector) accompanied the Aircraft.

16. The Maintenance Agreement includes, but is not limited to:

- An approval process for the Contractor by the operator and where applicable the Contractors and/or the operator's Authority.
- A list of facilities where the maintenance is to be carried out, including a list of satellite Facilities that the Contractor may use.
- A Statement of Work' (SOW) for the Maintenance Agreement that contains the detailed Technical requirements, including references to maintenance intervals, manuals, Airworthiness Directives (ADs), Service Bulletins (SBs) and operator special Requirements. A clear, unambiguous and sufficiently detailed SOW and assignment of Responsibilities are required to ensure no misunderstanding arises between the operator, The Contractor and the operator's Authority that could result in a situation where the Work, which has a bearing on the airworthiness or the serviceability of operator's aircraft, Is not properly performed.
- A requirement for the Contractor to produce a suitable quality plan for the project.
- Use and control of parts and materials.
- Process for the approval of deviations from maintenance documents.
- A need for an internal evaluation system by the Contractor.
- Access by the operator's quality assurance department staff for the purpose of Evaluating ongoing quality.
- A reporting structure that immediately notifies the operator of any significant defects.
- A system of completing, reviewing, retaining maintenance records.
- A system of calibration of tooling and equipment.
- A system of operator supplied product.
- A system of inspecting and testing, i.e., a quality control system.
- A system of handling unsatisfactory product.
- A system of handling, storage, packaging and delivery.
- A system of product identification and traceability.
- A system of training by the Contractor of its staff as well as a system of training the Contractor by the operator.
- A system of Release To Service of an aircraft or component;
- A system for communication between the operator and the Contractor.

A system of periodic review meetings to include some or all of those below:

- Contract Review Meeting
- Work scope Planning Meeting
- Technical Meeting (ADs/CNs/SBs)
- Commercial and/or Logistics Meeting
- Quality Meeting
- Reliability Meeting

17. Nesma Airlines shall ensure each approved maintenance organization that performs maintenance has an independent quality assurance program that:

- i) Complies with applicable regulations, requirements and GMM
- ii) Addresses the specific requirements of Nesma airlines, as specified in the maintenance agreement.
- iii) Is under the sole control of the Chief Inspector and Quality Manager or the person assigned managerial responsibility for the program.

18. Nesma airlines shall ensure each approved maintenance organization that performs maintenance for the Operator has an independent quality assurance program that meets the

specifications and has the control processes listed below:

Specifications:

- i) An internal audit/evaluation and surveillance program.
- ii) An established audit schedule.
- iii) A record of audit findings and corrective and/or preventive actions.
- iv) Assurance of appropriate corrective and/or preventive action.
- v) All elements necessary to confirm the maintenance organization is in compliance with the applicable regulations.
- vi) The QA program confirms all referenced procedures remain applicable and effective.

Control process:

- i) An initial evaluation, using the published checklists that cover all aspects of the maintenance organization technical activities, conducted within 12 months (or 24 months with appropriate management approval) following the date that the operating certificate is issued.
- ii) Recurring evaluations conducted at intervals established in the approved GMM.
- iii) Records of findings of compliance and non-compliance resulting from the evaluations
- iv) Procedures to ensure the findings of the evaluations are communicated to the person appointed and made available to Nesma airlines.
- v) Where appropriate, immediate and long-term actions to correct the root cause of each noncompliance noted.
- vi) Follow-up procedures to ensure necessary corrective/preventive actions (both immediate and long-term) implemented by the Maintenance Organization are effective.
- vii) A record-keeping system to ensure details of evaluation findings, corrective actions, preventive actions and follow-up are recorded and that the records are retained for two complete evaluation cycles.

19. Nesma airlines shall ensure each maintenance organization that performs maintenance for the Operator has a process for periodic review of the quality assurance program by the Chief Inspector and Quality Manager for the purpose of ensuring compliance with current requirements of the Maintenance Program and GMM.
20. Nesma Airlines shall ensure each maintenance organization that performs maintenance for Nesma Airlines has a process to immediately report to the Operator any defects, un-airworthy conditions, failures or malfunctions specified in GMM section 6.14.4
21. Nesma airlines shall ensure each maintenance organization that performs maintenance for Nesma Airlines utilizes appropriately licensed/authorized maintenance personnel to sign the maintenance release. And competence has been established in accordance with procedure accepted by ECAA granting approval for AMO

6.21.2 Subcontracting Procedures:

- Locate companies, which have reasonable facilities which include:
 - Technical data, Equipment's, tools and materials necessary to perform the work specified in the agreement.
 - The contracted AMO shall have suitable conditions for security and safety for stored items to include clean work area, Oxygen and other High-pressure bottles and flammable and toxic material properly identified and stored to perform the inspection required according to the approved Maintenance Schedule.
 - Nesma Airlines shall ensure each AMO perform maintenance to Nesma Airlines has a shelf-life program for applicable stored items, which includes a requirement for the shelf-life limit to be controlled and displayed
- The contracted AMO shall have an EASA approval at least.
- The contracted AMO shall provide detailed information with respect to all locations where aircraft maintenance is to be performed.

- The contracted MRO organizations are required to be aware of Nesma Airlines processes and Procedures, as well as their impact on maintenance and/or related systems.
- Nesma Airlines shall provide appropriate external organizations with relevant training that covers the operator's paperwork, certification and recording requirements. Alternatively.
- Nesma Airlines shall provide such training to each external organization that performs maintenance functions to comply with GMM procedure and ECAR.
- Sufficient supplies and spare parts to ensure timely rectification of defects with regard to the Minimum Equipment List (MEL) provisions and in accordance with service level agreements
- Nesma Airlines shall ensure each AMO that perform maintenance for Nesma Airlines has a process of material handling as specified in sections. 4.16.11, 5.4, 5.7.and 5.10
- Nesma air lines will arrange with ECAA a visit to this facility to stand on their procedure for performing work and their Quality assurance system.
 - Approval will be issued to such company by ECAA according to limitation required.
 - Subcontracted company will deliver all work package and required document to Nesma air lines as mentioned in above paragraphs of this chapter:
 - 1) A contract should be specifying all work to be performed by the Approved Maintenance Organization.
 - 2) Both the specification of work and the assignment of responsibilities should be clear, unambiguous and sufficiently detailed to ensure that no misunderstanding could arise between the parties concerned (Nesma air lines, maintenance organization and ECAA) that could result in a situation where work that has a bearing on the airworthiness or serviceability of aircraft is not, or will not, be properly performed.
 - 3) Special attention should be paid to procedures and responsibilities to ensure that all maintenance work is performed, service bulletins are analyzed, and decisions taken on accomplishment, airworthiness directives are completed on time and that all work, including non-mandatory modifications, is carried out in accordance with approved data and the maintenance agreement. Chief Inspector and Quality Manager shall ensure each maintenance organization that performs maintenance for the Operator maintains the validity of its approval through compliance with the requirements for an approved maintenance organization acceptable to ECAA.
 - 4) Chief Inspector and Quality Manager shall perform an external audit on service providers on general term agreement before accomplishment of any maintenance activity and Nesma maintenance representative attend to ensure the contracted AMO:
 - i) Complies with applicable regulations and safety and quality requirements.
 - ii) Has procedures that are acceptable to ECAA granting the approval.
 - iii) Performs all maintenance in accordance with requirements of Nesma Airlines.
- Nesma airlines provide a program that ensures personnel of external service providers are trained and competent to perform SMS duties, The technical training Chapter and SMS Manual (chapter 4.1) explore the scope of SMS training.

6.21.3 Maintenance Contract Acceptance:

- Any Contractual Arrangement with contracted AMO, contractor and subcontractor for the performance of any maintenance these contracts shall be accepted by ECAA
- Chief Inspector and Quality Manager shall take the necessary actions for getting the acceptance of the contracts at proper time
- All tasks defined in the maintenance agreement with each external maintenance organization that performs maintenance functions for the Operator are completed in accordance with the maintenance agreement.
- Chief Inspector and Quality Manager shall have an approval document that contains:
 - i) The name and location of the AMO.
 - ii) The date of issue and period of validity of the approval.
 - iii) The capability and scope of the approval.

6.22. A/C Lease Procedures

Reference: ECAR 91.23, 121.6, l21.153, 121.155

Responsibility:

Chief Inspector and Quality Manager.

Airworthiness requirements:

In case of leases an aircraft in, in accordance with a lease agreement, the leased aircraft shall comply with the following requirements before released:

1. The aircraft has a certificate of registration issued by an ICAO contracting state,
2. The aircraft is of a type design that is approved by the ECAA,
3. The aircraft has a valid certificate of airworthiness issued by the registering authority,
4. The aircraft is in an airworthy condition.
5. The aircraft meets the applicable airworthiness requirements related to identification and equipment.

For any type of lease, the lease agreement shall determine which party is responsible for the operational control of aircraft.

For any type of lease, the lease agreement shall determine which party is responsible for aircraft maintenance. If the leased aircraft is a foreign registered aircraft and is to be maintained by ECAR- 145 AMO. This organization must be accepted by the registering authority for such function. If the leased aircraft is a foreign registered aircraft and is to be maintained by foreign personnel, their licenses/authorizations shall be validated by the ECCA.

For any type of lease, the lease agreement shall contain a truth-in-leasing clause as a concluding paragraph in large print, immediately preceding the space for the signature of the parties.

For any type of lease, the lease agreement shall contain identification of the reference; regulations under which the aircraft has been maintained and inspected during the 12 months preceding the execution of the lease, and certification by the parties thereto regarding the aircraft's status of compliance with applicable maintenance and inspection requirements in this regulation for the operation to be conducted under the lease in respect to leased aircraft.

Unless the lease period is five days or less, a copy of the lease agreement shall be submitted to the ECAA, within 24 hours of its execution, and another copy must be carried on-board the leased aircraft, and The ECCA shall be notified, at least 48 hours before takeoff, of the first flight of the leased aircraft, the airport of departure and the departure time

The lease agreement shall contain the registration number of the aircraft involved.

The lease agreement shall assure:

1. The timing reporting of faults, malfunctions, defects and other occurrences from the operator to the lessor.
2. The timing supply of mandatory continuing airworthiness information between both parties.
3. The proper transfer and up-keeping of records and necessary documentations between / by both

Lease parties-to fulfill regulatory requirements.

4. The governing record-keeping regulation, under which the aircraft records should be maintained, should be determined prior to initiation of the lease or transfer.
5. Applicable aircraft maintenance records are made available to the new operator.

The following information shall be provided to the ECAA to be incorporated inside the Nesma air lines Ops. Spec.

1. The names, addresses and responsibilities of the lease parties specifying the party responsible for operational control and the party responsible for the continuing airworthiness;¹ of the leased aircraft
2. The lease duration.
3. Aircraft type and serial number, nationality and registration of each aircraft involved in the agreement.
4. The kind of operation.
5. The times and airports of operation.
6. Name and address of registered owner
7. State of registry and registration marks
8. (C of A) and statement from lessor that the aircraft fully complies with the airworthiness requirements of the state of registry.

For any type of lease, the Chief Inspector and Quality Manager shall apply to the ECAA and obtain its acceptance for the leased contract, a suitable time in advance.

6.23. Assessment of Personnel for Competence and qualifications:

Reference: ECAR 145.13 & ECAR 121.61

General:

The purpose of competence assessment is to affirm competence and to identify areas in need of improvement as appropriate either in the individual or the system within which the individual works.

Therefore:

- Competence of personnel must be established and controlled to a standard
- Staff must be assessed for competence
- Certifying staff must be assessed for competence, qualification and capability.

For assessment of personnel for competence: A- Pre-required qualification

- Good knowledge of spoken and written English Language
- Good personal characteristics
- Working Experience

B- Training:

Training will cover both theoretical and practical aspect all staff shall attend on:

- Basic Indoctrination course
- Human Factors
- Aircraft Course

C- Qualification:

- Have complete the courses mentioned in 6.23.2
- Have OJT
- Conduct an oral and practical test

D- Continues training E Recording

For more information See MTM

6.24. Authorization and Certification Board.

Reference: ECAR 65

Responsibility:

Chief Inspector and Quality Manager.

Maintenance Training Manager

6.24.1 General.

According to ECAR 145.13 (d-2, 3), that certifying staff must meet the following qualification requirements: - Approved examinations should be set at the end of each training course according to standards mentioned in ECAR part 147 and members of authorizing board should be nominated by the Nesma airlines and accepted upon by the ECAA.

Authorization Board has the authority to examine or check the approved maintenance Engineers in orally and practically to emphasize that personnel employed by Nesma airlines are able to carry out maintenance tasks to any standard specified in the maintenance instructions.

The Chief Inspector and Quality Manager is the Head of the Authorization Board, the members of the Board are well qualified persons who have broad knowledge and great experience in the field of aviation and to be approved from ECAA or ECAA inspectors.

6.24.2 Nesma airlines Authorization Board.

- The Authorization Board "After Acceptance and Authorization from ECAA" consists of the following members:
Eng. Youssef Hassanien

The Authorization Board members have the authority of issuance approvals for A320-232, after authorization board member completed.

- The exams are done by ECAA Examiner for A&C Rating.
- The exams are done by ECAA Examiner for (X) Rating.
- The ECAA must be notified 7 days before each exam.
- The Authorization has the following information:
 1. Name
 2. Category
 3. Rating
 4. Issue Date
 5. Validity
 6. Authority

See the training Chapter for evaluation and approval forms

6.24.3 Employee's Training and Records

1. Training of both approved and other maintenance personnel will be accomplished as necessary by classroom instruction plus on the job training and on occasions training at the product manufacturers' facility. Training is also can be conducted in Nesma airlines approved classroom by approved instructors.
2. Classroom training will be accomplished by the AMO's Approved Training Instructor supplemented by the Company's experienced Technical Supervisors and Managers as necessary. Training by the product manufacturer's instruction staff both in the classroom and on the job will be provided as necessary.
3. Training records for each maintenance personnel are maintained on file by the Head of Company Authorization and Certification Board. The records indicate the type of training, method, duration, date of completion, location, and will include the name of the instructor that conducted the classroom training and/or the Supervisor or Instructor under whom the employee underwent on-the-job training [ECAR 65 (Subpart C)]. These records will be available to the Chief Inspector and Quality Manager when considering persons for approval for maintenance inspection and other work categories.
4. The record of Nesma airlines certifying staff are kept in the Authorization Board Record and controlled by Nesma airlines Training Manager. No persons authorized to access the record system unless authorized by the Chief Inspector and Quality Manager or the training Manager; this is to ensure that records cannot be altered in an unauthorized manner or that such confidential records become accessible to unauthorized persons.
5. The record system of Nesma airlines certifying staff is available for ECAA at any time. The ECAA may investigate the records system for initial and continued approval or to concern of a particular certifying person.
6. The maintenance approval document clearly describes the scope (duties) of the authorized person.

See the Maintenance Training Chapter for training records.

6.24.4 Authorization Issue Procedure.

1. All applications for local authorization must be personally completed on the (Application for AMO Personal Approval) concerned form and submitted to the Chief Inspector and Quality Manager.
2. All application forms shall be filled by relevant qualifications training certificate and work sheets for 9 months for the first issue of the rating and 6 months for added rating. Recommendation from the applicant section head / department supervisor must be written on the form.
3. Authorization Board shall perform Examination/evaluation for the Maintenance Personnel. Authorization Board shall request ECAA Examiner for Evaluation till the Authorization board members completion.
4. ECAA Examiner shall evaluate the examinee, and according to The ECAA examiner Evaluation the Approval may issue for 6 months by the ECAA.
5. Chief Inspector and Quality Manager should renew the applicant ECAA approval after expiration.
6. Approval interval determined by the approval Issuance /reissue date tills the end of LWTR or recurrent course validation which ever come first.
7. Chief Inspector and Quality Manager renew the AMO Personal Approval after reviewed his/her LWTR and recurrent course status

General Rules:

1. Certificate of authorization in the appropriate categories may be granted only to persons who fulfill the following requirements:
 - a. Be of age 21 or over.
 - b. Holding a current type (II) aircraft maintenance engineer license for a pressurized aircraft having a maximum gross takeoff weight over 5700 kg.
 - c. Authorization will be restricted to AMO approval limitation.
2. The validity of the specific training course must not exceed three years. If the validity exceeds the two years period, the applicant must attend successfully an approved refreshing course. The minimum pass mark for each examination is 70% of full mark.
3. Results of all examinations shall be kept in the Authorization and Certification Record Section.
4. Unless suspended or revoked the authorization will be valid as long as the holder is still an employee of Nesma airlines and L.W.T.R valid GENERAL MAINTENANCE MANUAL AUTHORIZATION BOARD a mandatory for approval renewal

Notes:

- Class training period shall not be included in the specific practical experience period.
- Quality Manager shall be notified of any transfer of authorized staff from one department to another

.6.24.5 Requirements of full authority approval

1. The applicant should have highly experienced in aircraft maintenance in the appropriate category and holding valid license without type rating (Large A/C).
2. The applicant should have passed successfully a written exam of the specific training course approved by ECAA.
3. The applicant must submit worksheets (6 months for added rating and 9 months for first issue rating) for on-the-job training.
4. The applicant should have at least 3 years of practical experience in the appropriate category
5. The applicant must pass, written and practical oral test arranged by the Authorization and certification board before the issue of the approval.
6. Approval should be issued as per all conditions mentioned in ECAR.

6.24.6 Requirement for Evaluation certifying staff.

1. The applicant shall fill an Application form for approval and submitted to company authorization and certification board.
2. The applicant shall have a recommendation from the head of his/her department for approval application.
3. The evaluation shall base on theoretical and practical test done by the authorization board with aid of Director of maintenance
4. Authorization Board shall evaluate the Maintenance personnel.
5. The company authorization board shall issue an approval for the applicants who pass the approval test. Approval Limitation shall base on the applicants Experience:
 - 5 years' Experience and more, the authorization shall be limited to A check and CRS after A check or any major Inspection.
 - more than 3 years' Experience and less than 5 years' Experience the authorization shall be limited to A check Only
 - less than 3 years' Experience the authorization shall be limited to service Check
 - Authorization board may expand the authorization limits according to Its evaluation for all certifying staff
8. The applicants who fail the approval test shall be re-evaluated after 30 days from his/her last evaluation test.

N OTE: LWTR license practical Experience and OJT experience are included into applicant experience

6.25 Short Term Escalation

1. Nesma Airlines. Assigned time intervals of A/C inspection checks (periodic) an amount of time equal to five percent of the specified time limit.
2. Extraordinary circumstances arise and conflict with completing the pre-planned maintenance schedule and short-term escalation may be necessary. Short term. escalation is also provided for the purpose of allowing scheduling of time controlled functions to be performed in conjunction with other schedule functions, when their specified accomplishment times are different, but are still within reasonable proximity of one another.
3. The procedures described hereafter may be applied to any individual A/C Component (except basic engine) or appliance operated by Nesma Airlines. The Chief Inspector and Quality Manager has overall administration responsibility.
4. It is company policy not to use Short Term Escalation to cover up poor administration of its maintenance and inspection program. A Short-Term Escalation is approved to cover a specific circumstance and it's limited to that circumstance only.
5. for requesting an escalation maintenance and inspection program, the Planning/Engineering Managers will fill out a specific form and forward it to Chief Inspector and Quality Manager who will review this form to determine that:
 - a) No intervals specified in Airworthiness Directives.
 - b) No life limits specified by type certificate data sheet
 - c) No MEL/CDL item time limitation will be exceeded.
 - d) No structural or sampling inspection period is exceeded.
 - e) No Certification maintenance requirements unless specified otherwise in the MRP report

Note: The time limits specified in the five situations listed herein cannot be exceeded under any circumstance. They must be accomplished prior to the expiration of the original periodic check time.

6. The request for (Short Term Escalation) form "F206-13" shall forward to Chief Inspector and Quality Manager within 24 hours of completion.
7. The Chief Inspector and Quality Manager will forward the form to the ECAA within three working days upon reviewing for approval.
8. The next schedule event assigned time interval shall be planned with respect to the original status regardless the escalated time.

6.26. Certificate of Airworthiness Renewal.**Reference:** ECAR 25, 121**Responsibility:**

Chief Inspector and Quality Manager
Director of maintenance

The Certificate of Airworthiness is renewed annually. The certificate may be renewed up to 60 days prior to expiry without any loss of validity. All other certificates may be renewed up to 30 days in advance and will be dispatched once the new certificates have been issued.

Procedures:

- 1 An application for renewal of C of A shall be completed and signed by Nesma airlines Chief Inspector and Quality Manager.
- 2 The completed signed renewal application submitted to ECAA at least 30 days prior to expiry of the certificate with necessary fees.
- 3 ECAA shall reply with time of check inspection in order to renew C of A
- 4 Director of maintenance shall make the aircraft available for reasonable period for such inspection.
- 5 All relevant records of aircraft shall be made available to inspector of ECAA at time of inspection for renewal C of A.
- 6 After inspection ECAA inspector send all his findings and comment if any to Nesma Chief Inspector and Quality Manager for take an appropriate action and reply back with action taken against the findings.
- 7 The chief inspector and quality manager follow with ECAA to issue a new certificate and inserted to aircraft documents.

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Chapter 7

TECHNICAL TRAINING

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1.1 Training Program

1.1.1 General

- i. Nesma Airlines selection process of the maintenance operations personnel shall ensure management and non- management positions within maintenance operations that require the performance of functions relevant to aircraft airworthiness, safety and security of aircraft operations are filled by personnel on the basis of knowledge, skills, training and experience appropriate for the position.
- ii. Nesma Airlines AMO & contracted AMO's shall have a training program that assures all maintenance Certifying Staff receive initial, continuation – within 24 months, which may be reduced to a lesser interval based on findings generated by the QA program - and any additional training appropriate to individual assigned tasks and responsibilities.
- iii. Nesma Airlines conducted audits of external service providers shall also ensure that the aircraft engineering and maintenance operational functions personnel are trained and competent to perform SMS duties. The scope of such training should be appropriate to individual involvement in Nesma Air's SMS.
- iv. Nesma Airlines audit process ensures each maintenance organization that performs maintenance for Nesma Air has a training program that assures all maintenance personnel receive initial and recurrent training that is appropriate to assigned tasks and responsibilities, and provides maintenance personnel with:
 - knowledge of regulations, standards, and procedures in accordance with GMM requirements.
 - The knowledge and skills related to human performance, including coordination with, as applicable, other maintenance personnel and/or flight crew.
- v. knowledge and skills related to human performance in all maintenance activities covered under maintenance program, including those activities performed by an external AMO.
- vi. The Training program will ensure that all key positions are occupied with qualified personnel.
- vii. Management staff is qualified by formal engineering qualification and holders of a maintenance license(LWTR), plus a minimum of five years' aeronautical maintenance experience.
- viii. All Tech. Staff are required to hold current ECAA A/C Maint. License Without Type Rating (LWTR).

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- ix. In addition, all certifying staff will have received full formal type training at an approved trainingschool in the disciplines of approval.
- x. Non-certifying Technicians will be required to have demonstrated experience in the servicing and maintenance of large civil aircraft. They will receive training as appropriate to the duties they perform. This will be by theoretical training courses or on-the-job training OJT under the supervision of appropriately qualified personnel.
- xi. It is a policy within Nesma Air for all technical staff to attend Human Factors training. This is in two parts; an initial and bi-annual refresher course.
- xii. Training needs are identified at annual review and initiated by Departmental Managers.
- xiii. ECAR and GMM training is provided by an approved assigned Instructor from the Quality Directorate.

7.1.1Different Types of Training

i. Basic Indoctrination Training

A course required for Maintenance /Overhaul Engineers to acquire them with their duties and responsibilities, for the new hired engineers according to Nesma Air approved policy & procedures.

ii. Initial Training

Required for the new hired Maintenance / Overhaul certifying staff, auditor or receiving inspector

iii. Transition Training

Required for Maintenance / Overhaul certifying staff, who have been qualified on another type / component.

iv. Difference Training

Required for Maintenance certifying staff, who have been qualified on another aircraft type or component

v. Continuation Training

A course which is held every two years as per ECAA requirements to maintain a qualification and level of proficiency, regarding to overhaul courses “Initial, Transition & Difference”.

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vi. Refresher Training

A course to recall previously studied material

vii. Remedial Training

Conducted for individuals after an occurrence investigation covering gaps that led to that occurrence.

viii. On the Job Training (OJT)

OJT Work Sheet (Form no. NMT010) shall be completed including set of a maintenance tasks to be performed on in service A/C after theoretical training.

7.1.2 Training Plan

- i. Training Plan (Form no. NMT00) is an annual plan for all Tech. Staff training requirements.
- ii. At the beginning of each year Nesma Airlines will plan the training courses for the year, according to their requirements and the available staff.
- iii. Training Plan will be developed by the Training Manager & approved by the Chief Inspector in liaison with the Accountable Executive. The Chief Inspector will implement the training program, which during a twelve-month period will ensure that all key positions are occupied with qualified personnel.
- iv. In addition, each employee must have periodic continuation to increase his/her skill level.
- v. Personnel training requirements will be discussed with the department's managers, resulting training requirements will be added to the training plan.
- vi. The Yearly Training Plan will include for the maintenance personnel: Rating, A/C Type, Place of Training (location), Category of the trainee (engineer/technician), the training course title, training period, number of trainees, start and finish dates.
- vii. The Training Plan and success of the training conducted during the year will be discussed at the management Review Board Meeting

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7.1.3 Training Requirements

Training is a two-way process to ensure that certifying staff remain current in terms of procedures, human factors and technical knowledge and that the organization receives feedback on the adequacy of its procedures and maintenance instructions.

Due to the interactive nature of this training, consideration should be given to the possibility that such training has the involvement of the quality department to ensure that feedback is actioned.

Alternatively, there should be a procedure to ensure that feedback is formally passed from the training department to the quality department to initiate action.

i. Training syllabus:

The following is a list of subjects that should be covered within an AMO certifying staff continuation training syllabus:

(a) General Subjects:

- ECAR Part-145 requirements and amendments. (1 Hour)
- MOE requirements and amendments. (1 Hour)
- Quality audit findings, corrective actions and preventive actions. (1 Hour)
- Safety Management System Hazards and risks. (1 Hour)
- Human Factor typical mistakes and their prevention, Internal / External analysis on incidents on human errors in maintenance (4 Hours)
- Fuel Tank Safety (2 Hours)
- Electrical Wiring Interconnection System. (2 Hours)

(b) Type rated subjects:

- Airworthiness Directives (1 Hour)
- Service Bulletins (1 Hour)
- Defects (1 Hour)
- Modification standards (1 Hour)
- Material, tools, documentation and manufacturer's or competent authority's directives (2 Hours)
- Manuals and procedures Amendments (1 Hour)

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ii. Instructors Requirements:

A list of all training instructors with an evaluation form for each should be kept, the training instructorsshould cover the following as minimum requirements:

- Have attended an instruction techniques training.
- Have a minimum experience 5 years for the subject he teaches.
- For Type rated subjects, Instructor should have a valid maintenance license and authorized on the type fornot less than 5 years.

iii. Classroom requirements:

The training should be instructed in an ECAA approved classroom.

iv. Training materials:

The Technical Training Manager is responsible for updating the syllabus and preparing training materialsbefore each training.

v. Training orders

A training order (Form no. NMT05) shall be issued and delivered to ECAA with a copy of the detailedsyllabus before implementation with at least 7 days

vi. Training records keeping:

Syllabus, materials and original attendance evidence for each continuation training should be kept for not less than three years of its implementation, however a copy of attendance evidence and/or certificate shouldbe kept in certifying staff authorization file.

7.1.4Training Program Evaluation

All conducted training courses shall be evaluated for effectiveness & Training Program Review shall becompleted using (Form no. NMT016), including the responsible manager's Comments & Recommendations for improvement and the Tech. Quality Director's dissections

Section 2

Employment

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2.2 New employee resources.

1. B.SC degree from an Egyptian university (Faculty of engineer) or any equivalent degree in aviation maintenance.
 2. Aircraft maintenance basic course (Elect. & Avionics or Airframe & Engine).
 3. Able to talk, read and write English Language.
 4. Has Without Type Rating (L.W.T.R.) for large A/C >5700 Kg.
 5. From day one the new technical employee start to work under Training i.e. OJT (On Job Training) for at least 14 to 18 months and he will be ready for examination to have LWTR from ECAA and after he gets LWTR he can work on the A/C under supervision.
 6. After holding License without type rating, employee will continue the A/C Initial training
 7. Completed above Training will be documented on a Certificate of Completion or other applicable document Recorded on the employee Qualification Record and maintained in the employee training file.
 8. Training shall consist of a combination of formal (classroom) Instruction and on the job training, Approved Instructors and Approved curriculum from ECAA.
- Newsman Airlines May give training credit to individuals for experience gained while Employed by other operators.
9. Technical training (Nesma Airlines) may be contracted to another Training Center, Manufacturer, or in the case of a specialized process, to Nesma Airlines staff Knowledgeable in that specialized process. Nesma Airlines is responsible for the content and quality of such training
 10. The technical employee will continue following training Courses:
 - a- GMM
 - b- Basic Indoctrination.

2.3 Procedure for evaluating new employees' previous training

1. Reviewing the new employee training documents by checking the documents titles and date for validity.
2. Checking the training courses Contents approval and approval of the training center.
3. All courses and training center shall be approved by ECAA.
4. Determine the refreshment date to be embedded with the company training plan.

2.3.1 Qualification Process:

All new and / or prospective certifying staff must be assessed following a procedure for competence, qualification and capability related to intended duties.

When prospective certifying staff are evaluated coming from another ECAR 145 approved organization where they are already certifying staff, the assessment could be limited to written confirmation from the Chief inspector about the person. In all cases, qualification assessment covers collecting copies of all documents attesting qualification (license...), followed by a confirmation check with the organization that issued such documents and finally comparison check for differences between the product type ratings on the qualification documents and the relevant product types maintained by the organization.

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All the steps and processes for qualification process should be clearly described. It is recommended to split the process into:

- Qualification process required by ECAA,
- Qualification process established by assessment (on job) evaluation or examination, Assessment should be done through examinations on: knowledge of company procedures practical demonstrations and experience. Therefore to assure the validity of certificates held by Maintenance and Quality, Chief Inspector will accomplish the following:
 - a.Upon hiring a certified aircraft engineer, check the validity of his/her certificate. This verification will be made through the Egyptian Civil Aviation Authority (ECAA).
 - b. Each certificate shall be photocopied and kept on file in the Training Records Section.
 - c.The Maintenance Manager will confirm the information to chief inspector

2.3.2 Special Qualification & Re-qualification Training:

Special Qualification Training is required for employees to issue CRS (Certificate of Release to Service), Aircraft Towing, Run-up and/or RII Authorization.

To be eligible for special qualifications, the employee must meet the following requirements:

- a. Hold a valid ECAA Aircraft Maintenance License with Airframe and Power plant OR Electric and Avionic ratings.
- b. Completed Indoctrination Training.
- c. Completed the applicable Fleet Familiarization Training on the particular type aircraft for which the special qualification is sought.
- d. Completed the applicable Special Qualification Training.

Qualification Training will be conducted in accordance with the Company policies and procedures depicted in the applicable sections of this Manual, documented on the applicable training record, recorded on the employee Qualification Record and maintained in the employee training file.

Upon successful completion of the Special Qualification Training, this training will be documented with the initials of the Maintenance Manager and forwarded to the Chief inspector for authorization.

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2.4 Types Of Training Required for New Employee:

2.4.1 Company Indoctrination:

Indoctrination Training covering Nesma Airlines Technical Policy and Procedures will be successfully completed by each new technical employee. This training will be documented on a Maintenance Training Attendance Record, recorded on the employee Qualification Record and maintained in the training file.

Each maintenance/inspection employee should receive instruction in the use of Nesma Airlines manuals, policies, procedures, and forms.

2.4.2. Human Factor Training:

In this course the following items will be addressed in details:

- General/Introduction to Human Factor
- Safety Culture/Organization Factors
- Human Error
- Human Performance & Limitation
- Environment
- Procedures & Information, Tools and Practices
- Communication
- Teamwork
- Professionalism & Integrity
- Organization's HF Program

2.4.3. Maintenance Initial and Familiarization Training:

Fleet Familiarization Training requirements are based on the employee prior training with the type of aircraft operated by Nesma Airlines. Those employees who possess past training on aircraft of the same type as operated by Nesma Airlines can be approved by the Chief inspector by fleet type to work on the Company's aircraft without further Fleet Familiarization Training provided; this training can be documented in a manner acceptable to the Chief inspector.

New technical employees without prior training will successfully complete applicable initial (Basic) Training course.

New employees shall attend an Initial course exam and gain at least 70% to pass the course.

Until such time as this training is completed, the employee will not be allowed to work unsupervised.

Completed Familiarization Training will be documented on a Certificate of Completion or other applicable document, recorded on the employee Qualification Record and maintained in the employee training file.

2.4.4. Recurrent Training (Continuation Training):

Nesma Airlines adopts a policy for continuation training in the light of continuously educating and updating staff on new technology and to keep a high grade of qualifications.

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The aim of the continuation training is mainly to ensure that certifying staff remain current in terms of procedures, human factors and technical knowledge and that the organization receives feedback on the adequacy of its procedures as well as maintenance instructions.

It has to be underlined that sufficient duration should be related to relevant quality audit findings and other internal / external sources of information available to the organization on human errors in maintenance. Accordingly, this feedback system implies the quality department.

This requirement arises also often in response to the introduction of new aircraft variants for which experience does not exist in the company.

Recurrent training will consist of information intended to update the employee, such as changes to the aircraft, general policy and procedures and procedures specific to the employee working group. Criteria used for recurrent training needs will be derived from ECAR 65-93-C or as the need is identified or requested by management.

Completed recurrent training will be documented on a Maintenance Training Attendance Record recorded on the Nesma Air Lines training program should ensure that deficiencies discovered through continuous analysis and surveillance and/or reliability programs are corrected during recurrent training. Additionally, recurrent training should include at least the following:

- Review, reinforcement, and upgrading of all training given in both indoctrination and technical subjects
- Input from maintenance bulletins and/or maintenance newsletters
- Critical tasks, such as run-up/taxi, Required Inspection Items (RII).

2.4.5. On-Job Training (OJT):

On Job Training is given to an individual in the work environment and includes oral instruction and supervised work. It is used to train individuals to perform specific tasks and to understand related procedures.

On Job Training is designed to supplement formal training and is part of recurrent training requirements.

On Job Training is the dual responsibility of the departmental managers and the employee and as such will be accomplished under the direction of Director of Maintenance. The responsibility of reporting OJT is that of the employee.

On Job Training shall include the following tasks:

- 1- PDC/Transit Check
- 2- Daily Check

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- 3- Weekly Check
- 4- Operational Test/Check

2.4.6 Inspectors Training Procedures:

1- Basic Inspector Training

The course covers the following topics:

- Responsibilities of an inspector
- Inspection procedure and techniques. RII.
- ECAA regulations
- The inspection of acceptance of materials, parts and components provided by vendors (receiving inspectors)

This procedure applies to all personnel classified and rated as inspector.

All important and essential work tasks, with impact on flight safety, are subject to an inspection classified in different levels.

Store Inspector

Store inspector shall be qualified and trained on receiving inspection procedure to aircraft parts, materials, tools and equipment's.

- i. Qualification Requirements:
 - Has good experience on aviation field (maintenance or/and stores);
 - Hold a certificate of general secondary education or equivalent.
- ii. Training Requirements:
 - Has Quality Awareness training;
 - Has store receiving inspection training;
 - Company Procedures training.
- iii. Continuation Training Requirements:

Continuation training shall cover changes in ECAA requirements, and changes in NESMA AIRLINES procedures.

Continuation training of store inspectors shall be conducted on interval not exceed 36 months. which may be reduced to a lesser interval based on findings generated by NESMA AIRLINES Quality Assurance Audit/Surveillance program.

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Quality Audit Personnel Training Procedures

Auditors are selected according to:

- Experienced Nesma airlines Staff.
- Nesma airlines may use competent personnel from one section not responsible for the production function, procedure or product to audit that section, subject to the overall planning and the implementation being under the control of the Quality Assurance Manager.

Pre-required qualification

- Demonstration of a satisfactory knowledge of spoken and written English.
- Good personal Characteristics
- Have gained at least 2 years appropriate experience in the A/C industry.
- Have gained a level of experience in the relevant area(s) to be audited.

Training Procedure

The auditor should be trained for:

- Approved Auditing Course
- Quality management concept
- Quality monitoring of suppliers.
- Quality management (Quality Assurance systems and facilities)
- ECAR Part145, and Nesma airlines procedure knowledge (GMM).
- OJT (acting as an observer/auditor on at least 3 Audits) unless his previous experience makes this unnecessary.

Auditor Evaluation

Evaluation and assessment of each auditor for authorization will be conducted by QAM.

Auditor file

- Each auditor personal file shall contain auditor training certificates, and experience.
- Each auditor should perform at least one audit per year to keep validity as an auditor.
- Computerized Record of Area audited, date and auditor's name.

2.4.7 Mechanics Training Procedures. (145.29h5)

General Policy

It is Nesma airlines policy to employ experienced mechanics according to their:

- Basic Knowledge
- Working experience on similar/same type of Nesma airlines Aircraft.

If the experienced mechanic was working on an aircraft type different than Nesma airlines Aircraft type, so the mechanic will attend "Mechanics Familiarization Course (VACBI)".

Mechanics will perform only removal/installation/modification or any assigned job under supervision of a certifying staff who is authorized to certify a task, CRS Etc.

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Pre-acceptance requirement for training

- Be aged 21 or over
- Having at least 2 years practical working experience on similar or same type of Nesma airlines Aircrafts.

Qualification

- Have completed an Indoctrination course in “Nesma airlines Approved Training classroom” I.
- Have successfully completed Mechanics Familiarization Course (VACBI) Level I
Upon completion of the course, the student will have a general knowledge of the airframe, power plant, electric, avionics, special safety precautions, tooling, test equipment and maintenance practices peculiar or unique to the aircraft.
- Have completed successfully structured programmed in-house Training in respect to Company Procedures and documentation (GMM)
- On Job Training
1 year Practical Training to cover removal, installation, and repair tasks under supervision of a lead mechanic.
- Oral & practical examination conducted by training manager and Q.A.M.
- A copy of Examination results, remarks and evaluation reports are sent to Technician’s Direct Manager for evaluation and follow-up purposes.

Assessment Procedures

Examination and assessment of each Mechanic will be conducted by an Assessment Board under the chairmanship of the Quality assurance Manager or his nominated delegate.

The Assessment Board will consist of a minimum number of members as follows:

Quality assurance Manager or his nominated delegate plus one, or more, other (s) selected from specialists in the appropriate assessment subject and an Examiner.

Re-qualification

The company shall annually assess Mechanic and inform them (when required), as to areas of performance which require improvement.

Continuation Training

Training shall be provided to assist Technical understanding for career development and work requirements.

Section 3

Training Records

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3.1 Table of Contents

Title	Page No.
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3.2 Records	3

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3.2 Records

1. All the maintenance training course contents, materials and syllabus will be sent to the ECAA for study and approval.
2. Nesma Airlines has a separate file for each Instructor/ Examiner approved from the ECAA containing the following:
 - Full detailed Resume for the Instructor/ Examiner.
 - Copy from the ECAA License or Equivalent.
 - Copy from the approved Instructor course or the approval of the training center of the instructor.
 - Copy from the ECAA approval for the instructor or the training center.
 - Copy from the Instructor/ Examiner Qualification
 - Documents pertaining to Instructor/ Examiner assignments.
3. Nesma Airlines has a separate file for each trainee contains the following:
 - Name,
 - Date of birth,
 - Course Name.
 - Basic training,
 - Type training,
 - Date Started and Date Ended of the course.
 - Refreshing training, course data
 - Experience,
 - Qualification relevant to the approval.
 - Scope of the authorization.
 - Date of first issue of the authorization,
 - Expire date of the authorization; and
 - Identification number of the authorization.
 - Copy from the work sheets or On-Job Training (OJT) if applicable.
4. Nesma Air Lines records the following:
 - Course file including:
 - a) Training Order
 - b) Approved syllabus
 - c) Attendant Sheet
 - d) Exams & Results
 - Evaluation Report Training Plan
 - Planned Approval Courses

5. All records are filed and kept for 2 years.
6. All approved courses are filled separately with its approved syllabus and training hours.
7. Computerized Training Records will be used to record training and qualification status of personnel performing maintenance tasks for the company and to forecast needs for additional and recurrent training programs.
8. Computerized Training Records for the company maintenance personnel will be maintained and kept by the Chief inspector.
9. Completed Training Reports are transfer to individual training records.

Section 4

Training Policy

4.1 Table of Contents

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4.2 Introduction & Policy

The main purpose of the maintenance training is to train the maintenance engineers and technicians according to ECAR 147 and Nesma Airlines company policy to keep the technical level to optimum, upgrade the technical knowledge for maintenance staff.

Also keep the practical and On Job Training to the optimum required level.

