



TRANSMITTAL LETTER

Transmit-1

Rev. 30, Mar 25/2022

This is revision **30** to the **GRA Airplane Flight Manual , CSP C-012-219**.

To bring this manual up to date, remove old pages and insert revised pages as follows:

REMOVE:		INSERT:	
Chapter Section Subject	Page	Chapter Section Subject	Page
Title Page / Disclaimer	All	Title Page / Disclaimer	All
00–02	00–02–76	00–02	00–02–76 to 00–02–78
		00–04	00–04–1 to 00–04–8
Abnormal Procedures	05–00–5	Abnormal Procedures	05–00–5
	05–04–6 to 05–04–7		05–04–6 to 05–04–7
	05–11–14 to 05–11–19		05–11–14 to 05–11–19
Supplement	07–18B–00–1 to 07–18B–00–2	Supplement	07–18B–00–1 to 07–18B–00–2
	07–18B–01–13 to 07–18B–01–26		07–18B–01–13 to 07–18B–01–28

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



TRANSMITTAL LETTER

Transmit-2

Rev. 30, Mar 25/2022

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



Model CL-600-2D24
(Series 900)

AIRPLANE FLIGHT MANUAL

CSP C-012-219

GRA

CRJ SERIES TECHNICAL PUBLICATIONS

12655 Henri-Fabre Boulevard
Mirabel, Québec, J7N 1E1
Canada

Copyright © 2002 – 2022 by MHI RJ Aviation ULC and its affiliates

All rights reserved. No part of this work may be reproduced or copied
in any form or by any means without written permission
of MHI RJ Aviation ULC and its affiliates

MHIRJ is a trademark of
MHI RJ Aviation ULC and its affiliates

Initial Issue: Sep 09/2002
Revision 30: Mar 25/2022

"The information, technical data and the designs disclosed herein are the exclusive property of MHI RJ Aviation ULC and its affiliates or contain proprietary rights of others and are not to be used or disclosed to others without the written consent of MHI RJ Aviation ULC and its affiliates. The recipient of this document, by its retention and use, agrees to hold in confidence the technical data and designs contained herein. The foregoing shall not apply to persons having proprietary rights to such information, technical data or such designs to the extent that such rights exist."



APPROVAL PAGE

00-01-1

Rev. 28, Jun 04/2021

AIRPLANE FLIGHT MANUAL

MODEL CL-600-2D24 REGIONAL JET

Registration Number:

Manufacturer's Serial No:

ORIGINAL SIGNED

W. Jupp

Approved by the Chief, Flight Test for the Director,
Aircraft Certification, Transport Canada, on behalf of the
Joint Aviation Authorities. <JAA>

Date of Approval: 18 December, 2002

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPROVAL PAGE

00-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-1

Rev. 28, Jun 04/2021

The Airplane Flight Manual is valid only when all the issued revisions are incorporated. Record the date you insert each revision in your manual.

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
REV 1	Chapter 2 – Limitations: 02-04-3.	W. Jupp 13 Jan 2003	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Revised operating limitations for super-cooled large droplet icing. <RJ 700 RS-50>• Supersedes temporary revision RJ 900/2. <RS-7>	Bombardier Customer Service Group (BCSG) 13 Jan 2003
REV 2	Chapter 1 – General: 01-01-1 <JAA>, 01-02-4, 01-02-5, 01-02-6, 01-02-7, 01-02-8, 01-02-9, 01-02-20 <MST>, 01-02-21 <MST>. Chapter 2 – Limitations: 02-00-2 <MST>, 02-00-3 <MST>, 02-00-4 <MST>, 02-01-2 <MST>, 02-02-1 <MST>, 02-03-1 <2002>, 02-03-1 <2004>, 02-03-1 <2217>, 02-04-1, 02-04-2, 02-05-1 <MST>, 02-05-5, 02-05-6, 02-05-9, 02-05-11, 02-06-1 <MST>, 02-06-4, 02-08-1 <MST>, 02-08-3 <MST>, 02-08-4 <MST>, 02-08-5 <MST>, 02-08-6 <MST>, 02-09-1 <MST>, 02-09-2 <MST>. Chapter 3 – Emergency Procedures: 03-00-3, 03-04-1, 03-04-2, 03-04-3, 03-04-6, 03-04-13, 03-04-15, 03-04-17, 03-04-18,	W. Jupp 24 Feb 2004	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Incorporation of the JAA AFM approval page.• Revised airplane option codes.• Incorporation of temporary revisions RJ 900/3 and RJ 900/4. <RS-1>• Procedures, minimum brake cooling times and quick turn-around landing weight data for dispatch with the Brake Temperature Monitoring System (BTMS) inoperative; <RS-5>• Performance decrements and data for dispatch with various airplane systems inoperative, as Supplement 5;• Performance decrements	24 Feb 2004 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-2

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	<p>03-04-19, 03-05-1, 03-06-1, 03-09-2 <MST>, 03-09-5 <MST>, 03-15-5, 03-16-1, 03-18-1 <MST>, 03-18-2, 03-18-3 <MST>, 03-18-4 <MST>, 03-18-5, 03-18-6 <MST>, 03-18-7, 03-18-8.</p> <p>Chapter 4 – Normal Procedures:</p> <p>04-00-1 <MST>, 04-01-1, 04-01-2, 04-02-1, 04-02-2 <MST>, 04-02-3 <MST>, 04-02-4 <MST>, 04-02-5 <MST>, 04-02-6 <MST>, 04-02-7 <MST>, 04-02-8 <MST>, 04-02-9, 04-02-10 <MST>, 04-02-11 <MST>, 04-02-12 <MST>.</p> <p>Chapter 5 – Abnormal Procedures:</p> <p>05-00-3, 05-00-5, 05-00-7 <MST>, 05-06-2, 05-07-3, 05-07-4, 05-07-5, 05-07-6, 05-11-1, 05-11-6, 05-12-2, 05-12-3, 05-12-4, 05-12-7, 05-12-8, 05-13-1 <MST>, 05-13-2 <MST>, 05-13-6, 05-13-7, 05-13-8, 05-13-9 <MST>, 05-13-10, 05-13-11 <MST>, 05-13-12, 05-13-13, 05-13-14 <MST>, 05-13-15, 05-15-2, 05-15-3, 05-15-4, 05-15-5, 05-15-6, 05-15-5 <MST>, 05-15-6 <1025>, 05-16-7, 05-16-9.</p> <p>Chapter 6 – Performance:</p> <p>06-00-7 <MST>, 06-01-1 <MST>, 06-02-1 <2052>, 06-02-2 <2052>, 06-02-3 <2052>, 06-02-4 <2052>,</p>		<p>and data for dispatch with one channel of the anti-skid system inoperative, as Supplement 7; and</p> <ul style="list-style-type: none">• Performance decrements and data for flight with the landing gear fixed down, as Supplement 8.• Incorporation of temporary revision RJ 900/5. <RS-5>• Operational limitations for an intrusion resistant flight compartment door.• Incorporation of temporary revision RJ 900/9. <RS-9>• Data concerning FMS performance / accuracy criteria. <RS-11>• Crew action recommendations for windshear alerts during gusty conditions. <RS-12>• Revises HIGH PWR SCHEDULE switch information. <RS-14>• Within the hydraulic system abnormal procedures section, add a reference to the HYD 1 HI TEMP and HYD 2 HI TEMP emergency procedures, and• Add a hydraulic system	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-3

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	06-02-5 <2052>, 06-02-6 <2052>, 06-02-7 <2052>, 06-03-1 <MST>, 06-03-5/6 <2052>, 06-03-7/8 <2052>, 06-03-9/10 <2052>, 06-03-11 <2052>, 06-03-15/16 <2052>, 06-03-17 <2052>, 06-03-21/22 <2052>, 06-03-23 <2052>, 06-03-27/28 <2052>, 06-03-29/30 <2052>, 06-03-31/32 <2052>, 06-03-33 <2052>, 06-03-37/38 <2052>, 06-03-39 <2052>, 06-03-43/44 <2052>, 06-03-45/46 <2052>, 06-03-47/48 <2052>, 06-03-49 <2052>, 06-03-53/54 <2052>, 06-03-55 <2052>, 06-03-59/60 <2052>, 06-03-61 <2052>, 06-03-65/66 <2052>, 06-03-67/68 <2052>, 06-03-69/70 <2052>, 06-03-71 <2052>, 06-03-75/76 <2052>, 06-03-77 <2052>, 06-03-81 <2052>, 06-03-82 <2052>, 06-03-86 <2052>, 06-03-87 <2052>, 06-03-109, 06-03-110, 06-04-1 <MST>, 06-05-1 <MST>, 06-06-1 <MST>, 06-06-6 <2052>, 06-06-7/8 <2052>, 06-06-9 <2052>, 06-07-1 <MST>, 06-07-6, 06-07-7, 06-07-8. Chapter 7 – Supplements: 07-00-1 <MST>. Supplement 1 – Noise Characteristics:		<p>emergency procedures section, with HYD 1 HI TEMP and HYD 2 HI TEMP (amber) caution messages as the emergency procedures.</p> <ul style="list-style-type: none">• Incorporation of temporary revision TR RJ 900/15. <RS-15>• Revised towbarless towing limitation.• Incorporation of temporary revision RJ 900/16. <RS-16>• Addition of definitions of V_{2GA} and take-off distance from the RJ 700 AFM for harmonization purposes;• Simplified normal procedures checklist to harmonize with the RJ 100/200/700 AFM; and• Incorporation of temporary revision TR RJ 900/10. <RS-20>• Removal of the 'APU Door Open' Limitation from the Limitations chapter; and• Implementation of new APU Door Failure abnormal	

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



RECORD OF REVISIONS

00-02-4

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	07-01-4, 07-01-4 <2052>, 07-01-3 <2002>, 07-01-4 <2002>, 07-01-4 <2002, 2052>, 07-01-3 <2004>, 07-01-4 <2004>, 07-01-4 <2004, 2052>, 07-01-3 <2217>. Supplement 2 – Reduced Thrust Take-Off: 07-02-1 <2052>, 07-02-2 <2052>, 07-02-3 <2052>, 07-02-4 <2052>, 07-02-5 <2052>, 07-02-6 <2052>, 07-02-7 <2052>, 07-02-8 <2052>, 07-02-9 <2052>, 07-02-10 <2052>, 07-02-11 <2052>, 07-02-12 <2052>, 07-02-13 <2052>, 07-02-14 <2052>, 07-02-15 <2052>, 07-02-16 <2052>, 07-02-17 <2052>, 07-02-18 <2052>, 07-02-19 <2052>, 07-02-20 <2052>, 07-02-21 <2052>, 07-02-22 <2052>, 07-02-23 <2052>. Supplement 3 – Operation on Contaminated Runways: 07-03-4 <MST>. Supplement 5 – Performance Penalties for Operation With Airplane Systems Inoperative: 07-05-1, 07-05-2, 07-05-3, 07-05-4, 07-05-5, 07-05-6, 07-05-7, 07-05-8, 07-05-9, 07-05-10, 07-05-11, 07-05-12, 07-05-13, 07-05-14, 07-05-15, 07-05-16, 07-05-17, 07-05-18. Supplement 6 – Fuel Feed		<p>procedures.</p> <p><RS-22></p> <ul style="list-style-type: none">• Generic procedural coverage for PASS SIGNS switches / panel within the following procedures:<ul style="list-style-type: none">• Smoke Removal,• Air-Conditioning Smoke,• Cabin Smoke or Fire,• Electrical Smoke or Fire,• Galley Smoke,• Cargo Bay Smoke,• Toilet Smoke or Fire,• Emergency Descent,• Planned Ditching and Forced Landing,• Landing Gear Up / Unsafe Landing, and• Passenger Door Failure. <p><RS-24></p> <ul style="list-style-type: none">• Introduce bulk fuel take-off limits. <p><RS-28></p> <ul style="list-style-type: none">• Operational limitations for the aircraft communications addressing and reporting system (ACARS).<p><FAA Policy – Wording Change to ACARS AFMs></p> <p><RS-29></p> <ul style="list-style-type: none">• Incorporation of temporary revision TR RJ 900/11. <p><RS-29></p> <ul style="list-style-type: none">• Revised minimum ambient temperature approved for take-off.	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-5

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	<p>Check Valve Test:</p> <p>07-06-1 <JAA>, 07-06-2 <JAA>, 07-06-3 <JAA>, 07-06-4 <JAA>.</p> <p>Supplement 7 – Anti-skid System – One Channel Inoperative:</p> <p>07-07-1, 07-07-2, 07-07-3, 07-07-4, 07-07-5, 07-07-6, 07-07-7, 07-07-8, 07-07-9, 07-07-10, 07-07-11, 07-07-12.</p> <p>Supplement 8 – Flight With Landing Gear Down:</p> <p>07-08-1, 07-08-2, 07-08-3, 07-08-4, 07-08-5, 07-08-6.</p> <p>Supplement 9 – Ferry Kit:</p> <p>07-09-1, 07-09-2, 07-09-3, 07-09-4.</p> <p>Chapter 8 – APPENDICES:</p> <p>Appendix 1 – Configuration Deviation List:</p> <p>08-10-00-1, 08-10-00-2, 08-10-21-1, 08-10-21-2, 08-10-32-1.</p>		<ul style="list-style-type: none">• Reworks the maximum ambient air temperature approved for take-off and landing.• Incorporation of temporary revision TR RJ 900/20. <RS-32>• Chinese No. 3 Jet fuel. <RS-33>• Revised APU Altitude and Airspeed Chart.• Incorporation of temporary revision TR RJ 900/19. <RS-38>• Provide coverage should a ferry kit be installed. <RS-41>• Incorporation of data for operation in Reduced Vertical Separation Minimum (RVSM) airspace.• Incorporation of temporary revision TR RJ 900/21. <RS-48>• Incorporate the following:<ul style="list-style-type: none">• TR RJ 900/6,• TR RJ 900/10-1,• TR RJ 900/13-1,• TR RJ 900/14, and• TR RJ 900/18. <RS-60>	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-6

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
REV 2A	Chapter 2 – Limitations: 02-05-4, 02-05-4A. Chapter 3 – Emergency Procedures: 03-03-03, 03-03-5, 03-03-03A, 03-03-5A. Chapter 5 – Abnormal Procedures: 05-03-05, 05-03-6, 05-03-05A, 05-03-6A. Chapter 6 – Performance: 06-02-2, 06-02-3, 06-02-4, 06-02-5, 06-02-6, 06-02-7, 06-02-2 <2052>, 06-02-3 <2052>, 06-02-4 <2052>, 06-02-5 <2052>, 06-02-6 <2052>, 06-02-7 <2052>, 06-02-8, 06-02-9, 06-02-10, 06-02-11, 06-02-12, 06-02-13, 06-02-14, 06-03-13/14, 06-03-15/16, 06-03-15/16 <2052>, 06-03-17, 06-03-17 <2052>, 06-03-19, 06-03-21/22, 06-03-21/22 <2052>, 06-03-23, 06-03-23 <2052>, 06-03-34, 06-03-35/36, 06-03-37/38, 06-03-37/38 <2052>, 06-03-39, 06-03-39 <2052>, 06-03-51/52, 06-03-53/54, 06-03-53/54 <2052>, 06-03-55, 06-03-55 <2052>, 06-03-57, 06-03-59/60, 06-03-59/60 <2052>, 06-03-61, 06-03-61 <2052>, 06-03-72, 06-03-73/74, 06-03-75/76, 06-03-75/76 <2052>, 06-03-77, 06-03-77 <2052>, 06-03-81, 06-03-82, 06-03-81 <2052>,	W. Jupp 14 Jul 2004	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Revised windmilling engine relight envelope;• Revised altitude and airspeed limits within the engine relight emergency and abnormal procedures;• Revised performance data due to the incorporation of FADEC version 6.01, for implementation as the production standard;• Renumbering of the currently published performance chapter, from Chapter 06 to Chapter 06A, to cater for airplanes not yet updated to FADEC 6.01;• Revised 'Reduced Thrust Take-Off' data (Supplement 2) due to the incorporation of FADEC version 6.01, for implementation as the production standard;• Renumbering of the currently published Supplement 2 pages, from 07-02 to 07-02A, to cater for airplanes not yet updated to FADEC 6.01;• Revised 'Operation on Contaminated Runways' data (Supplement 3) due to the incorporation of FADEC version 6.01, for implementation as the production standard;	14 Jul 2004 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-7

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	<p>06-03-82 <2052>, 06-03-85, 06-03-86, 06-03-86 <2052>, 06-03-87, 06-03-87 <2052>, 06-03-89, 06-03-91, 06-03-93, 06-03-94, 06-03-95, 06-03-98, 06-03-99, 06-03-100, 06-03-101/102, 06-03-103, 06-03-104, 06-03-105, 06-03-107/108, 06-04-5/6, 06-04-7/8, 06-04-9/10, 06-04-11, 06-04-13/14, 06-04-15, 06-04-17/18, 06-04-19, 06-04-21/22, 06-04-23/24, 06-04-25/26, 06-04-27, 06-04-31/32, 06-04-33/34, 06-04-35/36, 06-04-37, 06-04-39/40, 06-04-41, 06-04-44, 06-04-45, 06-04-46, 06-04-47, 06-04-48, 06-04-49, 06-05-3/4, 06-05-5/6, 06-06-2, 06-06-3/4, 06-06-5, 06-06-6, 06-06-6 <2052>, 06-06-7/8, 06-06-7/8 <2052>, 06-06-9, 06-06-9 <2052>, 06-07-3.</p> <p>Chapter 6A – Pre-FADEC 6 Performance:</p> <p>06A-00-1 <MST>, 06A-00-2 <MST>, 06A-00-3 <MST>, 06A-00-4 <MST>, 06A-00-5 <MST>, 06A-00-6 <MST>, 06A-00-7 <MST>, 06A-00-8 <MST>, 06A-01-1 <MST>, 06A-01-2, 06A-01-3, 06A-01-4, 06A-01-5, 06A-01-6, 06A-01-7, 06A-01-8, 06A-01-9, 06A-01-10, 06A-01-11, 06A-01-12, 06A-01-13, 06A-01-14, 06A-01-15, 06A-01-16, 06A-01-17, 06A-01-18, 06A-01-19, 06A-01-20, 06A-01-21, 06A-01-22, 06A-01-23,</p>		<ul style="list-style-type: none">Renumbering of the currently published Supplement 3 pages, from 07-03 to 07-03A, to cater for airplanes not yet updated to FADEC 6.01. <RS-51>	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-8

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	06A-01-24, 06A-01-25, 06A-01-26, 06A-02-1, 06A-02-2, 06A-02-1 <2052>, 06A-02-2 <2052>, 06A-02-3, 06A-02-4, 06A-02-3 <2052>, 06A-02-4 <2052>, 06A-02-5, 06A-02-6, 06A-02-5 <2052>, 06A-02-6 <2052>, 06A-02-7, 06A-02-7 <2052>, 06A-02-8, 06A-02-9, 06A-02-10, 06A-02-11, 06A-02-12, 06A-02-13, 06A-02-14, 06A-03-1 <MST>, 06A-03-2, 06A-03-3, 06A-03-4, 06A-03-5/6, 06A-03-5/6 <2052>, 06A-03-7/8, 06A-03-7/8 <2052>, 06A-03-9/10, 06A-03-9/10 <2052>, 06A-03-11, 06A-03-11 <2052>, 06A-03-12, 06A-03-13/14, 06A-03-15/16, 06A-03-15/16 <2052>, 06A-03-17, 06A-03-17 <2052>, 06A-03-18, 06A-03-19, 06A-03-20, 06A-03-21/22, 06A-03-21/22 <2052>, 06A-03-23, 06A-03-23 <2052>, 06A-03-24, 06A-03-25, 06A-03-26, 06A-03-27/28, 06A-03-27/28 <2052>, 06A-03-29/30, 06A-03-29/30 <2052>, 06A-03-31/32, 06A-03-31/32 <2052>, 06A-03-33, 06A-03-33 <2052>, 06A-03-34, 06A-03-35/36, 06A-03-37/38, 06A-03-37/38 <2052>, 06A-03-39, 06A-03-39 <2052>, 06A-03-40, 06A-03-41, 06A-03-42, 06A-03-43/44, 06A-03-43/44 <2052>, 06A-03-45/46, 06A-03-45/46 <2052>, 06A-03-47/48, 06A-03-47/48 <2052>, 06A-03-49, 06A-03-49 <2052>, 06A-03-50, 06A-03-51/52,			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-9

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	06A-03-53/54, 06A-03-53/54 <2052>, 06A-03-55, 06A-03-55 <2052>, 06A-03-56, 06A-03-57, 06A-03-58, 06A-03-59/60, 06A-03-59/60 <2052>, 06A-03-61, 06A-03-61 <2052>, 06A-03-62, 06A-03-63, 06A-03-64, 06A-03-65/66, 06A-03-65/66 <2052>, 06A-03-67/68, 06A-03-67/68 <2052>, 06A-03-69/70, 06A-03-69/70 <2052>, 06A-03-71, 06A-03-71 <2052>, 06A-03-72, 06A-03-73/74, 06A-03-75/76, 06A-03-75/76 <2052>, 06A-03-77, 06A-03-77 <2052>, 06A-03-78, 06A-03-79, 06A-03-80, 06A-03-81, 06A-03-81 <2052>, 06A-03-82, 06A-03-82 <2052>, 06A-03-83, 06A-03-84, 06A-03-85, 06A-03-86, 06A-03-86 <2052>, 06A-03-87, 06A-03-87 <2052>, 06A-03-88, 06A-03-89, 06A-03-90, 06A-03-91, 06A-03-92, 06A-03-93, 06A-03-94, 06A-03-95, 06A-03-96, 06A-03-97, 06A-03-98, 06A-03-99, 06A-03-100, 06A-03-101/102, 06A-03-103, 06A-03-104, 06A-03-105, 06A-03-106, 06A-03-107/108, 06A-03-109, 06A-03-110, 06A-04-1 <MST>, 06A-04-2, 06A-04-3, 06A-04-4, 06A-04-5/6, 06A-04-7/8, 06A-04-9/10, 06A-04-11, 06A-04-12, 06A-04-13/14, 06A-04-15, 06A-04-16, 06A-04-17/18, 06A-04-19, 06A-04-20, 06A-04-21/22, 06A-04-23/24, 06A-04-25/26, 06A-04-27, 06A-04-28, 06A-04-29, 06A-04-30, 06A-04-31/32, 06A-04-33/34, 06A-04-35/36,			

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



RECORD OF REVISIONS

00-02-10

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	06A-04-37, 06A-04-38, 06A-04-39/40, 06A-04-41, 06A-04-42, 06A-04-43, 06A-04-44, 06A-04-45, 06A-04-46, 06A-04-47, 06A-04-48, 06A-04-49, 06A-04-50, 06A-05-1 <MST>, 06A-05-2, 06A-05-3/4, 06A-05-5/6, 06A-06-1 <MST>, 06A-06-2, 06A-06-3/4, 06A-06-5, 06A-06-6, 06A-06-6 <2052>, 06A-06-7/8, 06A-06-7/8 <2052>, 06A-06-9, 06A-06-9 <2052>, 06A-06-10, 06A-07-1 <MST>, 06A-07-2, 06A-07-3, 06A-07-4, 06A-07-5, 06A-07-6, 06A-07-7, 06A-07-8. Supplement 2 – Reduced Thrust Take-Off: 07-02-6, 07-02-7, 07-02-8, 07-02-9, 07-02-10, 07-02-11, 07-02-12, 07-02-13, 07-02-14, 07-02-15, 07-02-16, 07-02-17, 07-02-18, 07-02-19, 07-02-20, 07-02-21, 07-02-22, 07-02-23, 07-02-6 <2052>, 07-02-7 <2052>, 07-02-8 <2052>, 07-02-9 <2052>, 07-02-10 <2052>, 07-02-11<2052>, 07-02-12 <2052>, 07-02-13 <2052>, 07-02-14 <2052>, 07-02-15 <2052>, 07-02-16 <2052>, 07-02-17 <2052>, 07-02-18 <2052>, 07-02-19 <2052>, 07-02-20 <2052>, 07-02-21 <2052>, 07-02-22 <2052>, 07-02-23 <2052>. Supplement 2A – Reduced Thrust Take-Off (Pre-FADEC 6): 07-02A-1, 07-02A-2,			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-11

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	07-02A-3, 07-02A-4, 07-02A-5, 07-02A-6, 07-02A-7, 07-02A-8, 07-02A-9, 07-02A-10, 07-02A-11, 07-02A-12, 07-02A-13, 07-02A-14, 07-02A-15, 07-02A-16, 07-02A-17, 07-02A-18, 07-02A-19, 07-02A-20, 07-02A-21, 07-02A-22, 07-02A-23, 07-02A-24, 07-02A-1 <2052>, 07-02A-2 <2052>, 07-02A-3 <2052>, 07-02A-4 <2052>, 07-02A-5 <2052>, 07-02A-6 <2052>, 07-02A-7 <2052>, 07-02A-8 <2052>, 07-02A-9 <2052>, 07-02A-10 <2052>, 07-02A-11<2052>, 07-02A-12 <2052>, 07-02A-13 <2052>, 07-02A-14 <2052>, 07-02A-15 <2052>, 07-02A-16 <2052>, 07-02A-17 <2052>, 07-02A-18 <2052>, 07-02A-19 <2052>, 07-02A-20 <2052>, 07-02A-21 <2052>, 07-02A-22 <2052>, 07-02A-23 <2052>, 07-02A-24. Supplement 3 – Operation on Contaminated Runways: 07-03-2, 07-03-3, 07-03-8, 07-03-8 <2052>, 07-03-9, 07-03-9 <2052>, 07-03-10, 07-03-11/12, 07-03-11/12 <2052>, 07-03-13/14, 07-03-13/14 <2052>, 07-03-15, 07-03-17/18, 07-03-17/18 <2052>, 07-03-19/20, 07-03-19/20 <2052>, 07-03-21, 07-03-23/24, 07-03-23/24 <2052>, 07-03-25/26, 07-03-25/26 <2052>, 07-03-27, 07-03-29/30, 07-03-29/30 <2052>, 07-03-31/32, 07-03-31/32			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-12

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	<2052>, 07-03-33, 07-03-35/36, 07-03-35/36 <2052>, 07-03-37/38, 07-03-37/38 <2052>, 07-03-39, 07-03-41/42, 07-03-41/42 <2052>, 07-03-43/44, 07-03-43/44 <2052>, 07-03-45/46, 07-03-45/46 <2052>, 07-03-47/48, 07-03-47/48 <2052>, 07-03-49, 07-03-51/52, 07-03-51/52 <2052>, 07-03-53/54, 07-03-53/54 <2052>, 07-03-55/56, 07-03-55/56 <2052>, 07-03-57/58, 07-03-57/58 <2052>, 07-03-59, 07-03-61/62, 07-03-61/62 <2052>, 07-03-63/64, 07-03-63/64 <2052>, 07-03-65/66, 07-03-65/66 <2052>, 07-03-67/68, 07-03-67/68 <2052>, 07-03-70, 07-03-70 <2052>, 07-03-71, 07-03-71 <2052>, 07-03-72, 07-03-72 <2052>, 07-03-73, 07-03-75/76, 07-03-75/76 <2052>, 07-03-77/78, 07-03-77/78 <2052>, 07-03-79, 07-03-81/82, 07-03-81/82 <2052>, 07-03-83/84, 07-03-83/84 <2052>, 07-03-85, 07-03-87/88, 07-03-87/88 <2052>, 07-03-89/90, 07-03-89/90 <2052>, 07-03-91, 07-03-93/94, 07-03-93/94 <2052>, 07-03-95/96, 07-03-95/96 <2052>, 07-03-97, 07-03-99/100, 07-03-99/100 <2052>, 07-03-101/102, 07-03-101/102 <2052>, 07-03-103, 07-03-105/106, 07-03-105/106 <2052>, 07-03-107/108, 07-03-107/108 <2052>, 07-03-109/110, 07-03-109/110 <2052>, 07-03-111/112, 07-03-111/112			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-13

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	<2052>, 07-03-113, 07-03-115/116, 07-03-115/116 <2052>, 07-03-117/118, 07-03-117/118 <2052>, 07-03-119/120, 07-03-119/120 <2052>, 07-03-121/122, 07-03-121/122 <2052>, 07-03-123, 07-03-125/126, 07-03-125/126 <2052>, 07-03-127/128, 07-03-127/128 <2052>, 07-03-129/130, 07-03-129/130 <2052>, 07-03-131/132, 07-03-131/132 <2052>, 07-03-133. Supplement 3A – Operation on Contaminated Runways (Pre-FADEC 6): 07-03A-1, 07-03A-2, 07-03A-3, 07-03A-4 <MST>, 07-03A-5, 07-03A-6, 07-03A-7, 07-03A-8, 07-03A-9, 07-03A-10, 07-03A-11/12, 07-03A-13/14, 07-03A-15, 07-03A-16, 07-03A-17/18, 07-03A-19/20, 07-03A-21, 07-03A-22, 07-03A-23/24, 07-03A-25/26, 07-03A-27, 07-03A-28, 07-03A-29/30, 07-03A-31/32, 07-03A-33, 07-03A-34, 07-03A-35/36, 07-03A-37/38, 07-03A-39, 07-03A-40, 07-03A-41/42, 07-03A-43/44, 07-03A-45/46, 07-03A-47/48, 07-03A-49, 07-03A-50, 07-03A-51/52, 07-03A-53/54, 07-03A-55/56, 07-03A-57/58, 07-03A-59, 07-03A-60, 07-03A-61/62, 07-03A-63/64, 07-03A-65/66, 07-03A-67/68, 07-03A-69, 07-03A-70, 07-03A-71, 07-03A-72, 07-03A-73, 07-03A-74, 07-03A-75/76, 07-03A-77/78,			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-14

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	07-03A-79, 07-03A-80, 07-03A-81/82, 07-03A-83/84, 07-03A-85, 07-03A-86, 07-03A-87/88, 07-03A-89/90, 07-03A-91, 07-03A-92, 07-03A-93/94, 07-03A-95/96, 07-03A-97, 07-03A-98, 07-03A-99/100, 07-03A-101/102, 07-03A-103, 07-03A-104, 07-03A-105/106, 07-03A-107/108, 07-03A-109/110, 07-03A-111/112, 07-03A-113, 07-03A-114, 07-03A-115/116, 07-03A-117/118, 07-03A-119/120, 07-03A-121/122, 07-03A-123, 07-03A-124, 07-03A-125/126, 07-03A-127/128, 07-03A-129/130, 07-03A-131/132, 07-03A-133, 07-03A-134, 07-03A-135, 07-03A-136, 07-03A-137, 07-03A-138.			
REV 3	Chapter 1 – Introduction: 01-00-2 <MST>, 01-01-1 <2705>, 01-01-2 <2705>, 01-01-1 <2705 (FAA)>, 01-01-2 <2705 (FAA)>, 01-01-1 <2705 (JAA)>, 01-01-2 <2705 (JAA)>, 01-02-1 <MST>, 01-02-2 <MST>, 01-02-6, 01-02-7, 01-02-21 <MST>, 01-02-22. Chapter 2 – Limitations: 02-00-3 <MST>, 02-00-4 <MST>, 02-01-1 <MST>, 02-02-1 <MST>, 02-03-1 <2005>, 02-03-1 <2006>, 02-04-3, 02-05-2 <MST>, 02-06-1 <MST>, 02-06-2, 02-06-2 <2900>, 02-08-2, 02-08-6 <MST>, 02-09-2 <MST>, 02-09-3 <MST>.	W. Jupp 03 May 2005	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Supplementary data for Category II Operations.• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/50. <RS-4>• Miscellaneous changes to the smoke or fire procedures.• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/40. <RS-3>• Removes GPS alternate	03 May 2005 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-15

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	<p>Chapter 3 – Emergency Procedures:</p> <p>03-01-1 <MST>, 03-04-3, 03-04-8, 03-04-12, 03-04-14, 03-04-16, 03-04-19, 03-09-1, 03-09-2, 03-09-4, 03-18-8.</p> <p>Chapter 4 – Normal Procedures:</p> <p>04-01-1 <MST>, 04-02-5 <MST>.</p> <p>Chapter 5 – Abnormal Procedures:</p> <p>05-00-4, 05-01-1 <MST>, 05-05-1, 05-05-2, 05-05-3, 05-08-1, 05-08-2, 05-08-3, 05-11-2, 05-11-3, 05-11-4, 05-11-5, 05-11-6, 05-11-7, 05-11-8, 05-11-8 <2900>, 05-11-9, 05-11-10, 05-11-11, 05-11-12, 05-11-13, 05-11-14, 05-11-15, 05-11-16, 05-11-17 <MST>, 05-11-18 <MST>, 05-11-19, 05-11-20, 05-11-21, 05-11-22, 05-12-5, 05-12-8, 05-13-3, 05-13-5, 05-13-10, 05-13-13, 05-16-3.</p> <p>Chapter 6 – Performance:</p> <p>06-00-1, 06-00-2, 06-00-3, 06-00-4, 06-00-5, 06-00-6, 06-00-7, 06-00-8, 06-01-1 <MST>, 06-01-18, 06-01-18 <2900>, 06-01-24, 06-03-1 <MST>, 06-03-2, 06-03-24, 06-03-25, 06-03-27/28, 06-03-27/28 <2052>, 06-03-29/30, 06-03-29/30 <2052>, 06-03-31/32,</p>		<p>limitations from the AFM. <RS-13></p> <ul style="list-style-type: none">• Introduction of data for PRNAV operations in European airspace.• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/17. <RS-17>• Revised Minimum Brake Cooling Time for Take-off with the BTMS inoperative.• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/23. <RS-18>• Incorporate miscellaneous changes, and the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/7,• TR RJ 900/22,• TR RJ 900/26-1,• TR RJ 900/37, and• TR RJ 900/41-1.• Master AFM version of the Noise Supplement.• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/24. <RS-31>• Incorporation of new take-off performance data for wet grooved or porous friction course runways.	

DOT Approved

Airplane Flight Manual
CSP C-012-219



RECORD OF REVISIONS

00-02-16

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	06-03-31/32 <2052>, 06-03-33, 06-03-33 <2052>, 06-03-34, 06-03-35/36, 06-03-37/38, 06-03-37/38 <2052>, 06-03-39, 06-03-39 <2052>, 06-03-40, 06-03-41, 06-03-42, 06-03-43/44, 06-03-43/44 <2052>, 06-03-45/46, 06-03-45/46 <2052>, 06-03-47/48, 06-03-47/48 <2052>, 06-03-49, 06-03-49 <2052>, 06-03-50, 06-03-51/52, 06-03-53/54, 06-03-53/54 <2052>, 06-03-55, 06-03-55 <2052>, 06-03-56, 06-03-57, 06-03-58, 06-03-59/60, 06-03-59/60 <2052>, 06-03-61/62, 06-03-61/62 <2052>, 06-03-63/64, 06-03-63/64 <2052>, 06-03-65, 06-03-65 <2052>, 06-03-66, 06-03-67/68, 06-03-69/70, 06-03-69/70 <2052>, 06-03-71, 06-03-71 <2052>, 06-03-72, 06-03-73, 06-03-74, 06-03-75/76, 06-03-75/76 <2052>, 06-03-77, 06-03-77 <2052>, 06-03-78, 06-03-79, 06-03-80, 06-03-81/82, 06-03-81/82 <2052>, 06-03-83/84, 06-03-83/84 <2052>, 06-03-85/86, 06-03-85/86 <2052>, 06-03-87, 06-03-87 <2052>, 06-03-88, 06-03-89/90, 06-03-91/92, 06-03-91/92 <2052>, 06-03-93, 06-03-93 <2052>, 06-03-94, 06-03-95, 06-03-96, 06-03-97/98, 06-03-97/98 <2052>, 06-03-99/100, 06-03-99/100 <2052>, 06-03-101/102, 06-03-101/102 <2052>, 06-03-103, 06-03-103 <2052>, 06-03-104,		<ul style="list-style-type: none">• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/34. <RS-36>• Simplified FLAPS FAIL, SLATS FAIL, FLAPS FAIL and SLATS FAIL abnormal procedures.• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/41. <RS-39>• Configuration Deviation List Update:<ul style="list-style-type: none">• Provide illustrations to properly locate and identify the missing or damaged part(s) for which CDL relief has been given;• Provide coverage for missing P-seals under the multi-function flight spoilers (MFS) shroud (27-64);• Revised data for missing weather seals around the forward cargo door (52-45); and• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/22,• TR RJ 900/30,• TR RJ 900/37, and• TR RJ 900/42. <RS-49>• Circuit breaker reset limitation.	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-17

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	06-03-105/106, 06-03-107/108, 06-03-107/108 <2052>, 06-03-109, 06-03-109 <2052>, 06-03-110, 06-03-111, 06-03-112, 06-03-113, 06-03-113 <2052>, 06-03-114, 06-03-114 <2052>, 06-03-115, 06-03-116, 06-03-117, 06-03-118, 06-03-118 <2052>, 06-03-119, 06-03-119 <2052>, 06-03-120, 06-03-121, 06-03-122, 06-03-123, 06-03-120 <2900>, 06-03-121 <2900>, 06-03-122 <2900>, 06-03-123 <2900>, 06-03-124, 06-03-125, 06-03-126, 06-03-127, 06-03-128, 06-03-129, 06-03-130, 06-03-131, 06-03-132, 06-03-133/134, 06-03-135, 06-03-136, 06-03-137, 06-03-138, 06-03-139/140, 06-03-141, 06-03-142, 06-04-5/6, 06-04-7/8, 06-04-9/10, 06-04-11, 06-04-5/6 <2900>, 06-04-7/8 <2900>, 06-04-9/10 <2900>, 06-04-11 <2900>, 06-04-13/14, 06-04-15, 06-04-13/14 <2900>, 06-04-15 <2900>, 06-04-17/18, 06-04-19, 06-04-17/18 <2900>, 06-04-19 <2900>, 06-04-21/22, 06-04-23/24, 06-04-25/26, 06-04-27, 06-04-21/22 <2900>, 06-04-23/24 <2900>, 06-04-25/26 <2900>, 06-04-27 <2900>, 06-04-31/32, 06-04-33/34, 06-04-35/36, 06-04-37, 06-04-31/32 <2900>, 06-04-33/34 <2900>, 06-04-35/36 <2900>, 06-04-37 <2900>, 06-04-39/40, 06-04-41, 06-04-39/40 <2900>, 06-04-41 <2900>, 06-04-42, 06-04-43, 06-04-44, 06-04-45, 06-04-46,		<ul style="list-style-type: none">• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/26. <RS-52>• Incorporation of an alternate method of calculating performance adjustments for dispatch with the Slats or Flaps operating at half speed (Supplement 5) and for flight with the landing gear down (Supplement 8).• Revised performance corrections for miscellaneous systems component failures.• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/25. <RS-53>• Data covering rapid and large alternating control inputs.• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/35. <RS-56>• Revised RUD LIMITER procedure.• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/45. <RS-58> <p>To advise the flight crew of the following:</p> <ul style="list-style-type: none">• All CRJ 900 doors and	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-18

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	<p>06-04-47, 06-04-48, 06-04-49, 06-04-42 <2900>, 06-04-43 <2900>, 06-04-44 <2900>, 06-04-45 <2900>, 06-04-46 <2900>, 06-04-47 <2900>, 06-04-48 <2900>, 06-04-49 <2900>, 06-05-1 <MST>, 06-05-2, 06-05-3/4, 06-05-5/6, 06-05-1 <MST, 2900>, 06-05-2 <2900>, 06-05-3/4 <2900>, 06-05-5/6 <2900>, 06-06-2, 06-06-3/4, 06-06-5, 06-06-6, 06-06-6 <2052>, 06-06-7/8, 06-06-7/8 <2052>, 06-06-9, 06-06-9 <2052>, 06-06-2 <2900>, 06-06-3/4 <2900>, 06-06-5 <2900>, 06-06-6 <2900>, 06-06-6 <2052, 2900>, 06-06-7/8 <2900>, 06-06-7/8 <2052, 2900>, 06-06-9 <2900>, 06-06-9 <2052, 2900>, 06-07-2, 06-07-3, 06-07-4, 06-07-5, 06-07-6, 06-07-7, 06-07-2 <2900>, 06-07-3 <2900>, 06-07-4 <2900>, 06-07-5 <2900>, 06-07-6 <2900>, 06-07-7 <2900>.</p> <p>Chapter 7 – List of Supplements:</p> <p>Supplement 1 – Noise Characteristics:</p> <p>07-01-3 <MST>, 07-01-4 <MST>, 07-01-5 <MST>, 07-01-6 <MST>, 07-01-7 <MST>, 07-01-8 <MST>, 07-01-9 <MST>.</p> <p>Supplement 2 – Reduced Thrust Take-Off:</p> <p>07-02-3 <MST>, 07-02-3 <2052 (MST)>.</p>		<p>overwing exits are usable for ditching.</p> <ul style="list-style-type: none">• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/29. <RS-61>• Wing anti-ice system limitation concerning Type III anti-icing fluid.• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/43. <RS-62>To advise the flight crew of the following:<ul style="list-style-type: none">• Requirement for PRESS CONTROL switch to be in AUTO mode prior to setting LDG ELEV in door system abnormal procedures. <RS-63>• Revised L or R XFER SOV and the Abnormal Increase of Centre Tank Quantity or Suspected Leak into Centre Tank procedures. <RS-65>• Revised DME requirements – PRNAV operations.• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/17-1. <RS-66>• Changes to the reduced thrust take-off data which recommends an alternate	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-19

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Supplement 3 – Operation on Contaminated Runways: 07-03-4 <MST>. Supplement 4 – Category II Operations: 07-00-1 <MST>, 07-04-1 <MST>, 07-04-2, 07-04-3 <MST>, 07-04-4 <MST>, 07-04-5 <MST>, 07-04-6 <MST>, 07-04-7 <MST>, 07-04-8 <MST>, 07-04-9 <MST>, 07-04-10 <MST>, 07-04-11, 07-04-12, 07-04-13, 07-04-14. Supplement 5 – Performance Penalties for Operation With Airplane Systems Inoperative: 07-05-1, 07-05-3, 07-05-5, 07-05-6, 07-05-7, 07-05-8, 07-05-9, 07-05-10, 07-05-11, 07-05-12, 07-05-13, 07-05-14, 07-05-15, 07-05-16, 07-05-17, 07-05-18. Supplement 8 – Flight With Landing Gear Down: 07-08-1, 07-08-3, 07-08-4, 07-08-5, 07-08-6. Supplement 9 – Ferry Kit: 07-09-3 <MST>. Chapter 8 – Configuration Deviation List: Chapter 8 – Appendix – 1:		means of verifying the availability of full rated take-off thrust by using an engine trend monitoring program in lieu of full power demonstrations. • Incorporate the following Temporary Revisions: <ul style="list-style-type: none">• TR RJ 900/33. <RS-67>• Revised note, Service Bulletin and effectivity references within the L or R PACK TEMP / PACK abnormal procedures.• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/36. <RS-69>• Clarification and harmonization of take-off distance and take-off run definitions. <RS-70>• Increased demonstrated cross-wind components for take-off and landing.• Incorporate the following Temporary Revisions:<ul style="list-style-type: none">• TR RJ 900/44. <RS-72>• New take-off limitation to emphasize the requirement for an aerodynamically clean airplane during cold	

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



RECORD OF REVISIONS

00-02-20

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	08-10-00-1, 08-10-00-2, 08-10-01-1 <MST>, 08-10-23-1, 08-10-23-2, 08-10-23-3, 08-10-27-1, 08-10-27-2, 08-10-27-3, 08-10-27-4, 08-10-27-5, 08-10-27-6, 08-10-27-7, 08-10-27-8, 08-10-27-9, 08-10-27-10, 08-10-27-11, 08-10-27-12, 08-10-27-13, 08-10-27-14, 08-10-27-15, 08-10-27-16, 08-10-27-17, 08-10-27-18, 08-10-27-19, 08-10-27-20, 08-10-27-21, 08-10-27-22, 08-10-28-1, 08-10-28-2, 08-10-32-1, 08-10-32-2, 08-10-32-3, 08-10-32-4, 08-10-33-1, 08-10-33-2, 08-10-33-3, 08-10-33-4, 08-10-33-5, 08-10-33-6, 08-10-33-7, 08-10-33-8, 08-10-33-9, 08-10-33-10, 08-10-52-1, 08-10-52-2, 08-10-52-3, 08-10-52-4, 08-10-53-2, 08-10-57-1, 08-10-57-2, 08-10-57-3, 08-10-57-4.		<p>weather operations. <RS-77></p> <ul style="list-style-type: none">• Increased maximum take-off weights of 38,329 kg (84,500 lb) and 37,995 kg (83,764 lb);• Revised landing weight data for FLAPS / SLATS and hydraulic systems failures;• Revised landing distance correction factors for ground spoilers failures;• Incorporation of enhanced (long range) performance data;• Deletion of the following sections due to completion of the software upgrade to FADEC v. 6.01:<ul style="list-style-type: none">• Chapter 06A – Pre-FADEC 6 Performance;• Supplement 2A – Reduced Thrust Take-off (PRE-FADEC 6);• Supplement 3A – Operation on Contaminated Runways (PRE-FADEC 6).• Configuration Deviation List (CDL) coverage for additional static dischargers on the new winglets.• Supersedes TR RJ 900/1-1. <RS-79>• Airplane Model;	

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



RECORD OF REVISIONS

00-02-21

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
			<p>CL-600-2D15, Series 705. <RS-80></p> <ul style="list-style-type: none">• Certificated noise level data for RJ 900 Enhanced Performance, and• Certificated noise level data for the following:<ul style="list-style-type: none">• 38,329 kg (84,500 lb) MTOW and• 37,995 kg (83,765 lb) MTOW. <p><RS-81></p>	
REV 4	All	W. Istchenko 16 Feb 2010	<p>Introduces the following changes to the Airplane Flight Manual:</p> <ul style="list-style-type: none">• Conversion of the CL600-2D15 / 2D24 AFM to Standard Generalized Markup Language (SGML), including various formatting / standardization of terminology / nomenclature and editorial changes. <RS-37>• Incorporation of Miscellaneous AFM TR's. <RS-85> <RS-109>• Rework of Airplane Flight Manual Introduction – Abbreviations and option code data. <RS-102>• Consolidated Normal Procedures/Checklist Update of the following:<ul style="list-style-type: none">• After Start Check (APU as required),	16 Feb 2010 BCSG

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



RECORD OF REVISIONS

00-02-22

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
			<ul style="list-style-type: none">• Cleared to Start Check (Personal Electronic Devices added),• Shutdown Check (SEAT BELTS step re-positioned). <RS-103>• Apply fix to underline of symbols problem. <RS-119>• Change to the landing Distance Factors definition to include one or both thrust reversers inoperative. <RS-125>• Revisions to the CABIN ALT or Emergency Descent Procedure, DIFF PRESS and Passenger Door emergency Procedures. <RS-126>• Wheel brake cooling limitation revised to remove ambiguity concerning RTOs. <RS-129>	
REV 4A	Not Applicable			
REV 5	Chapter 3: EMERGENCY PROCEDURES – Power Plant 1. POWER PLANT C. Double Engine Failure E. L ENG OIL PRESS or R ENG OIL PRESS or LOW OIL Pressure Indication EMERGENCY PROCEDURES – Flight	W. Istchenko 21 Jun 2010	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Incorporation of Miscellaneous AFM TRs. <RS-136>• Incorporate standard stall recovery procedures. <RS-138>	21 Jun 2010 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-23

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Controls 1. FLIGHT CONTROL E. Stall Recovery EMERGENCY PROCEDURES – Hydraulic Power 1. HYDRAULIC POWER B. HYD 2 HI TEMP Chapter 4: NORMAL PROCEDURES – Introduction 6. TERRAIN AWARENESS <2040> Chapter 5: ABNORMAL PROCEDURES – Power Plant 1. POWER PLANT U. HIGH OIL TEMPERATURE ABNORMAL PROCEDURES – Hydraulic Power 1. HYDRAULIC POWER B. HYD 1 LO PRESS C. HYD 2 LO PRESS G. HYD 3 HI TEMP N. HYD 1 LO PRESS and HYD 2 LO PRESS ABNORMAL PROCEDURES – Aural/Visual Warning System 1. AURAL/VISUAL WARNING SYSTEM A. EICAS Primary Display Failure			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-24

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Chapter 7: SUPPLEMENTS 3– Operation on Contaminated Runways 1. INTRODUCTION B. Runway Conditions			
REV 5A	Chapter 2: LIMITATIONS – Operating Limitations 1. ALTITUDE AND TEMPERATURE OPERATING LIMITS Chapter 5: ABNORMAL PROCEDURES – Table of Contents ABNORMAL PROCEDURES – Single Engine Procedures 1. SINGLE ENGINE PROCEDURES A. In-flight Engine Shutdown ABNORMAL PROCEDURES – Auxiliary Power Unit ABNORMAL PROCEDURES – Doors ABNORMAL PROCEDURES – Electrical ABNORMAL PROCEDURES – Ice and Rain Protection ABNORMAL PROCEDURES – Instruments System ABNORMAL PROCEDURES – Aural/Visual Warning System	W. Istchenko 31 Jan 2011	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• To remove the reference part number in the Main landing gear door – inboard door. <RS-185>• SGML – Related Editorial/Typographical corrections. <RS-188>	31 Jan 2011 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-25

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Chapter 8: APPENDIX– Configuration Deviation List SYSTEM 32 LANDING GEAR 32–12 Main landing gear door – inboard door SYSTEM 52 DOORS 52–45 Doors			
REV 5B	Chapter 2: LIMITATIONS – Navigation System Limitations 1. FLIGHT MANAGEMENT SYSTEM (FMS) <1024> or <1050> or <1214> or <1215> A. Operating Data <1024> or <1050> or <1214> or <1215> B. FMS – 4200 Operating Limitations <1024> or <1050> or <1214> or <1215> C. FMS – 4200 Operational Approvals <1024> or <1050> or <1214> or <1215> 2. GLOBAL POSITIONING SYSTEM (GPS) <1027> or <1047> A. General <1024> or <1050> or <1214> or <1215>	W. Istchenko 11 May 2010	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">Introduction of FMC-028. <RS-139>	11 May 2010 BCSG
REV 5C	Not Applicable			
REV 6	FRONT MATTER APPROVAL PAGE Chapter 1: INTRODUCTION– General 6. ABBREVIATIONS	W. Istchenko 02 May 2011	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">Addition of a step and NOTE to cycle the N/W STRG switch during flights with the landing gear down. <RS-144>	02 May 2011 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-26

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	7. AIRPLANE OPTION CODES Chapter 2: LIMITATIONS– Power Plant 7. OIL D. Oil Replenishment System LIMITATIONS– Navigation System Limitations 1. FLIGHT MANAGEMENT SYSTEM (FMS) <1024> or <1050> or <1214> or <1215> C. FMS-4200 Operational Approvals <1024> or <1050> or <1214> or <1215> Chapter 3: EMERGENCY PROCEDURES – Smoke/Fires/Fumes 1. SMOKE/FIRE/FUMES C. Smoke/Fire/Fumes Procedures EMERGENCY PROCEDURES – Electrical 1. ELECTRICAL B. Loss of all AC Power EMERGENCY PROCEDURES – Landing Gears, Wheels and Brake System 1. LANDING GEAR, WHEEL AND BRAKE SYSTEM C. GEAR DISAGREE Chapter 4:		<ul style="list-style-type: none">Remove the requirement to dry motor the engine during oil replenishment. <RS-145>Addition of MAX deployment of the flight spoiler control lever in SUPPLEMENT 9, – Anti-skid System – One Channel Inoperative and SUPPLEMENT 9A – Anti-skid System – One Channel Inoperative (CAFIM) <2098>. <RS-146>Introduction of Flight Deck Door Video Surveillance System – EFB Compatible. <1242> <RS-147>Transponder step relocated in the "Cleared to Start Check". <RS-150>Addition of a step to attempt an APU start during the Loss of All AC Power emergency procedure. <RS-154>Editorial changes to harmonize the Arcing, Delaminated, Shattered, or Cracked Window or Windshield abnormal procedures across all programs. <RS-155>Harmonization of crew action required for the thrust	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-27

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	NORMAL PROCEDURES – Introduction 6. TERRAIN AWARENESS <2040> NORMAL PROCEDURES – Consolidated Procedures 2. PRIOR TO START F. Cleared to Start Check Chapter 5: ABNORMAL PROCEDURES – Power Plant 1. POWER PLANT J. NO STRTR CUTOUT (In flight) K. NO STRTR CUTOUT (On the ground) L. L STRT VLV OPEN or R STRT VLV OPEN (In flight) M. L STRT VLV OPEN or R STRT VLV OPEN (On the ground) ABNORMAL PROCEDURES – Electrical 1. ELECTRICAL T. IDG 1 U. IDG 2 ABNORMAL PROCEDURES – Ice and Rain Protection 2. ELECTRICAL ANTI-ICE K. Arcing, Delaminated, Shattered, or Cracked Window or Windshield		<p>levers in the terrain awareness warning procedures. <RS-157></p> <ul style="list-style-type: none">• Add the requirement for both pilots to confirm the correct IDG DISC switch prior to selection. <RS-168>• Revise the oil replenishment system time limit to indicate that the engines should be replenished within 15 minutes of engine shutdown. <RS-170>• Revision to the NO STRTR CUTOUT abnormal, and Introduction of the L STRT VLV OPEN or R STRT VLV OPEN abnormal procedure. <RS-171>• Additional information applicable to Egyptian Civil Aviation Authority registered aircraft. <RS-173>• Performance – Thrust Settings Data – Note added for FADEC V6.41. <RS-179>• Take-Off Weight Limited by Field Length Requirements (One Engine Inoperative – FLAPS 8 / FLAPS 20) Chart	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-28

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	ABNORMAL PROCEDURES – Instruments System 1. INSTRUMENT SYSTEM E. Display Control Panel Failure Chapter 6: PERFORMANCE – Thrust Settings 1. THRUST SETTINGS Chapter 6A: PERFORMANCE – Thrust Settings (CAFIM) <2098> 1. THRUST SETTINGS Chapter 7: SUPPLEMENTS 3– Operation on Contaminated Runways 6. PERFORMANCE C. Take-Off Performance SUPPLEMENT 5– Flight with Landing Gear Down 4. NORMAL PROCEDURES SUPPLEMENT 5A– Flight with Landing Gear Down (CAFIM) <2098> 4. NORMAL PROCEDURES SUPPLEMENT 9– Anti-skid System – One Channel Inoperative 5. NORMAL PROCEDURES SUPPLEMENT 9A– Anti-skid System – One Channel		Update. <RS-190> <ul style="list-style-type: none">Editorial change to the Display Control Panel Failure abnormal procedure. <RS-191>	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-29

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Inoperative (CAFM) <2098> 5. NORMAL PROCEDURES			
REV 7	Chapter 3: EMERGENCY PROCEDURES– Automatic Flight Control System 1. AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS) B. Uncommanded Yaw Motion	W. Istchenko 14 Feb 2013	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Addition of Uncommanded Yaw Motion procedure. <RS-228>	14 Feb 2013 BCSG
REV 8	Chapter 1: INTRODUCTION – General 6. ABBREVIATIONS 7. AIRPLANE OPTION CODES Chapter 2: LIMITATIONS – Introduction 2. KINDS OF AIRPLANE OPERATION LIMITATIONS – Operating Limitations 1. ALTITUDE AND TEMPERATURE OPERATING LIMITS A. Take-off, Landing and Operating Limits 8. OZONE CONCENTRATION 9. OPERATIONS USING QFE ALTIMETER SETTINGS 10. MAXIMUM CROSS-WIND COMPONENT	W. Istchenko 27 Sep 2013	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Revise the maximum airport pressure altitude to 10000 feet, and• Updates to the abnormal procedures affected by airplane operations between 8000 and 10000 feet. <RS-120>• Editorial rework to introduction. <RS-124>• Introduce supplementary information for approaches between 3.5 degrees and 4.0 degrees. <RS-135>• Simplify the L PACK TEMP or R PACK TEMP abnormal procedure. <RS-151>• Editorial change to the FCOM Volume 2	27 Sep 2013 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-30

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	LIMITATIONS – Power Plant 6. FUEL A. Fuel Load D. Fuel Additives 9. ENGINE OPERATING PROCEDURE LIMITS DUE TO WIND LIMITATIONS – Systems Limitations 1. AIR-CONDITIONING AND PRESSURIZATION 2. AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS) 14. ENHANCED GROUND PROXIMITY WARNING SYSTEM (EGPWS) <2040> 17. MULTI-FUNCTION DISPLAY (MFD) 22. AIR TRAFFIC CONTROL (ATC) TRANSPONDER 23. WEATHER RADAR 24. DISPLAY SYSTEM REVERSION 25. HIGH FREQUENCY (HF) RADIO COMMUNICATIONS Chapter 3: EMERGENCY		<p>references. <RS-159></p> <ul style="list-style-type: none">Information on Fuel System Icing Inhibitors (FSII) revised. <RS-163> <p>Procedural update:</p> <ul style="list-style-type: none">L ENG FIRE or R ENG FIRE or Severe Engine Damage (In Flight) <RS-165>Smoke/Fire/Fumes procedures updated. <RS-172>Rework "CABIN ALT (Warning Message) or Emergency Descent Procedure" due to oxygen mask dilution mode problem. <RS-176>SLATS FAIL procedure – GRND PROX, FLAP switch step removed. <RS-181>Advisory information on multi-function display flicker and declutter relocated to FCOM Volume 1. <RS-194>Maximum Allowable Cabin Concentration Data – Update to reference Quick Reference Handbook (QRH) Volume 1. <RS-195>	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-31

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	PROCEDURES – Power Plant 1. POWER PLANT A. L ENG FIRE or R ENG FIRE or Severe Engine Damage (In Flight) C. Double Engine Failure E. L ENG OIL PRESS or R ENG OIL PRESS or Low Engine Oil Pressure Indication EMERGENCY PROCEDURES – Smoke/Fire/Fumes 1. SMOKE/FIRE/FUMES A. General Notes, Cautions and Warnings B. Smoke/Fire/Fumes Procedure C. Smoke or Fumes Removal Procedure D. SMOKE AFT LAV or SMOKE FWD LAV E. SMOKE AFT CARGO or SMOKE FWD CARGO EMERGENCY PROCEDURES – Air-conditioning and Pressurization 1. AIR-CONDITIONING AND PRESSURIZATION A. CABIN ALT (Warning Message) or Emergency Descent Procedure B. DIFF PRESS <TC> or <FAA> or <JAA> EMERGENCY PROCEDURES – Bleed Air		<ul style="list-style-type: none">• Revisions to the Ice and Rain Protection, Electrical Anti-ice abnormal procedures possibly affected by an Air Data Anti-ice Heater Controller failure. <RS-196>• Revision to the NO STRTR CUTOUT and STRT VLV OPEN abnormal procedures. <RS-197>• Revision to the introduction of the Reduced Landing Reference Speed (V_{REF}) supplement to include operation to Category C approach minimums. <RS-199>• Editorial – Consistent reference to altitude and temperature operating limit chart. <RS-200>• Introduce supplementary information for airplane operations using QFE altimeter settings. <RS-201>• Editorial change to RNP-5/B-RNAV Statement for Egypt. <RS-204> <p>Procedural update:</p> <ul style="list-style-type: none">• MLG BAY OVHT, and• BRAKE OVHT procedures <p><RS-207></p> <p>Introduces additional</p>	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-32

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Leaks 1. BLEED AIR LEAKS A. L BLEED DUCT or R BLEED DUCT EMERGENCY PROCEDURES – Ditching and Forced Landing 1. DITCHING AND FORCED LANDING A. Recommended Configuration 2. DITCHING OR FORCED LANDING IMMINENT A. Procedure 3. PLANNED DITCHING E. After Water Contact 4. FORCED LANDING E. After Contact EMERGENCY PROCEDURES – Evacuation 1. EVACUATION A. Passenger Evacuation EMERGENCY		<p>information for Interstate Aviation Committee – Aviation Register <AR> registered airplanes:</p> <ul style="list-style-type: none">• Data for Contaminated Runway and Cross-wind Conditions <CAI F-1>,• Limitations and Procedures for Crew <CAI F-2, Item 1 to 5, Item 7 and 8>,• Limitations and Procedures for Display System Reversion <CAI AV-3>,• Limitations concerning the display of weather radar <CAI AV-4>, and• DIFF PRESS Procedure <CAI SSA-2>. <RS-208> <p>Procedural update:</p> <ul style="list-style-type: none">• EMER PWR ONLY procedure. <RS-209> <p>Procedural update:</p> <ul style="list-style-type: none">• PAX DR OUT HNDL,• PAX DR LATCH and	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-33