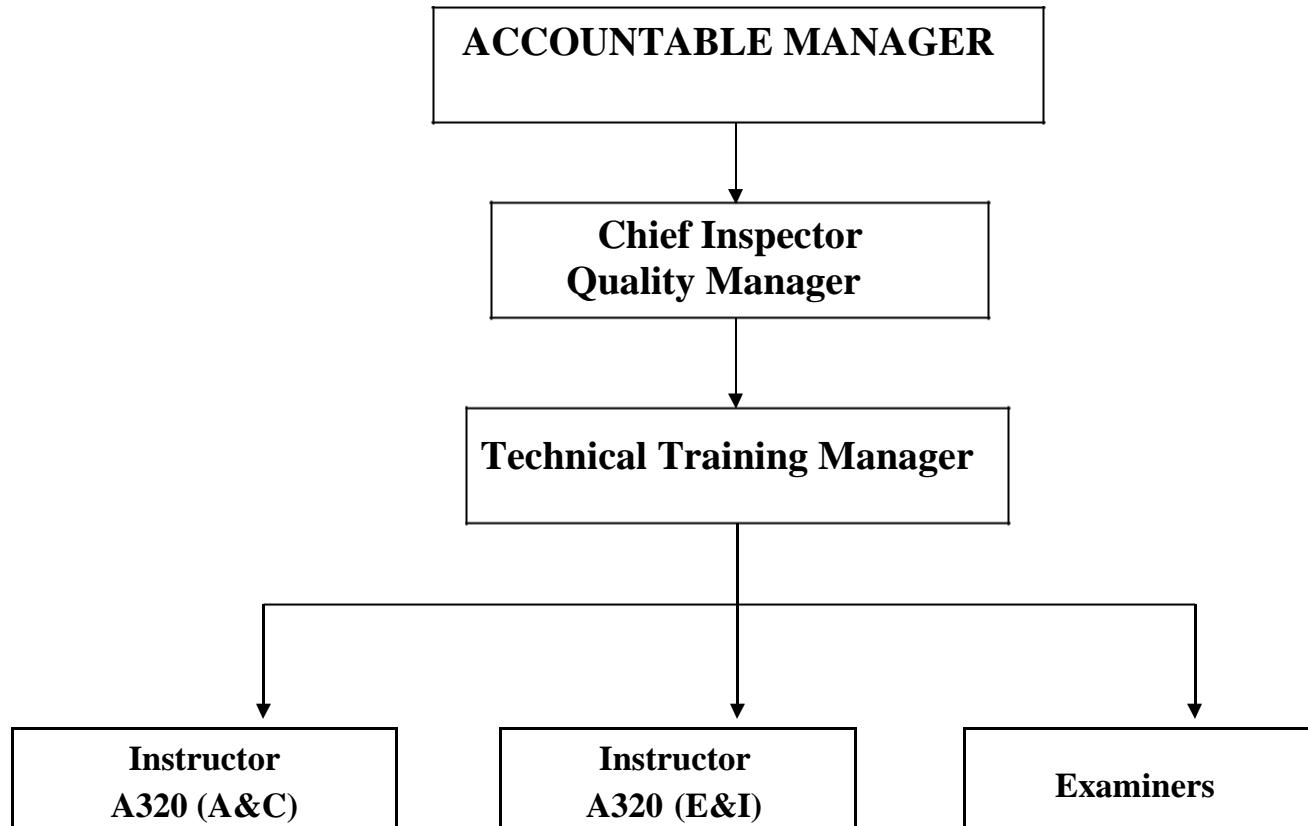
4.3 Maintenance Training Program

4.3.1 General

1. Nesma airlines training program assures all maintenance personnel receive initial and recurrent training that is appropriate to individually assigned tasks and responsibilities, and provides maintenance personnel with:
 - i) The knowledge of ECAA regulations, Nesma airlines standards and procedures in accordance with Requirements in the GMM.
 - ii) The knowledge and skills related to human performance, including coordination with other maintenance personnel and flight crew
2. Nesma airlines training program provides for continuation training on an interval not to exceed 24 months, which may be reduced to a lesser interval based on findings generated by the QA Program.
3. Continuation training would cover changes in relevant State of Registry/Authority requirements, changes in organization procedures and the modification standard of the products being maintained plus human factor issues identified from any internal or external analysis of incidents. And explains and addresses human factors principle
4. Nesma airlines provide an initial and continuation training for receiving inspectors.
5. Continuation training requirements are intended to apply to personnel performing and certifying maintenance, as well as to planners, inspectors of incoming goods and other maintenance personnel that have safety-critical responsibilities.
6. Technical training is an integral part of the maintenance process. The training process must be continuously upgraded, expanded to reflect new equipment and procedures, the curriculum shall be modified whenever new discoveries arise in any of its parts, in order to conform to minimum level of international development in its field
7. Nesma Airlines shall present the training curriculums for planned courses for approval annually (see planned approvals form) (section 5)

8. For more efficiency Nesma Airlines has a report to evaluate each course (Trainees, leisure time of instructors, failure and success and attendance limitations) and should be distributed to trainees, supervisors and inspectors.
9. If the evaluation reports regarding any course presented by either the supervisors or the inspectors (in the majority) will prove that the course is below average, the approval will be suspended until corrective actions have been implemented. Then the course will be allowed to be conducted once to reevaluate it and if the audit standards are met then its approval resumes, otherwise, it will be revoked completely or partially according to the situation
10. If the course is not listed on Nesma Air Lines, Nesma Air Lines shall convene this course in Egypt air Training Center or any Training Center approved from ECAA and should take certificates from there.
11. Nesma Airlines ensures that the training and procedures manual is amended as necessary to keep the information contained therein up to date.
12. Nesma Airlines ensures that the personnel with technical responsibilities have the requisite knowledge of regulations, standards and procedures in accordance with requirements in the GMM.

4.4 Training Management Tree:



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4.5 Responsibilities

Reference: ECAR 145 .13

- A management system is documented in controlled company media at both the corporate and Operational levels. GMM is documenting the management system.
- Nesma air lines GMM Section 2 provides a comprehensive description of the scope, structure and functionality of Technical management system and depicts lines of accountability throughout the organization, as well as authorities, duties, responsibilities and the interrelation of functions and activities within the system for ensuring safe and secure operations.
- Nesma air lines GMM provides; organization charts (GMM Sec 2.2), job descriptions and other descriptive written material that defines and clearly delineate the management system. It also reflects a functional continuity within the management system that ensures the entire organization works as a system and not as a group of independent or fragmented units
- Nesma air lines management system ensures compliance with all applicable standards and regulatory requirements. And shall comply with Egyptian Civil Aviation Authority.
- Nesma air lines have a management system for maintenance operations, comprising a staff of personnel suitably matched to the scale and scope of maintenance operations, to ensure maintenance of all aircraft is performed in accordance with Approved Maintenance Program and all maintenance is carried out in accordance with policies and procedures contained in the GMM (Sec. 4)

4.5.1 Accountable Manager Responsibilities

1. The accountable manager is the single senior management official is typically designated as the individual with overall accountability for ensuring the safety and security of operations.
2. The accountable manager shall be accepted by ECAA and financial control to make policy decisions, provide adequate resources to accomplish maintenance in accordance the organization's approval, resolve safety and quality issues and, in general, ensure necessary system components are in place and functioning properly
3. The Accountable manager shall ensure that any charges are paid, as prescribed by the ECAA in respect of ECAR 145 approval.
4. The accountable manager is responsible for ensuring that all necessary resources are available to accomplish maintenance in accordance with this Part to support the organization's approval.

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4.5.2 Chief Inspector Responsibilities

1. Chief Inspector is responsible directly to the accountable manager for the overall operation of the maintenance Quality Control Section.
2. He manages the safety and quality in maintenance operation.
3. He fills Approving Form 1210-054 to notify ECAA in case of change of NESMA Airlines activity.
4. He is responsible for directing, planning and laying out details of inspection standards, methods, and procedures used by NESMA Airlines in compliance with the applicable regulations and manufacturer's recommendations.
5. He administrates and issue amendments of General Maintenance Manual (GMM), and an appropriate amendment in GMM shall be made as soon as practical when it is requested by ECAR-145, 121.
6. He establishes and amendment of Nesma air lines approved maintenance program.
7. He supervises proper use of approved Minimum equipment list and configuration deviation list.
8. He assists, supervises and direct all personnel assigned to the quality Control section. It will be his duty to ensure that all inspection are properly performed on all completed work before it is released, and that the proper inspection records, reports, and forms used by NESMA Airlines are properly executed and to assure all work performed in compliance with ECAR 145 requirements.
9. He is responsible for arrange for maintenance of any aircraft or aircraft component for which it is approved at another organization reference to ECAR 145-37b
10. He is responsible for developing standard operating procedures; establishing policies, systems and standards related to quality Control activities and collecting necessary information and developing corrective actions for improvement.
11. He Ensures/verifies technical data on all units. These approved data consist of manufacturers overall manuals, airworthiness directives, service bulletins and ECAR.
12. He is Responsible the Certificate of Airworthiness of each aircraft remains valid.
13. He is responsible for Maintenance technical training
14. Controlling Nesma air lines maintenance records.
15. reporting of airworthy conditions "ECAR 145.27"
16. issuing directives and notices to the subcontracted AMOs as required
17. Making periodic checks on all inspection tools and the calibration of precision test equipment. He is responsible to advise a system of keeping records of checks and calibration of inspection

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tools and precision test equipment, taking steps to ensure that the established check periods are not exceeded.

- 18. He controls of Aircraft certification and equipment and instrument requirements and responsible for the final acceptance of all incoming material including new parts, supplies, and the airworthiness of articles on which work has been performed under contract.
- 19. He defines qualification requirements/policy in accordance with ECAR-65 for certifying staff.
- 20. Supervision over the maintenance and preventive maintenance personnel training programs.
- 21. Authorizing and issuing approval to NESMA Airlines staff to certify work, in conformity with regulations as applicable to ECAR-145, 65 and conducting technical examinations.
- 22. He is responsible for liaison with the ECAA on the matters related to ECAR-145, 121 requirements.
- 23. Investigation non-compliance of airworthiness requirements of GMM and taking appropriate action against the errant individuals such as issuing warnings/reprimands or to suspend / withdraw approvals, or recommending to Accountable Manager.
- 24. He is responsible for auditing; performing the internal audit program, AMO auditing and continuous surveillance of organization.
- 25. The quality control of all the operator's maintenance responsibilities performed by AMOs;
- 26. He is responsible of Mechanical reliability reports and Reliability program control.
- 27. Maintaining the validity of all documents required by ECAA/ECAR, for operation of aircraft.
- 28. Acting as the principal channel of communication between all departments of the organization and Airworthiness Authorities on all airworthiness matters.
- 29. He is responsible of Alteration and repair reports.
- 30. Notifying occurrences reports (if happened) to ECAA.
- 31. Maintaining continuous links with the authority and manufactures.

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4.5.3 Training Manager Responsibilities

1. The training manager is reported to the Technical Director.
2. The training manager response for sending all the maintenance training course contents, materials and syllabus to the ECAA for study and approval.
3. The training manager should assure that all maintenance personnel receive initial, continuation and any additional training appropriate to individual assigned tasks and responsibilities.
4. Follow up training history for all technical personnel to provide any more training needed
5. Plan the maintenance training schedule annually
6. Coordinate with chief inspector for Basic Indoctrination course for any new maintenance personnel or updated GMM.
7. Coordinate with any ECAA approved training center for any courses needed.
8. Control all record training and qualification status of personnel performing maintenance tasks for the company and to forecast needs for additional and recurrent training programs.
9. Responsible for TECHNICAL TRAINING amendment.

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4.6 List of approved Instructors

Refer to NMA Instructor list PDF / Training.

Related to instructor list at training manger office to keep updated,

4.7 Technical Instructor

4.7.1 Technical Instructor Definition:

A Technical instructor is a person selected from:

- 1. Nesma Air Lines Instructors
- 2. Any Training Center approved from ECAA

4.7.2 Technical Instructor requirement

1. The instructor should receive an approved training procedures course
2. He must hold a license issued in related to civil aviation field related to the courses he intended to do.
3. He should have accomplished the specific training related to the subjects he aims to teach
4. Must be at least 24 years of age
5. Must be able Read, write, speak & understand the English Language.
6. Must be pass a knowledge test on the fundamentals of instructing to include:
 - The learning process.
 - Elements of effective learning.
 - Student evaluation and testing
 - Course development.
7. The training department shall ensure that all instructional personnel receive initial and continuation training appropriate to their assigned tasks and responsibilities.
8. must attain training course for Human factor
9. The training department shall submit an application for approval for the instructor, using the appropriate form issued by the ECAA along with all the official documents required before conducting any training activity requiring approval.
10. Upon fulfilling all the requirements, the instructor will be allowed to teach course once under the supervision of civil aviation inspectors.
11. If his performance meets ECAA standards then an instructor approval valid for three years will be issued to him; and
12. When an approved instructor receives any approved specific course, ECAA add This to his Approval

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4.8 Technical Supervisors:

- 1 – Prepare for the attendant Sheet and the technical order.
- 2 – Review for the condition of the classrooms w.r.t lights, Air conditioning ...
- 3 – Prepare the publication and the C.Ds for the Course

4.9 Examiner

Refer to [NMA Examiner list PDF / Training List](#). Related to Examiner list at training manger office to keep updated,

All exams are done by ECAA Examiner for (A&C) or Multi (X) rating

See the GMM Section 6.24.2

4.10 Renewal and Maintain ability

Two weeks before the expiry date of a technical / Instructor LOA, an application for renewal should be submitted to ECAA, using the appropriate form (12110-218).

Note:

No Person allowed teaching course leading to certifying privileges unless he holds LOA issued from ECAA

4.11 Classroom Premised & Facilities

1. Nesma Air Lines will comply with ECAR 147 to conduct all training schools, centers, institutes, and/or department as a sufficient training to apply for issuing a license or adding training specifications, or permanent approval to perform some specific tasks in any civil aviation field.
2. Also to conduct all certificates and general rules for the holders of those certificates, training specifications and an aviation maintenance school certificate
3. Nesma Airlines has an ECAA approved Class Room which comply with all items on ECAR 147.5 (item 11, 12) & ECAR 147.21.
4. The Main Office and Class Rooms are located at 5 El-Madina St. El-Nozha El-Gedida - Heliopolis, Cairo- Egypt
5. The Class Room is approved for
 1. 16 Trainees (Engineers) or 13 Trainees (Pilots).
 2. 14 Trainees (Engineers) or 11 Trainees (Pilots).
 3. 12 Trainees (Engineers) or 9 Trainees (Pilots).

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4.12 Class Room Certificates

Ministry of Civil Aviation
Egyptian Civil Aviation Authority

Technical Level Directorate

DOC. 12110
Policy and Procedures Manual

Form12110-217

Technical Training Class Certificate

1- Center / Company Name: NESMA AIRLINE	2- Name of Director: SAMER TAYSER FAHMY
3- Center / Company Address: 5 EL MADINA ST EL NOZAHA CAIRO, EGYPT	4- Telephone # 22677251
	5- Fax # 22683220
6- Classrooms Address: : 5 EL MADINA ST EL NOZAHA CAIRO, EGYPT	7 Telephone # 26968008
	8- Fax # 22683220

Dear Sir.

With reference to your application dated 31/5/2010 Concerning the above subject. We have the pleasure to inform you that this training class is approved to conduct theoretical training for 16 Trainees under the following approval No

Approval No : ECAA/ NESMA AIRLINE /16 trainees/01/2010

Administrator , ACA

Name: ENG./ Mohamed Ibrahim Sherif

Signature:



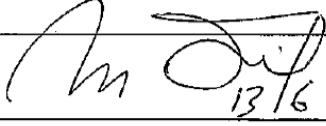
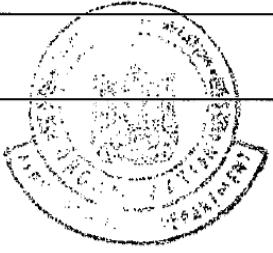
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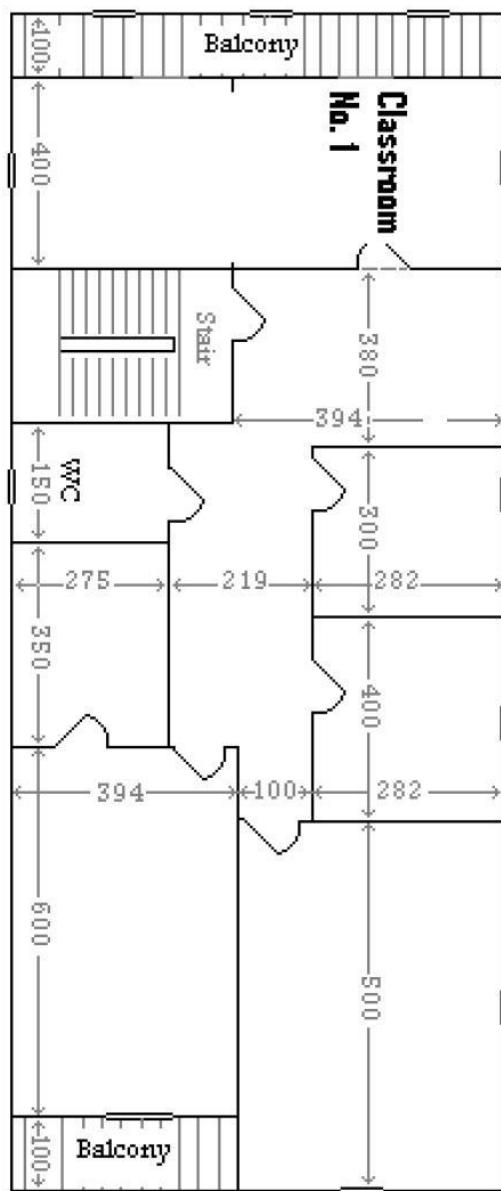
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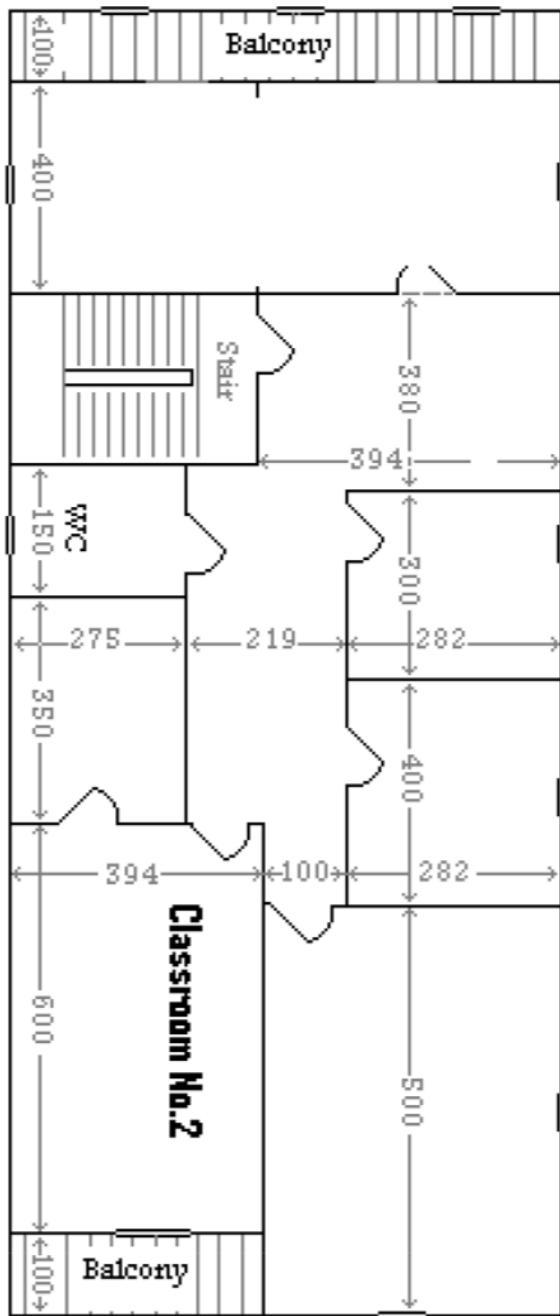


Form12110-217

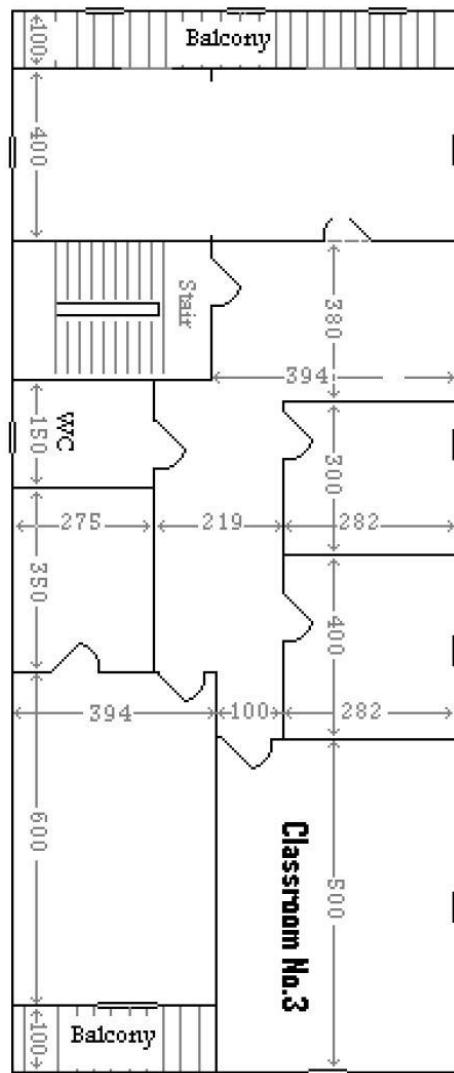
Technical Training Class Certificate

1- Center / Company Name: <i>Nesma Airlines</i>	2- Name of Director <i>Captain:Samir Fahmi</i>
3- Center / Company Address: <i>5, El madinah st., El nozha El gadidah,Cairo-Egypt</i>	4- Telephone # +202 2621 7591/2/3/4
	5- Fax # +202 2624 6919
6- Classrooms Address:	<i>5, El madinah st., El nozha El gadidah,Cairo-Egypt</i>
<p>Dear Sir:</p> <p>With reference to your application concerning the above subject. We have the pleasure to inform you that this training class is approved to conduct Theoretical Training for 10 Trainees "Engineers/Pilots" under the following approval No:</p> <p>Approval No: <i>ECAA/Nesma Airlines/10 Trainees/1/2010</i></p>	
<p>Administrator , ACA</p> <p>Name: <i>Eng:Mohamed Ibrahim Sherif</i></p> <p>Signature: </p> <p>Date: </p>	

4.13 Classrooms Layouts**Classroom 1**

Classroom 2

Classroom 3



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4.14 Records

1. All the maintenance training course contents, materials and syllabus will be sent to the ECAA for study and approval.
2. Nesma Airlines has a separate file for each Instructor/ Examiner approved from the ECAA containing the following:
 - Full detailed Resume for the Instructor/ Examiner.
 - Copy from the ECAA License or Equivalent.
 - Copy from the approved Instructor course or the approval of the training center of the instructor.
 - Copy from the ECAA approval for the instructor or the training center.
 - Copy from the Instructor/ Examiner Qualification
 - Documents pertaining to Instructor/ Examiner assignments.
3. Nesma Airlines has a separate file for each trainee contains the following:
 - Name,
 - Date of birth,
 - Course Name
 - . Basic training,
 - Type training,
 - Date Started and Date Ended of the course.
 - Refreshing training, course data
 - Experience,
 - Qualification relevant to the approval.
 - Scope of the authorization.
 - Date of first issue of the authorization,
 - Expire date of the authorization; and
 - Identification number of the authorization.
 - Copy from the work sheets or On-Job Training (OJT) if applicable.

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4. Nesma Air Lines records the following:

- Course file including:
 - a) Training Order
 - b) Approved syllabus
 - c) Attendant Sheet
 - d) Exams & Results
 - e) Evaluation Report
- Training Plan
- Planned Approval Courses

5. All records are filed and kept for 2 years.

6. Computerized Training Records will be used to record training and qualification status of personnel performing maintenance tasks for the company and to forecast needs for additional and recurrent training programs.
7. Computerized Training Records for the company maintenance personnel will be maintained and kept by the Chief inspector.
8. Completed Training Reports are transfer to individual training records.
9. Upon successful completion of maintenance training course, the student will receive a Certificate of Completion. A copy of the Certificate will be placed in the individual's training record.

Section 5

Training Facility

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5.3 Approval of training schools, departments, centers, institutes or divisions	3
5.4 Instructional equipment requirements	4

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5.2 Introduction

1. Nesma Airlines has an ECAA approved Class Room which comply with all items on ECAR 147.5 (item 11, 12) & ECAR 145 ECAR 65.
2. The Main Office and Class Rooms are located at 5 El-Madina St. El-Nozha El-Gedida - Heliopolis, Cairo- Egypt
3. The Class Room is approved for
 1. 16 Trainees (Engineers) or 13 Trainees (Pilots).
 2. 14 Trainees (Engineers) or 11 Trainees (Pilots).
 3. 12 Trainees (Engineers) or 9 Trainees (Pilots).

Refer to "Section 1" for the ECAA Approval.

4. Nesma Airlines Classrooms shall be equipped with safety and firefighting devices, emergency equipment, appropriate advisory marks in clear places of the buildings, along with appropriate emergency exits suitable for all abnormal conditions and possess the necessary trained personnel for the fire extinguishing and lifesaving to fulfill the requirements of industrial safety

(3) The training department shall issue a course training order before conducting it, and send it to the ECAA, at least one week in advance, to allow the ECAA inspectors to perform the necessary review

(4) Nesma Air Lines interests of safety specialists for the following:

I. Corporate training for all staff;

III. Training for operational personnel (pilots, cabin crews, maintenance, technicians, ramp personnel, etc.);

IV. Training for aviation safety specialists (such as the **SM**, Flight Data Analysts, etc.).

(5) Safety management system

a) Nesma Airlines shall establish, implement, maintain and adhere to a safety management system that is appropriate to the size, nature and complexity of all activities authorized to be conducted under the certificate and in accordance with EAC 00-11.

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- b) That system shall as a minimum:
 - 1. Identify safety hazards;
 - 2. Ensure that remedial action necessary to maintain an acceptable level of safety is implemented;
 - 3. Provide for continuous monitoring and regular assessment of the safety level achieved; and
 - 4. Aim to make continuous improvement to the overall level of safety.
- c) The results of this system and related audits and corrective actions shall be made available to the ECAA upon request

5.3.2 Duration of certificates:

- I. An aviation Training certificate and training specification are effective for two years unless until it is surrendered, suspended, or revoked; and
- II. The holder of a certificate that is surrendered, suspended, or revoked, shall return it to the ECAA.

5.3.3 Display of Certificate:

Nesma Air Lines shall display Training certificate and training specifications at a place that is normally accessible to the public and is not obscured

5.3.4 Changing of Location & Training Facilities:

- I. Nesma Air Lines shall notify ECAA if Nesma Air Lines changes the location of training facility at least 30 days before the day of change is contemplated.
- II. Any major change occurring to the Nesma Air Lines training facility, the organization structure, the training department or its rules or certificates shall be submitted to the ECAA at least 3 weeks before any changes is made on a form and in a manner prescribed by the ECAA.

5.3.5 Inspection:

- I. The ECAA may, at any time, inspect Nesma Airlines Maintenance facilities to determine its compliance with this Part. Such an inspection is normally made once each six months to determine if the training department continues to meet the requirements under which it was originally certificated. After such an inspection is made, the training department is notified in writing, of any deficiencies found during the inspection. Other informal inspections may be made from time to time.

- II. Nesma Airlines will be advised with the ECAA recommendations within one week from achieving inspections.

5.4 Instructional equipment requirements:

- (1) Nesma Air Lines training department must have the following instructional equipment as is appropriate for the training specification:
 - (i) Various kinds of airframe structures, airframe systems and components, powerplants, and powerplant systems and components of a quantity and type suitable to complete the practical projects required by its approved curriculums.
 - (ii) At least one aircraft of the type, with powerplant, instruments, navigation and communications equipment, landing lights, and other equipment and accessories on which the maintenance personnel may fulfill their on-job training requirements.
- (2) Airframes, powerplants, appliances, and components thereof, on which instruction is to be given, and from which practical working experience is to be gained, must be so diversified as to show the different methods of construction, assembly, inspection, and operation when installed in an aircraft for use. There must be enough units so that not more than eight students will work on any unit at a time to the satisfaction of ECAA. Meanwhile the number of students per an instructor shall not exceed eight students.
- (3) Materials and special tools requirements:
 - a) Nesma Air Lines maintenance training department have an adequate supply of materials and special tools as appropriate to the approved curriculum. The special tools must be in satisfactory working condition for the purpose for which they are to be used.
 - b) Nesma Airlines provide facilities, equipment, and material equal to the standards currently required for the issue of the certificate and training specification that it holds.
 - c) Any change in facilities, equipment, or material that has been approved for a particular curriculum should be approved by the ECAA in advance.

Section 6

Quality

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6.2 Quality Assurance & Safety Management

- a- Nesma Airlines compliance with ECARs ,Part 19 , by establishing a safety management system that is acceptable to the ECAA, maintaining it, and completing its implementation as per the chronology mentioned in this regulation.
- b- Safety and quality are integral and essential elements of every process at NESMA AIRLINES. We consider safety and quality to be vital characteristics of our products, intimately linked to how we perform our activities.
- c- Corporate Manual is the tool of NESMA AIRLINES General Manager for setting policies and standards for management oversight, to ensure that elements, of safety and quality management system are applied in all NESMA AIRLINES activities
- d- Corporate Manual is Contains the Internal Evaluation Program (IEP) Audit procedure, and audit check list of all the company Departments .The Procedure for corrective actions, in case of any discrepancy in the system before it may occur
- e- For more details about quality and safety See Corporate Manual
- f- Safety awareness training is a part of the technical recurrent course for both A&C and Xa & Xe.

Section 7

Training Course

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7.2 Approval of training curriculums

A thorough identification of the knowledge level is required, in order to qualify certain specialists, to allow them to apply for the Egyptian civil aviation tests required to issue or add ratings to the maintenance license, or to permanently approve them by an approved maintenance organization, to perform some specific tasks in the civil aviation field.

7.3 General curriculum requirements

- (a) These curriculums shall provide the minimum level of knowledge and experience required by Part 65.
- (b) They shall conform to the corresponding knowledge level defined in the Egyptian Civil Aviation Training Standard Handbook (ECATSH).
- (c) It is preferable to comply with the corresponding curriculums used in the international training centers of aircraft's manufacturers and their units.
- (d) A syllabus shall be established for each curriculum including a schedule for each part of the curriculum suitable to the trainees' level.
- (e) References, from which curriculum parts are extracted, and which conform to the approved publications of the manufacturer or ICAO or other approved training centers shall be specified in a syllabus.
- (f) Syllabus shall list the training aids necessary for each part in order to reach the goal sought.
- (g) The sequential order to follow in teaching the curriculum parts, and also the intermediate requirements shall be specified in the syllabus.
- (h) The curriculum must show:
 - (1) The required practical projects to be completed.
 - (2) A list of the minimum required tests to be given.

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7.4 Approval procedure

- (a) The training department shall submit the curriculum for approval, at least 15 days before conducting it for the first time using the appropriate application form issued by the ECAA.
- (b) The T.D is responsible to provide all facilities and information required to study the approval requested.
- (c) When preliminary acceptance to the proposed curriculum is granted, the applicant shall provide two copies of the training Chapter pertaining to the curriculum along with all related official documents.
- (d) Upon fulfilling all demands of the ECAA, a coded approval number is issued to the curriculum, designating the applicant name, the curriculum level and its specification and completeness, its training specifications and issue year, and revision number in this year.

7.5 To maintain approval validity

- (a) The curriculum shall be experienced practically in a trial course under the supervision of the ECAA inspectors to demonstrate its competence for actual application.
- (b) Nesma Airlines shall adhere to its approved curriculum. However the curriculum shall be modified whenever new discoveries arise in any of its parts, in order to conform to minimum level of international development in its field. Upon modification of parts of the curriculum an application shall be submitted for revalidation before applying it in any training course.
- (c) The ECAA may suspend the approval given to any curriculum when it deviates from any of the approval requirements. If it doesn't satisfy the requirements to resume its validity, the ECAA can revoke it either completely or partially according to the situation.

7.6 Approval of training courses (training specifications)

- (a) An approved curriculum or parts of approved curriculums shall be specified for each course.
- (b) Prerequisites for each course shall be specified.
- (c) A sufficient number of approved instructors, specialized for each of the different parts of the curriculum, shall be nominated accordingly.
- (d) Approved training manuals or documents pertaining to the course shall comply with parts of the curriculum covering the course schedule, and shall be precise (i.e. clear and with distinct sections, and revised according to the most recent modifications) and appropriately packaged.
- (e) Approved classrooms equipped with necessary training aids to teach the theoretical parts of the course syllabus shall be specified.
- (f) Approved departments equipped with necessary training facilities to achieve the practical parts of ground training courses, shall be specified.

(g) A certificate or result form, designed in a way conforming to the training order issued for each course, shall be determined along with approved signatories.

(h) The name or title of the course shall identify some of the following details, to classify the course according to the appropriate training specifications:

(1) Level divisions: first, second, or third (according to the ICAO ratings),
or: basic specific, or advanced (according to the ECAA ratings respectively);
The training department shall issue course training

(2) Type divisions: general, familiarization, initial, conversion, differences, practical, trouble shooting, refreshing, simulator, complementary or regulations;

(3) Field divisions: Repair, overhaul, line maintenance, chemical, NDT, or taxiing;

(4) Specialization division: airframe, engine, radio / radar, electrical or avionics, units or devices;

(5) Model of: aircraft, engine, unit or device; and

(6) In the case of creating any other nominations they shall be approved in advance from the ECAA.

(i) The training department shall submit for the approval of the course, at least 15 days before conducting it for the first time, using the appropriate form issued by the ECASA, along with all necessary documents to fulfill the requirements for approval.

(j) The applicant shall present all facilities and information requested by the ECAA inspectors to examine for course approval.

(k) Within one week of completing the inspections, the applicant will be notified of any additional requirements.

(m) The training department shall issue a course training order before conducting it, and send it to the ECAA, at least one week in advance, to allow the ECAA inspectors to perform the necessary review.

(n) Training orders shall contain (at least) the following data:

(1) Name of training school and its approval number;

(2) Training order number and its date of issue;

(3) Course name and its approval number;

(4) Starting and terminating dates of the course, and its schedule;

(5) Name of approved instructors assigned to teach different parts of the curriculum, and their approval number;

(6) Different places where parts of the syllabus will be conducted, and their approval number;

(7) Name of technical supervisors of the course; and

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(8) Name of trainees and their fulfillment of the prerequisites of the course. Note: In case any approved course is conducted without submitting its training order, its graduates will not be allowed to apply for issue or addition of ratings or temporary approvals related to that course.

- (o) If the evaluation reports regarding any course presented by either the supervisors or the inspectors (in the majority) will prove that the course is below average, the approval will be suspended until corrective actions have been implemented. Then the course will be allowed to be conducted once to reevaluate it and if the audit standards are met then its approval resumes, otherwise, it will be revoked completely or partially according to the situation.

7.7 Employee Training

- Training of both approved and other personnel will be accomplished as necessary by classroom instruction plus on the job training and on occasions training at the product manufactures facility. Training is also conducted in Nesma Airlines approved classroom by approved instructors.
- Classroom training will be accomplished by training instructor supplemented by the company's experienced technical supervisors and managers as necessary

7.8 Initial and continuous Training

Initial and continuous Training for Personnel of contracted maintenance or third party service provider Nesma Airlines performs either the training in house, or at the contracted maintenance, or at third party facility. This depends on which is most suitable and cost efficient.

The training will be conducted through classroom and on the job training to insure that all maintenance is done according Nesma and ECAA procedures, standards and regulations. Basis of the training is given in detail here after and depends on the position the person is qualified for.

Every person who works on an aircraft of Nesma receives an initial, continuous and/or recurrent training to perform a proficient and qualified work.

Refreshing Course must be repeated every 2 years.

In the training program for all employees in the maintenance department, internal or external, a human factors course is mandatory. The human factors course can be done in-house or by an external training provider.

PDC, Daily and weekly inspections training are a part of the technical recurrent course for both A&C and Xa & Xe.

RVSM recurrent training is a part of the technical recurrent course for both A&C and Xa&Xe

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7.8.1 Human Factor Training Procedures

Nesma Airlines ensuring that the training program includes training in knowledge and skills related to human performance, including co-ordination with other maintenance personnel and flight crew.

This course has a recurrent interval (2years from initial course), which is a part of technical recurrent course.

7.8.2 Safety Management System (SMS):

Nesma Airlines provides for its technical staff an intimal SMS course with the recurrence every 12 months.

7.9 Training Policy for Certifying personnel

- (1) Certifying personnel join Nesma Airlines
 - a. Hold certificate of engineering as B.SC Degree from Approved Egyptian University (Mech-Elect-communication or Equivalent)
 - b. Hold license without type Rating (LWTR)
 - c. Not less than 20 years
 - d. The following training Courses:
 - Basic Indoctrination course.
 - Human Factor course.
 - Regulation (ECAR) course
 - Have Specific A/C training Course.
 - Have GMM Course.
 - RNP, CAT II and RVSM Course
- (2) The training courses must be approved from the ECAA and teach by approved instructor in approved classroom.
- (3) The trainee must be attended at least 75% from the total hours of the course.
- (4) After finish the training courses shall examined Writing in ECAA.
- (5) The degree to pass to any exam must be at least 70%.
- (6) The result of the exam must be kept in the trainee and exam record file in the training department.
- (7) Every trainee must have O.J.T (on job training) related to the A/C specific course as a part of the course to complete it.

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- (8) After O.J.T and the work sheet required completed , the trainee has do an oral exam with the examiner Board company to have tech.Approval
- (9) The refreshing course must be repeated every 2 years from the initial course.

NOTE: The technical approval issued after 9 months practical training on the A/C.
Other 6 months practical training for adding a rating.

- (10) The technical approval copy will kept in the trainee file.

7.10 Planner and Engineering personnel

Any planner and engineering personnel join NESMA AIRLINES shall have the same policy as in item 3.1.1 and specific planning course following training course:

1. basic indoctrination course
2. human factor course
3. Regulations (ECAR) course

3.9 a) specific planning and Engineering course shall have the following
I – Engineering Course ii – Planning Course

- a. Familiarization of planning
- b. Presentation is aiming to highlight general practices in the planning general practices in the planning in order to familiarize all personnel technical department
- c. Ensuring adequate facilities, tools, equipment and materials for performing the planned tasks
- d. Execute and inspect the repairs
- e. Prepare job cards and associated procedures
- f. Release To Service documents
- g. Prepare corrective action documents
- h. Raw material, components and tooling needed for execution and control
- i. Trigger the scheduled repairs as planned and defined in the AMM, SRM....
- j. Launching scheduled repairs
- k. Trigger the unscheduled repair (SB/AD, reported repair, anomalies recorded in the log book)
- l. Launching the unscheduled repairs in coherence with planned work Discussion Point
- 1. Duties & responsibilities of planning staff
- 2. Focus on CN & AD processing
- 3. Focus on Maintenance program processing
- 4. Familiarization of forms used

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4. After finish the training course, he must work under the planner supervisor until gets sufficient experience to work by self.

7.11 Workshop Personnel.

Any Workshop personnel join NESMA AIRLINES should have the following:

1. LWTR
2. basic indoctrination course
3. Human factor course
4. Regulations (ECAR) course
5. Duties & responsibilities.
6. Basic Unit Overhaul Course
7. Approved a unit shop “U” in LWTR
8. Specific Unit Shop Course
9. ECAA will exam him and after accepting, Nesma Airlines will be approved him.

7.12 personnel (A&C or X) Mechanics

1. Any mechanics personnel join NESMA AIRLINES should have secondary school certificate and shall have the following Training course:
 - a. Familiarization of GMM.
 - b. Familiarization basic indoctrination course.
 - c. Specific A/C training course.
 - d. O.J.T related to the specific Course
2. After O.J.T completed, he worked under certifying personnel (GRD engineer) to carry out maintenance tasks & will notify supervisors of mistakes requiring rectification, to meet required maintenance standards.

7.13 Specialized services personnel (supervisor)

1. He is mechanic personnel worked under supervision of certifying personnel for long time (at least 5 years) he have the high experience in maintenance.
2. The NESMA AIRLINES should give the training course on special maintenance tasks to determine A/C or A/C component ready to release to service under the certifying personnel
3. After this course, He able to carry out specialized maintenance tasks under supervision of certified staff.

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7.14 Supervisors Personnel

1. When supervisor personnel join NESMA AIRLINES shall have the following training course :
 - a. Shall have basic Indoctrination Course
 - b. Shall have GMM Course
 - c. Shall have Human Factor Course
 - d. Shall have Regulation (ECAR) Refreshing Course.
 - e. Shall have Specific A/C training Course.
2. he worked as certifying staff for long time & he have high experience:
 - a. To ensure that all required maintenance tasks are carried out and where not completed.
 - b. He is evident that a particular maintenance tasks cannot be carried out in according with the maintenance Data.
 - c. He has Responsibility for appropriate Action to carry out maintenance tasks.
3. He have some course from another AMO Such as:
 - a. Structure repair
 - b. SAGE (system for the analysis of Gas turbine Engine)

7.15 Training Refresher Requirements

Refreshing courses must be approved from E.C.A.A before conducted Refreshing course repeated every two years

These courses can also done in Nesma Airlines Approved training class by qualified and approved trainers.

7.16 Engine privilege

Engine Run

Engine Run has the following qualification and training:

1. Must be from Nesma Certifying personnel.
2. Has at least 5 years' experience on A/C type.
3. No necessary recurrent course required.

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Borescope Inspection (BSI) Authorization

This authorization requires first to have type approval and that certifying staff is trained on specific engine and accomplish five times engine borescope inspections under supervision of authorized certifying staff.

7.17 Receiving Parts inspectors

Receiving Parts inspector has the following Qualification and training

- 1 – Graduated at least from Secondary School
- 2 – Has computer skills
- 3 – Initial Course in Receiving Parts inspection &Refreshing Course every 3 years
- GMM Chap 2

7.18 External Provider relevant training

Before starting the work by service provider or MRO. Nesma send by fax or Auditor the following items:

- 1 – Relevant training Documents on C.D or Hard Copy A – GMM /Identification/Chap 2/4

To be done for the persons doing the work

B – Trainer Authorization letter P15 Chap 6 after finishing the relevant training Nesma receive Document that the relevant training has done.

7.19 Regulation training

All personnel authorized for Aircraft or component for release to service certificate must be trained to specific courses including:

1. Basic indoctrination.
 2. ECAR requirements.
 3. Nesma Airlines GMM.
- 4.A refreshing course for certifying staff specific training are necessary once every 2 years for all personnel.

7.20 Definitions

- Initial Training: The training required for personnel who are entering A/C type training for the first time.
- Conversion Training: The training required for personnel who had been qualified and served in the same capacity on another aircraft of the same group.
- Refreshing Training: The training required for personnel who have the maintenance training course each 2 years from date of that training date to refresh the course.
- Programmed Hours: The hours of training prescribed in this subpart

On Job Training: after finish Maint theoretical course. The trainee must accomplish O.J.T under

supervision of the Maintenance Manager or any delegated certified person.

- Monitor of O.J.T carried out by chief inspector
- All paper work referred to the O.J.T must be signed by the trainee, approved by certifying person. And Maintenance Manager must be submit to the chief inspector References are:-
 - A.M.M
 - I.P.C (Illustrated Part Catalog)
 - MEL
 - Wiring Diagram

7.21 Auditors

See GMM 6.6

7.22 Drug and alcohol testing programs

1- Nesma Airlines Training Center will comply with ECAR 147-111,147-113 and 147-115

2- Refer to Safety Management Manual SMM

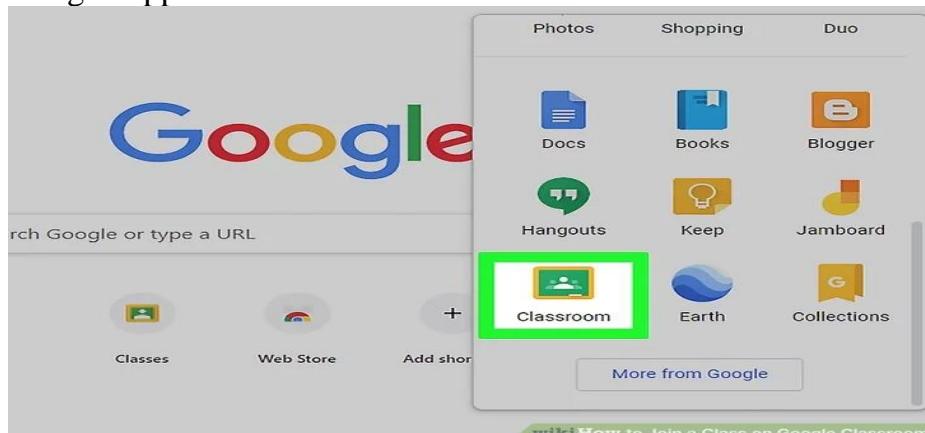
7.23 Procedure of Online Courses Introduction

-The purpose of this procedure is to describe steps needed to conduct the online training/ virtual training

-A classroom equipped with high speed internet connection, computer include (webcam, microphone, online application) or laptop.

-Equipped Classroom for the instructor only (in case of the instructor will conduct the online training inside Nesma airline classroom) ,In case of the instructor conducts the training outside the Nesma airline classroom, the training manger ensures that the instructor has the required equipment to conduct the online training effectively (at least lab top. High speed internet connection) and the Quality manger shall monitor the session periodically to ensure the effectively.

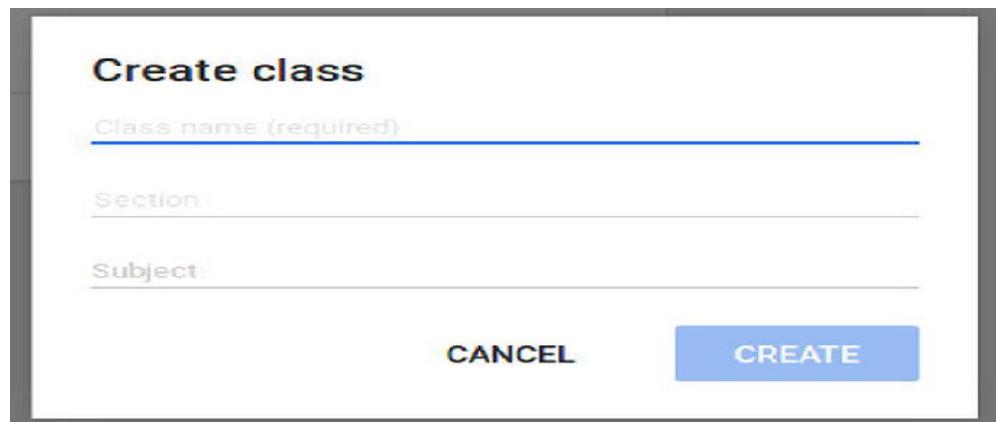
How to create online course using Google classroom:1-Open a Web browser and go to classroom.google.com. Instructor have to sign in with Nesma airlines email account to use Google Apps for Education account.



2-On the Welcome screen, click the plus sign at the top and choose Create Class.



3-In the Create a Class dialogue box, type in the Class Name and Section.



4-Click Create

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a-Add a new class: Just like on the Welcome screen, you can add a new class by clicking the plus sign in the top left next to your username.

b-Rename or archive a class: Click the three stacked dots next to the class name to either rename the class or archive it. Archiving a class means that, though you and your students can still access the class, no one can add assignments or make any other changes to the class. The class will move under the Archived section of the Home menu. Don't worry, though; you can restore the archived class at any time by viewing Archived classes, clicking the three stacked dots, and choosing Restore.

C-Access Google Drive for the class: Click the file folder icon in the bottom right corner of the class tile. This opens the Google Drive where all your classroom materials are stored.

D-Sending invitation email to engineers to attend classroom.

Responsibilities

Instructor

- 1-Creat Class room by using Google class room.
- 2- Sending invitation email to attendants to join online classroom.
- 3- Provide Course Information.
- 4-Fill Attendance sheet. (According to the screen shot captured including Trainee's name, daily date).
- 5- In case of session failure the instructor with IT coordinator to solve any problem and informing training manger if failure still exist.

Training Manager

- 1-Responsible for the contents of this documented procedure and of ensuring that it is followed.
- 2-Forwards the training Syllabus to Quality manger with determined details of the training program to be implemented with company requirement. Taking into consideration design and development procedure and to be approved from ECAA
- 3- If the online training course already exists. The Training Department Manager forwards the training order to Quality manger to proceed , check , review and sending to ECAA.
- 4- After issuing the training order, sending email for participants and before the first day of the online course
- 5-Responsible for Monitoring the online training during the conduction and obtaining instructors & trainee's feedback.
- 6- Coordinating with training aids in case of failures with IT department.
- 7- Acting as a coordinator among the management, instructor, and the trainees.
- 8-Reschedule the online session on another time in case of session completely failure the online course.
- 9-Assure that all the records are available in the online course file .

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Quality Assurance Manager

- 1- Taking the necessary steps to approve the online training courses from ECAA, and auditing the online training system according to this procedure of Quality control.
- 2- Is responsible for Monitoring periodically the online training during the conduction and obtaining instructors & trainee's feedback.

Section 8

Forms & Approvals

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Aircraft Maintenance Engineer's Worksheets F207-8

Year:

AIC: A320-232

Training Plan

Training Program	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Actual Date
Initial Training													
1) Airframe (Cat. A)													
2) Engine (Cat. C)													
3) Electric													
4) Avionics													
On Job Training													
1) Airframe (Cat. A)													
2) Engine (Cat. C)													
3) Electric													
4) Avionics													
Recurrent Training													
1) Airframe (Cat. A)													
2) Engine (Cat. C)													
3) Electric													
4) Avionics													
5) Main, Nose & Life Vest													
Miscellaneous													
1) Human Factor													
2) Basic Indoctrination													
3) ECAR													
4) GMM													
5) CAT II													
6) RVSM													
7) BRNAV													
8) Battery servicing P/N:2758													
9) Security													
10) SMS													

Name:\
Signature:\
Training Manager

Name:\
Signature:\
Chief Inspector

Form No. 207-1
Rev. 0
1 AUG 20

Name:\
Signature:\
Training Manager

Name:\
Signature:\
Chief Inspector

Form No. 207-1
Rev. 0
1 Mar 22

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Training Order No.:

Training Order Date:

Course Name:

Course Approval No.:

Name of technical supervisor:

Place:

Trainees:

Start:

Duration:

Time:

Instructor:

(With approval No.)

Trainee Names: Enclosure (1)

Program: Enclosure (2)

Signature:

Signature:

Eng./

Chief Inspector

Eng./

Training Manager

From No. F207-2

Evaluation Form

- | | |
|---|-------------------------------------|
| 1 | Name of Applicant: |
| 2 | ECAA License # |
| 3 | Rating: |
| 4 | Qualification Course (for Approval) |
| 5 | Applicant Signature: Date: |

Evaluator/ Examiner

- | | |
|---|------------------|
| 1 | Name: Title: |
| | Signature: Date: |
| 2 | Name: Title: |
| | Signature: Date: |

Evaluation and Acceptance

Please Check one Box

 Satisfactory Unsatisfactory

Comments:

Date: Date:

Name: Name:

Signature: Signature:

Chief Inspector Approval

Name: Date:

Signature:

Application for Approval

- | | |
|---|--|
| 1 | Name of Applicant: |
| 2 | ECAA License # |
| 3 | Rating: Types: |
| 4 | Qualification Course (for Approval) |
| 5 | Aircraft Type: |
| 6 | Applicant Signature: Date: |
| 7 | Department's Recommendations

Name: Title:

Signature: Date: |

Authorization Board Acceptance

- | |
|------------------|
| Name: |
| Signature: Date: |
| Name: |
| Signature: Date: |

From No. F207-5

Nesma Airlines نسمة للطيران	General Maintenance Manual Training	Chapter:	7
		Page:	69

Course Attendance Sheet

Title of Course :

Training Order No.:

From:

To:

Instructor Name :

Attendance Name :

No.	Names	/ /20.....	/ /20.....	/ /20.....	/ /20.....	/ /20.....	/ /20.....	Remark
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								

Instructor: Eng.

From No. F207-6

Nesma Airlines نسمة للطيران	General Maintenance Manual Training	Chapter:	7
		Page:	70

Evaluation Report Technical Department

Title of Course:

Training Order No.:

From:

To:

Location:

Instructor Name:

Trainee Name:

Nesma Airlines Training Department are constantly trying to improve the quality of our continuing education courses.
Please take a few minutes at the completion of the program to evaluate this course and presenter. Thank you.

Title	Strongly Disagree	Strongly Agree		
Meeting site was adequate in size, comfortable, and convenient				
Course administration was efficient and friendly				
Course material was up-to-date, well-organized, and presented in sufficient depth				
Instructor demonstrated a comprehensive knowledge of the subject				
Instructor appeared to be interested and enthusiastic about the subject				
Instructor spoke clearly and distinctly				
Instructor encouraged questions and participation				
Audio-visual materials used were relevant and of high quality				
Handout materials enhanced course content				
Overall, I would rate this course:				
Overall, I would rate this instructor:				

Comments (positive or negative):

From No. F207-7

Appendix A

Approvals List

	General Maintenance Manual Training	Chapter: 7 Page: 73
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A.1 Table of Contents

Title	Page No.
Cover page	1
A.1 Classrooms Approvals	2
A.2 Instructor Approvals	2

Nesma Airlines نسماء للطيران <small>Nesma Airlines نسماء للطيران</small>	General Maintenance Manual	Chapter: 7
	Training	Page: 74

A.1 Classrooms Approvals

Classroom No.	Address	Approval No.	Remark
1	5 El-Madina St. El-Nozha El-Gedida -Heliopolis, Cairo- Egypt	ECAA/NESMA AIRLINE/16trainees/01/2010	16 Trainees (Engineers) 13 Trainees (Pilots)
2	5 El-Madina St. El-Nozha El-Gedida -Heliopolis, Cairo- Egypt	ECAA/NESMA AIRLINE/14trainees/01/2010	14 Trainees (Engineers) 11 Trainees (Pilots)
3	5 El-Madina St. El-Nozha El-Gedida -Heliopolis, Cairo- Egypt	ECAA/NESMA AIRLINE/10trainees/01/2010	10 Trainees (Engineers) 9 Trainees (Pilots)

A.2 Instructor Approvals

Related to list kept at training manager office to keep updated

Chapter 8

Forms

	General Maintenance Manual Forms	Chapter: 8 Page: 2
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8.1 Table of Contents

Title	Form No.
Cover page	
8.1 Table of contents	
8.2 Technical development and Planning forms	
Bi Weekly Processing	F203-1
AD Status	F203-2
AD Evaluation	F203-3
SB Status	F203-4
SB Evaluation	F203-5
MOD Status	F203-6
Hard Time Component Status	F203-7
Life Limited Parts Status	F203-8
Defect Report	F203-9
Engineering Order	F203-10
Work Order	F203-11
Check Status Sheet	F203-12
Engineering Request	F203-14
Check Index	F203-18
Task Card Form	F203-19
Workshop forms	
Brake Unit Complete Overhaul	F204-01
BRK.U. LIFE EXT.SHIM INTALL	F204-02
BRK.U. TEST & FAULT ISOLATION	F204-03
MAIN WHEEL OVERHAUL	F204-04
MAIN WHEEL TEST & FAULT ISOLATION	F204-05
MAIN WHEEL TIRE REP	F204-06
NOSE WHEEL OVERHAUL	F204-07
Nose WHEEL TEST & FAULT ISOLATION	F204-08
Nose WHEEL Tire replacement	F204-09
NDT APPROVED TEST CERTIFICATE	F204-10

Life preserves eastern aero marine	F204-11
Ovhl Chronic or repetitive Snag	F204-12
Battery Regular Check	F204-13
Weight Change Summary	F204-14
Tool Control	F204-15
Technical Delay Report	F204-16
Emergency Equipment list	F204-17

8.3 Material forms

Request Form	F205-1
Good Receiving	F205-2
Serviceable Tag	F205-3
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US Tag	F205-5
Stock Status	F205-6
Shelf Life Follow Up	F205-7
US Parts to Quarantine	F205-8
Removed Part Tag	F205-9
From Store Delivery	F205-10
 Invoice	F205-11
Daily Temp. Check Form	F205-12
Shelf-Life Card Item	F205-15
Part History Card	F205-16

	General Maintenance Manual Forms	Chapter: 8 Page: 4
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8.4. Quality Forms

Technical Logbook Forms	F206-1
Aircraft deferred defect	F206-2
Cabin Defect Log	F206-3
Occurrence Report	F206-4
Accident Report	F206-5
Revision Confirmation	F206-6 R1
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Non-Routine Card	F206-9
CRS	F206-10
Calibration Due Date Alarm Report	F206-11
First Article Report	F206-12
Short Term Escalation Request	F206-13
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Cabin Deferred defect list	F206-15
Memo	F206-16
Audit Checklist	F206-17
Annual Audit Plan	F206-18
Notice to crew	F206-19
Audit Report	F206-20
Authorized Release Certificate	F206-21
preserved	F206-22
Corrective Action/ Preventive Action Request	F206-23
Technical Meeting Minutes	F206-24

Nesma Airlines نسماء للطيران	AD Biweekly Processing			Technical Department	
Routine AD check reveled the following:					
EASA Biweekly Number:					
Date:					
No. Of ADs Applicable:					
AD	Type/ Category	Description	Deadline Date	SB #	Effectivity / NMA Fleet
Remarks: (Copy of the Biweekly attached)					
FAA Biweekly Number:					
Date:					
No. Of ADs Applicable:					
AD	Type/ Category	Description	Deadline Date	SB #	Effectivity / NMA Fleet
Remarks: (Copy of the Biweekly attached)					
Checked by: Date:			Revised By: Date:		

AD Number:

Effective Date:

Rev:

ATA System:

Work Description:

Effectivity:

Applicable

Not Applicable

AD Compliance:

Due at:

Engineering Approval

Evaluated By: _____

Reviewed By: _____

Signature : _____

Signature : _____

Date : _____

Date : _____

Nesma Airlines نسما الطيران	SB Status	Technical Department
--------------------------------	------------------	-----------------------------

SB Status

Technical Department

Date

Nesma Airlines نسماء للطيران	SB EVALUATION	Technical Department
SB Number:	Effective Date:	
Rev:		
ATA System:		
Work Description		
Reason:		
<hr/> <hr/>		
Due:		
<hr/> <hr/>		
S.B Compliance:	<input type="checkbox"/> Optional	<input type="checkbox"/> Recommended <input type="checkbox"/> Mandatory
Euro Med Compliance:		
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Action Taken:		
<hr/> <hr/>		
Engineering Approval		Quality Approval
Evaluated By: _____		Reviewed By: _____
Signature : _____		Signature : _____
Date : _____		Date : _____

A/C:

Reg.:

S/N:

Aircraft Time:

Date:



Aircraft S/N:

P/N:

A/C TH:

Serial Number:

A/C TC:

Date:

Planning Manager

Chief inspector

Issue No. 4 R0 Dated 1/MAR/2022

1/1

From No. F203-8

Nesma Airlines نسماء للطيران	DEFECT REPORT	Technical Department
---------------------------------	---------------	----------------------

DEFECT REPORT

Nesma air lines
Cairo Int'l Airport
Cairo,
EGYPT

Phone:

Fax:

Purchase/Repair Order:

Date:

For the attention of

ATTN:

Tel:

Fax:

1. Unit Description:

2. Part No.:

3. Unit S/N:

4. Removed From: **MSN:**

5. Reason for Removal:
.....
.....

6. Action:

F206-21 Note:

Nesma Airlines نسماء للطيران	ENGINEERING ORDER	E.O No.
		A/C TYPE: A320
		REV. 0

Subject

Effectivity

Desc.	Page	Desc.			Page
TOC	1				
Planning	1				
Engineering	1				
General instructions	1				
Instructions	1				
Material	1				
Tools	1				
Drawings	1				
Total number of pages	8				

TOC

Engineering Order F203-10.xls
From No. F203-10

A/C Type: Reg.:

Subject:

Reference:

Background:

Request:

Signature:

Answer

Signature

Station: CAI	Nesma Airlines نسماء للطيران	Task number:
Card Seq.:		Issued By :
Registration SU-	Title	Intervals:
Date:		Skill:
RII Stamp		NRC Reference:

TOOLS	DESCRIPTION	MATERIAL & EXPENDABLE S	DESCRIPTION	QT Y

Feed Back

Finding : No YES NRC Numbers :

Performed by	Inspected by (RII)
Name:	Name:
Signature:	Signature:
Date:	Date:
Stamp:	Stamp:

* I hereby certify that the inspection / repair / replacement / modification specified above has been carried out in accordance with appropriate approved data in latest revisions under ECAA Approval No.: ECAA/AW/AE/G0075/R4

Actual task man hours:	Planned man hours:		
	TASKM.H.	ACCESSM.H.	PREP.M.H.

BILL OF WORK NO.											R00
A/C TYPE:		MSN:									A/C REG:

BOW FRONT MATTER

FROM: PLANNING & ENGINEERING DEPARTMENT

DEAR SIR

ATTACHED BILL OF WORK NO.:

CHECK:

PLANNED TO BE CARRIED OUT AT:

TO: DIRECTOR OF MAINTENANCE

BILL OF WORK NO.													R00
A/C TYPE:	MSN:			A/C REG:									

DATA SHEET

Estimated Total A/C FH: -----		MRO	CRS	
Estimated Total A/C FC: -----				
Planned Start Date: -----	ECAR 145	<input type="checkbox"/>	<input type="checkbox"/>	
Planned End Date : -----	EASA 145	<input type="checkbox"/>	<input type="checkbox"/>	
Required Maintenance: -----				
Maintenance Data:				
AMM: Rev. -----	IPC: Rev. -----	SRM: Rev. -----		
MPD: Rev No. -----	MP: Rev No. -----			
Location of Maintenance: -----				
ENG I: -----	SN: -----	Estimated TSN: -----	Estimated CSN: -----	
ENG II: -----	SN: -----	Estimated TSN: -----	Estimated CSN: -----	
APU Model: -----	PN: ----- SN: -----	Estimated TSN: -----	Estimated CSN: -----	
Issued By: PLANNING & ENGINEERING DEPARTMENT				
INSPECTION COMPLIANCE				
DATE	TIME	A/C TOTAL TIME	A/C TOTAL CYCLES	SIGN/STAMP

BILL OF WORK NO.												R00
A/C TYPE:		MSN:										A/C REG:

CHECK CONTENTS LISTS

SERIAL	TITLE	No. of Tasks
1	Tools	N/A
2	Consumables and expendables	N/A
3	Routine Tasks Index	-----
4	Out of Phase Tasks Index	-----
5	AD Tasks List Index	-----
6	ISB Tasks List Index	-----
7	MSB Tasks Index	-----
8	HARD TIME Tasks Index	-----
9	LLP Tasks Index	-----
10	Additional request Index	-----
11	Deferred/Open Item Index	-----
12	NRC INDEX	

BILL OF WORK NO.												R00
A/C TYPE:	MSN:			A/C REG:								

1) Tools required

Description	Tool P/N	Alternate P/N	QTY	Remarks

BILL OF WORK NO.												R00
A/C TYPE:	MSN:			A/C REG:								

2) Consumables and expendables

Description	P/N	Alternate P/N	QTY	Remarks

BILL OF WORK NO.													R00	
A/C TYPE:		MSN:		A/C REG:										

3) Routine task list:

ITEM	TASK NUMBER	REFERENCE	DESCRIPTION			SKILL	M.H	COMPLIANCE

BILL OF WORK NO.

												R00
--	--	--	--	--	--	--	--	--	--	--	--	-----

A/C TYPE:

MSN:

A/C REG:

4) Out of phase tasks list:

ITEM	TASK NUMBER	REFERENCE	DESCRIPTION	SKILL	M.H	COMPLIANCE

BILL OF WORK NO.											R00
A/C TYPE:	MSN:				A/C REG:						

5) AD Tasks List:

ITEM	EO No.	AD/SB/AOT No.	DESCRIPTION				SKILL	M.H	COMPLIANCE

BILL OF WORK NO.											R00
A/C TYPE:	MSN:				A/C REG:						

6) ISB Tasks List:

ITEM	EO No.	AD/SB/AOT No.	DESCRIPTION				SKILL	M.H	COMPLIANCE

BILL OF WORK NO.

R00

A/C TYPE:

MSN:

A/C REG:

7) MSB Tasks List:

ITEM	EO No.	AD/SB/AOT No.	DESCRIPTION	SKILL	M.H	COMPLIANCE

BILL OF WORK NO.

R00

A/C TYPE:

MSN:

A/C REG:

8) HARD TIME Tasks List:

ITEM	EO No.	AD/SB/AOT No.	DESCRIPTION	SKILL	M.H	COMPLIANCE

BILL OF WORK NO.											R00
A/C TYPE:	MSN:			A/C REG:							

9) LLP Tasks List:

ITEM	EO No.	AD/SB/AOT No.	DESCRIPTION	SKILL	M.H	COMPLIANCE

BILL OF WORK NO.										R00
A/C TYPE:	MSN:			A/C REG:						

10) Additional request List:

ITEM	EO No.	AD/SB/AOT No.	DESCRIPTION				SKILL	M.H	COMPLIANCE

BILL OF WORK NO.											R00
A/C TYPE:	MSN:				A/C REG:						

11) Deferred/Open Item List:

ITEM	EO No.	AD/SB/AOT No.	DESCRIPTION				SKILL	M.H	COMPLIANCE

BILL OF WORK NO.

R00

A/C TYPE:

MSN:

A/C REG:

12) NRC INDEX

Nesma Airlines		Nesma Airlines نسماء للطيران		REG.: -----
NRC Index				MSN : -----
Station: -----				Date: -----
Item	NRC Number	TASK CARD Number	Zone	Remarks
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Brake Unit Complete Overhaul Processes Sheet

Unit date in:

Unit date out:

Part Number:

Serial Number:

C. S. New:

C. S. Insp.:

C.S.O/H:

Reason for removal:

CMM Ref.: 32-47-61

Rev. No.: 04

Rev. Date: 19Apr2011

Process	Process / Checks description	Finding No.	Eng.
A	<p><u>Visual Inspection for Brake Unit Assy. CMM P/B 1000 SUB TASK 32-47-61-000-A01</u></p> <ul style="list-style-type: none"> • No missing parts & no heat pack damage • No Hydraulic contamination <p>Wear Ind. Length ≤ 25 mm when pressure 2100 PSI is applied to any of Hydraulic System.</p>		
B	<p><u>High press Hydraulic Leak test CMM P/B 1000 TASK 32-47-61700801-A01</u></p> <ul style="list-style-type: none"> • Supply Hydraulic for each of Brake System By 3000 PSI individually. • Maintain pressure for 3 min. for each Hydraulic System. • Check no Hydraulic leakage at any pistons for each system then drop pressure to ZERO PSI for both systems. 		
C	<p><u>Disassembly CMM P/B 3000 TASK 32-47-61-000-801-A01</u></p> <p>After complete Hyd. Drain remove:</p> <ol style="list-style-type: none"> 1- Temp. sens (1-20) & bolts (1-70) to dis-assy retaining plate (1-60) & rear plate(1-80) together from torque tube (1-310). 2- Heat shield (1-180) from torque tube (1-310). 3- Remove all stators and rotors assy.(1-090) 4- Remove life extension shim if installed then remove thrust plate (1-130) from the torque tube (1-310). 5- Remove wear indicator (1-310) from thrust plate (1-130). 6- After push back the pistons (2-260), remove and discard both of nut (2-160) & adjuster tube (2-200) from return piston (2-210). 7- Loosen and remove return piston (2-110) from hyd. Crown (2-380). 8- Dis-assy return piston parts: <ul style="list-style-type: none"> • Liner (2-320), piston (2-260), adjuster pin (2-180), • Guide (2-210), pin retainer (2-190) & spring (2-220). 9- Remove and discard all seals assy., packing & scrapers. 		
D	<p><u>Cleaning CMM P/B 4000 TASK 32-47-61-100-801-A01</u></p> <ul style="list-style-type: none"> • Clean all metal parts with aqueous cleaning product. • Paint stripping by local application method as S.R.P 32-09-01 sec 28 for hyd. crown, torque tube & retaining plate. 		
E.1	<p><u>Inspection Checks CMM P/B 5000 TASK 32-47-61-200-801-A01</u></p> <ol style="list-style-type: none"> 1) V. INSP. of hyd. crown (2-380) <ul style="list-style-type: none"> • Check No scratches or stripping metals at threads & tapped holes. 2) V. INSP of torque tube (1-300) <ul style="list-style-type: none"> • Check splines free from corrosion, scratches or stripping metal at all threads and tapped holes. • Check pin (1-370) for not loose and chromium plated not flacking. 3) V. INSP of bait (1-70), (1-270) & screw (1-200) <ul style="list-style-type: none"> • Check there are NO stripped or crushed threads. 4) V. INSP of retaining plate (1-60) <ul style="list-style-type: none"> • Check there is NO damage, NO corrosion or NO crack. 5) V. INSP. of thrust plate (1-130) <ul style="list-style-type: none"> • Check the rivets FREE from any cracks. • Discard thrust plate if: <ul style="list-style-type: none"> - If found more than ONE crack or more than ONE repaired crack which starts from dilatation hole. 		

Process	Process / Checks description	Finding No.	Eng.
	<ul style="list-style-type: none"> - If found a crack stops by less than 3 mm from welded ring for crack stops more than 3 mm. REF to REPAIR 3 at CMM. 		
E.1	<p>6) V. INSP of rear plate (1-080)</p> <ul style="list-style-type: none"> • Check that NO friction points at movable parts of rear plate, and NO parts can be disassembled. <p>7) INSP of nut (1-290)</p> <p>Turn nut to un-lubricated bolt (1-140) to make min. two threads above nut top.</p> <ul style="list-style-type: none"> • Check break way torque =Lbf.in (shall be > 31.9 Lbf.in) <p>8) INSP. of heat shield (1-180)</p> <ul style="list-style-type: none"> • Check that NO crack starts from dilatation holes. <p>Discard heat shield if:</p> <ul style="list-style-type: none"> - Found more than 5 cracks in heat shield. - Any axial crack with length > 60 mm. - Any radial crack with length > 10mm. - Other crack ref. to REPAIR 5 at CMM <p>9) V. INSP of life extension shim (if installed)</p> <ul style="list-style-type: none"> • Check that NO piston indentation with depth> 1 mm • Check max. slot width acceptable is < 23.5 mm <p>Slot width =.....mm</p> <p>10) V. INSP. of return piston parts (2-260)</p> <ul style="list-style-type: none"> • Check liner (2-320), piston (2-260) & adjuster pin (2-180) free from scratches or flacking. • Check piston outside diameter free from scratches & seals groove not damage • Check guide (2-210) dimensions: <ul style="list-style-type: none"> - Area 1 with diameter \geq 16.3 mm, - Area 2 with diameter \geq 15.7 mm, - Area 3 with diameter \geq 16.7 mm, - Area 4 with diameter \geq 27.375 mm. 		
E.2	<p><u>Non-Destructive Inspection SPM 32-09-01</u></p> <p>a) Penetrant INSP.</p> <p>Carry out penetrant inspection acc. to STD.REP.P.M 32-09-01 sec. 38 or 39 on the following parts:</p> <ol style="list-style-type: none"> 1. Hyd. crown (2-380) 2. Thrust p[ate(1-130) 3. Rear plate (1-080) <p>b) Magnetic Particle INSP.</p> <p>Carry out M.P. Insp. Acc. to STD.P.M 32-09-01 sec. 42 on:</p> <ol style="list-style-type: none"> 1. Torque tube (1-300) together with pins (1-370) 2. Retaining plate (1-060) 3. Adjuster pin (2-180) 		
E.3	<p><u>Hardness Test CMM P/B 5000</u></p> <p>Only at overheated brakes</p> <p>a) Hardness test of hyd.crown (2-380)</p> <p>Carry out hardness test by 10 mm dia. Ball test under 2250 Lbf min hardness = 140 HB & strength not below 470 M.Pa</p> <p>b) Hardness test of torque tube (1-310)</p> <p>Carry out hardness test by 1 mm dia. Ball test under 67.44 Lbf min. hardness = 300 HB</p> <p>c) Hardness test of retaining plate (1-080)</p> <p>Carry out hardness test by 1 mm dia. Ball test under 67.44 Lbf min. hardness = 295 HB</p>		

Process	Process / Checks description	Finding No.	Eng.
E.4	<p><u>Dimensional Checks CMM P/B 5000</u></p> <p>a) Spring (2-220) height dimension check H = 54.5 mm when applying load P1 " 250 to 304 Lbf H=50mm when applying load P2 = 295 to 361 Lbf</p> <p>b) Rear plate (1-080) dimension check Outer dia. = 368 mm, Inner dia. = 354 mm, Cone min. height = 14.25 mm, Shim 0.2 mm thick can't pass between the checking ring and top of the cone under load 157 to 298 Lbf</p> <p>c) Thrust plate (1-130) dimension check Check clearance between insulating washer (1-140) and flange assy. (1-170) < 0.2 mm axial clearance &< 0.6 mm radial clearance</p> <p>d) Guide (2-210) dimension check Area 1 with diameter ≥ 16.3 mm, Area 2 with diameter ≥ 15.7 mm, Area 3 with diameter ≥ 16.7 mm, Area 4 with diameter ≥ 27.375 mm</p>		
F	<p><u>Repairs And Treatments CMM P/B 6000TASK 32-47-61-300-801-A01</u></p> <p>a) Spring (2-220) height dimension check H = 54.5 mm when applying load P1 " 250 to 304 Lbf H=50mm when applying load P2 = 295 to 361 Lbf</p>		
G	<p><u>BRK. U. Assembl't. CMM PB 7000 TASK 32-47-61-400-801-A01</u></p> <p>Re-assy return piston parts: Liner (2-320) , piston (2-260) ,guide(2-210) & spring (2-220) Install new seal assy.(2-230) & packings (2-240) and (2-270). Install adjuster pen (2-180) and pen retainer (2-190) . Install return piston (2-110) in hyd crown (2-380) . 2 -Install new adjustable tube (2-200) & nut (2-160) 3- install thrust plate (1-130) on torque tube (1-310) 4- install new heat pack stator and rotor discs starting with stator disc 5- apply anti-galvanic corrosion to mating surface of torque tube then install heat shield (1-180) . 6-Install retaining plate (1-060) & rear plate(1-080) together to torque tube (1-310). 7- Grease bolt (1-070) by MIL-T-5544 or eq.then torque 27.6 lbf.f 8- Instal thermocouple (1-020) . 9- Adjust length of wear Ind to 50 mm</p>		
H	<p><u>BRK. U. Testing CMM P/B1000 TASK 32-47-61-700-801-A01</u></p> <p>- Flush BRK assy.& fill by Hyd.fluid then bleed air from two bleedrs Leakage test high l1ress.for brake ass~. - Chk no external hyd. leak or no press drop when slowly supply each BRK.Sys.Individually with 3000 psi with maintaining 3 min. then decrease press to ZERO. Low l1ress.leakage test for brake ass~. - Chk no exrenal hyd leak or no press drop when supply both sys. together gradually by 14.5 psi with maintaining 5 min. Then decrease press to ZERO. Brake ass~.oleration test: when apply press from 0 to 2100 psi gradually to each Circuit individually chk that: - All 7 pistons for each sys. Start to move at same time. -pressure recorded when disks start to push each other is psi. shall be " 290 psi when release pressure slowly from 21 OOps to ZERO chk that:</p>		

Process	Process / Checks description	Finding No.	Eng.
	<p>-pressure recorded when disks starts to free rotation is psi. shall be „135 psi</p> <p>-pressure recorded when all pistons back to initial position: psi shall be " 106 psi</p> <p>when hyd.pressure return to ZERO chk that:</p> <ul style="list-style-type: none"> - clearance between thrust plate and first carbon disk is between 0.3 and 5.1 mm - Chk clearance between rear plate & stator S5 = 0.3 to 5.1 mm when all hyd press. is released 		
I	<p><i>BRK. U. Preservation & storage CMM P/B 15000 TASK32-47-61-550-801-A01</i></p> <p>- Install protective tool A47676 .</p>		

Special Tool required:

Tool P/no.	Description	BIN.NO
AC21858200	Drain pipe for bleeding	
U21800	1/2 self sealing coupling	
Q21983	Handling tool	
A47676	Protective for heat pack	
F21864220-1	HYD.test bench	
Q47963	wrench for instremoval piston	
F266993000	tool for removal 1 install retaining reng	
89901	Spatulaa	
F265991 000	Installation tool	
F2B6992000	tool for installing retaing ring	
Q47964	cone to install piston in the liner	
Q47965	cone to install adjuster pin	

Consumable material required:

Material Ref.	Specification	Equvelant IF used
Molvkoit G rapid	Anti-galvanic corrosion material	
M.E.K	Methile Ethile Keton for cleaning heat sink	
MIL-PRF 680	Aqueous solvent for cleaning type	
MIL-T-5544	GREASE	

CERTIFICA TE TO SERVICE RELEASE:

I here by certify that in carry out the inspection repair, replacement or tests specified above all conditions and requirements of the E. CAR. for the time being in force which are applicable there to have complied with

Released By :

ENG. Name:

AUTH.N/O:

ENG. Signature :

Stamp:

WORKSHOP PROCESS SHEET
BRK.U. LIFE EXT.SHIM INTALL. PROCESSES SHEET

Unit date in:

Unit date out:

Part Number:

Serial Number:

C. S. New:

C. S. Insp.:

C.S.O/H:

Reason for removal:

CMM Ref.: 32-47-61

Rev. No.: 04

Rev. Date: 19Apr2011

Process	Process /Checks description	Finding No.	Eng.
A	<p>V.Insp for BRK. U.Assy. CMM SUB TASK 32-47-61-000-A01</p> <p>-No missing parts & no heat pack damage -No Hyd. Contamination Wear Ind. Length≤ 25 mm when pressure 2100 psi is applied to any of Hyd.sys.</p>		
B	<p>High press Hyd.leak test CMM P/B 1000 TASK 32-47-61-700-301-A01</p> <p>-Supply Hyd. for each of BRK.Sys. By 3000 psi individually -Maintain pressure for 3 min.on each Hyd.sys. -CHK no Hyd. Leakage at any pistons for each sys.then drop press. To ZERO psi for both systems.</p>		
C	<p>Disassembly CMM P/B 3000 TASK 32-47-61-000-801-A01</p> <p>After complete Hyd. Drain remove:</p> <ol style="list-style-type: none"> Temp. sens (1-20) & bolts (1-70) to dis-assy retaining plate (1-60) & rear plate(1-80) together from torque tube (1-310). Heat shield (1-180) from torque tube (1-310). Identify rotor & stator disks then remove all in sequence remove thrust plate (1-130) from the torque tube(1-310). remove and discard nut (2-160) & adjuster tube (2-200) from piston (2-210) . 		
D	<p>Cleaning CMM P/B 4000 TASK 32-47-100801-A01</p> <ul style="list-style-type: none"> Clean heat pack by dry compressed air Clean heat pack by cleaning agent if hyd.contaminated 		
E	<p>Inspection Checks CMM P/B 5000 TASK 32-47-61-200-801-A01</p> <ol style="list-style-type: none"> V. INSP. of hyd. crawn (2-380) <ul style="list-style-type: none"> Check No scratches or stripping metals at threads & tapped holes. V. INSP of torque tube (1-310) <ul style="list-style-type: none"> Chk splines free from corrosion, scratches or stripping metal at all threads and tapped holes. Chk pin (1-80) for not loose and chrmoium plated not flacking. 		
E	<ol style="list-style-type: none"> V.INSP of bolt (1-070),(1-270) & screw (1-200) <ul style="list-style-type: none"> Chk there are NO stripped or crushed threads V,INSP of retaining plate (1-1-060) <ul style="list-style-type: none"> Chk there is NO damage ,NO corrosion or NO crack. V.INSP. of thrust plate (1-130) <ul style="list-style-type: none"> Discard thrust plate if: <ul style="list-style-type: none"> -IF found more than ONE crack or more than ONE repaired crack which starts from dilatation hole. -IF found a crack stops by less than 3 mm from welded ring -for crack stops more than 3 mm . REF to REPAIR 3 at CMM . 		
E.2	<ol style="list-style-type: none"> V.INSP of rear plate (1-080) <ul style="list-style-type: none"> Chk that NO friction points at movable parts of rear plate, and NO parts can be disassembled . 		