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	PROCEDURES – Electrical 1. ELECTRICAL A. EMER PWR ONLY EMERGENCY PROCEDURES – Flight Controls 1. FLIGHT CONTROLS D. Stabilizer Trim Runaway E. Stall Recovery EMERGENCY PROCEDURES– Ice and Rain Protection 1. ICE AND RAIN PROTECTION A. WING OVHT C. L COWL A/I DUCT or R COWL A/I DUCT EMERGENCY PROCEDURES – Landing Gear, Wheel and Brake System 1. LANDING GEAR, WHEEL AND BRAKE SYSTEM A. MLG BAY OVHT B. BRAKE OVHT Chapter 4: NORMAL PROCEDURES – Introduction 2. SUPER-COOLED LARGE DROPLET (SLD) ICING 3. FLIGHT IN TURBULENCE 4. OPERATION IN		<ul style="list-style-type: none">• AV BAY DOOR or FWD CARGO DOOR or CTR CARGO DOOR or AFT CARGO DOOR or L FWD EMER DOOR or R FWD EMER DOOR or L AFT EMER DOOR or R AFT EMER DOOR or FWD SERVICE DOOR or Crew Escape Hatch Unsafe <RS-212> <p>Procedural update:</p> <ul style="list-style-type: none">• L COWL A/I or R COWL A/I• L COWL A/I OPEN or R COWL A/I OPEN• L WING A/I or R WING A/I,• L WING A/I and R WING A/I,• WING A/I SNSR,• WING XBLEED,• L WINDOW HEAT or R WINDOW HEAT,• L WSHLD HEAT or R WSHLD HEAT,• Arcing, Delaminated, Shattered, or Cracked Window or Windshield and• Ice Dispersal procedures. <p><RS-213></p> <p>Limitation Update:</p> <ul style="list-style-type: none">• Fuel Load <p>Procedural update:</p> <ul style="list-style-type: none">• FUEL CH 1/2 FAIL,• L XFER SOV or R XFER SOV, and	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-34

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	VOLCANIC ASH/DUST 5. WINDSHEAR 6. TERRAIN AWARENESS <2040> NORMAL PROCEDURES – Consolidated Procedures 4. AFTER TAKE-OFF A. Climb Check <TC> or <FAA> A. Climb Check <JAA> 5. PRIOR TO LANDING A. In Range Check <TC> or <FAA> A. Descent Check <JAA> B. Approach Check <JAA> C. Before Landing Check D. Go-around Procedure 6. AFTER LANDING C. Terminating Check Chapter 5: ABNORMAL PROCEDURES – Single Engine Procedures 1. SINGLE ENGINE PROCEDURES B. Starter-assisted Cross Bleed Relight C. Starter-assisted APU Bleed Relight ABNORMAL PROCEDURES – Power Plant 1. POWER PLANT D. APR CMD SET		<ul style="list-style-type: none">• Abnormal Increase of Centre Tank Quantity or Suspected Leak Into Centre Tank procedures. <RS-214>Editorial Changes –<ul style="list-style-type: none">• ENG TAT HEAT Procedure,• FAN VIB Procedure,• AOA HEAT Procedures, and• DISPLAY TEMP Procedure. <RS-215>Procedural update:<ul style="list-style-type: none">• RUD LIMITEREditorial change:<ul style="list-style-type: none">• STAB TRIM procedure. <RS-216>Procedural update:<ul style="list-style-type: none">• Flight Director Guidance Failure,• EFIS COMP MON Procedure,• EFIS COMP MON Procedure <1100>,• EFIS COMP MON Procedure <1025>,• DISPLAY TEMP Annunciation Procedure,• Display Control Panel Failure Procedure,• ADC 1 Failure Procedure,• ADC 2 Failure Procedure,• Radio Altimeter Failure• Radio Altimeter Failure <1045>,	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-35

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	E. L THROTTLE or R THROTTLE H. L FADEC or R FADEC J. NO STRTR CUTOUT (In flight) K. NO STRTR CUTOUT (On the ground) L. L STRT VLV OPEN or R STRT VLV OPEN (In flight) M. L STRT VLV OPEN or R STRT VLV OPEN (On the ground) R. L ENG TAT HEAT or R ENG TAT HEAT S. Loss of FAN VIB Indicator V. Engine Oscillations X. High Oil Temperature ABNORMAL PROCEDURES – Air-Conditioning, Bleed and Pressurization 1. AIR-CONDITIONING SYSTEM A. L PACK TEMP or R PACK TEMP 3. BLEED SYSTEM C. L ENG BLEED or R ENG BLEED D. L BLEED LOOP or R BLEED LOOP E. ISOL FAIL F. L BLEED DUCT or R BLEED DUCT 4. PRESSURIZATION		<ul style="list-style-type: none">• Attitude and Heading Reference System Failure Procedure, and <Typ Spec> or <1100>,• Inertial Reference System Failure Procedure <1025>, and• Radio Tuning Failure. <RS-217> <p>Editorial Changes –</p> <ul style="list-style-type: none">• L ENG BLEED or R ENG BLEED Procedure,• L BLEED LOOP or R BLEED LOOP Procedure,• ISOL FAIL Procedure,• L BLEED DUCT or R BLEED DUCT Procedure,• CABIN ALT Procedure,• APU BLEED ON Procedure, and• APU Door Failure Procedure. <p><RS-218></p> <p>Editorial Changes – Flight Spoiler Lever:</p> <ul style="list-style-type: none">• GLD NOT ARMED,• Radio Altimeter Failure Procedure,• A/SKID INBD (OUTBD) Procedure,• PROX SYSTEM Procedure,• WOW INPUT Procedure. <p><RS-219></p>	

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



RECORD OF REVISIONS

00-02-36

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	<p>SYSTEM C. CABIN ALT E. Manual Pressurization Control Procedure F. Unpressurized Flight Procedure (PACKs off)</p> <p>ABNORMAL PROCEDURES – Automatic Flight Control System</p> <p>1. AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS) D. Flight Director Guidance Failure</p> <p>ABNORMAL PROCEDURES – Auxiliary Power Unit</p> <p>1. AUXILIARY POWER UNIT (APU) B. APU LCV CLSD C. APU BLEED ON G. APU Door Failure</p> <p>ABNORMAL PROCEDURES – Doors</p> <p>1. PAX DOOR A. PAX DR OUT HNDL B. PAX DR LATCH</p>		<p>Procedural update:</p> <ul style="list-style-type: none">• L ENG OIL PRESS or R ENG OIL PRESS or Low Engine Oil Pressure Indication procedure. <RS-220> <p>Procedural update:</p> <ul style="list-style-type: none">• Radio Altimeter Failure procedures. <RS-221> <p>Procedural update:</p> <ul style="list-style-type: none">• APU LCV CLSD procedure. <RS-222> <p>Procedural update:</p> <ul style="list-style-type: none">• DIFF PRESS,• L BLEED DUCT or R BLEED DUCT, and• Unpressurized Flight Procedure (PACKs off) procedures. <RS-223> <p>Procedural update:</p> <ul style="list-style-type: none">• Starter-assisted Cross Bleed Relight procedure,• Starter-assisted APU Bleed Relight procedure,	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-37

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	<p>2. MISCELLANEOUS DOORS A. AV BAY DOOR or FWD CARGO DOOR or CTR CARGO DOOR or AFT CARGO DOOR or L FWD EMER DOOR or R FWD EMER DOOR or L AFT EMER DOOR or R AFT EMER DOOR or FWD SERVICE DOOR or Crew Escape Hatch Unsafe</p> <p>ABNORMAL PROCEDURES – Flight Controls</p> <p>1. FLIGHT CONTROLS C. RUD LIMITER G. STAB TRIM J. SLATS FAIL X. GLD NOT ARMED</p> <p>ABNORMAL PROCEDURES – Fuel</p> <p>1. FUEL A. FUEL CH 1/2 FAIL K. L XFER SOV or R XFER SOV R. Abnormal Increase of Centre Tank Quantity or Suspected Leak Into Centre Tank</p> <p>ABNORMAL PROCEDURES – Ice and Rain Protection</p> <p>1. PNEUMATIC ANTI-ICE B. L COWL A/I or R COWL A/I C. L COWL A/I OPEN or R COWL A/I OPEN F. L WING A/I or R WING A/I</p>		<ul style="list-style-type: none">• APR CMD SET procedure,• L THROTTLE or R THROTTLE procedure,• L FADEC or R FADEC procedure,• Engine Oscillations procedure, and• High Oil Temperature procedure indication. <RS-224>• Revision to Stall Recovery procedure. <RS-225>• Harmonization of Category II Operations Supplement. <RS-226>• Harmonize EGPWS information within QFE Supplement. <RS-229> <p>Illustration Update:</p> <ul style="list-style-type: none">• Engine operating limits due to wind harmonized. <RS-230> <p>Procedural update:</p> <ul style="list-style-type: none">• Stabilizer Trim Runaway procedure. <RS-232> <p>Procedural update:</p> <ul style="list-style-type: none">• WING OVHT procedure. <RS-233>• Introduction of SBAS GPS. <RS-236> <p>TGL-10 PRNAV Operations update. <RS-237></p>	

DOT Approved

Airplane Flight Manual
CSP C-012-219



RECORD OF REVISIONS

00-02-38

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	G. L WING A/I and R WING A/I H. WING A/I SNSR I. WING XBLEED 2. ELECTRICAL ANTI-ICE C. L AOA HEAT or R AOA HEAT E. L PITOT HEAT F. R PITOT HEAT G. L STATIC HEAT H. R STATIC HEAT K. L WINDOW HEAT or R WINDOW HEAT L. L WSHLD HEAT or R WSHLD HEAT M. Arcing, Delaminated, Shattered, or Cracked Window or Windshield 3. ICE DISPERSAL A. Ice Dispersal Procedure ABNORMAL PROCEDURES – Instruments System 1. INSTRUMENTS SYSTEM A. EFIS COMP MON A. EFIS COMP MON <1100> A. EFIS COMP MON <1025> D. DISPLAY TEMP Annunciation E. Display Control Panel Failure F. ADC 1 Failure G. ADC 2 Failure H. Radio Altimeter Failure H. Radio Altimeter Failure <1045>		<p>Procedural update:</p> <ul style="list-style-type: none">• L COWL A/I DUCT or R COWL A/I DUCT procedure. <p><RS-239></p> <p>Procedural update:</p> <ul style="list-style-type: none">• AIR CONDITIONING AND PRESSURIZATION, and• Manual Pressurization Control Procedure. <p><RS-240></p>	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-39

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	<p>I. Attitude and Heading Reference System Failure <Typ Spec> or <1100></p> <p>I. Inertial Reference System Failure <1025></p> <p>J. Radio Tuning Failure</p> <p>K. Position Information Unreliable <1040></p> <p>ABNORMAL PROCEDURES – Landing Gear, Wheel and Brake System</p> <p>1. LANDING GEAR, WHEEL AND BRAKE SYSTEM</p> <p>A. A/SKID INBD</p> <p>B. A/SKID OUTBD</p> <p>C A/SKID INBD and A/SKID OUTBD</p> <p>I. PROX SYSTEM</p> <p>K. WOW INPUT</p> <p>Chapter 6A:</p> <p>PERFORMANCE (CAFM) – General <2098></p> <p>1. INTRODUCTION</p> <p>Chapter 7:</p> <p>SUPPLEMENTS – List of Supplements</p> <p>SUPPLEMENT 3 – Operation on Contaminated Runways</p> <p>2. LIMITATIONS</p> <p>A. Maximum Depth of Contaminant</p> <p>B. Additional Requirements <AR></p> <p>SUPPLEMENT 3A –</p>			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-40

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Operation on Contaminated Runways 2. LIMITATIONS A. Maximum Depth of Contaminant B. Additional Requirements <AR> SUPPLEMENT 4 – Category II Operations 3. LIMITATIONS 4. EMERGENCY PROCEDURES A. Autopilot Failure / AFCS MSG FAIL Warning Message 6. ABNORMAL PROCEDURES A. Single Engine Approach and Landing <JAA> B. Engine Failure During Approach <JAA> C. Autopilot Fails to Disengage When Using the AP/SP DISC switch 8. SUPPLEMENTS SUPPLEMENT 4A – Category II Operations (CAFIM) <2098> 3. LIMITATIONS 4. EMERGENCY PROCEDURES A. Autopilot Failure / AFCS MSG FAIL Warning Message 5. NORMAL PROCEDURES A. Approach			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-41

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	6. ABNORMAL PROCEDURES A. Single Engine Approach and Landing <JAA> B. Engine Failure During Approach <JAA> O. Autopilot Fails to Disengage When Using the AP/SP DISC switch SUPPLEMENT 6 – Ferry Kit 3. LIMITATIONS SUPPLEMENT 18 – Operation with Reduced Landing Reference Speed (V_{REF}) 1. INTRODUCTION SUPPLEMENT 19 – Not Applicable SUPPLEMENT 20 – Not Applicable SUPPLEMENT 21 – TBD SUPPLEMENT 22 – Operations Using QFE Altimeter Settings 1. INTRODUCTION 2. LIMITATIONS A. Take-off, Landing and Operating Limits B. Enhanced Ground Proximity Warning System (EGPWS) <2040> C. Navigation Systems Limitations 3. EMERGENCY PROCEDURES			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-42

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	4. NORMAL PROCEDURES 2. PRIOR TO START E. Before Start Check 4. AFTER TAKE-OFF A. Climb Check <TC> or <FAA> or <JAA> 5. PRIOR TO LANDING A. In Range Check <TC> or <FAA> B. Approach Check <JAA> 5. ABNORMAL PROCEDURES 6. PERFORMANCE 7. SUPPLEMENTS SUPPLEMENT 23 – Not Applicable SUPPLEMENT 24 – Approaches between 3.5 Degrees and 4.0 Degrees 1. GENERAL 2. INTRODUCTION 3. LIMITATIONS 4. EMERGENCY PROCEDURES 5. NORMAL PROCEDURES 6. ABNORMAL PROCEDURES 7. PERFORMANCE			
REV 9	Chapter 1:	W. Istchenko	Introduces the following changes to the Airplane Flight	02 Jun 2014 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-43

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Introduction – General 7. AIRPLANE OPTION CODES Chapter 2: LIMITATIONS – Power Plant 1. ENGINE A. Engine Types B. Engine Indications 2. ENGINE OPERATING LIMITS A. Engine Operating Limits Table Chapter 3: EMERGENCY PROCEDURES– Bleed Air Leaks 1. BLEED AIR LEAKS A. L BLEED DUCT or R BLEED DUCT EMERGENCY PROCEDURES– Ice and Rain Protection 1. ICE AND RAIN PROTECTION A. WING OVHT C. L COWL A/I DUCT or R COWL A/I DUCT EMERGENCY PROCEDURES– Hydraulic Power 1. HYDRAULIC POWER A. HYD 1 HI TEMP (Caution Message) B. HYD 2 HI TEMP (Caution Message)	02 Jun 2014	<p>Manual:</p> <ul style="list-style-type: none">• Introduce new version of CF34-8C5 engines, related noise characteristics, supplementary and performance data. <RS-148>• Introduce new version of the CAFM. <RS-231>• Editorial – remove option number at Terminating Check – AFT CARGO switch step. <RS-247>	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-44

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Chapter 4: NORMAL PROCEDURES – Consolidated Procedures 6. AFTER LANDING C. Terminating Check Chapter 5: ABNORMAL PROCEDURES– Single Engine Procedures 1. SINGLE ENGINE PROCEDURES A. In-flight Engine Shutdown ABNORMAL PROCEDURES – Air-conditioning, Bleed and Pressurization 1. AIR-CONDITIONING SYSTEM A. L PACK TEMP or R PACK TEMP C. L PACK or R PACK 3. BLEED SYSTEM B. Manual Bleed Procedure C. L ENG BLEED or R ENG BLEED D. L BLEED LOOP or R BLEED LOOP E. ISOL FAIL F. L BLEED DUCT or R BLEED DUCT ABNORMAL PROCEDURES– Auxiliary Power Unit 1. AUXILIARY POWER UNIT (APU) A. APU LCV OPEN			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-45

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	B. APU LCV CLSD ABNORMAL PROCEDURES– Ice and Rain Protection 1. PNEUMATIC ANTI-ICE F. L WING A/I or R WING A/I I. WING XBLEED 2. ELECTRICAL ANTI-ICE A. ICE B. ICE DET FAIL (Caution Message) or ICE DET 1 FAIL or ICE DET 2 FAIL (Status Message) Chapter 6: PERFORMANCE – Thrust Settings 1. THRUST SETTINGS PERFORMANCE – Take-off Performance 1. INTRODUCTION PERFORMANCE – Obstacle Clearance 1. INTRODUCTION PERFORMANCE – Enroute Performance 1. INTRODUCTION PERFORMANCE – Approach and Landing Climb Gradients 1. INTRODUCTION PERFORMANCE – Landing Performance 1. INTRODUCTION			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-46

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Chapter 6A: PERFORMANCE (CAFM) – Thrust Settings <2098> 1. THRUST SETTINGS PERFORMANCE (CAFM) – Take-off Performance <2098> 2. TAKE-OFF PERFORMANCE CALCULATIONS Chapter 7: SUPPLEMENT – List of Supplements SUPPLEMENT 1 – Noise Characteristics 7. NOISE CHARACTERISTICS B. Certificated Noise Levels SUPPLEMENT 2 – Reduced Thrust Take-off 6. PERFORMANCE B. Thrust Setting Tables SUPPLEMENT 3A – Operation on Contaminated Runways (CAFM) <2098> 6. PERFORMANCE SUPPLEMENT 14 – Performance Penalties for Operation with Airplane Systems Inoperative 6. PERFORMANCE E. Nosewheel Steering Inoperative			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-47

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	F. Miscellaneous System Components 7. SUPPLEMENTS A. Operation on Contaminated Runways SUPPLEMENT 14A – Performance Penalties for Operation with Airplane Systems Inoperative (CAFIM) <2098> 6. PERFORMANCE SUPPLEMENT 17A – Computerized AFM Performance Data <2098> 1. INTRODUCTION 7. SUPPLEMENTS J. Supplements 18B – Operation with Reduced Landing Reference Speed (V_{REF}) SUPPLEMENT 18 – Operation with Reduced Landing Reference Speed (V_{REF}) 7. SUPPLEMENTS SUPPLEMENT 18B – Operation with Reduced Landing Reference Speed (V_{REF}) <2098> 1. INTRODUCTION 2. LIMITATIONS 3. EMERGENCY PROCEDURES 4. NORMAL PROCEDURES			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-48

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	5. ABNORMAL PROCEDURES 6. PERFORMANCE 7. SUPPLEMENTS Chapter 8: APPENDIX 1 – Configuration Deviation List 2. CAFM CDL INDEX <2098>			
REV 10	Chapter 1: INTRODUCTION – General 6. ABBREVIATIONS 7. AIRPLANE OPTION CODES Chapter 3: EMERGENCY PROCEDURES – Introduction 2. LANDING DISTANCE FACTORS EMERGENCY PROCEDURES – Unreliable Airspeed 1. UNRELIABLE AIRSPEED A. Unreliable Airspeed In-flight Chapter 4: NORMAL PROCEDURES – Consolidated Procedures 2. PRIOR TO START F. Cleared to Start Check	W. Istchenko 22 Dec 2014	<p>Introduces the following changes to the Airplane Flight Manual:</p> <ul style="list-style-type: none">Revision to the coverage for static dischargers. <RS-205>Addition of procedures for Unreliable Airspeed. <RS-227>Editorial change to supplementary information for approaches between 3.5 degrees and 4.0 degrees. <RS-248>Cleared to Start Check – transponder step re-sequenced. <RS-250>Update to IDG 1 and IDG 2 procedure. <RS-251>FCC part number update. <RS-253>Update to High Oil Temperature Procedure. <RS-256>	10 Dec 2014 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-49

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	5. PRIOR TO LANDING D. Go-around Procedure Chapter 5: ABNORMAL PROCEDURES – Introduction 2. LANDING DISTANCE FACTORS ABNORMAL PROCEDURES – Power Plant 1. POWER PLANT X. Left Engine or Right Engine High Oil Temperature Indication ABNORMAL PROCEDURES – Electrical 1. ELECTRICAL T. IDG 1 U. IDG 2 ABNORMAL PROCEDURES – Instruments System 1. INSTRUMENTS SYSTEM A. EFIS COMP MON <1025> B. EFIS COMP INOP F. ADC 1 Failure G. ADC 2 Failure Chapter 6B: PERFORMANCE (CAFM) – Thrust Settings <2054> and <2098> 1. THRUST SETTINGS Chapter 7: SUPPLEMENT 24 – Approaches between 3.5		<ul style="list-style-type: none">• Introduce engine fan speed (N1) setting data for new version of CF34-8C5 engines. <RS-257>• Revision to the landing distance factors definition. <RS-261>• Editorial changes. <RS-270>	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-50

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Degrees and 4.0 Degrees 1. GENERAL 5. NORMAL PROCEDURES A. Descent Check <JAA> Chapter 8: APPENDIX 1 – Configuration Deviation List SYSTEM 23 COMMUNICATIONS 23-61 Static dischargers			
REV 11	Chapter 1: INTRODUCTION – General 7. AIRPLANE OPTION CODES Chapter 4: NORMAL PROCEDURES– Consolidated Procedures 6. AFTER LANDING C. Terminating Check Chapter 5: ABNORMAL PROCEDURES – Power Plant 1. POWER PLANT T. N ₁ Fan Vibration Chapter 8: APPENDIX 1 – Configuration Deviation List 1. GENERAL LIMITATION SYSTEM 23	W. Istchenko 16 Mar 2015	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Terminating Check – RECIRC FAN step added. <RS-262>• Editorial – Options Page – MTOW description for option <2006> and <2217>. <RS-266>• Procedural update – N₁ Fan Vibration Procedure – If Statement – Add “or Ice Accumulation Suspected” <RS-271>• Addition of a missing paragraph in general limitation and correct table cell – Deviation for static dischargers. <RS-272>	16 Mar 2015 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-51

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	COMMUNICATIONS 23-61 Static dischargers			
REV 12	Chapter 2: LIMITATIONS – Power Plant 7. FUEL B. Fuel Temperature C. Fuel Grades Chapter 4: NORMAL PROCEDURES – Consolidated Procedures 5. PRIOR TO LANDING D. Go-around Procedure Chapter 5: ABNORMAL PROCEDURES – Electrical 1. ELECTRICAL A. AC 1 AUTOXFER B. AC 2 AUTOXFER C. AC BUS 1 D. AC BUS 2 Chapter 7: SUPPLEMENTS – List of Supplements SUPPLEMENT 1 – Noise Characteristics <TC or EASA> 1. INTRODUCTION 7. NOISE CHARACTERISTICS B. Certificated Noise Levels SUPPLEMENT 1A – Noise	W. Istchenko 07 Sep 2015	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Introduce CIS / Russian TS-1 fuel. <RS-235>• Addition of the Air-conditioning – Airplane Dispatch in Single Pack Configuration Supplement. <RS-245>• Revision to Noise Characteristics.• FAA-unique Noise Supplement <RS-249>• Go-around Procedure – Unreliable Airspeed – related caution update. <RS-274>• AC 1 AUTOXFER,• AC 2 AUTOXFER,• AC BUS 1 and• AC BUS 2 procedures. <RS-278>• Editorial change to the ECAA Approval Page.	07 Sep 2015 BCSG

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



RECORD OF REVISIONS

00-02-52

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Characteristics <FAA> 1. INTRODUCTION 2. LIMITATIONS 3. EMERGENCY PROCEDURES 4. NORMAL PROCEDURES 5. ABNORMAL PROCEDURES 6. PERFORMANCE 7. NOISE CHARACTERISTICS A. Certification Airplane Configuration B. Certificated Noise Levels SUPPLEMENT 19 – Air-conditioning – Airplane Dispatch in Single Pack Configuration 1. GENERAL NOTES, CAUTIONS AND WARNINGS 2. INTRODUCTION 3. LIMITATIONS A. Maximum Occupants and Operating Altitude 4. EMERGENCY PROCEDURES 5. NORMAL PROCEDURES 6. ABNORMAL PROCEDURES 7. PERFORMANCE			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-53

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	8. SUPPLEMENTS			
REV 13	Chapter 5: ABNORMAL PROCEDURES – Single Engine Procedures 1. SINGLE ENGINE PROCEDURES A. In-flight Engine Shutdown ABNORMAL PROCEDURES – Instruments System 1. INSTRUMENTS SYSTEM A. EFIS COMP MON <1099> A. EFIS COMP MON <1100> A. EFIS COMP MON <1025>	W. Istchenko 04 Mar 2016	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Addition of a note for the quantity/balance check. <RS-277> Procedural update: <ul style="list-style-type: none">• EFIS COMP MON procedures. <RS-290>	04 Mar 2016 BCSG
REV 14	Chapter 2: 1. FLIGHT MANAGEMENT SYSTEM (FMS) <1024> or <1050> or <1214> or <1215> C. FMS-4200 Operational Approvals <1024> or <1050> or <1214> or <1215> Chapter 5: ABNORMAL PROCEDURES – Single Engine Procedures 1. SINGLE ENGINE PROCEDURES B. Starter-assisted Cross Bleed Relight C. Starter-assisted APU Bleed Relight D. Windmilling Relight	W. Istchenko 29 Jul 2016	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• FMS operational approvals, addition of new coupled VNAV limitation. <RS-291> Procedural update: <ul style="list-style-type: none">• Starter-assisted Cross Bleed Relight,• Starter-assisted APU Bleed Relight, and• Windmilling Relight procedures. <RS-292> <ul style="list-style-type: none">• Editorial changes to harmonize the Starter-assisted Cross Bleed Relight and Starter-assisted APU Bleed Relight procedures across programs. <RS-300>	29 Jul 2016 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-54

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
REV 15	Chapter 1: INTRODUCTION – General 7. AIRPLANE OPTION CODES Chapter 2: LIMITATIONS – System Limitations 1. AIR-CONDITIONING AND PRESSURIZATION Chapter 3: EMERGENCY PROCEDURES – Smoke/Fire/Fumes 1. SMOKE/FIRE/FUMES B. Smoke/Fire/Fumes Procedure EMERGENCY PROCEDURES – Air-conditioning and Pressurization 1. AIR-CONDITIONING AND PRESSURIZATION B. DIFF PRESS <TC> or <FAA> or <JAA> EMERGENCY PROCEDURES – Bleed Air Leaks 1. BLEED AIR LEAKS A. L BLEED DUCT or R BLEED DUCT	W. Istchenko 03 Mar 2017	<p>Introduces the following changes to the Airplane Flight Manual:</p> <ul style="list-style-type: none">• Expanded explanation of when the FUEL LO PRESS caution message should be displayed during the Fuel Feed Check Valve Test. <RS-149>• Harmonization related changes to the ENG SRG CLSD (OPEN) procedures. <RS-252>• Passenger signs step revised. <RS-265>• Editorial change – Note relocated. <RS-284>• Editorial – Addition of Option Code <1099> for Type Spec AHRS. <RS-293>• Introduction of option code <2110> Total number of cabin seats (passengers and flight attendants) of 82 and below and, <2111> Total number of cabin seats (passengers and flight attendants) of 83 and above for single pack operations. <RS-294>• Editorial change to the reset action of the boost pump. <RS-295>	03 Mar 2017 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-55

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	<p>EMERGENCY PROCEDURES – Ice and Rain Protection</p> <p>1. ICE AND RAIN PROTECTION C. L COWL A/I DUCT or R COWL A/I DUCT</p> <p>Chapter 4:</p> <p>NORMAL PROCEDURES– Consolidated Procedures</p> <p>2. PRIOR TO START A. Safety Check E. Before Start Check</p> <p>5. PRIOR TO LANDING C. Before Landing Check</p> <p>Chapter 5:</p> <p>ABNORMAL PROCEDURES – Single Engine Procedures</p> <p>1. SINGLE ENGINE PROCEDURES A. In-flight Engine Shutdown B. Starter-assisted Cross Bleed Relight C. Starter-assisted APU Bleed Relight</p> <p>ABNORMAL PROCEDURES – Power Plant</p> <p>1. POWER PLANT J. NO STRTR CUTOUT (In flight) L. L STRT VLV OPEN or R STRT VLV OPEN (In flight) N. L ENG SRG CLSD or R ENG SRG CLSD</p>		<ul style="list-style-type: none">Editorial changes <RS-302>Addition of ADC 1 Failure and ADC 2 Failure references. <RS-304>	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-56

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	O. L ENG SRG OPEN or R ENG SRG OPEN ABNORMAL PROCEDURES – Air-conditioning, Bleed and Pressurization 1. AIR-CONDITIONING SYSTEM A. L PACK TEMP or R PACK TEMP C. L PACK or R PACK 3. BLEED SYSTEM B. Manual Bleed Procedure C. L ENG BLEED or R ENG BLEED D. L BLEED LOOP or R BLEED LOOP E. ISOL FAIL F. L BLEED DUCT or R BLEED DUCT ABNORMAL PROCEDURES – Fuel 1. FUEL J. L FUEL PUMP or R FUEL PUMP ABNORMAL PROCEDURES – Ice and Rain Protection 2. ELECTRICAL ANTI-ICE E. L PITOT HEAT F. R PITOT HEAT ABNORMAL PROCEDURES – Instruments System 1. INSTRUMENTS SYSTEM F. ADC 1 Failure G. ADC 2 Failure Chapter 7:			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-57

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	SUPPLEMENT 4– Category II Operations 3. LIMITATIONS SUPPLEMENT 4A– Category II Operations (CAF) <2098> 3. LIMITATIONS SUPPLEMENT 16A – Fuel Feed Check Valve Test<JAA> 4. NORMAL PROCEDURES A. Cleared to Start Check B. Shutdown Check SUPPLEMENT 18B – Operation with Reduced Landing Reference Speed (V_{REF}) <2098> 3. EMERGENCY PROCEDURES 5. ABNORMAL PROCEDURES 6. PERFORMANCE			
REV 16	Chapter 1: INTRODUCTION – General 7. AIRPLANE OPTION CODES Chapter 2: LIMITATIONS – Systems Limitations 2. AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS) Chapter 3: EMERGENCY	W. Istchenko 19 May 2017	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Airplane option code added for ADF.<2109>• Systems not available when on emergency power only listing within the Smoke/Fire/Fumes procedure, EMER PWR ONLY and Loss of All AC Power procedure updated.• Systems not available when on battery power only listing within the Loss of All AC	19 May 2017 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-58

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	PROCEDURES – Smoke/Fire/Fumes 1. SMOKE/FIRE/FUMES B. Smoke/Fire/Fumes Procedure EMERGENCY PROCEDURES – Electrical 1. ELECTRICAL A. EMER PWR ONLY B. Loss of All AC Power Chapter 5: ABNORMAL PROCEDURES – Instruments System 1. INSTRUMENT SYSTEM L. XPDR FAIL M. ADS-B OUT FAIL Chapter 7: SUPPLEMENT 18B – Operation with Reduced Landing Reference Speed (V_{REF}) <2098> 5. ABNORMAL PROCEDURES Y. GLD NOT ARMED		<p>Power procedure updated. <RS-242></p> <p>Procedural update:</p> <ul style="list-style-type: none">• To cover PAR/Baro VNAV/LPV• XPDR FAIL and• ADS-B OUT FAIL procedures. <p><RS-305></p> <ul style="list-style-type: none">• Editorial changes <RS-306>	
REV 17	Chapter 2: LIMITATIONS – System Limitations 2. AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS)	W. Istchenko 13 Oct 2017	<p>Introduces the following changes to the Airplane Flight Manual:</p> <ul style="list-style-type: none">• Add coverage for Item 51-23; Aerodynamic Sealant – Air Intake and Engine Nozzles, and	13 Oct 2017 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-59

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	LIMITATIONS – Navigation System Limitations 1. FLIGHT MANAGEMENT SYSTEM (FMS) B. FMS-4200 Operating Limitations Chapter 3: EMERGENCY PROCEDURES – Unreliable Airspeed 1. UNRELIABLE AIRSPEED A. Unreliable Airspeed In-flight Chapter 5: ABNORMAL PROCEDURES – In-Flight Engine Failures 1. IN-FLIGHT ENGINE FAILURE C. Engine Failure in Climb During ALTS CAP C. Engine Failure in Climb During (V) ALTS CAP <1239> ABNORMAL PROCEDURES – Ice and Rain Protection 2. ELECTRICAL ANTI-ICE F. R PITOT HEAT H. R STATIC HEAT ABNORMAL PROCEDURES – Instruments System 1. INSTRUMENTS SYSTEM A. EFIS COMP MON <1099> A. EFIS COMP MON <1100> A. EFIS COMP MON <1025> B. EFIS COMP INOP		<ul style="list-style-type: none">Editorial change. <RS-198>Procedural update:<ul style="list-style-type: none">Revised all related Unreliable Airspeed In-flight procedures. <RS-287>Addition of limitations to the CDL coverage with static discharger base missing. <RS-311>Added warnings in the AFCS limitations.Introduce new procedures to cover engine failure in climb during ALTS CAP. <RS-313>Added a note in the FMS limitations to cover the last waypoint of the STAR. <RS-314>Editorial changes to correct typos in the procedures. <RS-319>	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-60

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	F. ADC 1 Failure G. ADC 2 Failure Chapter 8: APPENDIX 1 – Configuration Deviation List SYSTEM 23 COMMUNICATIONS 23–61 Static dischargers and base SYSTEM 51 STRUCTURES 51-23 Aerodynamic sealant – Air intake 51-23 Aerodynamic sealant – Engine nozzles			
REV 18	Chapter 7: SUPPLEMENT 3 Operation on Contaminated Runways 1. INTRODUCTION B. Runway Conditions SUPPLEMENT 3A Operation on Wet and Contaminated Runways <2098> 1. INTRODUCTION B. Runway Conditions	W. Istchenko 29 Mar 2018	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">Runway Conditions / Dry Runway Definition harmonization. <RS-141>	29 Mar 2018 BCSG
REV 19	Chapter 4: Normal Procedures – Consolidated Procedures 2. PRIOR TO START F. Cleared to Start Check	W. Istchenko 15 Jun 2018	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">Addition of a NOTE in the Cleared to Start Check. <RS-326>	15 Jun 2018 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-61

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
REV 20	Chapter 3: EMERGENCY PROCEDURES – Fuel System 1. FUEL SYSTEM A. LOW FUEL (Caution Message) Chapter 5: ABNORMAL PROCEDURES – Air-conditioning, Bleed and Pressurization 3. BLEED SYSTEM F. L BLEED DUCT or R BLEED DUCT ABNORMAL PROCEDURES – Fuel 1. FUEL S. Fuel Leak Procedure	W. Istchenko 09 Nov 2018	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Corrected the Ram Air minimum speed for the CRJ 900. <RS-333>• Editorial change. <RS-336>	09 Nov 2018 BCSG
REV 21	Chapter 1: INTRODUCTION – General 6. ABBREVIATIONS Chapter 2: LIMITATIONS – Power Plant 5. ENGINE RELIGHT LIMITATIONS – Navigation System Limitations 1. FLIGHT MANAGEMENT SYSTEM (FMS) <1024> or <1050> or <1214> or <1215> B. FMS-4200 Operating Limitations <1024> or <1050> or <1214> or <1215> 3. INERTIAL REFERENCE SYSTEM (IRS) – DUAL	29 Mar 2019 W. Istchenko	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Clarifies various hydraulic system failure procedures. <RS-158>• Engine relight limitations changed.• Procedural update:<ul style="list-style-type: none">• Double Engine Failure procedure. <RS-234>• Update to the FMS instrument approaches limitations. <RS-329>• Update to the List of	29 Mar 2019 BCSG

DOT Approved

Airplane Flight Manual
CSP C-012-219



RECORD OF REVISIONS

00-02-62

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	INSTALLATION<1025> 4. GYRO COMPASSING ATTITUDE AND HEADING REFERENCE SYSTEM – DUAL INSTALLATION<1100> Chapter 3: EMERGENCY PROCEDURES – Power Plant 1. POWER PLANT C. Double Engine Failure EMERGENCY PROCEDURES – Hydraulic Power 1. HYDRAULIC POWER A. HYD 1 HI TEMP (Caution Message) B. HYD 2 HI TEMP (Caution Message) C. HYD 2 LO PRESS and HYD 3 LO PRESS (Caution Messages) Chapter 5: ABNORMAL PROCEDURES – Hydraulic Power 1. HYDRAULIC POWER B. HYD 1 LO PRESS C. HYD 2 LO PRESS D. HYD 3 LO PRESS E. HYD 1 HI TEMP F. HYD 2 HI TEMP G. HYD 3 HI TEMP N. HYD 1 LO PRESS and HYD 2 LO PRESS O. HYD 1 LO PRESS and HYD 3 LO PRESS		Abbreviations. • Update to the FMS-4200. • Upgrade to the IRS LTN-101. • Upgrade to the AHRS. <RS-339>	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-63

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	P. HYD 2 LO PRESS and HYD 3 LO PRESS (Caution Messages) Chapter 7: SUPPLEMENT 18 – Operation with Reduced Landing Reference Speed (V_{REF}) 3. EMERGENCY PROCEDURES I. HYD 1 HI TEMP (Caution Message) J. HYD 2 HI TEMP (Caution Message) K. HYD 2 LO PRESS and HYD 3 LO PRESS 5. ABNORMAL PROCEDURES AA. HYD 1 LO PRESS AB. HYD 2 LO PRESS AC. HYD 3 LO PRESS AD. HYD 1 HI TEMP AE. HYD 2 HI TEMP AF. HYD 3 HI TEMP AG. HYD 1 LO PRESS and HYD 2 LO PRESS AH. HYD 1 LO PRESS and HYD 3 LO PRESS AI. L AOA HEAT and R AOA HEAT SUPPLEMENT 18B –			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-64

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Operation with Reduced Landing Reference Speed (V_{REF}) <2098> 3. EMERGENCY PROCEDURES I. HYD 1 HI TEMP (Caution Message) J. HYD 2 HI TEMP (Caution Message) K. HYD 2 LO PRESS and HYD 3 LO PRESS 5. ABNORMAL PROCEDURES Z. HYD 1 LO PRESS AA. HYD 2 LO PRESS AB. HYD 3 LO PRESS AC. HYD 1 HI TEMP AD. HYD 2 HI TEMP AE. HYD 3 HI TEMP AF. HYD 1 LO PRESS and HYD 2 LO PRESS AG. HYD 1 LO PRESS and HYD 3 LO PRESS AH. L AOA HEAT and R AOA HEAT			
REV 22	Chapter 2: LIMITATIONS – Power Plant 6. FUEL C. Fuel Grades LIMITATIONS – System	W. Istchenko 07 Jun 2019	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Addition of a NOTE re-identifying ASTM Jet A, A-1 are considered equivalent to fossil based	07 Jun 2019 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-65

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Limitations 2. AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS) Chapter 3 EMERGENCY PROCEDURES – Air-conditioning, Bleed and Pressurization 1. AIR-CONDITIONING AND PRESSURIZATION B. DIFF PRESS <TC> or <FAA> or <JAA> B. DIFF PRESS <AR> EMERGENCY PROCEDURES – Bleed Air Leaks 1. BLEED AIR LEAKS A. L BLEED DUCT or R BLEED DUCT Chapter 5: ABNORMAL PROCEDURES – In-Flight Engine Failures 1. IN-FLIGHT ENGINE FAILURES D. Engine Failure in Climb During (V) ALTS CAP or (V) ALTV CAP <1239> ABNORMAL PROCEDURES – Air-conditioning, Bleed and Pressurization 3. BLEED SYSTEM F. L BLEED DUCT or R BLEED DUCT 4. PRESSURIZATION SYSTEM F. Unpressurized Flight Procedure (Packs off)		<p>fuels. <RS-335></p> <ul style="list-style-type: none">Additional of a NOTE to land at the nearest suitable airport if the RAM AIR OPEN status does not come on. <p><RS-341></p> <ul style="list-style-type: none">Title and procedure revised to include (V) ALTV CAP altitude capturing mode. <p><RS-343></p>	

DOT Approved

Airplane Flight Manual
CSP C-012-219



RECORD OF REVISIONS

00-02-66

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
REV 23	Cancelled			
REV 24	Chapter 1: INTRODUCTION – General 6. ABBREVIATIONS 7. AIRPLANE OPTION CODES Chapter 2: LIMITATIONS – Introduction 2. KINDS OF AIRPLANE OPERATION LIMITATIONS – Power Plant 7. Oil C. Engine Oil Level D. Oil Replenishment System LIMITATIONS – Operating Speeds 9. TURBULENCE PENETRATION SPEED LIMITATIONS – System Limitations 19. AIRCRAFT DATA LINK SYSTEM (ACARS AND CPDLC) _{<1243>} B. Data Link LIMITATIONS – Navigation	W. Istchenko 27 Mar 2020	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Limitation sections moved to new Supplement 21, Operational Capabilities: TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS) AUTOMATIC DEPENDENT SURVEILLANCE BROADCAST (ADS-B) OUT• Introduction of a new supplement providing operational capability statements:<ul style="list-style-type: none">• Reduced Vertical Separation Minimum (RVSM)_{<1030>}• Traffic Alert and Collision Avoidance System (TCAS)• Flight Management System (FMS)• FM Immunity_{<1103>}• Mode S Elementary Surveillance• Enhanced Mode S Surveillance• Automatic Dependent Surveillance-Broadcast (ADS-B)	27 Mar 2020 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-67

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	<p>System Limitations</p> <p>1. FLIGHT MANAGEMENT SYSTEM (FMS) <1024> or <1050> or <1214> or <1215></p> <p>B. FMS-4200 Operating Limitations <1024> or <1050> or <1214> or <1215></p> <p>2. GLOBAL POSITIONING SYSTEM (GPS) <1027> or <1047> or <1236> or <1244></p> <p>A. General</p> <p>Chapter 5:</p> <p>ABNORMAL PROCEDURES – Ice and Rain Protection</p> <p>2. ELECTRICAL ANTI-ICE</p> <p>M. Windshield or Window Cracking, Shattering, Arcing or Delamination</p> <p>ABNORMAL PROCEDURES – Instruments System</p> <p>1. INSTRUMENTS SYSTEM</p> <p>L. XPDR FAIL</p> <p>M. ADS-B OUT FAIL</p> <p>N. Uncommanded True Heading Indication <1025>.</p> <p>Chapter 7:</p> <p>SUPPLEMENTS – List of Supplements</p> <p>SUPPLEMENT 21 – Operational Capabilities</p> <p>1. INTRODUCTION</p> <p>2. LIMITATIONS</p> <p>3. EMERGENCY PROCEDURES</p>		<ul style="list-style-type: none">• A. Data Link – ATN B1 CPDLC (Controller-To-Pilot Data Link Communication) <1243> <RS-182>• Harmonize the times for oil level check after engine shutdown. <p><RS-310></p> <p>Procedural update:</p> <ul style="list-style-type: none">• Windshield or Window Cracking, Shattering, Arcing or Delamination procedure. <RS-315>• Update the illustration to add a line to the wing tip lens sealant.• Update the CDL index for the CAFM. <2098>• MEMO RJSE-19-008 Rev. C, in reference to Horizontal Stabilizer Root Seal Assembly. <p><RS-327></p> <ul style="list-style-type: none">• Clarified the recommended speed for turbulence penetration <RS-328>• Uncommanded True Heading Indication (only applicable to option <1025>). <RS-346>	

DOT Approved

Airplane Flight Manual
CSP C-012-219



RECORD OF REVISIONS

00-02-68

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	4. NORMAL PROCEDURES 5. ABNORMAL PROCEDURES 6. PERFORMANCE 7. SUPPLEMENTS 8. NAVIGATION A. Reduced Vertical Separation Minimum (RVSM) <1030> B. Traffic Alert and Collision Avoidance System (TCAS) C. Flight Management System (FMS) D. FM Immunity <1103> 9. SURVEILLANCE A. Mode S Elementary Surveillance B. Enhanced Mode S Surveillance C. Automatic Dependent Surveillance-Broadcast (ADS-B) 10. COMMUNICATIONS A. Data Link – ATN B1 CPDLC (Controller-To-Pilot Data Link Communication) <1243> Chapter 8: APPENDIX 1 – Configuration Deviation List 21 AIR-CONDITIONING 21-51 Ram air exhaust duct assembly (L/R) vanes			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-69

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	23 COMMUNICATIONS 23-61 Static dischargers and base 27 FLIGHT CONTROLS 27-10 Seals between aileron side end and wing 27-20 Seals between rudder and vertical stabilizer 27-20 Seals between inboard flaps and fuselage fairing 27-30 Seals between elevator and horizontal stabilizer upper surface 27-50 Inboard flap – Outboard seal (seal between flap side end and wing) 27-50 Outboard flap – Inboard seal (seal between flap side end and wing) 27-50 Outboard flap – Outboard seal (seal between flap side end and aileron) 27-50 Seals around flap fairing 27-54 Bute door seals, outboard flap 27-54 Skin panel seals, inboard flap 27-64 P-seal under the Multi-Function Spoilers (MFS) shroud (1 seal per wing side) 28 FUEL 28-41 Magnetic level indicators			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-70

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	32 LANDING GEAR 32–12 Left or right main landing gear door 32–12 Main landing gear door brush 32–12 Main landing gear door blade seal 33 LIGHTS 33–42 Navigation light covers on vertical stabilizer 33–43 Wing inspection light covers 33–44 Anti-collision light cover on vertical stabilizer 33–44 Lower/upper beacon (red) light covers 33–46 Logo light covers 33–50 Exterior emergency light covers 51 STRUCTURES 51–23 Aerodynamic sealant 51–23 Aerodynamic sealant – Air intake 51–23 Aerodynamic sealant – Engine nozzles 51–23 Aerodynamic sealant – Pitot static probe			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-71

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	52 DOORS 52-45 Low pressure ground air connection access door (182BR) 52-45 Aft lavatory service door (196ER) 52-45 Forward waste water service door (142BR) 52-45 Forward potable water service door (142AR) 52-45 AC ground power connection door (122DR) 52-45 Aft potable water service door (195EL) 52-45 High pressure ground air connection access door (313AL) 52-45 Deflector around forward and center cargo door 53 FUSELAGE 53-12 Forward jacking pad nylon plug 53-20 Passenger door hinge fairing 53-82 Flap stub fairings 53-83 Wheel bin brushes (3 brushes per wheel bin) 53-83 Small 4th wheel bin brush 55 STABILIZER 55-12 Horizontal stabilizer root seal assembly			

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-72

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	57 WING 57–20 Wing jacking pad nylon plugs 57–21 Main landing gear door cut-out seals 57–41 Left hand or right hand wing slat closing plates 57–41 Left hand or right hand wing slat seals 78 EXHAUST 78–33 Transcowl omega seal			
REV 25	Cancelled			
REV 26	Chapter 1: INTRODUCTION – General 7. AIRPLANE OPTION CODES Chapter 2: LIMITATIONS – Operating Limitations 14. MAXIMUM CABIN OCCUPANTS <TC> or <FAA> or <JAA> LIMITATIONS – Navigation System Limitations 2. GLOBAL POSITIONING SYSTEM (GPS) <1027> or <1047> or <1236> or <1244> B. LPV Operations <1108>	W. Istchenko 16 Oct 2020	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">Revised a step in the Rejected Take-off Before Achieving V₁.Changed the title of the existing procedure to add (In Flight) and created two new procedures for (On Ground).Pilots and Flight attendants conduct specific aircraft evacuation recurrent training required by the authorities. Therefore these steps are redundant and not	16 Oct 2020 BCSG

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-73

Rev. 28, Jun 04/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Chapter 3: EMERGENCY PROCEDURES – Rejected Take-off 1. REJECTED TAKE-OFF A. Rejected Take-off Before Achieving V ₁ EMERGENCY PROCEDURES – Smoke/Fire/Fumes 1. SMOKE/FIRE/FUMES B. Smoke/Fire/Fumes Procedure E. SMOKE AFT CARGO or SMOKE FWD CARGO (In Flight) F. SMOKE AFT CARGO or SMOKE FWD CARGO (On Ground) EMERGENCY PROCEDURES – Evacuation 1. Evacuation A. Passenger Evacuation EMERGENCY PROCEDURES – Air-Conditioning and Pressurization 1. AIR-CONDITIONING AND PRESSURIZATION A. CABIN ALT (Warning message) or Emergency Descent Procedure. Chapter 4: NORMAL PROCEDURES –		required in the manual. <RS-320> <ul style="list-style-type: none">• Editorial change.• Added steps that were missing in the AFM. <RS-324> <ul style="list-style-type: none">• Effectivities revised.• Isolation of In-Seat Power Supply System (ISPS) option <1107> added. <RS-345> <ul style="list-style-type: none">• LPV operations are prohibited in Alaska for airplanes equipped with GPS –100. <RS-349> <ul style="list-style-type: none">• A new option and paragraph added for MAXIMUM CABIN OCCUPANTS. <TC> or <FAA> or <JAA> <RS-350>	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-74

Rev. 29, Oct 15/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Consolidated Procedures 2. PRIOR TO START D. Originating Check			
REV 27	Chapter 1: INTRODUCTION – General 1. INTRODUCTION 8. SERVICE BULLETINS Chapter 2: LIMITATIONS – Power Plant 6. FUEL D. Fuel Additives Chapter 3: EMERGENCY PROCEDURES – Introduction 1. INTRODUCTION Chapter 4: NORMAL PROCEDURES – Introduction 1. INTRODUCTION NORMAL PROCEDURES – Consolidated Procedures 2. PRIOR TO START A. Safety Check Chapter 5: ABNORMAL PROCEDURES – Introduction 1. INTRODUCTION	W. Istchenko 26 Mar 2021	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Removal of Kathon FP 1.5 biocide additive. <RS-351>• Name change from Bombardier Aerospace to MHIRJ.• Logo change throughout the entire manual from CRJ Series Regional Jet to MHIRJ.• ORIGINAL SIGNED has been re-introduced in the approval pages. <RS-356>	26 Mar 2021 MHIRJ
REV 28	Chapter 1:	W. Istchenko	Introduces the following changes to the Airplane Flight	04 Jun 2021 MHIRJ

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-75

Rev. 29, Oct 15/2021

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	INTRODUCTION – General 6. ABBREVIATIONS 7. AIRPLANE OPTION CODES Chapter 5: ABNORMAL PROCEDURES – Power Plant 1. POWER PLANT J. NO STRTR CUTOUT (In flight) K. NO STRTR CUTOUT (On the ground) L. L STRT VLV OPEN or R STRT VLV OPEN (In flight) M. L STRT VLV OPEN or R STRT VLV OPEN (On the ground) Chapter 7: SUPPLEMENTS – List of Supplements SUPPLEMENT 26 – Temporary Cargo Carrying Operations<2252> 1. INTRODUCTION 2. LIMITATIONS 8. CARGO<2252> 14. MAXIMUM OCCUPANTS AND OCCUPANT REQUIREMENTS<2252> 15. TEMPORARY CARGO CARRYING OPERATIONS<2252>	04 Jun 2021	<p>Manual:</p> <ul style="list-style-type: none">• New supplement for Temporary Cargo Carrying Operations <RS-355>• Revised the effectivities to support incorporating one or both of the following Service Bulletins: 670BA-34-039 and 670BA-34-031. <RS-359>	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-76

Rev. 30, Mar 25/2022

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	3. EMERGENCY PROCEDURES 4. NORMAL PROCEDURES C. Before Take-Off Check C. Before Landing Check 5. ABNORMAL PROCEDURES E. Drop-Down Oxygen, Auto-Deploy Failure 6. PERFORMANCE DATA 7. SUPPLEMENTS			
REV 29	Chapter 5: ABNORMAL PROCEDURES – Power Plant 1. POWER PLANT T. N ₁ Fan Vibration Chapter 8: APPENDIX 1 – Configuration Deviation List APPENDIX 1 – Configuration Deviation List 52 DOORS 52 – 45 High pressure ground air connection access door (311AL)	W. Istchenko 15 Oct 2021	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Procedural update:<ul style="list-style-type: none">• N₁ Fan Vibration procedure. <RS-354>• Editorial change. <RS-361>	15 Oct 2021 MHIRJ
REV 30	Chapter 5: ABNORMAL PROCEDURES – Flight Controls 1. FLIGHT CONTROLS N. IB FLT SPLRS O. OB FLT SPLRS	W. Istchenko 25 Mar 2022	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Procedural update:<ul style="list-style-type: none">• Abnormal – Flight Controls – Spoilers procedures. <RS-312>	

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF REVISIONS

00-02-77

Rev. 30, Mar 25/2022

Revision	Pages / Units of Work Affected	DOT Approval	Description of Revision	Date Incorporated / Signature
	Q. IB SPOILERONS R. OB SPOILERONS Chapter 7: SUPPLEMENT 18 – Operation with Reduced Landing Reference Speed (V_{REF}) 5. ABNORMAL PROCEDURES Q. IB FLT SPLRS R. OB FLT SPLRS S. IB SPOILERONS T. OB SPOILERONS SUPPLEMENT 18B – Operation with Reduced Landing Reference Speed (V_{REF}) <2098> 5. ABNORMAL PROCEDURES P. IB FLT SPLRS Q. OB FLT SPLRS R. IB SPOILERONS S. OB SPOILERONS		<ul style="list-style-type: none">Editorial change. <RS-362>	

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



RECORD OF REVISIONS

00-02-78

Rev. 30, Mar 25/2022

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-1

Rev. 28, Jun 04/2021

Record the date you insert each temporary revision in your manual.

APPLICABILITY STATEMENTS

Applicability statements are found in the Subject boxes throughout this Record. These statements indicate the applicability (relevance) of the information presented in the Temporary Revision (Regulatory Authority and/or Option codes). Operators shall use the Applicability statements to determine which Temporary Revisions are relevant to their operations and aircraft configurations.

Example of the Applicability statements:

"Applicable to FAA registered airplanes only";

"For airplanes equipped with <1040>".

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/1	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">• Altitude and temperature operating envelopes to determine the applicability of performance corrections for airplanes not incorporating FADEC version 6.0 or equivalent.• Correction factors to the available runway length when determining the maximum take-off weight limited by field length requirements, at certain conditions within the given operating envelope described above.• Correction factors to the maximum take-off weight limited by climb requirements, at certain conditions within the given operating envelope described above.• Correction factors to the required runway length for a given take-off weight, at certain conditions within the given operating envelope described above.• Correction factors to the first and second segment net climb gradients, at certain conditions within the given operating envelope described above.	L. Galvin 09 Sep 2002	Superseded by RJ 900/1-1

DOT Approved

Airplane Flight Manual
CSP C-012-219



RECORD OF TEMPORARY REVISIONS

00-03-2

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/1-1	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">• Altitude and temperature operating envelopes to determine the applicability of performance corrections for airplanes not incorporating FADEC version 6.01 or equivalent.• Correction factors to the available runway length when determining the maximum take-off weight limited by field length requirements, for dry and wet runway operations, at certain conditions within the given operating envelope described above.• Correction factors to the maximum take-off weight limited by climb requirements, at certain conditions within the given operating envelope described above.• Correction factors to the required runway length for a given take-off weight, for dry and wet runway operations, at certain conditions within the given operating envelope described above.• Correction factors to the first and second segment net climb gradients, at certain conditions within the given operating envelope described above.• Correction factors to the available runway length when determining the maximum take-off weight limited by field length requirements, for contaminated runway operations, at certain conditions within the given operating envelope described above.	W. Jupp 21 Jul 2004	Superseded by REV 3 dtd 03 May 2005

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-3

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
	<ul style="list-style-type: none">Correction factors to the required runway length for a given take-off weight, for contaminated runway operations, at certain conditions within the given operating envelope described above.		
RJ 900/2	Temporary revision to introduce a limitation which restricts the total baggage capacity in the forward cargo compartment to 386 kg (850 lb).	L. Galvin 09 Sep 2002	Superseded by REV 1 dtd 13 Jan 2003
RJ 900/3	Temporary revision to incorporate changes to the Flight Compartment Smoke Removal Procedure and to the Noise Characteristics data (Supplement 1), due to FAA comments.	L. Galvin 25 Oct 2002	Superseded by REV 2 dtd 24 Feb 2004
RJ 900/4	Temporary revision to introduce the following: <ul style="list-style-type: none">Windshear detection and escape guidance information.	W. Jupp 16 Dec 2002	Superseded by REV 2 dtd 24 Feb 2004
RJ 900/5	Temporary revision to introduce the following: <ul style="list-style-type: none">Procedures, minimum brake cooling times and quick turn-around landing weight data for dispatch with the Brake Temperature Monitoring System (BTMS) inoperative;Performance decrements and data for dispatch with various airplane systems inoperative, as Supplement 5;Performance decrements and data for dispatch with one channel of the anti-skid system inoperative, as Supplement 7; andPerformance decrements and data for flight with the landing gear fixed down, as Supplement 8.	W. Jupp 29 May 2003	Superseded by REV 2 dtd 24 Feb 2004

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-4

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/6	<p>Applicable to JAA-registered airplanes only:</p> <p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">• Fuel feed check valve test.	W. Jupp 16 Dec 2002	Superseded by REV 2 dtd 24 Feb 2004
RJ 900/7	Introduces the following changes: <ul style="list-style-type: none">• To advise the flight crew of changes to the 'After Start Check'.• <Wing anti-ice first flight of day check no longer required.>	W. Jupp 11 Jul 2003	Superseded by REV 3 dtd 03 May 2005
RJ 900/8	Temporary revision to introduce the following: <ul style="list-style-type: none">• Chinese No. 3 Jet fuel <RS-33>.	W. Jupp 21 Oct 2003	Superseded by TR RJ 900/13-1
RJ 900/9	Temporary revision to introduce the following: <ul style="list-style-type: none">• Operational limitations for an intrusion resistant flight compartment door.	W. Jupp 14 Feb 2003	Superseded by REV 2 dtd 24 Feb 2004
RJ 900/10	Temporary revision to introduce the following: <ul style="list-style-type: none">• A centre tank fuel quantity monitoring limitation and check.• A Boost Pump Cycling procedure,• An Abnormal Increase of Centre Tank Quantity procedure, and• Changes to the Fuel Imbalance procedure.	W. Jupp 22 Jan 2003	Superseded by RJ 900/10-1
RJ 900/10-1	Temporary revision to introduce the following: <ul style="list-style-type: none">• A centre tank fuel quantity monitoring limitation and check.• A Boost Pump Cycling procedure,• An Abnormal Increase of Centre Tank Quantity or Suspected Leak into Centre Tank procedure, and	W. Jupp 19 Dec 2003	Superseded by REV 2 dtd 24 Feb 2004

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-5

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
	<ul style="list-style-type: none">Changes to the Fuel Imbalance procedure.		
RJ 900/11	<p>For airplanes equipped with <2219>:</p> <p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Operational limitations for the aircraft communications addressing and reporting system (ACARS). <p><RS-29></p>	W. Jupp 31 Oct 2003	Superseded by REV 2 dtd 24 Feb 2004
RJ 900/12	<p>Applicable to MESA Airlines airplanes only:</p> <ul style="list-style-type: none">Temporary revision to advise Mesa Airlines of an altitude restriction during flight spoiler or hydraulic system failures with 13-minute oxygen generators installed.	W. Jupp 18 May 2004	Superseded by REV 2A dtd 14 Jul 2004
RJ 900/13	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Bulk fuel take-off limits.	W. Jupp 31 Dec 2003	Superseded by RJ 900/13-1
RJ 900/13-1	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Bulk fuel take-off limits and Chinese No. 3 Jet fuel data. Supersedes TR RJ 900/8.	W. Jupp 16 Feb 2004	Superseded by REV 2 dtd 24 Feb 2004
RJ 900/14	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Configuration Deviation List – Limitations for dispatch with ram air exhaust duct assembly vanes missing.	W. Jupp 20 Oct 2003	Superseded by REV 2 dtd 24 Feb 2004

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-6

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/15	Temporary revision to introduce the following: <ul style="list-style-type: none">• Within the hydraulic system abnormal procedures section, add a reference to the HYD 1 HI TEMP and HYD 2 HI TEMP emergency procedures, and• Add a hydraulic system emergency procedures section, with HYD 1 HI TEMP and HYD 2 HI TEMP (amber) caution messages as the emergency procedures. <RS-15>	W. Jupp 10 Jul 2003	Superseded by REV 2 dtd 24 Feb 2004
RJ 900/16	Temporary revision to introduce the following: <ul style="list-style-type: none">• Revised towbarless towing limitation.	W. Jupp 25 Apr 2003	Superseded by REV 2 dtd 24 Feb 2004
RJ 900/17	Temporary revision to introduce the following: <ul style="list-style-type: none">• Introduction of data for PRNAV operations in European airspace . <RS-17>	W. Jupp 24 Feb 2004	Superseded by TR RJ900/17-1
RJ 900/17-1	Temporary revision to introduce the following: <ul style="list-style-type: none">• Introduction of data for PRNAV operations in European airspace <Revised DME requirements>. <RS-66>	W. Jupp 14 Jun 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/18	Temporary revision to introduce the following: <ul style="list-style-type: none">• Configuration Deviation List Update. <Revised coverage for main landing gear doors 32-12>	W. Jupp 16 Sep 2003	Superseded by REV 2 dtd 24 Feb 2004

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-7

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/19	Temporary revision to introduce the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Revised APU Altitude and Airspeed Chart.	W. Jupp 21 Oct 2003	Superseded by REV 2 dtd 24 Feb 2004
RJ 900/20	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Revised minimum ambient temperature approved for take-off.• Reworks the maximum ambient air temperature approved for take-off and landing. <RS-32>	W. Jupp 23 Dec 2003	Superseded by REV 2 dtd 24 Feb 2004
RJ 900/21	Temporary revision to introduce the following: <ul style="list-style-type: none">• Incorporation of data for operation in Reduced Vertical Separation Minimum (RVSM) airspace. <RS-48>	W. Jupp 16 Jan 2004	Superseded by REV 2 dtd 24 Feb 2004
RJ 900/22	Temporary revision to introduce the following: <ul style="list-style-type: none">• Configuration Deviation List Update. <Revised coverage for static dischargers 23-61>	W. Jupp 18 May 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/23	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Revised Minimum Brake Cooling Time for Take-off with the BTMS inoperative.	W. Jupp 19 Aug 2004	Superseded by REV 3 dtd 03 May 2005

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



RECORD OF TEMPORARY REVISIONS

00-03-8

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/24	Temporary revision to introduce the following: <ul style="list-style-type: none">• Noise Characteristics Supplement Update:<ul style="list-style-type: none">• Master AFM version of Noise Supplement,• Quote amendment levels of the AWM / FAR / ICAO requirements / regulations for noise characteristics data. <RS-31>	W. Jupp 18 May 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/25	Temporary revision to introduce the following: <ul style="list-style-type: none">• An alternate method of calculating performance adjustments for dispatch with the Slats or Flaps operating at half speed (Supplement 5) and for flight with the landing gear down (Supplement 8).• Revised performance corrections for miscellaneous systems component failures. <RS-53>	W. Jupp 30 Nov 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/26	Temporary revision to introduce the following : <ul style="list-style-type: none">• Circuit breaker reset limitation. <In Flight>	W. Jupp 03 Feb 2004	Superseded by TR RJ 900/26-1
RJ 900/26-1	Temporary revision to introduce the following : <ul style="list-style-type: none">• Circuit breaker reset limitation. <In Flight>	W. Jupp 07 Apr 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/27	To be issued later.		