Process	Process /Checks description	Finding No.	Eng.
	<p>7) INSP of nut (1-290)</p> <ul style="list-style-type: none"> turn nut to unlubricated bolt (1-140) to make min. two threads above nut top. Chk break way torque =Lbf.in (shall be > 31.9 Lbf.in) <p>8) INSP.of heatshield (1-250)</p> <ul style="list-style-type: none"> Chk. that NO crack starts from dilatation holes. discard heat shield if: -found more than 5 cracks in heat shield. -any axial crack with length > 60 mm . -any radial crack with length >10mm <p>Other crack ref to REPAIR 5 at CMM</p> <p>9) V.INSP heat pack (1-090) SUB TASK 32-47-61-200 014-A01</p> <ul style="list-style-type: none"> Chk criteria for re-use a carbon heat pack by life extension shim ref.to SIL: 580-32-3077 last rev. for BRK C20225310 1410 ref to SIL: 580-32-3284 last rev. for BRK C20225508/509/51 0 <p>10) V.INSP of life extension shim (1-100) before re-using</p> <ul style="list-style-type: none"> chk that NO piston indentation with depth> 1 mm chk max. slot width acceptable is < 23.5 mm slot width =.....mm Rear plate (1-080) 		
F	<p><u>BRK. U. Assembly CMM P/B 7000 TASK 32-47-61-400801-A01</u></p> <p>1-Install a new nut (2-160) & adjuster tube (2-200) in a piston (2-20) with a ball (2-180) 2-Install thrust plate(1-130) & life extension shim 25mm in sequence on a torque tube (1-310) . 3-Re-install heat back stator & rotor disks in sequense according to dis-assembly identification marks. 4-apply anti-galvanic corrosion to mating surface of torque tube then install heat shield (1-180). 5-Install retaining plate (1-060) & rear plate(1-080) together to torque tube (1-310) . 6-Grease bolt (1-070) by MIL-T-5544 or eq.then torque 27.6 Ib.f 7-Instal temp. sensor (1-020)</p>		
G	<p><u>BRK. U. Testing CMM P/B 1000 TASK 32-47-61-700-801-A01</u></p> <p>Flush BRK assy.& fill by Hyd.fluid then bleed air from two bleeder v/v</p> <p>Leakage test high (1rss.for brake assy.</p> <p>Chk no external hyd. leak or no press drop when slowly supply each BRK.Sys.Individually with 3000 psi with maintaining 3 min. then decrease press to ZERO</p> <p>Low press.leakage test for brake assy.</p> <p>Chk no external hyd leak or no press drop when supply both sys. Together gradually by 14.5 psi with maintaining 5 min. Then decrease press to ZERO.</p> <p>Brake assy. Operation test:</p> <p>when apply press from 0 to 2100 psi gradually to each Circuit individually chk that:</p> <ul style="list-style-type: none"> All 7 pistons for each sys. Start to move at same time. ' pressure recorded when disks start to push each other is psi. shall be \leq 290 psi <p>when release pressure slowly from 2100psi to ZERO chk that:</p> <ul style="list-style-type: none"> pressure recorded when disks starts to free rotation is psi. shall be \geq 135 psi. pressure recorded when all pistons back to initial position: psi shall be \geq 106 psi . <p>when hyd. pressure return to ZERO chk that:</p> <ul style="list-style-type: none"> clearance between thrust plate and first carbon disk is between 0.3 		

Process	Process /Checks description	Finding No.	Eng.
	and 5.1 mm		
H	<u>BRK. U. Preservation & storage CMM P/B 15000 TASK 32-47-61-550-801-A01</u> <ul style="list-style-type: none"> • install protective tool A47676 		

Finding No.	Fault description	Correction	Eng.

Special Tool required:

Tool P/no.	Description	BIN.NO
AC21858200	Drain pipe for bleeding	
U21800	1/2 self sealing coupling	
Q21983	Handling tool	
A47676	Protective for heat pack	
F21864220-1	HYD.test bench	

Consumable material required:

Material Ref.	Specification	Equvelant IF used
Molvkoit G rapid	Anti-galvanic corrosion material	
M.E.K	Methile Ethile Keton for cleaning heat sink	
MIL-PRF 680	Aqueous solvent for cleaning type	
MIL-T-5544	GREASE	

AD Applicable Not Applicable

SB Applicable Not Applicable

LLP Applicable Not Applicable

CERTIFICA TE TO SERVICE RELEASE:

I here by certify that in carry out the inspection repair, replacement or tests specified above all conditions and requirements of the E. CAR. for the time being in force which are applicable there to have complied with

Released By :

ENG. Name:

AUTH.N/O:

ENG. Signature :

Stamp:

WORKSHOP PROCESS SHEET

BRK.U. TEST & FAULT ISOLATION.

Unit date in:

Unit date out:

Part Number:

Serial Number:

C. S. New:

C. S. Insp.:

C.S.O/H:

Reason for removal:

CMM Ref.: 32-47-61

Rev. No.: 04

Rev. Date: 19Apr2011

Process	Process /Checks description	Finding No.	Eng.
A	<p><u>V.Insp for BRK. U.Assy. CMM SUBTASK 32-47-61-000-A01</u></p> <p>-No missing parts & no heat pack damage -No Hyd. Contamination Wear Ind. Length ≤ 25 mm when pressure 2100 psi is applied to any of Hyd.sys.</p>		
B	<p><u>Cleaning CMMP/ B 4000 TASK 32-47-61-100-801-A01</u></p> <p>-Clean heat pack by dry compressed air -Clean heat pack by cleaning agent if hyd. contaminated</p>		
C	<p><u>Low Press.leakage test for brake assyCMM P/B 1000 TASK 32-47-61-700-801-A01.</u></p> <p>Chk no external hyd leak or no press drop when supply both sys. Together gradually by 14.5 psi with maintaining 5 min. Then decrease press to ZERO.</p> <p><u>Brake assy. operation test:CMM P/B 1000 TASK 32-47-61-700-301-A01</u></p> <p>when apply press from a to 2100 psi gradually to each Circuit individually chk that: All 7 pistons for each sys. Start to move at same time. -pressure recorded when disks start to push each other is psi shall be ≤ 290 psi</p> <p>when release pressure slowly from 21. 0 psi to ZERO chk that: -pressure recorded when disks starts to free rotation is.....psi . shall be ≥135 psi -pressure recorded when all pistons back to initial positionpsi shall be ≥ 1 06 psi .</p> <p>when hyd. pressure return to ZERO chk that: -clearance between thrust plate and first carbon disk is between 0.3 and 5.1 mm</p>		

Finding No.	Fault description	Correction	Eng.

Process	Process /Checks description	Finding No.	Eng.
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D	<p><u>Final Hyd. leak test CMM P/B 1000 TASK 32-47-61-700-801-A01</u></p> <p>-Supply Hyd. for each of BRK.Sys. By 3000 psi individually</p> <p>-Maintain pressure for 3 min. on each Hyd.sys</p> <p>-CHK no Hyd. Leakage at any pistons for each sys.then drop press. To ZERO psi for both systems.</p>		
E	<p><u>BRK.U Preservation & storage CMM P/B 15000 TASK 32-47-61-550801-A01</u></p> <p>-Install protective tool A47676</p>		

<i>Special Tool required:</i>		
Tool P/no.	Description	BIN.NO
AC21858200	Drain pipe for bleeding	
U21800	1/2 self sealing coupling	
Q21983	Handling tool	
A47676	Protective for heat pack	
F21864220-1	HYD.test bench	

Consumable material required:		
Material Ref.	Specification	Equvelant IF used
M.E.K	Methile Ethile Keton for cleaning heat sink	
MIL-PRF 680	Aqueous solvent for cleaning type	

AD Applicable Not Applicable
SB Applicable Not Applicable
LLP Applicable Not Applicable

CERTIFICA TE TO SERVICE RELEASE:

I here by certify that in carry out the inspection repair, replacement or tests specified above all conditions and requirements of the ECAR. for the time being in force which are applicable there to have complied with

Released By :

ENG. Name:

AUTH.N/O:

ENG. Signature :

Stamp:

WORKSHOP PROCESS SHEET

MAIN WHEEL OVERHAUL.

Unit date in:

Unit date out:

Part Number:

Serial Number:

C. S. New:

C. S. Insp.:

C.S.O/H:

Reason for removal:

CMM Ref.:32-47-46.....

Rev. No.....08.....

Rev.Date:Sep/06.....

Process	Process /Checks description	Finding No.	Eng.
A	<p>V. inspection for MAIN WHEEL Assy.</p> <ul style="list-style-type: none"> -Chk no signs of run way rolling or tire burst. -Chk no damage or missing component from half wheels 		
B	<p>Pressure leak test CMM P100</p> <ul style="list-style-type: none"> -Inflate tire by Nitrogen to nominal press 200 psi -Apply solution soap around tire beads, valves & plugs then chk. that no bubbles in view. 		
C	<p>Disassembly CMM P300</p> <ul style="list-style-type: none"> -Deflate tire by gradually loosen core of v/v (3-120) then remove v/v after tire totally deflation. -Remove fusible plugs (2-260) , (2-180) & plugs (3-180) -Remove bearing cone (2-180) & (3-80) -Identify bolts (1-70) by drum position then remove by loosen nuts (1-90) in cross-cross seq. then remove washer (1-80) -Remove dust guard (1-150) & packing (1-30) then remove tire -Remove component of inner & outer half wheel: drive blocks (2-60) , heat shields (2-130) & balance weight <p>Note: identify [action of balance weight & its weight before removal]</p>		
D	<p>Cleaning CMM P400</p> <ul style="list-style-type: none"> • Clean parts by cleaning agent then dry by compressed dry air • Remove paint of outer & inner half wheels with stripping agent acc.to 32-09-01 STD.P.M sec 29 . 		
E1	<p>Inspection Checks CMM P500</p> <p>a) V.INSP. for inner & outer half wheels drum. Chk.No scratches, corrosion or signs of crack at areas: 1-tire bead seat areas 2-RIM 3-all holes for valves, plugs, air vent & tie bolts. 4-under drive key area.</p> <p>Note: Discard half wheels that show signs of rolling touch with runway</p> <p>b) V.INSP. of bearing cups(2-80) & (3-30) Chk bearing cups for both half wheels that: 1-bearing cup can't turn in it's housing and clearance < 0.1mm 2-raceway surface clear from nicks, dents or scratches 3-raceway clear from black, dark blue stains or sign of OVHT.</p> <p>c) V.JNSP of drive blocks (2-60) Chk each drive block for correctly attaching and: 1-no scratches, distortion or corrosion 2-no penning (max 0.3 mm depth is acceptable)</p> <p>d) V.INSP of bearing cone (2-180) & (3-80) Chk rollers thrust surface free from metallic chips or scores Chk no discoloration and surface must smooth and polished</p> <p>e) V.INSP of attachment bolts (1-70) Chk no stripped, no crushed threads and no broken 'bolts If one broken bolt, discard it and two bolts on each side make NDT for remaining bolts if one crack, discard all . if more than one broken bolt, discard all bolts.</p>		

	<p>f) V.INSP. of nuts(1-90) turn lubricated nut to bolt (1-70) to make min. two threads above nut top. Chk minim. break way torque = bf.in shall between 2.65 Ibf.ft and 25 ibf.ft (31.8 Ibf.in and 300 Ibf.in)</p> <p>g) V.INSP. Dust guard (1-50) Chk correct sealing efficiency when dust guard is installed with its packing in the half wheel housing.</p> <p>h) V.INSP. of performed packing (1-30) Chk no profile distortion, no dents or no notches.</p> <p>i) V.INSP heat shield (2-130) Chk no dents or crushes and make sure the studs are in good condition if not replace them.</p> <p>j) V.INSP stop and seal assy.(2-200) Chk its not defective or worn</p>		
E2	<p><u>Non-Destructive Inspection CMM fig 502</u></p> <p>a) Eddy current INSP. Carry out eddy current insp. acc.to STD.REP.P.M 32-09-01. sec.41 on inner & outer half wheel at areas: 1-Tire bead seat & drive key areas. 2-Air vent & tie bolt holes bores 3-Spot facing under washer areas.</p> <p>b) Penetrant INSP. Carry out penetrant inspection acc. to STD.REP.P.M 32-09-01 sec. 38 or 39 on inner & outer half wheel</p> <p>c) Magnetic particle INSP Carry out M.P. Insp. Acc. to STD.P.M 32-09-01 sec. 42 on : Drive block (2-60) & Tie bolts (1-70)</p> <p>Note: discard cracked bolt and two bolts which are on each side. discard all bolts if more than one bolt cracked .</p>		
E3	<p><u>Conductivity & Hardness Test CMM fig 502</u></p> <p>Only at Over Heating Conditions 1-Chk conductivity at 3 point 120" apart < 40% ICAS 2-Chk hardness by ball10mm dia.under load 1000kg > 130HB</p>		
E4	<p><u>Dimensional Checks CMM fig 503</u></p> <p>Only IF OVER loaded or tire burst wheels</p> <p>1-Chk buckling not more than 0.25 mm 2-Chk out of roundness not change by more than 0.5 mm</p>		
F	<p><u>Repairs And Treatments CMM P 600</u></p> <p>a) Half wheel repairs Remove scratches & light corrosion using light abrasive cloth. For protective treatment ref to CMM fig.611</p>		
G	<p><u>Outer & Inner Half Wheel Ass)C CMM P 700</u></p> <p>Clean and dry outer & inner wheel half parts. Lubricate all parts acc.to CMM fig 701 then install : 1-fusible plugs(2-260) with torque 6.6 to 7.4 Ibf.ft 2-fusible plugs(2-280) with torque 9.6 to 11.1 Ibf.ft 3-drive blocks (2-60) & heat shields(2-130) 4-inflation valve (3-120) with torque 14.B to 17Ibf.ft 5-plugs (3-180) with torque 14.B to 17Ibf.ft 6-packing (1-30) at inner half wheel * Assy. both half wheels with tire by bolts (1-70) & washers(1-80) at inner half (2-20) . Note:-the vent holes in both half wheels must be in line. -Internal chamfer of washer must be towards bolt head. * Install washer (1-80) & nut (1-90) at outer half wheel (3-10) and torque tighten in cross-cross tighten method. Note:-Internal chamfer of washer must be towards the nut. -Ref to CMM P700 to chk torque req. acc.to grease used Grease used: Basic trq. : Ibf.ft Final trq..... Ibf.ft * Install bearing (2-180) & seal assy (2-190) at inner half wheel</p>		

	* Install bearing (3-80) & seal (3-90) at outer half wheel		
H	M Wheel Final Leakage Test CMM 100 -Inflate tire by Nitrogen to nominal press 200 psi -Apply solution soap around tire beads, valves & fusible plugs then chk. that no bubbles. -Chk for press drop < 2.5% after 12 hrs. or < 5%after 24 hrs.		
I	M Wheel Preservation & storage CMM P 700 Store Nose Wheel Assy. with tire at low press nitrogen		

Finding No.	Fault description	Correction	Eng.

Special Tool required:

Tool P/no.	Description	BIN.NO
F26616000	Over inflation leakage test tool	
D21852	Extractor for bearing cup for inner half wheel	
J47200	Holding block for half wheel buckling chk	
J47201	Outer half wheel adaptor	
M21862	Extractor for bearing cup for outer half wheel	
Q47749	Guide to install drive blocks	

Consumable material required:

Material Ref.	Specification	Equivalent IF used
Molvkoit G rapid	Anti-galvanic corrosion material	
MIL-G-4343B	GREASE	
MIL-G-81322	Bearing Grease	
MIL-T-5544	anti-seize compound	
AIR 3565	VASELINE for red backing	
PD 680	Aqueous solvent for cleaning type	
Loctite243/1ocquic 7471	for threads locking	
ROCKETW040	Corrosion removal and protective	

AD Applicable Not Applicable

SB Applicable Not Applicable

LLP Applicable Not Applicable

CERTIFICATE TO SERVICE RELEASE:

I here by certify that in carry out the inspection repair, replacement or tests specified above all conditions and requirements of the E. CAR. for the time being in force which are applicable there to have complied with

Released By :

ENG. Name:

AUTH.N/O:

ENG. Signature :

Stamp:

WORKSHOP PROCESS SHEET
MAIN WHEEL TEST & FAULT ISOLATION.

Unit date in:

Unit date out:

Part Number:

Serial Number:

C. S. New:

C. S. Insp.:

C.S.O/H:

Reason for removal:

CMM Ref.:32 -47-46

Rev. No.: ...08

Rev. Date: Sep/06

Process	Process /Checks description	Finding No.	Eng.
A	<u>V. inspection for MAIN WHEEL Assy.</u> -Chk no signs of run way rolling or tire burst. -Chk no damage or missing component from half wheels		
B	<u>Pressure leak test CMM P1 00</u> -Inflate tire by Nitrogen to nominal press 200 psi -Apply solution soap around tire beads, valves & Fusible plugs (' then chk. that no bubbles in view.)		
C	<u>Cleaning CMMP 400</u> -Clean parts by cleaning agent then dry by compressed dry air		

Finding No.	Fault description	Correction	Eng.

D	<u>M Wheel Final Leakage Test CMM 100</u> -Inflate tire by Nitrogen to nominal press 200 psi -Apply solution soap around tire beads, valves & plugs Then chk. that no bubbles in view. -Chk for press drop < 2.5% after 12 hrs. or < 5%after 24 hrs.		
I	<u>Wheel Preservation & storage CMM P 700</u> Store Nose Wheel Assy. with tire at low press nitrogen.		

Special Tool required:

Tool P/no.	Description	BIN.NO
F26616000	Over inflation leakage test tool	L3/066

Consumable material required:

Material Ref.	Specification	Equivalent IF used
AIR 3565	VASELINE for red backing	
PD 680	Aqueous solvent for cleaning type	
MIL-G-81322	Bearing Grease	
Loctite243/locquic 7471	For thread locking	
ROCKETW040	Corrosion removal and protective	

AD Applicable Not Applicable
SB Applicable Not Applicable
LLP Applicable Not Applicable

CERTIFICATE TO SERVICE RELEASE:

I here by certify that in carry out the inspection repair, replacement or tests specified above all conditions and requirements of the ECAR. for the time being in force which are applicable there to have complied with

Released By :

ENG. Name:

AUTH.N/O:

ENG. Signature :

Stamp:

WORKSHOP PROCESS SHEET

MAIN WHEEL TIRE REP.

Unit date in:

Unit date out:

Part Number:

Serial Number:

C. S. New:

C. S. Insp.:

C.S.O/H:

Reason for removal:

CMM Ref.: 32-47-46

Rev. No.: 08

Rev. Date: Sep/06

Process	Process /Checks description	Finding No.	Eng.
A	<p><u>V. inspection for MAIN WHEEL Assy.</u></p> <p>-Chk no signs of run way rolling or tire burst. -Chk no damage or missing component from half wheels</p>		
B	<p><u>Pressure leak test CMM P100</u></p> <p>-Inflate tire by Nitrogen to nominal press 200 psi -Apply solution soap around tire beads, valves & plugs then chk. that no bubbles in view.</p>		
C	<p><u>Disassembly CMM P300</u></p> <p>-Deflate tire by gradually loosen core of v/v (3-120) then remove v/v after tire totally deflation. -Remove fusible plugs (2-260) , (2-180) & plugs (3-180) -Remove bearing cone (2-180) & (3-80) -Identify bolts (1-70) by drum position then remove by loosen nuts (1-90) in cross-cross seq. then remove washer (1-80) -Remove dust guard (1-150) & packing (1-30) then remove tire -Remove heat shields (2-130) & balance weight</p>		
D	<p><u>Cleaning CMM P400</u></p> <ul style="list-style-type: none"> • Clean parts by cleaning agent then dry by compressed dry air 		
E1	<p><u>Inspection Checks CMM P500</u></p> <p>a) V.INSP. for inner & outer half wheels drum. Chk.No scratches, corrosion or signs of crack at areas: 1-tire bead seat areas 2-RIM 3-all holes for valves, plugs, air vent & tie bolts. Chk.no worn areas of paint.</p> <p>b) V.INSP. of bearing cups(2-80) & (3-30) Chk bearing cups for both half wheels that: 1-bearing cup can't turn in it's housing and clearance < 0.1mm 2-raceway surface clear from nicks, dents or scratches 3-raceway clear from black, dark blue stains or sign of OVHT.</p> <p>c) V.JNSP of drive blocks (2-60) Chk each drive block for correctly attaching and: 1-no scratches, distortion or corrosion 2-no penning (max 0.3 mm depth is acceptable)</p> <p>d) V.INSP of bearing cone (2-180) & (3-80) Chk rollers thrust surface free from metallic ships or scores Chk no discoloration and surface must smooth and polished</p> <p>e) V.INSP of attachment bolts (1-70) Chk no stripped, no crushed threads and no broken 'bolts If one broken bolt, discard it and two bolts on each side make NDT for remaining bolts if one crack, discard all . if more than one broken bolt, discard all bolts.</p>		

Process	Process /Checks description	Finding No.	Eng.
	f) V.INSP. of nuts(1-90) turn lubricated nut to bolt (1-70) to make min. two threads above nut top. Chk minim. break way torque =bf.in shall between 2.65 Ibf.ft and 25 ibf.ft (31.8 Ibf.in and 300 Ibf.in)		
	g) V.INSP. Dust guard (1-50) Chk correct sealing efficiency when dust guard is installed with its packing in the half wheel housing.		
	h) V.INSP. of performed packing (1-30) Chk no profile distortion, no dents or no notches.		
	i) V.INSP heat shield (2-130) Chk no dents or crushes and make sure the studs are in good condition if not replace them.		
	j) V.INSP stop and seal assy.(2-200) Chk its not defective or worn		
E2	<u>Non-Destructive Inspection CMM fig 502</u> a) Eddy current INSP. Carry out eddy current insp. acc.to STD.REP.P.M 32-09-01. sec.41 on inner & outer half wheel at tire bead seat areas.		
F	<u>Repairs And Treatments CMM P 600</u> a) Half wheel repairs Remove scratches & light corrosion using light abrasive cloth. For protective treatment ref to CMM fig.611		
G	<u>Outer & Inner Half Wheel Assy CMM P 700</u> Clean and dry outer & inner wheel half parts. Lubricate all parts acc.to CMM fig 701 then install : 1-fusible plugs(2-260) with torque 6.6 to 7.4 Ibf.ft 2-fusible plugs(2-2BO) with torque 9.6 to 11.1 Ibf.ft 3-drive blocks (2-60) & heat shields(2-130) 4-plugs (3-180) with torque 14.8 to 17Ibf.ft 5-packing (1-30) at inner half wheel * Assy. both half wheels with tire by bolts (1-70) & washers(1-80) at inner half (2-20) . Note:-the vent holes in both half wheels must be in line. -Internal chamfer of washer must be towards bolt head. * Install washer (1-80) & nut (1-90) at outer half wheel (3-10) and torque tighten in cress-cross tighten method. Note:-Internal chamfer of washer must be towards the nut. -Ref to CMM P700 to chk torque req. acc.to grease used Grease used: Basic trq. : Ibf.ft Final trq..... Ibf.ft * Install bearing (2-180) & seal assy (2-190) at inner half wheel * Install bearing (3-80) & seal (3-90) at outer half wheel		
H	<u>M Wheel Final Leakage Test CMM 100</u> -Inflate tire by Nitrogen to nominal press 200 psi -Apply solution soap around tire beads, valves & fusible plugs then chk. that no bubbles. -Chk for press drop < 2.5% after 12 hrs. or < 5%after 24 hrs.		
I	<u>M Wheel Preservation & storage CMM P 700</u> Store Nose Wheel Assy. with tire at low press nitrogen		

Finding No.	Fault description	Correction	Eng.

Process	Process /Checks description	Finding No.	Eng.
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Special Tool required:

Tool P/no.	Description	BIN.NO
F26616000	Over inflation leakage test tool	
D21852	Extractor for bearing cup for inner half wheel	
J47201	Outer half wheel adaptor	
M21862	Extractor for bearing cup for outer half wheel	
Q47749	Guide to install drive blocks	

Consumable material required:

Material Ref.	Specification	Equivalent IF used
Molvkoit G rapid	Anti-galvanic corrosion material	
MIL-G-4343B	GREASE	
MIL-G-81322	Bearing Grease	
MIL-T-5544	anti-seize compound	
AIR 3565	VASELINE for red backing	
PD 680	Aqueous solvent for cleaning type	
Loctite243/1ocquic 7471	for threads locking	
ROCKETW040	Corrosion removal and protective	

AD Applicable Not ApplicableSB Applicable Not ApplicableLLP Applicable Not Applicable**CERTIFICATE TO SERVICE RELEASE:**

I here by certify that in carry out the inspection repair, replacement or tests specified above all conditions and requirements of the E. CAR. for the time being in force which are applicable there to have complied with

Released By :

ENG. Name:

AUTH.N/O:

ENG. Signature :

Stamp:

WORKSHOP PROCESS SHEET

NOSE WHEEL OVERHAUL.

Unit date in:

Unit date out:

Part Number:

Serial Number:

C. S. New:

C. S. Insp.:

C.S.O/H:

Reason for removal:

CMM Ref.: 32-41-13

Rev. No.: 06

Rev. Date: 30 Oct 2012

Process	Process /Checks description	Finding No.	Eng.
A	<p>V. inspection for NOSE WHEEL Assy.</p> <p>-Chk no signs of run way rolling or tire burst. -Chk no damage or missing component from half wheels</p>		
B	<p>Pressure leak test CMM P/B 1000 TASK 32 -41-13-700-801-A01</p> <p>-Inflate tire by Nitrogen to nominal press 180 psi -Apply solution soap around tire beads, valves & plugs then chk. that no bubbles in view.</p>		
C	<p>Disassembly CMM P/B 3000 TASK 32-41-13-030 801-A01</p> <p>1- Deflate tire then remove inflation v/v after tire totally deflation. 2- Remove TPIS. & OVINF. Plugs. 3- Remove bearing cone from inner & outer half wheels. 4- Identify tie bolts by drum position then remove by loosen nuts & remove washer. 5- Pull apart inner & outer half wheels then remove tire. 6- Remove spacer from outer half & packing from inner half wheel 7- Remove balance weight</p> <p>Note: identify location of balance weight look for marks show locn'&wt.of balance wt.(97,165,70)fig(3001).</p>		
D	<p>Cleaning CMM P/B 4000 TASK 32-41-13-100-801-A01</p> <ul style="list-style-type: none"> • Clean parts by cleaning agent then dry by compressed dry air • Remove paint of outer & inner half wheels with stripping agent 		
E1	<p>Inspection Checks CMM P/B 5000 TASK 32-41-13-200-801-A01</p> <p>a) V.INSP. for inner & outer half wheels drum. Chk.No scratches, corrosion or signs of crack at areas: 1-tire bead seat areas 2-all holes for inflation valve, plugs & tie bolts. Chk.no worn areas of paint. b) V.INSP. of bearing cups Chk bearing cups for both half wheels that: 1-bearing cup can't turn in it's housing and clearance < 0.05mm 2-raceway surface clear from nicks, dents or scratches 3-raceway clear from black, dark blue stains or sign of OVHT. c) V.INSP of bearing cone Chk rollers thrust surface free from metallic chips or scores Chk no discoloration and surface must smooth and polished d) V.INSP of tie bolts Chk no stripped, no crushed threads and no broken 'bolts If one broken bolt, discard it and one bolt on each side e) V.INSP. of nuts CMM SUB TASK 32-41-13-430-009-A01 turn nut to dry tie bolt by torque 14 Ibf.in , then check the end of bolt not flush or above top of the nut. f) V.INSP. of the spacer Chk spacer for no damage & 3.1 mm min. thickness. g) V.INSP. of performed packing Chk for no over stretching, dents or no cracks. h) V.INSP. of over inflation plug by leak test 32-41-13-810-801-A01</p>		

Process	Process /Checks description	Finding No.	Eng.
	install OVINF. plug by torque 140-160 Ibf.in on test set then pressurize with air to 200 psi. Chk that no leakage using solution soap.		
E2	<p><u>Non-Destructive Inspection CMM P/B 5000 SUBTASK 32-41-13-200-003-A01</u></p> <p>a) Eddy current INSP. Carry out eddy current insp. acc. to CMM page 502 on bead seat & contour areas .</p> <p>b) Penetrate INSP. Carry out dye penetrate inspection on all areas of inner and outer half wheels.</p> <p>c) Magnetic particle INSP Do a magnetic particle insp. on each bolt. Discard a bolt with crack</p>		
F	<p><u>Repairs And Treatments CMM P/B 6000 TASK 32-41-13-300-301-A01</u></p> <p>a) Half wheel repairs Remove scratches & light corrosion using light abrasive cloth. For protective treatment ref to CMM fig.6001,6002,6003,6004&6005 .</p>		
G	<p><u>Outer & Inner Half Wheel Assy CMM P/B 7000 TASK 32-41-13-400-801-A01</u></p> <ul style="list-style-type: none"> • Clean and dry outer & inner wheel half parts. • Lubricate all tie bolts by anti-seize compound .(MIL-T-5544) • Install spacer & new tire on outer half wheel and install packing on inner half then assy. all parts by tie bolts and washers. <p>Primary torque nut of tie bolts in criss-cross seq. by 28 Ib.ft Final torque nut in clockwise seq. by 57 Ib.ft</p> <ul style="list-style-type: none"> • Torque the OVINF. plug by 150 Ibf.in <p>Torque the TPIS. plug & INF.VN by 150 Ibf.in.</p> <p>Install identified balance weight in its previous position</p> <ul style="list-style-type: none"> • Lubricate bearing cone by grease (AEROSHELL22) or equivalent. <p>then Install bearing cone at inner & outer half wheel then grease seals by retaining ring.</p>		
H	<p><u>Nose Wheel Final Leakage Test CMMP/B 1000 TASK 32-41-13-700-801-A01</u></p> <ul style="list-style-type: none"> -Inflate tire by Nitrogen to nominal press 180 psi -Apply solution soap around tire beads, valves & plugs then chk. that no bubbles in view. -Chk for press drop < 2.5% after 12 hrs. or < 5%after 24 hrs. 		
I	<p>Nose Wheel Preservation & storage CMM P/B 15000 TASK 32-41-13-550801-A01</p> <p>Store Nose Wheel Assy. with tire at low press nitrogen 40 psi.</p>		

Finding No.	Fault description	Correction	Eng.

Special Tool required:

Tool P/no.	Description	BIN.NO
F26616000	Over inflation leakage test tool	

Consumable material required:

Material Ref.	Specification	Equivalent IF used

Issue 4 R0 Date: 1-MAR-22	Page 2 /3	Form No: 204-07
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Process	Process /Checks description	Finding No.	Eng.
Molvkoit G rapid	Anti-galvanic corrosion material		
MIL-PRF 680	Aqueous solvent for cleaning type		
Aeroshell 22	Bearing Grease		
MIL-T-5544	anti-seize compound		

AD Applicable Not Applicable
SB Applicable Not Applicable
LLP Applicable Not Applicable

CERTIFICATE TO SERVICE RELEASE:

I here by certify that in carry out the inspection repair, replacement or tests specified above all conditions and requirements of the E. CAR. for the time being in force which are applicable there to have complied with

Released By :

ENG. Name:

AUTH.N/O:

ENG. Signature :

Stamp:

WORKSHOP PROCESS SHEET Nose WHEEL TEST & FAULT ISOLATION.

Unit date in:

Unit date out:

Part Number:

Serial Number:

C. S. New:

C. S. Insp.:

C.S.O/H:

Reason for removal:

CMM Ref.: 32-41-13

Rev. No.: 06

Rev. Date: 30 Octbr 2012

Process	Process /Checks description	Finding No.	Eng.
A	V. inspection for NOSE WHEEL Assy. -Chk no signs of run way rolling or tire burst. -Chk no damage or missing component from half wheels		
B	Pressure leak test CMM P/B 1000 TASK 32-41-13-700-801-A01 -Inflate tire by Nitrogen to nominal press 180 psi -Apply solution soap around tire beads, valves & plugs (' then chk. that no bubbles in view.		
C	Cleaning CMMP/B 4000 TASK 32-41-13-100 -801-A01 -Clean parts by cleaning agent then dry by compressed dry air		

Finding No.	Fault description	Correction	Eng.

D	Nose Wheel Final Leakage Test CMM P/B 1000 TASK 32-41-13-700-801-A01 -Inflate tire by Nitrogen to nominal press 180 psi -Apply solution soap around tire beads, valves & plugs Then chk. that no bubbles in view. -Chk for press drop < 2.5% after 12 hrs. or < 5%after 24 hrs.		
I	Wheel Preservation & storage CMM P/B 15000 TASK 32-41-13-550-801-A01 Store Nose Wheel Assy. with tire at low press nitrogen 40 psi.		

Special Tool required:

Tool P/no.	Description	BIN.NO
F26616000	Over inflation leakage test tool	

Consumable material required:

Molvkoit G rapid	Anti-galvanic corrosion material	Equivalent IF used
MIL-PRF 680	Aqueous solvent for cleaning type	

Process	Process /Checks description	Finding No.	Eng.
Aeroshell 22	Bearing Grease		
MIL-T-5544	anti-seize compound		

AD Applicable Not Applicable
SB Applicable Not Applicable
LLP Applicable Not Applicable

CERTIFICATE TO SERVICE RELEASE:

I here by certify that in carry out the inspection repair, replacement or tests specified above all conditions and requirements of the ECAR. for the time being in force which are applicable there to have complied with

Released By :

ENG. Name:

AUTH.N/O:

ENG. Signature :

Stamp:

WORKSHOP PROCESS SHEET
Nose WHEEL Tire replacement. PROCESS SHEET

Unit date in:

Unit date out:

Part Number:

Serial Number:

C. S. New:

C. S. Insp.:

C.S.O/H:

Reason for removal:

CMM Ref.: 32-41-13

Rev. No.: 06

Rev. Date: 30 Oct 2012

Process	Process / Checks description	Finding No.	Eng.
A	<p>V. inspection for NOSE WHEEL Assy.</p> <p>-Chk no signs of run way rolling or tire burst. -Chk no damage or missing component from half wheels</p>		
B	<p>Pressure leak test CMM P/B1000 TASK 32-41-13-700-801-A01</p> <p>-Inflate tire by Nitrogen to nominal press 180 psi -Apply solution soap around tire beads, valves & plugs then chk. that no bubbles in view.</p>		
C	<p>Disassembly CMM P/B3000 TASK 32-41-13-030-801-A01</p> <p>1- Deflate tire then remove inflation v/v after tire totally deflation. 2- Remove TPIS. & OVINF. Plugs. 3- Remove bearing cone from inner & outer half wheels. 4- Identify tie bolts by drum position then remove by loosen nuts & remove washer. 5- Pull apart inner & outer half wheels then remove tire. 6- Remove spacer from outer half & packing from inner half wheel</p>		
D	<p>Cleaning CMM P/B4000 TASK 32-41-13-030-801-A01</p> <ul style="list-style-type: none"> • Clean parts by cleaning agent then dry by compressed dry air 		
E1	<p>Inspection Checks CMM P/B5000 TASK 32-41-13-200-801-A01</p> <p>a) V.INSP. for inner & outer half wheels drum. Chk.No scratches, corrosion or signs of crack at areas: 1-tire bead seat areas 2-all holes for inflation valve, plugs & tie bolts. Chk.no worn areas of paint. b) V.INSP. of bearing cups Chk bearing cups for both half wheels that: 1-bearing cup can't turn in it's housing and clearance < 0.05mm 2-raceway surface clear from nicks, dents or scratches 3-raceway clear from black, dark blue stains or sign of OVHT. c) V.INSP of bearing cone Chk rollers thrust surface free from metallic chips or scores Chk no discoloration and surface must smooth and polished d) V.INSP of tie bolts Chk no stripped, no crushed threads and no broken 'bolts If one broken bolt, discard it and one bolt on each side e) V.INSP. of nuts CMM SUBTASK 32-41-13-430-009-A01 V.INSP. Of the spacer Chk spacer for no damage & 3.1 mm min. thickness. f) V.INSP. of performed packing Chk for no over stretching, dents or no cracks.</p>		
E2	<p>Non-Destructive Inspection</p> <p>a) Eddy current INSP. Carry out eddy current insp. acc. to CMM page 5005 on bead seat & contour areas SUBTASK 32-41-13-200-003-A01.</p>		
F	<p>Repairs And Treatments CMM P/B 6000TASK 32-41-13-300-801-01</p>		

Process	Process /Checks description	Finding No.	Eng.
	a) Half wheel repairs Remove scratches & light corrosion using light abrasive cloth. For protective treatment ref to CMM fig.6001,6002,6003,6004&6005 .		
G	<p><u>Outer & Inner Half Wheel Assy. CMM P/B 7000 TASK 32-41-13-400-801-A01</u></p> <ul style="list-style-type: none"> • Clean and dry outer & inner wheel half parts. • Lubricate all tie bolts by anti-seize compound .(MIL-T-5544) • Install spacer & new tire on outer half wheel and install packing on inner half then assy. all parts by tie bolts and washers. Primary torque nut of tie bolts in criss-cross seq. by 28 Ib.ft Final torque nut in clockwise seq. by 52 Ib.ft • Torque the OVINF. plug by 150 Ibf.in Torque the TPIS. plug & INF.VN by 150 Ibf.in. Install identified balance weight in its previous position • Lubricate bearing cone by grease (AEROSHELL22) or equivalent. then Install bearing cone at inner & outer half wheel then grease seals by retaining ring. 		
H	<p><u>Nose Wheel Final Leakage Test CMMP/B 1000 TASK 32-41-13-700-801-A01</u></p> <ul style="list-style-type: none"> -Inflate tire by Nitrogen to nominal press 180 psi -Apply solution soap around tire beads, valves & plugs then chk. that no bubbles in view. -Chk for press drop < 2.5% after 12 hrs. or < 5%after 24 hrs. 		
I	<p><u>Nose Wheel Preservation & storage CMM P/B 15000 TASK 32-41-13550-801-A01</u></p> <p>Store Nose Wheel Assy. with tire at low press nitrogen 40 psi.</p>		

Finding No.	Fault description	Correction	Eng.

Special Tool required:

Tool P/no.	Description	BIN.NO
F26616000	Over inflation leakage test tool	

Consumable material required:

Material Ref.	Specification	Equivalent IF used
Molvkoit G rapid	Anti-galvanic corrosion material	
MIL-PRF 680	Aqueous solvent for cleaning type	
Aeroshell 22	Bearing Grease	
MIL-T-5544	anti-seize compound	

AD Applicable Not Applicable

SB Applicable Not Applicable

LLP Applicable Not Applicable

CERTIFICA TE TO SERVICE RELEASE:

I here by certify that in carry out the inspection repair, replacement or tests specified above all conditions and requirements of the E. CAR. for the time being in force which are applicable there to have complied with
Released By :

ENG. Name:

AUTH.N/O:

ENG. Signature :

Stamp:

Issue 4 R0 Date: 1-MAR-22	Page 2 of 2	Form No: 204-09
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EDDY CURRENT TESTING RESULT REPORTNesma Airlines
نسما للطيران

Report No		REPORT DATE		
Inspection Date		Insp. Accomplished Location		
A/C CURRENT DATA	AIRCRAFT TYPE		TOTAL FLT HOURS	
	A/C REG		TOTAL FLT CYCLES	
NDT Instruction No	NTM TASK NUMBER		NTM REV NO.	
	NTM TASK DESCRIPTION		NTM REV DATE	
ITEM TO BE INSPECTED	PART DESCRIPTION			
	PART LOCATION ON A/C		PART POSITION / NUMBERING	
	PART NUMBER			FRAM LOC:
	PART MATERIAL / THICKNESS			STRINGER LOC:
	DAMAGE TYPE			DAMAGE SIZE
INSTRUMENTS DATA	Type of instrument			
	Model			
	Instrument P/N		Instrument S/N	
	Date of Calibration		Next Calibration Due	
	Probe Description / Range			
	Probe P/N		Probe S/N	
CALIBR BLOCK Desc.		Ref Sample P/N		Ref Sample S/N
SCTCH DRWG				

Inspection Results			
Visual Examination	Surface finish, clean <input type="checkbox"/> and smooth <input type="checkbox"/> with <input type="checkbox"/> obvious visual faults		
Inspection Technique in accordance with NTM Instruction No.			
Inspection Results:	ITEM IS ACCEPTED <input type="checkbox"/>	ITEM IS NOT ACCEPTED <input checked="" type="checkbox"/>	
Accept/Reject Criteria	As Per NTM Instruction No. TASK 51-10-08-250-803-A01 For all kind of Material cracks		
NDT ENGINEER			Quality Control
Signed:			
Name:			
Certification No.			Signed:

Nesma Airlines
نسمة للطيران

Weight Change Summary

Technical Department

Aircraft Type: A320-232

Date:

Aircraft Registration: SU-

Aircraft MSN:

TOOLS LIST

Deliver to Tech

Receive from Tech

Tech Name :

Tech Name :

Id No. :

Id No. :

Signature :

Signature :

Store Name :

Store Name :

Id.No. :

Id.No. :

Signature :

Signature :

Prepared by:

Date	A/C Reg.	FLT No.	ATA Chapter	STN	STA	ATA	STD	ATD	Tech Delay	Defect OC RD:	<input type="checkbox"/> In F T	
											<input type="checkbox"/> On GRD	
Primary Concern	✓	Time	Primary Concern			✓	Time	Primary Concern			✓	Time
Pilot Report			After Eng. Start					Others:				
Maint. Report			Return to Stand					1)				
Prior to Dep.			Aborted Take Off					2)				
After Pushback			Diversion					3)				
DEFECT										ACTION TAKEN		

SEQUENCE OF EVENTS

(Please provide as much details as possible)

Time										

SECONDARY CAUSES

- | | |
|--|---|
| <input type="checkbox"/> Lack of Spare Parts | <input type="checkbox"/> Lack of Manpower |
| <input type="checkbox"/> Lack of Tooling / Ground Equipments | <input type="checkbox"/> Handling Agents |
| <input type="checkbox"/> Lack of Equipments | <input type="checkbox"/> Difficult Trouble Shooting |
| <input type="checkbox"/> Lack of Ground Time | <input type="checkbox"/> Others: |

DELAY SUBSEQUENT EFFECT

- Delay leads to Flight Cancellation
 Aircraft Substitution (Substitute by A/C Reg.....)

ACTION TAKEN FOR DELAY REASON:

Name:

Aircraft Model:

Aircraft Reg.:

MSN

Nesma Airlines نسمة للطيران	Material Requisition		Technical Department	
<i>Originator's Remarks</i>				
A/C Reg.: SU-	Date:			
P/No.:	Description:			
Alt.P/No.(s):				
Qty.:	A.O.G.	<input type="checkbox"/>	Critical:	<input type="checkbox"/>
			Expedite	<input type="checkbox"/>
			Normal	<input type="checkbox"/>
IPC Reference:		Reason for Demand:		
Req. by:	Staff No.:			
<i>Stores Remarks</i>				
Qty. Issued:	Rel. Note:	Issued by:	Staff No.:	UI:
NIL Stock (Sign):	NOT Stock (Sign):			

Received by (Sign): _____ **Date:** _____

DATE:

Item	Nesma Code	Part Number	Description	Serial Number	Certificate	Supplier

Store Keeper:

.....
.....