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-9

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/28	To be issued later.		
RJ 900/29	Temporary revision to introduce the following: <ul style="list-style-type: none">• All CRJ900 doors and overwing exits are usable for ditching. <RS-61>	W. Jupp 12 Mar 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/30	Introduces the following changes to the Airplane Flight Manual: <ul style="list-style-type: none">• Configuration Deviation List Update:<ul style="list-style-type: none">• Provide illustrations to properly locate and identify the missing or damaged part(s) for which CDL relief has been given;• Provide coverage for missing P-seals under the multi-function flight spoilers (MFS) shroud (27-64); and• Revised data for missing weather seals around the forward cargo door (52-45).	W. Jupp 09 Nov 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/31	Temporary revision to introduce the following: <ul style="list-style-type: none">• Changes to the L XFER SOV or R XFER SOV and the Abnormal Increase of Centre Tank Quantity or Suspected Leak into Centre Tank procedures.	W. Jupp 01 Apr 2004	Superseded by RJ 900/31-1
RJ 900/31-1	Temporary revision to introduce the following: <ul style="list-style-type: none">• Changes to the L XFER SOV or R XFER SOV and the Abnormal Increase of Centre Tank Quantity or Suspected Leak into Centre Tank procedures. <Addition of statement to XFER SOV procedure to confirm fuel leak.>	W. Jupp 16 Apr 2004	Superseded by RJ 900/31-2

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-10

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/31-2	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Fuel Leak procedure,• Gravity Crossfeed procedure,• Associated changes to the FUEL CH 1/2 FAIL, MAIN EJECTOR and SCAV EJECTOR, FUEL IMBALANCE, FUEL LO PRESS, XFLOW PUMP, and Abnormal Increase of Centre Tank Quantity or Suspected Leak into Centre Tank procedures, and• Incorporate TR RJ 900/31-1 <RS-45>	W. Jupp 31 Aug 2006	Superseded by RJ 900/31-3
RJ 900/31-3	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Fuel Leak procedure,• Gravity Crossfeed procedure,• Associated changes to the FUEL CH 1/2 FAIL, MAIN EJECTOR and SCAV EJECTOR, FUEL IMBALANCE, FUEL LO PRESS, XFLOW PUMP, and Abnormal Increase of Centre Tank Quantity or Suspected Leak into Centre Tank procedures, and• Fuel Leak Procedure - Carry over the minimum fuel quantity for go-around.	W. Jupp 05 Apr 2007	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/32	To be issued later.		

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-11

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/33	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Changes to the reduced thrust take-off data which recommends an alternate means of verifying the availability of full rated take-off thrust by using an engine trend monitoring program in lieu of full power demonstrations. <p><RS-67></p>	W. Jupp 22 Jul 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/34	<p>Introduces the following changes to the Airplane Flight Manual:</p> <ul style="list-style-type: none">Incorporation of new take-off performance data for wet grooved or porous friction course runways.	W. Jupp 15 Sep 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/35	<p>Introduces the following changes to the Airplane Flight Manual:</p> <ul style="list-style-type: none">Data covering rapid and large alternating control inputs. <p>< RS-56></p>	W. Jupp 08 Jun 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/36	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Revised note, Service Bulletin and effectivity references within the L or R PACK TEMP / PACK abnormal procedures. <p><RS-69></p>	W. Jupp 30 Nov 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/37	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Configuration Deviation List Update:Revise the coverage for left hand or right hand wing slat closing plates, item 57-41 (closing plate / bracket on the telescopic anti-ice duct, and closing plate on the slat track).	W. Jupp 18 Aug 2004	Superseded by REV 3 dtd 03 May 2005

DOT Approved

Airplane Flight Manual
CSP C-012-219



RECORD OF TEMPORARY REVISIONS

00-03-12

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/38	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">Revised Nose Wheel Steering System limitation. <RS-50>	W. Jupp 27 Sep 2006	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/39	Temporary revision to introduce the following: <ul style="list-style-type: none">Reversion of the windmilling relight altitude back to 21,000 feet.	W. Jupp 07 Jan 2005	Superseded by TR RJ 900/39-1
RJ 900/39-1	Temporary revision to introduce the following: <ul style="list-style-type: none">Reversion of the windmilling relight altitude back to 21000 feet, andReversions to the Double Engine Failure emergency procedure.	W. Istchenko 13 Jan 2010	Superseded by REV 5 dtd 21 Jun 2010
RJ 900/40	Temporary revision to introduce the following: <ul style="list-style-type: none">Miscellaneous changes to the smoke or fire procedures. <RS-3>	W. Jupp 12 Aug 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/41	Temporary revision to introduce the following: <ul style="list-style-type: none">Simplified FLAPS FAIL, SLATS FAIL, FLAPS FAIL and SLATS FAIL abnormal procedures. <RS-39>	W. Jupp 02 Nov 2004	Superseded by RJ 900/41-1
RJ 900/41-1	Temporary revision to introduce the following: <ul style="list-style-type: none">Simplified FLAPS FAIL, SLATS FAIL, FLAPS FAIL and SLATS FAIL abnormal procedures, and <RS-39>	W. Jupp 14 Jan 2005	Superseded by REV 3 dtd 03 May 2005

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-13

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
	<ul style="list-style-type: none">Revised RUD LIMITER procedure. <RS-58>		
RJ 900/42	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Provide CDL coverage for missing P-seals (27-64) under the Multi-Function Spoilers (MFS) shroud.	W. Jupp 03 Nov 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/43	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Wing anti-ice system limitation concerning Type III anti-icing fluid. <RS-62>	W. Jupp 30 Sep 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/44	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Increased demonstrated crosswind components for take-off and landing. <RS-72>	W. Jupp 05 Nov 2004	Superseded by REV 3 dtd 03 May 2005
RJ 900/45	<p>Temporary revision to advise the flight crew of the following:</p> <ul style="list-style-type: none">Revised RUD LIMITER abnormal procedure.	W. Jupp 30 Nov 2004	Superseded by TR RJ 900/41-1
RJ 900/46	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Removal of the fuel boost pump pre-flight check from the Normal Procedures section. <RS-75>	W. Jupp 27 Sep 2005	Superseded by REV 4 dtd 16 Feb 2010

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



RECORD OF TEMPORARY REVISIONS

00-03-14

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/47	<p>Temporary revision to introduce the following changes to the Airplane Flight Manual:</p> <ul style="list-style-type: none">• Update of the Configuration Deviation List (CDL) to remove the application of CDL performance corrections to structural weight limits;• Revised CDL coverage for the main landing gear inboard door (32-12); and• Supersedes Temporary Revisions TR RJ 900/37 and TR RJ 900/42. <RS-76>	W. Jupp 16 Jun 2005	Superseded by TR RJ 900/47-1
RJ 900/47-1	<p>Temporary revision to introduce the following changes to the Airplane Flight Manual:</p> <ul style="list-style-type: none">• Update of the Configuration Deviation List (CDL) to remove the application of CDL performance corrections to structural weight limits;• Revised CDL coverage for the main landing gear inboard door (32-12). <p><RS-76><Changes to reflect REV 3, May 03/05.></p>	W. Jupp 08 Aug 2005	Superseded by TR RJ 900/47-2
RJ 900/47-2	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">• Update of the Configuration Deviation List (CDL) to remove the application of CDL performance corrections to structural weight limits;• Revised CDL coverage for the main landing gear inboard door (32-12); and	W. Jupp 03 Jan 2006	Superseded by RJ900/47-3

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-15

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
	<ul style="list-style-type: none">Revised CDL coverage for the LH and RH wing slat closing plate (57-41) telescopic anti-ice duct closing plate. <Item 57-41, removal of flight hour limitation.>		
RJ 900/47-3	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Update of the Configuration Deviation List (CDL) to revise the applicable performance conditions;Addition of CDL coverage for the main landing gear inboard door blade seal (32-12);Addition of CDL coverage for the forward jacking pad nylon plug (52-12), passenger door hinge fairing (53-20), flap stub fairings (53-82) and small 4th wheel bin brush (53-83);Addition of CDL coverage for the horizontal stabilizer root seal assembly (55-32);Addition of CDL coverage for the wing jacking pad nylon plugs (57-20) and main landing gear door cut-out seals (57-21);Addition of CDL coverage for the transcowl omega seal (78-33); andSupersedes TR RJ 900/47-2. <RS-6>	W. Jupp 16 Jan 2007	Superseded by TR RJ 900/47-4
RJ 900/47-4	<p>Temporary revision to introduce the following changes to the Airplane Flight Manual:</p> <ul style="list-style-type: none">Update of the Configuration Deviation List (CDL) to remove the recommended maximum cruise speed with an inboard landing gear door missing (32-12), and	R. W. Walker 11 Jun 2008	Superseded by REV 4 dtd 16 Feb 2010

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-16

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
	<ul style="list-style-type: none">• Addition of CDL coverage for aerodynamic sealant on the fuselage in the RVSM zone between FS185.50 and FS220.00 and between WL76.00 and WL100 (51-23). <RS-105>		
RJ 900/48	Temporary revision to introduce the following: <ul style="list-style-type: none">• New take-off limitation to emphasize the requirement for an aerodynamically clean airplane during cold weather operations. <RS-77>	W. Jupp 24 Dec 2004	Superseded by TR RJ 900/48-1
RJ 900/48-1	Temporary revision to introduce the following: <ul style="list-style-type: none">• New take-off limitation to emphasize the requirement for an aerodynamically clean airplane during cold weather operations. <Additional TC & FAA requirements.>	W. Jupp 01 Feb 2005	Superseded by RJ 900/48-2
RJ 900/48-2	Temporary revision to introduce the following: <ul style="list-style-type: none">• New take-off limitation to emphasize the requirement for an aerodynamically clean airplane during cold weather operations. <Amendments to facilitate operations>	W. Jupp 07 Nov 2005	Superseded by RJ 900/48-3
RJ 900/48-3	Temporary revision to introduce the following: <ul style="list-style-type: none">• New take-off limitation to emphasize the requirement for an aerodynamically clean airplane during cold weather operations, and	R. W. Walker 19 Aug 2008	Superseded by TR RJ 900/75

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-17

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
	<ul style="list-style-type: none">Cold weather operations, critical surfaces definition updated. <RS-131>		
RJ 900/49	<p>Applicable to JAZZ airplanes only:</p> <p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Incorporation of Supplement 10, which covers the Computerized Airplane Flight Manual (CAFM) and its effect on the certified performance data contained in the basic AFM;Incorporation of performance data designated as option <2098>, in the performance chapter and applicable Supplements sections, developed specifically for use with the CAFM. <p><RS-82></p>	W. Jupp 12 Apr 2006	Superseded by TR RJ 900/49-1
RJ 900/49-1	<p>For airplanes equipped with <2098> CAFM:</p> <p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Rework of Supplement 10, to provide coverage for the CAFM on airplanes equipped with CF34-8C5A1 engines and various other configurations;Coverage for the CF34-8C5A1 engine in applicable CAFM pages of the Performance chapter and Supplement sections. <p><RS-98></p>	W. Jupp 18 Oct 2006	Superseded by RJ 900/49-2

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



RECORD OF TEMPORARY REVISIONS

00-03-18

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/49-2	<p>For airplanes equipped with <2098> CAFM:</p> <p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">• Rework of Supplement 10, to reflect the new part numbers and improvements introduced by Version 2.0 of the CAFM; and;• Supersedes TR RJ900/49-1. <p><RS-100></p>	W. Jupp 27 Jul 2007	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/50	<p>Temporary revision to introduce the following changes to the Airplane Flight Manual:</p> <ul style="list-style-type: none">• Supplementary data for Category II Operations. <p><RS-4></p>	W. Jupp 03 May 2005	Superseded by REV 3 dtd 03 May 2005
RJ 900/51	<p>Temporary revision to advise the flight crew of the following:</p> <ul style="list-style-type: none">• Revised starter duty cycle, and• Revised engine oil level and oil replenishment system limitations. <p><RS-54></p>	W. Jupp 11 May 2006	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/52	To be issued later.		
RJ 900/53	<p>Temporary revision to advise the flight crew of the following:</p> <ul style="list-style-type: none">• Thrust management data limitation revised.	W. Jupp 28 Jul 2006	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/54	Applicable to <DNA>, Republic of Argentina registered airplanes only:	R. W. Walker 03 Mar 2009	Superseded by REV 4 dtd 16 Feb 2010

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-19

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
	<p>Temporary revision to advise the flight crew of the following:</p> <ul style="list-style-type: none">• Additional information applicable to Dirección Nacioanal de Aeronavegabilidad (DNA) for aircraft registered in the Republic of Argentina. <p><RS-137></p>		
RJ 900/55	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">• Rework of the STEERING INOP and MLG OVHT FAIL abnormal procedures.	W. Jupp 14 Jul 2006	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/56	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">• Simplified EGPWS limitations and procedural data. <p><RS-59></p>	W. Jupp 30 Nov 2005	Superseded by TR RJ 900/56-1
RJ 900/56-1	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">• Addition of landing gear and flaps configuration to the terrain awareness data.	W. Istchenko 18 Jan 2010	Superseded by REV 5 dtd 21 Jun 2010
RJ 900/57	<p>For airplanes equipped with <2005> or <2006>:</p> <p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">• Improved forward centre of gravity limits for the CRJ 705/900 long range weight options. <p><RS-90></p>	W. Jupp 06 Apr 2006	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/58	<p>Temporary revision to advise the flight crew of the following:</p> <ul style="list-style-type: none">• Updates to various performance data, and	W. Jupp 12 May 2006	Superseded by RJ 900/58-1

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-20

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
	<ul style="list-style-type: none">Revised procedures and new performance data for operations using reduced landing approach speeds (V_{REF}) (designated with option code number <1228>), as Supplement 11. <RS-91>		
RJ 900/58-1	<p>Temporary revision to advise the flight crew of the following:</p> <ul style="list-style-type: none">Updates to various performance data,Revised procedures and new performance data for operations using reduced landing approach speeds (V_{REF}) (designated with option code number <1228>), as Supplement 11, andRevision to Supplement 11, Operation with Reduced Landing Reference Speed (V_{REF}), to introduce the Supplements Compatibility Table.	W. Jupp 12 May 2006	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/59	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Standardized flight crew procedures for in-flight smoke/fire/fumes emergencies. <RS-57> <AC 120-80>	W. Jupp 25 July 2007	Superseded by RJ 900/59-1
RJ 900/59-1	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Standardized flight crew procedures for in-flight smoke/fire/fumes emergencies, and	W. Jupp 20 Mar 2008	Superseded by TR RJ 900/75

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-21

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
	<ul style="list-style-type: none">Harmonize the RJ700 / RJ900 procedures. <Electrical and lavatory system circuit breaker labels corrected>		
RJ 900/60	<p>Temporary revision to advise the flight crew of the following:</p> <ul style="list-style-type: none">Statements to support AC 90-100; Enroute and Terminal RNAV Operations.	W. Jupp 21 Jun 2006	Superseded by TR RJ 900/60-1
RJ 900/60-1	<p>Temporary revision to advise the flight crew of the following:</p> <ul style="list-style-type: none">Statements to support AC 90-100A US Terminal and Enroute Area Navigation (RNAV) Operations, andSupersede TR RJ900/60. <RS-130>	R. W. Walker 17 Jun 2008	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/61	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">Addition of equivalent NATO fuel codes, Kathon FP 1.5 fuel additive and corrosion inhibitors data,Harmonize and standardize the nomenclature and specifications of all approved fuel grades, fuel temperatures and fuel additives data, andRemove obsolete APU and fuel system limitations; and harmonize APU bleed air limits. <RS-43>	W. Jupp 15 Oct 2007	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/62	<p>Temporary revision to advise the flight crew of the following:</p> <ul style="list-style-type: none">FMS limitations amended.AMJ 20X2 operations information deleted.	W. Jupp 19 Oct 2007	Superseded by REV 4 dtd 16 Feb 2010

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-22

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
	<ul style="list-style-type: none">• Redundant BRNAV operations information deleted. <AMC 20-4, Airworthiness Approval and Operational Criteria for the Use of Navigation Systems in European Airspace Designated for Basic RNAV Operations.>• PRNAV Operations -Advise that the FMS database integrity checks as required by TGL-10, section 10.6 are no longer a certification requirement. <RS-88>		
RJ 900/63	<p>Temporary revision to advise the flight crew of the following:</p> <ul style="list-style-type: none">• Introduce noise data for 36,995 kg MTOW with 33,339 kg MLW (81,560 lb MTOW with 73,500 lb MLW), and• Rework certification airplane configuration information. <RS-96>	W. Jupp 28 Jul 2006	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/64	To be issued later.		
RJ 900/65	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">• Revise the maximum altitude and temperature operating limit chart and text to increase the allowable airport pressure altitude to 9600 feet,• Incorporate applicable data from CRJ 100/200/440 Supplement 15, and• Incorporate / combine all applicable TRs. <RS-94>	W. Jupp 18 Jan 2007	Superseded by TR RJ 900/65-1

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-23

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/65-1	Temporary revision to introduce the following: <ul style="list-style-type: none">Correct CABIN ALT WARN HI message reference.	R. W. Walker 08 Apr 2008	Superseded by TR RJ 900/75
RJ 900/66	Temporary revision to introduce the following: <ul style="list-style-type: none">Changes to the EFIS COMP MON, Display Control Panel Failure, AHRS Failure, Radio Altimeter Failure and IRS Failure Abnormal procedures. <RS-92>	W. Jupp 21 Nov 2007	Superseded by TR RJ 900/66-1
RJ 900/66-1	Temporary revision to introduce the following: <ul style="list-style-type: none">Changes to the EFIS COMP MON, Display Control Panel Failure, AHRS Failure, Radio Altimeter Failure and IRS Failure Abnormal procedures. <RS-92>Radio Tuning Unit Failure procedure simplified. <RS-128>	W. Jupp 21 Nov 2007	Superseded by TR RJ 900/66-2
RJ 900/66-2	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">Changes to the EFIS COMP MON, Display Control Panel Failure, AHRS Failure, and IRS Failure Abnormal procedures. <RS-92>Radio Tuning Unit Failure procedure simplified. <RS-128>Harmonization of the EFIS COMP MON abnormal procedure across all programs, andIncorporate TR RJ 900/88.	W. Istchenko 14 Apr 2007	Superseded by REV 5 dtd 21 Jun 2010

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-24

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/67	Temporary revision to introduce the following: <ul style="list-style-type: none">• Incorporation of Service Bulletin SB 670BA-21-026, Air Conditioning - Filtering and Flow Control System - Installation of an Ozone Converter, and• Also applies the ozone concentration requirements to EASA-registered airplanes. <RS-101>	W. Jupp 29 Oct 2007	Superseded by TR RJ 900/75
RJ 900/68	To be issued later.		
RJ 900/69	Temporary revision to introduce the following: <ul style="list-style-type: none">• The FMS range, fuel management and altitude/speed capability information is advisory only. <RS-112>	W. Jupp 04 Feb 2008	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/70	Temporary revision to introduce the following: <ul style="list-style-type: none">• Revise the Trend Monitoring Program NOTE within the Reduced Thrust Take-off Supplement. <RS-106>	W. Jupp 22 Oct 2007	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/71	Temporary revision to introduce the following: <ul style="list-style-type: none">• Revisions to the L BLEED DUCT or R BLEED DUCT emergency and abnormal procedures. <RS-108>	R. W. Walker 23 Dec 2008	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/72	To be issued later.		

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-25

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/73	To be issued later.		
RJ 900/74	To be issued later.		
RJ 900/75	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Introduction of Electronic Flight Bag / Docking Station <1229>, and• Incorporate and supersede the applicable Temporary Revisions.<ul style="list-style-type: none">• TR RJ 900/46,• TR RJ 900/48-3,• TR RJ 900/59-1,• TR RJ 900/65-1, and• TR RJ 900/67. <RS-114>	R. W. Walker 09 Sep 2008	Superseded by RJ 900/75-1
RJ 900/75-1	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Introduction of the ozone converter option code <1231>.• Revise the applicability of the ozone concentration limitation, and• Supersede Temporary Revision TR RJ 900/75. <RS-133>	R. W. Walker 26 Aug 2008	Superseded by RJ 900/75-2
RJ 900/75-2	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Introduction of the ozone converter option code <1231>,• Revise the applicability of the ozone concentration limitation,• Add the new cabin lighting circuit breaker call-outs, and	R. W. Walker 22 Apr 2009	Superseded by REV 4 dtd 16 Feb 2010

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-26

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
	<ul style="list-style-type: none">• Supersede Temporary Revision TR RJ 900/75-1. <Next Gen cabin lighting circuit breaker change>		
RJ 900/75-3	<p>Temporary revision to advise the flight crew of the following:</p> <ul style="list-style-type: none">• Revise the effectivity of data regarding operations at airport elevations between 8,000 and 9,600 feet, and• Supersede Temporary Revision TR RJ 900/75-2. <RS-107>	R. W. Walker 18 Sep 2009	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/76	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">• Change the title to Uncommanded Acceleration / ENGINE OVERSPD, and• Revise the Uncommanded Acceleration / ENGINE OVERSPD procedure. <RS-115>	R. W. Walker 09 May 2008	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/77	<p>Temporary revision to introduce the following:</p> <ul style="list-style-type: none">• Revisions to the L REV DEPLOYED or R REV DEPLOYED emergency procedure. <RS-121>	W. Jupp 07 Feb 2008	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/78	<p>Temporary revision to advise the flight crew of the following:</p> <ul style="list-style-type: none">• Revisions to the Normal Procedures to incorporate Service Bulletin 670BA-34-029, wire strapping changes for operation of transponder when the aircraft is on the ground.	R. W. Walker 02 Dec 2008	Superseded by RJ 900/78-1

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



RECORD OF TEMPORARY REVISIONS

00-03-27

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
	<RS-132>		
RJ 900/78-1	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Revisions to the Normal Procedures to incorporate Service Bulletin 670BA-34-029, wire strapping changes for operation of transponder when the aircraft is on the ground. <Production effectiveness added>	R. W. Walker 17 Apr 2009	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/79	To be issued later.		
RJ 900/80	To be issued later.		
RJ 900/81	To be issued later.		
RJ 900/82	To be issued later.		
RJ 900/83	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Harmonize the ELT ON abnormal procedure.	M. Brulotte 23 Oct 2009	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/84	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Additional qualifying statement added to the L WING A/I or R WING A/I abnormal procedure.	R. W. Walker 22 Apr 2009	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/85	To be issued later.		
RJ 900/86	Temporary revision to introduce the following: <ul style="list-style-type: none">• Revisions to the HYD 3 HI TEMP abnormal procedure.	W. Istchenko 16 Dec 2009	Superseded by REV 5 dtd 21 Jun 2010

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



RECORD OF TEMPORARY REVISIONS

00-03-28

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/87	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">Harmonization of the In-flight Engine Shutdown procedure.	M. Brulotte 29 Oct 2009	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/88	Temporary revision to advise the flight crew of the following: <i>For airplanes equipped with <1100>:</i> <ul style="list-style-type: none">Introduction of option <1100>, Dual Gyro Compassing AHRS – AHC-4000, and <i>For airplanes equipped with <AHRS>:</i> <ul style="list-style-type: none">Revisions to the AHRS Failure abnormal procedures to include the red MAG annunciation.	R. W. Walker 16 Jun 2009	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/89	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">Update the Runway Conditions, Runway Contaminated by Standing Water or Slush or Wet Snow table.	W. Istchenko 04 Jan 2010	Superseded by REV 5 dtd 21 Jun 2010
RJ 900/90	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">Harmonize the CABIN ALT or Emergency Descent Procedure and Planned Ditching emergency procedures across programs.	M. Brulotte 23 Oct 2009	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/91	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">Remove the NOTE regarding fuel system powered crossflow in the HYD 1 HI TEMP and HYD 2 HI TEMP emergency procedures.	R. W. Walker 24 Aug 2009	Superseded by REV 4 dtd 16 Feb 2010

DOT Approved

**Airplane Flight Manual
CSP C-012-219**

**RECORD OF TEMPORARY REVISIONS**

00-03-29

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/92	To be issued later.		
RJ 900/93	To be issued later.		
RJ 900/94	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Harmonization of the AFCS MSG FAIL procedure and the APU portion of the Manual Bleed Procedure.	M. Brulotte 18 Nov 2009	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/95	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Instruction to "Land at the nearest suitable airport" added to the HYD 1 LO PRESS abnormal procedure.	W. Istchenko 15 Jan 2010	Superseded by REV 5 dtd 21 Jun 2010
RJ 900/96	To be issued later.		
RJ 900/97	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Editorial changes to harmonize Flight Controls abnormal procedures across all programs.	M. Brulotte 07 Oct 2009	Superseded by RJ 900/97-1
RJ 900/97-1	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Additional editorial changes to harmonize Flight Controls abnormal procedures across all programs.	M. Brulotte 19 Nov 2009	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/98	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Harmonization of the EICAS Primary and Secondary Display Failure abnormal procedures.	W. Istchenko 21 Dec 2009	Superseded by REV 5 dtd 21 Jun 2010

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



RECORD OF TEMPORARY REVISIONS

00-03-30

Rev. 28, Jun 04/2021

TR No.	Subject	DOT Approval	Incorporated By / Date
RJ 900/99	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• NOTE added to indicate the possibility of a DIFF PRESS warning message coming on during high rates of climb above 30,000 feet.	W. Istchenko 30 Nov 2009	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/100	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Harmonization of the L or R ENG BLEED and L or R BLEED LOOP abnormal procedures.	W. Istchenko 30 Nov 2009	Superseded by REV 4 dtd 16 Feb 2010
RJ 900/101	Temporary revision to advise the flight crew of the following: <ul style="list-style-type: none">• Simplify the L or R ENG OIL PRESS or Low Engine Oil Pressure Indication emergency procedures, and• Introduce a High Oil Temperature abnormal procedure.	W. Istchenko 13 Jan 2010	Superseded by REV 5 dtd 21 Jun 2010

DOT Approved

**Airplane Flight Manual
CSP C-012-219**

**LIST OF EFFECTIVE PAGES**

00-04-1

Rev. 30, Mar 25/2022

Page	Date	Page	Date	Page	Date
Title Page / All*	Mar 25/2022	-41	Jun 04/2021	-8	Jun 04/2021
Disclaimer		-42	Jun 04/2021	-9	Jun 04/2021
		-43	Jun 04/2021	-10	Jun 04/2021
00-01 <JAA>	-1 Jun 04/2021	-44	Jun 04/2021	-11	Jun 04/2021
	-2 Jun 04/2021	-45	Jun 04/2021	-12	Jun 04/2021
		-46	Jun 04/2021	-13	Jun 04/2021
		-47	Jun 04/2021	-14	Jun 04/2021
00-02	-1 Jun 04/2021	-48	Jun 04/2021	-15	Jun 04/2021
	-2 Jun 04/2021	-49	Jun 04/2021	-16	Jun 04/2021
	-3 Jun 04/2021	-50	Jun 04/2021	-17	Jun 04/2021
	-4 Jun 04/2021	-51	Jun 04/2021	-18	Jun 04/2021
	-5 Jun 04/2021	-52	Jun 04/2021	-19	Jun 04/2021
	-6 Jun 04/2021	-53	Jun 04/2021	-20	Jun 04/2021
	-7 Jun 04/2021	-54	Jun 04/2021	-21	Jun 04/2021
	-8 Jun 04/2021	-55	Jun 04/2021	-22	Jun 04/2021
	-9 Jun 04/2021	-56	Jun 04/2021	-23	Jun 04/2021
	-10 Jun 04/2021	-57	Jun 04/2021	-24	Jun 04/2021
	-11 Jun 04/2021	-58	Jun 04/2021	-25	Jun 04/2021
	-12 Jun 04/2021	-59	Jun 04/2021	-26	Jun 04/2021
	-13 Jun 04/2021	-60	Jun 04/2021	-27	Jun 04/2021
	-14 Jun 04/2021	-61	Jun 04/2021	-28	Jun 04/2021
	-15 Jun 04/2021	-62	Jun 04/2021	-29	Jun 04/2021
	-16 Jun 04/2021	-63	Jun 04/2021	-30	Jun 04/2021
	-17 Jun 04/2021	-64	Jun 04/2021		
	-18 Jun 04/2021	-65	Jun 04/2021	00-04	-1 * Mar 25/2022
	-19 Jun 04/2021	-66	Jun 04/2021		-2 * Mar 25/2022
	-20 Jun 04/2021	-67	Jun 04/2021		-3 * Mar 25/2022
	-21 Jun 04/2021	-68	Jun 04/2021		-4 * Mar 25/2022
	-22 Jun 04/2021	-69	Jun 04/2021		-5 * Mar 25/2022
	-23 Jun 04/2021	-70	Jun 04/2021		-6 * Mar 25/2022
	-24 Jun 04/2021	-71	Jun 04/2021		-7 * Mar 25/2022
	-25 Jun 04/2021	-72	Jun 04/2021		-8 * Mar 25/2022
	-26 Jun 04/2021	-73	Jun 04/2021		
	-27 Jun 04/2021	-74	Oct 15/2021	01-00	-1 Jun 04/2021
	-28 Jun 04/2021	-75	Oct 15/2021		-2 Jun 04/2021
	-29 Jun 04/2021	-76	* Mar 25/2022		
	-30 Jun 04/2021	-77	* Mar 25/2022		
	-31 Jun 04/2021	-78	* Mar 25/2022	01-02	-1 Jun 04/2021
	-32 Jun 04/2021				-2 Jun 04/2021
	-33 Jun 04/2021	00-03	-1 Jun 04/2021		-3 Jun 04/2021
	-34 Jun 04/2021		-2 Jun 04/2021		-4 Jun 04/2021
	-35 Jun 04/2021		-3 Jun 04/2021		-5 Jun 04/2021
	-36 Jun 04/2021		-4 Jun 04/2021		-6 Jun 04/2021
	-37 Jun 04/2021		-5 Jun 04/2021		-7 Jun 04/2021
	-38 Jun 04/2021		-6 Jun 04/2021		-8 Jun 04/2021
	-39 Jun 04/2021		-7 Jun 04/2021		-9 Jun 04/2021
	-40 Jun 04/2021				

* The asterisk indicates pages changed, added or deleted.

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--

**LIST OF EFFECTIVE PAGES**

00-04-2

Rev. 30, Mar 25/2022

Page	Date	Page	Date	Page	Date
-10	Jun 04/2021	-6	Jun 04/2021	03-01	-1 Jun 04/2021
-11	Jun 04/2021	-7	Jun 04/2021		-2 Jun 04/2021
-12	Oct 15/2021	-8	Jun 04/2021		
-13	Jun 04/2021	-9	Jun 04/2021	03-02	-1 Jun 04/2021
-14	Jun 04/2021	-10	Jun 04/2021		-2 Jun 04/2021
-15	Oct 15/2021	-11	Jun 04/2021		
-16	Jun 04/2021	-12	Jun 04/2021		
-17	Jun 04/2021	-13	Jun 04/2021	03-03	-1 Jun 04/2021
-18	Jun 04/2021	-14	Jun 04/2021		-2 Jun 04/2021
-19	Jun 04/2021	-15	Jun 04/2021		-3 Jun 04/2021
-20	Jun 04/2021	-16	Jun 04/2021		-4 Jun 04/2021
		-17	Jun 04/2021		-5 Jun 04/2021
		-18	Jun 04/2021		-6 Jun 04/2021
02-00	-1 Jun 04/2021				-7 Jun 04/2021
	-2 Jun 04/2021	02-06	-1 Jun 04/2021		-8 Jun 04/2021
	-3 Jun 04/2021		-2 Jun 04/2021		-9 Jun 04/2021
	-4 Jun 04/2021		-3 Jun 04/2021		-10 Jun 04/2021
	-5 Jun 04/2021		-4 Jun 04/2021		
	-6 Jun 04/2021		-5 Jun 04/2021	03-04	-1 Jun 04/2021
			-6 Jun 04/2021		-2 Jun 04/2021
02-01	-1 Jun 04/2021	02-07	-1 Jun 04/2021		-3 Jun 04/2021
	-2 Jun 04/2021		-2 Jun 04/2021		-4 Jun 04/2021
02-02	-1 Jun 04/2021		-1 Jun 04/2021		-5 Jun 04/2021
	-2 Jun 04/2021		-2 Jun 04/2021		-6 Jun 04/2021
		02-08	-1 Jun 04/2021		-7 Jun 04/2021
02-03	-1 Jun 04/2021		-2 Jun 04/2021		-8 Jun 04/2021
	-2 Jun 04/2021		-3 Jun 04/2021		-9 Jun 04/2021
			-4 Jun 04/2021		-10 Jun 04/2021
			-5 Jun 04/2021		-11 Jun 04/2021
02-04	-1 Jun 04/2021		-6 Jun 04/2021		-12 Jun 04/2021
	-2 Jun 04/2021	02-09	-1 Jun 04/2021	03-05	-1 Jun 04/2021
	-3 Jun 04/2021		-2 Jun 04/2021		-2 Jun 04/2021
	-4 Jun 04/2021		-3 Jun 04/2021		-3 Jun 04/2021
	-5 Jun 04/2021		-4 Jun 04/2021		-4 Jun 04/2021
	-6 Jun 04/2021		-5 Jun 04/2021	03-06	-1 Jun 04/2021
	-7 Jun 04/2021		-6 Jun 04/2021		-2 Jun 04/2021
	-8 Jun 04/2021		-7 Jun 04/2021		
	-9 Jun 04/2021		-8 Jun 04/2021	03-07	-1 Jun 04/2021
	-10 Jun 04/2021				-2 Jun 04/2021
02-05	-1 Jun 04/2021	03-00	-1 Jun 04/2021		
	-2 Jun 04/2021		-2 Jun 04/2021	03-08	-1 Jun 04/2021
	-3 Jun 04/2021		-3 Jun 04/2021		-2 Jun 04/2021
	-4 Jun 04/2021		-4 Jun 04/2021		
	-5 Jun 04/2021				

* The asterisk indicates pages changed, added or deleted.

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--

**LIST OF EFFECTIVE PAGES**

00-04-3

Rev. 30, Mar 25/2022

Page	Date	Page	Date	Page	Date
03-09 -1	Jun 04/2021	03-16 -1	Jun 04/2021	-7	Jun 04/2021
-2	Jun 04/2021	-2	Jun 04/2021	-8	Jun 04/2021
-3	Jun 04/2021			-9	Jun 04/2021
-4	Jun 04/2021	03-17 -1	Jun 04/2021	-10	Jun 04/2021
-5	Jun 04/2021	-2	Jun 04/2021	-11	Jun 04/2021
-6	Jun 04/2021			-12	Jun 04/2021
03-10 -1	Jun 04/2021	03-18 -1	Jun 04/2021	05-00 -1	Jun 04/2021
-2	Jun 04/2021	-2	Jun 04/2021	-2	Oct 15/2021
		-3	Jun 04/2021	-3	Jun 04/2021
		-4	Jun 04/2021	-4	Jun 04/2021
03-11 -1	Jun 04/2021	-5	Jun 04/2021	-5	* Mar 25/2022
-2	Jun 04/2021	-6	Jun 04/2021	-6	Jun 04/2021
-3	Jun 04/2021	-7	Jun 04/2021	-7	Jun 04/2021
-4	Jun 04/2021	-8	Jun 04/2021	-8	Jun 04/2021
-5	Jun 04/2021	-9	Jun 04/2021	-9	Jun 04/2021
-6	Jun 04/2021	-10	Jun 04/2021	-10	Jun 04/2021
-7	Jun 04/2021	-11	Jun 04/2021		
-8	Jun 04/2021	-12	Jun 04/2021	05-01 -1	Jun 04/2021
		-13	Jun 04/2021	-2	Jun 04/2021
		-14	Jun 04/2021		
03-12 -1	Jun 04/2021	03-19 -1	Jun 04/2021	05-02 -1	Jun 04/2021
-2	Jun 04/2021	-2	Jun 04/2021	-2	Jun 04/2021
-3	Jun 04/2021	-3	Jun 04/2021	-3	Jun 04/2021
-4	Jun 04/2021	-4	Jun 04/2021	-4	Jun 04/2021
-5	Jun 04/2021	-5	Jun 04/2021		
-6	Jun 04/2021	-6	Jun 04/2021	05-03 -1	Jun 04/2021
		-7	Jun 04/2021	-2	Jun 04/2021
		-8	Jun 04/2021	-3	Jun 04/2021
		-9	Jun 04/2021	-4	Jun 04/2021
03-14 -1	Jun 04/2021	-10	Jun 04/2021	-5	Jun 04/2021
-2	Jun 04/2021			-6	Jun 04/2021
-3	Jun 04/2021	04-00 -1	Jun 04/2021	-7	Jun 04/2021
-4	Jun 04/2021	-2	Jun 04/2021	-8	Jun 04/2021
03-15 -1	Jun 04/2021	04-01 -1	Jun 04/2021	05-04 -1	Jun 04/2021
-2	Jun 04/2021	-2	Jun 04/2021	-2	Jun 04/2021
-3	Jun 04/2021			-3	Jun 04/2021
-4	Jun 04/2021			-4	Jun 04/2021
-5	Jun 04/2021	04-02 -1	Jun 04/2021	-5	Jun 04/2021
-6	Jun 04/2021	-2	Jun 04/2021	-6	* Mar 25/2022
-7	Jun 04/2021	-3	Jun 04/2021	-7	* Mar 25/2022
-8	Jun 04/2021	-4	Jun 04/2021	-8	Jun 04/2021
		-5	Jun 04/2021	-9	Jun 04/2021
		-6	Jun 04/2021		

* The asterisk indicates pages changed, added or deleted.

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--

**LIST OF EFFECTIVE PAGES**

00-04-4

Rev. 30, Mar 25/2022

Page	Date	Page	Date	Page	Date	
-10	Oct 15/2021	05-11	-1	Jun 04/2021	-15	Jun 04/2021
-11	Oct 15/2021		-2	Jun 04/2021	-16	Jun 04/2021
-12	Oct 15/2021		-3	Jun 04/2021	-17	Jun 04/2021
-13	Oct 15/2021		-4	Jun 04/2021	-18	Jun 04/2021
-14	Oct 15/2021		-5	Jun 04/2021	-19	Jun 04/2021
			-6	Jun 04/2021	-20	Jun 04/2021
			-7	Jun 04/2021	-21	Jun 04/2021
05-05	-1	Jun 04/2021	-8	Jun 04/2021	-22	Jun 04/2021
	-2	Jun 04/2021	-9	Jun 04/2021	-23	Jun 04/2021
	-3	Jun 04/2021	-10	Jun 04/2021	-24	Jun 04/2021
	-4	Jun 04/2021	-11	Jun 04/2021		
	-5	Jun 04/2021	-12	Jun 04/2021	05-14	-1
	-6	Jun 04/2021	-13	Jun 04/2021		-2
	-7	Jun 04/2021	-14	* Mar 25/2022		-3
	-8	Jun 04/2021	-15	* Mar 25/2022		-4
	-9	Jun 04/2021	-16	* Mar 25/2022		-5
	-10	Jun 04/2021	-17	* Mar 25/2022		-6
	-11	Jun 04/2021	-18	* Mar 25/2022		-7
	-12	Jun 04/2021	-19	* Mar 25/2022		-8
			-20	Jun 04/2021		-9
05-06	-1	Jun 04/2021			-10	Jun 04/2021
	-2	Jun 04/2021	05-12	-1	-11	Jun 04/2021
				-2	-12	Jun 04/2021
05-07	-1	Jun 04/2021			05-15	-1
	-2	Jun 04/2021				-2
	-3	Jun 04/2021				-3
	-4	Jun 04/2021				-4
05-08	-1	Jun 04/2021				-5
	-2	Jun 04/2021				-6
	-3	Jun 04/2021				-7
	-4	Jun 04/2021				-8
	-5	Jun 04/2021	05-13	-1	Jun 04/2021	
	-6	Jun 04/2021		-2	Jun 04/2021	
				-3	Jun 04/2021	
05-09	-1	Jun 04/2021		-4	Jun 04/2021	
	-2	Jun 04/2021		-5	Jun 04/2021	
	-3	Jun 04/2021		-6	Jun 04/2021	
	-4	Jun 04/2021		-7	Jun 04/2021	
	-5	Jun 04/2021		-8	Jun 04/2021	
	-6	Jun 04/2021		-9	Jun 04/2021	
05-10	-1	Jun 04/2021		-10	Jun 04/2021	
	-2	Jun 04/2021		-11	Jun 04/2021	
				-12	Jun 04/2021	
				-13	Jun 04/2021	
				-14	Jun 04/2021	

* The asterisk indicates pages changed, added or deleted.

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--

**LIST OF EFFECTIVE PAGES**

00-04-5

Rev. 30, Mar 25/2022

Page	Date	Page	Date	Page	Date
05-17 -1	Jun 04/2021	06A-06 -1	Jun 04/2021	07-05A-00-1	Jun 04/2021
-2	Jun 04/2021	-2	Jun 04/2021	-2	Jun 04/2021
05-18 -1	Jun 04/2021	-3	Jun 04/2021	07-05A-01-1	Jun 04/2021
-2	Jun 04/2021	-4	Jun 04/2021	-2	Jun 04/2021
06A-00 -1	Jun 04/2021	07-00-00 -1	Jun 04/2021	07-06-00 -1	Jun 04/2021
-2	Jun 04/2021	-2	Jun 04/2021	-2	Jun 04/2021
-3	Jun 04/2021	07-01-00 -1	Jun 04/2021	07-06-01 -1	Jun 04/2021
-4	Jun 04/2021	-2	Jun 04/2021	-2	Jun 04/2021
06A-01 -1	Jun 04/2021	07-01-01 -1	Jun 04/2021	07-07-00 -1	Jun 04/2021
-2	Jun 04/2021	-2	Jun 04/2021	-2	Jun 04/2021
-3	Jun 04/2021	-3	Jun 04/2021	07-07-01 -1	Jun 04/2021
-4	Jun 04/2021	-4	Jun 04/2021	-2	Jun 04/2021
-5	Jun 04/2021			07-08-00 -1	Jun 04/2021
-6	Jun 04/2021			-2	Jun 04/2021
-7	Jun 04/2021	07-02A-00-1	Jun 04/2021	07-08-01 -1	Jun 04/2021
-8	Jun 04/2021	-2	Jun 04/2021	-2	Jun 04/2021
-9	Jun 04/2021			07-09A-00-1	Jun 04/2021
-10	Jun 04/2021	07-02A-01-1	Jun 04/2021	-2	Jun 04/2021
-11	Jun 04/2021	-2	Jun 04/2021	07-09A-01-1	Jun 04/2021
-12	Jun 04/2021	-3	Jun 04/2021	-2	Jun 04/2021
-13	Jun 04/2021	-4	Jun 04/2021	-3	Jun 04/2021
-14	Jun 04/2021			-4	Jun 04/2021
-15	Jun 04/2021			07-10-00 -1	Jun 04/2021
-16	Jun 04/2021	07-03A-00-1	Jun 04/2021	-2	Jun 04/2021
		-2	Jun 04/2021	07-10-01 -1	Jun 04/2021
06A-02 -1	Jun 04/2021	07-03A-01-1	Jun 04/2021	-2	Jun 04/2021
-2	Jun 04/2021	-2	Jun 04/2021	07-10-02 -1	Jun 04/2021
06A-03 -1	Jun 04/2021	-3	Jun 04/2021	-3	Jun 04/2021
-2	Jun 04/2021	-4	Jun 04/2021	-4	Jun 04/2021
-3	Jun 04/2021			07-10-00 -1	Jun 04/2021
-4	Jun 04/2021	07-04A-00-1	Jun 04/2021	-2	Jun 04/2021
		-2	Jun 04/2021	07-10-01 -1	Jun 04/2021
06A-04 -1	Jun 04/2021	07-04A-01-1	Jun 04/2021	-2	Jun 04/2021
-2	Jun 04/2021	-2	Jun 04/2021	07-10-02 -1	Jun 04/2021
-3	Jun 04/2021	-3	Jun 04/2021	-3	Jun 04/2021
-4	Jun 04/2021	-4	Jun 04/2021	-4	Jun 04/2021
		-5	Jun 04/2021	07-11-00 -1	Jun 04/2021
06A-05 -1	Jun 04/2021	-6	Jun 04/2021	-2	Jun 04/2021
-2	Jun 04/2021				

* The asterisk indicates pages changed, added or deleted.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**

**LIST OF EFFECTIVE PAGES**

00-04-6

Rev. 30, Mar 25/2022

Page	Date	Page	Date	Page	Date
07-11-01 -1 -2	Jun 04/2021 Jun 04/2021	-3 -4	Jun 04/2021 Jun 04/2021	07-20-01 -1 -2	Jun 04/2021 Jun 04/2021
07-12-00 -1 -2	Jun 04/2021 Jun 04/2021	07-18B-00-1 -2	* Mar 25/2022 * Mar 25/2022	07-21-00 -1 -2	Jun 04/2021 Jun 04/2021
07-12-01 -1 -2	Jun 04/2021 Jun 04/2021	07-18B-01-1 -2 -3 -4 -5 -6 -7	Jun 04/2021 Jun 04/2021 Jun 04/2021 Jun 04/2021 Jun 04/2021 Jun 04/2021 Jun 04/2021	07-21-01 -1 -2 -3 -4 -5 -6 -7	Jun 04/2021 Jun 04/2021 Jun 04/2021 Jun 04/2021 Jun 04/2021 Jun 04/2021 Jun 04/2021
07-13-00 -1 -2	Jun 04/2021 Jun 04/2021	-8 -9 -10 -11 -12 -13 -14	Jun 04/2021 Jun 04/2021 Jun 04/2021 Jun 04/2021 Jun 04/2021 * Mar 25/2022 * Mar 25/2022	07-22-00 -1 -2	Jun 04/2021 Jun 04/2021
07-14A-00-1 -2	Jun 04/2021 Jun 04/2021	-15 -16 -17 -18 -19 -20 -21 -22 -23 -24	* Mar 25/2022 * Mar 25/2022	07-22-01 -1 -2	Jun 04/2021 Jun 04/2021
07-14A-01-1 -2	Jun 04/2021 Jun 04/2021	-25 -26 -27 -28	* Mar 25/2022 * Mar 25/2022 * Mar 25/2022 * Mar 25/2022	07-23-01 -1 -2	Jun 04/2021 Jun 04/2021
07-15-00 -1 -2	Jun 04/2021 Jun 04/2021	-29 -30 -31 -32 -33 -34 -35 -36 -37 -38 -39 -40 -41 -42 -43 -44 -45 -46 -47 -48 -49 -50 -51 -52 -53 -54 -55 -56 -57 -58 -59 -60 -61 -62 -63 -64 -65 -66 -67 -68 -69 -70 -71 -72 -73 -74 -75 -76 -77 -78 -79 -80 -81 -82 -83 -84 -85 -86 -87 -88 -89 -90 -91 -92 -93 -94 -95 -96 -97 -98 -99 -100 -101 -102 -103 -104 -105 -106 -107 -108 -109 -110 -111 -112 -113 -114 -115 -116 -117 -118 -119 -120 -121 -122 -123 -124 -125 -126 -127 -128 -129 -130 -131 -132 -133 -134 -135 -136 -137 -138 -139 -140 -141 -142 -143 -144 -145 -146 -147 -148 -149 -150 -151 -152 -153 -154 -155 -156 -157 -158 -159 -160 -161 -162 -163 -164 -165 -166 -167 -168 -169 -170 -171 -172 -173 -174 -175 -176 -177 -178 -179 -180 -181 -182 -183 -184 -185 -186 -187 -188 -189 -190 -191 -192 -193 -194 -195 -196 -197 -198 -199 -200 -201 -202 -203 -204 -205 -206 -207 -208 -209 -210 -211 -212 -213 -214 -215 -216 -217 -218 -219 -220 -221 -222 -223 -224 -225 -226 -227 -228 -229 -230 -231 -232 -233 -234 -235 -236 -237 -238 -239 -240 -241 -242 -243 -244 -245 -246 -247 -248 -249 -250 -251 -252 -253 -254 -255 -256 -257 -258 -259 -2510 -2511 -2512 -2513 -2514 -2515 -2516 -2517 -2518 -2519 -2520 -2521 -2522 -2523 -2524 -2525 -2526 -2527 -2528 -2529 -2530 -2531 -2532 -2533 -2534 -2535 -2536 -2537 -2538 -2539 -2540 -2541 -2542 -2543 -2544 -2545 -2546 -2547 -2548 -2549 -2550 -2551 -2552 -2553 -2554 -2555 -2556 -2557 -2558 -2559 -2560 -2561 -2562 -2563 -2564 -2565 -2566 -2567 -2568 -2569 -2570 -2571 -2572 -2573 -2574 -2575 -2576 -2577 -2578 -2579 -2580 -2581 -2582 -2583 -2584 -2585 -2586 -2587 -2588 -2589 -2590 -2591 -2592 -2593 -2594 -2595 -2596 -2597 -2598 -2599 -25100 -25101 -25102 -25103 -25104 -25105 -25106 -25107 -25108 -25109 -25110 -25111 -25112 -25113 -25114 -25115 -25116 -25117 -25118 -25119 -25120 -25121 -25122 -25123 -25124 -25125 -25126 -25127 -25128 -25129 -25130 -25131 -25132 -25133 -25134 -25135 -25136 -25137 -25138 -25139 -25140 -25141 -25142 -25143 -25144 -25145 -25146 -25147 -25148 -25149 -25150 -25151 -25152 -25153 -25154 -25155 -25156 -25157 -25158 -25159 -25160 -25161 -25162 -25163 -25164 -25165 -25166 -25167 -25168 -25169 -25170 -25171 -25172 -25173 -25174 -25175 -25176 -25177 -25178 -25179 -25180 -25181 -25182 -25183 -25184 -25185 -25186 -25187 -25188 -25189 -25190 -25191 -25192 -25193 -25194 -25195 -25196 -25197 -25198 -25199 -251100 -251101 -251102 -251103 -251104 -251105 -251106 -251107 -251108 -251109 -251110 -251111 -251112 -251113 -251114 -251115 -251116 -251117 -251118 -251119 -2511100 -2511101 -2511102 -2511103 -2511104 -2511105 -2511106 -2511107 -2511108 -2511109 -2511110 -2511111 -2511112 -2511113 -2511114 -2511115 -2511116 -2511117 -2511118 -2511119 -25111100 -25111101 -25111102 -25111103 -25111104 -25111105 -25111106 -25111107 -25111108 -25111109 -25111110 -25111111 -25111112 -25111113 -25111114 -25111115 -25111116 -25111117 -25111118 -25111119 -251111100 -251111101 -251111102 -251111103 -251111104 -251111105 -251111106 -251111107 -251111108 -251111109 -251111110 -251111111 -251111112 -251111113 -251111114 -251111115 -251111116 -251111117 -251111118 -251111119 -2511111100 -2511111101 -2511111102 -2511111103 -2511111104 -2511111105 -2511111106 -2511111107 -2511111108 -2511111109 -2511111110 -2511111111 -2511111112 -2511111113 -2511111114 -2511111115 -2511111116 -2511111117 -2511111118 -2511111119 -25111111100 -25111111101 -25111111102 -25111111103 -25111111104 -25111111105 -25111111106 -25111111107 -25111111108 -25111111109 -25111111110 -25111111111 -25111111112 -25111111113 -25111111114 -25111111115 -25111111116 -25111111117 -25111111118 -25111111119 -251111111100 -251111111101 -251111111102 -251111111103 -251111111104 -251111111105 -251111111106 -251111111107 -251111111108 -251111111109 -251111111110 -251111111111 -251111111112 -251111111113 -251111111114 -251111111115 -251111111116 -251111111117 -251111111118 -251111111119 -2511111111100 -2511111111101 -2511111111102 -2511111111103 -2511111111104 -2511111111105 -2511111111106 -2511111111107 -2511111111108 -2511111111109 -2511111111110 -2511111111111 -2511111111112 -2511111111113 -2511111111114 -2511111111115 -2511111111116 -2511111111117 -2511111111118 -2511111111119 -25111111111100 -25111111111101 -25111111111102 -25111111111103 -25111111111104 -25111111111105 -25111111111106 -25111111111107 -25111111111108 -25111111111109 -25111111111110 -25111111111111 -25111111111112 -25111111111113 -25111111111114 -25111111111115 -25111111111116 -25111111111117 -25111111111118 -25111111111119 -251111111111100 -251111111111101 -251111111111102 -251111111111103 -251111111111104 -251111111111105 -251111111111106 -251111111111107 -251111111111108 -251111111111109 -251111111111110 -251111111111111 -251111111111112 -251111111111113 -251111111111114 -251111111111115 -251111111111116 -251111111111117 -251111111111118 -251111111111119 -2511111111111100 -2511111111111101 -2511111111111102 -2511111111111103 -2511111111111104 -2511111111111105 -2511111111111106 -2511111111111107 -2511111111111108 -2511111111111109 -2511111111111110 -2511111111111111 -2511111111111112 -2511111111111113 -2511111111111114 -2511111111111115 -2511111111111116 -2511111111111117 -2511111111111118 -2511111111111119 -25111111111111100 -25111111111111101 -25111111111111102 -25111111111111103 -25111111111111104 -25111111111111105 -25111111111111106 -25111111111111107 -25111111111111108 -25111111111111109 -25111111111111110 -25111111111111111 -25111111111111112 -25111111111111113 -25111111111111114 -25111111111111115 -25111111111111116 -25111111111111117 -25111111111111118 -25111111111111119 -251111111111111100 -251111111111111101 -251111111111111102 -251111111111111103 -251111111111111104 -251111111111111105 -251111111111111106 -251111111111111107 -251111111111111108 -251111111111111109 -251111111111111110 -251111111111111111 -251111111111111112 -251111111111111113 -251111111111111114 -251111111111111115 -251111111111111116 -251111111111111117 -251111111111111118 -251111111111111119 -2511111111111111100 -2511111111111111101 -2511111111111111102 -2511111111111111103 -2511111111111111104 -2511111111111111105 -2511111111111111106 -2511111111111111107 -2511111111111111108 -2511111111111111109 -2511111111111111110 -2511111111111111111 -2511111111111111112 -2511111111111111113 -2511111111111111114 -2511111111111111115 -2511111111111111116 -2511111111111111117 -2511111111111111118 -2511111111111111119 -25111111111111111100 -25111111111111111101 -25111111111111111102 -25111111111111111103 -25111111111111111104 -25111111111111111105 -25111111111111111106 -25111111111111111107 -25111111111111111108 -25111111111111111109 -25111111111111111110 -25111111111111111111 -25111111111111111112 -25111111111111111113 -25111111111111111114 -25111111111111111115 -25111111111111111116 -25111111111111111117 -25111111111111111118 -25111111111111111119 -251111111111111111100 -251111111111111111101 -251111111111111111102 -251111111111111111103 -251111111111111111104 -251111111111111111105 -251111111111111111106 -251111111111111111107 -251111111111111111108 -251111111111111111109 -251111111111111111110 -251111111111111111111 -251111111111111111112 -251111111111111111113 -251111111111111111114 -251111111111111111115 -251111111111111111116 -251111111111111111117 -251111111111111111118 -251111111111111111119 -2511111111111111111100 -2511111111111111111101 -2511111111111111111102 -2511111111111111111103 -2511111111111111111104 -2511111111111111111105 -2511111111111111111106 -2511111111111111111107 -2511111111111111111108 -2511111111111111111109 -2511111111111111111110 -2511111111111111111111 -2511111111111111111112 -2511111111111111111113 -2511111111111111111114 -2511111111111111111115 -2511111111111111111116 -2511111111111111111117 -2511111111111111111118 -2511111111111111111119 -25111111111111111111100 -25111111111111111111101 -25111111111111111111102 -25111111111111111111103 -25111111111111111111104 -25111111111111111111105 -25111111111111111111106 -25111111111111111111107 -25111111111111111111108 -25111111111111111111109 -25111111111111111111110 -25111111111111111111111 -25111111111111111111112 -25111111111111111111113 -25111111111111111111114 -25111111111111111111115 -25111111111111111111116 -25111111111111111111117 -25111111111111111111118 -25111111111111111111119 -251111111111111111111100 -251111111111111111111101 -251111111111111111111102 -251111111111111111111103 -251111111111111111111104 -251111111111111111111105 -251111111111111111111106 -251111111111111111111107 -251111111111111111111108 -251111111111111111111109 -251111111111111111111110 -251111111111111111111111 -251111111111111111111112 -251111111111111111111113 -251111111111111111111114 -251111111111111111111115 -251111111111111111111116 -251111111111111111111117 -251111111111111111111118 -251111111111111111111119 -2511111111111111111111100 -2511111111111111111111101 -251111111111111111111110			

**LIST OF EFFECTIVE PAGES**

00-04-7

Rev. 30, Mar 25/2022

Page	Date	Page	Date	Page	Date
07-25A-01-1	Jun 04/2021	-15	Jun 04/2021	-4	Oct 15/2021
-2	Jun 04/2021	-16	Jun 04/2021	-5	Jun 04/2021
		-17	Jun 04/2021	-6	Jun 04/2021
07-26-00 -1	Jun 04/2021	-18	Jun 04/2021		
-2	Jun 04/2021	-19	Jun 04/2021	08-01-53-1	Jun 04/2021
		-20	Jun 04/2021	-2	Jun 04/2021
07-26-01 -1	Jun 04/2021	-21	Jun 04/2021	-3	Jun 04/2021
-2	Jun 04/2021	-22	Jun 04/2021	-4	Jun 04/2021
-3	Jun 04/2021			-5	Jun 04/2021
-4	Jun 04/2021	08-01-28-1	Jun 04/2021	-6	Jun 04/2021
-5	Jun 04/2021	-2	Jun 04/2021	-7	Jun 04/2021
-6	Jun 04/2021			-8	Jun 04/2021
		08-01-32-1	Jun 04/2021		
08-00 -1	Jun 04/2021	-2	Jun 04/2021	08-01-55-1	Jun 04/2021
-2	Oct 15/2021	-3	Jun 04/2021	-2	Jun 04/2021
		-4	Jun 04/2021		
08-01-01-1	Jun 04/2021	-5	Jun 04/2021	08-01-57-1	Jun 04/2021
-2	Jun 04/2021	-6	Jun 04/2021	-2	Jun 04/2021
-3	Jun 04/2021			-3	Jun 04/2021
-4	Jun 04/2021	08-01-33-1	Jun 04/2021	-4	Jun 04/2021
		-2	Jun 04/2021	-5	Jun 04/2021
08-01-21-1	Jun 04/2021	-3	Jun 04/2021	-6	Jun 04/2021
-2	Jun 04/2021	-4	Jun 04/2021	-7	Jun 04/2021
		-5	Jun 04/2021	-8	Jun 04/2021
08-01-23-1	Jun 04/2021	-6	Jun 04/2021	-9	Jun 04/2021
-2	Jun 04/2021	-7	Jun 04/2021	-10	Jun 04/2021
-3	Jun 04/2021	-8	Jun 04/2021		
-4	Jun 04/2021	-9	Jun 04/2021	08-01-78-1	Jun 04/2021
		-10	Jun 04/2021	-2	Jun 04/2021
		-11	Jun 04/2021	-3	Jun 04/2021
		-12	Jun 04/2021	-4	Jun 04/2021
08-01-27-1	Jun 04/2021				
-2	Jun 04/2021	08-01-51-1	Jun 04/2021		
-3	Jun 04/2021	-2	Jun 04/2021		
-4	Jun 04/2021	-3	Jun 04/2021		
-5	Jun 04/2021	-4	Jun 04/2021		
-6	Jun 04/2021	-5	Jun 04/2021		
-7	Jun 04/2021	-6	Jun 04/2021		
-8	Jun 04/2021	-7	Jun 04/2021		
-9	Jun 04/2021	-8	Jun 04/2021		
-10	Jun 04/2021				
-11	Jun 04/2021	08-01-52-1	Jun 04/2021		
-12	Jun 04/2021	-2	Jun 04/2021		
-13	Jun 04/2021	-3	Jun 04/2021		
-14	Jun 04/2021				

* The asterisk indicates pages changed, added or deleted.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



LIST OF EFFECTIVE PAGES

00-04-8

Rev. 30, Mar 25/2022

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



CHAPTER 1 - INTRODUCTION

GENERAL

INTRODUCTION	01-02-1
SCOPE OF THE AIRPLANE FLIGHT MANUAL	01-02-1
Limitations	01-02-1
Status of Airplane Flight Manual Information	01-02-1
Emergency Procedures	01-02-2
Normal Procedures	01-02-2
Abnormal Procedures	01-02-2
Performance	01-02-2
Supplements	01-02-2
Appendices	01-02-2
PAGINATION	01-02-2
AIRWORTHINESS AUTHORITY CODES	01-02-3
DEFINITIONS	01-02-3
Airspeeds	01-02-3
Temperature	01-02-5
Distances	01-02-5
Take-off Path	01-02-8
Climb Gradient	01-02-8
Miscellaneous	01-02-9
ABBREVIATIONS	01-02-10
AIRPLANE OPTION CODES	01-02-18
SERVICE BULLETINS	01-02-19



INTRODUCTION Table of Contents

01-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



INTRODUCTION

General

01-02-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

This Airplane Flight Manual contains limitations, procedures and performance data for the operation of the following airplane models, manufactured by MHIRJ, Mirabel, Quebec, Canada:

- CL-600-2D24

It is the responsibility of pilots who are qualified to operate the airplane to be entirely familiar with the information contained in this publication to ensure that the airplane is operated at all times within the approved flight envelope.

For clarity and simplicity, the manual is written in the imperative, in order that the information and operating instructions may be presented in a positive sense and require no interpretation by the user.

Specific items requiring emphasis are expanded upon and ranked in increasing order of importance in the form of a NOTE, CAUTION or WARNING.

NOTE

Expands on information which is considered essential to emphasize.
Information contained in notes may also be safety related.



Provides information that may result in damage to equipment if not followed.



Emphasizes information that may result in personal injury or loss of life if not followed.

2. SCOPE OF THE AIRPLANE FLIGHT MANUAL

A. Limitations

Observance of the limitations contained in the Limitations Chapter of this Airplane Flight Manual is mandatory.

B. Status of Airplane Flight Manual Information

In the Emergency Procedures, Normal Procedures (Consolidated Check Lists), Abnormal Procedures and Performance Chapters of this Airplane Flight Manual, checks and procedures written in the imperative or qualified by "shall" or "must" are defined as those actions which, if not observed, could result in a significant adverse effect on the safety of the airplane.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



C. Emergency Procedures

Procedures given in the Emergency Procedures Chapter of this Airplane Flight Manual are concerned with foreseeable but unusual situations in which immediate and precise crew action, as indicated within the "boxed" area at the beginning of each procedure, will substantially reduce the hazard.

D. Normal Procedures

The Normal Procedures Chapter of this Airplane Flight Manual contains procedures and checks peculiar to the airplane and are supplementary to normal procedures common to the operation of modern transport category jet airplanes.

E. Abnormal Procedures

The Abnormal Procedures Chapter of this Airplane Flight Manual addresses foreseeable situations, usually involving a failure condition, in which the use of the normal or alternate systems can be expected to maintain an acceptable level of airplane operation.

F. Performance

The Performance Chapter of this Airplane Flight Manual contains details pertinent to the airplane configurations and conditions for operation in compliance with the applicable airworthiness performance requirements.

G. Supplements

The Supplements Chapter of this Airplane Flight Manual consists of information which supersedes or is in addition to the basic Airplane Flight Manual. This information may be a result of the issuance of a Supplemental Type Certificate, or approved changes to AFM limitations, procedures or performance without a Supplemental Type Certificate.

H. Appendices

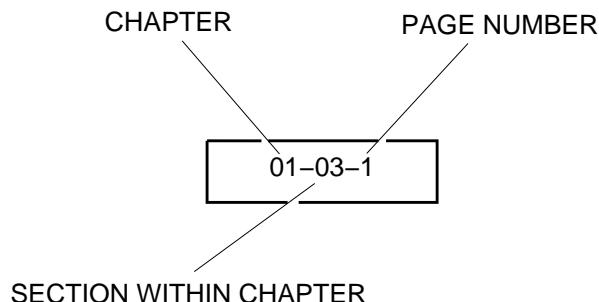
The Appendices Chapter of this Airplane Flight Manual includes additions to the manual that are required by the installation of optional equipment or for specific operations (Configuration Deviation List, etc.).

3. PAGINATION

Each chapter of the Airplane Flight Manual is subdivided into sections categorized by the subject or type of material presented.

This permits issuance of small blocks of revision pages without renumbering and reprinting complete sections of the manual.

The volume is paginated with a Chapter/Section/Page numbering system as follows:



Additional identification data carried in the margin of the page are the date of issue or revision date printed below the page number and the chapter title and subject carried in the masthead.

Blank pages resulting from end of section, back-up pages of foldout illustrations, or illustrations that must be arranged as facing pages are defined by "This Page Intentionally Left Blank". In the List of Effective Pages, these blank pages will be included in the total page count of each affected chapter.

4. AIRWORTHINESS AUTHORITY CODES

Applicable pages of the Airplane Flight Manual contain Airworthiness Authority codes adjacent to the applicable text when a specific paragraph, procedure, or illustration is unique to the specified Authority. Example: <FAA>, <JAA>, <CAA>, etc.

5. DEFINITIONS

A. Airspeeds

The following definitions are for terms commonly used throughout the manual. Items not commonly used will be defined in the respective sections where they apply.

IAS	Indicated airspeed – Airspeed indicator reading corrected for instrument error. Values in this manual assume zero instrument error.
CAS	Calibrated airspeed – Indicated airspeed corrected for static source position error.
EAS	Equivalent airspeed – Calibrated airspeed corrected for compressibility.
TAS	True airspeed – Equivalent airspeed corrected for density.



INTRODUCTION

General

01-02-4

Rev. 28, Jun 04/2021

M_I	Indicated Mach number – Machmeter reading corrected for instrument error.
M_T	True Mach number – Machmeter reading corrected for both instrument and static source position errors.
V_1	Take-off decision speed (formerly designated as critical engine failure recognition speed) – The speed used as a reference at which, due to engine failure or other causes, the pilot may elect to stop or continue the take-off.
V_{1MBE}	Maximum V_1 for brake energy – The maximum speed on the ground from which a stop can be accomplished within the energy capabilities of the brakes.
V_{1MCG}	Minimum V_1 limited by control on the ground – The take-off decision speed following an engine failure at V_{MCG} . V_1 may not be less than V_{1MCG} .
V_2	Take-off safety speed – Target climb speed to be attained at or before a height of 35 feet above the runway during a continued take-off, following an engine failure.
V_{2GA}	Approach climb speed (also known as V_2 GO-AROUND) – Target climb speed to be attained during a go-around with one engine inoperative.
V_A	Design maneuvering speed – The maximum speed at which application of full available aileron, rudder or elevator will not overstress the airplane.
V_{EF}	Critical engine failure speed – The speed at which, if the critical engine fails, the engine failure is recognized at V_1 .
V_{FE}	Maximum flap extended speed – is the highest speed permissible with the wing flaps in a prescribed extended position.
V_{FTO}	Final take-off climb speed – The speed attained at the end of the flight path acceleration segment during a continued take-off following an engine failure, and is the climb speed scheduled for the final take-off climb.
V_{LE}	Maximum landing gear extended speed – The maximum speed at which the airplane can be safely flown with the landing gear extended.
V_{LO}	Maximum landing gear operating speed – The maximum speed at which the landing gear can be safely extended or retracted.
V_{MO}/M_{MO}	Maximum operating limit speed / Mach number – The maximum operating limit speed (airspeed or Mach number) is the speed that may not be deliberately exceeded in any regime of flight (climb, cruise, or descent) unless a higher speed is authorized for flight test or pilot training operations.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



V_{MCA}	Minimum control speed, air – Minimum flight speed at which the airplane is controllable with a maximum of 5-degree bank, when the critical engine suddenly becomes inoperative, with the remaining engine at maximum take-off thrust.
V_{MCG}	Minimum control speed, ground – Minimum speed on the ground at which control can be maintained and the take-off continued using aerodynamic controls alone, when the critical engine suddenly becomes inoperative, with the remaining engine at maximum take-off thrust.
V_{MCL}	Minimum control speed during landing approach – Minimum flight speed at which the airplane is controllable with a maximum of 5-degree bank, when the critical engine suddenly becomes inoperative, with the remaining engine at maximum take-off thrust.
V_R	Rotation speed – Speed at which rotation is initiated during take-off.
V_{REF}	Approach speed – The landing reference speed at a height of 50 feet above the runway threshold in the normal landing configuration.
V_S	Stalling speed.

B. Temperature

The following definitions are for terms commonly used throughout the manual. Items not commonly used will be defined in the respective sections where they apply.

ISA	International standard atmospheric conditions.
OAT	Outside air temperature – The free air temperature, obtained either from in-flight temperature indications or ground meteorological sources.
SAT	Static air temperature (In-flight, SAT = OAT).
TAT	Total air temperature – Static air temperature plus adiabatic compression (ram) rise.

C. Distances

The following definitions are for terms commonly used throughout the manual. Items not commonly used will be defined in the respective sections where they apply.

Take-off Distance	The take-off distance on dry runways is the longer of (1) and (2), defined as follows: The take-off distance on wet and contaminated runways is the longer of (3) or the take-off distance on dry runways as established from (1) or (2).
-------------------	--

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



INTRODUCTION
General

01-02-6

Rev. 28, Jun 04/2021

	<ul style="list-style-type: none">(1) The distance from the start of the take-off roll to the point where the airplane attains a height of 35 feet above the take-off surface, with a failure of the critical engine at V_{EF}.(2) 115% of the distance from the start of the take-off roll to the point where the airplane attains a height of 35 feet above the take-off surface, with all engines operating.(3) The distance from the start of the take-off roll to the point where the airplane attains a height of 15 feet above the take-off surface, with a failure of an engine at V_{EF}.
Take-off Run (with clearway)	<p>The take-off run on dry runways is the longer of (1) and (2), defined as follows:</p> <p>The take-off run on wet and contaminated runways is the longer of (3) or the take-off run on dry runways as established from (1) or (2).</p> <ul style="list-style-type: none">(1) The distance from the start of the take-off roll to the mid point between lift-off and the point where the airplane attains a height of 35 feet above the take-off surface, with a failure of the critical engine at V_{EF}.(2) 115% of the distance from the start of the take-off roll to the mid point between lift-off and the point where the airplane attains a height of 35 feet above the take-off surface, with all engines operating.(3) The horizontal distance along the take-off path from the start of the take-off to the point equidistant between the point at which lift-off is achieved and the point where the airplane is 15 feet above the take-off surface, assuming that an engine fails at V_{EF}.
Take-off Run (without clearway)	If the take-off distance does not include a clearway, the take-off run is equal to the take-off distance.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



INTRODUCTION

General

01-02-7

Rev. 28, Jun 04/2021

Accelerate-stop Distance (applicable to dry, wet and contaminated runways)	<p>The accelerate-stop distance is the longer of (1) and (2), defined as follows:</p> <p>(1) The sum of the distances necessary to:</p> <ul style="list-style-type: none">(a) Accelerate the airplane from a standing start to V_{EF} with all engines operating;(b) Accelerate the airplane from V_{EF} to V_1 assuming the critical engine fails at V_{EF}; and(c) Come to a full stop from the point reached at the end of the acceleration period prescribed in paragraph (1) (b), assuming that the pilot does not apply any means of retarding the airplane until that point is reached; plus(d) A distance equivalent to 2 seconds at constant V_1. <p>(2) The sum of the distances necessary to:</p> <ul style="list-style-type: none">(a) Accelerate the airplane from a standing start to V_1 with all engines operating;(b) Come to a full stop at the end of the period prescribed in paragraph (2) (a), assuming that the pilot does not apply any means of retarding the airplane until that point is reached; plus(c) A distance equivalent to 2 seconds at constant V_1.
Clearway	An area beyond the runway, not less than 500 feet wide, centrally located about the extended centerline of the runway, and under the control of the airport authorities. The clearway is expressed in terms of a clearway plane, extending from the end of the runway with an upward slope not exceeding 1.25% above which no object nor any terrain protrudes. However, threshold lights may protrude above the plane if their height above the end of the runway is 26 inches or less and if they are located to each side of the runway.
Stopway	An area beyond the take-off runway at least as wide as the runway and centered upon the extended centerline of the runway, able to support the airplane during an aborted take-off without causing structural damage to the airplane, and designated by the airport authorities for use in decelerating the airplane during an aborted take-off.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



INTRODUCTION

General

01-02-8

Rev. 28, Jun 04/2021

Actual Landing Distance	Actual landing distance is the distance from a 50 feet height at V_{REF} with the flaps in the normal landing configuration, to a full stop on a smooth, dry, level, hard-surfaced runway and ISA temperature.
Landing Field Length	The performance charts in this manual include factors for operational rules which require the use of 60% of the available runway in determining landing field length requirements. The required landing field length on a dry runway is the actual landing distance divided by 0.6. The landing field length required under wet runway conditions is equal to 115% of the dry runway landing field length.

D. Take-off Path

The following definitions are for terms commonly used throughout the manual. Items not commonly used will be defined in the respective sections where they apply.

Take-off Path	The take-off path begins from a standing start and ends at 1500 feet above the take-off surface or at the point where transition from take-off to enroute configuration is completed, whichever is higher.
Take-off Flight Path	The take-off flight path begins at the end of the take-off distance and at a height of 35 feet above the take-off surface, and ends at 1500 feet above the take-off surface, or at the point where transition from take-off to enroute configuration is completed, whichever is higher. This is also known as the Gross Take-off Flight Path.
Net Take-off Flight Path	The net take-off flight path is the gross take-off flight path diminished by 0.8% climb gradient capability (or equivalent reduction in acceleration along that part of the take-off flight path at which the airplane is accelerated in level flight). The net take-off flight path must clear all obstacles in the take-off area by at least 35 feet vertically.

E. Climb Gradient

The following definitions are for terms commonly used throughout the manual. Items not commonly used will be defined in the respective sections where they apply.

Climb Gradient	The ratio of the change in height, during a portion of a climb, to the horizontal distance traversed in the same time interval.
Gross Gradient	Climb gradient expressed as a percentage ratio, obtained using the following formula: $(\text{Change in height} \div \text{Horizontal distance travelled}) \times 100$ The gradients shown on the charts are based on true (not pressure) rates of climb.

DOT Approved

Airplane Flight Manual
CSP C-012-219



Net Gradient	The gross gradient reduced by the required margins.
First Segment	The first segment starts from the 35-foot height and extends to the point where the landing gear is fully retracted, at a constant V_2 speed and flaps in the take-off position.
Second Segment	The second segment starts at the point where the landing gear is fully retracted up to at least 400 feet above the runway, flown at V_2 speed and flaps in the take-off position.
Acceleration Segment	The acceleration segment is the part of the take-off flight path that begins at the end of the second segment and extends horizontally over the distance required to retract flaps to zero, and accelerate to the final take-off climb speed.
Final Segment	The final segment starts from the end of the acceleration segment and extends to the end of the take-off flight path, flown at the final segment climb speed, flaps up.

F. Miscellaneous

The following definitions are for terms commonly used throughout the manual. Items not commonly used will be defined in the respective sections where they apply.

APR	Automatic performance reserve – In the event of an engine failure during take-off, the APR function will increase the thrust rating of the remaining engine.
Centre of Gravity (CG)	The point at which the airplane would balance if suspended. The CG distance from the reference datum is found by dividing the total moment by the total weight of the airplane.
GW	Gross weight – The maximum weight to which the airplane is certificated.
MLW	Maximum landing weight – The maximum airplane weight approved for the landing touchdown.
MRW	Maximum ramp weight – The maximum possible airplane weight allowed for ground handling and taxiing.

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



INTRODUCTION

General

01-02-10

Rev. 28, Jun 04/2021

MTOW	Maximum take-off weight – The maximum airplane weight approved for the start of take-off.
MZFW	Maximum zero fuel weight – The maximum weight allowed before usable fuel is loaded into the airplane.

NOTE

The following ICAO weight conversion factor is used throughout the AFM:

- 1 kilogram (kg) = 2.20462262185 pounds (lb)

As much as possible, these numbers are rounded off to the nearest multiple of 5, except when operational requirements dictate otherwise. The weights in the AFM correspond to the weights given in the Weight and Balance Manual (WBM) (CSP C-041).

6. ABBREVIATIONS

The following abbreviations may be used by flight compartment displays, radio tuning units and flight management system and can be found throughout the manual. Some abbreviations may also appear in lower case letters. Abbreviations having very limited usage are explained in the chapters where they are used.

A

A/I	Anti-Ice	ALTN	Alternate
A/SKID	Anti-Skid	AMJ	Advisory Material Joint
AC	Advisory Circular, Alternating Current	AMM	Aircraft Maintenance Manual
ACARS	Aircraft Communications Addressing and Reporting System	amp	Ampere(s)
ACC.	Acceleration	AMU	Areas of Magnetic Unreliability
ACT	Actuator	AOA	Angle Of Attack
ADC	Air Data Computer	AP	Autopilot
ADG	Air Driven Generator	APPR	Approach
AEO	All Engines Operating	APR	Automatic Performance Reserve
AFCS	Automatic Flight Control System	APU	Auxiliary Power Unit
AFM	Airplane Flight Manual	ATA	Air Transport Association of America
AGL	Above Ground Level	ATC	Air Traffic Control
AHRS	Attitude and Heading Reference System	ATN B1	Aeronautical
ALT	Altimeter, Altitude, Altitude Hold (PFD/FD)	CPDLC	Telecommunication Network Baseline 1 Controller Pilot Data Link Communications
		ATS	Air Turbine Starter

DOT Approved

**Airplane Flight Manual
CSP C-012-219**

**INTRODUCTION**
General

01-02-11

Rev. 28, Jun 04/2021

ATT, ATTD	Attitude	AV	Avionics
AUTO	Automatic	AWM	Airworthiness Manual
AUTO XFER	Automatic Transfer	AWO	All Weather Operations

B

BATT	Battery	BTL	Bottle
BOARD	Boarding	BTMS	Brake Temperature Monitoring System

C

C	Cabin, Caution, Centre	CLB	Climb
CAAC	Civil Aviation Authority of China	CLK	Clock
CAA (UK)	Civil Aviation Authority (UK)	CLSD	Closed
CAB	Cabin	CMD	Command
CAFIM	Computerized Airplane Flight Manual	COMP	Comparator, Compressor
CAIV	Cowl Anti-Ice Valve	CONT	Contactor, Continuous, Control, Controller
CAS	Calibrated Airspeed, Crew Alerting System	COOL	Cooling
CAT	Category	CPC	Cabin Pressure Control
CAT II	Category II	CPCP	Cabin Pressure Control Panel
CDL	Configuration Deviation List	CPDLC	Controller Pilot Data Link Communications
CDU	Control Display Unit	CPLT	Copilot
CG	Centre of Gravity	CRT	Cathode Ray Tube
CH	Channel, Chapter	CSP	Customer Support
CHAN	Channel	CTR	Publication
CIS	Commonwealth of Independent States	CVNAV	Centre
CKPT	Cockpit		Vertical Navigation (VNAV) capability – Coupled

D

DC	Direct Current	DG	Directional Gyro
DCU	Data Concentrator Unit	DH	Decision Height
DEL	Delete	DiEGME	Diethylene Glycol
DEPRESS	Depressurize		Monomethyl Ether
DET	Detector	DIFF	Differential



INTRODUCTION General

01-02-12

Rev. 29, Oct 15/2021

DIR	Direct	DN	Down
DIS	Distance (to way point)	DNA	Dirección Nacional
DISA	Deviation from International Standard Atmosphere	DOT	Aeronavegabilidad
DISC	Disconnect		Department Of Transport,
DISCH	Discharge	DR	Department Of Transportation
DIST	Distance	DSPLY	Door
DME	Distance Measuring Equipment	dtd	Display
			Dated

E

EAS	Equivalent Airspeed	EGPWS	Enhanced Ground Proximity Warning System
EASA	European Aviation Safety Agency	EGT	Exhaust Gas Temperature (°C), APU
ECAA	Egyptian Civil Aviation Authority	EICAS	Engine Indication and Crew Alerting System
ECS	Environmental Control System	ELEV	Elevation, Elevator
ECU	Electronic Control Unit	ELT	Emergency Locator Transmitter
ED	EICAS Display	EMER	Emergency
EDP	Engine Driven Pump (engine primary hydraulic pump)	ENG	Engine(s)
EFB	Electronic Flight Bag	EPNdB	Effective Perceived Noise levels
EFIS	Electronic Flight Instrument System	ESS	Essential
e.g.	exempli gratia (for example)		

F

FAA	Federal Aviation Administration (USA)	FIREX	Fire Extinguisher
FADEC	Full Authority Digital Engine Control	FL	Flight Level
FAF	Final Approach Fix	FLT	Flight
FAIL	Failure	FLX	Flex thrust (reduced take-off thrust)
FAR	Federal Aviation Regulations	FMC	Flight Management Computer
FCC	Flight Control Computer	FMS	Flight Management System
FCP	Flight Control Panel	FOD	Foreign Object Damage
FD	Flight Director	FPCCM	Flight Planning and Cruise Control Manual
FEED	Feeder		

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



INTRODUCTION General

01-02-13

Rev. 28, Jun 04/2021

fpm	Foot (feet) per minute	ft	Foot (feet)
FS	Fuselage Station	FUSE	Fuselage
FSII	Fuel System Icing Inhibitors	FW	Firewall
ft ³	Cubic foot (feet)	FWD	Forward

G

g	G force	GND, GRND	Ground
G (+/-)	Receiver gain	GNSS	Global Navigation Satellite System
GAL	Gallon(s)	GPS	Global Positioning System
GEAE	General Electric Aircraft Engine	GPWS	Ground Proximity Warning System
GEN	Generator	GRAD	Gradient
GLD	Ground Lift Dumping	GW	Gross Weight

H

H _I	Indicated altitude	HLA	High Level Airspace
H _P	True pressure altitude	HLDR	Holder
HDG	Heading	Hndl	Handle
HEAT	Heater	HP	High Pressure
HF	High Frequency (3-30 MHz)	hPa	Hecto Pascal(s)
Hg	Mercury	HYD	Hydraulic
HI	High		

I

IAS	Indicated Airspeed	INHIB	Inhibit
ICAO	International Civil Aviation Organization	INOP	Inoperative
IDG	Integrated Drive Generator	INTC	Intercept
i.e.	id est (that is)	IRS	Inertial Reference System
IFR	Instrument Flight Rules	ISA	International Standard Atmosphere
ILS	Instrument Landing System	ISI	Integrated Standby Instrument
in.	Inch(es)	ISOL	Isolated, Isolation
INBD	Inboard	ITT	Inter Turbine Temperature (°C), Engine
INCR	Increase		

**INTRODUCTION**
General

01-02-14

Rev. 28, Jun 04/2021

J

JAA Joint Aviation Authorities JAR Joint Aviation Requirements

K

KCAS	Knots Calibrated Airspeed	kt, kts	Knot(s)
kg	Kilogram(s)	kVA	Kilovolt-ampere(s)
KIAS	Knots Indicated Airspeed		

L

I	Litre(s)	LOC	Localizer (ILS)
L	Landing, Left	LOC-BC	Localizer Back Course
L/V	(SBAS) LNAV/VNAV	LOH	Level-Off Height
LAV	Lavatory	LP	Low Pressure, Lateral Precision
lb	Pound(s)	LPV	Localizer Performance with Vertical guidance
LCV	Load Control Valve	LRNS	Long Range Navigation Sensors
LDA	Localizer-type Directional Aid	LTS	Lights
LDG	Landing	LWD	Left Wing Down
LH	Left Hand		
LNAV	Lateral Navigation		
LO	Low		

M

M	Mach number	MDC	Maintenance Diagnostics Computer
M_I	Indicated Mach number		
M_{MO}	Maximum operating speed in Mach number	MEL	Minimum Equipment List
		MES	Main Engine Start
M_T	True Mach number	MFD	Multi-Function Display(s)
M, m	Metre(s)	MFS	Multi-Function Spoiler(s)
MAC	Mean Aerodynamic Chord	MHz	Megahertz
MAG	Magnetic	mil	Thousandth of an inch
MAGVAR	Magnetic Variation	MIN	Minimum, Minute
MAN	Manual	MLG	Main Landing Gear
MAX	Maximum	MLOH	Maximum engine-out Level-Off Height
MCT	Maximum Continuous Thrust	MLS	Microwave Landing System
MDA	Minimum Descent Altitude	MLW	Maximum Landing Weight

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



INTRODUCTION General

01-02-15

Rev. 29, Oct 15/2021

mm	Millimetre(s)	MRW	Maximum Ramp Weight
MMEL	Master Minimum Equipment List	MSG	Message(s)
MNPS	Minimum Navigation Performance Specifications	MSL	Mean Sea Level
MON	Monitor	MST	Master
		MTOW	Maximum Take-Off Weight
		MZFW	Maximum Zero Fuel Weight

Miscellaneous

&	and	°C	Degree(s) Celsius
Δ	Delta	°F	Degree(s) Fahrenheit
%	Percent		

N

N	Normal	NAVAIDs	Navigational Aids
N/W	Nosewheel	ND	Navigation Display, Nose Down
N ₁	Low pressure rotor	NM	Nautical Mile(s)
N ₂	High pressure rotor	No.	Number
NAD	North American Datum	NORM	Normal
NATO	North Atlantic Treaty Organization	NTO	Normal Take-Off
NAT	North Atlantic	NU	Nose Up
NAV	Navigation		

O

OAT	Outside Air Temperature	OVBD	Overboard
OB	Outboard	OVERSPD	Overspeed
OEI	One Engine Inoperative	OVHT	Overheat
OUT	Outer	OVLD	Overload
OUTBD	Outboard	OXY	Oxygen

P

P/N	Part Number	PBE	Protective Breathing Equipment
P	Pressure		
PA	Passenger Address	PCU	Power Control Unit
PACK	Package(s) (air-conditioning)	PDU	Power Drive Unit
PASS, PAX	Passenger	PERF	Performance

DOT Approved

**Airplane Flight Manual
CSP C-012-219**

**INTRODUCTION**
General

01-02-16

Rev. 28, Jun 04/2021

PFD	Primary Flight Display	PRNAV	Precision Area Navigation
PLT	Pilot	PROX	Proximity
PPE	Personal Protective Equipment	PSI	Pound(s) per Square Inch
PPOS	Present Position	PSID	Pound(s) per Square Inch Differential
PRESS	Pressure, Pressurization	PTCT	Protect
PRI	Primary	PWR	Power

Q

QAR	Quick Access Recorder	QTY	Quantity
QFE	Local station pressure		

R

R	Right	RNAV	Area Navigation
RA	Radio Altitude, Resolution Advisory	RNP	Required Navigation Performance
RAD	Radial	RPM	Revolutions Per Minute
RAIM	Receiver Autonomous Integrity Monitoring	RTL	Rudder Travel Limiter
RECIRC	Recirculation	RTO	Rejected Take-Off
REF	Reference(s)	RTU	Radio Tuning Unit
Rev.	Revision	RUD	Rudder
REV	Reverse	RVSM	Reduced Vertical Separation Minimum
RH	Right Hand	RWD	Right Wing Down

S

SA	Special Authorization	SERV	Service
SAPT	Service Availability Prediction Tool	S.L., SL	Sea Level
SAT	Static Air Temperature	SLD	Super-cooled Large Droplet
SB	Service Bulletin	SOV	Shut-Off Valve
SBAS	Satellite-Based Augmentation System	SP	Speed, Stick Pusher
SCAV	Scavenge	SPEC	Specification
SCID	Software Configuration Index Drawings	SPLR	Spoiler(s)
SCTrend	Small Commercial Trend	STAB	Stabilizer
SDF	Simplified Directional Facility	STAT	Status
		STBY	Standby
		STRG	Steering

DOT Approved

**Airplane Flight Manual
CSP C-012-219**

**INTRODUCTION**
General

01-02-17

Rev. 28, Jun 04/2021

SYNC	Synchronous	SYS, SYST	System
T			
TAS	True Airspeed	TEMP	Temperature
TAT	Total Air Temperature	TGL	Temporary Guidance Leaflet
TC	Transport Canada	TOGA	Take-Off/Go-Around
TCAS	Traffic Alert and Collision Avoidance System	TRU	Transformer Rectifier Unit
		TXFR	Transfer
U			
US	United States	UTIL	Utility
US gal, USG	United States gallon(s)		
V			
V	Volt(s)	V _{LO}	Maximum landing gear operating speed
V __	V-Speed (refer to 5. DEFINITIONS – Airspeeds, in this section.)	V _{MC}	Minimum control speed
V ₁	Take-off decision speed	V _{MCA}	Minimum control speed, air
V _{1MBE}	Maximum V ₁ for brake energy	V _{MCG}	Minimum control speed, ground
V _{1MCG}	Minimum V ₁ limited by control on the ground	V _{MCL}	Minimum control speed, landing
V ₂	Take-off safety speed	V _{MO}	Maximum operating speed in knots
V _{2GA} , V _{2GO-AROUND}	Approach climb speed	V _R	Rotation speed
V _A	Design maneuvering speed	V _{REF}	Landing reference speed
V _{EF}	Critical engine speed	V _S	Stalling speed
V _{ENR}	Climb speed during the enroute phase	V _{S1G}	Reference stall speed based on 1.0 G criteria
V _{FE}	Maximum flap extended speed	V _{SR}	Reference stall speed
V _{FTO}	Final take-off speed	VFR	Visual Flight Rules
V _{LC}	Climb speed during the landing climb	VHF	Very High Frequency (30-300 MHz)
V _{LE}	Maximum landing gear extended speed	VIB	Vibration
		VNAV	Vertical Navigation
		VOL	Volume
		VPATH	Vertical path(s)
		VS	Vertical Speed Mode



INTRODUCTION General

01-02-18

Rev. 28, Jun 04/2021

W

WARN	Warning	WOW	Weight-On-Wheels
WBM	Weight and Balance Manual	WS	Wing Station(s), Second segment limited weight
WGS	World Geodetic System	WSHLD	Windshield
WIND	Window	WT, wt	Weight
WL	Water Line		

X

XFER, XFR	Transfer	XFLOW	Cross-Flow
-----------	----------	-------	------------

Y

YD	Yaw Damper
----	------------

Z

7. AIRPLANE OPTION CODES

Relevant pages of the AFM contain the following airplane option codes adjacent to the applicable text.

In cases where two or more option codes apply to the same text, and one of the options is the basic configuration, the option code <Type Spec> will appear, paired with other applicable option code(s). Example: <Type Spec> and <2004>.

Absence of an option code means that the data are applicable to all.

Airplane Option Codes	
Option Code	Description
<JAA>	Data applicable to Joint Aviation Authorities registered airplanes only.
<1021>	Lights – Red Beacon Lights
<1025>	Inertial Reference System (IRS) – Dual Installation
<1027>	Global Positioning System (GPS) – Dual Sensors
<1030>	Reduced Vertical Separation Minimum (RVSM) Capability
<1045>	Altimeter – Second Radio Altimeter
<1071>	Oxygen – Passenger, 22 minute Chemical Oxygen Generators
<1092>	Emergency Locator Transmitter (ELT) – Satellite Capability (Artex)

DOT Approved

**Airplane Flight Manual
CSP C-012-219**

**INTRODUCTION
General**

01-02-19

Rev. 28, Jun 04/2021

Airplane Option Codes	
Option Code	Description
<1103>	VHF NAV — FM Immunity
<1201>	Cargo Compartment – Aft Compartment Automatic Temperature Control
<1212>	Global Positioning System (GPS) – Dual GPS Antenna Installation
<1214>	Flight Management System (FMS) – Dual Installation (Collins), ACARS Compatible
<1226>	Reinforced Flight Compartment Door
<1231>	Air-conditioning – Filtering and Flow Control – Ozone Converter
<2006>	Performance – Long Range: 37995 kg (83765 lb) <Europe>
<2040>	Enhanced Ground Proximity Warning System (EGPWS)
<2052>	Power Plant – 2% NTO Thrust Increase (CF34-8C5A1)
<2098>	Computerized Airplane Flight Manual (CAFM)
<2109>	Automatic Direction Finder (ADF)
<2111>	Total number of cabin seats (passengers and flight attendants) of 83 and above.
<2252>	Temporary Cargo Carrying Operations

8. SERVICE BULLETINS

Referenced throughout the Airplane Flight Manual are airplane serial numbers and MHIRJ Service Bulletins, shown in the following list:

Service Bulletin	Title	Serial Number
SB 670BA-30-013	Ice and Rain Protection – Engine Cowl Anti-ice Control and Indication – Change the Electrical Wires for the Cowl Anti-Ice Valve (CAIV) Interlock	15002 thru 15023

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



INTRODUCTION

General

01-02-20

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



CHAPTER 2 - LIMITATIONS

INTRODUCTION

INTRODUCTION	02-01-1
KINDS OF AIRPLANE OPERATION	02-01-1

STRUCTURAL WEIGHT

STRUCTURAL WEIGHT LIMITATION	02-02-1
------------------------------------	---------

CENTRE OF GRAVITY

CENTRE OF GRAVITY (LIMITS)	02-03-1
----------------------------------	---------

OPERATING LIMITATIONS

ALTITUDE AND TEMPERATURE OPERATING LIMITS	02-04-1
Take-off, Landing and Operating Limits	02-04-1
OPERATION IN ICING CONDITIONS	02-04-5
Cowl Anti-ice System	02-04-5
Wing Anti-ice System	02-04-5
Super-cooled Large Droplet (SLD) Icing	02-04-6
COLD WEATHER OPERATIONS	02-04-6
HOT WEATHER OPERATION	02-04-7
RUNWAY SLOPES	02-04-7
TAILWIND CONDITIONS	02-04-7
MINIMUM FLIGHT CREW	02-04-8
CARGO	02-04-8
OZONE CONCENTRATION	02-04-8
OPERATIONS USING QFE ALTIMETER SETTINGS	02-04-8
MAXIMUM CABIN OCCUPANTS <TC> or <FAA> or <JAA>	02-04-9

POWER PLANT

ENGINES	02-05-1
Engine Types	02-05-1
Engine Indications	02-05-1
Thrust Management Data	02-05-1
Engine Warm-up	02-05-1



LIMITATIONS Table of Contents

02-00-2

Rev. 28, Jun 04/2021

Engine High Power Schedule Switch <TC> or <JAA>	02-05-1
ENGINE OPERATING LIMITS	02-05-2
Engine Operating Limits Table	02-05-2
Airplane Cold Soak	02-05-3
CONTINUOUS ENGINE IGNITION	02-05-3
STARTER CRANKING LIMITS	02-05-3
Engine Start (Ground)	02-05-3
Engine Start or Motoring (Flight)	02-05-3
Motoring (Ground)	02-05-4
ENGINE RELIGHT	02-05-4
FUEL	02-05-8
Fuel Load	02-05-8
Fuel Temperature	02-05-8
Fuel Grades	02-05-9
Fuel Additives	02-05-10
Fuel Cross-flow	02-05-11
OIL	02-05-11
Oil Grades	02-05-11
Oil Consumption	02-05-11
Engine Oil Level	02-05-12
Oil Replenishment System	02-05-12
AUXILIARY POWER UNIT (APU)	02-05-12
Type	02-05-12
Maximum RPM	02-05-12
Starting	02-05-12
Operating Range	02-05-13
APU Bleed Air	02-05-16
APU Generator	02-05-16
APU Indications	02-05-16
ENGINE OPERATING PROCEDURE LIMITS DUE TO WIND	02-05-16
OPERATING SPEEDS	
MAXIMUM OPERATING SPEED AND MACH NUMBER	02-06-1
RVSM MAXIMUM CRUISE MACH NUMBER <1030>	02-06-3

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



LIMITATIONS Table of Contents

02-00-3

Rev. 28, Jun 04/2021

DESIGN MANEUVERING SPEED	02-06-3
FLAPS EXTENDED SPEED	02-06-5
MAXIMUM LANDING GEAR OPERATING SPEED	02-06-5
MAXIMUM LANDING GEAR EXTENDED SPEED	02-06-5
TIRE LIMIT SPEED	02-06-5
MAXIMUM AIRSPEED FOR ADG OPERATION	02-06-5
TURBULENCE PENETRATION SPEED	02-06-6
MINIMUM OPERATING LIMIT SPEED	02-06-6
WINDSHIELD WIPER OPERATION	02-06-6

MANEUVERING LOADS

MANEUVERING LIMIT LOAD FACTORS	02-07-1
SIDE-SLIP MANEUVERS	02-07-1

SYSTEM LIMITATIONS

AIR-CONDITIONING AND PRESSURIZATION	02-08-1
AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS)	02-08-1
ELECTRICAL SYSTEMS	02-08-2
Permissible Loads on AC System	02-08-2
Permissible Loads on DC Systems	02-08-2
Circuit Breaker Reset (In Flight)	02-08-2
FLIGHT CONTROLS – LIFT/DRAG DEVICES	02-08-2
Slats/Flaps	02-08-2
Flight Spoilers	02-08-2
STALL PROTECTION SYSTEM	02-08-3
THRUST REVERSERS	02-08-3
NOSEWHEEL STEERING SYSTEM	02-08-3
TAXI LIGHTS	02-08-3
WHEEL BRAKE COOLING LIMITATIONS	02-08-3
MINIMUM DESCENT ALTITUDE	02-08-4
TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS)	02-08-4

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Table of Contents

02-00-4

Rev. 28, Jun 04/2021

INTEGRATED STANDBY INSTRUMENT (ISI)	02-08-4
CONFIGURATION DEVIATION LIST (CDL)	02-08-4
ENHANCED GROUND PROXIMITY WARNING SYSTEM (EGPWS) <2040>	02-08-4
PNEUMATIC SYSTEM	02-08-5
FLIGHT DECK DOOR <FAA> or <1226>	02-08-5
Automatic Dependent Surveillance-Broadcast (ADS-B) OUT	02-08-6

NAVIGATION SYSTEM LIMITATIONS

FLIGHT MANAGEMENT SYSTEM (FMS) <1024> or <1050> or <1214> or <1215>	02-09-1
Operating Data	02-09-1
FMS-4200 Operating Limitations	02-09-1
GLOBAL POSITIONING SYSTEM (GPS) <1027> or <1047> or <1236> or <1244>	02-09-4
General	02-09-4
Inertial Reference System (IRS) – Dual Installation <1025>	02-09-4

LIST OF ILLUSTRATIONS

CENTRE OF GRAVITY

Figure 02-03-1 Centre of Gravity Limits <2006>	02-03-2
---	---------

OPERATING LIMITATIONS

Figure 02-04-1 Altitude and Temperature Operating Limits	02-04-2
Figure 02-04-2 Altitude and Temperature Operating Limits	02-04-4

POWER PLANT

Figure 02-05-1 Engine Start Envelope	02-05-5
Figure 02-05-2 Engine Start Envelope	02-05-7
Figure 02-05-3 APU Start and Operating Limits	02-05-14
Figure 02-05-4 APU Altitude and Airspeed Chart	02-05-15
Figure 02-05-5 Engine Operating Procedure Limits Due to Wind	02-05-17

OPERATING SPEEDS

Figure 02-06-1 Maximum Operating Speed and Mach Number	02-06-2
Figure 02-06-2 Design Maneuvering Speeds	02-06-4

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



LIMITATIONS
Table of Contents

02-00-5

Rev. 28, Jun 04/2021

NAVIGATION SYSTEM LIMITATIONS

Figure 02-09-1	AMU for Airplanes Equipped with IRS 465020-0400-0401	02-09-6
Figure 02-09-2	AMU for Airplanes Equipped with IRS 465020-04000402	02-09-8

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



Figure 1 to paragraph (g) – AFM Revision

(Required by AD 2021-23-12)

Radio Altimeter Flight Restrictions

When operating in U.S. airspace, the following operations requiring radio altimeter are prohibited in the presence of 5G C-Band wireless broadband interference as identified by NOTAM (NOTAMs will be issued to state the specific airports where the radio altimeter is unreliable due to the presence of 5G C-Band wireless broadband interference):

- Instrument Landing System (ILS) Instrument Approach Procedures (IAP) SA CAT I, SA CAT II, CAT II, and CAT III
- Required Navigation Performance (RNP) Procedures with Authorization Required (AR), RNP AR IAP
- Automatic Landing operations
- Manual Flight Control Guidance System operations to landing/head-up display (HUD) to touchdown operation
- Use of Enhanced Flight Vision System (EFVS) to touchdown under 14 CFR 91.176(a)

REF FAA AMOC REFERENCE: MHIRJ-CAW-22-011, dated February 12, 2022

The Manager of the Operational Safety Branch approves your proposal to allow operation of the MHI RJ Aviation ULC Model airplanes in the following table equipped with the Collins Aerospace ALT-1000 and/or ALT-55B radio altimeters to the airports and runways listed in the attached addendum as an AMOC to paragraph (g) of AD 2021-23-12 in areas identified by NOTAMs.

Aircraft Make: MHI RJ Aviation ULC	Radio Altimeter Manufacturer	Radio Altimeter Model (See Note 2)	Radio Altimeter Part Number (See Note 3)
CL-600-2B19	Collins Aerospace	ALT-1000	822-1939-001 822-1939-005
CL-600-2B19	Collins Aerospace	ALT-55B	622-2855-011
CL-600-2C10 CL-600-2C11 CL-600-2D15 CL-600-2D24	Collins Aerospace	ALT-1000	822-1939-001 822-1939-005
CL-600-2C10 CL-600-2C11 CL-600-2D15 CL-600-2D24	Collins Aerospace	ALT-55B	622-2855-011

Note 1: All MHI RJ Aviation ULC commercial derivative models with Collins Aerospace ALT-1000 and/or ALT-55B certification.
Note 2: If the airplane is equipped with both ALT-1000 and ALT-55B radio altimeter models, use the ALT-55B runway list.
Note 3: Approval only applicable to radio altimeter part numbers listed.

MSN 15426, 15428, 15429 and 15434 – have Radio Altimeter P/N: 822-1939-005 installed.
See AOM 700-1231 Latest Revision For Airports/Runways Cleared for minimized 5G C-band interference.



LIMITATIONS
Table of Contents

02-00-6

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS

Introduction

02-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

Observance of the limitations included in this chapter is mandatory.

2. KINDS OF AIRPLANE OPERATION

The airplane is certified in the transport category for day and night operations, in the following conditions when the equipment and instruments required by the airworthiness and operating regulations are approved, installed and in an operable condition:

- VFR and IFR
- Flight in icing conditions

The airplane is certified for ditching when the safety equipment specified by the applicable regulations is installed.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



LIMITATIONS
Introduction

02-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS
Structural Weight

02-02-1

Rev. 28, Jun 04/2021

1. STRUCTURAL WEIGHT LIMITATION

Weight	kg	lb	Airplane Option Code
Maximum Ramp Weight (MRW)	38222	84265	<2006>
Maximum Take-Off Weight (MTOW)	37995	83765	<2006>
Maximum Landing Weight (MLW)	34065	75100	<2005> or <2006>
Maximum Zero Fuel Weight (MZFW)	32092	70750	<2005> or <2006>
Minimum flight weight	20412	45000	

NOTE

The Maximum Take-Off Weight (MTOW) and/or Maximum Landing Weight (MLW) may be further limited due to performance considerations.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



LIMITATIONS
Structural Weight

02-02-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Centre of Gravity

02-03-1

Rev. 28, Jun 04/2021

1. CENTRE OF GRAVITY (LIMITS)

The maximum permissible Centre of Gravity (CG) range with landing gear extended is shown in [Figure 02-03-1](#). The airplane must be loaded in accordance with the loading instructions associated with the Weight and Balance Manual (WBM) (CSP C-041). The effect of landing gear retraction on CG position is negligible.

DOT Approved

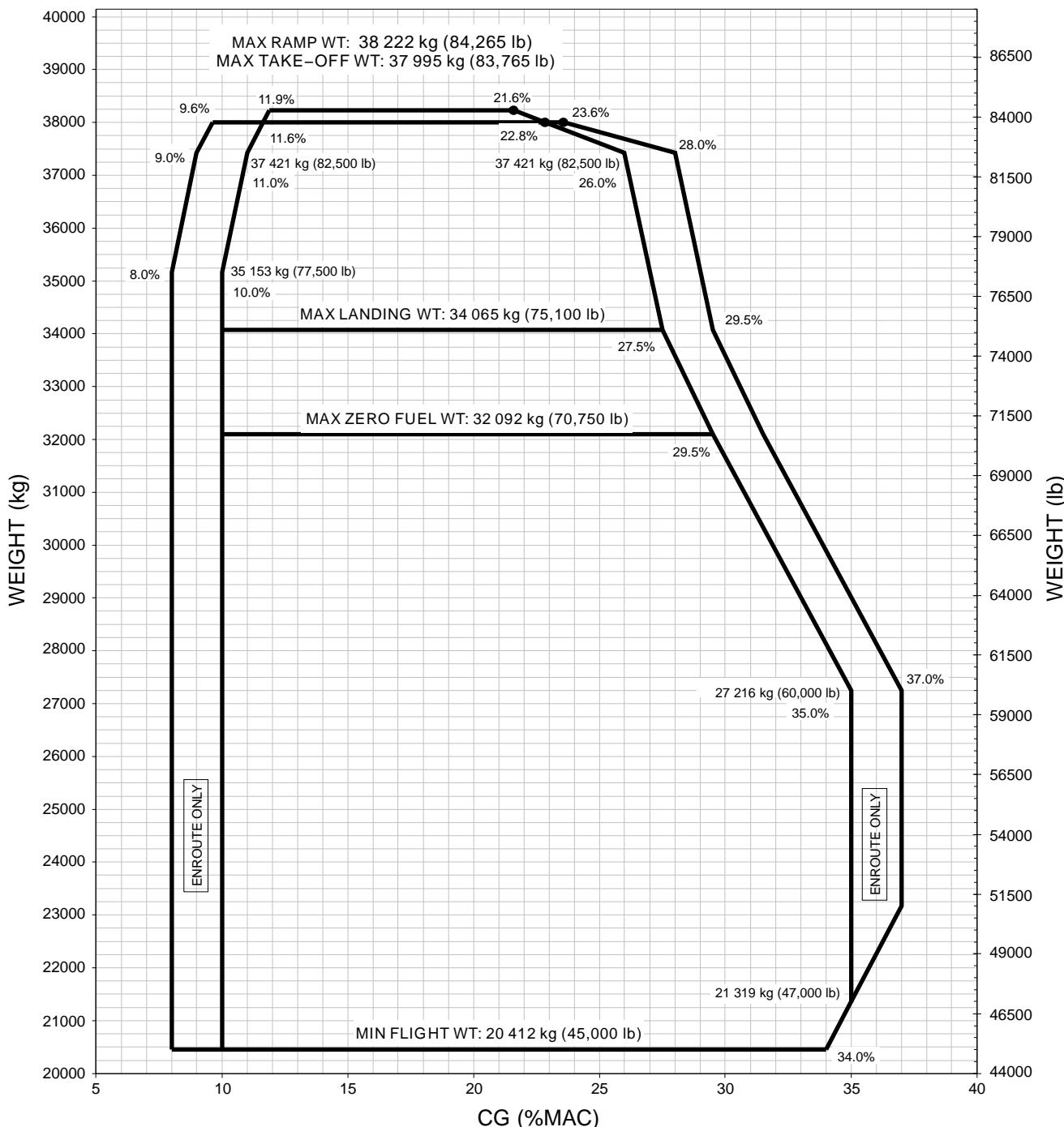
Airplane Flight Manual
CSP C-012-219



LIMITATIONS Centre of Gravity

02-03-2

Rev. 28, Jun 04/2021



Centre of Gravity Limits <2006>
Figure 02-03-1

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Operating Limitations

02-04-1

Rev. 28, Jun 04/2021

1. ALTITUDE AND TEMPERATURE OPERATING LIMITS

A. Take-off, Landing and Operating Limits

The altitude and temperature operating limits are as shown in [Figure 02-04-1](#).

Maximum airport pressure altitude for take-off and landing is 8000 feet.

Maximum operating altitude is 41000 feet.

Maximum ambient air temperature approved for take-off and landing is ISA + 35°C.

Minimum ambient temperature approved for take-off is -40°C (-40°F).

DOT Approved

Airplane Flight Manual
CSP C-012-219

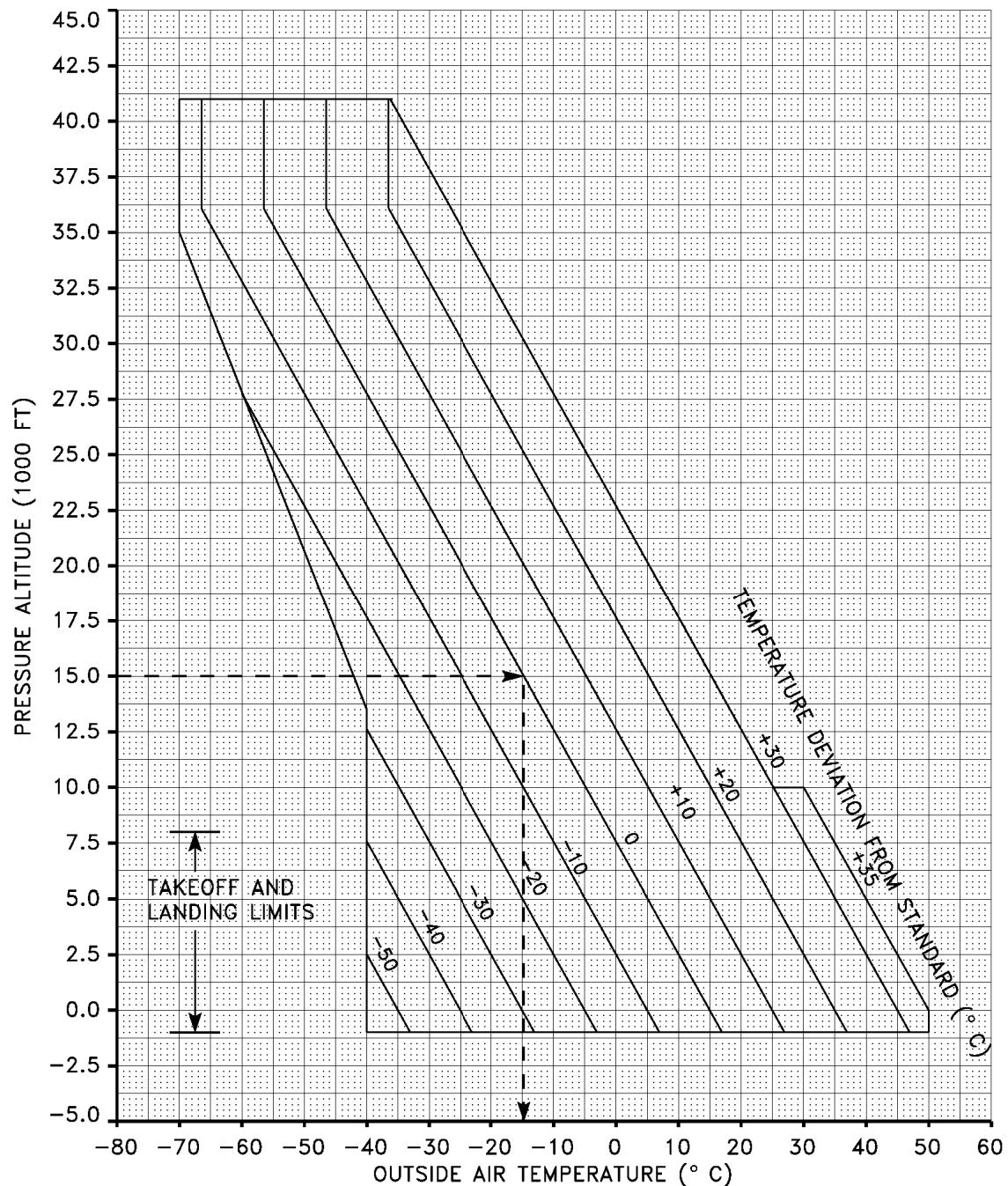


LIMITATIONS Operating Limitations

02-04-2

Rev. 28, Jun 04/2021

ALT TEMP_RJX_DP_24APR02



Altitude and Temperature Operating Limits
Figure 02-04-1

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Operating Limitations

02-04-3

Rev. 28, Jun 04/2021

Effectivity:

- When operating at airport pressure altitudes between 8000 and 10000 feet, for:
- Airplanes 15250 and subsequent, or
- Airplanes 15001 thru 15249 **incorporating** the following Service Bulletin:
 - SB 670BA-21-030, Air Conditioning – Cabin Pressure Controller (CPC) – Software Upgrade.

The altitude and temperature operating limits are as shown in [Figure 02-04-2](#).

Maximum airport pressure altitude for take-off and landing is 10000 feet.

Maximum operating altitude is 41000 feet.

Maximum ambient air temperature approved for take-off and landing is ISA + 35°C.

Minimum ambient temperature approved for take-off is -40°C (-40°F).

DOT Approved

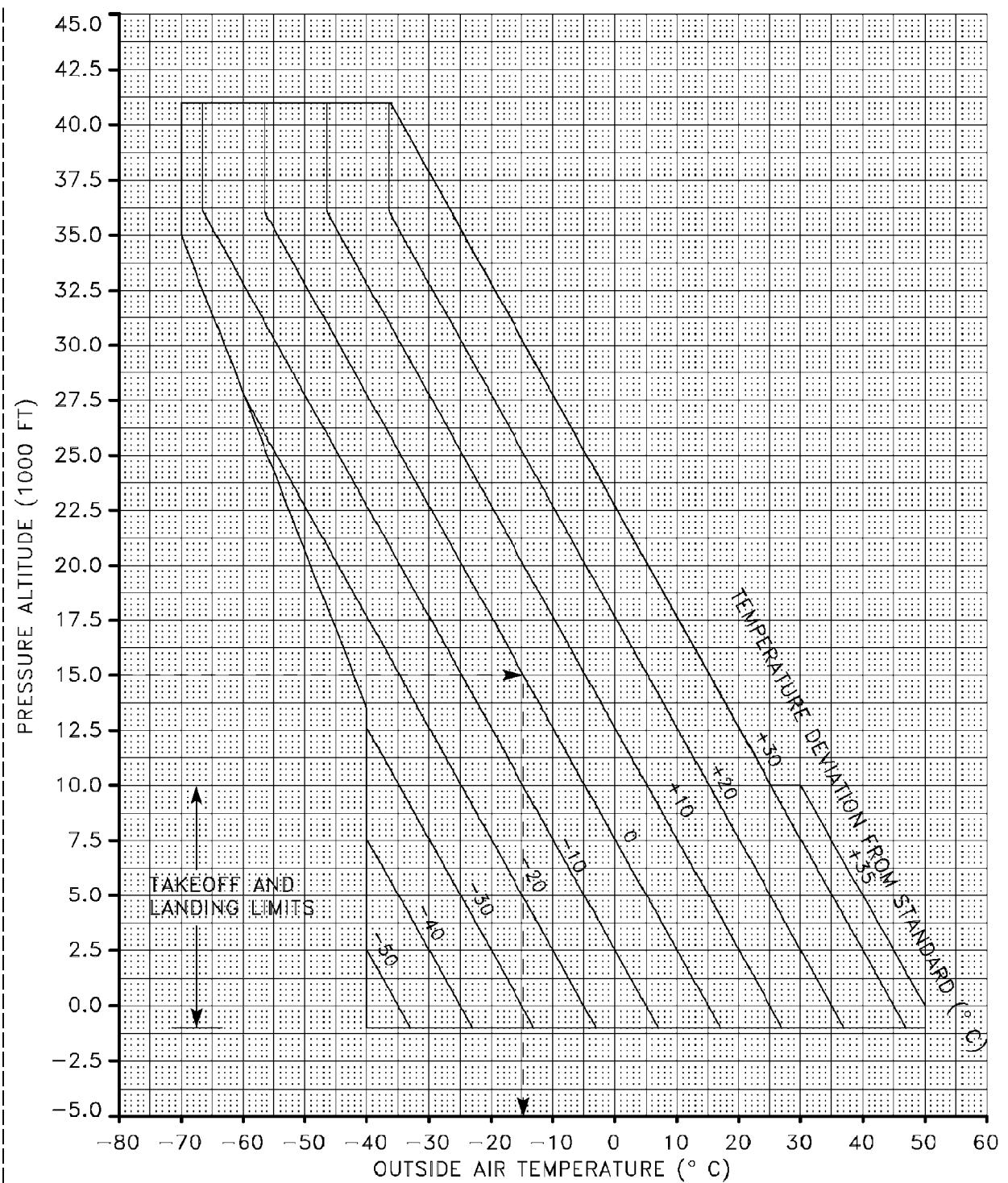
**Airplane Flight Manual
CSP C-012-219**



LIMITATIONS
Operating Limitations

02-04-4

Rev. 28, Jun 04/2021



Altitude and Temperature Operating Limits
Figure 02-04-2

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Operating Limitations

02-04-5

Rev. 28, Jun 04/2021

2. OPERATION IN ICING CONDITIONS

A. Cowl Anti-ice System

(1) Ground Operations

The cowl anti-ice system must be ON when the OAT is 10°C (50°F) or below and visible moisture in any form is present (such as fog with visibility of 1500 metres [one mile] or less, rain, snow, sleet and ice crystals).

The cowl anti-ice system must also be ON when the OAT is 10°C (50°F) or below when operating on runways, ramps, or taxiways where surface snow, ice, standing water, or slush is present.

(2) Flight Operations

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

The cowl anti-ice system must be ON:

- when in icing conditions, or
- when ICE is annunciated by the ice detection system.

B. Wing Anti-ice System

(1) Ground Operations

The wing anti-ice system must be ON for take-off when the OAT is 5°C (41°F) or below and visible moisture in any form is present (such as fog with visibility of 1500 metres [one mile] or less, rain, snow, sleet and ice crystals).

The wing anti-ice system must also be ON for take-off when the OAT is 5°C (41°F) or below and the runway is contaminated with surface snow, slush or standing water.

When Type II, III or Type IV anti-icing fluids have been applied, the wing anti-ice system must only be selected ON, if required, just prior to thrust increase for take-off.

(2) Flight Operations

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



LIMITATIONS Operating Limitations

02-04-6

Rev. 28, Jun 04/2021

The wing anti-ice system must be ON:

- when ICE is annunciated by the ice detection system, or
- when in icing conditions and the airspeed is less than 230 KIAS.

Do not hold in icing conditions with the flaps/slats extended.

C. Super-cooled Large Droplet (SLD) Icing

Continued operation in areas where Super-cooled Large Droplet (SLD) icing conditions exist is prohibited.

SLD icing conditions are indicated by ice accretion on the flight compartment side windows:

- The wing anti-icing system must be ON in SLD icing conditions.
- The cowl anti-icing system must be ON in SLD icing conditions.
- Leave icing conditions when side window icing occurs.

3. COLD WEATHER OPERATIONS

WARNING

Even small amounts of frost, ice, snow or slush on the wing leading edges and forward upper wing surface may adversely change the stall speeds, stall characteristics and the protection provided by the stall protection system, which may result in loss of control on take-off.

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Operating Limitations

02-04-7

Rev. 28, Jun 04/2021

Take-off is prohibited with frost, ice, snow or slush adhering to any critical surface (wings, horizontal stabilizer, vertical stabilizer, control surfaces and engine inlets).