Material Manager:

.....
.....

Chief Inspector

.....
.....

SERVICEABLE PART TAG

P/N:

S/N:

Description:

Condition:

Expiry Date:

T.S.N.:

C.S.N.:

T.S.O.:

C.S.O.:

Date:

Inspector:

Nesma Airlines
نسما للطيران

STORE CARD

Part Number:

Description:

Location:

Remarks:

Issue 4 R0

Date: 1-3-22

/1

Form: F205-04

Nesma Airlines
 Nesma طيران

UNSERVICEABLE PART TAG

P/N:

S/N:

Description:

Removed From:

Position:

Flight Hours:

Flight Cycles:

Reason for Removal:

Date:

Engineer:

Issue 4 R0

Date: 1-3-22

1/1

Form: F205-05

Nesma Code:

Part Number:

Alternate Part Number:

ATA Chapter:

Description:

Store Keeper:

.....

.....

Store Keeper:

.....

Chief Inspector:

.....
.....

Nesma Airlines نسماء للطيران	U/S Parts Delivery to Quarantine Store	Technical Department
---------------------------------	--	----------------------

Store Keeper

.....

Issue 4 R0

Date: 1-03-22

Material Manager

.....

1/1

Chief Inspector

.....

Form: F205-08

Nesma Airlines
نسمة طيران

REMOVED PART TAG

P/N: S/N:

Description: A/C reg.....

Condition: Expiry Date:

T.S.N.: C.S.N.:

T.S.O.: C.S.O.:

Date: Inspector:

Issue No. 4 R0

Dated 1/03/2022

Form: F205-09

Nesma Code	Part Number	Description	SN / QTY	Aircraft	Assigned	Date	Remarks

Store Keeper

.....

Nesma Airlines
نسماء طيران

Invoice

Technical Department

5 El-madenah St
Enozha Elgededa, Heliopolis
Cairo, Egypt
Tel: Int.
Fax: Int.

Invoice No.:
Invoice Date:

Issued To:

Ship To:

Reference

Ship Via

AWB Number

Ship Date

Part Number

Description
S/N

QTY

Price Each
USD

Price Total
USD

\$0.00

Remarks:

For Nesma Airlines

Station

Months

Attention : if temperature > 25 degree centrigade and humidity > 70 % the Maintenance Manager has to be informed

Nesma Airlines
نسمة للطيران

SHELF - Life Time

Description: الوصف:

Part No: رقم القطعة:

GRL No.: رقم كشف الاستلام:

Bin No.: رقم الحالة:

Serial No.: رقم المسلسل:

Release No.: رقم شهادة الصلاحية:

Issue 4 R0 Date: 1-03-22 Form: F205-15

Visually Checked and Tasted

Found OK

Signature

Date

SHELF - Life Time

Expiry Date

Nesma Airlines Nesma طيران	Wrist Strap Conductivity Records	Technical Department
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Note: According to GMM item 4.16.11 ESD handling. Perform Conductivity test prior to use and record result

Nesma Airlines نسماء للطيران 0008501A				AIRCRAFT TECHNICAL LOG AIRCRAFT TYPE A 320- 200					TECHNICAL DEPARTMENT			
A/C REG.: SU-		DEP. Date:		<input type="checkbox"/> B-RNAV	<input type="checkbox"/> RVSM	<input type="checkbox"/> CAT I	<input type="checkbox"/> CAT II	LOG TIME	Hrs.	Mins.		
DEP. Point		ARR. Date:		Fuel Used	Eng 1			Landed				
ARR. Point					Eng 2			Airborne				
FLT. No.		<input type="checkbox"/> Revenue <input type="checkbox"/> Non revenue			Total			Sector time				
Pilot Name <input type="checkbox"/> PF <input type="checkbox"/> PM				Delay code		No. Landing		Time B/F				
Co-Pilot Name <input type="checkbox"/> PF <input type="checkbox"/> PM				Delay time		<input type="checkbox"/> G/A	<input type="checkbox"/> FLX	<input type="checkbox"/> TOGA	Total time			
Item No	Defect			Action Taken								
1		<input type="checkbox"/> PR	<input type="checkbox"/> MR	ATA	<input type="checkbox"/> ADD raised	ADD cleared No.		<input type="checkbox"/> RII	Date: Eng. Sig & Auth			
									Eng. Sig & Auth. RII			
2		<input type="checkbox"/> PR	<input type="checkbox"/> MR	ATA	<input type="checkbox"/> ADD raised	ADD cleared No.		<input type="checkbox"/> RII	Date: Eng. Sig & Auth			
									Eng. Sig & Auth. RII			
3		<input type="checkbox"/> PR	<input type="checkbox"/> MR	ATA	<input type="checkbox"/> ADD raised	ADD cleared No.		<input type="checkbox"/> RII	Date: Eng. Sig & Auth			
									Eng. Sig & Auth. RII			
Item No	P/N OFF		S/N OFF			P/N ON			S/N ON			
FUEL				ENGINE OIL Qts.			IDG AND APU OIL UPLIFT Qts		HYDRAULIC Qts		TIRE PRESSURE PSI	
Supplier	Arrival	Kgs	Engine	1	2							
Receipt		Kgs	Arrival			LH		G				
Density	Uplift	Ltr	Uplift			RH		B				
Temp.	Depart	Kgs	Departure			APU		Y				
I Hereby Certify That The Maintenance Specified Above Has Been Carried Out In Accordance With Manufacturer's Documents. Egyptian Civil Aviation Regulations And Nesma Airlines Relevant Approved Document												
CHECK	SIGN.	AUTH.	DATE	TIME			STATION	AIRCRAFT ACCEPTANCE FOR FLIGHT				
WEEKLY								Capt. Name		Capt. Sign		
DAILY												
PDC								DATE: - / - / - - -				
								TIME: - / - -				

Continue to next Page: YES NO Dated

No.:0000101

A/C Type	
A/C Reg.	SU-

Station	
Date	

Log Book	Page No.
	Item No.

Deferred Defect

ATA :

A

Rectification

Ref. No. RII Yes No

B

Ref. MEL CDL AMM SRM

Required Action

Operation (O) Repetitive Yes No
 Maintenance. (M) Repetitive Yes No

See Notice to Crew. _____ / _____

Ref. No. RII Yes No

Deferral Category		Rect. Due		Item	P/N off	S/N off	P/N on	S/N on	Position
-------------------	--	-----------	--	------	---------	---------	--------	--------	----------

Deferral reason									
-----------------	--	--	--	--	--	--	--	--	--

Required Item Desc.								
---------------------	--	--	--	--	--	--	--	--

Extension No.	Extension to	Engineer Sig. & stamp	Date	Engineer Sig. & stamp	Inspetion Sig. & Stamp for RII	Date	Station
---------------	--------------	-----------------------	------	-----------------------	--------------------------------	------	---------

--	--	--	--	--	--	--	--

--	--	--	--	--	--	--	--

Note: Only one deferred defect is to be entered, all entries in capital letters

CABIN DEFECT LOG

Nº 0001 C

Registration:		Date:	Flight No:	From:	To:		
No.	DEFECT		ACTION		Sign.	Auth.	Date
			TRANSFERRED TO: CADDL ITEM _____ ATLP ITEM _____				
			TRANSFERRED TO: CADDL ITEM _____ ATLP ITEM _____				
			TRANSFERRED TO: CADDL ITEM _____ ATLP ITEM _____				
			TRANSFERRED TO: CADDL ITEM _____ ATLP ITEM _____				
Purser Name		Purser Sign.	Any item affecting the airworthiness of the aircraft MUST BE TRANSFERRED BY THE CAPTAIN TO THE AIRCRAFT TECHNICAL LOG and an entry made by him in the "action" column stating "TRANSFERRED TO TLP NO....." This log must be presented to and signed by the Captain before the termination of each flight. For guidance, defects affecting the following should be transferred to the Aircraft Technical Log.				
Captain Sig:							

Complete all sections where information is relevant

Data Received by ECAA

ECAA Occurrence No.

For multi -choice boxes, indicate which entry is appropriate

Aircraft Type and Series	Registration	Operator	Date of Occurrence			Flight Phase	NATURE OF FLIGHT	
						PARKED	SCHED PAX	
						TAXYING	NON-SCHED PAX	
FLIGHT AND WEATHER DETAILS								
Flight No.	DAY NIGHT TWILIGHT	WIND Used IAS KTS	Precipitation	Icing	Turbulence	TAKE-OFF	SCHED FREIGHT	
			RAIN SNOW SLEET HAIL	light Mod Heavy	light Mod Heavy	LIGHT MOD SEVERE EXTREME	CLIMB	SURVEY
From :	TIME GMT	Height ft State	DRY WET ICE SNOW SLUSH	Cloud Type		Cruise	PLEASURE	
				Height / ft Amount / 8ths		DESCENT	AGRICULTURAL	
To :					HOLDING	BUSINESS		
Geog. Position	VISIBILITY	O.A.T. °C		APPROACH	CLUB/GROUP			
				LANDING	PRIVATE			
				CIRCUIT	POSITIONING			
				AEROBATICS	FERRY			
				HOVER	TEST			
					TRAINING			

DESCRIPTION

ENGINEERING DETAILS	Aircraft constructor's No.	Engine Type & serious	Ground Phase	MAINTENANCE UNATTENDED			GROUND HANLING TAXING
Component / Part	Location on aircraft	Manual Reference	Overhaul/Repair Agency	Maintenance Prog.		Manufacturer advised	
				O.C	C.M		H.T
Manufacturer	Part No.	Serial No.	HOURS / CYCLES / LANDINGS	Total	Since	OVERHAUL/ REPAIR/ INSPECTION	
Any published Airworthiness information Relevant to occurrence (eg. Mod / Insp / Repair) Plus compliance status of aircraft or equipment .							

Organization	Address and Tel. No.		
Position			
Reference No.	Date	Name	signature

ACCIDENT REPORT			REPORT No.	
DATE	LOCATION	PERSON REPORTING ACCIDENT		
		NAME	TITLE	BASE
EQUIPMENT INVOLVED				
AIRCRAFT <input type="radio"/>	VEHICLE <input type="radio"/>	ROUND SUPPORT EQUIPMENT <input type="radio"/>	AS EQUIPMENT IN MOTION YES <input type="radio"/> NO <input type="radio"/>	
EQUIPMENT TYPE/MARKS/MODEL				
AIL OR REGISTRATION NO				
OWNER / OPERATOR				
PERSONNEL INVOLVED				
PILOT / DRIVER	COPILOT / CREW		OTHER CREW/PASSSENGERS	
HIRTY PARTY INVOLVED ? YES <input type="radio"/> NO <input type="radio"/> NOT KNOWN <input type="radio"/>		NJURY INVOLVED ? YES <input type="radio"/> NO <input type="radio"/> NOT KNOWN <input type="radio"/>		
HIRTY PARTY / INJURY WAS INVOLVED DESCRIBE				
LIST OF WITNESSES : (Other statement from witnesses and attach to this report)				
DESCRIPTION OF ACCIDENT				
COST ESTIMATES OF DAMAGE				
REPAIR COST	M / HRS	ABOR COST	MATERIAL COST	
OTHER COST LIST				
TOTAL COST OF ACCIDENT				

Nesma Airlines نسماء طيران	Read and sign	Technical Department
-------------------------------	---------------	----------------------

- (i) I am aware that Nesma airlines policies are available to me on the company server, on aircraft and on technical library.
- (ii) It is my responsibility to familiarize myself with these policies.
- (iii) In addition, I confirm that I have received, read and understood the new revision policies.
- (iv) I agree to conduct my activities in accordance with Nesma airlines policies and understand that breaching these standards may result in disciplinary action up to and including termination or other legal remedy available to the organization.

Signers List:

Name	position	Nesma Approval	Signature

Nesma air lines

A / C Registration :----- A / C Type : -----

Flight No / Date :----- Station of Departure : -----
Flight route :----- A / C Flight cycle : -----A / C Flight hours :-----
A . T . A System :----- Reference : -----Summary of defects (s)-----

-----Action taken :-----

-----Concession Requested :-----

-----Reasons :-----

Applicant Names :----- sign :-----

Occupation :----- Date :-----

Concession approval No Date : Q .C instructions : Chief Inspector : ----- -----	Final action Name :----- Sign :----- Date :-----
---	---

NRC

No

Nesma Airlines نسماء للطيران		NON ROUTINE CARD		TECHNICAL DEPT.
A/C REGISTRATION SU - _____	A/C TYPE	DATE OF CHECK		CHECK
SYSTEM OR ZONE		REF:		
TECHNICAL DEFECT / AD / SB / INSPECTION		ACTION TAKEN		ENGINEER

Issue 3

Date: 1-12-17

1/1

From No. F206-09

1. ECAA/ ARAB REPUBLIC OF EGYPT	CERTIFICATE OF RELEASE TO SERVICE	TECHNICAL DEPARTMENT
--	--	-----------------------------

Certificate Of Release To Service Number:						
Approved Maintenance Organization :			Nesma Airlines نسماء للطيران			
Aircraft					Engines/ APU	
Model	MSN	Registration	Flight Hours	Cycles	Engine Type/Model Engine S/N	
					Engine Type/Model Engine S/N	
					APU Type/Model APU S/N	
Approved Maintenance Schedule Reference:					Work Package Ref.	Beginning of work:
						End of work:
Work Performed:						
Concessions:						
<u>Release to Service</u> "Certifies that the work specified except as otherwise specified was carried out in accordance with ECAR 145 and in respect to that work the aircraft / aircraft component is considered ready for release to service"						
With Test Flight	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Tick in appropriate box			
Name:	Signature / Stamp:	Date: ---/---/----	Approval Number: ECAA/AW/AI/C0018 R6	Place:		
		Time: ---:---				

(SPECIAL TOOLS/TAST EQUIPMENT)

Page _____ of _____
Date : / /
Frequency :

SER	NOMENCLATURE	P/N	S/N	DATE OF LAST CALIBRATION	CALIBRATION CYCLE (MONTH)	DATE OF NEXT CALIBRATION	REMARKS
				/ /		/ /	
				/ /		/ /	
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				/ /		/ /	

Subject	
Date	
Place	
Department in charge	
Persons in charge	
Conclusion;	

Engineering manager Sig:

Chief Inspector: _____ Sig: _____

Nesma air lines

A / C Registration :----- A / C Type : -----

A / C Flight hours : ----- A / C Flight cycle : -----

Check Repeat Interval: ----- Reference: -----

Normal Dead Line: ----- New Dead Line: -----

Escalation Requested: -----
-----Reasons :-----
-----Applicant Names :----- sign :-----
-----Occupation :----- Date :-----

Escalation approval No Date : Q .C instructions :	Final action
Chief Inspector :----- Sign :----- Date :-----	Name :----- Sign :----- Date :-----

NOTE:

Limitations: 5% of Routine Maintenance Check or tasks intervals provided that it will not affect the next higher check interval limits. Short term Escalation is prohibited for:

- 1-Interval specified Airworthiness Directive.
- 2-Life limits specified by type certificate data sheets.
- 3-Limitation specified by MEL or CDL.
- 4-Structural Sampling periods imposed by MR.
- 5-Certification maintenance requirements unless specified otherwise in the MRP report.

A / C REG: SU- Station: Date:

Unit Description:

Unit Position:

REMOVE UNIT	INSTALLED UNIT
P/N:	P/N:
S/N:	S/N:
Reason for Removed:	
.....	
.....	
.....	
.....	
.....	
.....	
.....	
.....	
Engineer:	Engineer:
Signature:	Signature:
Authority No.:	Authority No.:

Nesma Airlines نسماء للطيران		CABIN ADD LIST		A/C : SU-NM_____		Document N° 0000001 C		Date -----	
ITEM N°	OPEN DATE	DESCRIPTION	SIGNATURE	DEFERRED LIMIT	ELIMINATION			CLOSE DATE	SIGNATURE
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
1) THIS FORM IS CONSIDERED AS INTEGRAL PART OF THE A/C CABIN LOG BOOK Note: 2) ONCE RE PLACED WITH A NE W F ORM, T HIS D OCUMENT MUST BE DELIVERED TO DTP AND SEND VIA FAX.				REMOVAL DATE	NEW DOC N°	NAME	SIGNATURE		

Nesma Airlines نسماء للطيران	Memo	Technical Department
---------------------------------	------	----------------------

Nesma Airlines		
Number:	Date:	
<u>From:</u>		
<u>To:</u>		
Subject:		
Affectivity:	<input type="checkbox"/> Permanent	<input type="checkbox"/> Temp.
Reasons :		
Instruction:		
Name:		
Signature :		

Nesma Airlines نسماء للطيران	General Maintenance Manual	Section:	Appendix B
	Audit Program	Page:	1 of 1

Audit Check List:

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	

Auditor Name:

Signature:.....

Date:.....

Annual Audit Plan 20__ / 20__

Technical Department

No.	AUDIT TASK	JULY				AUGUST				SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				REMARKS			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
1	Maintenance Department.																												
2	Engineering Department.																												
3	Planning Department.																												
4	Technical Records																												
5	Material and Store																												
6	Technical Library																												
7	Training																												
8	Contractor Audit																												
9	Fuel Auditing																												
10	Workshop																												
11	Aircraft																												
No.	AUDIT TASK	JANUARY.				FEBRUARY.				MARCH				APRIL				MAY				JUNE				REMARKS			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
1	Maintenance Department.																												
2	Engineering Department.																												
3	Planning Department.																												
4	Technical Records																												
5	Material and Store																												
6	Technical Library																												
7	Training																												
8	Contractor Audit																												
9	Fuel Auditing																												
10	Workshop																												
11	Aircraft																												

Chief Inspector and Quality Manager

Sign

Issue 3

Date: 1-12-17

Rev.no.0

Planned

Performed

Form no. F 206-18

Nesma Airlines نسماء للطيران	NOTICES TO CREW	A/C Registration -----	Document No. -----	TECHNICAL DEPARTMENT
---------------------------------	------------------------	---------------------------	-----------------------	----------------------

Item No.	NOTICE Opening Date	NOTICE Raised By	DEFECT Original Reference (if applicable)		NOTICE	DEFECT Clearance Ref. (if applicable)		NOTICE Closed by
		Sign.	Tech Log Page	Item No.		Tech Log Page	Item No.	Sign.
		CRS Auth. No.	Date			Date		CRS Auth. No.
		Sign.	Tech Log Page	Item No.		Tech Log Page	Item No.	Sign.
		CRS Auth. No.	Date			Date		CRS Auth. No.
		Sign.	Tech Log Page	Item No.		Tech Log Page	Item No.	Sign.
		CRS Auth. No.	Date			Date		CRS Auth. No.
		Sign.	Tech Log Page	Item No.		Tech Log Page	Item No.	Sign.
		CRS Auth. No.	Date			Date		CRS Auth. No.
		Sign.	Tech Log Page	Item No.		Tech Log Page	Item No.	Sign.
		CRS Auth. No.	Date			Date		CRS Auth. No.
		Sign.	Tech Log Page	Item No.		Tech Log Page	Item No.	Sign.
		CRS Auth. No.	Date			Date		CRS Auth. No.
		Sign.	Tech Log Page	Item No.		Tech Log Page	Item No.	Sign.
		CRS Auth. No.	Date			Date		CRS Auth. No.
		Sign.	Tech Log Page	Item No.		Tech Log Page	Item No.	Sign.
		CRS Auth. No.	Date			Date		CRS Auth. No.
		Sign.	Tech Log Page	Item No.		Tech Log Page	Item No.	Sign.
		CRS Auth. No.	Date			Date		CRS Auth. No.
		Sign.	Tech Log Page	Item No.		Tech Log Page	Item No.	Sign.
		CRS Auth. No.	Date			Date		CRS Auth. No.
		Sign.	Tech Log Page	Item No.		Tech Log Page	Item No.	Sign.
		CRS Auth. No.	Date			Date		CRS Auth. No.
REMOVAL DATE		Name				NEW DOC. No.	CRS Auth. No.	
							Sign.	

1. ECAA/ ARAB REPUBLIC OF EGYPT		2. Egyptian Civil Aviation Authority AUTHORIZED RELEASE CERTIFICATE/ AIRWORTHINESS APPROVAL TAG			3. Form Number	
4. Organization: Nesma Airlines, Cairo International Airport, Cairo, Egypt					5. Work Order/ Contract/ Invoice Nesma Airlines نجوم مصرية	
6. Item	7. Description	8. Part No.	9. Eligibility	10 Quantity	11. Serial/ Batch No.	12. Status/ Work
13- Remarks						
14- New: NEWLY OVERHAULED CERTIFICATE THAT THE NEW OR NEWLY OVERHAULED PART(S) IDENTIFIED ABOVE ACCEPTED AS OTHERWISE SPECIFIED IN BLOCK 13 WAS (WERE) MANUFACTURES LAW. EGYPTIAN AIRWORTHINESS REGULATION. NOTE: IN CASE OF PARTS BE EXPORTED THE SOCIAL REQUIREMENTS OF IMPORTING COUNTRIES HAVE MEET.			19- <input type="checkbox"/> PART-145 RELEASE TO SERVICE <input type="checkbox"/> OTHER REGULATION SPECIFIED IN BLOCK 13 CERTIFICATE THAT WORK SPECIFIED IN BLOCK 13 WAS CARRIED OUT IN ACCORDANCE WITH THE EGYPTIAN AIRWORTHINESS REGULATION AND RESPECT TO THAT WORK THE PART(S) IS (ARE) APPROVED FOR RETURN TO SERVICE			
15- Authorized Signature:	16- Authorized No.:	20- Authorized Signature:		21- APPROVAL No.: ECAA/AW/AI/COO18 R6		
17-Name:	18-Date:	22-Name:		23-Date:		
IT IS IMPORTANT TO UNDERSTAND THAT THE EXISTENCE OF THE DOCUMENT ALONE DOES NOT AUTOMATICALLY TO INSTALL THE PART / COMPONENT / ASSEMBLY. WHERE THE USER / INSTALLER PERFORMANCE WITH A NATIONAL REGULATION OF AN AIRWORTHINESS DIFFERENT THAN AIRWORTHINESS OF COUNTRY SPECIFIED IN BLOCK(I) IT IS ESSENTIAL THAT THE USER/INSTALLER ENSURE THAT THE HIS (HER) AIRWORTHINESS ACCEPTED PARTS / COMPONENTS /ASSEMBLIES FROM THE AIRWORTHINESS AUTHORITY SPECIFIED IN BLOCK (1).						

**Technical committee
Meeting Minutes**Date :
Venue :
Time :**1) Attendees:**

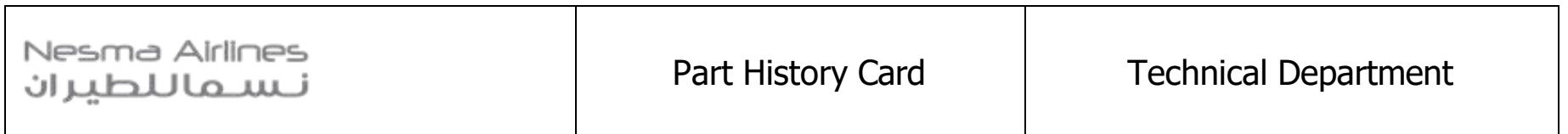
S	Name	Position
1		
2		
3		
4		
5		
6		
7		
8		

2) Meeting Agenda:**2.1 Additional items****3) Meeting notes & issues:****4. Last meeting open items follow up:**

S	SUBJECT	RESPONSIBLE	Follow-up
1			
2			

5. current open items:

S	SUBJECT	RESPONSIBLE	Follow-up
1			
2			





Nesma Airlines Nesma طيران	Wrist Strap Conductivity Records	Technical Department
-------------------------------	-------------------------------------	-------------------------

Note: According to GMM item 4.16.11 ESD handling. Perform Conductivity test prior to use and record result

Battery Regular Check

Unit date in:

Unit date out:

Part Number:

Serial Number:

T. S. New:

T. S. Insp.:

Removed from: SU-NM.....

CMM Ref.: 24-38-51

Rev. No.:

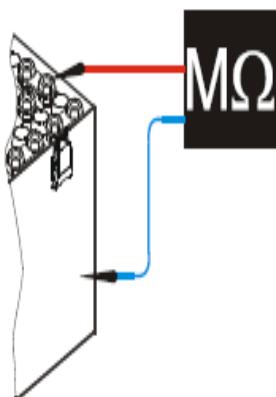
Rev. Date:

Step	Process / Checks description	Eng.	Stamp.
1	<p>visual inspection</p> <p>Visual inspection should be done each time the battery is removed for maintenance.</p> <ul style="list-style-type: none">- Remove the cover complete (050).- Visually check each cell (320) for any evidence of electrolyte leakage. If there is salt or electrolyte traces do a General overhaul. Excessive salts around a terminal post indicates possible leakage from the terminal O-ring. Verify the torque of the lower nut (refer to chapter ASSEMBLY).- Inspect the links (270 to 310) and all upper nuts (250), and washers (360 and 380). The hardware should be free of bends, tarnish, corrosion, burns, or any loss of nickel plating. Minor tarnish can be polished off with a fine wire brush. Defective hardware should be replaced.- Check the connector (200) for evidence of arcing, corrosion, cracks, or cross-threaded terminals. Replace the defective connector. <p>Caution: Worn aircraft connectors and/or loose connections can greatly affect the performance of the battery. A defective connector (200) can cause battery self-discharge as well as low voltage in service.</p> <ul style="list-style-type: none">- Inspect the electrical connector for bent or loose pins, corrosion, cracks, faulty wire connections, evidence of arcing, or cracked or loose potting material.- Inspect the battery box (020) and cover assembly (050) for any damage. Minor dents may be repaired with a small rubber mallet. Ensure the cover gasket (070), if applicable, is undamaged and fully secured to the cover assembly (060).		

2 **insulation check:**

A breakdown in electrical insulation between the cells (320) and the battery box (020) will result in a "leakage" current, which over time will discharge the battery. The most common cause for the loss of insulation is the leakage of electrolyte from the cells (320) that acts as a conductor between the cells and the battery box (020). Because leakage current can affect battery performance, it is necessary that it be kept to a minimum.

On a completely assembled battery, use a megohmmeter, set to 250 V DC, to measure the insulation resistance between the positive terminal of each cell (320) and the battery box (020).



Refer to the table below for the acceptance criteria.

250 KΩ	2 MΩ	10 MΩ	
Must be cleaned. Do a General Overhaul Check the cause (overcharge...)	Acceptable but cleaning is recom- mended	Acceptable for in- service battery	Mandatory level of insulation for new or in service battery after cleaning

3	<p>Nut tightness:</p> <p>Tighten and check the torque of all upper cell nuts</p> <table border="1"><thead><tr><th rowspan="2">IPL FIG ITEM N°</th><th rowspan="2">NAME</th><th colspan="2">TORQUE VALUE</th></tr><tr><th>N.m</th><th>lbf.in</th></tr></thead><tbody><tr><td>upper nut 350</td><td>Nut</td><td>12 to 14</td><td>106 to 124</td></tr><tr><td>lower nut 350</td><td>Nut</td><td>4.5 to 5.5</td><td>39.2 to 47.8</td></tr></tbody></table>	IPL FIG ITEM N°	NAME	TORQUE VALUE		N.m	lbf.in	upper nut 350	Nut	12 to 14	106 to 124	lower nut 350	Nut	4.5 to 5.5	39.2 to 47.8	
IPL FIG ITEM N°	NAME			TORQUE VALUE												
		N.m	lbf.in													
upper nut 350	Nut	12 to 14	106 to 124													
lower nut 350	Nut	4.5 to 5.5	39.2 to 47.8													
4	<p>a-polarization test</p> <p>Charge the battery at 2.3 A for 1.5 hours.</p> <p>Keep the battery in open circuit for 1 hour.</p> <p>Measure the open circuit voltage of each cell. If any cell is zero (0) V or negative polarity, do a General overhaul. If all cells are above zero (0) V, continue with maintenance as specified.</p> <p>b-residual discharge</p> <p>Discharge the battery at the 23 A or 11.5 A rate until each cell in the battery is discharged to 1.0 volt or below.</p>															
5	<p>cell shorting:</p> <p>As each cell's voltage drops below 1.0 V, connect an equalizing resistor (T03) across each cell's terminals. Leave the resistors in place for 12 to 16 hours to allow each cell to completely discharge and the battery to cool.</p> <p>NOTE: As an alternative to the resistor a shorting clip can be applied when the voltage has dropped to 0.5 V/cell.</p>															

6 Charging:

Main charge			Final charge (overcharge)	
Current	Criteria of end of charge	Time	Current and duration	Minimum voltage at the end of charge
2.3 A	mini 10 h maxi 12 h	mini: 30 V maxi: 34 V	2.3 A for 4 h	1.5 V / per cell
11.5 A	mini 2 h maxi 2 h 30 min.	mini: 31 V maxi: 34 V	2.3 A for 4 h	1.5 V / per cell
23 A	mini 1 h maxi 1 h 15 min.	mini: 31.4 V maxi: 34 V	2.3 A for 4 h	1.5 V / per cell

Table 1 - Charge Rates

7 Adjust electrolyte level

Caution: Using anything other than distilled or deionized water in nickel-cadmium cells will cause electrolyte contamination and damage.

Always take appropriate precautions to prevent any foreign substances from entering the cell. Anything other than distilled or deionized water that enters the cells will cause electrolyte contamination and will affect overall performance.

The amount of time that the vent-valves are removed from the cell for maintenance should be limited to prevent as much air as possible from entering the cell. Carbon dioxide in the air will combine with the electrolyte to form potassium carbonate. Potassium carbonate will increase the internal resistance of the cells and thus decrease the performance at low temperatures and during high rate discharges. Always ensure that the vent-valves are properly secured while the battery is in use.

Electrolyte level adjustment is to be done during the last 15-30 minutes of the 4 hours overcharge at [2.3 A](#) rate of charge.

Caution: Take care not to tilt cells while vent-valves are loosened or removed. Contact of electrolyte with skin can cause burns. If contact occurs, flush area with large amounts of water. Electrolyte in the eyes is very serious. Flush with water and contact a doctor immediately.

Caution: The battery must be fully charged before adjusting the electrolyte level.

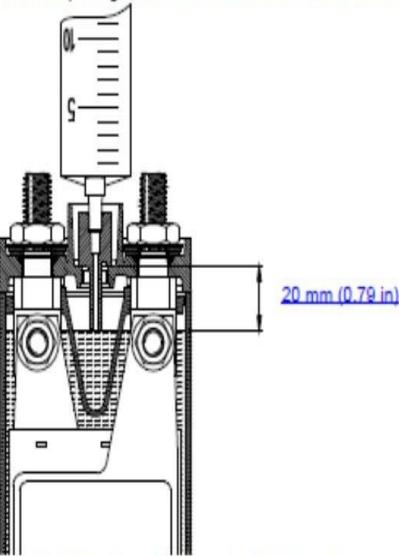
Use only distilled or deionized water (see chapter [SPECIAL TOOLS, FIXTURES, EQUIPMENT AND CONSUMABLES](#)).

Do not re-use water removed from cells.

The quantity (in cm³) required to level the first cell will serve as a guide for requirements of the remaining cells but the amount of water required for each cell can vary, so carry out this check on a cell by cell basis. Each cell must be leveled individually. If the quantity of water added per cell is above 80% of the electrolyte water volume shown in the specification tables (60 cm³ (3.66 in³)), check the charging system. If it is functioning properly, shorten the time period between servicing. In no case must the water consumption exceed 60 cm³ (3.66 in³).

Adjust the level of electrolyte, one cell at a time, using the following instructions:

- 1. Remove the vent-valves ([325](#)) with the vent-valve wrench ([101](#))
- 2. Check the nozzle length at 20 mm before fitting it to the syringe

	<p>- 3. Insert the syringe (T02) into the cell opening until the shoulder of the nozzle rests on the vent-valve seat .</p>  <p>Figure 5002 Position of Syringe in Cell Vent Seat</p> <p>- 4. Withdraw the plunger and check for any liquid in the syringe. Any excess liquid in the cell will be drawn into the syringe until the electrolyte is level with the end of the nozzle. This is the correct level for the electrolyte. If the liquid level is too low, the syringe will remain empty, indicating that the end of the syringe nozzle did not reach the liquid in the cell. In this case, replenish low electrolyte: - 5. Draw 5 cm³ of the distilled water (M01) into the syringe and inject it into the cell. - 6. With the syringe nozzle remaining on the vent-valve (325) seat, slowly withdraw the plunger in the syringe. - 7. If the syringe remains empty, repeat steps 5 and 6, counting the number of 5 cm³ injections required to achieve the correct level. Record the amount of water added to each cell on the maintenance record. - 8. At the point in step 8 when some excess liquid is drawn into the syringe, the correct level for that cell has been reached. Expel the excess liquid into a separate container for disposal. Do not re-use the liquid removed from cells. Check with local authorities for proper disposal of hazardous waste.</p>	
8	<p>capacity check:</p> <p>Discharge the battery at 23 A. Record the time when the first cell reaches 1.0 volt. This time must be equal or greater to 1 hour.</p>	
9	<p>light cleaning:</p> <p>On an assembled battery.</p> <p>Caution: Do not use solvent, petroleum spirits, trichloroethylene or other products containing chloride for cleaning the battery. The use of solvents may degrade the integrity of metal and plastic parts.</p>	

10	Repeat step 6 & 7		
11	Repeat step 3		

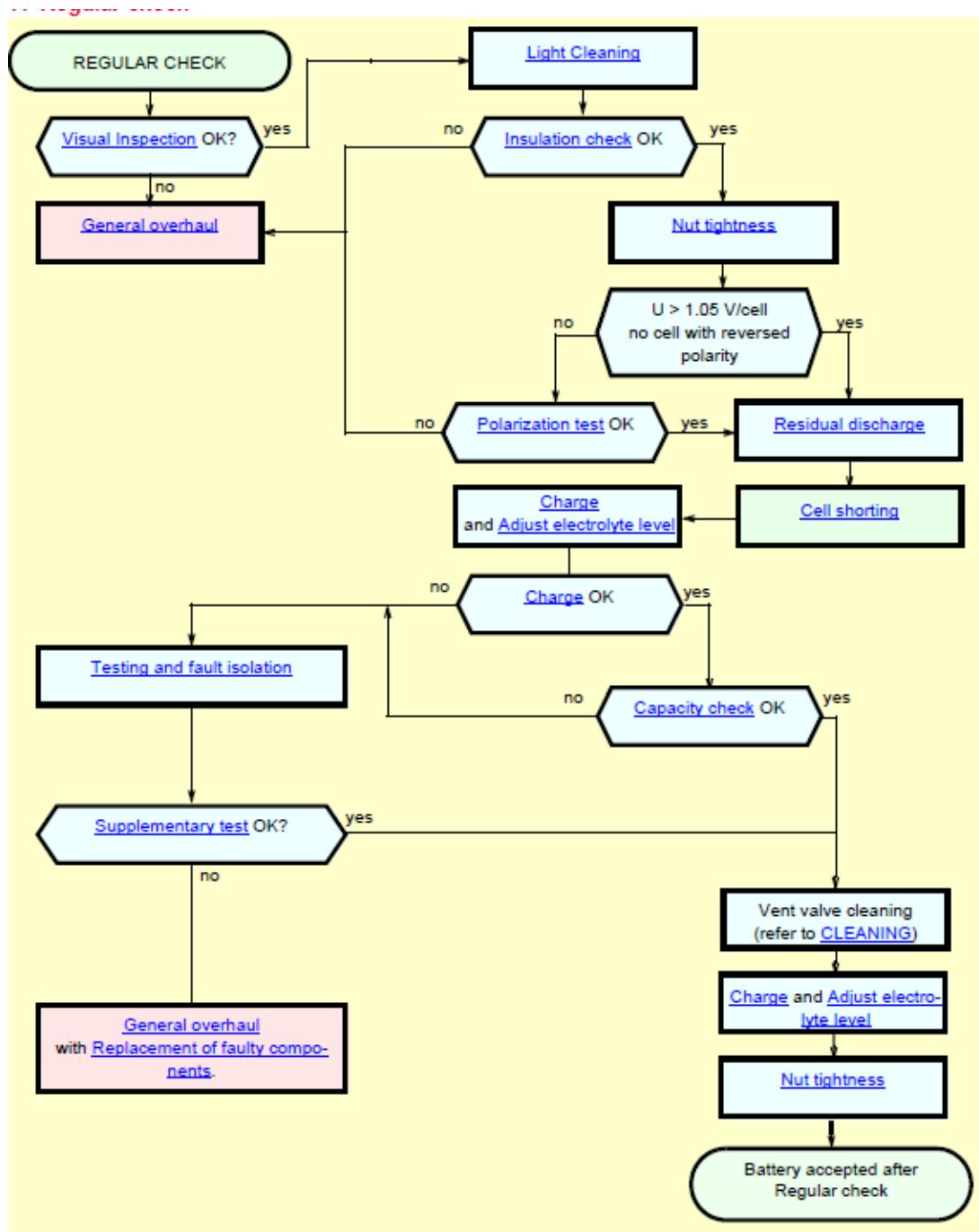


Figure 5003 Regular check

Find ing No.	Fault description	Correction	Eng.

CERTIFICATE TO SERVICE RELEASE:

I hereby certify that in carry out the inspection repair, replacement or tests specified above all conditions and requirements of the E. CAR. for the time being in force which are applicable there to have complied with

Released By :

ENG. Name:

AUTH.N/O:

ENG. Signature :

Stamp:

Audit Information

Audit Report No.:	Audit Plan:
Audit Type:	Department/Organization:
Audit Start Date:	Audit End Date:

Audit Team**Lead Auditor Name:****Auditee Representatives**

Name:	Title:
Name:	Title:
Name:	Title:

Audit Objective**Audit Scope****Audit Criteria****Audit Findings & Observations Summary**

No.	Finding / Observation	Reference	Category	Close-out Date
1				
2				
3				
4				

Audit Follow-up

The previous audit findings are closed and the corrective actions are effective.

Lead Auditor**Chief inspector and quality manager****Finding Categories****CAT I (observation): non-conformity with a recommended practice****CAT II: significant no-conformity with a standard****CAT III: Major non-conformity with a standard.**

Audit Information

Audit Report No.:	Reference:
Audit Type:	Department/Organization:
Audit Start Date:	Audit End Date:

Description of the Non Conformity

Finding Category

Root Cause Analysis**Planned Corrective Action**

Proposed Close out Date

Final Action Taken**Verification of Implementation or Review Comments**

Auditee

Auditor

Finding Categories

CAT I (observation): non-conformity with a recommended practice

CAT II: significant no-conformity with a standard

CAT III: Major non-conformity with a standard.

Nesma Airlines نسما للطيران	Chronic or repetitive snag	Technical Department
--------------------------------	----------------------------	----------------------

Chronic or repetitive snag

REGN: SU-_____

CLASSIFICATION OF DEFECT :- MAJOR / MINOR

DETAIL OF DEFECT :

RECTIFICATION ACTION TAKEN :

History of Snag and its repetitive period:

MCC Manager:

Signature:

Nesma Airlines نسمة للطيران	General Maintenance Manual Workshop	Chapter: 9
		Page: 1

Chapter 9

Workshop

Nesma Airlines نسما للطيران	General Maintenance Manual Workshop	Chapter: 9 Page: 2
--	--	---------------------------

9.1

Table of Contents

Title	Page No.
9.2. General	3
9.3. Workshops organizing Chart	4
9.4. Duties and responsibilities	5
9.5. Scope of work	6
9.6. Industrial Standards	10
9.7. Environment	10
9.8. Quality Control Procedures	10
9.9. Technical Data	11
9.10. Process Control	11
9.11. Handling, storage, packaging, protection and delivery	13
9.12. Record Keeping	13
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9.2 General

Nesma Airlines has two Workshops and Battery servicing room:

- A. Safety workshop (life jacket Test only)
- B. Wheel & Brake Workshop. (Repair/Overhaul)
- C. Battery servicing room (charging and capacity check)
- D. Structure repair workshop (minor repair)

The two workshops are located in the Nesma Airlines maintenance main base in Cairo airport.

Each workshop is established and approved in accordance with ECAR 145 4.

The Forms which are used to control the work in the Units Test/Repair/Overhaul workshops are: refer to 9.14.