Although the upper fuselage is not defined as a critical surface, it must nonetheless be de-iced to remove contamination, other than allowable frost, anytime the wing and tail surfaces require de-icing.

NOTE

1. Take-off is permitted with frost adhering to:
 - the upper surface of the fuselage; and/or
 - the underside of the wing, that is caused by cold soaked fuel,
in accordance with the instructions provided in the Flight Crew Operating Manual, Volume 2 (CSP C-013): SUPPLEMENTARY PROCEDURES – Cold Weather Operations – PRE-FLIGHT PREPARATION – External Safety Inspection.
2. Comprehensive procedures for operating in cold weather are provided in the Flight Crew Operating Manual, Volume 2 (CSP C-013): SUPPLEMENTARY PROCEDURES – Cold Weather Operations.

4. HOT WEATHER OPERATION

Comprehensive procedures for operating in hot weather are provided in the Flight Crew Operating Manual, Volume 2 (CSP C-013): SUPPLEMENT 14 – Hot Weather Operation.

5. RUNWAY SLOPES

The maximum runway slopes approved for take-off and landing are:

- +2% (uphill)
- -2% (downhill)

6. TAILWIND CONDITIONS

The maximum tailwind component approved for take-off and landing is 10 knots.

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Operating Limitations

02-04-8

Rev. 28, Jun 04/2021

7. MINIMUM FLIGHT CREW

The minimum flight crew is one pilot and one copilot.

8. CARGO

Flight must be within 60 minutes of a suitable airport, if cargo is carried in either cargo compartment.

9. OZONE CONCENTRATION

Effectivity:

- Airplanes **not equipped** with option <1231>, ozone converter:

Airplane operations are prohibited on routes where ozone concentrations will exceed the following limits:

- 0.25 parts per million by volume, sea level equivalent, at any time above flight level 320; and
- 0.1 parts per million by volume, sea level equivalent, time-weighted average during any 3-hour interval above flight level 270.

NOTE

“Sea level equivalent” refers to conditions of 25°C and 760 millimetres of mercury pressure.

Data to determine flight altitudes and/or duration at altitude in compliance with these requirements are given in the Quick Reference Handbook (QRH), Volume 1 (CSP C-022): FLIGHT PLANNING – OZONE TABLES – Maximum Altitude.

10. OPERATIONS USING QFE ALTIMETER SETTINGS

Airplane operations using QFE altimeter settings must be conducted in accordance with the Airplane Flight Manual, Chapter 7, Supplement 22, Operations Using QFE Altimeter Settings.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



LIMITATIONS
Operating Limitations

02-04-9

Rev. 28, Jun 04/2021

11. MAXIMUM CABIN OCCUPANTS <TC> or <FAA> or <JAA>

The total number of passengers plus flight attendants carried shall not exceed:

- 90 + 2 flight attendants (Series 900)

and shall not exceed the number for which seating accommodation approved for take-off and landing is provided.

Seating Accommodation: Refer to the Weight and Balance Manual, CSP C-041.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



LIMITATIONS
Operating Limitations

02-04-10

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Power Plant

02-05-1

Rev. 28, Jun 04/2021

1. ENGINES

A. Engine Types

Type: General Electric CF34-8C5A1 , quantity two. <2052>

B. Engine Indications

The engine limit display markings on EICAS must be used to determine compliance with the maximum/minimum limits and precautionary ranges. If EICAS markings show more conservative limits than those specified in the Engine Indications table, the limit markings on the EICAS must be used.

CF34-8C5A1 <2052>			
Engine Indications			
Indication	Red (Maximum/ Minimum Limits)	Amber (Caution Range)	Green (Normal Operating Range)
N ₁ % RPM	99.5	–	0 to 99.4
N ₂ % RPM	99.4	–	0 to 99.3
ITT °C	Variable	–	Variable
OIL TEMP °C	164	156 to 163	–40 to 155
OIL PRESS psi	0 to 24	Variable	Variable

C. Thrust Management Data

With the engines running and bleeds configured for take-off, the crew must verify that the target N₁ values correspond to the data presented in the thrust setting charts ($\pm 1.0\%$). Refer to PERFORMANCE – Thrust Settings. With the thrust levers set for take-off, target and actual N₁ values should match.

D. Engine Warm-up

The engine must remain at IDLE until oil pressure reaches normal operating range.

During all starts, do not exceed 75% N₁ for two minutes after start, or until all operating indications are in the normal range, whichever is longer.

E. Engine High Power Schedule Switch <TC> or <JAA>

Use of the HIGH PWR SCHEDULE switch is prohibited.

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Power Plant

02-05-2

Rev. 28, Jun 04/2021

2. ENGINE OPERATING LIMITS

A. Engine Operating Limits Table

Limit	Ground Start [3]	Assisted Air Start [4]	Windmill Start [4]	IDLE	Maximum Continuous	Normal Take-off (TOGA) [1]	APR [2] (MAX POWER) [1]
N ₁	–	–	–	20-25%	99.5%	99.5%	99.5%
ITT <2052>	815°C	815°C	927°C	–	960°C	973°C (2 min)	1006°C (2 min)
	–	–	–	–	–	957°C (5 min)	990°C (5 min)
N ₂	0-45%	0-45%	–	55-65%	98.0%	99.4%	99.4%
OIL TEMP	–40°C (minimum)	–	–	–	155°C	163°C (15 min)	163°C (15 min)
OIL PRESS	182 psi [7] 95 psi (after 10 min)	182 psi [7] 95 psi (after 10 min)	182 psi [7] 95 psi (after 10 min)	25-60 psi [6] 25-95 psi (oil temp <60°C)	45-95 psi [5] [6]	45-95 psi [5] [6]	45-95 psi [5] [6]
Minimum Oil Level for Flight [8]	40% minimum with affected engine not started.	–	–	–	–	–	–

- [1] Normal take-off power and maximum power (two engines) is limited to 5 minutes.
- [2] APR power (one engine) is limited to 10 minutes.
- [3] ITT must be below 120°C before attempting to ground start engine.
- [4] ITT must be below 90°C before attempting to air start engine.
- [5] Maximum oil pressure is limited to 156 psi when oil temperature transient is less than 60°C.
- [6] Oil pressures (above IDLE) between 25 psi and 45 psi require oil temperature monitoring.
- [7] Oil pressures should show positive value during start and may peak beyond 182 psi (maximum display value). Oil pressures above 182 psi are displayed as amber dashes. Oil pressure may be greater than 95 psi for a maximum of 10 minutes.
- [8] For further details, refer to the Flight Crew Operating Manual, Volume 1 (CSP C-013): POWER PLANT – Oil System .

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



LIMITATIONS Power Plant

02-05-3

Rev. 28, Jun 04/2021

B. Airplane Cold Soak

Before the first flight of a day, when the airplane is cold-soaked at an ambient temperature of -30°C (-22°F) or below for more than 8 hours:

- The engines must be motored for 60 seconds and the fan rotation must be verified before an engine start is initiated.
- The thrust reversers must be actuated until the deploy and stow cycles are 2 seconds or less.

3. CONTINUOUS ENGINE IGNITION

Continuous engine ignition must be used during the following:

- Take-offs and landings on contaminated runways,
- Flight through moderate or heavier intensity rain,
- Flight through moderate or heavier intensity turbulence,
- Flight in the vicinity of thunderstorms.

4. STARTER CRANKING LIMITS

A. Engine Start (Ground)

The starter must not be used if indicated N_2 rpm exceeds 45%.

Start	Maximum Time On	Followed By
1 and 2	90 seconds	10 seconds cool down
3 through 5	90 seconds	5 minutes cool down

B. Engine Start or Motoring (Flight)

The starter must not be used if indicated N_2 rpm exceeds 45%.

Start/Motoring	Maximum Time On	Followed By
1	120 seconds	10 seconds cool down
2 through 5	60 seconds	5 minutes cool down

DOT Approved

Airplane Flight Manual
CSP C-012-219

**LIMITATIONS
Power Plant**

02-05-4

Rev. 28, Jun 04/2021

C. Motoring (Ground)

Motoring	Maximum Time On	Followed By
1	90 seconds	5 minutes cool down
2 through 5	30 seconds	5 minutes cool down

5. ENGINE RELIGHT*Effectivity:*

- For airplanes not equipped with FADEC 6.20 and subsequent.

Relight Type	Envelope (Figure 02-05-1)
Windmilling	Altitude from 21000 feet to sea level: Speed 250 KIAS to V_{MO} and 7.2% N_2 minimum.
Starter-assisted	Altitude from 21000 feet to sea level: Speed from V_{REF} up to V_{MO} and from 0 to 45% N_2 .
All-Engine-Out Rapid Relight	Altitude from 10000 feet to sea level: FADEC rapid relight capability has been demonstrated at 200 KIAS for up to 15-second fuel interruptions.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**

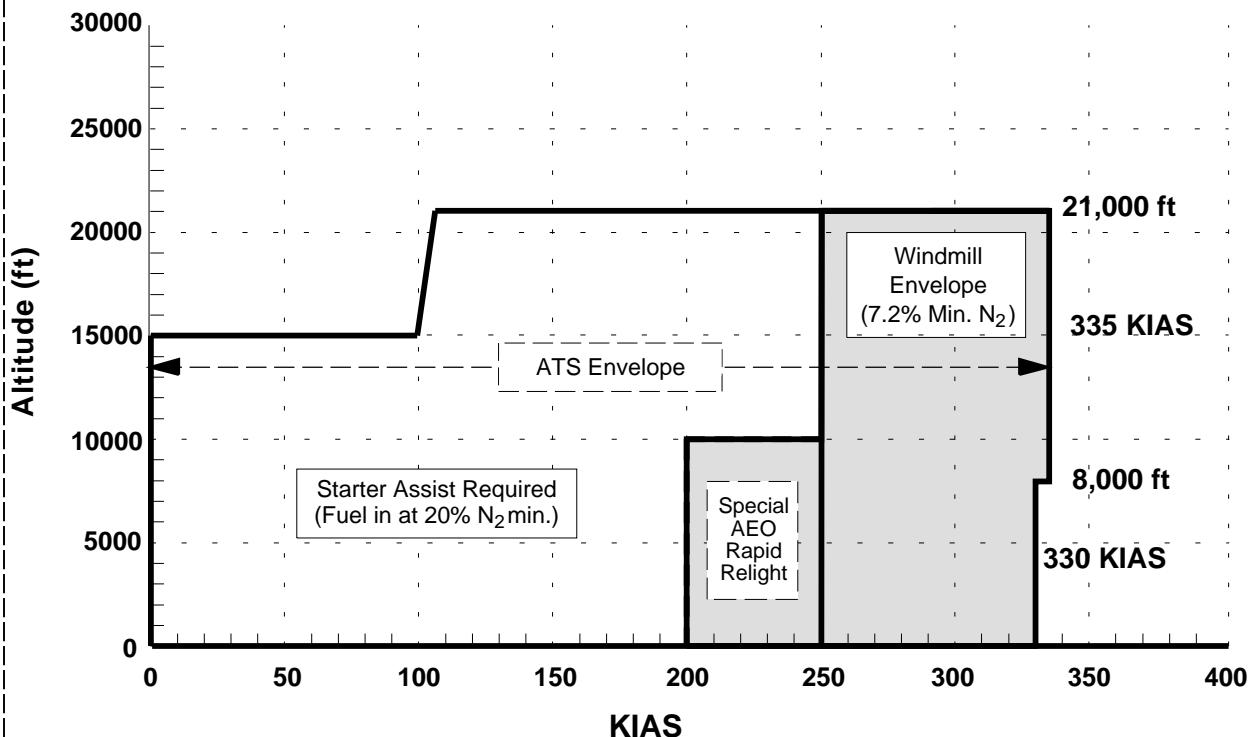


LIMITATIONS Power Plant

02-05-5

Rev. 28, Jun 04/2021

Engine starting is only permitted within the envelope defined in [Figure 02-05-1](#). Allow the engine to spool down to less than 20% N₂ or stabilized windmill speed, prior to initiating a starter assisted start.



NOTE: Special All-Engine Out Rapid Relight Envelope, from 10,000 feet to S.L. and 200 to 250 KIAS.

Engine Start Envelope
[Figure 02-05-1](#)

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS
Power Plant

02-05-6

Rev. 28, Jun 04/2021

Effectivity:

- For airplanes equipped with FADEC 6.20 and subsequent.

Relight Type	Envelope (Figure 02-05-2)
Windmilling	Altitude from 25000 feet to sea level: Speed 250 KIAS to V_{MO} and 7.2% N ₂ minimum.
Starter-assisted	Altitude from 21000 feet to sea level: Speed from V_{REF} up to V_{MO} and from 0 to 45% N ₂ .
All-Engine-Out Rapid Relight	Altitude from 10000 feet to sea level: FADEC rapid relight capability has been demonstrated at 200 KIAS for up to 15-second fuel interruptions.

DOT Approved

Airplane Flight Manual
CSP C-012-219

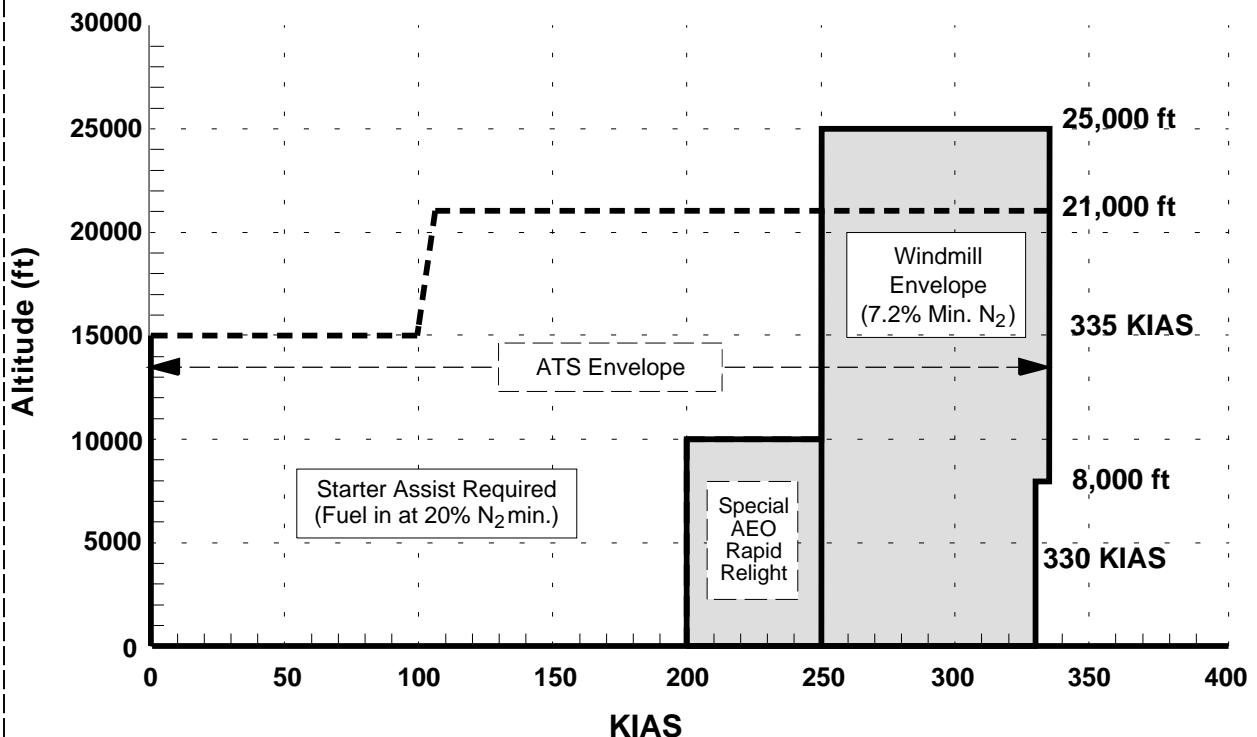


LIMITATIONS Power Plant

02-05-7

Rev. 28, Jun 04/2021

Engine starting is only permitted within the envelope defined in [Figure 02-05-2](#). Allow the engine to spool down to less than 20% N₂ or stabilized windmill speed, prior to initiating a starter assisted start.



NOTE: Special All-Engine Out Rapid Relight Envelope, from 10,000 feet to S.L. and 200 to 250 KIAS.

Engine Start Envelope
[Figure 02-05-2](#)

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Power Plant

02-05-8

Rev. 28, Jun 04/2021

6. FUEL

A. Fuel Load

The maximum permissible fuel imbalance between the contents of the main left tank and the main right tank is as follows:

- During take-off – 136 kg (300 lb)
- All other phases of flight – 363 kg (800 lb)

Fuel remaining in a tank when the appropriate fuel quantity indicator reads zero is not usable.

The fuel quantities that follow are based on 6.75 lb per US gal and 2.2046 lb per kg conversion factors. The maximum usable fuel load for each fuel tank is as follows:

	Pressure Refueling	Gravity Refueling
Left main tank	3398 kg (7492 lb)	3359 kg (7405 lb)
Right main tank	3398 kg (7492 lb)	3359 kg (7405 lb)
Centre tank	2091 kg (4610 lb)	
Total	8887 kg (19594 lb)	6718 kg (14810 lb)

Take-off with a fuel load in excess of 227 kg (500 lb) in the centre tank is not permitted unless:

- each main wing tank is above 1996 kg (4400 lb); or
- each main wing tank is above 907 kg (2000 lb):
 - the allowable zero fuel weight is reduced by the weight of the fuel in the centre tank in excess of 227 kg (500 lb); and
 - the Centre of Gravity (CG) in this configuration is verified to be within the allowable CG envelope as calculated from the Weight and Balance Manual (WBM) (CSP C-041).

The minimum fuel quantity for go-around is 272 kg (600 lb) per wing (with the airplane level) and assuming a maximum airplane climb attitude of 10 degrees nose up.

B. Fuel Temperature

Take-off with engine fuel temperature indications below 5°C (41°F) is prohibited.

Take-off with bulk fuel temperature indications below the limits stated is prohibited.

During flight, bulk fuel temperature must remain above the applicable bulk fuel freezing point.

Fuel Type	Bulk Fuel Take-off Limit – Minimum Temperature	Bulk Fuel Freezing Point
ASTM D1655 JET A	-30°C	-40°C
ASTM D1655 JET A-1	-37°C	-47°C

DOT Approved

Airplane Flight Manual
CSP C-012-219

**LIMITATIONS
Power Plant**

02-05-9

Rev. 28, Jun 04/2021

Fuel Type	Bulk Fuel Take-off Limit – Minimum Temperature	Bulk Fuel Freezing Point
MIL-DTL-5624 JP-5	-36°C	-46°C
MIL-DTL-83133 JP-8	-37°C	-47°C
GB 6537-2006 No. 3 Jet	-37°C	-47°C
CIS RT	-40°C	See NOTE
CIS / Russian TS-1	-43°C	See NOTE

NOTE

1. Russian / CIS TS-1 and RT fuels with a freezing point of not higher than -50°C are approved for use wherein the ground level OAT is not below -30°C during the 24 hours before departure.
2. Russian / CIS fuel with a freezing point of not higher than -55°C (RT) and -60°C (TS-1) for use in low temperature regions are available at operator's request.
3. The principle grade available in Russia (and members of CIS) is TS-1 (written as TC-1 in Russian cyrillic script).

C. Fuel Grades

Fuels conforming to any of the following specifications are approved for use. Mixing of fuels is permitted.

Canadian	American	British	Chinese	CIS	NATO
CGSB-3. 23	ASTM D1655 JET A				
	ASTM D1655 JET A-1	DEF STAN 91-91	GB 6537-2006 No. 3 Jet	RT TS-1☆	F-35
CGSB-3. 24	MIL-DTL-83133 JP-8	DEF STAN 91-87			F-34

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--

**LIMITATIONS
Power Plant**

02-05-10

Rev. 28, Jun 04/2021

Canadian	American	British	Chinese	CIS	NATO
	MIL-DTL-5624 JP-5	DEF STAN 91-86			F-44

Use of wide-cut fuels Jet B and JP-4 is prohibited.

★ When using TS-1 Fuel, engine fuel system components must be inspected and fuel sampling to be performed in compliance with GE CF34-8C-SB-73-031.

NOTE

ASTM D1655, Def. Std. 91-91 and CAN/CGSB-3-23 Jet fuels whose origin is ASTM D7566 (Aviation Turbine Fuel Containing Synthesized Hydrocarbons) and are re-identified as Jet A, A-1 fuels are considered equivalent to fossil based fuels.

D. Fuel Additives

- Alcohol-based anti-icing additives of Fuel System Icing Inhibitors (FSII) type Fluid I and Fluid I-M should not be used continuously. CIS/Russian fuel containing (or pre-mixed with) alcohol-based additives of anti-icing Fuel System Icing Inhibitors (FSII) type Fluid I and Fluid I-M should not be used continuously. Contact engine manufacturer for details of impact on a reduced component inspection program if continuous use has been determined.
- Anti-icing additives Diethylene Glycol Monomethyl Ether (DiEGME) per MIL-DTL-85470:

GEAE Fuel Specification D50TF2 Class and Fuel Description	Additive Maximum Concentration
Class A: Aviation Kerosene (Jet A)	0.15%
Class B: Wide-cut Distillate (Jet B, JP-4)	N/A
Class C: Low Freeze Kerosene (Jet A-1, JP-8, No. 3 Jet)	0.15%
Class D: High Flash Kerosene (JP-5)	0.15%
Class E: Low Freeze Kerosene (CIS RT)	0.20%

- SOHIO Biobor JF biocide additive at a concentration of not more than 270 ppm (20 ppm elemental boron) by weight for the initial dose, to prevent the growth of micro-organisms. Contact the additive manufacturer for specific use instructions. The maintenance dose should be as per the additive manufacturer's instructions and should not exceed 135 ppm.
- Anti-static additive STADIS 450 at a concentration of 3 g/m³ for the initial dose. Maximum dosage should not exceed 5 g/m³.
- Fuel system additive SIGBOL may be used in concentrations less than 0.0005% by weight. This additive should not be used continuously. Contact engine manufacturer for details of impact on the component inspection program.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



LIMITATIONS Power Plant

02-05-11

Rev. 28, Jun 04/2021

- Corrosion inhibitors listed in the table that follows are approved, by the concentrations indicated. It is recommended that corrosion inhibitors be blended with the fuel to provide lubricity. The corrosion inhibitor must be added after water removal and downstream of any clay filters (these processes remove the inhibitor).

Additive	Maximum Concentration
Apollo PRI-19	23 g/m ³
Octel DCI-4A	23 g/m ³
Octel DCI-6A	6 g/m ³
Hitec E-580	23 g/m ³
Nalco 5403	23 g/m ³
Nalco 5405	11 g/m ³

E. Fuel Cross-flow

Powered cross-flow and gravity cross-flow must be off for take-off.

7. OIL

A. Oil Grades

NOTE

Mixing of different types of oils is prohibited.

Component	MIL-L-23699 (Type II)	MIL-L-7808 (Type I)	Castrol 4000
Engines	✓	✓	✓
Air Turbine Starter	✓	✓	✓
Integrated Drive Generator	✓	✓	✓
Auxiliary Power Unit	✓	✓	✓

B. Oil Consumption

Maximum oil consumption, on each engine, is 189 cubic centimetres per hour (6.4 US ounces per hour / 0.05 US gallon per hour).

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



LIMITATIONS Power Plant

02-05-12

Rev. 28, Jun 04/2021

C. Engine Oil Level

Engine oil levels must be checked as follows:

- The maximum duration without engine oil servicing is 36 operating hours.
- For airplane operations in excess of 36 operating hours (without engine oil tank servicing), the engine oil level must be checked after every engine shutdown.
- Wait for a minimum of five minutes after the engine shutdown before you check the oil level.

D. Oil Replenishment System

If an engine oil tank must be replenished, wait for a minimum of 15 minutes after the engine shutdown before you service the engine.

8. AUXILIARY POWER UNIT (APU)

A. Type

Allied Signal RE 220 (RJ)

B. Maximum RPM

106%

C. Starting

Minimum ambient temperature for starting a cold soaked APU on the ground is -40°C.

Maximum EGT (dependent upon altitude and temperature):

- 0 to 100% RPM – 692°C to 1038°C

The APU starter motor duty cycle is as follows:

- Do not perform more than three starts / start attempts in one hour.

NOTE

A two-minute delay must be observed between cranking attempts to allow for cooling of starter and starter contactor and for APU drainage.

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Power Plant

02-05-13

Rev. 28, Jun 04/2021

D. Operating Range

Maximum EGT, APU on-speed (dependent upon altitude and temperature):

- Ground – 682°C to 789°C
- In flight – 773°C to 806°C

Maximum EGT:

- 1038°C (not to be exceeded under any operating conditions)

APU starting and operation is permitted within the following operating envelope:

- Start and Operating Limits (refer to [Figure 02-05-3](#))
- Altitude and Airspeed (refer to [Figure 02-05-4](#))

DOT Approved

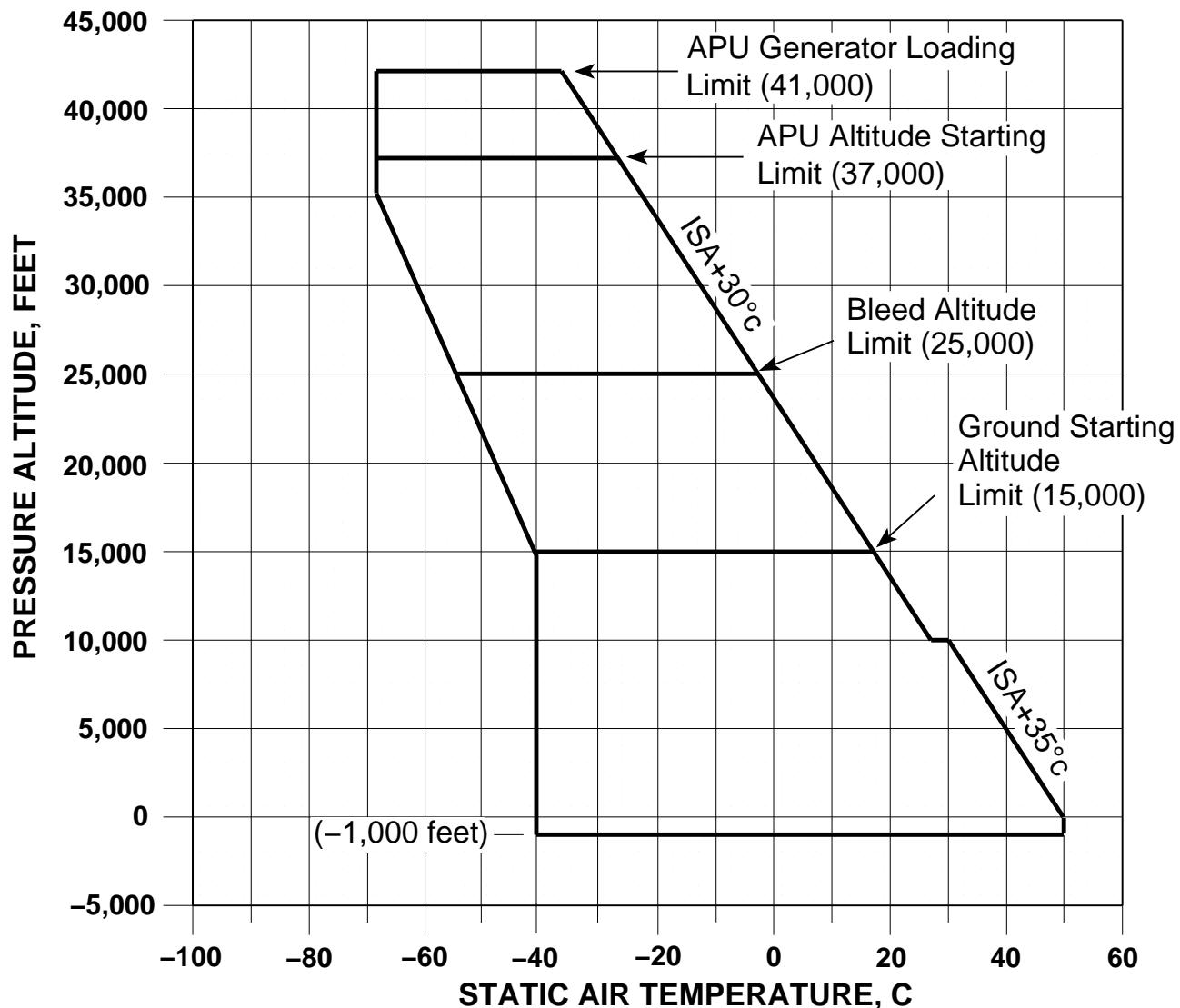
Airplane Flight Manual
CSP C-012-219



LIMITATIONS
Power Plant

02-05-14

Rev. 28, Jun 04/2021



APU Start and Operating Limits
Figure 02-05-3

DOT Approved

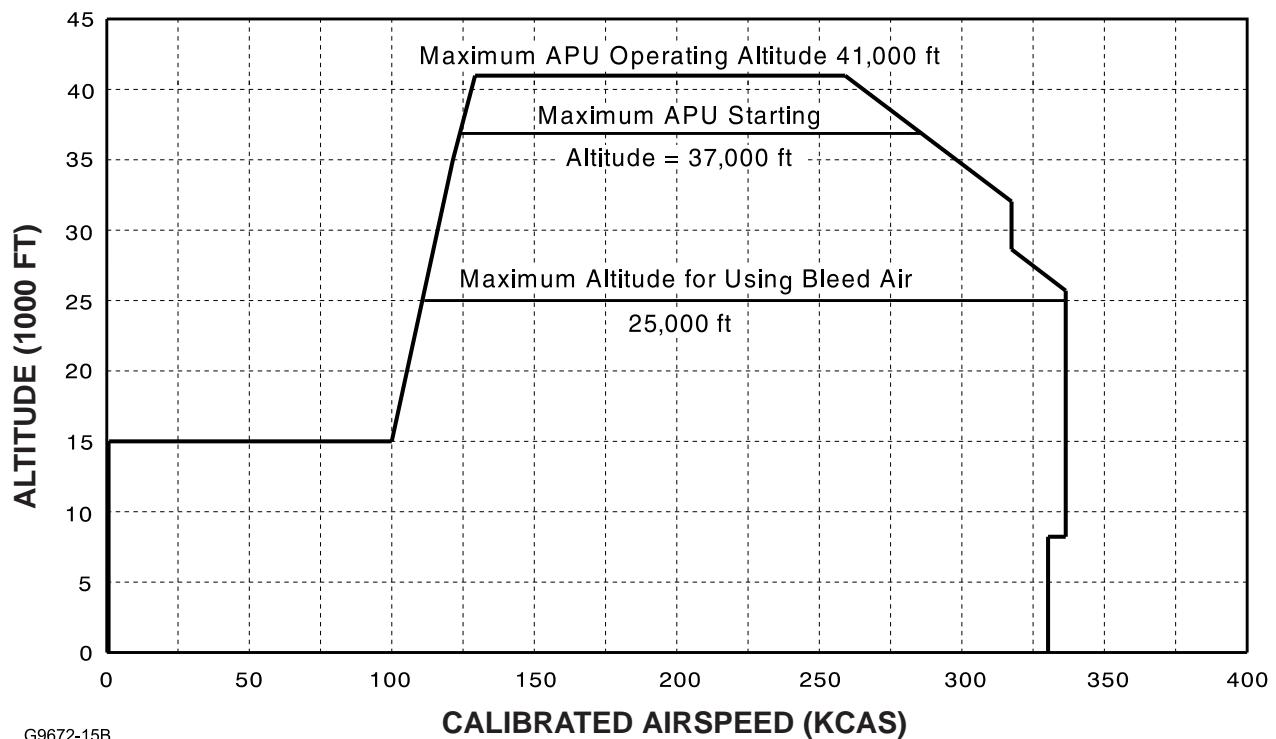
Airplane Flight Manual
CSP C-012-219



LIMITATIONS
Power Plant

02-05-15

Rev. 28, Jun 04/2021



APU Altitude and Airspeed Chart
Figure 02-05-4

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Power Plant

02-05-16

Rev. 28, Jun 04/2021

E. APU Bleed Air

APU Bleed Air Limitations	
System/Condition	Limitation
Bleed air extraction	APU bleed air extraction is not permitted above 25000 feet.
Engine-start during ground operations	No bleed air extraction limitation. Each engine may be started using the APU as a bleed air source.

F. APU Generator

The maximum permissible load on the APU generator is 40 kVA.

G. APU Indications

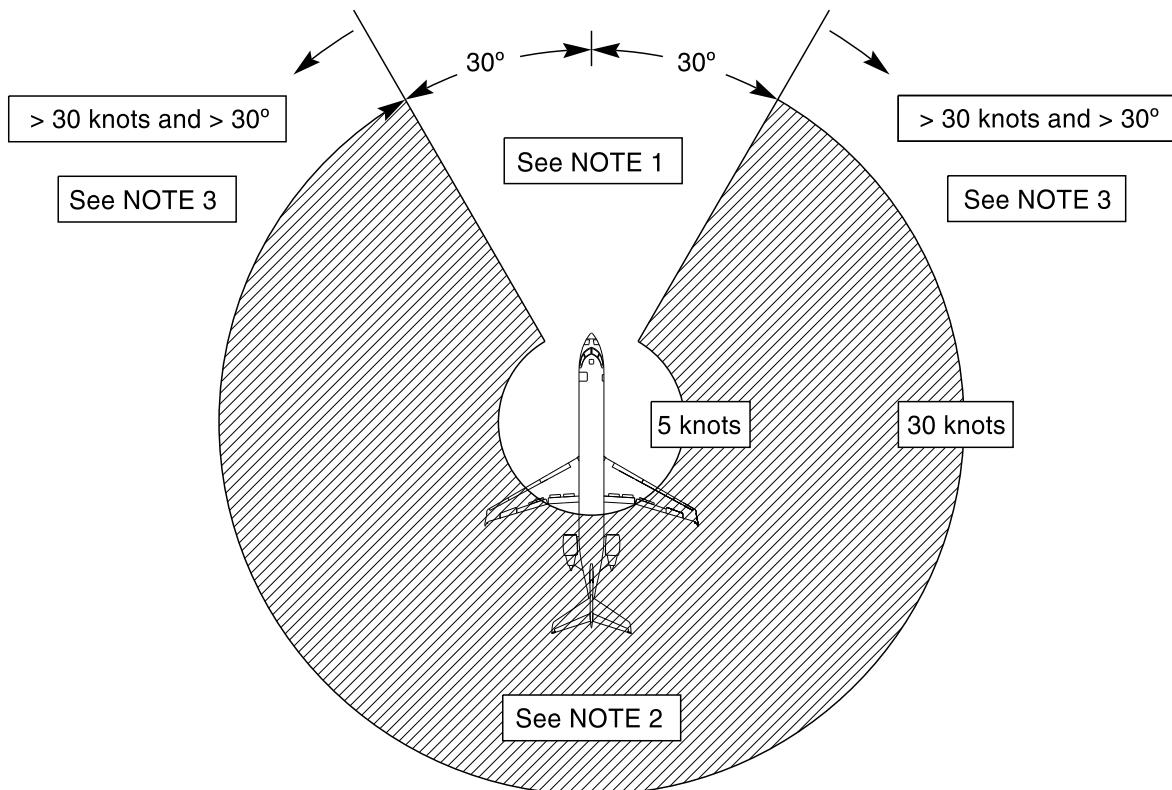
The APU limit display markings on the EICAS must be used to determine compliance with the maximum limit and precautionary ranges. If EICAS markings show more conservative limits than those specified in the APU Indications table, the limit markings on the EICAS should be used.

APU Indications		
Indication	Red (Maximum Limits)	Green (Normal Operating Range)
APU EGT °C	807	0 to 806
APU RPM %	107	0 to 106

9. ENGINE OPERATING PROCEDURE LIMITS DUE TO WIND

Wind and fan speed limitations as shown in [Figure 02-05-5](#) must be observed:

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



	Wind Condition	Limitation
NOTE 1	30 degrees either direction from airplane nose; no wind-speed limit. OR > 30 degrees either direction from airplane nose; < 5 knots windspeed.	No limitations – TOGA thrust may be applied before brakes release, but must be set by 60 KIAS.
NOTE 2	> 30 degrees either direction from airplane nose; between 5 and 30 knots windspeed.	A maximum of 75% N1 may be applied before brakes release, then set TOGA thrust by 60 KIAS.
NOTE 3	> 30 degrees either direction from airplane nose; > 30 knots windspeed.	Only Idle/Taxi thrust may be applied before brakes release, then set TOGA thrust by 60 KIAS.

Engine Operating Procedure Limits Due to Wind
Figure 02-05-5



LIMITATIONS
Power Plant

02-05-18

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Operating Speeds

02-06-1

Rev. 28, Jun 04/2021

1. MAXIMUM OPERATING SPEED AND MACH NUMBER

Maximum operating limit speeds as given in [Figure 02-06-1](#) must not be deliberately exceeded in any regime of flight (climb, cruise or descent), unless a higher speed is specifically authorized for flight test or training operations.

DOT Approved

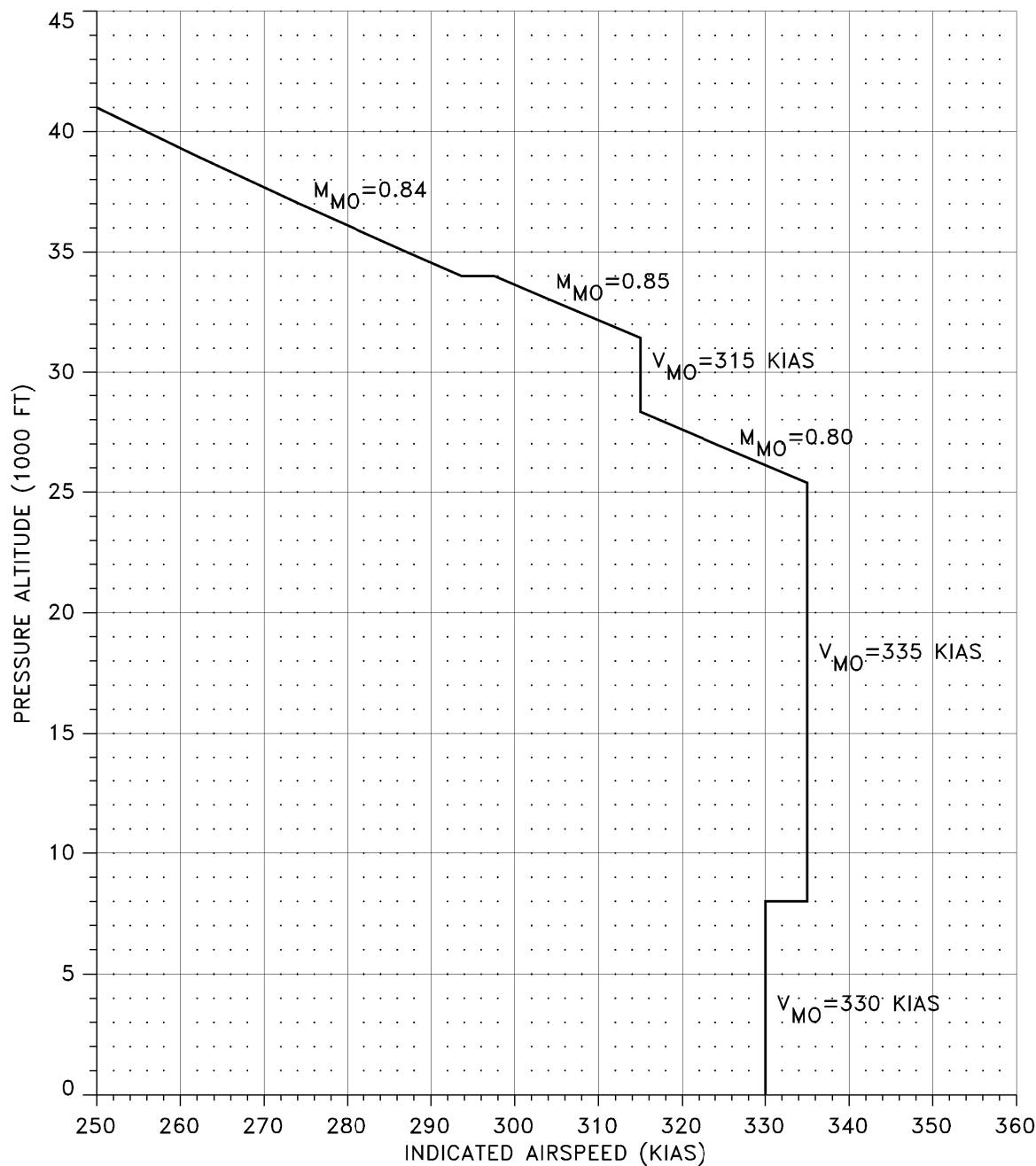
Airplane Flight Manual
CSP C-012-219



LIMITATIONS Operating Speeds

02-06-2

Rev. 28, Jun 04/2021



Maximum Operating Speed and Mach Number
Figure 02-06-1

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



LIMITATIONS Operating Speeds

02-06-3

Rev. 28, Jun 04/2021

2. RVSM MAXIMUM CRUISE MACH NUMBER <1030>

The maximum cruise Mach number during flight in RVSM airspace is 0.82.

3. DESIGN MANEUVERING SPEED

Full application of rudder and aileron controls as well as maneuvers that involve angles of attack near the stall, must be confined to speeds below V_A . Values of V_A are given in [Figure 02-06-2](#), for varying pressure altitudes and airplane weights.



Avoid rapid and large alternating control inputs, especially in combination with large changes in pitch, roll, or yaw (e.g., large side-slip angles) as they may cause structural failure at any speed, including below V_A .

DOT Approved

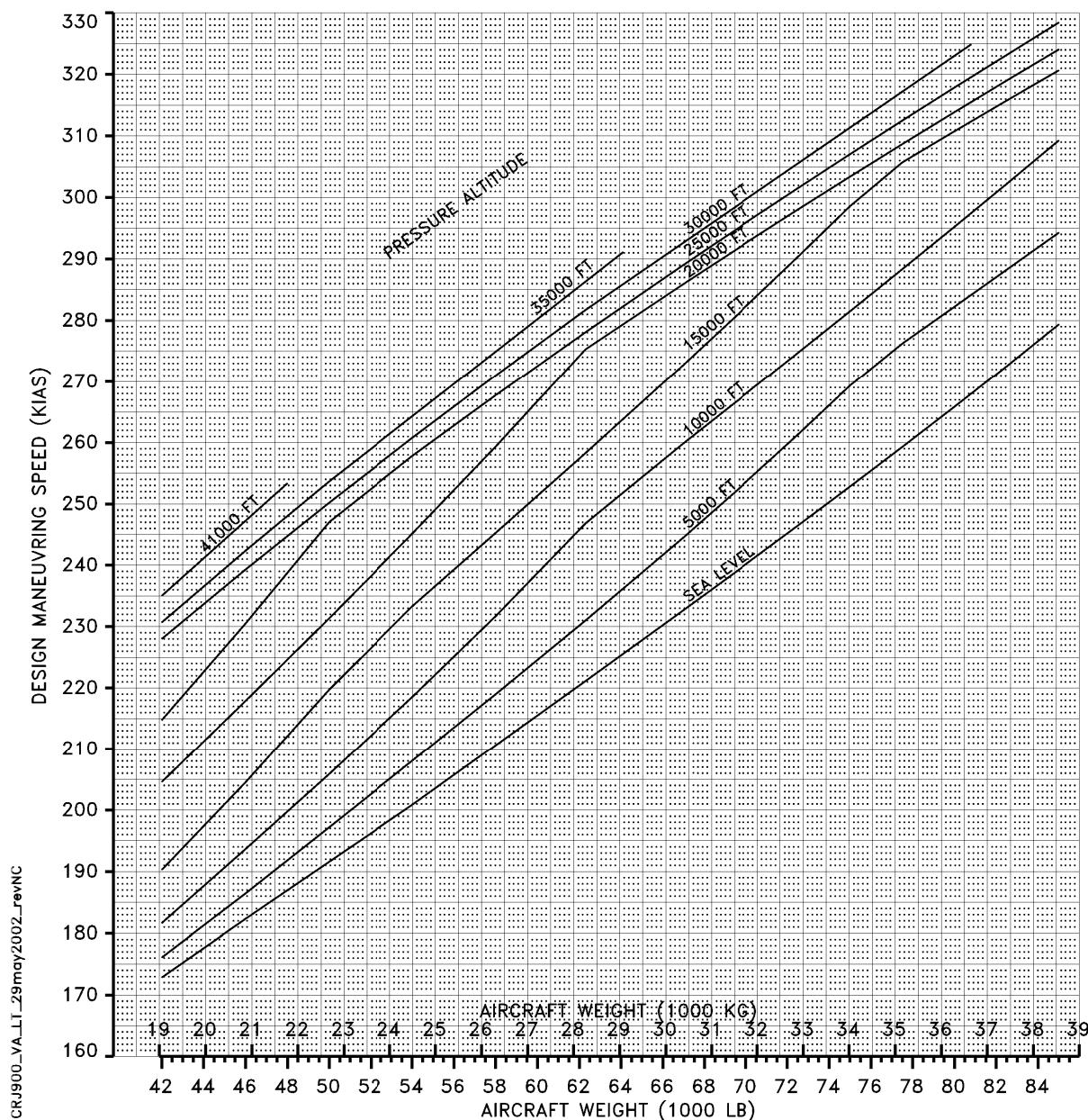
Airplane Flight Manual
CSP C-012-219



LIMITATIONS Operating Speeds

02-06-4

Rev. 28, Jun 04/2021



Design Maneuvering Speeds
Figure 02-06-2

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Operating Speeds

02-06-5

Rev. 28, Jun 04/2021

4. FLAPS EXTENDED SPEED

The maximum speeds at which the flaps may be extended are:

- FLAPS 1: 230 KIAS
- FLAPS 8: 230 KIAS
- FLAPS 20: 220 KIAS
- FLAPS 30: 185 KIAS
- FLAPS 45: 170 KIAS

5. MAXIMUM LANDING GEAR OPERATING SPEED

The maximum airspeed at which it is safe to extend the landing gear is 220 KIAS.

The maximum airspeed at which it is safe to retract the landing gear is 200 KIAS.

6. MAXIMUM LANDING GEAR EXTENDED SPEED

The maximum airspeed at which the airplane may be flown with the landing gear extended and locked is 220 KIAS.

7. TIRE LIMIT SPEED

The tire limit speed is 195 knots ground speed.

8. MAXIMUM AIRSPEED FOR ADG OPERATION

The maximum speed for ADG operation is V_{MO}/M_{MO} .

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Operating Speeds

02-06-6

Rev. 28, Jun 04/2021

9. TURBULENCE PENETRATION SPEED

The airspeed limitation for severe turbulence penetration is 280 KIAS or 0.75 Mach, whichever is lower.

NOTE

1. When penetrating moderate turbulence, it is recommended to slow to this speed to reduce the risk of inadvertent severe turbulence penetration at a higher speed.
2. Large and rapid variations of airspeed are possible. Do not "chase" the airspeed in order to maintain the recommended speed.
3. Comprehensive turbulence penetration techniques and procedures are provided in the Flight Crew Operating Manual, Volume 2 (CSP C-013), SUPPLEMENT 15 – Flight in Turbulence.

10. MINIMUM OPERATING LIMIT SPEED

Intentional speed reduction below the onset of stall warning, as defined by stick shaker operation, is prohibited unless a lower speed is specifically authorized for flight test or training operations.

11. WINDSHIELD WIPER OPERATION

The windshield wiper must not be operated above 250 KIAS.

If the windshield wiper has failed in a non-parked position, the airplane speed must not exceed 250 KIAS.

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Maneuvering Loads

02-07-1

Rev. 28, Jun 04/2021

1. MANEUVERING LIMIT LOAD FACTORS

These load factors limit the permissible angles of bank in turns and the severity of pull-up and push-over maneuvers:

- Flaps up: -1.0 g to 2.5 g
- Flaps down: 0.0 g to 2.0 g

2. SIDE-SLIP MANEUVERS

Avoid unnecessary and large side-slip maneuvers during low speed high altitude cruise.

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS
Maneuvering Loads

02-07-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS System Limitations

02-08-1

Rev. 28, Jun 04/2021

1. AIR-CONDITIONING AND PRESSURIZATION

The maximum positive differential pressure is 8.7 psi.

The maximum negative differential pressure is -0.5 psi.

During ground maneuvering, the pressure differential must not exceed 0.1 psi.

During initial landing (at touchdown), the maximum differential pressure must not exceed 1.0 psi.

The airplane must be completely depressurized prior to opening any of the airplane doors.

The maximum altitude for single pack operation is 25000 feet. <2111>

To preclude possible crew and/or passenger ear damage, use of the EMER DEPRESS switch above 15000 feet is prohibited.

2. AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS)

WARNING

During the ALTS CAP mode the flight guidance/autopilot may not maintain the selected airspeed. If an engine failure occurs during a climb while in ALTS CAP or just before ALTS CAP, the airspeed may drop significantly below the safe operating speed. Crew intervention may be required to maintain safe operating speed.

The following table identifies the approved autopilot minimum use heights as a function of flight phase and glide path (glide slope) angle.

Flight Phase	Glide path Angle	Minimum Use Height
Take-off	-	600 feet AGL
Non-precision approach	-	400 feet AGL
Precision approach	≤3.5 degrees	60 feet AGL with both engines operating <EASA> 110 feet AGL with one engine operating
	>3.5 degrees ≤4.0 degrees	Prohibited <FCC-320> Refer to Airplane Flight Manual (CSP-C-012): SUPPLEMENT 24 – Approaches between 3.5 Degrees and 4.0 Degrees.<FCC-420>
	>4.0 degrees	Prohibited

The ADC source coupled to the active autopilot must be the same as that coupled to the ATC transponder during flight in RVSM airspace. <1030>

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS System Limitations

02-08-2

Rev. 28, Jun 04/2021

3. ELECTRICAL SYSTEMS

A. Permissible Loads on AC System

Individual AC generator loading must not exceed the following values:

Altitude (Feet)	Load Limitation (kVA)	
	Main Generator (Each)	APU Generator
0 – 41000	40	40

B. Permissible Loads on DC Systems

(1) Ground Operations

To protect the flight compartment CRT displays, the maximum permissible time for ground operations with DC power only is 5 minutes.

(2) Flight Operations

The maximum permissible continuous load on each TRU is 120 amp.

C. Circuit Breaker Reset (In Flight)

A circuit breaker must not be reset or cycled (i.e., opened or closed) unless doing so is consistent with explicit procedures specified in the AFM or unless, in the judgement of the Pilot-In-Command (PIC), that resetting or cycling of the circuit breaker is necessary for the safe completion of the flight.

4. FLIGHT CONTROLS – LIFT/DRAG DEVICES

A. Slats/Flaps

En-route use of slats/flaps is prohibited.

Flight with slats/flaps extended at altitudes above 15000 feet is prohibited.

B. Flight Spoilers

Flight spoilers must not be extended in flight below an altitude of 300 feet AGL.

To ensure adequate maneuver margins, flight spoilers must not be extended in flight at airspeeds below the recommended approach speed plus 10 KIAS (refer to PERFORMANCE – Landing Performance).

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS System Limitations

02-08-3

Rev. 28, Jun 04/2021

5. STALL PROTECTION SYSTEM

Both stall protection system switches must remain on for all phases of flight.

6. THRUST REVERSERS

Thrust reversers are approved for ground use only, activation of the reverse thrust levers is prohibited in flight.

The thrust reversers are intended for use during full stop landings. Do not attempt a go-around maneuver after deployment of the thrust reversers.

Take-off with any thrust reverser icons or EICAS warning and/or caution messages displayed is prohibited.

During landing, maximum reverse thrust is prohibited below 75 KIAS, and reverse idle should be achieved by 60 KIAS.

During pre-flight check of the thrust reversers with the airplane stationary, reverse thrust must be limited to reverse idle.

Backing-up using thrust reversers is prohibited.

7. NOSEWHEEL STEERING SYSTEM

Towbarless towing is prohibited, unless the operation is performed in compliance with the Aircraft Maintenance Manual (AMM) (CSP B-001) towbarless towing requirements.

8. TAXI LIGHTS

The taxi lights must be switched OFF whenever the airplane is stationary in excess of 10 minutes.

9. WHEEL BRAKE COOLING LIMITATIONS

Brake cooling times (established in accordance with PERFORMANCE – Take-off Performance – MAXIMUM ALLOWABLE BRAKE TEMPERATURE FOR TAKE-OFF) must be observed between a landing or a Rejected Take-Off (RTO) and a subsequent take-off, to ensure that sufficient brake energy is available to bring the airplane to a complete stop, if the subsequent take-off is rejected.

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS System Limitations

02-08-4

Rev. 28, Jun 04/2021

10. MINIMUM DESCENT ALTITUDE

When setting the MDA marker on the barometric altimeter using the DH/MDA knob on the altitude reference panel, the next highest 10-foot increment must be selected if the altitude is not at a 10-foot increment.

11. TRAFFIC ALERT AND COLLISION AVOIDANCE SYSTEM (TCAS)

Refer to Supplement 21.

12. INTEGRATED STANDBY INSTRUMENT (ISI)

When NAV 1 is tuned to a valid ILS frequency, the ISI will display localizer and glide slope deviation while on the backcourse approach. Use of the ISI localizer and backcourse information is prohibited during backcourse approaches.

13. CONFIGURATION DEVIATION LIST (CDL)

If the airplane is to be operated with certain secondary airframe and/or any nacelle parts missing, operation must be in accordance with the limitations specified in the basic AFM, and as amended by the Configuration Deviation List (CDL) (Appendix 1).

14. ENHANCED GROUND PROXIMITY WARNING SYSTEM (EGPWS) <2040>

Airplane navigation must not be predicated upon the use of the terrain display.

To avoid giving unwanted alerts, the terrain awareness alerting and display functions must be inhibited on take-off, approach or landing within 15 nm of an airport not included in the EGPWS airport database.

The terrain data base, terrain displays and alerting system do not account for man-made obstructions, except for all known man-made obstructions in Canada, the United States and Mexico.

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS System Limitations

02-08-5

Rev. 28, Jun 04/2021

CAUTION

Effectivity:

- Airplanes **equipped** with FMC 822-0783-015 (SCID 832-4119-016)

1. If GPS is inoperative (identified by NO GPS RAIM, GPS NOT AVAILABLE or GPS – FMS DISAGREE message on the FMS CDU), the EGPWS may fail to alert when a terrain threat exists, during ambient surface temperatures below ISA, during non-standard temperature lapse rates or if incorrect barometric settings are set on the altimeter.

Effectivity:

- Airplanes **equipped** with FMC 822-0783-028 (SCID 832-4119-030) or FMC 822-0783-032 (SCID 832-4119-034)

2. If GPS is inoperative (identified by LOSS OF INTEGRITY GNSS NOT AVAILABLE, or GNSS-FMS DISAGREE message on the FMS CDU), the EGPWS may fail to alert when a terrain threat exists, during ambient surface temperatures below ISA, during non-standard temperature lapse rates or if incorrect barometric settings are set on the altimeter.

15. PNEUMATIC SYSTEM

Wing and/or cowl anti-ice selection is prohibited with the APU as a bleed source in manual mode.

16. FLIGHT DECK DOOR <FAA> or <1226>

The flight deck door must be kept closed and locked at all times during flight except to permit access and egress in accordance with the FAA approved procedures for opening, closing and locking the door.

Any time the flight deck door is opened in flight, a challenge and response closing and locking verification must be used to verify that the door is closed and locked.

Any time one of the required flight crew leaves the flight deck another crew member must be present in the flight deck to ensure that the required crew member is not locked out of the flight deck.

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS System Limitations

02-08-6

Rev. 28, Jun 04/2021

Effectivity:

- Airplanes 15380 and subsequent, or
- Airplanes **incorporating** the following Service Bulletin:
 - SB 670BA-34-044 – Navigation – Mode S Transponder System – Installation of Automatic Dependent Surveillance-Broadcast (ADS-B OUT) – DO-260B Compliant for Aircraft that have Mode S Transponder TDR-94D/TSS-4100.
 - Airplanes **incorporating** the following Service Bulletin:
 - SB 670BA-34-045 – Navigation – Mode S Transponder System – Installation of Automatic Dependent Surveillance-Broadcast (ADS-B OUT) – DO-260B Compliant for Aircraft that have Mode S Dual Transponder TDR-94D.

17. AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST (ADS-B) OUT

Refer to Supplement 21.

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS
Navigation System Limitations

02-09-1

Rev. 28, Jun 04/2021

1. FLIGHT MANAGEMENT SYSTEM (FMS) <1024> or <1050> or <1214> or <1215>

A. Operating Data <1024> or <1050> or <1214> or <1215>

The Flight Management System (FMS) must be operated in accordance with the latest edition of the following:

- Airplane Flight Manual, and
- Flight Management System Pilot Guide that follows:

Publication Number	Applicability	
523-0778363	FMS-4200	FMC-015
523-0809278		FMC-028
		FMC-032
523-0820005		FMC-036

B. FMS-4200 Operating Limitations <1024> or <1050> or <1214> or <1215>

(1) FMC-015, FMC-028, FMC-032, FMC-036

- Software Program Version
 - The FMS is approved for use only with the software program version given in the table that follows:

Software Program Version (SCID)	Applicability	FMS Version
832-4119-016	FMC-015	FMS 99
832-4119-030	FMC-028	FMS 4.1
832-4119-034	FMC-032	FMS 4.1.1
832-4119-038	FMC-036	FMS 4.2

- FMS range, fuel management and altitude/speed capability information is advisory only.
- IFR enroute and terminal navigation is prohibited unless the pilot verifies the currency of the database and verifies waypoints for accuracy by reference to current publications.

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



LIMITATIONS Navigation System Limitations

02-09-2

Rev. 28, Jun 04/2021

- FMS instrument approaches must be accomplished with instrument approach procedures that are retrieved from the FMS database. The FMS must incorporate the current update cycle.

NOTE

Altitude constraint(s) on the last waypoint of the STAR corresponding to the first waypoint of the approach procedure must be verified on the ACT LEGS page. The flight crew must correct or delete the altitude constraints as required to agree with charted procedures.

- FMS instrument approaches must not be continued past the final approach fix if an FMS "NO APPR" amber message is displayed on the PFD.
- FMS instrument approaches must not be continued past the final approach fix if an FMS "NO APPR" white message is displayed on the PFD unless APPR FOR REF ONLY is displayed on the CDU and the underlying NAVAID is also displayed during the approach, monitored by the crew, and can be reverted to if FMS fails or disagrees with the underlying NAVAID.
- True north operations at altitudes below 10000 feet are prohibited. <1025>
- The individual flight plan leg length or distance between aircraft position and the TO waypoint must not exceed:
 - RNP-1 — 200 NM
 - RNP-2 — 400 NM
 - RNP-10 — 500 NM

Effectivity:

- Airplanes **equipped** with FMC 822-0783-028 (SCID 832-4119-030) (FMS 4.1) or FMC 822-0783-032 (SCID 832-4119-034) (FMS 4.1.1) or FMC 822-0783-036 (SCID 832-4119-038) (FMS 4.2)
 - Use of the FMS Temperature Compensation function is prohibited;

NOTE

FMS generated altitudes and V-paths are not corrected for non-ISA conditions.

- Changes to altitudes in departure and missed approach procedures are prohibited.

Effectivity:

- Airplanes **equipped** with FMC 822-0783-015 (SCID 832-4119-016) (FMS 99)
 - ILS, LOC, LOC-BC, LDA, SDF and MLS approaches using the FMS are prohibited. The FMS does not provide automatic transition to ILS.
 - The VNAV system information is not temperature compensated. FMS generated altitudes and V-paths are not corrected for non-ISA conditions.

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Navigation System Limitations

02-09-3

Rev. 28, Jun 04/2021

- The FMS is approved for use only during enroute, terminal and non-precision approach phases of flight.
- The magnetic variation errors and the indicated FMS course may differ from the published course by more than 3 degrees in the following regions:

Latitude	Longitude
50°N to 73°N	East of 180°W and West of 45°W
50°N to 73°N	East of 85°E and West of 120°E
15°S to 60°S	East of 55°E and West of 140°E

In these regions, the following operations shall only be performed using true north bearings:

- PLACE BRG/DIST to pilot-defined waypoints
- PLACE BRG/PLACE BRG to pilot-defined waypoints
- Holding patterns except at present position (PPOS)
- INTC CRS on DIR INTC page
- RAD CROSS on FIX INFO page

NOTE

At latitudes greater than 73°N and greater than 60°S, the FMS always uses true course values, and local magnetic variation has no effect.