The Test/Repair/Overhaul procedures are carried out in accordance with the recommendation instructions, limitations of the vendors [CMM, service bulletins and service letters]

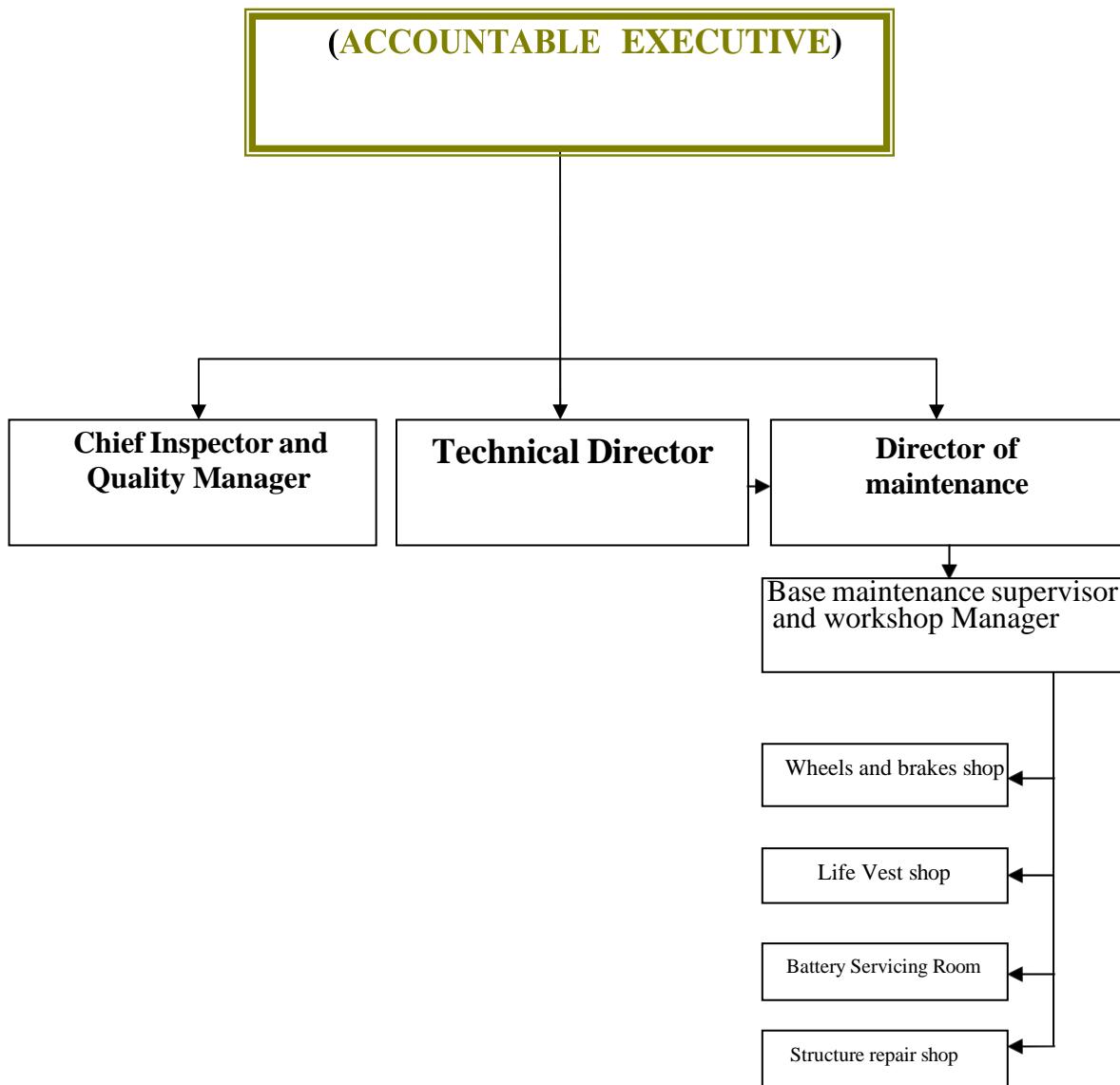
Each procedure or inspection is contained in a nominated worksheet which specifies the nature of the work of the procedure, the tools to be used and the manpower required to carry out the procedure.

The Service bulletin and AD's Modifications are the mainly the responsibility of the Engineering. The Chief Inspector and Quality Manager must authorize these Modifications.

Conformity verification tests of all procedures listed in the worksheet are carried out by authorized persons.

Workshop capability amendments are mainly the responsibility of The Chief Inspector and Quality Manager and must be reviewed and approved by ECAA.

9.3 WORKSHOPS ORGANIZING CHART:



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9.4 Duties and Responsibilities:

Technical director:

See Section 2.4

Director of maintenance:

See Section 2.4

Chief Inspector and Quality manager:

See Section 2.4

Base maintenance and workshop manager

See Section 2.4

Workshops Inspector Responsibility:

The inspector of the workshops is responsible for the following:

1. The technical data of the work to be done is available for the concerning personnel and the data is amended up to date.
2. All due Airworthiness Directives and Alert Service Bulletins for the unit have been carried out.
3. Required equipment and tools are in a good condition and calibration schedule is thoroughly observed.
4. Required spare parts and/or material used are available, checked and approved.
5. The environment conditions [Temperature, humidity] are suitable and controlled, the working area is clean and accommodates the accomplishing work.
6. Satisfaction of final acceptance, forms and serviceable label for the units are available
7. The storage of the overhauled repaired or tested units is in accordance with the manufacturer approved Method.
8. In addition to the above responsibilities, the quality control inspector of the workshop's duties are to ensure that:
 - a. Overhaul, repair, and test of the units is in accordance with the shop capability.
 - b. Recording all forms and keeping all documents for the overhauled unit,
 - c. Issuing the defect report and sending the unit, which is out of, shop capability to a suitable repair station,
 - d. Rejection of the rejected items.

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9.5 Scope of Work

Nesma Airlines Shall carry out work on component for which it is approved at the location identified in this manual.

ECAR PART-145 approved companies will only perform work on component for which it holds the required technical data, necessary tooling and trained personnel.

A description of company's scope of work relative to the extent of approvals is detailed hereinafter.

Capabilities

Components:

1- Wheels and brake shop.

The shop is capable for overhaul and modification according to Nesma airlines capability list.

2- Safety shop.

Safety Equipment, approved for inspection & leak test of life jackets according to Nesma airlines capability list.

3- Battery Servicing

4- Structure repair shop

Nesma airlines Capability List:

Nesma airlines Capability list refer to GMM Chapter 2 Section 2.7

Brake & Wheel Workshop facilities

Location for detailed premises description refer to GMM Section1 item 1.5

Activities Overhaul & repair of: *Refer to the capability list*

The wheels, tires and Brakes workshop is capable to perform the following procedures:

1. Brake unit shims and heat sink replacement.
2. Cleaning.
3. Inspection, Check.
4. Test, Repair and Overhaul.
5. Wheels assembly and disassembly (tires change)
6. Test.
7. Storage.

All NDT required by the procedures during the work in the Units Overhaul Shop Must be done. If required test is above the capability of Nesma Airlines the Part is sent to an approved Shop capable to carry out the relevant test.

NOTE: dye penetrate, and hardness test shall perform in Egypt Air If needed

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Tools and Equipment's

	tools P/N			tools P/N	
1	Protector	A47676	15	Tool	F26693000
2	Drain	AC21858200	16	Fitting Tool	F26691 000
3	Record	U21800	17	Spatular	89901
4	Handling Tool	Q21983	18	Wheel Inflation Cage	
5	Broche	Q47749	19	Iron Stand	
6	Adaptor	Q47963	20	Wheel Removal Stand	
7	Cone	Q47964	21	Rotating Table	
8	Cone	Q47965	22	Bearing Washing Basing	
9	Extractor	D21852	23	Drum Washing	
10	Pin	D46242	24	Air Drive 1/2"	231C
11	Extractor	M21862	25	Tire Beading Break	
12	Holding Block	J47200	26	Brake Hyd.Tester	F21864220-1
13	Spacer	J47201	27	Hyd. Press Machine 5 Ton	
14	Tool	F26616000			

Procedure:

1- Nose wheel/Main Wheel

- a. Receive the wheel with U/S tag and send to quarantine store
- b. Forward the wheel to workshop for check and repair
- c. Check the S/N of the part and review the part history card for concerning S/N
- d. Carry out leak test on the wheel
- e. Fault isolation procedure applied
 - If the wheel worn:
 - o Disassemble the wheel
 - o Cleaning process carried out
 - o Rectification all defects with respect to its CMM
 - o Assemble the wheel
 - o Leak test applied, and after passing the test serviceable label issued for the wheel
 - If it's not worn:
 - o Replace the defected Item
 - o Assemble the wheel
 - o Leak test applied, and after passing the test serviceable label issued for the wheel
- f. Update the part history card
- g. Send to main store

Forms: F204-04, F204-05, F204-06, F204-07, F204-08, F204-09, F205-03, F205-05& F205-16

2- Brake Unit.

- a. Receive the Unit with U/S tag and send to quarantine store
- b. Forward the Unit to workshop for check and repair
- c. Check the S/N of the Unit and Review the part history card for concerning S/N
- d. Hydraulic leak test shall be carried out
- e. Fault isolation carried out as per the unit CMM
- f. Disassemble the unit as per the unit CMM
- g. Cleaning process shall carry out as per the unit CMM
- h. Replace heat pack if completely worn. If need a shim; install a shim
- i. Assemble the unit
- j. Hydraulic Leak test applied, and after passing the test serviceable Tag issued for the Unit
- k. Update the part history card
- l. Send to main store

Forms: F204-01, F204-02, F204-03, F205-03, F205-05& F205-16

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Safety workshop (life jacket facilities Location)

For detailed premises description refer to GMM chapter 1 item 1.5

Workshops

The life jackets shop is capable to perform the following procedures:

1. Disassembly.
2. Cleaning.
3. Inspection, Check
4. Testing.
5. Packing.

For the following types of Life Jacket (vest): Refer to the capability list 9.5

Tools and Equipment's

TOOL P/N	
ELECTRONIC BALANCE	
VACUUM MACHIN	
AIR COMPRESSOR 6 LIT	
PLASTIC SEALING MACHINE	300-HC

Procedure:

Life Jacket:

- a. Receive the Jacket with U/S tag and send to quarantine store
- b. Forward the Jacket to workshop for check and repair
- c. Check the S/N of the part and review the part history card for concerning S/N
- d. Carry out leak test on the Jacket
- e. After 24 Hours; Jacket shall fold and sealed
- f. Issue a serviceable tag for the Jacket
- g. Update the part history card and send the jacket to main store

Forms: F205-11, F205-03, F205-05& F205-16

Battery servicing Room

Location: for detailed premises description refer to GMM chapter 1 item 1.5

Activities

The Battery servicing room is capable to perform the following procedures.

1. Inspection, Check, Testing.
2. Charging.

Tools and Equipment:

Tool P/N	
BATTERY CHARGER	RF80K

Procedure:

- a. Receive the Battery with U/S tag in quarantine store
- b. Forward the Battery to servicing room for check.
- c. Check the S/N of the Battery and Review the part history card for concerning S/N
- d. Apply all applicable clean and checks.
- e. Issue a serviceable tag for the Battery
- f. Update the part history card and send to main store

Forms: F204-13, F205-03 &F205-05

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Structure repair shop

Location: for detailed premises description refer to GMM chapter 1 item 1.5

Activities

Structure Repair Shop Capable To Deal With All Minor Structure Repairs Referenced To Manufacturer Structure Repair Manual SRM, Aircraft Maintenance Manual AMM, And As Referenced Directions From AMM 71-00-00, AMM 71-11-11 PB 601, AMM 72-31-00 PB 601, AMM 78-10-00 PB 601 and AMM 78-11-11 PB 601 To Goodrich Structural Repair Manual V2500-A5 Nacelle In The Airbus INDUSTRIE A320 SRM 54-00-00 with its all included subchapter parts And ECAA Approval # NM4940 Which Contained on the following references'.

Damage Assessment And Classification	SRM 51-11-00
Damage/Defect Reporting	SRM 51-11-13
REPAIR OF Minor Damage	SRM 51-73-00
Standard Composite Repair	SRM 51-77-00
Fastener Installation And Removal	SRM 51-42 -00
Engine - General - Repairs	AMM 72-00-00 PB 801
Common Nozzle Exhaust - Repairs	AMM 78-11-11 PB 801
Cowl - Air Intake - Repairs	AMM 78-11-11 PB 801
Goodrich Structural Repair Manual V2500-A5 / A320 / A319	SRM 54-00-00
Coating Application	SRM 51-23-00
Repair Of Paint Coatings	SRM 51-75-12
Corrosion Prevention	SRM 51-22-00
Repair For Corroded Areas	SRM 51-74-00
Protective Treatment	SRM 51-21-00
Sealing Repair	SRM 51-76-00
Equipment/Furnishings - General - Repairs	AMM 25-00-00 PB 801
Cockpit - Repairs	AMM 25-10-00 PB 801
Passenger Compartment – Repairs	AMM 25-20-00 PB 801
Lavatories - Repairs	AMM 25-40-00 PB 801
Cargo Compartments - Repairs	AMM 25-50-00 PB 801
Buffet And Galley - Repairs	AMM 25-30-00 PB 801

Procedure:

- Do I Or Redo Dent And Damage Assessment
- Apply Applicable Repair Needed Law The Above SRM And Other Manuals.
All Accomplished Repairs Will Be Recorded On Applicable Forms Non Routine Card NRC Form No. F206-09 and Aircraft Technical Log Aircraft Type A 320- 200/ A319-132 Form No.: 206-01
- Original Copy Of The work Accomplished Records Of Non Routine Card NRC Form No. F206-09 Will Be Kept On the Structure Repair Workshop As Workshop Activities History And Red Copy Should Be Sent To Planning And Records Section To Be Added To Each Aircraft Technical Records.
- If The Assessment Show That The Damage Is Out Of SRM, Contact The Manufacturer and The Contracted AMO For Required Major Repairs.

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9.6 Industrial Standards

Cleanliness standards

The general cleanliness is assured by a workshop team which follows a clean program established by the Director of maintenance. The continuous cleanliness on the job is the responsibility of each person.

9.7 Environment

The working environment for workshop should be such that the particular repair or inspection task can be carried out without any distraction.

If works carry out that where the working environment deteriorates to unacceptable level in respect to Temperature, Moisture, wind and dust,
the particular repair or inspection task should be suspended by chief inspector and quality manager

9.8 Quality Control Procedures

Authorized Personnel Procedures:

- Workshop authorization including the workshop scope limitation and expire date, issued from Nesma Airlines Quality Department according to Authorization issuing procedures GMM 6.24.4,
- Workshop authorization will be renewal periodically according to expire date.
- Only the chief inspector and quality manager has authority for delivering a stamp to authorize a person to pronounce the approval for return to service.
- The person authorized to pronounce the approval for return to service must have a good knowledge and experience of the work performed on concerned equipment and a general knowledge of regulations.
- The number on each stamp is strictly individual.
- The authorization form is kept on file at Quality Control Department copies are given to the authorized person.
- The maintenance director has to inform Chief inspector and quality manager for any change

Authorized Stamps

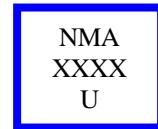
It is the responsibility of individuals to ensure that their personal authorization certificates and stamps are maintained in safe custody and good condition. The loss of either must be reported to Quality department immediately, who will take appropriate quarantine action and arrange for replacement.

Identification of stamps.

The allocation of stamps into numeric groups and the use of arrangement of colored inks assists the identification and verification of document certifications, all stamps identify Nesma airlines with prefix "NMA" and distributed as follows:-

Workshop authorized Engineer.

Square Stamp with 12 mm edge long NMA License Number and Cat. in blue or black..



Battery servicing approval procedure:

- For battery service Electric engineer shall pass battery charge and capacity check course.
- The electric Engineer shall perform battery charging and capacity check twice before approval under supervision of authorized Engineer on battery charging and capacity check.
- Chief inspector and Quality manager shall add battery charge and Capacity check approval to the Authorized Electric engineer according to Authorization issuing procedures GMM 6.24.4.

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9.9 Technical Data

1- External documentation

- The library supervisor in charge of: Procurement of all external documentation by subscriptions or spot Request.
- Recording on a computerized central file (initial document and updates)
- Distributing to the users with an acknowledgment receipt.
- Notifying the users of the arrival of new documents of CMM.

2- Internal documentation:

- Technical development manager receives the Airworthiness directives (AD FAA and CN DGCA) to analysis the AD an CN and dispatch to workshops.
- The Base maintenance and workshop manager is in charge to: Study the CMM
- Establish and update the work instructions and the work following sheets.
- Keep the last issue of original documentation.
- Maintain the historical record of work instructions changes.

9.10 Process Control

The status of a part or equipment is identified by the work following sheet, the tag and at the end Serviceable label attached to them. These documents permit also the traceability.

1. Work following sheets

Documents

Nesma airlines uses different kinds of work following sheets adapted to types of works.

The *overall* works that may be done are printed on the work following sheet. During the preliminary Inspection, the Base maintenance and workshop manager indicates the works to be done and cross out the others.

The shop routers indicate the designation of part, the PIN and S/N, and the technical and turnaround time data.

2. Tagging

a) Green Tag (serviceable label F205-03). This tag identifies the unit is serviceable.

b) Red Tag (scrapped tag F205-05). This tag identifies scrapped tag. This tag is completed by an inspector.

9.10.1 Identification and Traceability of product

General

Nesma airlines repair processes of parts of equipment are organized and implement by means of:

Written job instructions (workshop Task card) created and managed by the work Base maintenance and workshop manager.

Shop routers established according to the steps of the job instruction (Workshop Task card) and allowing for record of work in progress.

Forms to record inspection data, parameters, analysis resultsetc.

The use of equipment adapted, checked and maintained.

Qualified personnel.

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The work documents make reference to documents, they are issued from manufacturer manuals, and also give the product acceptance criteria.

The documents filled in along the repair process of equipment / a part constitutes the work package which is archived in order to assure the traceability.

2- Modifications

Except for the changes coming from manufacturers (Manuals Revision and Service Bulletins) the repair station has to manage.

The Airworthiness directive AD.

3- In process Inspection

When the Base maintenance and workshop manager determines the step of the work instruction they indicate the need for in process inspection.

After the inspection, the inspector puts his stamp on the corresponding item of the work instructions sheet.

If the part is not conforming, the inspector opens an internal discrepancy report to ask for rework or to indicate why the part is to be scrapped. And signs the report.

4- Final Inspection

The last step of the work instruction sheet is the final inspection, and that the entire work package is correctly filled in the stamp of work Base maintenance and workshop manager indicates that the work is finished and conforms to the specifications, and that the work package is correctly filled in.

5- Approval of Release to service

Concerns the parts / equipment maintained under the repair station certificates held by Nesma airlines.

When Nesma airlines makes the complete repair of a part, the final inspection conducted by workshop supervisor determines that:-

- All the current specifications and regulation have been observed.
- The works completed.
- The work instruction sheet filled up for the specific work requested, are completed correctly.

After stamping the final inspection on the work instruction sheets the Base maintenance and workshop manager pronounces the approval for return to service on serviceable label.

The serviceable tag filled only the person authorized by Chief inspector and quality manager may pronounce a release to service by putting his signature on the tag.

9.10.2 Control of Inspection Tools and Test Equipment

1- General

Precision tools, scales, pressure gauge, Avo-meter, are subject to periodic checks and calibration in accordance with appropriate procedures.

All personnel, before using test equipment are responsible to check that the testing unit has a current calibration label attached any piece found in the plant without a current calibration label attached is to be given to the calibration air force for re calibration.

2- Incoming Verification and Recording

The new tools and measuring equipment are verified by the work Base maintenance and workshop manager of calibration. The serial number and location are recorded in the data processing system.

The new installation is recorded in the data processing system to be followed. They receive also a calibration label.

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3- Calibration Organization

Chief inspector and quality manager determines the periodicity of calibration for the standards on each type of tools in accordance with standards, manufactures specification.

The calibration status is kept in computer. The status may be shown on screen or printed.

4- Use of tools and Equipment's by the Personnel

Before use of any tool or equipment subject to a calibration the user must verify the presence of the sticker and the validity of calibration.

If it is not the case, he has to return the equipment for re-calibration. The validity of calibration must appear clearly on loaned Equipment if not it must be included in the Nesma airlines system.

9.10.3 Test and Inspection Status

Inspection and test are signed off on the shop route, by means of the authorization stamp in the specific box in front of the concerned operation.

The stamp alone means conformity.

- A red scrap tag is attached on part when no rework is allowed.
- In any case, test on job instruction sheet is filled in and filed in the work package, allowing for traceability of inspection results.
- The conformity status of the product at the end of work is given by the signature on Airworthiness documents by the authorized person at review of the work package.

9.11 Handling, storage, packaging, protection and delivery

General

The job instruction in component maintenance manual (CMM) gives the specific handling and protection requirement for the product.

Storage

Refer to manufactures manual for storage procedures.

Packaging

Packaging instructions and rules are described in manufactures manual.

Protection

According to the product specific means are used for the protection of parts along their repair process at Nesma airlines shuttle boxes plastic protections, packaging or masking, ----- etc.

Delivery

The above protection rules are applicable down to the product delivery. Nesma airlines peculiarly assures that positioning and securing of equipment in the transported are such that no damage exists.

Issue.

9.12 Record Keeping

Quality related records are made.

On one side to assure traceability of works and products, on the other side to provide evidence the Quality System is operational.

These records are based on regulatory requirements.

Anon comprehensive list may be given:

- Work package.
- Purchase orders, receiving documents.
- Test samples.
- Audit.
- List of authorized persons.
- Training records.
- Follow up of calibration and installation.

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9.13 Use Of The Authorized Release Certificate

This procedure only covers the use of release certificate for maintenance purposes. Nesma airlines release certificate is for release certification of parts under ECAA capability.

Procedures:

1. Purpose and Scope

The purpose of the certificate is to identify airworthiness and eligibility status of Parts/components/assemblies (hereafter referred to as "part (s)" after manufacture and to release maintenance work carried out on parts under the approval.

The certificate referenced is called the authorized release certificate.

The certificate is to be used for export/import purposes, as well as for domestic purposes, and serves as an official certificate for parts from the maintenance organization to users.

The certificate is not a delivery or shipping note.

It can only be issued by organizations approved by ECAA within the scope of their approval.

The Certificate may be used as a routable tag by utilizing the available space on the reverse side of the Certificate for any additional information and dispatching the part with two copies of the Certificate so that one copy may be eventually returned with the part to the maintenance organization.

The alternative solution is to use existing routable tags and also supply a copy of the Certificate.

Under no circumstances may a certificate be issued for any part when it is known that the part is unserviceable or contains a defect considered a serious hazard to flight safety.

2. GENERAL

- The Certificate should comply with the format attached including block numbers in that each block must be located as per the layout. The size of each block may however be varied to suit the individual application but not to the extent that would make the Certificate unrecognizable. The overall size of the Certificate may be significantly increased or decreased so long as the certificate remains responsible and legible.

- All printing should be clear and legible to permit easy reading.

- The Certificates should either be pre-printed, or computer generated but in either case the printing of lines and characters must be clear and legible. Pre-printed wording is permitted in accordance with the attached model, but no other certification statements are permitted.

- Completion of the Certificate should be in English when it is used.

WORKSHOPS

- The details to be entered on the Certificate can be either machine/computer printed, or handwriting using block letters and should permit easy reading.

- Abbreviations should be restricted to a minimum.

- The space remaining on the reverse side of the Certificate may be used by the originator for any additional information but should not include any certification statement.

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-The original Certificate should accompany the parts and correlation should be established between the Certificate and the part(s). A copy of the Certificate should be retained by the organization that manufactured or maintained the part. Where the Certificate format and data is entirely computer generated, subject to acceptance by the NAA- it is permissible to retain the Certificate format and data on a secure database.

-Where a single Certificate was used to release a number of parts and those parts are subsequently separated out from each other, such as through a parts distributor, then a copy of the original Certificate should accompany such parts and the original Certificate should be retained by the organization that received the batch of parts. Failure to retain the original Certificate could invalidate the parts release status.

Note: There is no restriction in the number of copies of copies of the Certificate sent to the customer or retained by the originator.

The certificate that accompanies the part may be attached to the part by being placed in an envelope for durability.

3. COMPLETION OF THE RELEASE CERTIFICATE

Refer to chapter 4.9 of GMM

4. DISTRIBUTION

Original copy to Nesma airlines. Second copy to Stores. Third copy to be retained with the work back. Fourth copy to be forwarded to Quality Department.

5. RESPONSIBILITY

It is the responsibility of the person certifying **to ensure that the form Release certificate is completed correctly, and that relevant capability is held for the part(s) being released.**
Issue

9.14 Workshops Forms used

Refer to GMM Section 8

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Appendix A

Anti-Drug program policy statement

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Anti-Drug program policy statement

Reference: ECAR121 App. I &J.& 145.59

Responsibility:

- Safety and Quality director

REFER TO Safety Management Manuel SMM.

APPENDIX B

Audit Program

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INTERNAL AUDITING

INSTRUCTIONS:

1. Used to audit all Maintenance areas, include that for contractors
2. Prepare and fill PRELIMINARY DATA FORM prior to Audit
3. The selection of Audit Form(s) will depend upon the area of Audit
4. Complete the Audit Form(s) required with appropriate remarks, Cat. and sign.
5. Summarize the findings in the AUDIT REPORT, attach the Audit Form(s) to it and pass to Accountable Manager
6. Unsatisfactory items of the audit form are to be detailed in the Remarks
7. Follow up corrective actions

Audit scope

An audit is a comparison of an operation against the reference procedure. Scope of auditing covers the Maintenance aspects: -

1. Maintenance Department.
2. Engineering Department.
3. Planning Department.
4. Technical Records.
5. Material and Store
6. Technical Library
7. Training
8. Contractor Audit
9. Fuel Audit
10. Workshop
11. Quality Department.
12. Aircraft

Audit Scheduling

- 1- Audits are completed within 12 months.
- 2- Follow up evaluations may be scheduled to verify that correctives actions are carried out.
- 3- Unscheduled audits are planned IAW identified trends.
- 4- Maintenance program's Audit interval.

Audit Area	Interval (Month)
Maintenance Department.	6
Engineering Department.	6
Planning Department.	6
Technical Records	6
Material and Store	6
Technical Library	6
Training	6
Contactor Audit	24
Fuel Audit	6
Workshop	12
Quality Department	6
Aircraft	3

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Annual Audit Plan /

Technical
Department

No.	AUDIT TASK	JULY				AUGUST				SEPTEMBER				OCTOBER				NOVEMBER				DECEMBER				REMARKS
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
1	Maintenance Department.									X																
2	Engineering Department.						X																			
3	Planning Department.															X										
4	Technical Records																	X								
5	Material and Store															X										
6	Technical Library																	X								
7	Training																							X		
8	Contractor Audit																			X	X					
9	Fuel Auditing					X																				
10	Workshop																									
11	Aircraft									X														X		
No.	AUDIT TASK	JANUARY.				FEBRUARY.				MARCH				APRIL				MAY				JUNE				REMARKS
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
1	Maintenance Department.									X																
2	Engineering Department.						X																			
3	Planning Department.														X											
4	Technical Records																X									
5	Material and Store													X												
6	Technical Library																	X								
7	Training																					X				
8	Contractor Audit																									
9	Fuel Auditing					X																				
10	Workshop																						X			
11	Aircraft									X													X			

Chief Inspector and Quality Manager
sign

Issue 3

Accountable Manager
sign

Date 19/7/2022

Planned



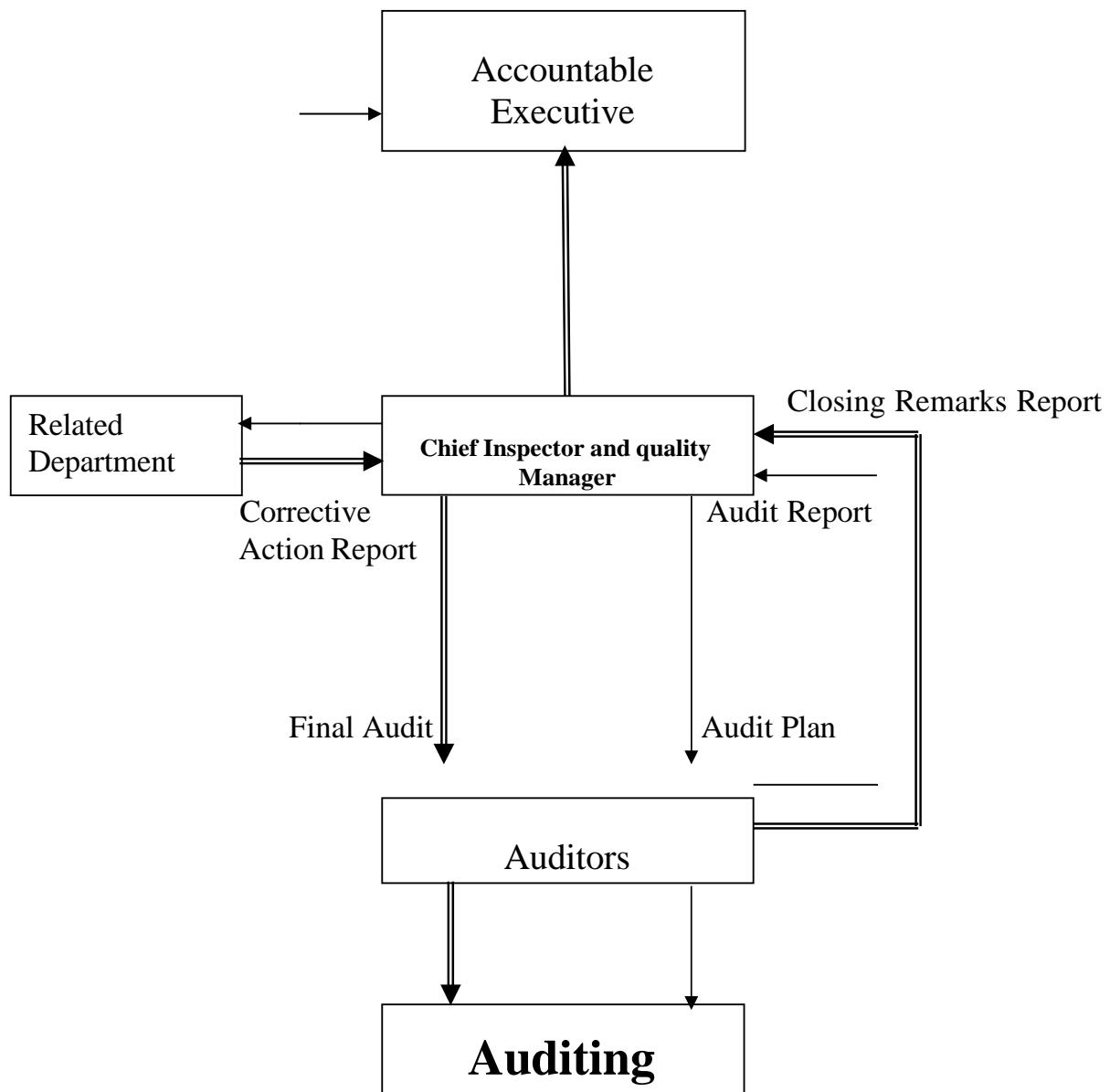
Performed



Rev.no.2

Form no. F 206-18

Auditing flow chart



Nesma Airlines
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General Maintenance Manual

Audit Program

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A. Maintenance Department

#	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
1	ECAR 121.367 ECAR 145.19 ECAR 145.29	Is certificate holder shall ensure the airworthiness of the aircraft and the serviceability of both operational and emergency equipment by: Accomplishment of pre-flight inspections.			
2		Is Rectification to an approved standard of any defect and damage affecting safe operation, taking into account the minimum equipment list and configuration deviation list if available?			
3		Is the accomplishment of all maintenance done in accordance with the approved certificate holder's aircraft maintenance program?			
4		Analysis of the effectiveness of the certificate holder's approved aircraft maintenance program.			
5		Accomplishment of any operational directive, airworthiness directive and any other continued airworthiness requirement made mandatory by the ECAA.			
6		Is the Accomplishment of modifications done in accordance with an approved standard, and for non-mandatory modifications? And ECAA accepted			
7		does the certificate holder ensure the certificate of airworthiness for each operated aircraft remains valid with respect to: Any calendar expiration date specified in the certificate			
8		Any other maintenance condition specified in the certificate.			
9		The co-ordination satisfactory between system Engineers and production personnel?			
10		Dose the department has adequate facilities as: 1. Rooms should be clean, well ventilated 2. Rooms should be in a suitable illumination 3. Facilities should be contained a room which includes computers and net work 4. Facilities should include emergency equipment (fire extinguishers, first aid kits).			
11		Use of technical manuals to perform maintenance or repair, all available, controlled and update			
12		Dose RII handling procedure applied correctly			
13		Do installed/removed parts and materials meet the standard of GMM eg. U/S card attached to the replaced unit and unit replacement form filled properly and sent to the technical department			

A. Maintenance Department (continue)

#	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
14	ECAR 121.367	Dose the correct aircraft status and needed document being reported to the technical department regularly as specified in GMM			
15	ECAR 145.19	Dose the CRS completed and signed off to certify that work done comply with GMM and ECAA requirement			
16	ECAR 145.29	Do applications of human factor principle are applied			
17		Do emergency equipment serviceable and complete			
18		Do all tools, equipment, and calibration tools available and serviceable			
19		Do all maintenance operations and activity run by qualified and approved personnel			
20		Do all work package performed as time planned without delay and dirty finger print sent back to planning department on time			
21		Do aircrafts logs and books of maintenance filled properly with care and accuracy as specified in GMM			
22		Do aircrafts documents e.g. TLB, ADDL, CDL, CLB, Daily, weekly check, engine reports, PDC. NRC and PCMCIA card sent to technical department on time			
23		Do all safety cautions and bulletins applied, and any safety conditions reported			
24		Dose Aircraft dent and buckle chart reviewed regularly and updated			
25		Dose fly away kit checked and completed			
26		Do visual inspection on Aircraft from out side Check for: Fluid leaks Lights (emergency, Taxi, LandingEtc.) Nose and main Landing gear (doors, struts, tires, wheel well) Fuselage, empennage and radome (dents, cracks, paint.... etc.) Lower wing and engine cowl (dents, cracks, Paint. Etc.) Engine intake and fan blades Crow oxygen thermal discharge disc APU fire extinguisher over pressure discharge disc			
28		Do visual inspection on aircraft cabin Check for: Seats and belts Widows Document onboard Dent chart			

Auditor Name:

Signature:.....

Date:.....

B. Engineering Department

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
1	ECAR 145.29	IS The department has adequate facilities as: a) Equipment, b) Furnishing, c) Communications			
2		Does Engineering department: ▪ Receive and review Manufacturer's Service Bulletins, Services Letters, and Airworthiness Directives. ▪ Initiates' appropriate assignments for study and issuing the engineering order for the approved modifications and / or inspections.			
3		Does Engineering Department evaluate of A/C and equipment vendors SB, SL, etc for new products and make recommendation for incorporating into the company fleet.			
4		Does Engineering Department issue technical documentation for implementation of non-mandatory SB and modifications?			
5		Does Engineering Department control and monitor of modification and technical standards.			
6		Does Engineering Department Review Mandatory Occurrence Reports (MOR) and incidents, to produce procedures intended to avoid repeat incidents.			
7		Does Engineering Department Maintain liaison with the other areas in the technical department to resolve problems related to time limits, work instructions, etc.			
8		Maintenance performance data collection and reports.			
9		Does Engineering Department support maintenance services for specific troubleshooting analysis not covered by approved data?			
10		Does Engineering Department determine the procedure for the weighing of the airplane?			
11		Does Engineering Department Review the reliability program data report to make a revision to the Maintenance Program.			
12		Does Engineering Department Propose revisions to the Maintenance Program, as appropriate, after monitoring repetitive defects and feedback from Maintenance and Repair Agencies, as results of the Reliability Program implementation.			

**B. Engineering System
Continue**

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
13		Is Job assignment from system Engineers Clearly defined?			
14		Is the co-ordination satisfactory between System Engineers and production personnel?			
15		Are the Maintenance Program and Customized Minimum Equipment List furnished to all persons to whom the MP and CMEList has been issued			

Auditor Name:**Signature:**.....**Date:**.....

C. Planning Department

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
1	ECAR 145.29	Is the department has adequate facilities as: a) Equipment, b) Furnishing, c) Communications			
2		Does Planning provide Tech. Assistance to The Maintenance stations as required			
3		Does Planning prepare Maintenance checks work package in advance and complete			
4		Does Planning Monitor A/C & Engines hours and Cycles reference to A/C Operation logged in TLB.			
5		Does Planning Develop and manage the planning and scheduling of all maintenance in accordance with the Approved Maintenance Program			
6		Does Planning forecast all scheduled maintenance requirements, related to the AMP or other Engineering requests, are properly forecasted			
7		Does Planning report immediately to any un-airworthy condition, related to scheduled maintenance and/or time limited tasks (including AD's under his control) or components, which might require a stop to the aircraft operations			
8		Ensuring, that the Technical Records of the maintenance task performed on the A/C are properly recorded, filed and stored, in accordance with the requirements.			
9		Are all customizing JIC & Ensuring order meet and maintain the Technical and Quality Standards for all the JIC assigned to the Dept.			
10		Are the Planners interpret maintenance requirements into maintenance tasks.			
11		Does Planning administrate materials for scheduled & non scheduled maintenance activity			
12		Does Planning Monitor and control of "Hard Time" and of "Life Limited" parts.			
13		Does Planning Monitor A/C utilization parameters affecting the AMS requirements.			
14		Does Planning Review the engine condition monitoring?			

Auditor Name:

Signature:.....

Date:.....

D. Technical Record

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
1	ECAR 121.375 ECAR 145.21	Is Aircraft technical log system accurately track the following information for each aircraft: <ul style="list-style-type: none">- Aircraft nationality and registration.- Date.- Names of the cockpit crew and their duty assignment.- Departure point and time of departure.- Arrival point and time of arrival.- Duration of the flight in hours and minutes or tenths.- Type of flight.- The current aircraft certificate of release to service.- The current maintenance status giving the aircraft maintenance status of what scheduled and out of phase maintenance is next due with regard to pending maintenance requirements.- Guidance and instructions for maintenance support arrangements.- Signature of the person responsible for completing the log.- Incidents, defects, observations and any action taken.- Error corrected shall remain readable.			
2		Is all entries in technical log accomplished in ink and the journey log and technical log and subsequent amendments approved by ECAA.			
3		Is the certificate holder's aircraft technical log and any subsequent amendment accepted by the ECAA.			
4	ECAR 121.376 ECAR 145.21	Are all detailed maintenance records in respect of the aircraft and any aircraft component fitted thereto?			
5		Are the total time and flight cycles, as appropriate, of the aircraft, engines, components, including the current status of all life limited components?			
6		Are the time and flight cycles as appropriate, since last overhaul of the aircraft or aircraft component subjected to an overhaul life?			
7		Is the current aircraft inspection status such that compliance with the approved certificate holder's aircraft maintenance program established.			

D. Technical Record Continue

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
8		Is the current status of airworthiness directives applicable to the aircraft and aircraft components?			
9	ECAR 121.376 ECAR 145.21	Are details of current modifications and repairs to the aircraft, engines and any other aircraft component carried out comply with ECAA?			
10		Is aircraft technical log retained for 24 months after the date of any flight recorded therein?			
11		Are the records as follows: Item No. 5, 8 and 9 for 12 months after the aircraft has been permanently withdrawn from service. Item No. 6 and 7 until another overhaul or inspection of equivalent work scope and detail has superseded a period of 90 days after the aircraft or aircraft component overhaul or inspection. Item No.4; 24 months after the aircraft or aircraft component was released to service.			
12	ECAR 145.21	Are records stored in a safe way with regard to fire, flood and theft?			
13		Is Computer backup system. stored in a different location from computers working unit			
14	ECAR 145.29	Is the department has adequate facilities as: a) Stacking Racks, b) Pack up server disc, c) Computer net work			

Auditor Name:**Signature:**.....**Date:**.....

E. Material and Store

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
1	ECAR 145.29 ECAR 145.11 ECAR 145.23	<ul style="list-style-type: none"> • Is material and tools manager accomplishing the following: <ul style="list-style-type: none"> Management of a tracking system for borrowed, loaned, leased and exchanged parts. Arranging for expedited parts procurement support for handling of AOG material. Procure and expedite material to support critical requirements. Distributing to all pertinent departments any technical information that is received by the stockroom. Maintaining stock of items at a level that will enable the maintenance department to function in a normal manner. Monitoring for properly stocking, segregating and protecting materials, parts. Ensuring that only serviceable parts and supplies will be delivered for any job on time and received with appropriate Release Document. 			
2		<ul style="list-style-type: none"> • Are aircraft parts and materials. <ul style="list-style-type: none"> - obtained from approved sources. - certification documentation requirements are specified. - traceability for used or surplus parts. - a statement of conformity or certification test results is required for hardware and raw materials, such as extrusions and sheet or bar stock. - Inventory storage of consumable material should be managed to ensure traceability of batch control 			
3		<ul style="list-style-type: none"> • Are aircraft components, whereas unserviceable aircraft components, material, tooling and equipment simply separately stored. 			
4		<ul style="list-style-type: none"> • Are storage facilities for serviceable aircraft components clean, well ventilated and maintained at a suitable dry temperature Manufacturers and standards recommendation. • Check for. <ul style="list-style-type: none"> - Clean work areas, including management offices. - Parts and material properly identified and stored. - Oxygen and other high-pressure bottles properly identified and stored. - Flammable, toxic or volatile materials properly identified and stored. - Equipment identified and protected. 			
5		<ul style="list-style-type: none"> • Are Storage racks strong enough to hold aircraft components and provide sufficient support for large aircraft components such that the component is not distorted during storage? 			
6		<ul style="list-style-type: none"> • IS quarantine area for rejected parts and materials awaiting disposition secured 			
7		<ul style="list-style-type: none"> • Are all aircraft components, wherever practicable, remaining packaged in protective material to minimize damage and corrosion during storage, and All aircraft components must be conditioned tagged? 			