Effectivity:

- Airplanes **equipped** with FMC 822-0783-028 (SCID 832-4119-030) (FMS 4.1) or FMC 822-0783-032 (SCID 832-4119-034) (FMS 4.1.1)
 - The magnetic variation errors and the indicated course may differ from the published course by more than 3 degrees in the following regions:

Latitude	Longitude
70°N to 73°N	East of 85°E and West 100°E
55°S to 60°S	East of 125°E and West of 140°E

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS Navigation System Limitations

02-09-4

Rev. 28, Jun 04/2021

In these regions, the following operations shall only be performed using true north bearings:

- PLACE BRG/DIST to pilot-defined waypoints
- PLACE BRG/PLACE BRG to pilot-defined waypoints
- Holding patterns except at present position (PPOS)
- INTC CRS on DIR INTC page
- RAD CROSS on FIX INFO page

NOTE

At latitudes greater than 73°N and greater than 60°S, the FMS always uses true course values, and local magnetic variation has no effect.

2. GLOBAL POSITIONING SYSTEM (GPS) <1027> or <1047> or <1236> or <1244>

A. General

Other approved navigation equipment appropriate to the route of flight (enroute and terminal) must be installed and operating.

The GPS may only be used for approach guidance if the reference coordinate data system for the instrument approach is WGS-84 or NAD-83.

3. INERTIAL REFERENCE SYSTEM (IRS) – DUAL INSTALLATION <1025>

- Magnetic north operation is prohibited in the following regions:
 - Latitudes greater than 82°N (refer to AMU AREA 1 in Figure 02-09-1 and Figure 02-09-2)
 - Latitudes greater than 73°N for longitudes between 90°W and 120°W (refer to AMU AREA 1 Figure 02-09-01 and Figure 02-09-2)
 - Latitudes greater than 60°S
- For airplanes equipped with IRS 465020-0400-0401:

The use of magnetic heading is prohibited when the aircraft is flying in the following regions (refer to AMU AREA 2 Figure 02-09-1):

Latitude	Longitude
80°N to 82°N	East of 180°W and West 120°W
80°N to 82°N	East of 90°W and West 180°E
75°N to 80°N	East of 180°W and West 120°W
75°N to 80°N	East of 90°W and West 30°E
75°N to 80°N	East of 170°E and West 180°W

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS
Navigation System Limitations

02-09-5

Rev. 28, Jun 04/2021

Latitude	Longitude
73°N to 75°N	East of 175°W and West 120°W
73°N to 75°N	East of 90°W and West 0°E
70°N to 73°N	East of 175°W and West 0°E
65°N to 70°N	East of 165°W and West 10°W
60°N to 65°N	East of 160°W and West 20°W
55°N to 60°N	East of 150°W and West 100°W
55°N to 60°N	East of 80°W and West 30°W

NOTE

Local authority may not authorize aircraft operations based on magnetic heading in Areas of Magnetic Unreliability (AMUs).

DOT Approved

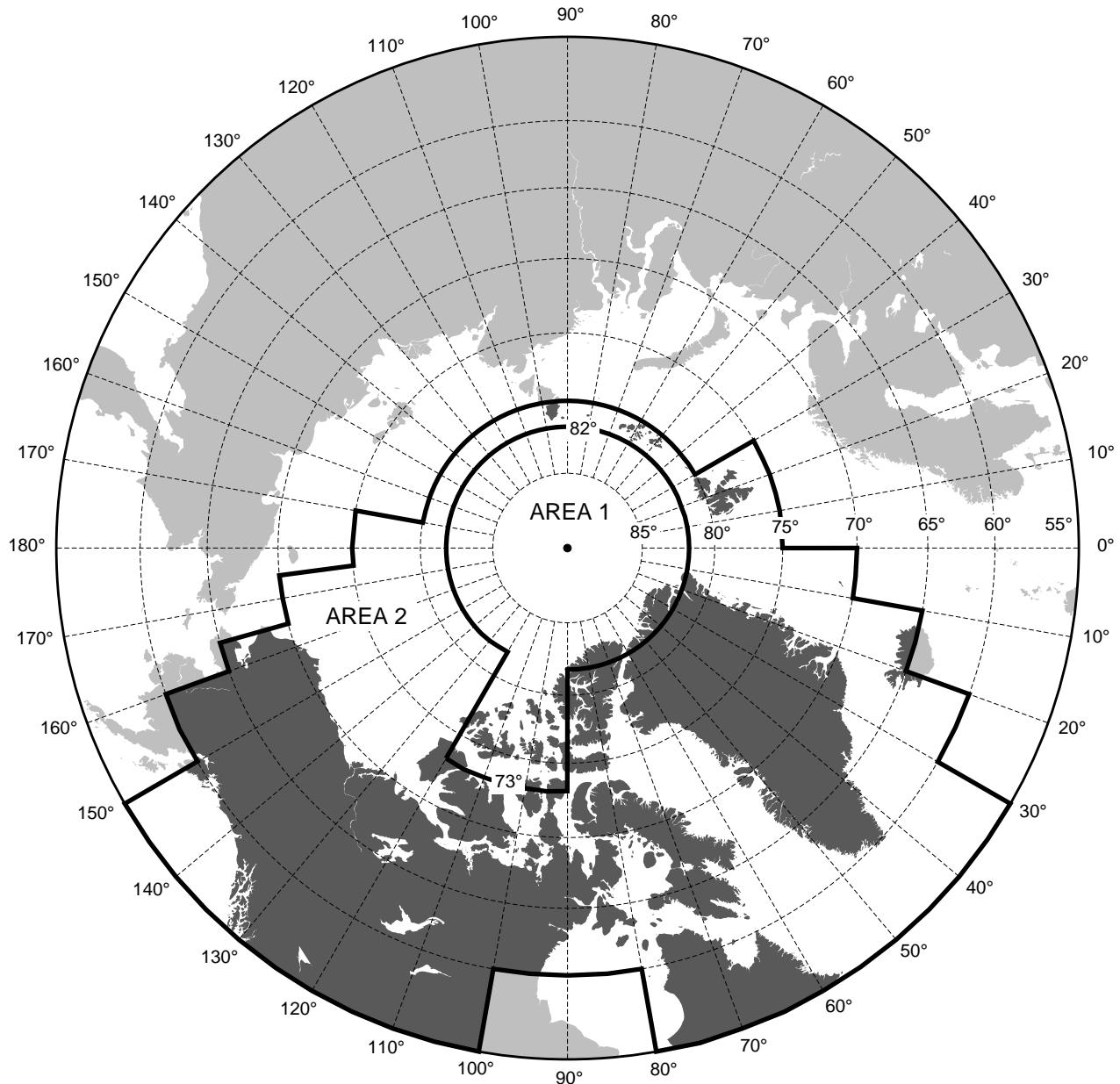
**Airplane Flight Manual
CSP C-012-219**



LIMITATIONS
Navigation System Limitations

02-09-6

Rev. 28, Jun 04/2021



AMU for Airplanes Equipped with IRS 465020-0400-0401
Figure 02-09-1

DOT Approved

Airplane Flight Manual
CSP C-012-219



LIMITATIONS
Navigation System Limitations

02-09-7

Rev. 28, Jun 04/2021

- For airplanes equipped with IRS 465020–04000402:

The use of magnetic heading is prohibited when the aircraft is flying in the following regions (refer to AMU AREA 3 in Figure 02–09–2):

Latitude	Longitude
80°N to 82°N	East of 180°W and West 120°W
80°N to 82°N	East of 90°W and West 15°W
80°N to 82°N	East of 80°E and West 180°W
75°N to 80°N	East of 175°W and West 120°W
75°N to 80°N	East of 90°W and West 45°W
73°N to 75°N	East of 155°W and West 120°W
73°N to 75°N	East of 90°W and West 55°W
70°N to 73°N	East of 155°W and West 55°W
65°N to 70°N	East of 135°W and West 105°W
65°N to 70°N	East of 85°W and West 70°W

NOTE

Local authority may not authorize aircraft operations based on magnetic heading in Areas of Magnetic Unreliability (AMUs).

DOT Approved

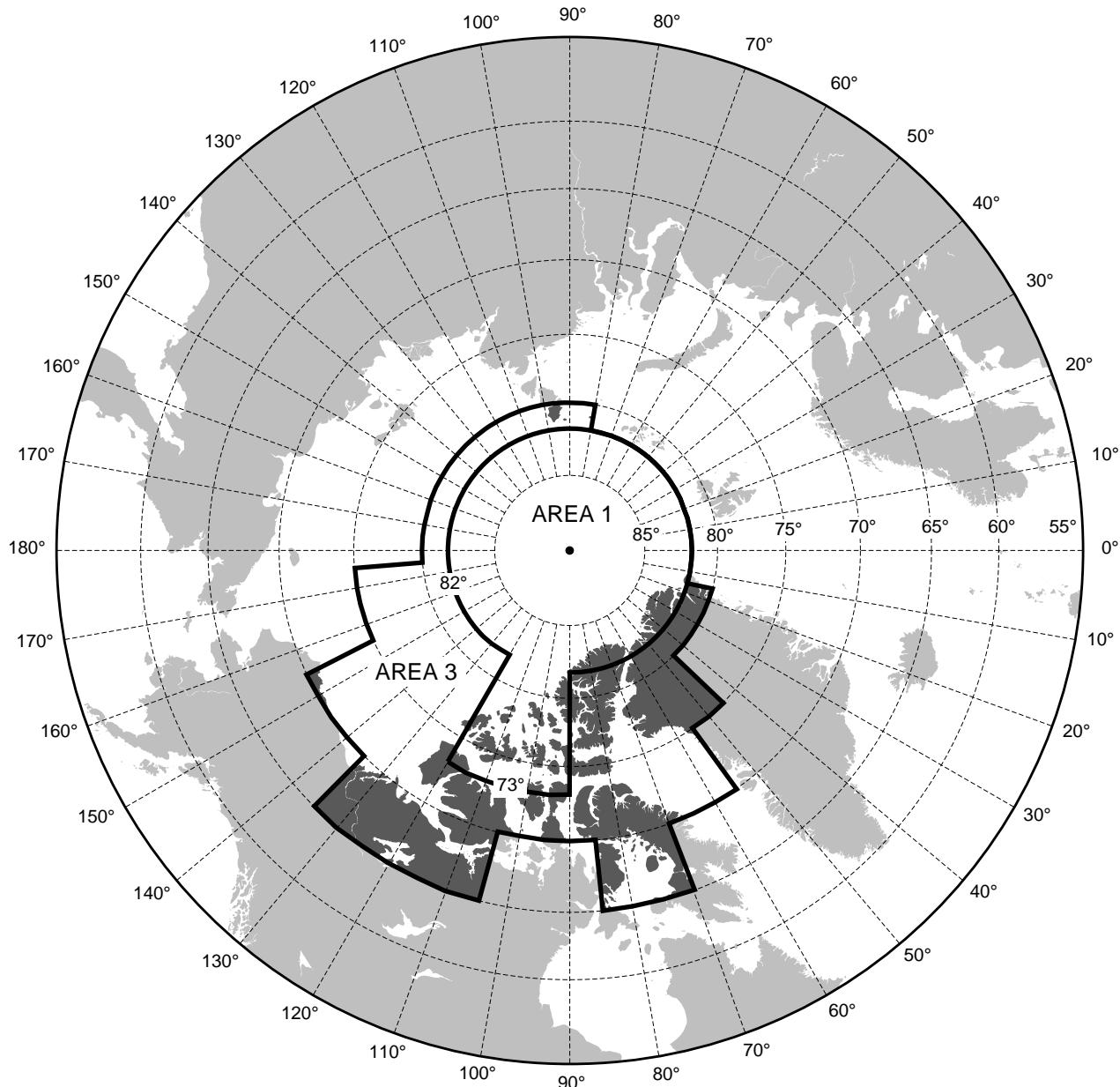
**Airplane Flight Manual
CSP C-012-219**



LIMITATIONS
Navigation System Limitations

02-09-8

Rev. 28, Jun 04/2021



AMU for Airplanes Equipped with IRS 465020-04000402
Figure 02-09-2

DOT Approved

Airplane Flight Manual
CSP C-012-219



CHAPTER 3 - EMERGENCY PROCEDURES

INTRODUCTION

INTRODUCTION	03-01-1
LANDING DISTANCE FACTORS	03-01-1

REJECTED TAKE-OFF

REJECTED TAKE-OFF	03-02-1
Rejected Take-off Before Achieving V ₁	03-02-1

POWER PLANT

POWER PLANT	03-03-1
L ENG FIRE or R ENG FIRE or Severe Engine Damage (In Flight)	03-03-1
L ENG FIRE or R ENG FIRE or Severe Engine Damage (On Ground)	03-03-1
Double Engine Failure	03-03-2
L REV DEPLOYED or R REV DEPLOYED	03-03-8
L ENG OIL PRESS or R ENG OIL PRESS or Low Engine Oil Pressure Indication	03-03-8
Uncommanded Acceleration / ENGINE OVERSPD	03-03-9

SMOKE/FIRE/FUMES

SMOKE/FIRE/FUMES	03-04-1
General Notes, Cautions and Warnings	03-04-1
Smoke/Fire/Fumes Procedure	03-04-1
Smoke or Fumes Removal Procedure	03-04-9
SMOKE AFT LAV or SMOKE FWD LAV	03-04-10
SMOKE AFT CARGO or SMOKE FWD CARGO (In Flight)	03-04-11
SMOKE AFT CARGO or SMOKE FWD CARGO (On Ground)	03-04-11

AIR-CONDITIONING AND PRESSURIZATION

AIR-CONDITIONING AND PRESSURIZATION	03-05-1
CABIN ALT (Warning Message) or Emergency Descent Procedure	03-05-1
DIFF PRESS <TC> or <FAA> or <JAA>	03-05-2

AUTOMATIC FLIGHT CONTROL SYSTEM

AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS)	03-06-1
AFCS MSG FAIL or Autopilot Failure	03-06-1
Uncommanded Yaw Motion	03-06-1



EMERGENCY PROCEDURES Table of Contents

03-00-2

Rev. 28, Jun 04/2021

AUXILIARY POWER UNIT

AUXILIARY POWER UNIT (APU)	03-07-1
APU FIRE	03-07-1
APU OVERSPEED	03-07-1
APU OVERTEMP	03-07-1

BLEED AIR LEAKS

BLEED AIR LEAKS	03-08-1
L BLEED DUCT or R BLEED DUCT	03-08-1

DITCHING AND FORCED LANDING

DITCHING AND FORCED LANDING	03-09-1
Recommended Configuration	03-09-1
DITCHING OR FORCED LANDING IMMINENT	03-09-1
Procedure	03-09-1
PLANNED DITCHING	03-09-2
General Notes, Cautions and Warnings	03-09-2
Preliminary	03-09-2
Approach	03-09-3
Prior to Water Contact	03-09-4
After Water Contact	03-09-4
FORCED LANDING	03-09-4
General Notes, Cautions and Warnings	03-09-4
Preliminary	03-09-4
Approach	03-09-5
Prior to Contact	03-09-6
After Contact	03-09-6

EVACUATION

EVACUATION	03-10-1
Passenger Evacuation	03-10-1

ELECTRICAL

ELECTRICAL	03-11-1
EMER PWR ONLY	03-11-1
Loss of All AC Power	03-11-3

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Table of Contents

03-00-3

Rev. 28, Jun 04/2021

FLIGHT CONTROLS

FLIGHT CONTROLS	03-12-1
Aileron System Jammed	03-12-1
Elevator System Jammed	03-12-2
Rudder System Jammed	03-12-3
Stabilizer Trim Runaway	03-12-4
Stall Recovery	03-12-5

FUEL SYSTEM

FUEL SYSTEM	03-13-1
LOW FUEL (Caution Message)	03-13-1

ICE AND RAIN PROTECTION

ICE AND RAIN PROTECTION	03-14-1
WING OVHT	03-14-1
ANTI-ICE DUCT	03-14-1
L COWL A/I DUCT or R COWL A/I DUCT	03-14-2

LANDING GEAR, WHEEL AND BRAKE SYSTEM

LANDING GEAR, WHEEL AND BRAKE SYSTEM	03-15-1
MLG BAY OVHT	03-15-1
BRAKE OVHT	03-15-1
GEAR DISAGREE	03-15-2
LDG GEAR Lever Jammed in the UP Position	03-15-3
Landing Gear Up / Unsafe Landing Procedure	03-15-4
PARKING BRAKE	03-15-6
During Landing – Excessive Asymmetry or Loss of Braking	03-15-6
NOSE DOOR OPEN	03-15-7

PASSENGER DOOR

PASSENGER DOOR	03-16-1
PASSENGER DOOR	03-16-1

AURAL/VISUAL WARNING SYSTEM

AURAL/VISUAL WARNING SYSTEM	03-17-1
Configuration Warning	03-17-1

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Table of Contents

03-00-4

Rev. 28, Jun 04/2021

HYDRAULIC POWER

HYDRAULIC POWER	03-18-1
HYD 1 HI TEMP (Caution Message)	03-18-1
HYD 2 HI TEMP (Caution Message)	03-18-4
HYD 2 LO PRESS and HYD 3 LO PRESS (Caution Messages)	03-18-10

UNRELIABLE AIRSPEED

UNRELIABLE AIRSPEED	03-19-1
Unreliable Airspeed In-flight	03-19-1

LIST OF ILLUSTRATIONS

HYDRAULIC POWER

Figure 03-18-1	Maximum Landing Weight Limited by Maximum Brake Energy – Single Hydraulic System Failure	03-18-9
----------------------	--	---------

UNRELIABLE AIRSPEED

Figure 03-19-1	Table A – Level Flight – FLAPS 0	03-19-5
Figure 03-19-2	Table B – Climb – FLAPS 0	03-19-6
Figure 03-19-3	Table C – Descent – FLAPS 0 – Idle	03-19-7
Figure 03-19-4	Table D – Approach – Level Flight	03-19-8
Figure 03-19-5	Table E – Approach – FLAPS 45 – GEAR DN – 3 degree G/S	03-19-9

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Introduction

03-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

Procedures given in this chapter of the Airplane Flight Manual (AFM) are concerned with foreseeable but unusual situations in which immediate and precise crew action, as indicated by the items within the "boxed" area at the beginning of each procedure, will substantially reduce the risk of disaster. These "boxed" items are considered immediate pilot action items.

Unless otherwise indicated, the titles of the procedures given in this chapter reflect the display of the corresponding EICAS warning (red) message. In addition, the master warning system operates where applicable.

The emergency procedures contained within this chapter have been developed and recommended by MHIRJ and approved by Transport Canada. These procedures are provided as guidance and should not be construed as prohibiting the development of equivalent Regulatory Authority-approved procedures.

2. LANDING DISTANCE FACTORS

Landing distance factors are provided herein with and without the use of thrust reversers. Unless landing distance factors are explicitly provided for "With One Thrust Reverser", the "Without Thrust Reversers" factors are to be used for airplanes with either one or both thrust reversers inoperative at landing.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Introduction

03-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Rejected Take-off

03-02-1

Rev. 28, Jun 04/2021

1. REJECTED TAKE-OFF

A. Rejected Take-off Before Achieving V₁

Simultaneously:

- (1) Thrust levers IDLE
- (2) Wheel brakes Maximum until a safe stop.
- (3) Thrust reverser(s) (operating engine[s]) Maximum, consistent with directional control.

After the airplane has been safely brought to a stop:

- (4) PARKING BRAKE ON
- (5) Applicable Immediate Actions or procedures Accomplish

If evacuation is required:

- (6) Passenger Evacuation procedure Accomplish
(Refer to EMERGENCY PROCEDURES – Evacuation – Passenger Evacuation.)

If evacuation is not required:

- (6) Passengers Advise to remain in their seats

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Rejected Take-off

03-02-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Power Plant

03-03-1

Rev. 28, Jun 04/2021

1. POWER PLANT

A. L ENG FIRE or R ENG FIRE or Severe Engine Damage (In Flight)

At a safe altitude, affected engine:

- (1) Thrust lever Confirm and IDLE
- (2) Thrust lever Confirm and SHUT OFF
- (3) ENG FIRE PUSH switch Confirm and select
- (4) FUEL, BOOST PUMP switch Confirm and select off

If after 10 seconds L ENG FIRE or R ENG FIRE warning message persists:

- (5) Affected engine BOTTLE switch Select, to discharge

If after another 30 seconds L ENG FIRE or R ENG FIRE warning message still persists:

- (6) Other engine BOTTLE switch Select, to discharge

- (7) Single Engine Procedures, In-flight Engine Shutdown Accomplish

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – In-flight Engine
Shutdown.)

B. L ENG FIRE or R ENG FIRE or Severe Engine Damage (On Ground)

NOTE

Attempt to face the airplane into the wind.

- (1) PARKING BRAKE ON

Affected engine:

- (2) Thrust lever SHUT OFF
- (3) ENG FIRE PUSH switch Select
- (4) FUEL, L and R BOOST PUMP switches Select off

If after 10 seconds L ENG FIRE or R ENG FIRE warning message persists:

- (5) Both engine BOTTLE switches Select, to discharge

- (6) Passenger Evacuation procedure As required

(Refer to EMERGENCY PROCEDURES –
Evacuation – Passenger Evacuation.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Power Plant

03-03-2

Rev. 28, Jun 04/2021

C. Double Engine Failure

- | | |
|--|------------------------|
| (1) IGNITION, CONT switch | ON |
| (2) Airspeed | Not less than 240 KIAS |
| (3) Turn toward nearest suitable airport. | |
| (4) Engines instruments Monitor for automatic relight. | |

NOTE

L ENG FLAMEOUT and **R ENG FLAMEOUT** caution messages are displayed.

- (5) ADG manual deploy handle Pull

When ADG power is established:

- | | |
|--|------------|
| (6) STAB TRIM, CH 2 switch | Select |
| (7) Oxygen masks (if required) | Don |
| (8) Crew communications | Establish |
| (9) PASS SIGNS switches (both) | ON |
| (10) APU (if available, at 37000 feet and below) | Start |
| (11) APU GEN switch (if APU available) | Check AUTO |

If engines continue to run-down and **L ENG FLAMEOUT** and **R ENG FLAMEOUT** caution messages are not displayed:

- (12) Thrust levers (both) SHUT OFF
- If relight of either engine is not considered feasible, proceed to step (13).
 - If windmilling relight is considered feasible, proceed to step (16).
 - If APU bleed air relight is considered feasible, proceed to step (38).

(13) RELIGHT OF EITHER ENGINE IS NOT CONSIDERED FEASIBLE

- (14) Target glide airspeed Establish

Airplane Weight	Target Airspeed
24950 kg (55000 lb) or below	180 KIAS
37421 kg (82500 lb)	220 KIAS
38329 kg (84500 lb)	225 KIAS

- (15) Proceed to step (60).

(16) WINDMILLING RELIGHT PROCEDURE

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Power Plant

03-03-3

Rev. 28, Jun 04/2021

- If airplane is equipped with FADEC 6.20 and subsequent, proceed to step (17).
- If airplane is not equipped with FADEC 6.20 and subsequent, proceed to step (20).
 - (17) Descent Initiate to 25000 feet or below.
 - (18) Airspeed Not less than 250 KIAS
 - (19) Proceed to step (22).
 - (20) Descent Initiate to 21000 feet or below.
 - (21) Airspeed Not less than 250 KIAS.
 - (22) FUEL, L and R BOOST PUMP switches Confirm ON
 - (23) ANTI-ICE, WING and COWL switches All OFF
 - (24) IGNITION, CONT switch Confirm ON
- When ITT is 90° or less and N₂ is at least 7.2%:**
 - (25) Thrust levers (both) IDLE

NOTE

An **ENG FLAMEOUT** caution message may momentarily be displayed.

- (26) Engine indications Monitor

NOTE

N₂ acceleration should be positive and uninterrupted. Stable idle speed should be reached within 3 to 4 minutes.

- If at least one engine relights and stabilizes at flight idle, proceed to step (27).
- If neither engine relight within 25 seconds, proceed to step (35).

At least one engine relights and stabilizes at flight idle:

- (27) Thrust lever(s) As required
- (28) WING A/I CROSS BLEED switch As required
- (29) ANTI-ICE, WING and COWL switches As required
- (30) IGNITION, CONT switch Select off

Re-establish normal power:

- (31) Affected GEN Check AUTO
- (32) ADG manual deploy handle Stow
- (33) ADG CONTROL, PWR TXFR
OVERRIDE button Select

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Power Plant

03-03-4

Rev. 28, Jun 04/2021

- (34) Single Engine ProceduresAccomplish, if required
(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures.)

Neither engine relights within 25 seconds:

- (35) Thrust levers (both)SHUT OFF

Another windmill relight attempt is still possible:

- (36) Wait 30 seconds, then proceed to step (16) and repeat **WINDMILLING RELIGHT PROCEDURE.**

Another windmill relight attempt is not possible:

- (37) Proceed to step (39) or to step (60).

(38) APU BLEED AIR RELIGHT PROCEDURE

- (39) Target airspeedEstablish

Airplane Weight	Target Airspeed
24950 kg (55000 lb) or below	180 KIAS
37421 kg (82500 lb)	220 KIAS
38329 kg (84500 lb)	225 KIAS

- (40) FUEL, L and R BOOST PUMP switchesConfirm ON

- (41) ANTI-ICE, WING and COWL switchesAll OFF

- (42) BLEED SOURCE switchAPU

- (43) ISOL switchOPEN

- (44) BLEED VALVES switchMANUAL

Attempt to start one engine at a time (21000 feet and below):

- (45) IGNITION, CONT switchConfirm ON

When ITT is 90°C or less:

- (46) L or R ENG START switchSelect and hold until N₂ is increasing.

When N₂ is at least 20%:

- (47) Applicable thrust leverIDLE

- (48) Engine indicationsMonitor

- **If engine relights and stabilizes at flight idle, proceed to step (49).**
- **If engine does not relight within 25 seconds, proceed to step (56).**

Engine relights and stabilizes at flight idle:

- (49) Thrust leverAs required

- (50) IGNITION, CONT switchSelect off

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Power Plant

03-03-5

Rev. 28, Jun 04/2021

(51) BLEED VALVES switch AUTO

Re-establish normal power:

(52) Affected GEN Check AUTO

(53) ADG manual deploy handle Stow

(54) ADG CONTROL, PWR TXFR
OVERRIDE button Select

(55) Single Engine Procedures Accomplish

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures.)

Engine does not relight:

(56) Affected thrust lever SHUT OFF

(57) Affected ENG STOP switch Select

(58) Attempt relight on other engine.

Neither engine is restarted:

(59) Proceed to step (60).

(60) ALL ENGINE OUT PROCEDURE

(61) Determine if APU GEN is available.

• **If APU GEN is available, proceed to step (62).**

• **If APU GEN is not available, proceed to step (65).**

APU GEN is available:

(62) ADG manual deploy handle Stow

(63) ADG CONTROL, PWR TXFR OVERRIDE
button Select

(64) Proceed to step (65).

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Power Plant

03-03-6

Rev. 28, Jun 04/2021

APU GEN is not available:

- (65) Determine if a suitable landing site is within gliding range.

NOTE

1. Target glide speed provides for a range of approximately 2.5 NM for every 1000 feet of altitude lost.
2. Descent rate will be approximately 1200 – 1600 fpm.
3. Recommended approach is a descending 360-degree turn started at 5000 feet above the landing area.
4. With both engines inoperative, the gliding distance and time from 10000 feet above the landing area to the initiation of the recommended approach maneuver at 5000 feet above the landing area, will be approximately.

Airplane Weight	Target Airspeed	Gliding Distance and Time
24950 kg (55000 lb)	180 KIAS	12.5 NM – 4.5 Minutes
37421 kg (82500 lb)	220 KIAS	12.5 NM – 3.5 Minutes

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Power Plant

03-03-7

Rev. 28, Jun 04/2021

(66) If time allows, affected aircraft systems Review

NOTE

The following significant systems are not available when all engines are out:

- Automatic pressurization,
- Yaw damper 2 and autopilot,
- Inboard and outboard ground spoilers, inboard and outboard multi-function spoilers,
- Stabilizer trim channel 1, aileron and rudder trims,
- Anti-skid system and nosewheel steering,
- Hydraulic EDP 1A and EDP 2A, hydraulic pumps 1B, 2B and 3A,
- PFD 2, MFD 2, VHF COM 2, RTU 2,
- FD 2, VHF NAV 2, ATC 2,
- ADF 2, <2109>
- Radio altimeter 2, <1045>
- Copilot's instrument lights, NAV lights and taxi lights,
- Right probe heaters and ice detector 2,
- Windshield wipers, both windshield heaters and right window heater.
- Below 135 KIAS, AC ESS bus is shed causing the loss of the following:
 - The remaining TRU (ESS TRU 1 or ESS TRU 2),
 - Rudder limiter,
 - XFLOW pump,
 - Left probe heaters and ice detector 1,
 - Left window heater.
- **If suitable landing site is in range, proceed to step (67).**
- **If no suitable landing site is in range, proceed to step (79).**

Suitable landing site is in range:

At 10000 feet MSL or lowest safe altitude:

- (67) EMER DEPRESS switch ON
- (68) RAM-AIR switch OPEN
- (69) GRND PROX, FLAP switch OVRD
- (70) Approach start point Establish at 5000 feet AGL over landing area.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



EMERGENCY PROCEDURES Power Plant

03-03-8

Rev. 28, Jun 04/2021

- (71) 20 to 30-degree angle of bank turn Start over landing area.
(72) Target airspeed Maintain
(73) Downwind leg Establish at 2500 feet AGL abeam landing area and 180 degrees from final approach heading.
(74) Final approach Establish at 1500 feet AGL.
(75) LDG GEAR lever DN when runway is assured.
(76) Landing FLAPS 20
(77) Final approach speed $V_{REF} (\text{FLAPS } 45) + 12 \text{ KIAS}$
(78) Actual landing distance Increase

Without Thrust Reversers

2.80 (180%)

No suitable landing site is in range:

- (79) Ditching or Forced Landing Procedure Accomplish

D. L REV DEPLOYED or R REV DEPLOYED

- (1) Affected thrust lever Confirm and IDLE
- (2) Airspeed Not more than 200 KIAS
(3) Affected THRUST REVERSER switch OFF
(4) APU (if available, at 37000 feet and below) Start
(5) Single Engine Procedures, In-flight Engine Shutdown Accomplish

(Refer to ABNORMAL PROCEDURES – Single Engine Procedures – In-flight Engine Shutdown.)

E. L ENG OIL PRESS or R ENG OIL PRESS or Low Engine Oil Pressure Indication

- (1) Affected engine oil pressure / quantity Check
(2) Affected thrust lever Confirm and retard to IDLE

If any 2 of the following 3 indications are displayed:

- L ENG OIL PRESS or R ENG OIL PRESS warning message;
- Affected engine oil pressure is below limits;
- Affected engine oil temperature is increasing or decreasing abnormally.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Power Plant

03-03-9

Rev. 28, Jun 04/2021

- (3) Single Engine Procedures, In-flight Engine Shutdown Accomplish
(Refer to ABNORMAL PROCEDURES – Single Engine Procedures – In-flight Engine Shutdown.)

If only 1 of the above indications is displayed:

- (3) Affected thrust lever Adjust as required
(4) Engine indications Monitor

F. Uncommanded Acceleration / ENGINE OVERSPD

- (1) Affected thrust lever Confirm and IDLE
- (2) Engine indications Monitor
- If engine does not respond or if engine has shut down automatically:**
- (3) Single Engine Procedures, In-flight Engine Shutdown Accomplish
(Refer to ABNORMAL PROCEDURES – Single Engine Procedures – In-flight Engine Shutdown.)

NOTE

Do not attempt to relight the engine.

If engine responds:

- (3) Affected thrust lever Adjust as required

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Power Plant

03-03-10

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Smoke/Fire/Fumes

03-04-1

Rev. 28, Jun 04/2021

1. SMOKE/FIRE/FUMES

A. General Notes, Cautions and Warnings

WARNING

Time is critical during smoke/fire/fumes emergencies. The flight crew should consider an immediate landing anytime the situation cannot be controlled.

CAUTION

Passenger masks should not be deployed when performing smoke or fire procedures.

B. Smoke/Fire/Fumes Procedure

- (1) Oxygen masks / smoke goggles (if required) On, 100%
- (2) Crew and cabin communication Establish
- (3) Land at the nearest suitable airport.

CAUTION

Continuing to destination is not recommended. If the decision to continue is made the flight crew must acknowledge that the threat has been positively identified, confirmed to be extinguished and the smoke/fumes have dissipated.

- (4) AFT CARGO switch OFF
- (5) RECIRC FAN switch OFF

WARNING

Anytime smoke/fumes becomes the greatest threat accomplish the smoke or fumes removal procedure. Refer to EMERGENCY PROCEDURES – Smoke/Fire/Fumes – Smoke or Fumes Removal Procedure.

If time and conditions permit and source of smoke/fire/fumes can be quickly identified and eliminated:

- (6) Appropriate procedure Accomplish

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



EMERGENCY PROCEDURES Smoke/Fire/Fumes

03-04-2

Rev. 28, Jun 04/2021

- Air-conditioning (Smoke coming from gaspers or vents) See
"SOURCE IS IDENTIFIED AS AIR-CONDITIONING SYSTEM"
- Electrical (Electrical Fire Smell, Potential Loss of Associated Systems) See
"SOURCE IS IDENTIFIED AS ELECTRICAL SYSTEM"
- Galley See
"SOURCE IS IDENTIFIED AS GALLEY FIRE/SMOKE"
- Cabin See
"SOURCE IS IDENTIFIED AS CABIN FIRE/SMOKE"

If time and conditions do not permit or source of smoke/fire/fumes cannot be quickly identified and eliminated:

- (6) Land immediately at the nearest suitable airport.



Dependent upon the severity of the situation, the flight crew should expedite the landing. The crew should also consider an overweight landing, tailwind landing, ditching or a forced off-airport landing.

SOURCE IS IDENTIFIED AS AIR-CONDITIONING SYSTEM:

- (1) BLEED SOURCE switch BOTH ENG
- (2) ISOL switch CLSD
- (3) BLEED VALVES switch MANUAL
- (4) L PACK switch OFF

If smoke/fumes conditions persists:

- (5) L PACK switch On
- (6) R PACK switch OFF

If smoke/fumes conditions still persists:

- (7) R PACK switch On

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Smoke/Fire/Fumes

03-04-3

Rev. 28, Jun 04/2021

- (8) Land immediately at the nearest suitable airport.

CAUTION

Dependent upon the severity of the situation, the flight crew should expedite the landing. The crew should also consider an overweight landing, tailwind landing, ditching or a forced off-airport landing.

If smoke/fumes condition ceases:

NOTE <2111>

Airplane altitude not above 25000 feet during single pack operations.

- (7) Smoke or Fumes Removal ProcedureAccomplish, if required
(Refer to EMERGENCY PROCEDURES –
Smoke/Fire/Fumes – Smoke or Fumes
Removal Procedure.)

SOURCE IS IDENTIFIED AS ELECTRICAL SYSTEM:

- (1) AC and DC Electrical loadsMonitor

If source of electrical smoke/fire/fumes is positively identified:

WARNING

The series of steps that follow provide guidance on how to isolate each electrical bus. Select only the steps required to isolate the positively identified bus. The steps below are not to be used for trial and error in an attempt to identify the source bus.

- (2) Affected electrical busIsolate

AC BUS 1:

- (a) AC ESS XFER switch.....ALTN
(b) Left AUTO XFER switch.....OFF
(c) GEN 1 switch.....OFF/RESET

AC BUS 2:

- (a) Right AUTO XFER switchOFF
(b) GEN 2 switch.....OFF/RESET

AC ESS BUS:

- (a) AVIONICS FAN switchFLT ALTN

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Smoke/Fire/Fumes

03-04-4

Rev. 28, Jun 04/2021

- (b) AC ESS FEED circuit breaker (1S2) Open

AC SERV BUS:

- (a) AC SERVICE FEED
circuit breaker (2E2) Open

DC BUS 1:

- (a) DC 1 FEED circuit breaker (1D6) Open

DC BUS 2:

- (a) DC 2 FEED circuit breaker (2L8) Open

DC ESS BUS:

- (a) DC ESS FEED circuit breaker (2R6) Open

DC SERV BUS:

- (a) SERV BUS FEED circuit breaker (2F5) Open

- (b) DC SERVICE switch OFF

DC BATT BUS:

- (a) Airplane altitude Not above 13000 feet

- (b) PRESS CONT switch Auto

- (c) LDG ELEV selector Set to 14000 feet

- (d) BATT BUS FEED circuit breaker (2N2) Open

DC UTILITY BUS:

- (a) DC UTILITY FEED
circuit breaker (2L7) Open

If electrical smoke/fire/fumes ceases:

- (3) Affected airplane systems Review

- (4) Smoke or Fumes Removal Procedure Accomplish, if required

(Refer to EMERGENCY PROCEDURES –
Smoke/Fire/Fumes – Smoke or Fumes
Removal Procedure.)

If source of electrical smoke/fire/fumes cannot be positively identified:

- (2) ADG manual deploy handle Pull and leave extended.

- (3) GEN 1 and GEN 2 switches OFF/RESET (after ADG online)

- (4) APU GEN switch OFF/RESET (after ADG online)

- (5) STAB TRIM, CH 2 switch Select

- (6) R PACK Check on

- (7) L PACK OFF

- (8) PRESS CONT switch MAN

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Smoke/Fire/Fumes

03-04-5

Rev. 28, Jun 04/2021

- (a) MAN ALT switch As required
- (b) MAN RATE selector As required
- (9) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

- (10) Land immediately at the nearest suitable airport.



Dependent upon the severity of the situation, the flight crew should expedite the landing. The crew should also consider an overweight landing, tailwind landing, ditching or a forced off-airport landing.

If smoke/fire/fumes persists:

- (11) GEN 1, GEN 2, APU GEN switches AUTO
- (12) ADG manual deploy handle Stow
- (13) ADG CONTROL, PWR TXFR OVERRIDE button Select
- (14) CAS messages Review
- (15) Affected systems Restore

If smoke/fire/fumes ceases:

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Smoke/Fire/Fumes

03-04-6

Rev. 28, Jun 04/2021

(11) Avoid excessive rudder inputs.

NOTE

The following significant systems are not available when on emergency power only:

- Automatic pressurization,
- Yaw damper 2 and autopilot,
- Inboard ground spoilers and inboard multi-function spoilers,
- Stabilizer trim channel 1, aileron and rudder trims,
- Anti-skid system and nosewheel steering,
- Hydraulic pumps 1B, 2B and 3A,
- PFD 2, MFD 2, VHF COM 2, RTU 2,
- FD 2, VHF NAV 2, ATC 2,
- ADF 2, <2109>
- Radio altimeter 2, <1045>
- Copilot's instrument lights, NAV lights and taxi lights,
- Right probe heaters and ice detector 2,
- Windshield wipers, both windshield heaters and right window heater.
- Below 135 KIAS, AC ESS bus is shed causing the loss of the following:
 - The remaining TRU (ESS TRU 1 or ESS TRU 2),
 - Rudder limiter,
 - XFLOW pump,
 - Left probe heaters and ice detector 1,
 - Left window heater.

During approach – Prior to reducing speed below 145 KIAS:

- (12) LDG GEAR lever DN
(13) FLAPS 45

DOT Approved

Airplane Flight Manual
CSP C-012-219

**EMERGENCY PROCEDURES**
Smoke/Fire/Fumes

03-04-7

Rev. 28, Jun 04/2021

(14) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
2.30 (130%)	1.80 (80%)

NOTE

If on ADG power:

1. The slats/flaps will operate at half speed.
2. A momentary loss of ADG power may occur:
 - at 140 KIAS and below, if the slats/flaps are operating.
 - at 108 KIAS and below, if pitch trim is used.

Upon landing:**NOTE**

Use the thrust reversers as required during landing.

Do not cycle the brakes.

(15) Brake pedals Depress, apply slowly and steadily.

SOURCE IS IDENTIFIED AS GALLEY FIRE/SMOKE:

- (1) Designated crew member Advise
 - (a) To isolate and extinguish source of smoke or fire, and to secure the area.
 - (b) Galley control panel circuit breakers (all) Open
- (2) Galley, galley heating system and water system De-energize

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Smoke/Fire/Fumes

03-04-8

Rev. 28, Jun 04/2021

- (a) WATER SYSTEM circuit breaker (2D8) Open
- (b) WASTE SYST circuit breaker (2M9) Open
- (c) WATER CONT circuit breaker (2M10) Open
- (d) GALLEY HEATER CONT circuit breaker (2F11) Open
- (e) GALLEY HEATER circuit breaker (2B11) Open
- (f) GALLEY EXHAUST FAN circuit breaker (2B8) Open
- (g) LIGHTS GALLEY AREA circuit breaker (2M6) Open
- (h) LIGHTS CAB UTIL circuit breaker (1P4) Open

If smoke/fire/fumes condition persists:

- (3) Land immediately at the nearest suitable airport.



Dependent upon the severity of the situation, the flight crew should expedite the landing. The crew should also consider an overweight landing, tailwind landing, ditching or a forced off-airport landing.

If smoke/fire/fumes condition ceases:

- (3) Smoke or Fumes Removal Procedure Accomplish, if required
(Refer to EMERGENCY PROCEDURES –
Smoke/Fire/Fumes – Smoke or Fumes
Removal Procedure.)

SOURCE IS IDENTIFIED AS CABIN FIRE/SMOKE:

- (1) EMER LTS ON
- (2) Designated crew member Advise

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Smoke/Fire/Fumes

03-04-9

Rev. 28, Jun 04/2021

- (a) To isolate and extinguish source of smoke or fire, and to secure the area.
- (b) To turn off lights at FWD and AFT flight attendants panel.

Effectivity:

- Airplanes 15001 thru 15129, 15132, 15133, 15136, 15157 thru 15159, 15449, 15451 and subsequent:

(i)	PSU READING LIGHTS	OFF
(ii)	CEILING LIGHT	OFF
(iii)	SIDEWALL LIGHT	OFF
(iv)	ENTRANCE LIGHT	OFF
(v)	FWD AFT READING LIGHTS	OFF

- (3) PASS SIGNS OFF
- (4) Affected boarding lights / door actuator system De-energize, if required
 - (a) LIGHTS BOARD circuit breaker (2M3) Open
 - (b) PASS DOOR ACT circuit breaker (1E1) Open
 - (c) LIGHTS CAB UTIL circuit breaker (1P4) Open

If smoke/fire/fumes condition persists:

- (5) Land immediately at the nearest suitable airport.



Dependent upon the severity of the situation, the flight crew should expedite the landing. The crew should also consider an overweight landing, tailwind landing, ditching or a forced off-airport landing.

If smoke/fire/fumes conditions ceases:

- (5) Smoke or Fumes Removal Procedure Accomplish, if required
(Refer to EMERGENCY PROCEDURES –
Smoke/Fire/Fumes – Smoke or Fumes
Removal Procedure.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Smoke/Fire/Fumes

03-04-10

Rev. 28, Jun 04/2021

C. Smoke or Fumes Removal Procedure

- (1) AFT CARGO switch OFF
- (2) RECIRC FAN switch OFF
- (3) Descent Initiate to 10000 feet MSL or lowest safe altitude, whichever is higher.
- (4) PRESS CONT switch MAN
 - (a) MAN ALT switch UP
 - (b) MAN RATE selector INCR as required to depressurize the cabin, while ensuring that the cabin altitude does not exceed 13500 feet.
 - (c) MAN ALT switch HOLD, when smoke has cleared.
- (5) Smoke/Fire/Fumes Procedure Continue, if required
(Refer to EMERGENCY PROCEDURES – Smoke/Fire/Fumes – Smoke/Fire/Fumes Procedure.)

D. SMOKE AFT LAV or SMOKE FWD LAV

- (1) Designated crew member Advise to isolate and extinguish source of smoke or fire, and to secure the area.
- (2) Toilet/lavatory area and water system De-energize
 - (a) LAV EXHAUST FAN circuit breaker (1B8) Open
 - (b) WATER SYSTEM circuit breaker (2D8) Open
 - (c) WASTE SYST circuit breaker (2M9) Open
 - (d) WATER CONT circuit breaker (2M10) Open
 - (e) TOILET (motor pump) circuit breaker (2D5) Open
 - (f) LIGHTS TOILET circuit breaker (2M5) Open

If smoke/fire/fumes condition persists:

- (3) Land immediately at the nearest suitable airport.



Dependent upon the severity of the situation, the flight crew should expedite the landing. The crew should also consider an overweight landing, tailwind landing, ditching or a forced off-airport landing.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Smoke/Fire/Fumes

03-04-11

Rev. 28, Jun 04/2021

If smoke/fire/fumes condition ceases:

- (3) Land at the nearest suitable airport.
- (4) Smoke or Fumes Removal ProcedureAccomplish, if required
(Refer to EMERGENCY PROCEDURES –
Smoke/Fire/Fumes – Smoke or Fumes
Removal Procedure.)

E. SMOKE AFT CARGO or SMOKE FWD CARGO (In Flight)

- (1) Affected CARGO FIREX, CARGO SMOKE
PUSH switchSelect
- (2) CARGO FIREX, BOTTLE ARMED PUSH
TO DISCH switchSelect, to discharge.
- (3) Squib / bottle dischargeCheck
- (4) LDG ELEV selectorSet to 8000 feet or landing field elevation,
whichever is higher.
- (5) DescentInitiate to 10000 feet MSL or minimum
enroute altitude, whichever is higher.

At 10000 feet MSL or lowest safe altitude, whichever is higher:

- (6) LDG ELEV selectorSet to landing field elevation, if not already
done.
- (7) Land immediately at the nearest suitable airport.



Dependent upon the severity of the situation, the flight crew should expedite the landing. The crew should also consider an overweight landing, tailwind landing, ditching or a forced off-airport landing.

F. SMOKE AFT CARGO or SMOKE FWD CARGO (On Ground)

- (1) PARKING BRAKEON
- (2) EMER DEPRESS switchON
- (3) AFT CARGO switchOFF
- (4) Affected CARGO FIREX, CARGO SMOKE
PUSH switchSelect
- (5) CARGO FIREX, BOTTLE ARMED PUSH
TO DISCH switchSelect, to discharge.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Smoke/Fire/Fumes

03-04-12

Rev. 28, Jun 04/2021

- (6) Squib / bottle discharge Check
(7) Passenger Evacuation procedure As required

(Refer to EMERGENCY PROCEDURES –
Evacuation – Passenger Evacuation.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Air-conditioning and Pressurization

03-05-1

Rev. 28, Jun 04/2021

1. AIR-CONDITIONING AND PRESSURIZATION

A. CABIN ALT (Warning Message) or Emergency Descent Procedure

- | | |
|--------------------------------------|--|
| (1) Oxygen masks | Don, set to 100% |
| (2) Crew communication | Establish |
| (3) PASS SIGNS switches (both) | ON |
| (4) Descent | Initiate to 10000 feet MSL or lowest safe altitude, whichever is higher. |
| (5) Thrust levers | IDLE |
| (6) Flight spoilers | Deploy |

- (7) PASS OXY switch ON

If structural damage is suspected:

- (8) Airspeed Do not exceed the speed at which the damage occurred, and minimize maneuvering loads.

If no structural damage is suspected:

- (8) Airspeed Do not exceed V_{MO}/M_{MO}

If at safe altitude and at or below 10000 ft MSL:

- (9) Oxygen and masks As required



Closing the doors on the crew mask stowage compartments and pressing RESET will stop the flow of oxygen to the masks.

NOTE

If supplemental crew oxygen is still required, setting masks to normal (N) will reduce consumption.

If accompanied by any door message(s) or hatch unsafe condition:

- (10) Do not attempt to repressurize the airplane.

- (11) Applicable door procedure Accomplish (when at a safe cabin altitude)
(Refer to EMERGENCY PROCEDURES – Passenger Doors.) or
(Refer to ABNORMAL PROCEDURES – Doors.)

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



EMERGENCY PROCEDURES Air-conditioning and Pressurization

03-05-2

Rev. 28, Jun 04/2021

If no door/hatch malfunctions exist:

- (10) PRESS CONT switch MAN
- (11) MAN ALT switch DN
- (12) MAN RATE selector Maximum INCR

If control of cabin pressurization is regained:

- (13) Manual Pressurization Control Procedure Continue

(Refer to ABNORMAL PROCEDURES –
Air-conditioning, Bleed and Pressurization –
PRESSURIZATION SYSTEM – Manual
Pressurization Control Procedure.)

If control of cabin pressurization is not regained:

- (13) Unpressurized Flight Procedure (PACKs on)..... Accomplish

(Refer to ABNORMAL PROCEDURES –
Air-conditioning, Bleed and Pressurization –
PRESSURIZATION SYSTEM –
Unpressurized Flight Procedure (PACKs
on).)

B. DIFF PRESS <TC> or <FAA> or <JAA>

NOTE

For altitude above 30000 feet, if climbing at a rate greater than 1500 FPM, a **DIFF PRESS** warning message may come on.

- (1) PRESS CONT switch MAN
- (2) MAN ALT switch UP
- (3) MAN RATE selector INCR as required

If control of cabin pressurization is regained:

- (4) Manual Pressurization Control Procedure Continue

(Refer to ABNORMAL PROCEDURES –
Air-conditioning, Bleed and Pressurization –
PRESSURIZATION SYSTEM – Manual
Pressurization Control Procedure.)

If control of cabin pressurization is not regained:

- (4) Descent Initiate to 10000 feet MSL or lowest safe altitude, whichever is higher.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Air-conditioning and Pressurization

03-05-3

Rev. 28, Jun 04/2021

- (5) L or R PACK switch OFF

NOTE <2111>

Airplane altitude not above 25000 feet during single pack operations.

If DIFF PRESS warning message persists:

- (6) Unpressurized Flight Procedure (PACKs off) Accomplish as follows:
(a) Airplane altitude Not above 10000 feet MSL or lowest safe altitude, whichever is higher.
(b) Airspeed Not less than 210 KIAS

NOTE

Recommended during cruise to provide sufficient airflow to passengers within cabin.

- (c) EMER DEPRESS switch ON
(d) L and R PACK switches OFF
(e) AIR CONDITIONING, AFT CARGO switch OFF
(f) RECIRC FAN switch OFF
(g) RAM-AIR switch OPEN

NOTE

If **RAM AIR OPEN** status message does not come on, the cockpit and/or cabin temperature can rise quickly. Expedite landing at nearest suitable airport.

If DIFF PRESS warning message goes out:

- (6) Pressurization Monitor

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Air-conditioning and Pressurization

03-05-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Automatic Flight Control System

03-06-1

Rev. 28, Jun 04/2021

1. AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS)

A. AFCS MSG FAIL or Autopilot Failure

- (1) Autopilot Disengage using AP/SP DISC switch on control wheel or AP DISC switch on flight control panel.

NOTE

Do not use the autopilot when an **AFCS MSG FAIL** warning message is displayed.

B. Uncommanded Yaw Motion

- Indication: Abnormal / uncommanded change in yaw attitude.
Continuous or intermittent rudder kicks.
Sustained oscillation ("Dutch Roll").

- (1) Controls Assume manual control and counter aircraft motion using handwheel inputs.
(2) YAW DAMPER, DISC button Select to disconnect both yaw dampers.

NOTE

Disregard **YAW DAMPER** caution message.

If uncommanded motion persists:

- (3) Airspeed Not more than 250 KIAS
(4) Land at nearest suitable airport.

NOTE

Select the runway available with minimum cross-wind and turbulence.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Automatic Flight Control System

03-06-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Auxiliary Power Unit

03-07-1

Rev. 28, Jun 04/2021

1. AUXILIARY POWER UNIT (APU)

A. APU FIRE

(1) APU FIRE PUSH switch Select

If after 5 seconds APU FIRE warning message persists:

(2) APU BOTTLE switch Select, to discharge.



Do not restart the APU.

(3) APU, START/STOP switch Select off

(4) APU, PWR FUEL switch Select off

(5) Land immediately at the nearest suitable airport.

B. APU OVERSPEED

(1) APU, START/STOP switch Select off

(2) APU, PWR FUEL switch Select off



Do not restart the APU.

C. APU OVERTEMP

On the ground:

(1) APU, START/STOP switch Select off

(2) APU, PWR FUEL switch Select off



Do not restart the APU.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Auxiliary Power Unit

03-07-2

Rev. 28, Jun 04/2021

In flight:

If the APU generator is required:

- (1) APU indications Monitor
- (2) Land at the nearest suitable airport.
- (3) Manual Bleed Procedure (to select both engines as the bleed source) Accomplish

(Refer to ABNORMAL PROCEDURES –
Air-conditioning, Bleed and Pressurization –
BLEED SYSTEM – Manual Bleed
Procedure.)

NOTE

Upon landing if the APU overtemperature condition persists, the APU will shut down automatically after 60 seconds.

After landing:

- (4) APU, START/STOP switch Select off
- (5) APU, PWR FUEL switch Select off

If the APU generator is not required:

- (1) APU, START/STOP switch Select off
- (2) APU, PWR FUEL switch Select off

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



EMERGENCY PROCEDURES

Bleed Air Leaks

03-08-1

Rev. 28, Jun 04/2021

1. BLEED AIR LEAKS

A. L BLEED DUCT or R BLEED DUCT



If **L BLEED DUCT** or **R BLEED DUCT** warning message persists for 30 seconds, all bleed air sources will be closed causing loss of pressurization.

NOTE

The **L BLEED DUCT** or **R BLEED DUCT** warning message will be replaced by a **L BLEED DUCT** or **R BLEED DUCT** caution message, following automatic bleed valve closure and leak isolation.

- (1) ECS synoptic page Select to determine affected side.

If both L and R engine bleed valves are closed:

- (2) Descent Initiate to 10000 feet MSL or lowest safe altitude, whichever is higher.
- (3) BLEED VALVES switch CLSD
- (4) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

- (5) ANTI-ICE, WING switch OFF
- (6) ANTI-ICE, LH and RH COWL switches OFF
- (7) Unpressurized Flight Procedure (PACKs off) Accomplish as follows:
- (a) Airplane altitude Not above 10000 feet MSL or lowest safe altitude, whichever is higher.
- (b) Airspeed Not less than 210 KIAS

NOTE

Recommended during cruise to provide sufficient airflow to passengers within cabin.

- (c) EMER DEPRESS switch ON
- (d) L and R PACK switches OFF

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Bleed Air Leaks

03-08-2

Rev. 28, Jun 04/2021

- (e) AIR CONDITIONING, AFT CARGO switch OFF
- (f) RECIRC FAN switch OFF
- (g) RAM-AIR switch OPEN

NOTE

If **RAM AIR OPEN** status message does not come on, the cockpit and/or cabin temperature can rise quickly. Expedite landing at nearest suitable airport.

If either L or R engine bleed valves are open:

- (2) BLEED SOURCE switch Select non-affected engine source
- (3) ISOL switch CLSD
- (4) BLEED VALVES switch MANUAL
- (5) Affected PACK switch OFF

NOTE <2111>

Airplane altitude not above 25000 feet during single pack operations.

- (6) WING A/I CROSS BLEED switch Select non-affected side
- (7) ANTI-ICE, LH or RH COWL switch Affected side OFF
- (8) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Ditching and Forced Landing

03-09-1

Rev. 28, Jun 04/2021

1. DITCHING AND FORCED LANDING

A. Recommended Configuration

The recommended configuration for safe water landing or safe forced landing is given in the table that follows:

Parameters	Safe Water Landing	Safe Forced Landing
Approach speed	V_{REF}	V_{REF}
Descent rate (if thrust available)	200-300 fpm	200-300 fpm
Landing gear	Retracted	As required
FLAPS	45	45

2. DITCHING OR FORCED LANDING IMMINENT

A. Procedure

- | | |
|---------------------------------|------------|
| (1) L and R PACK switches | OFF |
| (2) EMER DEPRESS switch | ON |
| Just before contact: | |
| (3) EMER DEPRESS switch | Select off |

- | | |
|--|---|
| (4) Thrust levers | SHUT OFF |
| (5) APU, LH ENG and RH ENG FIRE PUSH
switches | Select |
| (6) Water (or terrain) | Contact with minimum forward speed but
not less than stick shaker speed and at
minimum sink rate. |

When the airplane has stopped:

- | | |
|---|-----------------------|
| (7) APU BOTTLE switch | Select, to discharge. |
| (8) Both engine BOTTLE switches | Select, to discharge. |
| (9) Doors and overwing exits | Open |
| (10) Passenger Evacuation procedure | Accomplish |

(Refer to EMERGENCY PROCEDURES –
Evacuation – Passenger Evacuation.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Ditching and Forced Landing

03-09-2

Rev. 28, Jun 04/2021

3. PLANNED DITCHING

A. General Notes, Cautions and Warnings

NOTE

This procedure is intended for use where sufficient time is available.

B. Preliminary

- (1) Descent Plan
- (2) Crew and flight attendants Alert and brief
- (3) Air Traffic Control Notify
- (4) RTU Select transponder code 7700
- (5) ELT switch <Type Spec> or <1092> ON
- (6) PASS SIGNS switches (both) ON
- (7) Loose equipment Secure and stow
- (8) Flight compartment door Unlocked
- (9) GND PROX WARN circuit breaker (1B14) Open
- (10) AUDIO WARNING switches (all) DISABLE
- (11) Survival equipment Check
- (12) Life vest, harness and belts On and tightened

NOTE

- 1. Life vests should be donned but not inflated until outside of the airplane.
- 2. Life vests light plugs should be removed only if ditching at night.

- (13) Shoulder harness Tight and locked
- (14) LDG GEAR lever UP

DOT Approved

Airplane Flight Manual
CSP C-012-219

**Prior to reducing speed below 145 KIAS:**

(15) FLAPS 45

NOTE

If on ADG power:

- The slats/flaps will operate at half speed.
- A momentary loss of ADG power may occur:
 - at 140 KIAS and below, if the slats/flaps are operating.
 - at 108 KIAS and below, if pitch trim is used.

C. Approach**NOTE**

If possible, ditch in the vicinity of rescue vessels, near coastlines or islands.

At approximately 2000 feet AGL:

- (1) Sea conditions and wind direction Determine
- (2) Ditching heading Establish
 - Wind speed < 15 kt: contact parallel to swells.
 - Wind speed between 15 and 45 kt: compromise between wind and swell.
 - Wind speed > 45 kt: land into the wind.
- (3) Descent rate / approach speed Establish
- (4) L and R PACK switches OFF
- (5) PRESS CONT switch MAN
- (6) MAN ALT switch UP
- (7) MAN RATE selector Maximum INCR

When the airplane is completely depressurized:

- (8) BLEED VALVES switch CLSD
- (9) MAN ALT switch DN
- (10) FUEL, L and R BOOST PUMP switches Select off
- (11) APU (if not required) Shut down

At approximately 500 feet AGL:

- (12) Crew and flight attendants Alert that ditching is imminent
- (13) Radio Transmit final position
- (14) Brace for impact Order over PA system



EMERGENCY PROCEDURES Ditching and Forced Landing

03-09-4

Rev. 28, Jun 04/2021

- (15) EMER LTS switchON
- (16) LANDING LTS, LEFT, NOSE and RIGHT switchesON

D. Prior to Water Contact

Just before contact:

- (1) Thrust leversSHUT OFF
- (2) APU, LH ENG and RH ENG FIRE PUSH switchesSelect
- (3) WaterContact with minimum forward speed but not less than stick shaker speed, and at minimum sink rate.

E. After Water Contact

When the airplane has stopped:

- (1) APU BOTTLE switchSelect, to discharge.
- (2) Both engine BOTTLE switchesSelect, to discharge.
- (3) Doors and overwing exitsOpen
- (4) Passenger Evacuation procedureAccomplish

(Refer to EMERGENCY PROCEDURES – Evacuation – Passenger Evacuation.)

4. FORCED LANDING

A. General Notes, Cautions and Warnings

NOTE

This procedure is intended for use where sufficient time is available.

B. Preliminary

- (1) DescentPlan
- (2) Crew and flight attendantsAlert and brief
- (3) Air Traffic ControlNotify
- (4) RTUSelect transponder code 7700
- (5) ELT switch <Type Spec> or <1092>.....ON
- (6) PASS SIGNS switches (both)ON

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Ditching and Forced Landing

03-09-5

Rev. 28, Jun 04/2021

- (7) Loose equipment Secure and stow
- (8) Flight compartment door Unlocked
- (9) GND PROX WARN circuit breaker (1B14) Open
- (10) AUDIO WARNING switches (all) DISABLE
- (11) Survival equipment Check
- (12) Harness and belts On and tightened
- (13) Shoulder harness Tight and locked
- (14) LDG GEAR lever As required
- Prior to reducing speed below 145 KIAS:**
- (15) FLAPS 45

NOTE

If on ADG power:

- The slats/flaps will operate at half speed.
- A momentary loss of ADG power may occur:
 - at 140 KIAS and below, if the slats/flaps are operating.
 - at 108 KIAS and below, if pitch trim is used.