E. Material and Store (Continue)

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
8		<ul style="list-style-type: none"> • Is there adequate supervision for • Is storage area neat and orderly 			
9		<ul style="list-style-type: none"> • Are tools properly identified? Check expiration date of tools and test equipment calibration 			
10	ECAR 145.11 ECAR 145.23	<ul style="list-style-type: none"> • Are toolkits Inspection's periodical held for Engineers? 			
11	IOSA MNT4.7	<ul style="list-style-type: none"> • Are Engine inlets covers, gear pins, chocks, jacks, and air bottles properly stowed and serviceable? 			
12		<ul style="list-style-type: none"> • Is Nitrogen servicing units serviceable? 			
13		<ul style="list-style-type: none"> • Are Headsets available and in satisfactory conditions? 			
14		<ul style="list-style-type: none"> • Are ladders, stands etc. readily available and serviceable 			
15		<ul style="list-style-type: none"> • Is general condition around office area / tool equipment stores satisfactory? 			
16		<ul style="list-style-type: none"> • Are Transportation available and in satisfactory conditions? 			
17		<ul style="list-style-type: none"> • Review U/S components: <ul style="list-style-type: none"> i. That U/S components shelve is neat, clean, and orderly ii. That U/S component are adequately identified regarding removal reason date, status, ... etc iii. That U/S component, tags are completely filled out and signed by authorized person iv. That U/S component will be send for repair in time 			
18		<ul style="list-style-type: none"> • Are specified grease / lubrications etc...used? 			
19		<ul style="list-style-type: none"> • Is Responsibility established for replenishment of stock bins, etc? 			
20		<ul style="list-style-type: none"> • Are all lines, houses, actuator openings ...etc properly capped or protected? 			
21		<ul style="list-style-type: none"> • Are servicing Tags connected to servicing Parts and properly filled out 			
22		<ul style="list-style-type: none"> • Does the stock area have adequate security? 			
23		<ul style="list-style-type: none"> • Are components properly packaged and secured in containers for shipment? 			
24		<ul style="list-style-type: none"> • Are flammable fluid containers properly identified, capped and stored? 			
25		<ul style="list-style-type: none"> • Is responsibility established for accomplishing periodic checks of shelf life limit dates? 			
26		<ul style="list-style-type: none"> • Are storage parts properly identified and organized? 			
27		<ul style="list-style-type: none"> • Are oil / fluid servicing units properly identified and protected 			
28		<ul style="list-style-type: none"> • Is there evidence of obsolete parts 			
29		<ul style="list-style-type: none"> • Are wheels properly stored? 			
30		<ul style="list-style-type: none"> • Is there a system for follow –up of open requested items? 			

E. Material and Store (Continue)

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
31	ECAR 145.11	• Check shelf-life program for applicable stored items			
32	ECAR 145.23	<ul style="list-style-type: none"> • Ground Equipment" if any": • Check serviceability and Maintenance perform for: • Maintenance steps • Ground power • Air starter 			
33	IOSA MNT 4.7	<ul style="list-style-type: none"> • Check for a documented Electrostatic Discharge • Check for Appropriate warning and caution signs, as well as decals, are placed in areas where ESDs are handled; • Check for Devices contained in ESD-approved packaging are sealed and properly labeled; • Check for Devices not contained in ESD-approved sealed packaging are handled by personnel using, as applicable, approved earthing (i.e. grounding) straps and/or conductive desk mats, and: <ul style="list-style-type: none"> (a) For maintenance activities that require floor grids where ESDs are handled, the floor grids are grounded; (b) ESDs are not stored on shelving covered with carpet, foam, vinyl or any other material that can store or produce an electrical charge; (c) Straps and earthing mats are tested to ensure conductivity at regular intervals or prior to use and such test results are recorded. 			
34	IOSA MNT 4.6	<p>Check for the necessary technical data, equipment, tools and material to perform the work has been approved, to include:</p> <ul style="list-style-type: none"> - Equipment and tools necessary to comply with the work specified. - Sufficient supplies and spare parts to ensure timely rectification of defects with regard to the MEL provisions. <p>Check receiving inspection program that:</p> <ul style="list-style-type: none"> - Assures incoming material has the required certification documentation and traceability. - Includes a process for verification of incoming part tags to ensure information on the tag matches the corresponding information on the part. 			
35		Check sensitive parts and equipment, such as, oxygen system components (oxygen generators and bottles), O-rings and electrostatic sensitive devices are properly packaged, identified and stored to protect them from damage and contamination.			
36		Check aircraft components and parts are shipped in suitable containers that provide protection from damage and, when specified by the OEM, ATA-300 or equivalent containers shall be used.			

Auditor Name:**Signature:**.....**Date:**.....

F. Technical Library

Audit Number:

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
1	ECAR 145.17 ECAR 145.29	Are the required Manuals available and revisions current?			
2		Are personnel advised of manual revisions and procedures changes?			
3		Are revision updated according to latest manufacture revision and ECAA approved.			
4		Is the department has adequate facilities as: a) Stacking Racks, b) CD Keeper, c) Computer net work			
5		Are Updated set of the following available: - Ops Specs - GMM - MEL - AFM - ECARS - Applicable AD's - Type data sheets Supplemental Type certificate			
6		Are the following manuals available: - A/C manufacture Manuals - Vendors manuals for: • Appliance • Engine • Emergency Equipment - Applicable technical Standards			
7		Is technical Library Index shown all data mentioned below: • Manuals/Document name • Revision date • Revision Number • Document number • Document's media e.g. Hard copy or on CD			
8		Are old documents and superseded documents discard.			
9		Are the manuals distributed as specified to its distribute list and have a control distribution number(on Nesma Airlines library and on aircrafts library)			

Auditor Name:

Signature:.....

Date:.....

G. Training

No. R	Refere nce	Auditing Item	Comply		NA
			Sat	Unsat	
1	ECAR 145.15 ECAR 145.29 ECAR 121.380	Class room Facilities: Is projection available and serviceable? Is there is adequate illumination? Is there are adequate air-conditioning?			
2		Training Aids: Are manuals readily available for reference? Are training aids available?			
3		Training Schedule: Are training courses planned and scheduled well in advance. Training documents provided to personnel? Are training courses schedule coordinated? Is training records are properly maintained and securely stored. The training and qualifying records neat and current? Is on-the-job training conducted for new hires? Training program define the training and instructions for personnel? Are Maintenance personnel trained on equipment and on units handled in their area? Are all maintenance personnel provide with initial, continuation and any additional training appropriate to their assigned tasks?			
4		Are this information kept on Training record in respect of each certifying person: Name. Date of birth. Basic training. Type training. Refreshing training. Experience. Qualifications relevant to the approval. Scope of the authorization. Date of first issue of the authorization. Expire date of the authorization and Identification number of the authorization.			

Auditor Name:

Signature:.....

Date:.....

N. Fuel**Audit Number :**

Station:

Supplier:

Date:

Time:

Fuel truck operator Name:

Nesma Auditor Name:

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
1	ECAR 145.29	Check that all the refueling safety precautions are established and applied			
2		Check the Training of personnel responsible for refueling			
3		Check the density of the fuel from the fuel cart			
4		Check that the fuel does not contain any water impurities			
5		flow up and verify the Sampling procedure on a periodic basis			
6		Maintenance personnel are familiarized with sampling procedure			
7		Check the general condition of the fuel cart			
8		Check that the fuel grade and quantity is properly recorded in the technical logbook			

Auditor Name:**Signature:**.....**Date:**.....

Audit Number :

O. Workshop.

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
1 EC	ECAR 145.11 ECAR 145.21 ECAR 145.23	Is the workshop has adequate facilities as: <ul style="list-style-type: none"> - Equipment, such as stands, docks...etc - Communications - storage areas tools and spares - lights and ventilations and general house keeping adequate - Well protected 			
2		Is the Controlled & updated copy of GMM Manuel Available			
3		Is the Workshop approved capability list updated and available			
4		Are shop work records complete, In order and legible? Are current manual procedures used and available in the shop?			
5		Are the Technical records of workshop: <ul style="list-style-type: none"> - Maintained and kept for each job done properly - Accepted for AD's and modifications records - Complied with GMM procedure manual 			
6		Is the release of work accepted to GMM manual?			
7		Are tools and equipment Properly identified? <ul style="list-style-type: none"> - Check general condition of tools/test equip. - Review system for controlling tools /test - Check expiration date of tools and test equipment calibration 			
8		Is all work done carried out IAW accepted Airworthiness data			
9		Is safety equipment available and serviceable" Fire fighting system and first aids kit"			
10 A		Are the personnel: <ul style="list-style-type: none"> - Properly trained, qualified and Authorized - Technicians sufficient trained properly 			
11		Are procedure for shift turnover are in place and properly utilized			
12		Are the individual shop storage areas maintained to same standard as main store			
13		Are the work areas not conflict with each other?			
14		Are personnel protection and health hazard taking in consideration?			

Auditor Name:

Signature:.....

Date:.....

Audit Number :

Q. Quality Department.

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
1	ECAR 145.29	Is the department has adequate facilities as: a) Equipment, b) Furnishing, c) Communications			
2		Is Quality department: ▪ Having a periodically Audit plan ▪ Having a proper audit Check list			
3		Is the Audit plan implemented in time and on all departments as schedule			
4		Is the Audit report identify the findings clearly as a description and as a Category			
5		Is the remedial action followed up properly.			
6		Is the quality Audit program comply with ECAA requirement			
7		Is the quality program address the requirements for operational, environmental condition, maintenance schedules, records keeping system			
8		Is the quality program has up to date signature list identify approved maintenance personnel			
9		Is the quality program has a document auditor training/qualification program			
		Is the quality System has a process for periodic review of the quality assurance program for purpose of ensuring compliance with current requirements of the Maintenance Program and the GMM.			

Auditor Name:

Signature:.....

Date:.....

Audit Number :

. M. Contractors

No.	Refere	Auditing Item	Comply		NA
			Sat	Unsat	
1	ECAR 145.29 ECAR 145.33 IOSA MNT 4.1	<p>General:</p> <ul style="list-style-type: none"> • Is Maintenance contractor approved as Maintenance repair station by ECAA? Approval No. • Is Maintenance contractor procedures acceptable to ECAA? • Is the Approved AMO Maintains the validity of its approval through compliance with the requirements for an approved maintenance organization acceptable ECAA? • Is the Approved AMO that performs maintenance for Nesma airlines has an approval document that contains: <ul style="list-style-type: none"> i) The name and location of the AMO; ii) The date of issue and period of validity of the approval; iii) The scope of the approval(check the AMO certificate categories): <ul style="list-style-type: none"> <input type="checkbox"/> Aircraft <input type="checkbox"/> Avionics <input type="checkbox"/> Engine <input type="checkbox"/> Propeller <input type="checkbox"/> Structure and Corrosion Protection Control Program <input type="checkbox"/> Component <input type="checkbox"/> Welding <input type="checkbox"/> NDT 			
	ECAR 145.13 IOSA MNT 4.2	<p>Management:</p> <ul style="list-style-type: none"> • Is maintenance organization that performs maintenance for Nesma airlines has a manager who, if applicable, is acceptable to the relevant authority and has responsibility for the management and supervision of the maintenance organization? • Record nominated appropriate personnel with responsibilities for ensuring the maintenance organization is in compliance with the requirements for an approved maintenance organization as accepted by the Authority: <ul style="list-style-type: none"> - - - - • Is maintenance organization that performs maintenance for the Operator has the necessary personnel to plan, perform, supervise, inspect and release the maintenance work to be performed? 			

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
	ECAR 145.31 ECAR 145.27 IOSA MNT 1.11 IOSA MNT 4.3	<p>Quality Assurance:</p> <ul style="list-style-type: none"> • Check maintenance agreement has been executed with each external AMO that performs maintenance functions Nesma airlines; such maintenance agreement shall <ul style="list-style-type: none"> A. Specify all maintenance requirements and define all tasks to be performed; B. Comply with the procedures governing maintenance arrangements, as specified in the • Check The AMO that performs maintenance for Nesma Airlines has an independent Quality Assurance Program that meets the specifications as follows: <ul style="list-style-type: none"> C. An internal audit/evaluation and surveillance program; D. An established audit schedule; E. A record of audit findings and corrective and/or preventive actions; F. Assurance of appropriate corrective and/or preventive action; G. All elements necessary to confirm the maintenance organization is in compliance with the applicable regulations and the MPM; H. The QA program confirms all referenced procedures remain applicable and effective. • Check The AMO that performs maintenance for Nesma Airlines has an independent Quality Assurance Program that meets the control processes as follows: <ul style="list-style-type: none"> A. An initial evaluation, using the published checklists that cover all aspects of the maintenance organization technical activities, conducted within 12 months (or 24 months with appropriate management approval) following the date that the operating certificate is issued; B. Recurring evaluations conducted at intervals established in the approved MPM; C. Records of findings of compliance and non-compliance resulting from the evaluations required by A and B. D. Procedures to ensure the findings of the evaluations are communicated to the person appointed and made available to the Operator; E. Where appropriate, immediate and long-term actions to correct the root cause of each noncompliance noted; F. Follow-up procedures to ensure necessary corrective/preventive actions (both immediate and long-term) implemented by the Maintenance Organization are effective; G. A record-keeping system to ensure details of evaluation findings, corrective actions, preventive 			

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
		<p>actions and follow-up are recorded and that the records are retained for two complete evaluation cycles</p> <ul style="list-style-type: none"> • Check The AMO that performs maintenance for Nesma Airlines has an independent Quality Assurance Program that: <ol style="list-style-type: none"> I. Monitors compliance with applicable regulations, requirements and the Maintenance Procedures Manual (MPM) of the AMO; II. Addresses the specific requirements of the Operator as specified in the maintenance agreement; III. Is under the sole control of the Quality Manager or the person assigned managerial responsibility for the program • Check AMO process for periodic review of the quality assurance program by the Quality Manager or the person assigned managerial responsibility for the program for the purpose of ensuring compliance with current requirements of the Maintenance Program and MMM. • Check AMO that performs maintenance for Nesma Airlines has a process to immediately report to Nesma any defects or un-airworthy conditions, 			
	ECAR 145.13 ECAR 145.15 IOSA MNT 4.4	<p>Personnel</p> <ul style="list-style-type: none"> • Check The AMO that performs maintenance for Nesma Airlines utilizes maintenance personnel: <ol style="list-style-type: none"> I. That are appropriately licensed and/or authorized to sign the maintenance release; II. Whose competence has been established in accordance with a procedure and to a level acceptable to the authority granting approval for the maintenance organization. - Planners, mechanics, specialized services personnel, supervisors and certifying personnel are required to be assessed for competence by on the job evaluation and/or examination relevant to their particular job role within the organization before unsupervised work is permitted. • Are planners able to interpret maintenance requirements into maintenance tasks and have an appreciation that they have no authority to deviate from the maintenance data; • Are mechanics able to carry out maintenance tasks to any standard specified in the maintenance data and notify supervisors of mistakes requiring rectification to 			

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
		<p>meet required maintenance standards</p> <ul style="list-style-type: none"> • Are specialized services personnel able to carry out specialized maintenance tasks to the standard specified in the maintenance data and will both inform and await instructions from their supervisor in any case where it is impossible to complete the specialized maintenance in accordance with the maintenance data; • Are Supervisors able to ensure that all required maintenance tasks are carried out and where not completed or where it is evident that a particular maintenance task cannot be carried out in accordance with the maintenance data • Are Certifying personnel able to determine when the aircraft is or is not ready to be released to service? • Does the CRS completed and signed off to certify that work done comply with GMM and ECAA requirement. • Check The AMO that performs maintenance for Nesma Airlines has record of all certifying staff include details of the scope of their authorization and the following minimum information shall be kept on record in respect of each certifying person: <ul style="list-style-type: none"> (i) Name; (ii) Date of birth; (iii) Basic training; (iv) Type training; (v) Refreshing training; (vi) Experience; (vii) Qualifications relevant to the approval; (viii) Scope of the authorization; (ix) Date of first issue of the authorization; (x) If appropriate expire date of the authorization; and (xi) Identification number of the authorization <p>Check the positive identification of maintenance personnel that are approved to perform and certify maintenance.</p>			
	ECAR 145.53 IOSA MNT 4.5	<p>Training Program</p> <ul style="list-style-type: none"> • Check The AMO that performs maintenance for Nesma Airlines has a training program that assures all maintenance personnel receive initial and recurrent training that is appropriate to individually assigned tasks and responsibilities, and provides maintenance personnel with: <ol style="list-style-type: none"> I. The knowledge of regulations, standards and procedures in accordance with requirements in the MMM. II. The knowledge and skills related to human performance, including coordination with other 			

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
		<p>maintenance personnel and flight crew.</p> <ul style="list-style-type: none"> • Check The AMO that performs maintenance for Nesma Airlines has a training program that provides for continuation training on an interval not to exceed 36 months. • Check maintenance organization that performs Maintenance for the Nesma has a training and qualification program for auditors used in the QA Program. • Check maintenance organization that performs Maintenance for the Nesma has training program that provides for initial and continuation training for receiving inspectors. • Check the maintenance personnel are authorized, competent and qualified to conduct aircraft taxi Operations. • Check the maintenance personnel working in Nesma A/C, Have trained and competent to perform SMS duties 			
	ECAR 145.11 IOSA MNT 4.6	<p>Facilities and Physical Resources</p> <ul style="list-style-type: none"> • Check The AMO that performs maintenance for Nesma Airlines has the basic facilities and work environment, appropriate for the maintenance tasks to be performed for the Operator, to include: <ul style="list-style-type: none"> i) A place of business, with a fixed address; ii) Communications equipment/software, such as telephones, facsimile machines, email and others; iii) Any devices used to establish when a particular aircraft requires maintenance. This may include planning bulletin boards, card files or a computer system; iv) A secure, dry storage area to retain aircraft technical records. v) Hangar(Facilities): <ul style="list-style-type: none"> a. Is the hangar area clean and well organized? b. Is hangar light sufficient for night work? c. Is security of hangar adequate? d. Check area around hangar for FOD materials e. Check general condition of jacks, work stands, ladders-etc • Check The AMO that performs maintenance for Nesma Airlines has the necessary technical data, equipment, tools and material to perform the work for which the maintenance organization has been approved, to include: <ul style="list-style-type: none"> i) Equipment and tools necessary to comply with the work specified in the agreement between the Operator and the maintenance organization; ii) Sufficient supplies and spare parts to ensure timely rectification of defects with regard to 			

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
		<p>the Minimum Equipment List (MEL) provisions and in accordance with service level Agreements.</p> <ul style="list-style-type: none"> • Check The AMO that performs maintenance for Nesma Airlines has facilities suitable for the storage of parts, equipment, tools and material under conditions that provide security and prevent deterioration of and damage to stored items, to include: <ul style="list-style-type: none"> i. Clean work areas, including management offices; ii. Parts and material properly identified and stored; iii. Oxygen and other high-pressure bottles properly identified and stored; iv. Flammable, toxic or volatile materials properly identified and stored; v. Equipment identified and protected. vi. Is there adequate security of stockroom area? vii. Are wheels properly stored? viii. Check battery storage? • Check The AMO that performs maintenance for Nesma Airlines has a shelf-life program for applicable stored items, which includes a requirement for the shelf-life limit to be controlled and displayed. • Check The AMO that performs maintenance for Nesma Airlines has a receiving inspection process that: <ul style="list-style-type: none"> i) Assures incoming material has the required certification documentation and traceability; ii) Includes a process for verification of incoming part tags to ensure information on the tag (e.g., part name, part number, serial number, modification and/or any other applicable reference information) matches the corresponding information on the part. 			
	ECAR 145.23 IOSA MNT 4.7 IOSA MNT 1.11.9	<p>Material Handling</p> <ul style="list-style-type: none"> • Are aircraft parts and materials : <ul style="list-style-type: none"> i) are only obtained from approved sources; ii) certification documentation requirements are specified; iii) traceability for used or surplus parts; a statement of conformity or certification test results is required for hardware and raw materials, such as extrusions and sheet or bar stock; iv) Inventory storage of consumable material should be managed to ensure traceability of batch control • Is the AMO that performs maintenance for Nesma Airlines has a secure quarantine area for rejected parts and materials awaiting disposition? • Is the AMO that performs maintenance for Nesma Airlines has a process for segregating aircraft 			

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
		<p>serviceable parts, aircraft non-serviceable parts, and non-aircraft parts?</p> <ul style="list-style-type: none"> • Check for Appropriate warning and caution signs, as well as decals, are placed in areas where ESDs are handled; • Check for Devices contained in ESD-approved packaging are sealed and properly labeled; • Check for Devices not contained in ESD-approved sealed packaging are handled by personnel using, as applicable, approved earthing (i.e. grounding) straps and/or conductive desk mats, and: <ul style="list-style-type: none"> - For maintenance activities that require floor grids where ESDs are handled, the floor grids are grounded;. - ESDs are not stored on shelving covered with carpet, foam, vinyl or any other material that can store or produce an electrical charge; - Straps and earthing mats are tested to ensure conductivity at regular intervals or prior to use and such test results are recorded. • Is the AMO that performs maintenance for Nesma Airlines has a method of storage that assures sensitive parts and equipment, such as oxygen system components (oxygen generators and bottles), O-rings and electrostatic sensitive devices are properly packaged, identified and stored to protect them from damage and contamination. • Is the AMO that performs maintenance for Nesma Airlines has a process that assures aircraft components and parts are shipped in suitable containers that provide protection from damage and, when specified by the OEM, ATA-300 or equivalent containers shall be used? 			
	ECAR 145.29 IOSA MNT 4.9	<p>Procedures Manual</p> <ul style="list-style-type: none"> • Is the AMO that performs maintenance for Nesma Airlines provides for the use and guidance of relevant maintenance personnel a Maintenance Procedures Manual (MPM), which may be issued in separate parts, that contains the following information: <ul style="list-style-type: none"> i. A brief description of the organization that includes: A general description of the scope of work authorized under the organization's terms of approval; A general description of the organization's facilities. 			

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
		<ul style="list-style-type: none"> ii. A description of the organization procedures and quality or inspection system; iii. Names and duties of the responsible personnel; iv. Names and duties of the person or persons whose responsibilities are to ensure that maintenance is carried out in accordance with the MPM; v. A description of the procedures used to establish the competence of maintenance personnel; vi. A description of the methods used for the completion and retention of the Operator's maintenance records, including procedures for retaining back-up records; vii. A description of the procedure for preparing the maintenance release and the circumstances under which the release is to be signed; viii. The process for authorizing personnel to sign the maintenance release and the scope of their authorization; ix. A description of any additional procedures for complying with the Operator's maintenance procedures and requirements; x. A description of the procedures for complying with the service information reporting requirements; xi. A description of the procedure for receiving, amending and distributing within the maintenance organization, all necessary airworthiness data from the type certificate holder or type design organization. <ul style="list-style-type: none"> • Check the AMO that performs maintenance for Nesma Airlines process to amend the MPM as necessary to keep the information contained therein up to date. • Check the AMO that performs maintenance for Nesma Airlines process furnish copies of all amendments to the MPM promptly to all organizations or persons to whom the manual has been issued. 			
	ECAR 145.19 IOSA MNT 4.10	<p>Maintenance Release</p> <ul style="list-style-type: none"> • Check the AMO that performs maintenance for Nesma Airlines produces a completed and signed maintenance release that certifies all maintenance work performed has been completed satisfactorily and in accordance with the approved data and procedures described in the MPM of the maintenance organization. Such maintenance release shall include: i. Basic details of the maintenance performed; 			

No.	Reference	Auditing Item	Comply		NA
			Sat	U sat	
		<ul style="list-style-type: none"> ii. A reference of the approved data used; iii. Maintenance tasks that were not accomplished; iv. The date maintenance was completed; v. When applicable, identity of the approved maintenance organization; vi. Identity of the person(s) that sign the release. 			
	ECAR 145.23 IOSA MNT 4.11	<p>Tooling and Calibration</p> <ul style="list-style-type: none"> • Check the AMO that performs maintenance for Nesma Airlines has procedures to control and document the calibration and records of all tools, including personnel-owned tools, and preventing out-of-service and due-for calibration tools and equipment from being used; The procedures shall include the following elements: <ul style="list-style-type: none"> i. Calibration date; ii. Identity of individual or vendor that performed calibration or check; iii. Calibration due date; iv. A calibration certificate for each item calibrated by an outside agency; v. Details of adjustments and repairs. vi. Repair history of the tool. vii. The part number and serial number of the standard used to perform the calibration. • Are test equipment properly stored, instructions attached and serviceable condition? • Is test equipment available as required 			
6	ECAR 145.35	<p>Safety:</p> <ul style="list-style-type: none"> • Check the AMO that performs maintenance for Nesma Airlines has established, implemented, maintained and adhered safety management system; That system shall as a minimum: <ul style="list-style-type: none"> (1) Identify safety hazards. (2) Ensure that remedial action necessary to maintain an acceptable level of safety is implemented. (3) Provide for continuous monitoring and regular assessment of the safety level achieved. (4) Aim to make continuous improvement to the overall level of safety (5) Have trained and competent to perform Nesma airlines SMS duties 			

Auditor Name:

Signature:.....

Date:.....

R. Aircraft.

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
1	ECAR 145.31	General external condition: <ul style="list-style-type: none"> • corrosion • Cleanliness (related to the ability to inspect the aircraft) • Presence of ice, snow, frost • Legibility of markings • Windshield delaminating • Loose or missing fasteners and rivets • Presence and condition of the antennas (missing or damaged outside) • Presence and condition of the static dischargers • Condition and functionality of the exterior lights etc 			
2		Doors and hatches: Check for <ul style="list-style-type: none"> • Presence and condition of bonding wires • Door external markings, operation instructions • Condition of doors, hatches and associated seals 			
3		Flight controls: <ul style="list-style-type: none"> • Check external Flight Controls. • Check presence and condition of the static dischargers • Check presence and condition of bonding wires 			
4		L/G, wheels, tyres and brakes: <ul style="list-style-type: none"> • Inspect wheels and tyres for damage and wear • Check for correct tyre pressure. • Check the condition of the braking system • Check L/G for condition, lubrication, corrosion, damage and inappropriate strut extension 			
5		Wheel well: <ul style="list-style-type: none"> • Check for lubrication, leakage & corrosion. • Check for lubrication, leakage & corrosion and wear on door fittings and hinges • Presence and condition of bonding wires • Check for cleanliness and damage 			
6		Power plant and Pylon: Check for <ul style="list-style-type: none"> • Dents and loose/missing fasteners • LPT/LPC blades (where visible), obvious damage to sensors • Cracks • Panels are aligned and handles are flushed unusual wear & tear and leaks • The condition of the thrust reverser • The condition of the Intake acoustic liners Presence and legibility of the markings and placards 			
7		Fan Blades: Check for FOD damage, cracks, cuts, corrosion, erosion etc			

R. Aircraft. (Continue)

No.	Reference	Auditing Item	Comply		NA
			Sat	Unsat	
8		Repaired and unrepaired damage: <ul style="list-style-type: none"> • Check for un-assessed and un-recorded damage including corrosion, lightning • strike damage, bird strikes etc • Check that any damage is observed, assessed and possibly recorded on a damage chart (i.e. Dent & Buckle chart) • Check for repairs of unusual design or poorly performed 			
9		Leakage: Check for fuel leaks, hydraulic leaks and (if applicable) toilet liquid leaks (blue ice)			
10		Cargo compartment: <ul style="list-style-type: none"> • Check the general condition of cargo compartment • Check lighting, fire protection, detection & extinguishing system • Check side wall and overhead (blow-out) panels, smoke detectors. • Check the presence and condition of cargo barrier/dividing nets • Check the Floor locks Serviceability. 			
11		Cabin: Check for: <ul style="list-style-type: none"> • General conditions of Seats, seat's belt, Widows, carpets, Galleys, Lavatories, overhead racks and sidewall panels • Conditions, validity and positions of Emergency equipment. • Emergency exit signs and internal placard for presence and condition 			

Auditor Name:**Signature:**.....**Date:**.....

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Appindex C

Safety Management System S.M.S

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Safety Management System S.M.S

References: ECAR 19 &145.35, EAC0011, SMM

Responsibility:

- Director of maintenance
- Safety coordinator

1. General.

Safety Policy

Safety is one of our core business functions. We are committed to developing, implementing, maintaining and constantly improving strategies and processes to ensure that all our aviation activities take place under an appropriate allocation of organizational resources, aimed at achieving the highest level of safety performance and meeting regulatory requirements, while delivering our services.

All levels of management and all employees are accountable for the delivery of this highest level of safety performance, starting with the Accountable Executive

Our commitment is to:

- ◆ support the management of safety through the provision of all appropriate resources that will result in an organizational culture that fosters safe practices, encourages effective safety reporting and communication, and actively manages safety with the same attention to results as the attention to the results of the other management systems of the organization.
- ◆ ensure that the management of safety is a primary responsibility of all managers and employees.
- ◆ clearly define, for all staff, managers and employees alike, their accountabilities and responsibilities for the delivery of the organization's safety performance and the performance of our safety management system.
- ◆ establish and operate hazard identification and risk management processes, including a hazard reporting system, in order to eliminate or mitigate the safety risks of the consequences of hazards resulting from our operations, to achieve continuous improvement in our safety performance.
- ◆ ensure that no action will be taken against any employee who discloses a safety concern through the hazard reporting system, unless such disclosure indicates, beyond any reasonable doubt, gross negligence or a deliberate or willful disregard of regulations or procedures.
- ◆ comply with and, wherever possible, exceed, legislative and regulatory requirements ensure that sufficient skilled and trained human resources are available to implement safety strategies and processes.
- ◆ ensure that all staff are provided with adequate and appropriate aviation safety training, are competent in safety matters, and are allocated only tasks commensurate with their skills.
- ◆ establish and measure our safety performance against realistic safety performance indicators and safety performance targets.
- ◆ continually improve our safety performance through continuous monitoring and measurement, regular review and adjustment of safety objectives and targets, and diligent achievement of these; ensure that externally supplied systems and services to support our operations are delivered meeting our safety performance standards.

1.1. Concept of Safety

In order to understand safety management, it is necessary to consider what is meant by "safety". Depending on one's perspective, the concept of aviation safety may have different connotations, such as:

- Zero accidents (or serious incidents), a view widely held by the traveling public.
- The freedom from danger or risks, i.e., those factors which cause or are likely to cause harm.
- The attitude towards unsafe acts and conditions by employees (reflecting a "safe" corporate culture);
- The degree to which the inherent risks in aviation are "acceptable".
- The process of hazard identification and risk management; and
- The control of accidental loss (of persons and property, and damage to the environment).

While the elimination of accidents (and serious incidents) would be desirable, a one hundred percent safety rate is an unachievable goal. Failures and errors will occur, in spite of the best efforts to avoid them. No human activity or human-made system can be

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guaranteed to be absolutely safe, i.e. free from risk. Safety is a relative notion whereby inherent risks are acceptable in a “safe” system.

Safety is increasingly viewed as the management of risk. SMS manual primary purpose is to develop a system at NESMA AIRLINES for managing the core business process of safety and to ensure compliance with all national and international guidelines on safety management system.

Safety is the state in which the risk of harm to persons or of property damage is reduced to, and maintained at or below, an acceptable level through a continuing process of hazard identification and risk management.

1.2. Regulation Requirements.

Safety has always been the overriding consideration in all aviation activities. This is reflected in the aims and objectives of national and international regulations to ensure the safe and orderly growth throughout the world. ECAR 19, 121 and its guidance material EAC0011 provisions for NESMA AIRLINES safety management system.

Safety Management System (SMS) is an organized approach to managing safety including the necessary organized structures, accountabilities, policies and procedures. In accordance with the provision of national regulations, The ECAA shall require the individual operators implement the SMS acceptable by the state (ECAA) as a minimum, such SMS shall:

- a) Identify safety hazard,
- b) Ensure that remedial actions necessary to mitigate the risks/hazards are implemented; and
- c) Provide for continuous monitoring and regular assessment of the safety level achieved.
- d) Aims to make continuous improvement to the overall level of safety.

An organization’s SMS shall also clearly define lines of safety accountabilities, including direct accountabilities for safety on the part of senior management.

Reference SMM

1.3. Introduction to Safety Performance Indicators.

In any system, it is necessary to set and measure performance outcomes in order to determine whether the system is operating in accordance with expectations, and to identify where action may be required to enhance performance levels to meet these expectations.

The introduction of the concept of acceptable level of safety responds to the need to complement the prevailing approach to the management of safety based upon regulatory compliance, with a performance –based approach. The acceptable level of safety expresses the safety goals (or expectations) of an oversight authority and an operator.

From the perspective of the relationship between oversight authority and operators. It provides an objective in terms of the safety performance operators should achieve while conducting their core business function, as a minimum acceptable to the oversight authority. It is a reference against which the oversight authority can measure safety performance. In determining an acceptable level of safety, it is necessary to consider such factors as the level of risk that applies the cost /benefits of improvements to the system, and public expectations on the safety of the aviation industry.

In practice, the concept of acceptable level of safety is expressed by two measures/metrics i.e., safety performance indicators and safety performance targets and implemented through various safety requirements. The following explains the use of these terms:

- Safety Performance Indicators are a measure of the safety performance of a department. Safety indicators should be easy to measure and be linked to the major components of a company’s SMM.
- Safety Performance Targets sometimes referred to as goals or objectives) are determined by considering what safety performance levels are desirable and realistic for individual departments and operators. Safety targets should be measurable, acceptable to stakeholders, and consistent with our SMM.
- Safety Requirements are needed to achieve the safety performance indicators and safety performance targets. They include the operational procedures. Technology, systems and programs to which measures of reliability, availability, performance and/or accuracy can be specified.

The relationship between acceptable level of safety, safety performance indicators, safety performance targets and safety requirements is as follows:

- Acceptable level of safety is the overarching concept

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- Safety performance indicators are the measures/metrics used to determine if the acceptable level of safety has been achieved.
- Safety performance targets are the quantified objectives pertinent to the acceptable level of safety
- Safety requirements are the tools or means required to achieve the safety targets

Reference SMM

1.4. Stakeholders in Safety

Given the total cost of aviation accidents, many diverse groups have a stake in improving the management of safety. The principles stakeholders are in safety are:

- a) Aviation professionals (e.g. flight crew, cabin crew, air traffic controllers and aircraft maintenance engineers ...)
- b) Aircraft owners and operators
- c) Aviation regulatory authorities (e. g. CAA)
- d) Manufacturers
- e) Industry trade associations (e.g. IATA)
- f) Regional ATS providers
- g) Professional associations and unions
- h) International aviation organization (e.g. ICAO)
- i) The flying public

Major aviation safety occurrences invariably involve additional groups which may not always share a common objective in advancing aviation safety:

- a) Next of kin, victims, or persons injured in an accident
- b) Insurance companies
- c) Travel industry
- d) Safety training and educational institutions
- e) Other government departments and agencies
- f) Media
- g) General public, and
- h) Lawyers and consultants

Reference SMM 1.5

1.6 Emergency Response Plan (ERP)

According to Nesma airlines policy and objective, Nesma airlines issued an emergency response plan (ERP) for the central management and coordination of all activities if it is necessary to respond to a major aircraft accident or other type of adverse event that results in fatalities, serious injuries, considerable damage and/or a significant disruption of operations. The issued emergency response plan is considered an element of the SMS framework.

The emergency (or crisis) response plan is prepared to be appropriate to deal with the risks related to Nesma airlines size and type of operations and includes consideration of a major aircraft accident and other potential aircraft events that would require a full corporate emergency response.

In Egypt, and in major cases of the emergency or crisis, the response is assumed by the governmental authority rather than by the operator (specially for small scale airlines) . So, the emergency response plan includes this consideration and addresses interaction with the governmental response to an emergency or crisis.

Reference SMM 1.6

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2. Hazard Identification and Reporting Process

2.1.1. Introduction

Nesma Airlines have a hazard identification program that is implemented and integrated throughout the Organization, to include:

- i. A combination of reactive and proactive methods for safety data collection.
- ii. Processes for safety data analyses that identifies existing hazards and predict future hazards to Aircraft operations.

To ensure all hazards are identified to the extent possible, hazard identification processes are Necessarily formalized, coordinated and consistently applied on an on-going basis in all areas of the Organization where there is a potential for hazards that could affect aircraft operations.

To be effective, reactive and proactive processes are used to acquire information and data, which are Then analyzed to identify existing or predict future (i.e. potential) hazards to aircraft operations. Nesma Airlines has developed and maintains a formal process for collecting, recording, acting on and generating Feedback about hazards in operations, based on a combination of reactive, proactive and predictive Methods of safety data Collection, Examples of processes that typically yield information or data for Hazard identification include:

- Reporting system.
- Investigation of accidents, incidents, irregularities and other non-normal events.
- Flight data analysis (AIRFASE)
- Observation of flight crew performance in line operations and training.
- Quality assurance and/or safety auditing.
- Safety information gathering or exchange (external sources)..

2.1.2 Reactive safety method:

2.1.2.1. Investigate accidents and reportable incidents.

This method is useful for situations involving failures in technology, or unusual events. The utility of the reactive approach for safety management purposes depends on the extent to which the investigation goes beyond determining the causes to include an examination of all the contributory factors

2.1.2.2 The reactive approach tends to be marked by the following characteristics:

- a) Management's safety focus is on compliance with minimum requirements.
- b) Safety measurement is based on reportable accidents and incidents with such limitations in value as:
 - Any analysis is limited to examining actual failures.
 - Insufficient data is available to accurately determine trends, especially those attributable to human error.
 - Little insight is available into the "root causes" and latent unsafe conditions, which facilitate human error.
- c) Constant "catching up" is required to match human inventiveness for new types of errors.

2.1.3 Proactive safety method:

2.1.3.1 Aggressively seeking information from a variety of sources which may be Indicative of emerging safety problems.

2.1.3.1 NESMA AIRLINES pursuing a proactive method for safety management believes that the risk of accidents can be minimized by identifying vulnerabilities before they fail and by taking the necessary actions to reduce those risks. Consequently, they actively seek systemic unsafe conditions using such tools as:

- a) Hazard and incident reporting systems that promotes the identification of latent unsafe conditions.
- b) Safety surveys to elicit feedback from front-line personnel about areas of dissatisfaction and unsatisfactory conditions that may have accident potential.

- c) Flight data monitoring (AIRFASE system) used as a predictive method for identifying operational go beyond and confirming normal operating procedures;
- d) Operational inspections or audits of all aspects of operations to identify vulnerable areas before accidents, incidents or minor safety events confirm a problem exists; and
- e) A policy for consideration and embodiment of manufacturers' service bulletins

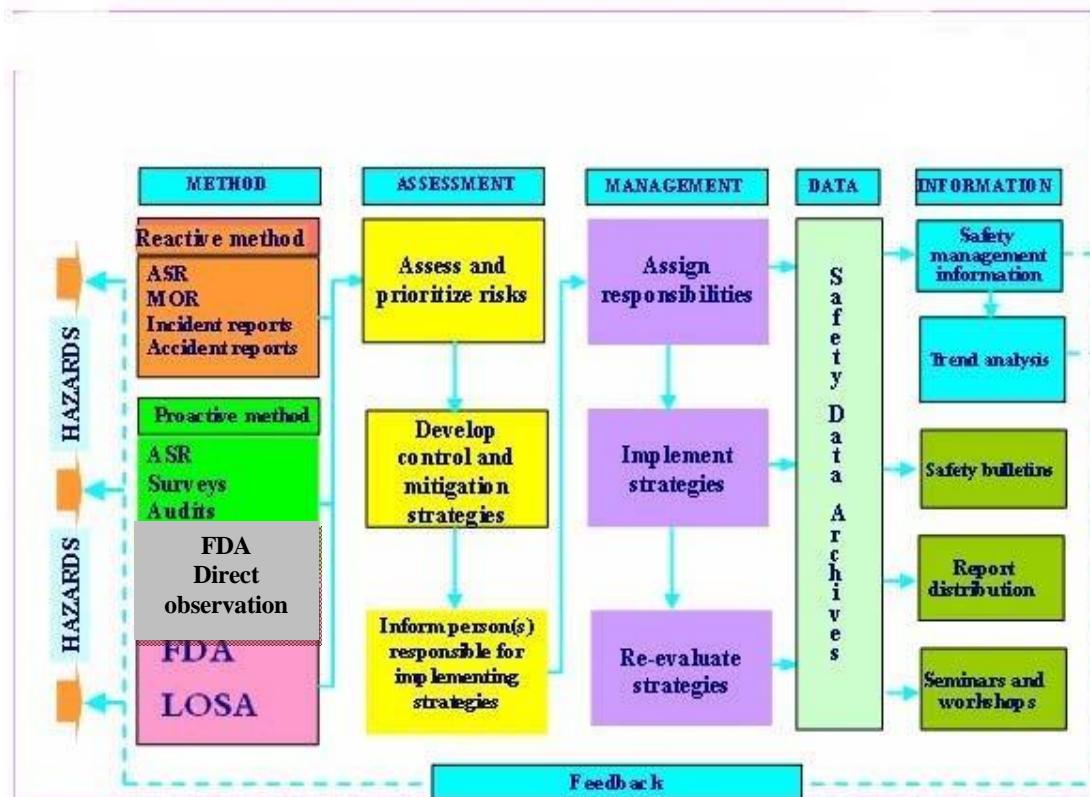


Figure 1 Safety Management System Process

Reference SMS 1.2

2.1.4 Hazard Records

In order to maintain knowledge of hazards and be able to refer to it, each department, records and maintains a list of the Hazards it faces or may face in the “Departmental Hazard list”, to ensure the resilience of operations in all operating conditions And to communicate them to those working on the frontline.

The Safety & Quality Department manages this hazard log and the content of which is supplied by the Individual department, through entering each department hazard list in the “Hazard Log” associated with Risk management processes for each hazard.

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2.1.4.1 Occurrence and Hazard Reporting

Safety reporting policy

The key objective of Nesma Airlines safety reporting system is to enhance the safety of our company's aviation activities through the collection of reports on actual or potential safety deficiencies that would otherwise not be reported through other channels. Such reports may involve occurrences, hazards or threats relevant to the safety of our aviation activities. This system does not eliminate the need for formal reporting of accidents and incidents according to our company SOPs, as well as the submission of mandatory occurrence reports to the relevant regulatory authorities.

The Safety reporting system is a voluntary, non-punitive, confidential occurrence and hazard reporting system administered by the Safety & Quality Department. It provides a channel for the voluntary reporting of aviation occurrences or hazards relevant to our organization's aviation activities, while protecting the reporter's identity.

All levels of management and all employees are accountable for the delivery of this highest level of safety performance, starting with the Accountable Executive

Our commitment is to:

- ◆ Achieve the safest flight operating standards possible. To achieve this, it is imperative that we have uninhibited reporting of all incidents and occurrences that compromise the safe conduct of our operations. To this end, every employee is responsible for communicating any information that may affect the integrity of flight safety. Such communication must be completely free of any form of reprisal.
- ◆ Encourages and perhaps even provides incentive for individuals to report hazards and operational deficiencies to management.
- ◆ Assures personnel that their candid input is highly desired and vital to safe and secure operations.
- ◆ Do not take disciplinary action against any employee who discloses an incident or occurrence involving flight safety. This policy shall not apply to information received by the company from a source other than the employee, or which involves an illegal act, or a deliberate or willful disregard of promulgated regulations or procedures.
- ◆ Develop our methods of collecting, recording and disseminating information obtained from Safety Reports to protect to the extent permissible by law, the identity of any employee who provides flight safety information.
- ◆ Urge all staff to use our flight safety program to help Nesma Airlines become a leader in providing our customers and employees with the highest level of flight safety.
- ◆ Review periodically the safety reporting policy to ensure continuing relevance to our company.

General:

Every event is an opportunity to NESMA AIRLINES to learn valuable safety lessons. The lessons will only be understood, however, if the occurrence is analyzed so that all staff, including management, understands not only what happened, but also why it happened. This involves looking beyond the event and investigating the contributing factors.

To achieve this, NESMA AIRLINES maintains procedures for the internal reporting and recording of occurrences, hazards and other safety related issues. The collection of timely, appropriate and accurate data will allow NESMA AIRLINES to react to information received, and apply the necessary corrective action to prevent a recurrence of the event.

The key to accomplish this, NESMA AIRLINES have a reporting system that meets the needs of all staff that will be using it – all staff. As such, personnel input into the development of the system are vital. A safety reporting system is worthless if no one uses it.

NESMA AIRLINES non-punitive discipline policy and a real and demonstrated Commitment by management to achieve the company's safety goals will help to foster the development of a reporting culture within NESMA AIRLINES.

Objective

Nesma Airlines have a safety reporting system that is implemented throughout the organization in a manner that:

- i) Encourages and facilitates personnel to submit reports that identify safety hazards, expose safety Deficiencies and raise safety concerns.
- ii) Ensures mandatory reporting in accordance with applicable regulations.
- iii) Includes analysis and management action as necessary to address safety issues identified through the reporting system.

Safety reporting is considered a proactive and a reactive hazard identification activity in an SMS.

Frontline personnel, such as flight or cabin crew members and maintenance technicians, are exposed to hazards and face challenging situations as part of their everyday activities. An operational reporting system provides such personnel with a means to report these hazards or any other safety concerns so they may be brought to the attention of relevant managers.

To build confidence in the reporting process and encourage more reporting, an acknowledgement of receipt is typically provided to each person that submits a report.

An effective system provides for a review and analysis of each report to determine whether a real safety issue exists, and if so, ensure development and implementation of appropriate action by responsible management to correct the situation.

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2.1.4.3 Reporting Hazards, Events and Safety Concerns

NESMA AIRLINES has developed Hazards, Events and safety concerns forms to allow for a full description of the event.

2.1.4.4 Why report?

All events require appropriate investigation in order to:

- a) Establish their root cause, that is the underlying initial contributing factor(s) that caused the event and identify actions to minimize the chance of recurrence.
- b) Satisfy any regulatory requirements for reporting and investigation as ECAR 39 (MOR)
- c) Provide a factual record of the circumstances of the event or hazard to allow others to learn from the situation; and
- d) Categorize the underlying causes and establish the appropriate remedial and continuous improvement action.

2.1.4.5 What should be reported?

Any event or hazard with the potential to cause damage or injury should be reported.

Examples of these issues are:

- Excessive duty times
- Crews rushing through checks
- Inadequate tool or equipment control
- Unruly passengers
- Emergency exit paths blocked
- Incorrect or inadequate procedures, and a failure to adhere to standard procedures.
- Poor communication between operational areas
- Lack of up to date technical manuals
- Poor shift changeovers
- Runway incursions
- Lack of adequate training and recurrent training.

2.1.4.6 When should a hazard report be submitted?

Any individual involved directly or indirectly in the flight activities of the flight department (i.e., cockpit, cabin, dispatchers, maintenance, employees, personnel, and others providing aviation related products/services) must report any observed hazard. If a hazard is recognized and unable to be observed via normal procedures, the observer shall complete a hazard report and submit it to the Safety manager.

A Hazard Report or Flight Operations Incident Report shall be submitted when any situation, practice, procedure, or process is observed which either a recognized safety concern is, considered unusual from an operational or procedural standpoint, or considered deficient from a safety standpoint, and which, in the submitter's opinion, possesses a foreseeable potential for injury or illness to persons or damage or loss of property if not addressed in a timely manner.

Any safety concern that would be of interest to others that are involved in like activities should be reported. Hazard Report is not required for hazards which are able to be resolved locally, however, when a hazard is likely to be duplicated in other department workplaces a Hazard Report should be submitted for the benefit of other affected employees

2.1.4.7 How a Hazard shall be reported?

2.1.4.7.1 At NESMA AIRLINES the reports are acted upon in a timely manner by the Flight Safety Manager.

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2.1.4.7.2 Available Forms:

1. Air Safety Report (ASR) (Form No. 305)
2. Confidential / Hazard / Human Factor Report (Form No. 302)
3. Voluntary Report (Form No. 303)
4. Cabin Crew Report (Form No. 304)

2.1.4.7.3 NESMA AIRLINES's reporting system maintains confidentiality between the person reporting the hazard and the Flight Safety Manager. Any safety information distributed a hazard report must be de- identified.

2.1.4.7.4 NESMA AIRLINES reporting system maintains confidentiality between the person reporting the hazard and the Safety and Quality Director

2.1.4.8 The system includes the following procedures such as:

2.1.4.8.1 All safety reports go to Safety and Quality Director, Safety and Quality Director is responsible for investigation of the report the Safety Manger will follow- up on a report to clarify the details and the nature of the problem. Anyone submitting a safety report must receive acknowledgement and feedback within 10 working days after the investigation.

2.1.4.8.2 Hazard Report Processing: upon receipt of a Hazard Report the Safety manager will conduct an investigation to determine the validity of the report as well as to gain additional information concerning the report's subject matter. Any hazardous situations or equipment shall be either placarded or removed from service until the hazardous situation is corrected. The submitter, if identified, will be advised of the result of the investigation. If a Hazard Report identifies a problem that is outside the scope or authority, the originator will be offered assistance in routing the information to the appropriate person responsible.

2.1.4.8.3 The contents of the Hazard Report and the investigation results will be provided along with recommendations for corrective/preventive action. Appropriate action and a target date for elimination or reduction of the hazardous situation will then be determined.

2.1.4.8.4 Final corrective action shall be documented.

2.1.4.8.5 NESMA AIRLINES Decisions concerning risk acceptability should be made by management and they should be kept informed of all high-risk considerations.

2.1.5 Reports should be distributed, as a minimum, to the following:

- a) The Safety And Quality Director for managing the safety management system.
- b) The safety committee.

2.1.6 Hazard, Confidential Human Factors Report:

Hazard Reports should be submitted using the Hazard Confidential / human factors Report form . The submitter's identification on the report is optional but is encouraged in the event that further information is required for elimination of the hazard. Reports should be concise and should accurately and thoroughly describe the hazard. When applicable, reports should include the submitter's recommendation(s) for corrective action. In circumstances where the perceived hazard possesses the immediate potential for injury/illness to persons or damage/loss of property, management shall be notified immediately by the most expeditious means possible for the purpose of determining appropriate action to prevent such injury/illness or damage/loss. Confidential Reporting systems aim to protect the identity of the reporter. This is one way of ensuring that voluntary reporting systems are non-punitive. Confidentiality is usually achieved by de-identification, and any

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information about the reporter is known only to "Safety & Quality directory" in order to allow for the follow-up of the reported event(s). Confidential incident reporting systems facilitate the disclosure of hazards leading to human error

2.1.7 Voluntary Reporting system:

This reporting is voluntary in nature which means it is submitted without any administrative requirement.

NESMA AIRLINES the top management encourages all employees and gives them the incentive to report voluntarily any hazard or Event. (Reporting Underlining Errors or Unintentional Violations) .In NESMA AIRLINES The reported information shall not be used against the reporter, The Voluntary Reporting system is non punitive and extend protection to the source of information to encourage the reporting of such valuable information.

2.1.8 Reserved

2.1.9 Safety oversight

2.1.9.1 Safety oversight for cabin safety shall achieve by program of:

1. Aircraft inspections (e.g., emergency exits, emergency equipment, galleys);
2. Pre-flight (ramp) inspections.
3. In-flight cabin inspections (e.g., passenger briefings, crew briefings and use of checklists)

2.1.9.2 NESMA AIRLINES internal safety audit program should include the Maintenance department. The audit process should include a review of all maintenance activity as well.

2.1.10 Safety reporting culture

Use of the following outlined principles helps to overcome the natural resistance to safety reporting & improve s Safety reporting culture at NESMA AIRLINES:

2.1.10.1 Trust

2.1.10.1.1 Persons reporting hazards or incidents must trust that the receiving organization the company will not use the information against them in any way. Without such confidence, people will be reluctant to report their mistakes or other hazards they have noticed.

2.1.10.1.2 Trust begins with the design and implementation of the re porting system. Employee input into the development of a reporting system is therefore vital.

2.1.10.1.3 NESMA AIRLINES believes that positive safety culture in the organization generates such kind of trust necessary for a successful incident reporting system. Specifically, the culture must be error -tolerant and just. In addition, incident reporting systems need to be perceived as being fair in how they treat unintentional errors or mistakes. (Most people do not expect an incident reporting system to exempt criminal acts or deliberate violations from prosecution or disciplinary action.) NESMA AIRLINES considers such a process to be an example of a "just culture".

2.1.10.2 Non-punitive

2.1.10.2.1 Non-punitive reporting systems are based on confidentiality. Before employees will freely report incidents, At NESMA AIRLINES Top management committed that reported information would not be used punitively against them. The person reporting the incident (or unsafe condition) must be confident that anything said will be kept in confidence.

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2.1.10.2.2 Reporting anonymously is not the same as confidential reporting. Most successful reporting systems have some type of call-back capability in order to confirm details or obtain a better understanding of the occurrence. Reporting anonymously makes it impossible to “call back” to ensure understanding and completeness of the information provided by the reporter. There is also a danger that anonymous reporting may be used for purposes other than safety.

2.1.10.3 Inclusive reporting base

2.1.10.3.1 Early voluntary incident reporting systems were targeted at flight crew. Pilots are in a position to observe a broad spectrum of the aviation system and are therefore able to comment on the system’s health. Nonetheless, incident reporting systems that focus solely on the perspective of flight crew tends to reinforce the idea that everything comes down to pilot error. Taking a systemic approach to safety management requires that safety information be obtained from all parts of the operation.

2.1.10.3.2 Incidents reporting systems, collecting information on the same occurrence from different perspectives facilitates forms a more complete impression of events. Relying on only one perspective; may not provide a complete understanding of the event.

2.1.10.4 Independence

Voluntary reporting to the Quality & Safety Director benefits from a trusted “third party” managing the system. Quality & Safety Director receives, processes and analyses the incident reports and feeds the results back to the safety committee, and any information received will be used for safety purposes only; as part of NESMA AIRLINES safety management system.

2.1.10.5 Ease of reporting

The task of submitting incident reports should be as easy as possible for the reporter. Reporting forms should be readily available so that anyone wishing to fill a report can do so easily. Forms should be simple to compile, have adequate space for a descriptive narrative and should encourage suggestions on how to improve the situation or prevent an occurrence. To simplify completion, classifying information, such as the type of operation, light conditions, type of flight plan, and weather, can use a “tick-off” format.

2.1.10.6 Acknowledgment

The reporting of incidents requires time and effort by the reporter and should be appropriately acknowledged. To encourage further submission of reports, one State encloses a blank report form with its acknowledgment letter. In addition, the reporter naturally expects feedback about actions taken in response to the reported safety concern.

2.1.10.7 Promotion

The (de-identified) information received from an incident reporting system should be made available for all employees in a timely manner. This could be done in the form of monthly newsletters or periodic summaries. Ideally, a variety of methods would be used with a view to achieving maximum exposure. Such promotional activities may help to motivate people to report additional incidents.

2.1.11 Types of incident reporting systems

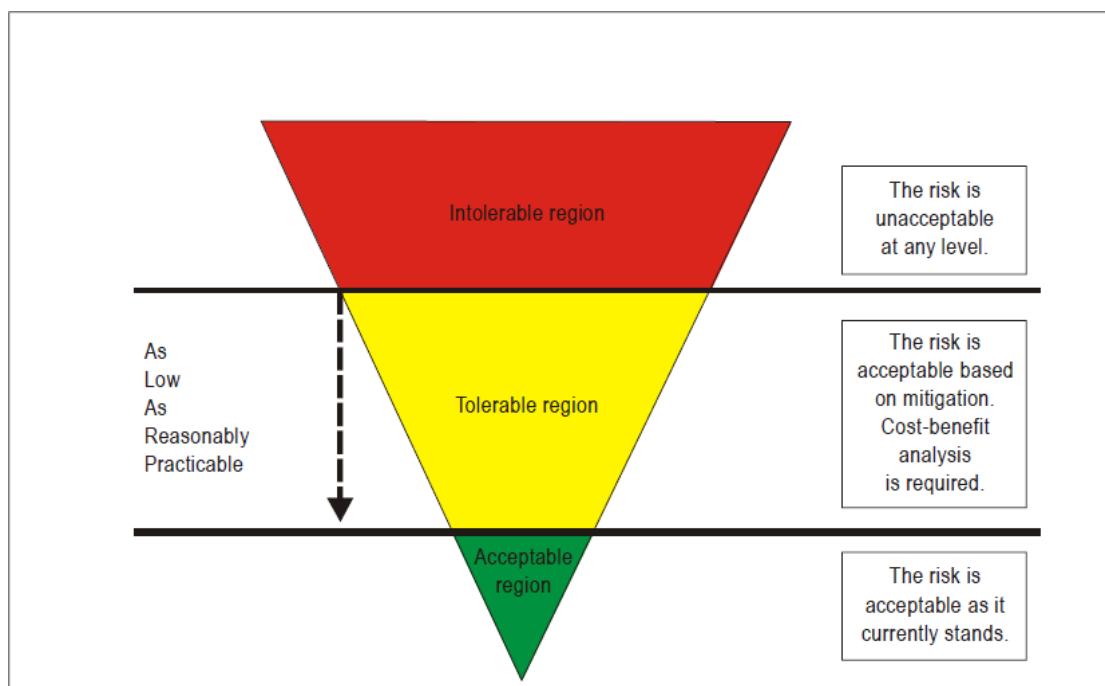
In general, an incident involves an unsafe, or potentially unsafe, occurrence or condition that does not involve serious personal injury or significant property damage, i.e., it does not meet the criteria for an accident. Even though, NESMA AIRLINES is required – as an operator to report the occurrence to ECAA.

Reference SMM 2.1

3. Risk Assessment and Mitigation Processes

3.1 Risk is a by-product of doing business.

Not all risks can be eliminated, nor are all believable risk mitigation measures economically feasible. The risks and costs inherent in aviation necessitate a rational process for decision-making. Daily, decisions are made in real time, weighing the probability and severity of any adverse consequences implied by the risk against the expected gain of taking the risk. This process is known as



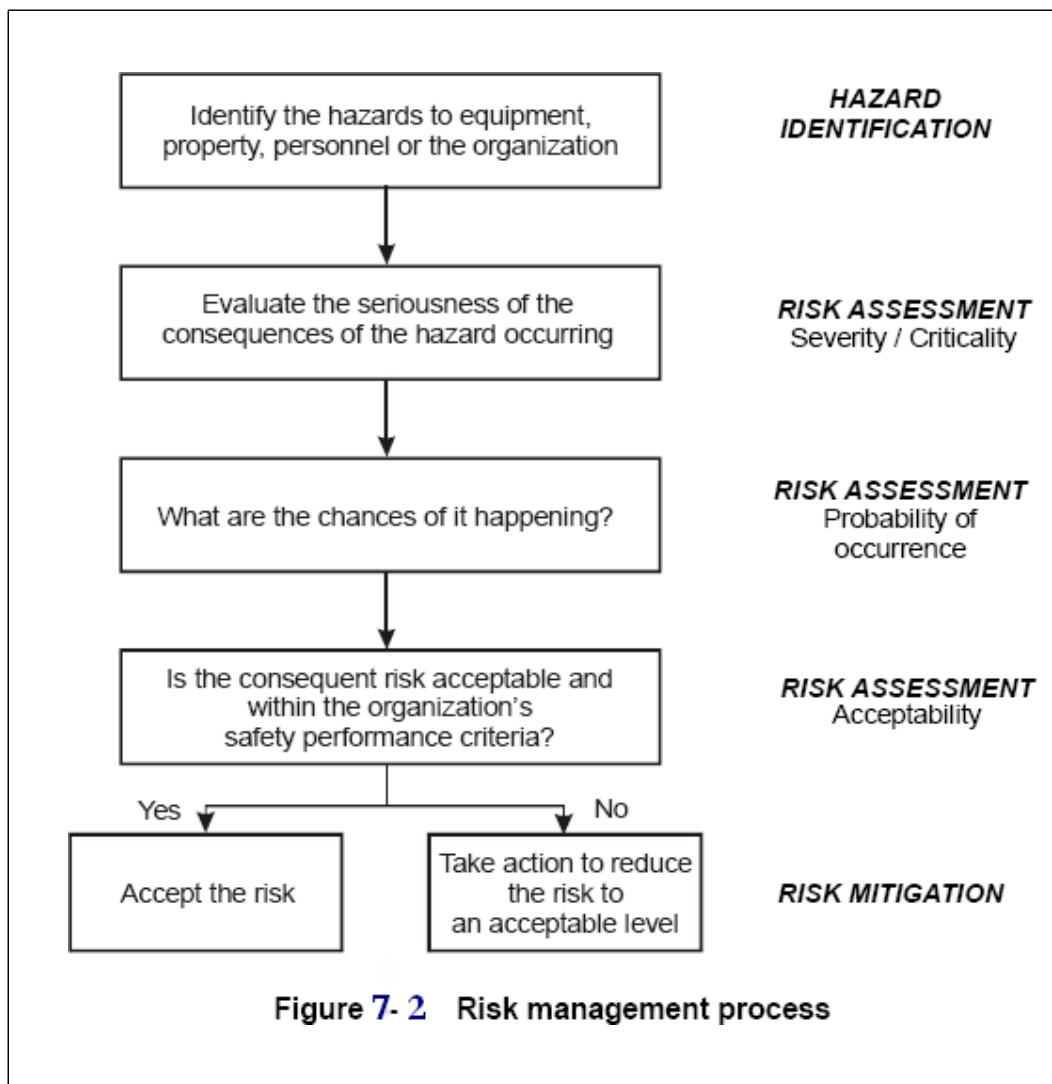
3.2. Risk management facilitates the balancing act between assessed risks and viable risk mitigation.

Risk management is an integral component of safety management. It involves a logical Process of objective analysis, particularly in the evaluation of the risks.

Reference SMM 2.2

3.3. The process for risk management is summarized in the flow chart in

Figure 7.2 as the figure indicates, risk management comprises three essential elements: hazard identification, risk assessment and risk mitigation. The concepts of risk management have equal application in decision making.



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3.4 First fundamental – Risk management

3.4.1 What is it The identification, analysis and elimination, and/or mitigation to an acceptable level of risks that threaten the capabilities of an organization.

3.4.2 What is the objective Aims at a balanced allocation of resources to address all risks and available risk control and mitigation.

3.4.3 Why is it important?

A key component of safety management systems .

Data-driven approach to safety resources allocation, thus defensible and easier to explain.

3.5 Second fundamental - Risk probability

3.5.1 Definition(s)

Probability – The feasibility that a situation of danger might occur as shown in figure (7.3)

Questions for assessing the probability of an occurrence:

- a) Is there a history of occurrences like the one being assessed, or is the occurrence an isolated event?
- b) What other equipment, or similar type components, might have similar defects?
- c) What number of operating or maintenance personnel must follow the procedure (s) in question?
- d) How frequently is the equipment or procedure under assessment used?
- e) Are there organizational, management or regulatory implications that might generate larger threats to public safety?

PROBABILITY OF OCCURRENCES		
RISK PROBABILITY	MEANING	VALUE
FREQUENT	Likely to occur many times (has already occurred in the company (Freq. > 3 x year). Has occurred frequently in the history of the aviation industry)	5
OCCASIONAL	Likely to occur sometimes (has already occurred in the company (Freq. < 3 x year). Has occurred infrequently in the history of the aviation industry)	4
REMOTE	Unlikely to occur, but possible (has already occurred in the company at least once. Has regularly occurred in the history of the aviation industry)	3
IMPROBABLE	Very unlikely to occur (not known to have occurred in the company but has already occurred at least once in the history of the aviation industry)	2
EXTREMELY IMPROBABLE	Almost inconceivable that the event will occur (it has never occurred in the history of the aviation industry)	1

Figure 7.3 risk probability

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3.6 Third fundamental – Risk severity

3.6.1 Definition(s)

Severity – The possible consequences of an unsafe event or condition, taking as reference the **worst foreseeable situation**, as shown in figure (7.4)

3.6.2 Define the consequence(s) in terms of:

- Property
- Health
- Finance
- Liability
- People
- Environment
- Image
- Public confidence

Questions for assessing the severity of the consequences of an occurrence: How many **lives are at risk?**

-Employees

-Passengers

-Bystanders

-General public

What is the likelihood of **environmental impact**?

- Spill of fuel or other hazardous product

- Physical disruption of natural habitat

Questions:

What is the likely extent of **property or financial damage**?

-Direct operator property loss

-Damage to aviation infrastructure

-Third party collateral damage

-Financial impact and economic impact for the State

-What are the likely **political implications** and/or **media interest**?

RISK SEVERITY OF OCCURRENCES					
SEVERITY OF OCCURRENCE	MEANING				VALUE
	PERSONNEL	ENVIRONMENT	MATERIAL	IMAGE	
CATASTROPHIC	Multiple fatalities	Massive effects (pollution, destruction, etc.)	Damage > 1 M€	International impact	E
HAZARDOUS	Fatality	Effects difficult to repair	Damage < 1 M€	National impact	D
MAJOR	Serious injuries	Noteworthy local effects	Damage < 250K€	Considerable impact	C
MINOR	Slight injuries	Little impact	Damage < 50K€	Limited impact	B
NEGLIGIBLE	Superficial or no injuries	Negligible or no effects	Damage < 10K€	Light or no impact	A

Figure 7.4 risk severity

3.7 Fourth fundamental risk assessment and tolerability

Using the risk analysis matrix as shown in figure 7.5, it is possible to standardize the qualitative risk assessments, and categorize the hazard using the tolerability NESMA AIRLINES considers important as shown in figure 7.6

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RISK PROBABILITY	RISK SEVERITY				
	NEGLIGIBLE (A)	MINOR (B)	MAJOR (C)	HAZARDOUS (D)	CATASTROPHIC (E)
FREQUENT (5)	5 A	5 B	5 C	5 D	5 E
OCCASIONAL (4)	4 A	4 B	4 C	4 D	4 E
REMOTE (3)	3 A	3 B	3 C	3 D	3 E
IMPROBABLE (2)	2 A	2 B	2 C	2 D	2 E
EXTREMELY IMPROBABLE (1)	1 A	1 B	1 C	1 D	1 E

Figure 7.5 risk assessments matrix

SUGGESTED CRITERIA	ASSESSMENT RISK INDEX	SUGGESTED CRITERIA
	5 E, 5 C, 5 D, 5 E, 4 C, 4 D, 4 E, 3 D, 3 E 5 A 4 B 3 C 2 D, 2 E 3 A, 3 B 2 A, 2 B, 2 C 1 A, 1 B, 1 C, 1 D, 1 E	Unacceptable under the existing circumstances
		Acceptable based on risk mitigation. It may require management decision
		Acceptable

Figure 7.6 risk tolerability

3.8 Fifth fundamental – Risk control/mitigation Definition(s)

Mitigation – Measures to eliminate the potential hazard or to reduce the risk probability or severity.
 Risk mitigation = Risk control

(Mitigate – To make milder, less severe or less harsh) Strategies

Avoidance – The operation or activity is cancelled because risks exceed the benefits of continuing the operation or activity.

Example:

Regular operations into an aerodrome surrounded by complex geography and without the necessary aids are cancelled.

Reduction –The frequency of the operation or activity is reduced, or action is taken to reduce the magnitude of the consequences of the accepted risks.

Example:

Regular operations into an aerodrome surrounded by complex geography and without the necessary aids are continued based upon the availability of specific aids and application of specific procedures.

Segregation of exposure – Action is taken to isolate the effects of risks or build-in redundancy to protect against it, i.e., reduces the severity of risk.

Non RVSM equipped aircraft not allowed to operate into RVSM airspace.

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Risk mitigation – Defenses

As part of the risk mitigation, determine:

- a) Do defenses to protect against such risk (s) exist?
- b) Do defenses function as intended?
- c) Are the defenses practical for use under actual working conditions?
- d) Is a staff involved aware of the risks and the defenses in place?
- e) Are additional risk mitigation measures required?
 - Recalling the three basic defenses
 - Technology
 - Training
 - Regulations

Avoidance: The operation or activity is cancelled because risks exceed the benefits of continuing the operation or activity. e.g., Regular operations into an aerodrome surrounded by complex geography and without the necessary aids are cancelled.

Reduction: The frequency of the operation or activity is reduced, or action is taken to reduce the magnitude of the consequences of the accepted risks. e.g., Regular operations into an aerodrome surrounded by complex geography and without the necessary aids are continued based upon the availability of specific aids and application of specific procedures.

Segregation of exposure: Action is taken to isolate the effects of risks or build-in redundancy to protect against it, i.e., reduces the severity of risk.

Note: Figure 7 showing risk mitigation and Figure 8 showing risk mitigation process

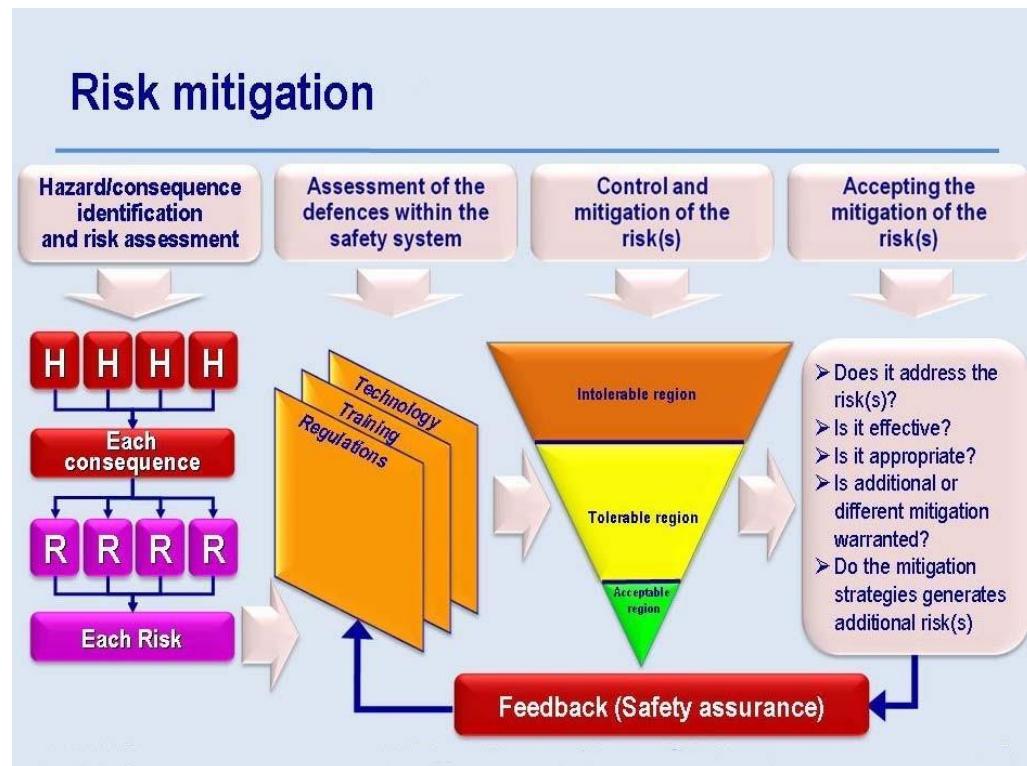


Figure 7.7 risk mitigation

Risk management process

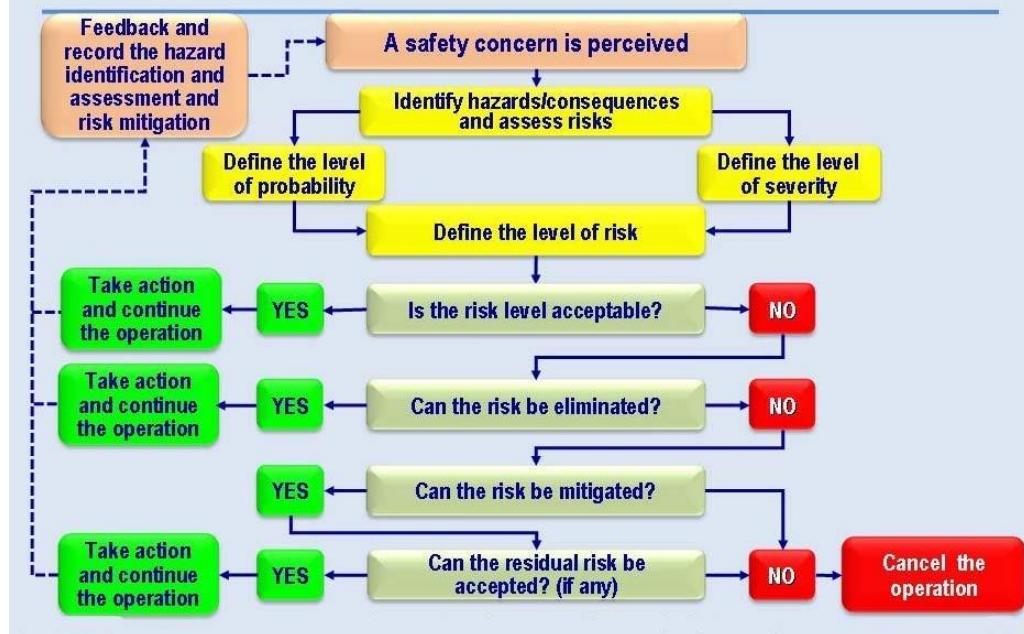


Figure 7.8 risk mitigation process

3.9 Safety Performance Measurement

3.9.1 General:

Statistical measures are often used to indicate a level of safety, e.g. the number of accidents per hundred thousand hours, or fatalities per thousand sectors flown. Such quantitative indicators mean little by themselves, but they are useful in assessing whether safety is getting better or worse over time.

NESMA AIRLINES Safety Objectives are:

- i. To identify and eliminate hazards.
- ii. To provide a safe, healthy work environment for all personnel.
- iii. To minimize all types of occurrences (injuries, incidents, serious incidents & accidents).
- iv. To minimize damage to aircraft and injury to people.
- v. To investigate occurrences (incidents, serious incidents and accidents) with a view to establish root cause and to make recommendations to prevent future recurrence.
- vi. To promote a 'Positive Reporting Culture' throughout the organization.
- vii. To conduct an effective Flight Data Analysis Program across all fleet.
- viii. To provide Safety Management System (SMS) education and training to all personnel.
- ix. To improve the effectiveness of the SMS through safety audits that reviews all aspects of the SMS.
- x. To perform hazard and risk analysis for all proposed new equipment acquisitions, facilities, operations and procedures.
- xi. To disseminate safety related information to the appropriate personnel.
- xii. To ensure conformance with company standards.
- xiii. To drive quality system improvement utilizing the quality process within a defined program.
- xiv. To maintain effective crisis management capability which is designed to respond, contain and manage any major occurrence or event in a safe and secure manner, whilst ensuring a safe continuation of normal operations.

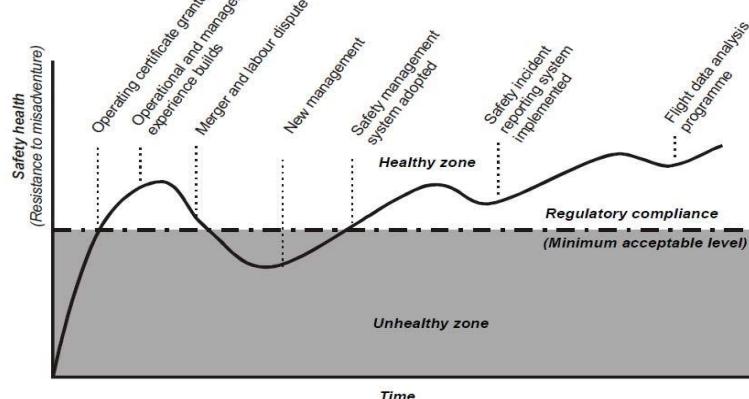
3.9.2 Safety health:

- i. The term safety health is an indication of Nesma Airlines resistance to unexpected conditions or acts by individuals. It reflects the systemic measures put in place by NESMA AIRLINES to defend against the unknown. Furthermore, it is the indication of NESMA AIRLINES ability to adapt to the unknown. In fact, it reflects the safety culture of NESMA AIRLINES.
- ii. Although the absence of safety-related events (accidents and incidents) does not necessarily indicate a "safe" operation, some operations are considered to be "safer" than others. Safety deals with risk reduction to an acceptable (or at least a tolerable) level. The level of safety in an organization is unlikely to be static.
- iii. Adding defences against safety hazards, safety health may be considered to be improving. However, various factors (hazards) may compromise that safety health, requiring additional measures to strengthen the organization's resistance to misadventure.

3.9.3 Assessing safety health

NESMA AIRLINES set indicators for assessing safety performance in order to improve safety health; through:

- i. Implementing measures to increase its resistance to the unforeseen. They consistently do more than just meet the minimum regulatory requirements.
- ii. Identifying the symptoms may provide a valid impression of NESMA AIRLINES safety health, however, information may still be lacking for effective decision-making. Additional tools are required to measure safety performance in a systematic and convincing way.



3.9.4 Symptoms of poor safety health

Poor safety health may be indicated by symptoms that put elements of the organization at risk. A weakness in any one area may be tolerable; however, weaknesses in many areas indicate serious systemic risks, compromising the safety health of the organizations as follows:

- i. Inadequate organization and resources for current operations.
- ii. Instability and uncertainty due to recent organizational change.
- iii. Poor financial situation.
- iv. Unresolved labor-management disputes.
- v. Record of regulatory non-compliance.
- vi. Low operational experience levels for type of equipment or operations.
- vii. Fleet inadequacies such as age and mix.
- viii. Poorly defined (or no) corporate safety function.
- ix. Inadequate training programmers.
- x. Corporate complacency regarding safety record, current work practices, etc.; and
- xi. Poor safety culture

3.9.5 Improving safety health

- Proactive corporate safety culture.
- Investment in human resources in such areas as non-mandatory training.
- Formal safety processes for maintaining safety database, incident reporting, investigation of incidents, safety communications, etc.
- Operation of a comprehensive safety management system (i.e., appropriate corporate approach, organizational tools and safety oversight).
- Strong internal two-way communications in terms of openness, feedback, reporting culture and dissemination of lessons learned; and
- Safety education and awareness in terms of data exchange, safety promotion, participation in safety fora, and training aids.

3.9.6 Statistical safety performance indicators

- i. Statistical safety performance indicators can be focused on specific areas of the operation to monitor safety achievement, or on identifying areas of interest. This approach is useful in trend analysis, hazard identification, risk, as well as in the choice of risk control measures.
- ii. Since accidents (and serious incidents) are relatively random and rare events in aviation, assessing safety health based solely on statistical safety perform an indicator may not provide a valid predictor of safety performance, especially in the absence of reliable exposure data. Reviewing the past does little to assist in their quest to be proactive and to put in place those systems most likely to protect against the unknown.

3.9.7 NESMA AIRLINES Key Performance Indicators (KPI'S):

Nesma Airlines has predetermined Safety Performance Indicators that characterize and / or typify the level of safety of Nesma Airlines, while Safety Performance Targets are the goals required by the organization to continuously improve on its safety performance. Safety performance measurement data is used to compute trends that determine safety performance of the airline. These trends are benchmarked against predetermined SPI and SPT.

SPI are used to highlight critical activities, in the context of an acceptable level of risk, reflect operational safety performance. They are expressed in practical terms as a reflection of the risk to the business. The values of SPI and tolerability defined by SPT, may be determined by industry best practice or derived through risk.

SPT are specified to ensure that risk levels are maintained within defined boundaries and to highlight areas which may require improvements to reduce risk.

NESMA AIRLINES as a small-scale airline, the key performance indicators may include the following indicators and not limited to it:

- Technical record data entry
- MCC availability percentage
- Planning work request
- Aircraft logbook filling mistakes percentage
- Executed task card signed
- Reliability reports read out

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Due to small scale of the airline, the following KPI's MAY or MAY NOT be selected for maintenance department performance measurements many of them showed no occurrence in previous measurements

Maintenance

- 1. Rushing through Checks Maintenance personnel
- 2. Inadequate Training or recurrent Training
- 3. Inadequate tool or Equipment Control
- 4. Poor Communication within Maintenance
- 5. Poorly Designed Task Cards
- 6. Excessive Duty Time in Maintenance operations for Engineers and Technicians.
- 7. Lack of updated Technical Manuals
- 8. Failure to Adhere to Standard procedures
- 9. Failure to obey Safety precautions while Doing A\C Engine Maintenance

3.9.8 Nesma Airlines safety performance target are:

Nesma Airlines safety performance targets are detected and should be achieved as follows:

- The selection of the safety performance indicators.
- Measuring the performance of the selected indicators.
- Performing a risk assessment that includes mitigations, identify actions required and implement these actions.
- A measurable target for each selected indicator performance measurement is established based on mitigations set and actions to be implemented.
- After setting the target and applying the actions required, another measurement is done to monitor their on reducing the number of cases caused by operations and to verify the measurable target achievement.
- A continuous improvement for safety targets will require to repeat the above procedure by setting better targets and/or adding new indicators.
- The following are an example for the targets that may be selected and set on a measurable base:
Continual reduction of high risk and/or severe incidents (occurrences reports)
To reach and maintain 100% IOSA compliance.
To conduct a Line Operational Safety Audit (LOSA) at least once every 4 years.
Reduction in the percentage of SAFA findings ratio.

3.9.9 Safety Performance Review

Safety performance is monitored on an ongoing basis by the Safety Department utilizing the collation of data and the analysis of incident data sourced from operational departments, Reporting System, Flight Data Analysis Program... this data is published, distributed, and reviewed on Safety Committee Meeting. Actions arising from this meeting are allocated to parties who are responsible for their close-out; and tracked to close-out in a formal manner.

Operational departments shall review and identify SPI which will be measured and agree

SPT that are to be identified in reference to risk indicators.

The operational departments shall liaise with Safety Department to ratify SPT and to identify additional SPI that maintain awareness of hazards and acceptable levels of risk as business activities evolve.

- Fleet inadequacies such as age and mix.
- Poorly defined (or no) corporate safety function.
- Inadequate training programmers.
- Corporate complacency regarding safety record, current work practices, etc. and
- Poor safety culture

Reference SMM 3