C. Approach

At approximately 2000 feet AGL:

- (1) Landing area conditions and wind direction Determine
- (2) Descent rate / approach speed Establish
- (3) L and R PACK switches OFF
- (4) PRESS CONT switch MAN
- (5) MAN ALT switch UP
- (6) MAN RATE selector Maximum INCR

When the airplane is completely depressurized:

- (7) BLEED VALVES switch CLSD
- (8) FUEL, L and R BOOST PUMP switches Select off
- (9) APU (if not required) Shut down

At approximately 500 feet AGL:

- (10) Crew and flight attendants Alert that forced landing is imminent
- (11) Radio Transmit final position
- (12) Brace for impact Order over PA system

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Ditching and Forced Landing

03-09-6

Rev. 28, Jun 04/2021

- (13) EMER LTS switchON
- (14) LANDING LTS, LEFT, NOSE and RIGHT switchesON

D. Prior to Contact

Just before contact:

- (1) Thrust leversSHUT OFF
- (2) APU, LH ENG and RH ENG FIRE PUSH switchesSelect
- (3) TerrainContact with minimum forward speed, but not less than stick shaker speed, and at minimum sink rate.

E. After Contact

When the airplane has stopped:

- (1) APU BOTTLE switchSelect, to discharge.
- (2) Both engine BOTTLE switchesSelect, to discharge.
- (3) Doors and overwing exitsOpen
- (4) Passenger Evacuation procedureAccomplish

(Refer to EMERGENCY PROCEDURES – Evacuation – Passenger Evacuation.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Evacuation

03-10-1

Rev. 28, Jun 04/2021

1. EVACUATION

A. Passenger Evacuation

This procedure contains the steps required to prepare for passenger evacuation on land and is initiated when a condition potentially endangering life or physical well-being of passengers and crew exists.

Pilot:

- (1) PARKING BRAKE ON
- (2) Evacuation Command
- (3) GND LIFT DUMPING switch MAN DISARM
- (4) Thrust levers SHUT OFF
- (5) Evacuation Initiate using PA system
- (6) APU, LH ENG and RH ENG FIRE PUSH switches Select
- (7) BATTERY MASTER switch OFF

Copilot: On evacuation command

- (8) Air Traffic Control Notify of emergency conditions and intent to evacuate
- (9) EMER DEPRESS switch ON
- (10) EMER LTS (coincident with PA) ON

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Evacuation

03-10-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Electrical

03-11-1

Rev. 28, Jun 04/2021

1. ELECTRICAL

A. EMER PWR ONLY

- (1) STAB TRIM, CH 2 switch Select
- (2) Engine instruments Verify N₁, N₂, ITT

If both engines confirmed failed:

- (3) Double Engine Failure procedure Accomplish
- (Refer to EMERGENCY PROCEDURES –
Power Plant – Double Engine Failure.)

If both engines confirmed operating:

- (3) Cabin altitude Monitor
- (4) GEN 1 and GEN 2 switches OFF/RESET then AUTO
- (5) APU (if available, at 37000 feet and below) Start

If any generator comes on-line, re-establish normal power:

- (6) ADG manual deploy handle Stow
- (7) ADG CONTROL, PWR TXFR OVERRIDE button Select
- (8) CAS messages Review
- (9) Affected systems Restore

If unable to reset at least one generator, continue flight on emergency power only:

- (6) ADG manual deploy handle Check pulled
- (7) R PACK Confirm on
- (8) L PACK OFF
- (9) PRESS CONT switch MAN
 - (a) MAN ALT switch..... As required
 - (b) MAN RATE selector As required
- (10) Leave icing conditions.

NOTE

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the SAT is -40°C (-40°F) or below.

- (11) Land at the nearest suitable airport.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Electrical

03-11-2

Rev. 28, Jun 04/2021

(12) Avoid excessive rudder inputs.

NOTE

The following significant systems are not available when on emergency power only:

- Automatic pressurization,
- Yaw damper 2 and autopilot,
- Inboard ground spoilers and inboard multi-function spoilers,
- Stabilizer trim channel 1, aileron and rudder trims,
- Anti-skid system and nosewheel steering,
- Hydraulic pumps 1B, 2B and 3A,
- PFD 2, MFD 2, VHF COM 2, RTU 2,
- FD 2, VHF NAV 2, ATC 2,
- ADF 2, <2109>
- Radio altimeter 2, <1045>
- Copilot's instrument lights, NAV lights and taxi lights,
- Right probe heaters and ice detector 2,
- Windshield wipers, both windshield heaters and right window heater.
- Below 135 KIAS, AC ESS bus is shed causing the loss of the following:
 - The remaining TRU (ESS TRU 1 or ESS TRU 2),
 - Rudder limiter,
 - XFLOW pump,
 - Left probe heaters and ice detector 1,
 - Left window heater.

During approach – Prior to reducing speed below 145 KIAS:

(13) LDG GEAR lever DN

(14) FLAPS Set for landing

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Electrical

03-11-3

Rev. 28, Jun 04/2021

(15) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
2.30 (130%)	1.80 (80%)

NOTE

If on ADG power:

- The slats/flaps will operate at half speed.
- Momentary loss of ADG power may occur:
 - at 140 KIAS and below, if the slats/flaps are operating.
 - at 108 KIAS and below, if pitch trim is used.

Upon landing:

NOTE

Use the thrust reversers as required during landing.

Do not cycle the brakes.

(16) Brake pedals Depress, apply slowly and steadily

B. Loss of All AC Power

(1) ADG manual deploy handle Pull

If on emergency power:

(2) EMER PWR ONLY procedure Accomplish

(Refer to EMERGENCY PROCEDURES – Electrical – EMER PWR ONLY.)

If battery power only persists:

(2) Engine instruments Verify N₁, N₂, ITT

If engine instruments indicate that engines are not operating:

(3) Double Engine Failure procedure Accomplish

(Refer to EMERGENCY PROCEDURES – Power Plant – Double Engine Failure.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Electrical

03-11-4

Rev. 28, Jun 04/2021

If engine instruments indicate that engines are operating:

- (3) Cabin altitude Monitor
- (4) GEN 1 and GEN 2 switches OFF/RESET then AUTO
- (5) APU (if available, at 37000 feet and below) Start

NOTE

Each APU start attempt consumes approximately six minutes of battery life.

If any generator comes on-line, re-establish normal power:

- (5) ADG manual deploy handle Stow
- (6) ADG CONTROL, PWR TXFR OVERRIDE button Select
- (7) CAS messages Review
- (8) Affected systems Restore

If unable to reset at least one generator, continue flight on battery power only:

NOTE

Electrical power may be lost after 30 minutes.

- (5) STALL PTCT PUSHER switch (left or right) OFF
- (6) R PACK Confirm on
- (7) L PACK OFF
- (8) PRESS CONT switch MAN
 - (a) MAN ALT switch.....As required
 - (b) MAN RATE selector As required
- (9) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Electrical

03-11-5

Rev. 28, Jun 04/2021

(10) Land at the nearest suitable airport.

NOTE

The following significant systems are not available when on battery power only:

- Automatic pressurization,
- Rudder limiter,
- Yaw damper 2 and autopilot,
- Flaps and slats,
- Inboard ground spoilers and inboard multi-function spoilers,
- Both stabilizer trim channels, Mach trim, aileron and rudder trims,
- Anti-skid system and nosewheel steering,
- Normal landing gear extension,
- Hydraulic pumps 1B, 2B, 3A and 3B,
- PFD 2, MFD 2, VHF COM 2, RTU 2,
- FD 2, VHF NAV 2, ATC 2,
- ADF 2, <2109>
- Copilot's instrument lights, NAV lights and taxi lights,
- All TRUs,
- XFLOW pump,
- Probe heaters and ice detectors,
- Windshield wipers, both windshield heaters and both window heaters.

Prior to landing:

(11) Landing Gear Manual Extension procedure Accomplish

(Refer to ABNORMAL PROCEDURES –
Landing Gear, Wheel and Brake System –
Landing Gear Manual Extension.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Electrical

03-11-6

Rev. 28, Jun 04/2021

(12) Final approach speed $V_{REF} (\text{FLAPS } 45) + \Delta V_{REF}$ from the following table:

Flaps Position	ΔV_{REF}		
	0-19	20-24	25
0-7	40	24	24
8-19	30	18	18
20-29	30	12	12
30-44	24	24	8
45	10	10	0

(13) Actual landing distance Increase

Final Approach Speed ΔV_{REF} (kt)	Actual Landing Distance Factor (Without Thrust Reversers)	Actual Landing Distance Factor (With Thrust Reversers)
40	4.00	2.75
30	3.50	2.50
24	3.10	2.40
18	2.95	2.25
12	2.80	2.05
10	2.70	2.05
8	2.65	2.00
0	2.35	1.80



The maximum tire speed (195 knots ground speed) may be exceeded at high OAT and/or high airfield elevation.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Electrical

03-11-7

Rev. 28, Jun 04/2021

After touchdown:

Do not cycle the brakes.

(14) Brake pedals Depress, apply slowly and steadily

NOTE

A slight pitch-up tendency may occur upon selection of reverse thrust.
This can be readily corrected by the application of nose-down elevator
and/or brakes.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



EMERGENCY PROCEDURES
Electrical

03-11-8

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Flight Controls

03-12-1

Rev. 28, Jun 04/2021

1. FLIGHT CONTROLS

A. Aileron System Jammed

- | | |
|-----------------------------------|---|
| (1) Autopilot | Disengage |
| (2) Aileron controls (both) | Release pressure |
| (3) ROLL DISC handle | PULL and TURN to lock |
| (4) Airplane control | Transfer to pilot with operative aileron. |

NOTE

Roll controllability is reduced. The roll disconnect will result in half feel during airplane handling.

- (5) PLT ROLL or CPLT ROLL switch Select operative side

NOTE

If the PLT ROLL or CPLT ROLL switch is not selected within 20 seconds of pulling the ROLL DISC handle, the **SPOILERONS ROLL** caution message will come on.

- (6) Land at the nearest suitable airport.

NOTE

Select the longest runway available with minimum cross-wind and turbulence.

Prior to landing:

- (7) GRND PROX, FLAP switch OVRD
(8) Landing FLAPS 20
(9) Approach speed Not less than V_{REF} (FLAPS 45) + 12 KIAS
(10) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.25 (25%)

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Flight Controls

03-12-2

Rev. 28, Jun 04/2021

B. Elevator System Jammed

- (1) Autopilot Disengage
- (2) Elevator controls (both) Release differential pressure
- (3) PITCH DISC handle PULL and TURN to lock
- (4) Airplane control Transfer to pilot with operative elevator.

- (5) Airspeed Not more than 250 KIAS

NOTE

1. Pitch controllability is reduced. The pitch disconnect will result in half feel during airplane handling.
2. Stick pusher is inoperative, if the right side is jammed.
3. Avoid excessive elevator inputs.
4. **ELEVATOR SPLIT** caution message may be displayed if elevator use is aggressive.

- (6) Land at the nearest suitable airport.

NOTE

Select the longest runway available with minimum cross-wind and turbulence.

Prior to landing:

- (7) GRND PROX, FLAP switch OVRD
- (8) Landing FLAPS 20
- (9) Approach speed Not less than $V_{REF} (\text{FLAPS } 45) + 12 \text{ KIAS}$
- (10) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.25 (25%)

NOTE

A slight pitch-up tendency may occur upon selection of reverse thrust. This can be readily corrected by the application of nose-down elevator and/or brakes.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Flight Controls

03-12-3

Rev. 28, Jun 04/2021

After landing:

If **ELEVATOR SPLIT** caution message was displayed, airplane structure may be compromised and must be inspected for damage.

C. Rudder System Jammed

- | | |
|-----------------------------------|-----------|
| (1) YAW DAMPER, DISC button | Select |
| (2) Rudder pedals | Overpower |

NOTE

1. Rudder may be available at higher pedal forces.
2. Limited travel may be available through the use of the rudder trim.

- (3) Land at the nearest suitable airport.

NOTE

1. If the rudder is jammed out of the neutral position, use aileron and differential thrust to maintain straight flight until touchdown.
2. Select the longest runway available with minimum cross-wind and turbulence.

Prior to landing:

- | | |
|-----------------------------------|--|
| (4) GRND PROX, FLAP switch | OVRD |
| (5) Landing FLAPS | 20 |
| (6) Approach speed | Not less than $V_{REF} (\text{FLAPS } 45) + 12 \text{ KIAS}$ |
| (7) Actual landing distance | Increase |

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.25 (25%)

NOTE

1. After touchdown, use differential braking to maintain directional control, as the airplane will turn in the direction of the jammed rudder.
2. Before using the nosewheel steering tiller, ensure that the nose strut is compressed to prevent nosewheel steering failure.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Flight Controls

03-12-4

Rev. 28, Jun 04/2021

D. Stabilizer Trim Runaway

- Indication: Abnormal / uncommanded change in pitch attitude.
Stabilizer trim changes without pilot input.
Stabilizer trim changes not by system design (Mach trim, flap compensation, etc).
Higher or lower than normal and increasing or decreasing pitch control forces.

(1) Control wheel Assume manual control and override runaway

(2) STAB TRIM DISC switch Select

(3) Airspeed Adjust to minimize out-of-trim condition

NOTE

1. If a pull force is required, increase airspeed. If a push force is required, decrease airspeed.
2. Do not exceed V_{MO}/M_M or minimum maneuvering speed as appropriate.
3. Flight spoilers will reduce airspeed and provide nose-up pitch.
4. Reducing thrust will reduce airspeed and provide nose-up pitch.
5. Autopilot, stabilizer trim and Mach trim are not available.

(4) PASS SIGNS switches (both) ON

(5) Land at the nearest suitable airport.



If control forces are excessive, some relief may be gained by adjusting airspeed or flap position. Increased flap settings generally reduce pull forces for a given airspeed. Decreased airspeed generally reduces push forces for a given flap configuration.

Prior to landing:

(6) GRND PROX, FLAP switch OVRD

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Flight Controls

03-12-5

Rev. 28, Jun 04/2021

- (7) Landing FLAPS 20

NOTE

Control column force gradient is significantly reduced with flap deployment from FLAP 0. The combined effects of reduced approach airspeed, flap configuration and changes to the pitch force gradient with flap selection, make FLAP 20 the recommended landing configuration for both a nose-up and nose-down out-of-trim condition.

- (8) Approach speed Not less than $V_{REF}(\text{FLAPS } 45) + 12 \text{ KIAS}$
(9) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.25 (25%)

WARNING

In the event of a go-around, increasing thrust will increase nose-down forces. Increase thrust slowly to avoid excessive pitch forces.

NOTE

A slight pitch-up tendency may occur upon selection of reverse thrust. This can be readily corrected by the application of nose-down elevator and/or brakes.

E. Stall Recovery

Indication: Aircraft buffet, uncommanded roll, stick shaker activated and/or stall warbler on.

- (1) Autopilot Disengage, if required
(2) Pitch attitude Lower nose to reduce angle of attack
(3) Thrust levers Advance to MAX POWER
(4) Roll attitude Wings level
(5) FLIGHT SPOILER lever RETRACT

After airspeed increases and stall warning goes out:

- (6) Pitch attitude Adjust to minimize altitude loss

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



EMERGENCY PROCEDURES

Flight Controls

03-12-6

Rev. 28, Jun 04/2021

(7) Thrust levers and aircraft configuration Adjust as required.

NOTE

1. It is essential that the AOA be immediately reduced, even if this means a loss of altitude.
2. Avoid abrupt or aggressive pitch control inputs during recovery. Inappropriate recovery inputs can result in a secondary stall.
3. Height loss resulting from high AOA recovery, especially at cruise altitude and/or low initial thrust conditions, can be significant.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Fuel System

03-13-1

Rev. 28, Jun 04/2021

1. FUEL SYSTEM

A. LOW FUEL (Caution Message)

If quantity in either main tank is less than 272 kg (600 lb) or total fuel is less than 544 kg (1200 lb):

- (1) Airplane attitudeNot more than 10 degrees nose up
- (2) Fuel balanceCheck
- (3) Land at the nearest suitable airport.

NOTE

1. Do not attempt go-around.
2. The minimum fuel quantity for go-around is 272 kg (600 lb) per wing (with the airplane level) and assuming a climb attitude of 10 degrees nose up.

If quantity in either main tank is greater than 272 kg (600 lb) or total fuel is greater than 544 kg (1200 lb):

NOTE

In this condition, both fuel collector cells are low.

- (1) Do not climb.
- (2) Fuel balanceCheck
- (3) Land at the nearest suitable airport.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Fuel System

03-13-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Ice and Rain Protection

03-14-1

Rev. 28, Jun 04/2021

1. ICE AND RAIN PROTECTION

A. WING OVHT

(1) Affected side Determine

(2) WING A/I CROSS BLEED switch Select non-affected side

If after 40 seconds, WING OVHT warning message persists:

(3) ANTI-ICE, WING switch OFF

(4) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

B. ANTI-ICE DUCT

(1) ANTI-ICE, WING switch OFF and confirm **ANTI-ICE DUCT** warning message goes out.

(2) Leave icing conditions.

WARNING

Even small accumulations of ice on the wing leading edge can change the stall speed or stall characteristics or the warning margins provided by the stall protection system.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

After leaving icing conditions, and if ice accumulation is observed on the heated portion of the wing leading edge:

(3) Airspeed Increase to V_{MO}/M_{MO} to disperse ice, if possible.

If ice accumulation persists:

(4) ANTI-ICE, WING switch ON

When ANTI-ICE DUCT warning message comes on:

(5) ANTI-ICE, WING switch OFF

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Ice and Rain Protection

03-14-2

Rev. 28, Jun 04/2021

Ice accumulation persists, repeat steps (4) and (5), as required (maximum 5 times).

If it is impossible to remove ice from the wing leading edge and in order to assure adequate stall margin:

(6) Maneuvering speed Not less than 200 KIAS

Prior to landing:

(7) GRND PROX, FLAP switch OVRD

(8) Landing FLAPS 20

(9) Approach speed Not less than V_{REF} (FLAPS 45) + 25 KIAS

NOTE

The landing distance factors that follow are based upon an ice accumulation and FLAPS 20 landing.

(10) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.50 (50%)	1.40 (40%)

NOTE

A slight pitch-up tendency may occur upon selection of reverse thrust. This can be readily corrected by the application of nose-down elevator and/or brakes.

C. L COWL A/I DUCT or R COWL A/I DUCT

(1) ANTI-ICE, LH or RH COWL switch Affected side OFF

(2) Leave icing conditions to prevent ice accumulation on inoperative cowl.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

If L COWL A/I DUCT or R COWL A/I DUCT warning message persists:

(3) BLEED SOURCE switch Select non-affected side

(4) ISOL switch CLSD

(5) BLEED VALVES switch MANUAL

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Ice and Rain Protection

03-14-3

Rev. 28, Jun 04/2021

- (6) Affected PACK switch OFF

NOTE <2111>

Airplane altitude not above 25000 feet during single pack operations.

- (7) WING A/I CROSS BLEED switch Select non-affected side

If L COWL A/I DUCT or R COWL A/I DUCT warning message still persists:

- (8) Single Engine Procedure, In-flight Engine
Shutdown Accomplish

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – In-flight Engine
Shutdown.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Ice and Rain Protection

03-14-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Landing Gear, Wheel and Brake System

03-15-1

Rev. 28, Jun 04/2021

1. LANDING GEAR, WHEEL AND BRAKE SYSTEM

A. MLG BAY OVHT

- | | |
|--------------------------|------------------------|
| (1) Airspeed | Not more than 220 KIAS |
| (2) LDG GEAR lever | DN |

- | | |
|---------------------------|---------|
| (3) BTMS indicators | Monitor |
|---------------------------|---------|

If MLG BAY OVHT warning message goes out and all BTMS indicators are displaying 06 or less:

- | | |
|---------------------------------------|------------------------|
| (4) BTMS OVHT WARN RESET button | Select |
| (5) Airspeed | Not more than 200 KIAS |
| (6) LDG GEAR lever | UP |

If MLG BAY OVHT warning message persists:

- | |
|---|
| (4) Land at the nearest suitable airport. |
|---|

B. BRAKE OVHT

During flight:

- | | |
|--------------------------|------------------------|
| (1) Airspeed | Not more than 220 KIAS |
| (2) LDG GEAR lever | DN |

- | | |
|---------------------------|---------|
| (3) BTMS indicators | Monitor |
|---------------------------|---------|

If all BTMS indicators are decreasing:

- | | |
|---------------------------------------|--------------------------------------|
| (4) BTMS indicators | Continue to monitor until 14 or less |
| (5) BTMS OVHT WARN RESET button | Select |
| (6) BTMS indicators | Continue to monitor until 06 or less |
| (7) Airspeed | Not more than 200 KIAS |
| (8) LDG GEAR lever | UP |

If the brake overheat condition persists:

- | |
|---|
| (4) Land at the nearest suitable airport. |
|---|

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Landing Gear, Wheel and Brake System

03-15-2

Rev. 28, Jun 04/2021

On the ground:

- (1) Brakes Minimize

NOTE

Use thrust reversers or shut down one engine to minimize brake usage.

- (2) Do not take-off.



Suspect fire. There is a potential that the wheel fuse plug may release. Keep personnel clear of the wheel bay area until the brake temperatures have cooled down.

C. GEAR DISAGREE

Gear UP Disagree:

- (1) Airspeed Not more than 200 KIAS
(2) HYDRAULIC 3B pump switch ON
(3) LDG GEAR lever DN
(4) N/W STRG switch Select OFF then ARMED

NOTE

Cycle the N/W STRG switch from ARMED to OFF and back to ARMED to enable nosewheel steering monitoring.

- (5) Land at the nearest suitable airport.

If GEAR DISAGREE warning message persists:

- (6) Gear DN Disagree procedure Accomplish
(Refer to "Gear DN Disagree", in this paragraph.)

Gear DN Disagree:

- (1) Airspeed Not more than 200 KIAS
(2) HYDRAULIC 3B pump switch ON
(3) LDG GEAR lever UP then DN

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Landing Gear, Wheel and Brake System

03-15-3

Rev. 28, Jun 04/2021

If GEAR DISAGREE warning message persists:

- (4) HYDRAULIC 2 pump switch ON
- (5) LDG GEAR lever Confirm DN
- (6) LANDING GEAR MANUAL RELEASE handle Pull to full extension



Nosewheel steering may not be available upon landing.

If any landing gear fails to down and lock following manual release attempt:

- (7) Landing Gear Up / Unsafe Landing Procedure Accomplish
- (Refer to EMERGENCY PROCEDURES –
Landing Gear, Wheel and Brake System –
Landing Gear Up / Unsafe Landing
Procedure.)

D. LDG GEAR Lever Jammed in the UP Position

- (1) Airspeed Not more than 220 KIAS
- (2) HYDRAULIC 2 pump switch ON
- (3) LANDING GEAR MANUAL RELEASE handle Pull to full extension



Nosewheel steering will not be available upon landing.

NOTE

The **GEAR DISAGREE** warning message will appear with the LDG GEAR lever jammed in the UP position, and the landing gear down. Disregard the GEAR DISAGREE emergency procedure under this condition.

- (4) N/W STRG switch OFF

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Landing Gear, Wheel and Brake System

03-15-4

Rev. 28, Jun 04/2021

If any landing gear fails to down and lock following manual release attempt:

- (5) Landing Gear Up / Unsafe Landing Procedure Accomplish
(Refer to EMERGENCY PROCEDURES –
Landing Gear, Wheel and Brake System –
Landing Gear Up / Unsafe Landing
Procedure.)

E. Landing Gear Up / Unsafe Landing Procedure

PRELIMINARY

- (1) Descent Plan

NOTE

Reduce fuel to the minimum, if possible, while retaining sufficient fuel for a controlled, powered approach.

PREPARATION

NOTE

1. **If one main landing gear is up or unsafe**, hold applicable wing up for as long as possible. Maintain directional control with rudder and nosewheel steering (if considered safe). When wing touches the ground, apply asymmetrical braking for directional control.
2. **If nose landing gear is up or unsafe**, trim stabilizer nose-up after touchdown. Gently lower the nose before elevator effectiveness is lost.
3. **If all wheels are up or unsafe**, perform a nose high attitude touchdown but do not reduce touchdown speed below stick shaker speed.
4. **If both main landing gear cannot be locked down**, consideration should be given to landing with all wheels up.

- (1) Crew and flight attendants Alert and brief

NOTE

The briefing should include the type of emergency, time available, airplane attitude after landing and exits available for use.

- (2) Air Traffic Control Notify
(3) PASS SIGNS switches (both) ON
(4) Loose equipment Secure

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



EMERGENCY PROCEDURES

Landing Gear, Wheel and Brake System

03-15-5

Rev. 28, Jun 04/2021

- (5) GND PROX WARN circuit breaker (1B14) Open
- (6) AUDIO WARNING switches (all) DISABLE
- (7) Flight compartment door Unlocked
- (8) Shoulder harness Tight and locked
- (9) Plan to land with FLAPS 45.

NOTE

If two hydraulic systems failed, plan to land with FLAPS 20.

APPROACH

- (1) L and R PACK switches OFF
- (2) PRESS CONT switch MAN
- (3) MAN ALT switch UP

When the airplane is completely depressurized:

- (4) BLEED VALVES switch CLSD
- (5) EMER LTS switch ON

At approximately 500 feet AGL:

- (6) Brace for impact Order over PA system

BEFORE TOUCHDOWN

- (1) APU FIRE PUSH switch Select
- (2) Airplane attitude Maintain nose high attitude.

NOTE

Ground/landing field contact should be accomplished using minimum forward speed, but not less than stick shaker speed, and at a minimum sink rate.

AFTER LANDING

If the landing gear has collapsed or failed to extend:

- (1) Thrust levers SHUT OFF
- (2) LH ENG and RH ENG FIRE PUSH switches Select
- (3) Passenger Evacuation procedure As required

(Refer to EMERGENCY PROCEDURES –
Evacuation – Passenger Evacuation.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Landing Gear, Wheel and Brake System

03-15-6

Rev. 28, Jun 04/2021

If the landing gear has not collapsed (remains extended):

- (1) HYDRAULIC 2 and 3B pump switchesON
(both)
- (2) Landing gear locking pinsInstall

F. PARKING BRAKE

- (1) PARKING BRAKE handleCheck released

If PARKING BRAKE warning message persists:

Prior to landing:

NOTE

The following landing distance factors are based upon both anti-skid systems inoperative.

- (2) Actual landing distanceIncrease

Without Thrust Reversers	With Thrust Reversers
2.10 (110%)	1.75 (75%)



Extreme caution is required during braking to avoid tire damage or blowout. Maximize use of reverse thrust.

G. During Landing – Excessive Asymmetry or Loss of Braking

- (1) Wheel brakesRelease momentarily
- (2) ANTI-SKID switchOFF
- (3) Wheel brakesRe-apply, as required



Extreme caution is required during braking to avoid tire damage or blowout. Maximize use of reverse thrust.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Landing Gear, Wheel and Brake System

03-15-7

Rev. 28, Jun 04/2021

H. NOSE DOOR OPEN

- (1) Airspeed Not more than 220 KIAS
- (2) Land at the nearest suitable airport.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



EMERGENCY PROCEDURES
Landing Gear, Wheel and Brake System

03-15-8

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Passenger Door

03-16-1

Rev. 28, Jun 04/2021

1. PASSENGER DOOR

A. PASSENGER DOOR

WARNING

Door failure may be indicated by a loud noise, pressurization leak or rumble emanating from the door area. If any of these indications are present, do not approach the door.

- (1) PASS SIGNS switches (both)ON
- (2) DescentInitiate to 10000 feet MSL or lowest safe altitude, whichever is higher.

NOTE

- 1. Prepare to land at the nearest suitable airport.
 - 2. Accomplish Emergency Descent Procedure, if required. (Refer to EMERGENCY PROCEDURES – Air-conditioning and Pressurization – CABIN ALT (Warning Message) or Emergency Descent Procedure.)
-
- (3) PRESS CONT switchMAN
 - (4) MAN ALT switchUP
 - (5) MAN RATE selectorMaximum INCR
 - (6) Land at the nearest suitable airport.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



EMERGENCY PROCEDURES
Passenger Door

03-16-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Aural/Visual Warning System

03-17-1

Rev. 28, Jun 04/2021

1. AURAL/VISUAL WARNING SYSTEM

A. Configuration Warning

- | | |
|--------------------|-------------------------|
| (1) Take-off | Discontinue immediately |
|--------------------|-------------------------|

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



EMERGENCY PROCEDURES
Aural/Visual Warning System

03-17-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Hydraulic Power

03-18-1

Rev. 28, Jun 04/2021

1. HYDRAULIC POWER

Effectivity:

- Airplanes 15001 thru 15199, 15202, 15204 **not incorporating** the following Service Bulletin:
 - SB 670BA-29-005 – Hydraulic Systems No. 1 and No. 2 – Installation of the Hydraulic Thermal Fuses (SFAR 88).

A. HYD 1 HI TEMP (Caution Message)

- | | |
|-----------------------------------|------------------------|
| (1) L HYD SOV switch | CLOSED |
| (2) HYDRAULIC synoptic page | Check L HYD SOV closed |
| (3) System 1 temperature | Monitor |

NOTE

No action is required for the **HYD 1 LO PRESS** caution message, continue HYD 1 HI TEMP procedure until landing.

If system 1 temperature is increasing or L HYD SOV remains open:

- | | |
|--|---|
| (4) Left engine thrust lever | Confirm and IDLE |
| (5) Left engine thrust lever | Confirm and SHUT OFF |
| (6) FUEL, L BOOST PUMP switch | Confirm and select off |
| (7) WING A/I CROSS BLEED switch | FROM RIGHT |
| (8) ANTI-ICE, LH COWL switch | OFF |
| (9) HYDRAULIC 1 pump switch | OFF |
| (10) APU (if available, at 37000 feet and below) | Start |
| (11) Fuel system | Check <ul style="list-style-type: none">• Cross-flow• Quantity/balance AUTO
Check |

NOTE

Leave icing conditions to prevent ice accumulation on the engine cowl with the inoperative anti-icing system.

- | | |
|--|------------------------------------|
| (12) Airspeed | Not more than 280 KIAS |
| (13) FLIGHT CONTROLS synoptic page and HYDRAULIC synoptic page | Select and review affected systems |
| (a) OB FLT SPLRS caution message on: <ul style="list-style-type: none">• FLIGHT SPOILER lever• Airplane altitude <1071>..... | RETRACT
No restriction |

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Hydraulic Power

03-18-2

Rev. 28, Jun 04/2021

(b) **OB GND SPLRS** and **OB SPOILERONS** caution messages on:

- No action required.

(14) Land at the nearest suitable airport.

Prior to landing:

(15) GRND PROX, FLAP switch OVRD

(16) LH THRUST REVERSER switch OFF

(17) Landing FLAPS 20

(18) Approach speed Not less than V_{REF} (FLAPS 45) + 12 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the outboard multi-function spoilers, outboard ground spoilers, left thrust reverser and left engine inoperative.

(19) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.45 (45%)	1.40 (40%)



An asymmetric thrust condition will exist, using the thrust reverse system with the left thrust reverser not operating. Rudder control assistance (on ground) at high speed will be required to maintain directional control.

If system 1 temperature is not increasing and L HYD SOV is closed:

(4) HYDRAULIC 1 pump switch ON

If system 1 temperature is equal to or greater than 96°C or HYD 1 LO PRESS caution message is ON:

(5) HYDRAULIC 1 pump switch OFF

(6) FLIGHT CONTROLS synoptic page and HYDRAULIC synoptic page Select and review affected systems

(a) **OB FLT SPLRS** caution message on:

- FLIGHT SPOILER lever RETRACT
- Airplane altitude <1071> No restriction

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Hydraulic Power

03-18-3

Rev. 28, Jun 04/2021

- (b) **OB GND SPLRS** and **OB SPOILERONS** caution messages on:

- No action required.

(7) Land at the nearest suitable airport.

Prior to landing:

- (8) GRND PROX, FLAP switch OVRD
(9) LH THRUST REVERSER switch OFF
(10) Landing FLAPS 20
(11) Approach speed Not less than V_{REF} (FLAPS 45) + 12 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the outboard multi-function spoilers, outboard ground spoilers, and left thrust reverser.

(12) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.45 (45%)	1.40 (40%)



An asymmetric thrust condition will exist, using the thrust reverse system with the left thrust reverser not operating. Rudder control assistance (on ground) at high speed will be required to maintain directional control.

If system 1 temperature is less than 96°C and HYD 1 LO PRESS caution message is OFF:

- (5) HYDRAULIC 1 pump switch OFF
(6) FLIGHT CONTROLS synoptic page and HYDRAULIC synoptic page Select and review affected systems
- (a) **OB FLT SPLRS** caution message on:
- FLIGHT SPOILER lever RETRACT
 - Airplane altitude <1071> No restriction
- (b) **OB GND SPLRS** and **OB SPOILERONS** caution messages on:
- No action required.

Prior to landing:

(7) HYDRAULIC 1 pump switch AUTO

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Hydraulic Power

03-18-4

Rev. 28, Jun 04/2021

(8) System 1 temperature Monitor

Effectivity:

- Airplanes 15001 thru 15199, 15202, 15204 **not incorporating** the following Service Bulletin:
 - SB 670BA-29-005 – Hydraulic Systems No. 1 and No. 2 – Installation of the Hydraulic Thermal Fuses (SFAR 88).

B. HYD 2 HI TEMP (Caution Message)

- | | |
|-----------------------------------|------------------------|
| (1) R HYD SOV switch | CLOSED |
| (2) HYDRAULIC synoptic page | Check R HYD SOV closed |
| (3) System 2 temperature | Monitor |

NOTE

No action is required for the **HYD 2 LO PRESS** caution message, continue **HYD 2 HI TEMP** procedure until landing.

If system 2 temperature is increasing or R HYD SOV remains open:

- | | |
|--|---|
| (4) Right engine thrust lever | Confirm and IDLE |
| (5) Right engine thrust lever | Confirm and SHUT OFF |
| (6) FUEL, R BOOST PUMP switch | Confirm and select off |
| (7) WING A/I CROSS BLEED switch | FROM LEFT |
| (8) ANTI-ICE, RH COWL switch | OFF |
| (9) HYDRAULIC 2 pump switch | OFF |
| (10) APU (if available, at 37000 feet and below) | Start |
| (11) Fuel system | Check <ul style="list-style-type: none">• Cross-flow• Quantity/balance AUTO
Check |

NOTE

Leave icing conditions to prevent ice accumulation on the engine cowl with the inoperative anti-icing system.

- | | |
|---------------------|------------------------|
| (12) Airspeed | Not more than 280 KIAS |
|---------------------|------------------------|

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Hydraulic Power

03-18-5

Rev. 28, Jun 04/2021

- (13) FLIGHT CONTROLS synoptic page and HYDRAULIC synoptic page Select and review affected systems
- (a) **IB FLT SPLRS** caution message on:
- FLIGHT SPOILER lever RETRACT
 - Airplane altitude <1071> No restriction
- (b) **OB BRAKE PRESS** and/or **IB SPOILERONS** caution message(s) on:
- No action required.
- (c) LG ALT EXT affected:
- No action required.

(14) Land at the nearest suitable airport.

Prior to landing:

- (15) Brake pressure Check

NOTE

Brake pressure may continue to deplete. Monitor brake pressure until commencing the approach to adjust maximum landing weight if required.

If the brake pressure is equal to or greater than 1800 psi for outboard brakes:

- (16) Proceed to step (17).

If the brake pressure is less than 1800 psi for outboard brakes:

- (16) Maximum landing weight Determine using [Figure 03-18-1](#) and correct for wind and slope.
- (17) GRND PROX, FLAP switch OVRD
- (18) RH THRUST REVERSER switch OFF
- (19) Landing FLAPS 20
- (20) Approach speed Not less than V_{REF} (FLAPS 45) + 12 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the inboard multi-function spoilers, outboard brakes, right thrust reverser and right engine inoperative.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Hydraulic Power

03-18-6

Rev. 28, Jun 04/2021

(21) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.90 (90%)	1.75 (75%)



1. An asymmetric thrust condition will exist, using the thrust reverse system with the right thrust reverser not operating. Rudder control assistance (on ground) at high speed will be required to maintain directional control.
2. Anticipate the loss of outboard brakes during landing when the system 2 brake accumulator depressurizes.

(22) Use a steady brake application upon landing. Do not cycle the brakes.

If system 2 temperature is not increasing and R HYD SOV is closed:

(4) HYDRAULIC 2 pump switch ON

If system 2 temperature is equal to or greater than 96°C or HYD 2 LO PRESS caution message is ON:

(5) HYDRAULIC 2 pump switch OFF

(6) FLIGHT CONTROLS synoptic page and HYDRAULIC synoptic page Select and review affected systems

(a) **IB FLT SPLRS** caution message on:

- FLIGHT SPOILER lever RETRACT
- Airplane altitude <1071> No restriction

(b) **OB BRAKE PRESS** and/or **IB SPOILERONS** caution message(s) on:

- No action required.

(c) LG ALT EXT affected:

- No action required.

(7) Land at the nearest suitable airport.

Prior to landing:

(8) Brake pressure Check

NOTE

Brake pressure may continue to deplete. Monitor brake pressure until commencing the approach to adjust maximum landing weight if required.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Hydraulic Power

03-18-7

Rev. 28, Jun 04/2021

If the brake pressure is equal to or greater than 1800 psi for outboard brakes:

- (9) Proceed to step (10).

If the brake pressure is less than 1800 psi for outboard brakes:

- (9) Maximum landing weight Determine using [Figure 03-18-1](#)
and correct for wind and slope.
- (10) GRND PROX, FLAP switch OVRD
- (11) RH THRUST REVERSER switch OFF
- (12) Landing FLAPS 20
- (13) Approach speed Not less than V_{REF} (FLAPS 45) + 12 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the inboard multi-function spoilers, outboard brakes, and right thrust reverser.

- (14) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.90 (90%)	1.75 (75%)



1. An asymmetric thrust condition will exist, using the thrust reverse system with the right thrust reverser not operating. Rudder control assistance (on ground) at high speed will be required to maintain directional control.
2. Anticipate the loss of outboard brakes during landing when the system 2 brake accumulator depressurizes.

- (15) Use a steady brake application upon landing. Do not cycle the brakes.

If system 2 temperature is less than 96°C and HYD 2 LO PRESS caution message is OFF:

- (5) HYDRAULIC 2 pump switch OFF

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Hydraulic Power

03-18-8

Rev. 28, Jun 04/2021

- (6) FLIGHT CONTROLS synoptic page and HYDRAULIC synoptic page Select and review affected systems
- (a) **IB FLT SPLRS** caution message on:
- FLIGHT SPOILER lever RETRACT
 - Airplane altitude <1071>..... No restriction
- (b) **OB BRAKE PRESS** and/or **IB SPOILERONS** caution message(s) on:
- No action required.
- (c) LG ALT EXT affected:
- No action required.

Prior to landing:

- (7) HYDRAULIC 2 pump switch AUTO
- (8) System 2 temperature Monitor

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Hydraulic Power

03-18-9

Rev. 28, Jun 04/2021

OAT		Airport Pressure Altitude (Feet)					
		0	2000	4000	6000	8000	10000
°C	°F	Landing Weight kg (lb) Due to Maximum Brake Energy					
		-40	38270 (84371)	36765 (81053)	35324 (77876)	33952 (74852)	32611 (71894)
-20	-4	36577 (80638)	35177 (77553)	33821 (74562)	32499 (71649)	31208 (68803)	29943 (66013)
0	32	35063 (77300)	33754 (74414)	32461 (71564)	31192 (68767)	29954 (66037)	28739 (63359)
20	68	33725 (74350)	32466 (71576)	31235 (68861)	30022 (66187)	28829 (63558)	27660 (60981)
40	104	32519 (71693)	31305 (69015)	30118 (66400)	28958 (63841)	27800 (61290)	26665 (58786)

CRJ900_ABN_LAND_WT_MBE_F20_SINGLE_HYDR_FAIL_FS_30JAN2013

Wind Corrections:

Headwind: increase maximum landing weight by 1000 kg (2200 lb) per 10 kts of headwind
Tailwind: decrease maximum landing weight by 4400 kg (9700 lb) per 10 kts of tailwind

Runway Slope Corrections:

Uphill: increase maximum landing weight by 600 kg (1325 lb) per 1% uphill slope
Downhill: decrease maximum landing weight by 800 kg (1765 lb) per 1% downhill slope

Maximum Landing Weight Limited by Maximum Brake Energy – Single Hydraulic System Failure
Figure 03-18-1

NOTE

The actual landing weight must not exceed the corrected maximum landing weight due to brake energy.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Hydraulic Power

03-18-10

Rev. 28, Jun 04/2021

C. HYD 2 LO PRESS and HYD 3 LO PRESS (Caution Messages)

- (1) HYDRAULIC pump switches (all)ON
- (2) Systems 2 and 3 hydraulic pressureMonitor

If system 2 and 3 pressure is equal to or greater than 1800 psi:

- (3) No further action required.

If system 2 and 3 pressure is less than 1800 psi:

- (3) HYDRAULIC 2, 3A and 3B pump switchesOFF
- (4) R HYD SOV switchCLOSED
- (5) FLIGHT CONTROLS synoptic page and HYDRAULIC synoptic pageSelect and review affected systems
 - (a) **IB FLT SPLRS** caution message on:
 - FLIGHT SPOILER leverRETRACT
 - Airplane altitude <1071>.....No restriction
 - (b) **OB BRAKE PRESS** and/or **IB SPOILERONS, IB GND SPLRS, IB BRAKE PRESS** caution message(s) on:
 - No action required.
 - (c) RH aileron will upfloat:
 - Use aileron trim as required to compensate.
- (6) Land at the nearest suitable airport.

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Hydraulic Power

03-18-11

Rev. 28, Jun 04/2021

WARNING

The nosegear will not extend during the landing gear manual extension procedure with both **HYD 2 LO PRESS** and **HYD 3 LO PRESS** caution messages displayed.

NOTE

1. Flight path control is limited with hydraulic systems 2 and 3 failed.
2. Select the longest runway available with minimum cross-wind and turbulence.
3. Rudder control is adequate for normal flight and should be used in coordination with aileron, if necessary, during turns.

(7) Descent Plan

NOTE

1. Reduce fuel to the minimum, if possible, while retaining sufficient fuel for a controlled, powered approach.
2. With nose landing gear up, trim stabilizer nose-up after touchdown. Gently lower the nose before elevator effectiveness is lost.

(8) Crew and flight attendants Alert and brief

NOTE

The briefing should include the type of emergency, time available, airplane attitude after landing and exits available for use.

(9) Air Traffic Control Notify

(10) PASS SIGNS switches (both) ON

(11) Loose equipment Secure

(12) GND PROX WARN circuit breaker (1B14) Open

(13) AUDIO WARNING switches (all) Disable

(14) Flight compartment door Unlocked

(15) Shoulder harness Tight and Locked

Prior to landing:

(16) RH THRUST REVERSER switch OFF

(17) ANTI-SKID switch OFF

(18) Landing FLAPS 20

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Hydraulic Power

03-18-12

Rev. 28, Jun 04/2021

- (19) LDG GEAR lever DN
(20) LANDING GEAR MANUAL RELEASE handle Pull to full extension

NOTE

The landing gear extension relies upon the free fall following a landing gear alternate extension. Side slip may be required for the main landing gear to achieve down-lock

- (21) Approach speed Not less than V_{REF} (FLAPS 45) + 12 KIAS



1. An asymmetric thrust condition will exist, using the thrust reverse system with the right thrust reverser not operating. Rudder control assistance (on ground) at high speed will be required to maintain directional control.
2. Anticipate the loss of inboard and outboard brakes when the system 2 and 3 brake accumulators depressurize.
3. A steady brake application is recommended upon landing. Do not cycle the brakes. Avoid hard braking.

During approach:

- (22) L and R PACK switch OFF
(23) PRESS CONT switch MAN
(24) MAN ALT switch UP

When the airplane is completely depressurized:

- (25) BLEED VALVES switch CLSD
(26) EMER LTS switch ON

At approximately 500 feet AGL:

- (27) Brace for impact Order over PA system

Before touchdown:

- (28) APU FIRE PUSH switch Select

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES Hydraulic Power

03-18-13

Rev. 28, Jun 04/2021

(29) Airplane attitude Maintain nose high attitude.

NOTE

Ground/landing field contact should be accomplished using minimum forward speed, but not less than stick shaker speed, and at a minimum sink rate.

After landing:

- (30) Thrust levers SHUT OFF
(31) LH ENG and RH ENG FIRE PUSH switches Select
(32) Passenger Evacuation procedure As required

(Refer to EMERGENCY PROCEDURES –
Evacuation – Passenger Evacuation.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Hydraulic Power

03-18-14

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Unreliable Airspeed

03-19-1

Rev. 28, Jun 04/2021

1. UNRELIABLE AIRSPEED

A. Unreliable Airspeed In-flight

- Indication:
- Pitch attitude, thrust setting or external noise not consistent with indicated airspeed.
 - Loss of multiple airspeed indication.
 - Multiple airspeed indications remain constant regardless of pitch or thrust adjustments.
 - Airspeed difference between primary flight displays is more than 10 KIAS and/or more than 15 KIAS between any primary flight display and ISI and no reliable airspeed source can be determined.

NOTE

1. Autopilot may not be available.
2. No crew action is required for the following messages:
 - Caution messages: **EFIS COMP MON** with amber IAS flag, **EFIS COMP INOP** with red IAS flag, **STALL FAIL**, **MACH TRIM**, **RUD LIMITER**.
 - Status messages: **RUD LIMIT FAULT**, **L FADEC FAULT 2**, **R FADEC FAULT 2**.

- | | |
|----------------------------------|-----------|
| (1) Autopilot | Disengage |
| (2) FDs | Deselect |
| (3) Use ISI for pitch reference. | |

Initial take-off climb or go-around is required:

- | | |
|----------------------------------|--|
| (4) Pitch/N ₁ | 10 degrees/TOGA from SL to 15000 ft;
5 degrees/CLB above 15000 ft |
| (5) Aircraft configuration | At clean up altitude Gear UP / FLAPS 0 |
| (6) Airplane altitude | Maintain lowest safe altitude or higher |



Respect stall warning/stick shaker.

- (7) Set and monitor pitch and roll using PFD. <1025> or <1100>

At desired altitude:

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Unreliable Airspeed

03-19-2

Rev. 28, Jun 04/2021

(8) Pitch/N₁ Set as per Table A – Level Flight – FLAPS 0

(9) STALL PTCT, PUSHER switch (left or right) OFF



1. Do not use any FD/autopilot SPEED mode.
2. Rudder travel limits may be inappropriate for phase of flight. For cruise and descent flight, avoid excessive rudder inputs. For approach, landing and go-around flight, differential thrust and aileron input may be required to assist in maintaining directional control. Select the longest runway available with minimum crosswind and turbulence.

(10) Flight Director PTCH/ROLL or HDG modes

(11) Autopilot Engage (if available)

NOTE

1. Airspeed Trend Vector, Ground Speed indications and FMS time and fuel prediction information may not be reliable.
 2. ILS/LOC/VOR course deviation indicator information are reliable.
 3. Disengage MACH TRIM if erratic stabilizer motion is observed.
 4. Select the affected AUDIO WARNING switch to DISABLE if overspeed warning sounds.
 5. Rudder Travel Limiter (RTL) display on EICAS synoptic will display actual RTL limits even if RTL limit indicators (goal posts) are amber. These limits may be inappropriate for the phase of flight.
 6. Altitude, Mode C and TCAS may be in error by up to 600 feet.
- (12) Leave current environmental conditions if they are considered to be a reason for unreliable airspeed. Refer to "PITCH / THRUST TARGETS" Tables B or C as required for climb or descent.
- (13) ANTI-ICE, LH and RH COWL switches As required
- (14) ANTI-ICE, WING switch As required

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Unreliable Airspeed

03-19-3

Rev. 28, Jun 04/2021

Evaluate indicated airspeed sources as following:



Airspeed should be considered reliable only if the following conditions exist:

1. Airspeed indication is consistent with pitch, thrust and airspeed range from "PITCH / THRUST TARGETS" Table A, B, C or D.
2. Airspeed indication changes and speed trend vector is consistent with pitch and thrust adjustments.

(15) AIR DATA source selector Select to NORM

(16) Both PFDs and ISI Compare airspeed to expected speed range from Table A.

(17) Determine which of the following conditions apply:

- If no indicated airspeed is considered reliable, proceed to step (18).
- If one or more airspeed source is considered reliable, proceed to step (23).

(18) NO RELIABLE AIRSPEED SOURCE

(19) Airspeed Indications Disregard

(20) Pitch/N₁ Set using Table A, B, C, D, or E as appropriate for phase of flight.

(21) Land at the nearest suitable airport.

(22) When ready to start descent, proceed to step (29).

(23) ONE OR MORE AIRSPEED SOURCE IS CONSIDERED RELIABLE

(24) AIR DATA source selector Confirm NORM

(25) Reliable airspeed source MONITOR WITH CAUTION

(26) Pitch/N₁ Set using Table A, B, C, D or E as appropriate for phase of flight and continue to monitor reliable airspeed source and airspeed range.



1. Disregard airspeed indication if at any time it becomes unreliable.
2. AIR DATA source selector must remain in NORM position.

(27) Land at the nearest suitable airport.

(28) When ready to start descent, proceed to step (29).

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Unreliable Airspeed

03-19-4

Rev. 28, Jun 04/2021

(29) Descent Initiate when ready



To avoid significant flap overspeed and flap damage:

1. Transition from FLAPS 0 to FLAPS 30 must be accomplished in level flight.
2. Select FLAPS 45 at the start of final descent on the glideslope/glidepath.

NOTE

Plan to intercept a long final to allow time to re-configure for approach/landing and set pitch/N₁.

(30) Unreliable aircraft systems Review

- Enhanced ground proximity warning, <2040>
- Windshear detection,
- Flap overspeed,
- Automatic function of passenger signs.

(31) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.25 (25%)	1.20 (20%)

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Unreliable Airspeed

03-19-5

Rev. 28, Jun 04/2021

Flight Technique:
Set thrust and pitch to target, then adjust pitch to maintain required altitude or path:

- Allow sufficient time to stabilize altitude or path between pitch adjustments.
- If still descending below desired altitude or path, INCREASE pitch using 0.5-degree increments.
- If still climbing above desired altitude or path, DECREASE pitch using 0.5-degree increments.
- If displayed, VSI can be used to monitor required altitude or path.

NOTE

1. Initial pitch target is for reference only. See Flight Technique to adjust pitch as required up to a maximum of +/- 1.5 degrees.
2. If pitch is increased, REDUCE expected speed range by $\Delta \text{KIAS}/\Delta \text{Mach}$.
3. If pitch is decreased, INCREASE expected speed range by $\Delta \text{KIAS}/\Delta \text{Mach}$.

Table A – LEVEL FLIGHT – FLAPS 0

ALT (ft)	EXPECTED SPD RANGE KIAS/Mach	EXPECTED SPD CHANGE FOR 0.5 DEGREE CHANGE IN PITCH $\Delta \text{KIAS}/\Delta \text{Mach}$	Weight kg (lb) Pitch (degree)/Initial Thrust (%N1)						
			20412 (45000)	22680 (50000)	24948 (55000)	27216 (60000)	29484 (65000)	31751 (70000)	34019 (75000)
40000 .70 - .81	205 - 250/ 5/0.01	0.5 / 79.6	1.0 / 80.6	1.0 / 81.6	1.0 / 82.7	1.0 / 84.3	1.0 / 85.6	... / / ...
35000 .69 - .81	225 - 280/ 5/0.01	0.0 / 78.2	0.0 / 78.9	0.5 / 79.6	0.5 / 80.3	0.5 / 81.1	1.0 / 82.0	1.0 / 82.9	1.0 / 84.1
30000 250 - 290 10	-0.5 / 77.6	-0.5 / 78.0	0.0 / 78.4	0.0 / 79.0	0.5 / 79.6	0.5 / 80.4	1.0 / 81.2	1.0 / 81.8	1.5 / 82.7
25000 250 - 290 10	-1.0 / 74.0	-0.5 / 74.5	0.0 / 74.9	0.0 / 75.5	0.5 / 76.2	0.5 / 76.9	1.0 / 77.8	1.0 / 78.5	1.5 / 79.3
20000 250 - 290 10	-1.0 / 70.4	-0.5 / 70.8	0.0 / 71.2	0.0 / 71.8	0.5 / 72.5	0.5 / 73.2	1.0 / 73.9	1.5 / 74.6	1.5 / 75.4
15000* 250 - 290 10	-1.0 / 66.0	-0.5 / 67.3	0.0 / 67.9	0.0 / 68.3	0.5 / 68.7	0.5 / 69.3	1.0 / 70.2	1.5 / 70.9	1.5 / 71.7
15000** 200 - 235 5	0.5 / 58.7	1.0 / 59.5	1.5 / 60.3	2.0 / 61.3	2.5 / 62.4	3.0 / 63.9	3.0 / 65.5	3.5 / 67.1	4.0 / 68.6
10000 205 - 235 5	0.5 / 55.1	1.0 / 55.9	1.5 / 56.7	2.0 / 57.6	2.5 / 58.7	3.0 / 60.2	3.0 / 61.9	3.5 / 63.3	4.0 / 64.7
5000 205 - 235 5	0.5 / 51.8	1.0 / 52.5	1.5 / 53.3	2.0 / 54.1	2.5 / 55.2	3.0 / 56.4	3.0 / 58.0	3.5 / 59.3	4.0 / 60.6
0 205 - 235 5	0.5 / 48.4	1.0 / 49.0	1.5 / 49.6	2.0 / 50.3	2.5 / 51.5	3.0 / 52.6	3.0 / 54.2	3.5 / 55.4	4.0 / 56.6

If any indicated speed is outside the expected indicated airspeed range, it should be considered UNRELIABLE.

* Pitch/N₁ settings for cruise phase

** Pitch/N₁ settings for transition to approach phase

Interpolation is acceptable

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Unreliable Airspeed

03-19-6

Rev. 28, Jun 04/2021

Flight Technique:

1. Use FD in PITCH mode only.
2. Use AP if available, otherwise handfly airplane to the desired altitude

CAUTION
Do not use any AP/FD SPEED mode.

Table B – CLIMB – FLAPS 0

ALT (ft)	Pitch	N1%	EXPECTED SPD RANGE KIAS/Mach
SL	10.0	TOGA	245 – 315
5000	9.0	TOGA	250 – 310
10000	7.0	CLB	240 – 300
15000	5.0	CLB	260 – 300
20000	4.0	CLB	260 – 295
25000	3.0	CLB	260 – 290
30000	2.0	CLB	255 – 280 / .71 – .76
35000	1.0	CLB	265 – 275 / .70 – .74

Table B – Climb – FLAPS 0
Figure 03-19-2

DOT Approved

Airplane Flight Manual
CSP C-012-219

CAUTION
Do not attempt to climb above 35,000ft for aircraft weights above 75,000lbs.



EMERGENCY PROCEDURES

Unreliable Airspeed

03-19-7

Rev. 28, Jun 04/2021

Flight Technique:

1. Use FD in PITCH mode only.
2. Use AP if available, otherwise handfly airplane to the desired altitude

CAUTION

Do not use any AP/FD SPEED mode.

Table C - DESCENT - FLAPS 0 - IDLE

ALT (ft)	Pitch	N1%	EXPECTED SPD RANGE KIAS/Mach
40000	- 2.0	IDLE	210 – 240 / .71 – .79
35000	- 3.0	IDLE	215 – 275 / .65 – .79
30000	- 3.0	IDLE	230 – 305 / .61 – .79
25000	- 3.5	IDLE	235 – 320
20000	- 3.5	IDLE	230 – 315
15000	- 3.5	IDLE	230 – 310
10000	- 3.0	IDLE	215 – 300
5000	- 2.5	IDLE	210 – 285
0	- 2.5	IDLE	210 – 285

NOTEIf anti-ice is required, adjust thrust as required to maintain a minimum of 75% N₂.

- For an N1 increase of 5%, add 0.5 degree to the pitch from Table C.
- For an N1 increase of 10%, add 1.0 degree to the pitch from Table C.
- For an N1 increase of 15%, add 1.5 degree to the pitch from Table C.

Table C – Descent – FLAPS 0 – Idle
Figure 03-19-3

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



EMERGENCY PROCEDURES

Unreliable Airspeed

03-19-8

Rev. 28, Jun 04/2021

Flight Technique:**Allow sufficient time to stabilize altitude or path between pitch adjustments or configuration change.**

If displayed, VSI can be used to monitor required altitude or path.

When transitioning from FLAPS 0 to FLAPS 8 maintain FLAPS 0 N1/pitch if FLAPS 1 temporarily selected.

CAUTION

- If transitioning from FLAPS 0 to FLAPS 8 maintain FLAPS 0 N1/pitch if FLAPS 1 temporarily selected.
1. Flaps transition from 0 to 30 must be accomplished in level flight.
 2. FLAPS 45 must be selected at the start of final descent.
- For LEVEL FLIGHT:**
- Set N1 and pitch to target, then adjust pitch to maintain required altitude:**
- If still descending below desired altitude or path, INCREASE pitch using 0.5-degree increments.
 - If still climbing above desired altitude or path, DECREASE pitch using 0.5-degree increments.

Table D - APPROACH - LEVEL FLIGHT

ALT (ft)	EXPECTED SPD RANGE KIAS/Mach	EXPECTED SPD CHANGE FOR 0.5 DEGREE CHANGE IN PITCH Δ KIAS	Level Flight - FLAPS 8 - Gear UP					
			Weight kg (lb)	Pitch (degree)	Initial Thrust (%N1)	34019 (75000)	36287 (80000)	38329 (84500)
170 - 220	5	0.0 / 59.8	0.5 / 60.4	1.0 / 61.1	1.5 / 61.5	2.0 / 62.7	2.5 / 63.8	3.0 / 64.7
150 - 190	5	-1.0 / 55.8	-0.5 / 56.8	0.0 / 57.7	1.0 / 59.6	2.0 / 61.8	2.5 / 63.6	3.5 / 65.5
to 0	135 - 180	5	-1.5 / 63.8	-0.5 / 64.1	0.0 / 65.0	1.0 / 66.2	2.0 / 67.5	3.0 / 69.3
125 - 180	5	-3.5 / 70.7	-2.5 / 71.3	-1.5 / 72.2	-0.5 / 72.8	0.5 / 74.1	1.5 / 75.1	2.5 / 76.5
						3.5 / 78.1	4.5 / 79.6	

Table D – Approach – Level Flight
Figure 03-19-4

- NOTE**
1. Initial pitch target is for reference only. See Flight Technique to adjust pitch as required up to a maximum of \pm 1.5 degree.
 2. If pitch is increased, REDUCE expected speed range by Δ KIAS.
 3. If pitch is decreased, INCREASE expected speed range by Δ KIAS.

Interpolation is acceptable

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES

Unreliable Airspeed

03-19-9

Rev. 28, Jun 04/2021

Flight Technique:**Allow sufficient time to stabilize altitude or path between pitch adjustments or configuration change.**

If displayed, VSI can be used to monitor required altitude or path.

For FLAPS 45 GEAR DN – 3 degree G/S:**Set N1 and pitch to target, then adjust pitch to maintain required glidepath:**

- Do not change N1.
- Adjust pitch as necessary to maintain required glideslope guidance/glidepath.

CAUTION
FLAPS 45 must be selected at the start of final descent.

		Weight kg (lb) Pitch (degree) / Initial Thrust (%N1)								
ALT (ft)	EXPECTED SPD RANGE KIAS	FLAPS 45 – GEAR DN – 3 degree G/S								
		20412 (45000)	22680 (50000)	24948 (55000)	27216 (60000)	29484 (65000)	31751 (70000)	34019 (75000)	36287 (80000)	38329 (84500)
15000		0.5 / 59.9	0.5 / 62.6	0.5 / 65.5	1.0 / 67.4	1.0 / 69.6	1.0 / 71.8	1.0 / 74.0	1.0 / 75.9	1.0 / 78.0
10000	$V_{REF} \pm 10$	0.5 / 55.9	0.5 / 58.5	0.5 / 60.9	1.0 / 63.2	1.0 / 65.5	1.0 / 67.6	1.0 / 69.7	1.0 / 71.5	1.0 / 73.6
5000		0.5 / 52.1	0.5 / 54.7	0.5 / 57.0	1.0 / 59.2	1.0 / 61.4	1.0 / 63.5	1.0 / 65.6	1.0 / 67.4	1.0 / 69.4
0		0.5 / 48.6	0.5 / 51.1	0.5 / 53.3	1.0 / 55.4	1.0 / 57.6	1.0 / 59.6	1.0 / 61.6	1.0 / 63.4	1.0 / 65.3

NOTE

Initial pitch target is for reference only. See Flight Technique to adjust pitch as required.

Interpolation is acceptable

Table E – Approach – FLAPS 45 – GEAR DN – 3 degree G/S
Figure 03-19-5

DOT Approved

Airplane Flight Manual
CSP C-012-219



EMERGENCY PROCEDURES
Unreliable Airspeed

03-19-10

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



CHAPTER 4 - NORMAL PROCEDURES

INTRODUCTION

INTRODUCTION	04-01-1
SUPER-COOLED LARGE DROPLET (SLD) ICING	04-01-1
FLIGHT IN TURBULENCE	04-01-1
OPERATION IN VOLCANIC ASH/DUST	04-01-1
WINDSHEAR	04-01-1
TERRAIN AWARENESS <2040>	04-01-2

CONSOLIDATED PROCEDURES

INTRODUCTION	04-02-1
General	04-02-1
PRIOR TO START	04-02-1
Safety Check	04-02-1
Cabin Inspection	04-02-2
External Walkaround	04-02-2
Originating Check	04-02-3
Before Start Check	04-02-4
Cleared to Start Check	04-02-4
PRIOR TO TAKE-OFF	04-02-5
After Start Check	04-02-5
Taxi Check	04-02-5
Before Take-off Check	04-02-6
AFTER TAKE-OFF	04-02-6
Climb Check <JAA>	04-02-6
PRIOR TO LANDING	04-02-7
Descent Check <JAA>	04-02-7
Approach Check <JAA>	04-02-7
Before Landing Check	04-02-8
Go-around Procedure	04-02-8
AFTER LANDING	04-02-9
After Landing Check	04-02-9
Shutdown Check	04-02-9
Terminating Check	04-02-10



NORMAL PROCEDURES
Table of Contents

04-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



NORMAL PROCEDURES

Introduction

04-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

The consolidated normal operating procedures included in this chapter are defined as being fundamental to the normal safe operation of the airplane and are supplementary to normal procedures common to the operation of any modern transport jet airplane.

These normal procedures have been developed and recommended by MHIRJ and approved by Transport Canada for use in the operation of the airplane. These procedures are provided as guidance and should not be construed as prohibiting the development of equivalent Regulatory Authority-approved procedures.

2. SUPER-COOLED LARGE DROPLET (SLD) ICING

The supplementary data for Super-cooled Large Droplet (SLD) icing conditions are given in the Flight Crew Operating Manual, Volume 2 (CSP C-013), Chapter 7, SUPPLEMENT 13, Super-cooled Large Droplet Icing.

3. FLIGHT IN TURBULENCE

The recommended procedures for flight in turbulence are given in the Flight Crew Operating Manual, Volume 2 (CSP C-013), Chapter 7, SUPPLEMENT 15, Flight in Turbulence.

4. OPERATION IN VOLCANIC ASH/DUST

The recommended procedures for operation in volcanic ash/dust are given in the Flight Crew Operating Manual, Volume 2 (CSP C-013), Chapter 7, SUPPLEMENT 16, Operation in Volcanic Ash/Dust.

5. WINDSHEAR

When a windshear warning occurs (siren and windshear aurals accompanied by the PFD display of WINDSHEAR warning [red message] and windshear escape guidance):

- Immediately set maximum thrust;
- Ensure flight spoilers are retracted;
- Follow FD commands smoothly and precisely, respecting stick shaker;
- Do not change landing gear or flap configuration until the vertical flight path is under control; and
- Follow the escape guidance until the windshear condition no longer exists.

DOT Approved

Airplane Flight Manual
CSP C-012-219



NORMAL PROCEDURES

Introduction

04-01-2

Rev. 28, Jun 04/2021

During an approach and landing, whenever a windshear caution occurs (PFD display of WINDSHEAR alert [amber message]), immediately accomplish a normal go-around maneuver.

NOTE

Gusty wind conditions not associated with downdrafts may occasionally trigger a windshear caution during an approach. Immediately accomplish a normal go-around maneuver unless flight path control is acceptable and the condition can be positively assessed as not related to thunderstorm or microburst activity.

The detailed recommended procedures for windshear detection and recovery are given in the Flight Crew Operating Manual, Volume 2 (CSP C-013), Chapter 7, SUPPLEMENT 17, Windshear.

6. TERRAIN AWARENESS <2040>

The terrain display provides situational awareness only, and may not provide the accuracy and/or fidelity upon which to solely base terrain avoidance maneuvering.

When a terrain awareness warning occurs (identified by an aural including the words TERRAIN or OBSTACLE and PULL UP accompanied by the red PULL UP light flashing):

- Immediately disconnect the autopilot, initiate a pull up and set maximum thrust,
- Ensure flight spoilers are fully retracted,
- Do not change landing gear or flaps configuration until the vertical flight path is under control, and
- Climb at the best climb angle, respecting stick shaker until all alerts cease and is confirmed that a safe ground clearance exists.

When a terrain awareness caution occurs (identified by an aural including the words TERRAIN or OBSTACLE accompanied by the amber GND PROX light flashing):

- Adjust airplane flight path until the alert ceases.

The detailed recommended procedures for terrain awareness alerts are given in the Flight Crew Operating Manual, Volume 2 (CSP C-013) Chapter 7, SUPPLEMENT 18, Aural/Visual Warning System.

DOT Approved

Airplane Flight Manual
CSP C-012-219



NORMAL PROCEDURES

Consolidated Procedures

04-02-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

A. General

The following checklists comprise a consolidation of the “phase-of-flight” checks/procedures accomplished by the flight crew from the time the airplane is prepared for flight until the termination of the last flight of the day.

The checklists are supplementary to those checks arising from basic airmanship and procedural practices common to the operation of any modern transport category jet airplane. The checklists are based on the normal procedure of APU start before engine start.

The “phase-of-flight” checks fall under the following five (5) major categories, listed consecutively:

- (1) Prior to Start;
- (2) Prior to Take-off;
- (3) After Take-off;
- (4) Prior to Landing; and
- (5) After Landing.

All the checks within a major “phase-of-flight” category must be accomplished prior to the next major “phase-of-flight”. Refer to the Flight Crew Operating Manual, Volume 2 (CSP C-013): NORMAL PROCEDURES, for the details of these checks/procedures.

2. PRIOR TO START

A. Safety Check

This is a check to determine if airplane systems are in a configuration to safely place AC electrical power on the airplane busses. These procedures should be performed on through flights (enroute stops) if AC electrical power is removed from the airplane, or if there is any doubt that all safety aspects of the prevailing situation can be covered. Completion of this check ensures that there will be no danger to the airplane and/or personnel when powering the systems. This check should be executed prior to assuming normal crew position.

- (1) Circuit breakers (panels 1- 2)Closed

NOTE

MHIRJ philosophy and policy with respect to the resetting of tripped circuit breakers (in flight / on ground) is given in the Flight Crew Operating Manual, Volume 2 (CSP C-013): INTRODUCTION – General – CIRCUIT BREAKER RESET.

- (2) N/W STRG switchOFF
- (3) HYDRAULIC pumpsOFF

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



NORMAL PROCEDURES

Consolidated Procedures

04-02-2

Rev. 28, Jun 04/2021

- (4) LDG GEAR leverDN
- (5) FLIGHT SPOILER lever0
- (6) SLATS/FLAPS leverSet to actual flap position
- (7) RadarOFF
- (8) ADG manual deploy handleStowed
- (9) EMER FLAP switchNORMAL
- (10) BATTERY MASTER switchON

NOTE

To prevent a **BLEED MISCONFIG** caution message during APU start, ensure that the wing and cowl anti-ice switches are OFF prior to APU start.

- (11) APU / AC electricsAs required / Established
- (12) IRS <1025>NAV
- (13) Emergency equipmentChecked
- (14) Gear and safety pinsOn board
- (15) Airplane documentsChecked
- (16) HYDRAULIC 3A pumpAs required
- (17) FMS initialization <1024> or <1050>
or <1214> or <1215>Complete

B. Cabin Inspection

- (1) Cabin inspection (if required)Accomplish Refer to the Flight Crew Operating Manual, Volume 2 (CSP C-013): NORMAL PROCEDURES – Prior to Start – Cabin Inspection.

C. External Walkaround

- (1) Walkaround inspectionAccomplish Refer to the Flight Crew Operating Manual, Volume 2 (CSP C-013): NORMAL PROCEDURES – Prior to Start – External Walkaround.

The pitot-static probes must be unobstructed, with no abnormal discoloration and the fuselage skin in the vicinity of each static source must be free of damage. <1030>

DOT Approved

Airplane Flight Manual
CSP C-012-219



NORMAL PROCEDURES

Consolidated Procedures

04-02-3

Rev. 28, Jun 04/2021

D. Originating Check

This procedure is used to ensure that the pertinent pre-flight and safety checks have been completed before starting the engines.

- (1) Internal and external pre-flight checks Complete
- (2) Pedals, seats and harness Adjusted
- (3) Crew oxygen and masks <TC> or <JAA>..... Checked/Quantity First flight of the day.
- (4) AUDIO WARNING panel Checked
- (5) ELECTRICAL POWER panel Checked
- (6) FIRE DETECTION / FIREX MONITOR test Complete First flight of the day.
- (7) EXTERNAL LTS panel Checked
- (8) FUEL panel Checked
- (9) BLEED AIR panel Checked
- (10) APU panel As required
- (11) Start panel Checked
- (12) HYDRAULIC panel Checked
- (13) ELT switch <Type Spec> or <1092> ARM/RESET
- (14) CABIN PRESS panel Checked
- (15) AIR-CONDITIONING panel Checked
- (16) Ice detector test Complete First flight of the day.
- (17) WSHLD switches LOW
- (18) EMER LTS switch ARM
- (19) Standby compass Checked
- (20) PLT and CPLT ROLL switch/lights Out
- (21) STALL test Complete First flight of the day.
- (22) N/W STRG switch OFF
- (23) Side LIGHTING panel switches As required
- (24) WIPER selector OFF/PARK
- (25) Clocks Set
- (26) EFIS control panels Checked
- (27) Instrument panels Checked
- (28) EICAS and standby instrument Checked

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



NORMAL PROCEDURES

Consolidated Procedures

04-02-4

Rev. 28, Jun 04/2021

- | | | |
|----------------------------------|----------|--------------------------|
| (29) Anti-skid test | Complete | First flight of the day. |
| (30) MLG BAY OVHT test | Complete | First flight of the day. |
| (31) Upper pedestal | Checked | |
| (32) Thrust lever quadrant | Checked | |
| (33) Avionics | Checked | |
| (34) Trims | Checked | |
| (35) YAW DAMPER | ENGAGE | |
| (36) Source selector panel | NORM | |
| (37) Lower pedestal | Checked | |

E. Before Start Check

- | | |
|-------------------------------|-------------------|
| (1) PASS SIGNS | As required |
| (2) LDG ELEV | Set |
| (3) Altimeters | (_ _ _) Set |
| (4) FMS/IRS <1025> | Set |
| (5) Radios and Nav aids | Set for departure |
| (6) Take-off briefing | Complete |

F. Cleared to Start Check

- | | |
|---------------------------------------|----------------|
| (1) Personal electronic devices | Off |
| (2) APU / AC electrics | On/Checked |
| (3) Papers | On board |
| (4) Take-off data | Set |
| (5) Doors | Closed/Locked |
| (6) BEACON <1021>..... | ON |
| (7) Fuel pumps and quantity | On, (quantity) |
| (8) HYDRAULIC pumps | AUTO/ON |
| (9) PARKING BRAKE | As required |

NOTE

Release parking brake and turn off nosewheel steering if push-back is required. Audio or visual communications with the ground crew must be maintained at all times during push-back.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



NORMAL PROCEDURES

Consolidated Procedures

04-02-5

Rev. 28, Jun 04/2021

(10) Engines Start

NOTE

Do not exceed starter cranking limits. Refer to LIMITATIONS – Power Plant – STARTER CRANKING LIMITS.

(11) Fuel feed check valve test

<JAA> Complete First flight of the day.

Refer to SUPPLEMENTS –
Fuel Feed Check Valve
Test. <JAA>

3. PRIOR TO TAKE-OFF

A. After Start Check

NOTE

Do not accelerate engine until oil pressure is in the normal operating range.

- (1) GEN 1 and GEN 2 AUTO
- (2) BLEED VALVES and PACKs AUTO/On
- (3) APU As required
- (4) ANTI-ICE As required
- (5) PROBES ON
- (6) Electrics Checked
- (7) Rudder Checked
- (8) N/W STRG ARMED

NOTE

At airports where runway structural repair or debris is known to exist, use thrust reversers with extreme caution to preclude the possibility of foreign object damage (FOD) from occurring.

B. Taxi Check

- (1) FLAPS (_____) Indicating
- (2) Flight controls Checked

DOT Approved

Airplane Flight Manual
CSP C-012-219



NORMAL PROCEDURES

Consolidated Procedures

04-02-6

Rev. 28, Jun 04/2021

- (3) Trims Green and (._.)
- (4) THRUST REVERSERs ARMED
- (5) Flight instruments Checked
- (6) FMS radio tuning As required Airplanes equipped with a functioning GPS, select MAN on the FMS RADIO TUNING page.
- Airplanes not equipped with GPS or if the GPS is unavailable, select AUTO on the FMS RADIO TUNING page.
- (7) BRAKE TEMP Checked

C. Before Take-off Check

- (1) Lights and strobes As required
- (2) FUEL, XFLOW MAN and off
- (3) IGNITION/ANTI-ICE As required
- (4) Flight attendant Advised
- (5) Transponder/TCAS On / As required
- (6) Radar As required
- (7) Terrain display <2040> As required
- (8) CAS Checked and cleared

4. AFTER TAKE-OFF

A. Climb Check <JAA>

Effectivity:

- Airplanes 15250 thru 15259, or
- Airplanes 15001 thru 15249 **incorporating** the following Service Bulletin:
 - SB 670BA-21-030, Cabin Pressure Controller (CPC) – Software Upgrade.

NOTE

Monitor cabin altitude while the **CABIN ALT WARN HI** status message is posted.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



NORMAL PROCEDURES

Consolidated Procedures

04-02-7

Rev. 28, Jun 04/2021

- (1) Altimeters(_____) Set
- (2) FUEL, XFLOW Auto
- (3) Bleeds and APU Set
- (4) Lights and PASS SIGNS As required
- (5) THRUST REVERSERS OFF
- (6) CAS Checked and cleared

5. PRIOR TO LANDING

A. Descent Check <JAA>

Effectivity:

- Airplanes 15250 thru 15259, or
- Airplanes 15001 thru 15249 **incorporating** the following Service Bulletin:
 - SB 670BA-21-030, Cabin Pressure Controller (CPC) – Software Upgrade.

NOTE

Monitor cabin altitude while the **CABIN ALT WARN HI** status message is posted.

- (1) LDG ELEV Set
- (2) Fuel Checked
- (3) TCAS As required
- (4) Radar As required
- (5) Terrain display <2040> As required
- (6) CAS Checked and cleared
- (7) Landing data Set
- (8) Approach briefing Complete

B. Approach Check <JAA>

- (1) Altimeters(_____) Set
- (2) APU and bleeds Set
- (3) Lights and PASS SIGNS As required

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



NORMAL PROCEDURES

Consolidated Procedures

04-02-8

Rev. 28, Jun 04/2021

C. Before Landing Check

- (1) Flight attendant ADVISED
- (2) PASS SIGNS AS REQUIRED
- (3) THRUST REVERSERS ARMED
- (4) LDG GEAR DN
- (5) FLAPS () INDICATING

D. Go-around Procedure

The following procedures are recommended in the event of a missed approach or any other situation which would necessitate making a go-around maneuver, with the airplane in the landing configuration. It is assumed that the flight instruments, radios and navigation aids have been previously set-up for the missed approach.

WARNING

If unreliable airspeed suspected, disregard all references in this procedure to airspeed, speed mode and TOGA.

CAUTION

1. If unreliable airspeed is suspected, do not use TOGA switch.
2. A go-around maneuver should NOT be attempted after the thrust reversers have been deployed.

NOTE

The minimum fuel quantity for go-around is 272 kg (600 lb) per wing (with the airplane level) and assuming a maximum airplane climb attitude of 10 degrees nose up.

From a gear-down, FLAPS 45 approach:

- (1) Thrust levers / TOGA switch Advance to TOGA /
Press Advance the thrust levers to
the TOGA detent, then press
TOGA switch.
- (2) Airplane Rotate smoothly towards the flight
director command bar.
- (3) FLAPS 8
- (4) Pitch attitude Adjust to achieve an airspeed of not
less than $V_{2GA} + 10$ KIAS as
the flaps are retracted to
8 degrees.

DOT Approved

Airplane Flight Manual
CSP C-012-219



NORMAL PROCEDURES

Consolidated Procedures

04-02-9

Rev. 28, Jun 04/2021

When a positive rate of climb is achieved:

- (5) LDG GEAR lever UP
- (6) Airspeed Maintain not less than V_{2GA} + 10 KIAS.
- (7) Normal climb out procedures Accomplish

6. AFTER LANDING

A. After Landing Check

- (1) APU As required

Effectivity:

- Airplanes 15001 thru 15228 **not incorporating** the following Service Bulletin:
- SB 670BA-34-029 – Navigation – Transponder System – Wire Strapping Changes for Operation of Transponder when the Aircraft is on the Ground.

- (2) Transponder STBY
- (3) Radar OFF
- (4) FLAPS 0
- (5) Lights and strobes As required
- (6) PROBES OFF

B. Shutdown Check

NOTE

Thrust reversers must be stowed prior to engine shutdown.



Inform ground crew of "Hot" brakes condition as soon as possible.

- (1) Chocks and brakes As required

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



NORMAL PROCEDURES

Consolidated Procedures

04-02-10

Rev. 28, Jun 04/2021

CAUTION

If the aircraft is to be moved again under its own power or otherwise, before all the passengers have deplaned, then the SEAT BELTS signs must be turned back on and all passengers confirmed seated with their seat belts fastened before any further aircraft movement.

- | | | |
|--|-------------|--|
| (2) SEATS BLTS | OFF | |
| (3) Electrics | Set | |
| (4) Fuel feed check valve test
<JAA>..... | Complete | First flight of the day.
Refer to SUPPLEMENTS –
Fuel Feed Check Valve
Test. <JAA> |
| | | |
| (5) Thrust levers | SHUT OFF | |
| (6) ANTI-ICE | OFF | |
| (7) Fuel pumps | Off | |
| (8) HYDRAULIC 3A pump | As required | |
| (9) BEACON <1021>..... | OFF | |
| (10) N/W STRG switch | OFF | |

C. Terminating Check

Effectivity:

- When operating at airport pressure altitudes between 8000 and 10000 feet, for:
- Airplanes 15250 and subsequent, or
- Airplanes 15001 thru 15249 **incorporating** the following Service Bulletin:
 - SB 670BA-21-030, Air Conditioning – Cabin Pressure Controller (CPC) – Software Upgrade.

NOTE

When in manual pressurization control mode, the CABIN ALT caution and warning messages are reset to be posted at their nominal values of 8500 feet and 10000 feet, respectively.

- | | |
|-----------------------------|--------|
| (1) RECIRC FAN switch | OFF |
| (2) Chocks and brakes | In/Off |
| (3) IRS <1025>..... | OFF |

DOT Approved

Airplane Flight Manual
CSP C-012-219



NORMAL PROCEDURES
Consolidated Procedures

04-02-11

Rev. 28, Jun 04/2021

- (4) THRUST REVERSER switchesOFF
- (5) EMER LTS switchOFF
- (6) WSHLD switchesOFF
- (7) AFT CARGO switchOFF
- (8) HYDRAULIC pumpsOFF
- (9) EXTERNAL LTS switchesOFF
- (10) APU, START/STOP switchOff
- (11) APU, PWR FUEL switchOff
- (12) DC SERVICE switchOFF
- (13) BATTERY MASTER switchOFF
- (14) DOME LIGHT switchOFF
- (15) Boarding lightsOff

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



NORMAL PROCEDURES
Consolidated Procedures

04-02-12

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



CHAPTER 5 - ABNORMAL PROCEDURES

INTRODUCTION

INTRODUCTION	05-01-1
LANDING DISTANCE FACTORS	05-01-1

IN-FLIGHT ENGINE FAILURES

IN-FLIGHT ENGINE FAILURES	05-02-1
Engine Failure During Take-off After Achieving V ₁	05-02-1
Engine Failure During Approach	05-02-2
Engine Failure in Climb During ALTS CAP	05-02-3

SINGLE ENGINE PROCEDURES

SINGLE ENGINE PROCEDURES	05-03-1
In-flight Engine Shutdown	05-03-1
Starter-assisted Cross Bleed Relight	05-03-2
Starter-assisted APU Bleed Relight	05-03-4
Windmilling Relight	05-03-5
Single Engine Approach and Landing	05-03-6
Single Engine Go-around	05-03-7

POWER PLANT

POWER PLANT	05-04-1
L REV UNLOCKED or R REV UNLOCKED	05-04-1
L REV UNSAFE or R REV UNSAFE	05-04-1
L REV INOP or R REV INOP	05-04-1
APR CMD SET	05-04-2
L THROTTLE or R THROTTLE	05-04-3
L ENG FLAMEOUT or R ENG FLAMEOUT	05-04-4
L START ABORT or R START ABORT	05-04-4
L FADEC or R FADEC	05-04-4
L FADEC OVHT or R FADEC OVHT	05-04-5
L STRT VLV OPEN or R STRT VLV OPEN (In flight)	05-04-6
L STRT VLV OPEN or R STRT VLV OPEN (On the ground)	05-04-7
L ENG SRG CLSD or R ENG SRG CLSD	05-04-8
L ENG SRG OPEN or R ENG SRG OPEN	05-04-8
Engine Hot Start	05-04-9
L START VALVE or R START VALVE	05-04-9
L ENG TAT HEAT or R ENG TAT HEAT	05-04-10



ABNORMAL PROCEDURES Table of Contents

05-00-2

Rev. 29, Oct 15/2021

Loss of FAN VIB Indicator	05-04-10
N ₁ Fan Vibration	05-04-10
N ₂ Core Vibration	05-04-12
Engine Oscillations	05-04-13
L ENG DEGRADED or R ENG DEGRADED	05-04-13
Left Engine or Right Engine High Oil Temperature Indication	05-04-13

AIR-CONDITIONING, BLEED AND PRESSURIZATION

AIR-CONDITIONING SYSTEM	05-05-1
L PACK TEMP or R PACK TEMP	05-05-1
L PACK AUTOFAIL or R PACK AUTOFAIL	05-05-2
L PACK or R PACK	05-05-2
AVIONICS COOLING SYSTEM	05-05-3
AVIONICS FAN	05-05-3
DISPLAY COOL	05-05-3
OVBD COOL(On Ground Only)	05-05-3
BLEED SYSTEM	05-05-3
BLEED MISCONFIG	05-05-3
Manual Bleed Procedure	05-05-4
L ENG BLEED or R ENG BLEED	05-05-5
L BLEED LOOP or R BLEED LOOP	05-05-6
ISOL FAIL	05-05-6
L BLEED DUCT or R BLEED DUCT	05-05-7
PRESSURIZATION SYSTEM	05-05-9
ALT LIMITER	05-05-9
AUTO PRESS	05-05-9
CABIN ALT	05-05-9
EMER DEPRESS	05-05-9
Manual Pressurization Control Procedure	05-05-10
Unpressurized Flight Procedure (PACKs off)	05-05-11
Unpressurized Flight Procedure (PACKs on)	05-05-12
AFT CARGO BAY VENTILATION SYSTEM <1201>	05-05-12
AFT CARGO OVHT	05-05-12

AUTOMATIC FLIGHT CONTROL SYSTEM

AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS)	05-06-1
--	---------

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Table of Contents

05-00-3

Rev. 28, Jun 04/2021

AP TRIM IS LWD or AP TRIM IS RWD or AP TRIM IS NU or AP TRIM IS ND	05-06-1
AP PITCH TRIM	05-06-1
YAW DAMPER	05-06-2
Flight Director Guidance Failure	05-06-2

AUXILIARY POWER UNIT

AUXILIARY POWER UNIT (APU)	05-07-1
APU LCV OPEN	05-07-1
APU LCV CLSD	05-07-2
APU BLEED ON	05-07-2
APU FAULT	05-07-2
APU PUMP	05-07-3
APU ECU FAIL	05-07-3
APU Door Failure	05-07-3
APU SOV FAIL	05-07-4
APU SOV OPEN	05-07-4

DOORS

PAX DOOR	05-08-1
PAX DR OUT HNDL	05-08-1
PAX DR LATCH	05-08-2
MISCELLANEOUS DOORS	05-08-3
AV BAY DOOR or FWD CARGO DOOR or CTR CARGO DOOR or AFT CARGO DOOR or L FWD EMER DOOR or R FWD EMER DOOR or L AFT EMER DOOR or R AFT EMER DOOR or FWD SERVICE DOOR or Crew Escape Hatch Unsafe	05-08-3

ELECTRICAL

ELECTRICAL	05-09-1
AC 1 AUTOXFER	05-09-1
AC 2 AUTOXFER	05-09-1
AC BUS 1	05-09-1
AC BUS 2	05-09-2
AC ESS BUS	05-09-2
AC SERV BUS	05-09-2
APU BATT OFF	05-09-2
APU GEN OFF	05-09-3
APU GEN OVLD	05-09-3



ABNORMAL PROCEDURES Table of Contents

05-00-4

Rev. 28, Jun 04/2021

BATTERY BUS	05-09-3
DC BUS 1	05-09-3
DC BUS 2	05-09-3
DC EMER BUS	05-09-3
DC ESS BUS	05-09-4
DC SERV BUS	05-09-4
GEN 1 OFF	05-09-4
GEN 2 OFF	05-09-4
GEN 1 OVLD	05-09-4
GEN 2 OVLD	05-09-5
IDG 1	05-09-5
IDG 2	05-09-5
MAIN BATT OFF	05-09-5

FIRE PROTECTION

FIRE PROTECTION	05-10-1
APU FIRE FAIL	05-10-1
APU SQB	05-10-1
L FIRE FAIL or R FIRE FAIL	05-10-1
L ENG SQB or R ENG SQB	05-10-1
FWD CARGO DET	05-10-1
FWD CARGO SQB 1 or FWD CARGO SQB 2	05-10-1
AFT CARGO DET	05-10-1
AFT CARGO SQB 1 or AFT CARGO SQB 2	05-10-2
FIRE SYS FAULT	05-10-2
APU BTL LO	05-10-2
ENG BTL 1 LO or ENG BTL 2 LO	05-10-2
CARGO BTL LO	05-10-2

FLIGHT CONTROLS

FLIGHT CONTROLS	05-11-1
STALL FAIL	05-11-1
PITCH FEEL	05-11-1
RUD LIMITER	05-11-2
ELEVATOR SPLIT	05-11-3
Aileron PCU Runaway	05-11-4
MACH TRIM	05-11-5
STAB TRIM	05-11-5

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES Table of Contents

05-00-5

Rev. 30, Mar 25/2022

STAB TRIM LIMIT	05-11-6
FLAPS FAIL	05-11-6
SLATS FAIL	05-11-9
FLAPS FAIL and SLATS FAIL	05-11-10
SLATS/FLAPS Lever Jammed or Disconnected	05-11-14
FLT SPLR DEPLOY	05-11-14
IB FLT SPLRS	05-11-14
OB FLT SPLRS	05-11-15
SPOILERONS ROLL	05-11-15
IB SPOILERONS	05-11-16
OB SPOILERONS	05-11-16
FLIGHT SPOILER Lever Jammed (Spoilers Deployed)	05-11-17
GND SPLR DEPLOY	05-11-17
IB GND SPLRS	05-11-18
OB GND SPLRS	05-11-18
GLD UNSAFE	05-11-19
GLD NOT ARMED	05-11-19

FUEL

FUEL	05-12-1
FUEL CH 1/2 FAIL	05-12-1
L MAIN EJECTOR and L SCAV EJECTOR or R MAIN EJECTOR and R SCAV EJECTOR	05-12-1
FUEL IMBALANCE	05-12-1
L ENG SOV OPEN or R ENG SOV OPEN	05-12-2
L ENG SOV CLSD or R ENG SOV CLSD	05-12-2
L ENG SOV FAIL or R ENG SOV FAIL	05-12-2
L FUEL LO PRESS or R FUEL LO PRESS	05-12-3
L MAIN EJECTOR or R MAIN EJECTOR	05-12-3
L SCAV EJECTOR or R SCAV EJECTOR	05-12-3
L FUEL PUMP or R FUEL PUMP	05-12-4
L XFER SOV or R XFER SOV	05-12-4
XFLOW PUMP	05-12-4
BULK FUEL TEMP	05-12-4
L FUEL LO TEMP or R FUEL LO TEMP	05-12-4
L FUEL FILTER or R FUEL FILTER	05-12-4
Boost Pump Cycling	05-12-4
Gravity Cross-feed Procedure	05-12-5

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES Table of Contents

05-00-6

Rev. 28, Jun 04/2021

Abnormal Increase of Centre Tank Quantity or Suspected Leak into Centre Tank	05-12-6
Fuel Leak Procedure	05-12-7

HYDRAULIC POWER

HYDRAULIC POWER	05-13-1
General Notes, Cautions and Warnings	05-13-1
HYD 1 LO PRESS	05-13-1
HYD 2 LO PRESS	05-13-2
HYD 3 LO PRESS	05-13-5
HYD 1 HI TEMP	05-13-8
HYD 1 HI TEMP	05-13-8
HYD 2 HI TEMP	05-13-9
HYD 2 HI TEMP	05-13-10
HYD 3 HI TEMP	05-13-13
HYD EDP 1A or HYD EDP 2A	05-13-17
HYD PUMP 1B	05-13-17
HYD PUMP 2B	05-13-17
HYD PUMP 3A	05-13-17
HYD PUMP 3B	05-13-17
HYD SOV 1 OPEN or HYD SOV 2 OPEN	05-13-17
HYD 1 LO PRESS and HYD 2 LO PRESS	05-13-18
HYD 1 LO PRESS and HYD 3 LO PRESS	05-13-21
HYD 2 LO PRESS and HYD 3 LO PRESS (Caution Messages)	05-13-24

ICE AND RAIN PROTECTION

PNEUMATIC ANTI-ICE	05-14-1
ANTI-ICE DUCT	05-14-1
L COWL A/I or R COWL A/I	05-14-1
L COWL A/I OPEN or R COWL A/I OPEN	05-14-1
ANTI-ICE LOOP (On Ground Only)	05-14-2
L COWL LOOP or R COWL LOOP (On Ground Only)	05-14-2
L WING A/I or R WING A/I	05-14-2
L WING A/I and R WING A/I	05-14-2
WING A/I SNSR	05-14-3
WING XBLEED	05-14-4
ELECTRICAL ANTI-ICE	05-14-4
ICE	05-14-4

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES Table of Contents

05-00-7

Rev. 28, Jun 04/2021

ICE DET FAIL (Caution Message) or ICE DET 1 FAIL or ICE DET 2 FAIL (Status Message)	05-14-4
L AOA HEAT or R AOA HEAT	05-14-5
L AOA HEAT and R AOA HEAT	05-14-5
L PITOT HEAT	05-14-5
R PITOT HEAT	05-14-6
L STATIC HEAT	05-14-6
R STATIC HEAT	05-14-7
STBY PITOT HEAT	05-14-7
TAT PROBE HEAT	05-14-7
L WINDOW HEAT or R WINDOW HEAT	05-14-7
L WSHLD HEAT or R WSHLD HEAT	05-14-7
Windshield or Window Cracking, Shattering, Arcing or Delamination	05-14-8
Windshield or Window Cracking, Shattering, Arcing or Delamination	05-14-9
ICE DISPERSAL	05-14-11
Ice Dispersal Procedure	05-14-11

INSTRUMENTS SYSTEM

INSTRUMENTS SYSTEM	05-15-1
EFIS COMP MON <1025>	05-15-1
EFIS COMP INOP	05-15-2
Primary Flight Display Failure	05-15-3
DISPLAY TEMP Annunciation	05-15-3
Display Control Panel Failure	05-15-3
ADC 1 Failure	05-15-3
ADC 2 Failure	05-15-3
Radio Altimeter Failure <1045>	05-15-4
Inertial Reference System Failure <1025>	05-15-5
Radio Tuning Unit Failure	05-15-5
Position Information Unreliable <2040>	05-15-5
XPDR FAIL	05-15-6
ADS-B OUT FAIL	05-15-6
Uncommanded True Heading Indication <1025>	05-15-7

LANDING GEAR, WHEEL AND BRAKE SYSTEM

LANDING GEAR, WHEEL AND BRAKE SYSTEM	05-16-1
A/SKID INBD	05-16-1
A/SKID OUTBD	05-16-1

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES Table of Contents

05-00-8

Rev. 28, Jun 04/2021

A/SKID INBD and A/SKID OUTBD	05-16-2
IB BRAKE PRESS or OB BRAKE PRESS	05-16-2
PARK BRAKE SOV	05-16-4
STEERING INOP	05-16-4
MLG OVHT FAIL	05-16-4
Landing Gear Manual Extension	05-16-5
PROX SYSTEM	05-16-6
PROX SYS CHAN	05-16-8
WOW INPUT	05-16-8
WOW OUTPUT	05-16-10

MISCELLANEOUS SYSTEMS

MISCELLANEOUS SYSTEMS	05-17-1
ELT ON	05-17-1
EMER LTS OFF	05-17-1
OXY LO PRESS	05-17-1
PASS OXY ON	05-17-1
Passenger Oxygen, Auto-deploy Failure	05-17-1

AURAL/VISUAL WARNING SYSTEM

AURAL/VISUAL WARNING SYSTEM	05-18-1
EICAS Primary Display Failure	05-18-1
EICAS Secondary Display Failure	05-18-1
EICAS Control Panel Failure	05-18-1
TCAS System Failure (TCAS FAIL Flag on PFD/MFD)	05-18-1
TCAS Resolution Advisory Failure (TCAS RA FAIL Flag on PFD)	05-18-1
TCAS Traffic Display Failure (TCAS DISPLAY FAIL Flag on MFD)	05-18-1
DCU 1 INOP or DCU 2 INOP or DCU 1 AURAL INOP or DCU 2 AURAL INOP (Status Message)	05-18-2

LIST OF ILLUSTRATIONS

FLIGHT CONTROLS

Figure 05-11-1	Maximum Landing Weight Limited by Tire Speed – Flaps Fail Procedure – Landing with ΔV_{REF} of 18 or 24 knots	05-11-8
----------------------	---	---------

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES Table of Contents

05-00-9

Rev. 28, Jun 04/2021

Figure 05-11-2	Maximum Landing Weight Limited by Tire Speed – Flaps Fail and Slats Fail Procedure – Landing with ΔV_{REF} of 40 knots	05-11-12
Figure 05-11-3	Maximum Landing Weight Limited by Tire Speed – Flaps Fail and Slats Fail Procedure – Landing with ΔV_{REF} of 18, 24, or 30 knots	05-11-13

HYDRAULIC POWER

Figure 05-13-1	Maximum Landing Weight Limited by Maximum Brake Energy – Single Hydraulic System Failure	05-13-4
Figure 05-13-2	Maximum Landing Weight Limited by Maximum Brake Energy – Single Hydraulic System Failure	05-13-7
Figure 05-13-3	Maximum Landing Weight Limited by Maximum Brake Energy – Single Hydraulic System Failure	05-13-12
Figure 05-13-4	Maximum Landing Weight Limited by Maximum Brake Energy – Single Hydraulic System Failure	05-13-16
Figure 05-13-5	Maximum Landing Weight Limited by Maximum Brake Energy – Double Hydraulic System Failure	05-13-20
Figure 05-13-6	Maximum Landing Weight Limited by Maximum Brake Energy – Double Hydraulic System Failure	05-13-23

LANDING GEAR, WHEEL AND BRAKE SYSTEM

Figure 05-16-1	Maximum Landing Weight Limited by Maximum Brake Energy – IB BRAKE PRESS or OB BRAKE PRESS Failure	05-16-3
----------------	---	---------

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES

Table of Contents

05-00-10

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES

Introduction

05-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

The abnormal procedures included in this chapter address foreseeable situations usually involving a failure condition, in which the use of the normal or alternate systems can be expected to maintain an acceptable level of airworthiness.

Unless otherwise indicated, the titles of the procedures given in this chapter reflect the display of the corresponding EICAS caution (amber) message. In addition, the master caution system operates where applicable.

Unless otherwise specified in these abnormal procedures, the landing configuration of the airplane will be landing gear down and slats/flaps 45.

After completion of the applicable non-normal procedures, carry out normal checklist procedures (refer to NORMAL PROCEDURES – Consolidated Procedures).

These procedures have been developed and recommended by MHIRJ and approved by Transport Canada for use in the operation of the airplane. These procedures are provided as guidance and should not be construed as prohibiting the development of equivalent Regulatory Authority-approved procedures.

2. LANDING DISTANCE FACTORS

Landing distance factors are provided herein with and without the use of thrust reversers. Unless landing distance factors are explicitly provided for "With One Thrust Reverser", the "Without Thrust Reversers" factors are to be used for airplanes with either one or both thrust reversers inoperative at landing.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES
Introduction

05-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

In-flight Engine Failures

05-02-1

Rev. 28, Jun 04/2021

1. IN-FLIGHT ENGINE FAILURES

A. Engine Failure During Take-off After Achieving V_1

(1) Take-off Continue

At V_R :

(2) Airplane Rotate smoothly towards the flight director command bar.

(3) Pitch attitude Adjust to achieve an airspeed of V_2 at 35 feet.

When a positive rate of climb is achieved:

(4) LDG GEAR lever UP

(5) Airspeed Maintain at V_2 to engine-out level-off height
(Refer to PERFORMANCE – Obstacle Clearance – NET TAKE-OFF FLIGHT PATH DETERMINATION.)

NOTE

1. If engine failure occurs at a speed between V_2 and $V_2 + 10$ KIAS, maintain present airspeed.
2. If engine failure occurs above $V_2 + 10$ KIAS, maintain $V_2 + 10$ KIAS.

At an altitude not below 400 feet AGL or the engine-out level-off height:

If wing anti-ice system selected off:

(6) Proceed to step (8).

If wing anti-ice system selected on:

(6) WING A/I CROSS BLEED switch Select non-affected side

(7) ANTI-ICE, LH or RH COWL switch Affected side OFF

(8) Thrust Set as required

NOTE

Set thrust lever to CLIMB detent after time limit for APR thrust (10 minutes) has expired.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

In-flight Engine Failures

05-02-2

Rev. 28, Jun 04/2021

- (9) Airspeed Accelerate to the final segment climb speed
(10) FLAPS Select at slats/flaps retraction speed:

For a FLAPS 20 take-off:

- (a) Select FLAPS 8 at $V_2 + 12$ KIAS.
- (b) Select FLAPS 1 at $V_2 + 20$ KIAS.
- (c) Retract to FLAPS 0 at $V_{FTO} - 15$ KIAS.

For a FLAPS 8 take-off:

- (a) Select FLAPS 1 at $V_2 + 12$ KIAS.
- (b) Retract to FLAPS 0 at $V_{FTO} - 15$ KIAS.

At a safe altitude:

- (11) Single Engine Procedures, In-flight Engine Shutdown Accomplish

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – In-flight Engine
Shutdown.)

B. Engine Failure During Approach

- (1) Autopilot (if engaged) Disengage
- (2) Operating engine Increase thrust as required
- (3) Flight spoilers (if extended) Retract
- (4) Approach and landing FLAPS 20
- (5) Airspeed Increase to $V_{REF (FLAPS 45)} + 12$ KIAS
- (6) Airplane Retrim and continue approach, or go-around at pilot's discretion

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – Single Engine
Go-around.)

NOTE

The autopilot may be re-engaged, if above 400 feet AGL.

If continuing the approach:

- (7) GRND PROX, FLAP switch OVRD
- (8) Final approach speed Maintain $V_{REF (FLAPS 45)} + 12$ KIAS

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

In-flight Engine Failures

05-02-3

Rev. 28, Jun 04/2021

- (9) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.30 (30%)	1.25 (25%)



If required, use remaining thrust reverser carefully upon landing.

After landing:

- (10) Affected thrust lever SHUT OFF

C. Engine Failure in Climb During ALTS CAP

- (1) Autopilot (if engaged) Disengage
(2) Pitch attitude Adjust to maintain the required single engine operating airspeed.

NOTE

Vertical FD commands may be used and Autopilot re-engaged after FCC mode changes to ALTS at desired altitude.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES
In-flight Engine Failures

05-02-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Single Engine Procedures

05-03-1

Rev. 28, Jun 04/2021

1. SINGLE ENGINE PROCEDURES

A. In-flight Engine Shutdown

Accomplish an engine shutdown only when flight conditions permit:

- (1) Affected thrust lever Confirm and IDLE
- (2) Affected thrust lever Confirm and SHUT OFF
- (3) Affected HYDRAULIC pump switch ON
 - (a) If left engine shutdown HYDRAULIC 1 switch ON
 - (b) If right engine shutdown HYDRAULIC 2 switch ON
- (4) Affected FUEL, BOOST PUMP switch Confirm and select off
- (5) WING A/I CROSS BLEED switch Select non-affected side
- (6) ANTI-ICE, LH or RH COWL switch Affected side OFF
- (7) Affected PACK switch OFF

NOTE <2111>

Airplane altitude not above 25000 feet during single pack operations.

- (8) Fuel System Check
 - (a) Cross-flow AUTO
 - (b) Quantity/balance Check

NOTE

- 1. Leave icing conditions to prevent ice accumulation on the engine cowl with the inoperative anti-icing system.
- 2. Crew may have to perform the Gravity Cross-feed procedure when required and time permits. Refer to ABNORMAL PROCEDURES – Fuel – Gravity Cross-feed Procedure.

If enroute terrain clearance is not a consideration:

- (9) Proceed to step (12).

If enroute terrain clearance is a consideration:

- (9) Operating engine thrust lever Set to CLIMB
- (10) Airspeed Maintain enroute climb speed

(Refer to PERFORMANCE – General – FLIGHT CAPABILITIES – Climb Speeds.)

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES

Single Engine Procedures

05-03-2

Rev. 28, Jun 04/2021

- (11) Allow the airplane to climb or descend to the single engine level-off altitude.
(12) APU (if available, at 37000 feet and below)Start

NOTE

Do not attempt to relight an engine that is suspected to be damaged
(engine fire, rotor burst, reverser deployed, etc.).

If engine damage is suspected / intentional shutdown:

- (13) Land at the nearest suitable airport.
(14) Single Engine Approach and Landing
procedureAccomplish
(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – Single Engine
Approach and Landing.)

If engine damage is not suspected:

- (13) Engine Relight procedureAccomplish as required
(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures:
 - Starter-assisted Cross Bleed Relight
procedure
 - Starter-assisted APU Bleed Relight
procedure
 - Windmilling Relight.

Relight engine using starter-assisted start whenever possible.

B. Starter-assisted Cross Bleed Relight

- (1) AltitudeNot above 21000 feet
(2) FUEL, L and R BOOST PUMP switchesConfirm ON
(3) BLEED SOURCE switchOperative engine
(4) ISOL switchOPEN
(5) BLEED VALVES switchMANUAL
(6) Bleed air pressureNot less than 40 psi

When ready to start:

- (7) IGNITION, CONT switchON
(8) Affected ENG STARTswitchSTART and hold until N₂ is increasing.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Single Engine Procedures

05-03-3

Rev. 28, Jun 04/2021

When N₂ is at least 20% and ITT is 90°C or less:

- (9) Affected thrust lever IDLE
(10) Engine indications Monitor

If engine relights and stabilizes at IDLE:

- (11) Thrust levers As required
(12) IGNITION, CONT switch Select off

NOTE

A **BLEED MISCONFIG** caution message will be displayed after engine start. The message will go out when the BLEED VALVES switch is set to AUTO.

- (13) BLEED VALVES switch AUTO
(14) Affected PACK switch Select on
(15) WING A/I CROSS BLEED switch NORMAL
(16) ANTI-ICE, LH and RH COWL switches As required
(17) ANTI-ICE, WING switch As required
(18) Affected HYDRAULIC pump switch AUTO

If engine does not relight:

- (11) Affected thrust lever Confirm and SHUT OFF
(12) Affected ENG STOP switch STOP
(13) Wait 30 seconds, then repeat relight procedure if desired.

If engine relight is still not successful:

- (14) IGNITION, CONT switch Select off
(15) Affected FUEL, BOOST PUMP switch Confirm and select off
(16) Land at the nearest suitable airport.
(17) Single Engine Approach and Landing
procedure Accomplish

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – Single Engine
Approach and Landing.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Single Engine Procedures

05-03-4

Rev. 28, Jun 04/2021

C. Starter-assisted APU Bleed Relight

NOTE

If a **L ENG BLEED** or **R ENG BLEED** caution message is posted on EICAS, the PRSOV is not fully closed after engine shutdown. Do not attempt a Starter-assisted APU Bleed Relight. Use a Starter-assisted Cross Bleed Relight or a Windmilling Relight.

- (1) Altitude Not above 21000 feet
- (2) FUEL, L and R BOOST PUMP switches Confirm ON
- (3) ANTI-ICE, WING and COWL switches All OFF
- (4) BLEED SOURCE switch APU
- (5) ISOL switch OPEN
- (6) BLEED VALVES switch MANUAL

When ready to start:

- (7) IGNITION, CONT switch ON
- (8) Affected ENG START switch START and hold until N₂ is increasing.

When N₂ is at least 20% and ITT is 90°C or less:

- (9) Affected thrust lever IDLE
- (10) Engine indications Monitor

If engine relights and stabilizes at IDLE:

- (11) Thrust levers As required
- (12) IGNITION, CONT switch Select off
- (13) BLEED VALVES switch AUTO
- (14) Affected PACK switch Select on
- (15) WING A/I CROSS BLEED switch NORMAL
- (16) ANTI-ICE, WING and COWL switches As required
- (17) Affected HYDRAULIC pump switch AUTO
- (18) APU As required

If engine does not relight:

- (11) Affected thrust lever Confirm and SHUT OFF
- (12) Affected ENG STOP switch STOP
- (13) Wait 30 seconds, then repeat relight procedure if desired.

If engine relight is still not successful:

- (14) IGNITION, CONT switch Select off

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Single Engine Procedures

05-03-5

Rev. 28, Jun 04/2021

- (15) Affected FUEL, BOOST PUMP switch Confirm and select off
- (16) BLEED VALVES switch AUTO
- (17) WING A/I CROSS BLEED switch Select non-affected side
- (18) ANTI-ICE, WING and non-affected COWL switches As required
- (19) Land at the nearest suitable airport.
- (20) Single Engine Approach and Landing procedure Accomplish

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – Single Engine
Approach and Landing.)

D. Windmilling Relight

- (1) Altitude Not above 21000 feet
- (2) FUEL, L and R BOOST PUMP switches Confirm ON

When ready to start:

- (3) IGNITION, CONT switch ON
- (4) Airspeed Not less than 250 KIAS

NOTE

1. Windmill astart efficiency is enhanced by attaining the highest practical airspeed and N₂ within the relight envelope.
2. Maintain airspeed throughout light-off until engine start is complete (stable idle). Monitor engine parameters carefully.

When N₂ is at least 7.2% and ITT is less than 90°C:

- (5) Affected thrust lever IDLE

NOTE

An **ENG FLAMEOUT** caution message may momentarily be displayed.

- (6) Engine indications Monitor

NOTE

N₂ acceleration should be positive and uninterrupted. Stable idle speed should be reached within three to four minutes.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Single Engine Procedures

05-03-6

Rev. 28, Jun 04/2021

If engine achieves stabilized IDLE:

- (7) Thrust levers As required
- (8) IGNITION, CONT switch Select off
- (9) ANTI-ICE, LH and RH COWL switches As required
- (10) WING A/I CROSS BLEED switch NORMAL
- (11) Affected HYDRAULIC pump switch AUTO
- (12) APU As required

If engine does not achieve stabilized IDLE:

- (7) Affected thrust lever Confirm and SHUT OFF
- (8) Airspeed Not less than 250 KIAS
- (9) Wait 30 seconds, then repeat relight procedure if desired.

If engine relight is still not successful:

- (10) IGNITION, CONT switch Select off
- (11) Affected FUEL, BOOST PUMP switch Confirm and select off
- (12) Land at the nearest suitable airport.
- (13) Single Engine Approach and Landing procedure Accomplish

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – Single Engine
Approach and Landing.)

E. Single Engine Approach and Landing

- (1) GRND PROX, FLAP switch OVRD
- (2) Approach and landing FLAPS 20
- (3) Final approach speed Not less than $V_{REF} (\text{FLAPS } 45) + 12 \text{ KIAS}$
- (4) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.30 (30%)	1.25 (25%)



If required, use remaining thrust reverser carefully upon landing.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Single Engine Procedures

05-03-7

Rev. 28, Jun 04/2021

F. Single Engine Go-around

NOTE

The minimum fuel for go-around is 272 kg (600 lb) per wing (with the airplane level) and assuming a maximum airplane climb attitude of 10 degrees nose up.

If a go-around is initiated due to an engine failure on approach or during a single engine approach:

- (1) Thrust levers / TOGA switch Advance the thrust levers to the TOGA detent while simultaneously pressing the TOGA switch.
- (2) Flight spoilers (if extended) Retract
- (3) Airplane Rotate smoothly towards the flight director command bar
- (4) FLAPS 8
- (5) Pitch attitude Adjust to achieve an airspeed of V_{2GA} as the flaps are retracted to 8

When a positive rate of climb is achieved:

- (6) LDG GEAR lever UP
- (7) Airspeed Maintain at V_{2GA}

NOTE

1. If engine failure occurs at a speed between V_{2GA} and $V_{2GA} + 10$ KIAS, maintain present airspeed.
2. If engine failure occurs above $V_{2GA} + 10$ KIAS, maintain $V_{2GA} + 10$ KIAS.

At a safe altitude (not below 400 feet AGL):

If wing anti-ice system selected off:

- (8) Proceed to step (10).

If wing anti-ice system selected on:

- (8) WING A/I CROSS BLEED switch Select non-affected side
- (9) ANTI-ICE, LH or RH COWL switch Affected side OFF
- (10) Thrust Set as required

NOTE

Set thrust lever to CLIMB detent after time limit for APR thrust (10 minutes) has expired.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES
Single Engine Procedures

05-03-8

Rev. 28, Jun 04/2021

- (11) Airspeed Accelerate to the final segment climb speed
(12) FLAPS Select as follows:
 (a) Select FLAPS 1 at $V_{2GA} + 12$ KIAS.
 (b) Retract to FLAPS 0 at $V_{FTO} - 15$ KIAS.

If engine failure occurred on approach:

- (1) Single Engine Procedures, In-flight Engine Shutdown Accomplish

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – In-flight Engine Shutdown.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Power Plant

05-04-1

Rev. 28, Jun 04/2021

1. POWER PLANT

A. L REV UNLOCKED or R REV UNLOCKED

- (1) Affected thrust lever Confirm and IDLE
- (2) Airspeed Not more than 200 KIAS
- (3) Affected THRUST REVERSER switch OFF

Prior to landing:

- (4) GRND PROX, FLAP switch OVRD
- (5) Landing FLAPS 20
- (6) Approach speed Not less than $V_{REF} (\text{FLAPS } 45) + 12 \text{ KIAS}$
- (7) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.35 (35%)	1.25 (25%)



If required, use remaining thrust reverser carefully upon landing.

B. L REV UNSAFE or R REV UNSAFE

- (1) Affected THRUST REVERSER switch OFF



If required, use remaining thrust reverser carefully upon landing.

C. L REV INOP or R REV INOP

- (1) Affected THRUST REVERSER switch Confirm ARMED

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



ABNORMAL PROCEDURES Power Plant

05-04-2

Rev. 28, Jun 04/2021

If L REV INOP or R REV INOP caution message persists:

- (2) Affected THRUST REVERSER switch OFF



If required, use remaining thrust reverser carefully upon landing.

D. APR CMD SET

On the ground:

- (1) Do not take-off.

In flight:

- (1) ENGINES, SYNCH switch OFF

- (2) Thrust levers Adjust

NOTE

Thrust levers may be split.

- (3) Engine performance Monitor

NOTE

1. Selecting TOGA detent may set APR thrust.
2. Selecting CLIMB detent may set maximum continuous thrust.

DOT Approved

Airplane Flight Manual
CSP C-012-219

**E. L THROTTLE or R THROTTLE****NOTE**

1. There will be no response to thrust lever movement.
 2. The FADEC will maintain the affected engine operating at a thrust level equal to the last valid thrust lever setting.
 3. When either the LDG GEAR lever is selected DN or the flaps are selected to greater than FLAPS 20, the FADEC will set the affected engine thrust to approach IDLE until touchdown and then to normal ground IDLE. Thrust will remain at idle regardless of configuration changes.
 4. The thrust reverser on the affected engine is inoperative.
 5. Selecting the thrust lever to SHUT OFF will cause the engine to shut down.
- (1) Airplane performanceEvaluate for continued engine operation at the current thrust setting
- (2) Affected THRUST REVERSER switchLeave OFF

Prior to approach:**If affected engine thrust is above IDLE:****If able to safely maneuver the airplane to within landing gear operating speed:**

- (3) LDG GEAR leverDN when IDLE thrust is required
- (4) Single Engine Approach and Landing procedureAccomplish

(Refer to ABNORMAL PROCEDURES – Single Engine Procedures – Single Engine Approach and Landing.)

If unable to safely maneuver the airplane to within landing gear operating speed:

- (3) Single Engine Procedures, In-flight Engine ShutdownAccomplish

(Refer to ABNORMAL PROCEDURES – Single Engine Procedures – In-flight Engine Shutdown.)

If affected engine thrust is IDLE:

- (3) Single Engine Approach and Landing procedureAccomplish

(Refer to ABNORMAL PROCEDURES – Single Engine Procedures – Single Engine Approach and Landing.)



ABNORMAL PROCEDURES Power Plant

05-04-4

Rev. 28, Jun 04/2021

F. L ENG FLAMEOUT or R ENG FLAMEOUT

- (1) Affected thrust lever Confirm and IDLE
(2) Engine instruments Monitor auto-relight

NOTE

1. Affected engine's ITT may drop; N₂ may drop below idle.
2. Affected engine may shut down.

If L ENG FLAMEOUT or R ENG FLAMEOUT caution message persists or N₂ drops below 40%:

- (3) Single Engine Procedures, In-flight Engine Shutdown Accomplish
(Refer to ABNORMAL PROCEDURES – Single Engine Procedures – In-flight Engine Shutdown.)

G. L START ABORT or R START ABORT

- (1) Affected thrust lever SHUT OFF
(2) Dry motor Until ITT < 120°C or starter limit, whichever comes first
(3) Affected ENG STOP switch STOP
(4) Affected engine start Repeat

H. L FADEC or R FADEC

- (1) Affected thrust lever Confirm and IDLE
(2) Engine indications Monitor

NOTE

1. Engine may operate normally but without overspeed protection.
2. Engine RPM may reduce to idle setting.
3. Engine may shut down.

If engine indications are normal:

Prior to landing:

- (3) GRND PROX, FLAP switch OVRD
(4) Affected THRUST REVERSER switch OFF
(5) Landing FLAPS 20

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Power Plant

05-04-5

Rev. 28, Jun 04/2021

- (6) Approach speed Not less than V_{REF} (FLAPS 45) + 12 KIAS
(7) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.35 (35%)	1.25 (25%)



If required, use remaining thrust reverser carefully upon landing.

If engine indications are not normal:

- (3) Single Engine Procedures, In-flight Engine Shutdown Accomplish
(Refer to ABNORMAL PROCEDURES – Single Engine Procedures – In-flight Engine Shutdown.)

I. L FADEC OVHT or R FADEC OVHT

NOTE

The **L FADEC OVHT** or **R FADEC OVHT** caution message indicates possible erroneous information or loss of an engine.

- (1) Affected thrust lever Retard until message out
(2) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

When clear of icing conditions:

- (3) ANTI-ICE, LH or RH COWL switch Affected side OFF

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES Power Plant

05-04-6

Rev. 30, Mar 25/2022

If L FADEC OVHT or R FADEC OVHT caution message persists:

- (4) Single Engine Procedures, In-flight Engine
Shutdown Accomplish
(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – In-flight Engine
Shutdown.)

NOTE

A relight attempt should only be carried out when the **L FADEC OVHT** or **R FADEC OVHT** caution message is out.

If L FADEC OVHT or R FADEC OVHT caution message goes out:

- (4) Engine instruments Monitor

Effectivity:

- Airplanes 15260 and subsequent, or Airplanes **incorporating** one or both of the following Service Bulletins:
 - SB 670BA-34-039 – Navigation – Flight Management System (FMS) – Installation of FMS Upgrades (Provisions for the Coupled VNAV, the ACARS Link 2000, the SBAS GPS-4000S, and/or the LPV), or
 - SB 670BA-34-031 – Navigation – Flight Management System – Installation of the Coupled Vertical Navigation (VNAV) Capability.

J. L STRT VLV OPEN or R STRT VLV OPEN (In flight)

- (1) Affected ENG STOP switch STOP

If L STRT VLV OPEN or R STRT VLV OPEN caution message goes out:

- (2) Normal operations Continue

If L STRT VLV OPEN or R STRT VLV OPEN caution message persists:

- (2) BLEED SOURCE switch Select non-affected engine source.

- (3) ISOL switch CLSD

- (4) BLEED VALVES switch MANUAL

If L STRT VLV OPEN or R STRT VLV OPEN caution message still persists:

- (5) Single Engine Procedures, In-flight Engine
Shutdown Accomplish

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – In-flight
Engine Shutdown.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Power Plant

05-04-7

Rev. 30, Mar 25/2022

If L STRT VLV OPEN or R STRT VLV OPEN caution message goes out:

- (5) Inoperative PACK switch OFF

NOTE <2111>

Airplane altitude not above 25000 feet during single pack operations.

- (6) WING A/I CROSS BLEED switch Select source engine side
(7) ANTI-ICE, LH or RH COWL switch Non-source engine side OFF.
(8) Leave icing conditions to prevent ice accumulation on inoperative cowl.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

Effectivity:

- Airplanes 15260 and subsequent, or Airplanes **incorporating** one or both of the following Service Bulletins:
 - SB 670BA-34-039 – Navigation – Flight Management System (FMS) – Installation of FMS Upgrades (Provisions for the Coupled VNAV, the ACARS Link 2000, the SBAS GPS-4000S, and/or the LPV), **or**
 - SB 670BA-34-031 – Navigation – Flight Management System – Installation of the Coupled Vertical Navigation (VNAV) Capability.

K. L STRT VLV OPEN or R STRT VLV OPEN (On the ground)

APU or Cross Bleed Start:

- (1) Affected ENG STOP switch STOP

If L STRT VLV OPEN or R STRT VLV OPEN caution message goes out:

- (2) Normal operations Continue

If L STRT VLV OPEN or R STRT VLV OPEN caution message persists:

- (2) BLEED SOURCE switch Select non-affected engine source.

- (3) ISOL switch CLSD

- (4) BLEED VALVES switch MANUAL

If L STRT VLV OPEN or R STRT VLV OPEN caution message still persists:

- (5) Affected thrust lever SHUT OFF

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Power Plant

05-04-8

Rev. 28, Jun 04/2021

If L STRT VLV OPEN or R STRT VLV OPEN caution message goes out:

- (5) Do not take-off.

External Air Start:

- (1) Affected ENG STOP switch STOP

If L STRT VLV OPEN or R STRT VLV OPEN caution message goes out:

- (2) Normal operations Continue

If L STRT VLV OPEN or R STRT VLV OPEN caution message persists:

- (2) Affected thrust lever SHUT OFF

- (3) External air supply Remove

No Start Being Attempted:

- (1) Affected thrust lever SHUT OFF

L. L ENG SRG CLSD or R ENG SRG CLSD

On the ground:

- (1) Do not take-off.

In flight:

- (1) Affected thrust lever Adjust as required. Avoid rapid acceleration or deceleration. Avoid high power settings.

If compressor stall occurs:

- (2) Affected thrust lever Retard to IDLE then slowly advance to desired setting

If compressor stall continues or engine limits are exceeded:

- (3) Single Engine Procedures, In-flight Engine Shutdown Accomplish

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – In-flight Engine Shutdown.)

If compressor stall does not occur or engine limits are not exceeded:

- (2) Engine instruments Monitor

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Power Plant

05-04-9

Rev. 28, Jun 04/2021

M. L ENG SRG OPEN or R ENG SRG OPEN

On the ground:

- (1) Do not take-off.

In flight:

- (1) Affected engine Monitor ITT and adjust thrust to maintain ITT limits.

- (2) Do not deploy the affected thrust reverser upon landing.

Prior to landing:

- (3) Affected THRUST REVERSER switch OFF



If required, use remaining thrust reverser carefully upon landing.

N. Engine Hot Start

- (1) Affected thrust lever SHUT OFF
- (2) Dry motor Until ITT < 120°C or starter limit, whichever comes first
- (3) Affected ENG STOP switch STOP

O. L START VALVE or R START VALVE

On the ground:

- (1) Affected ENG STOP switch STOP
- (2) Air turbine start is not available.

In flight:

- (1) Windmilling Relight procedure Accomplish

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – Windmilling
Relight.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Power Plant

05-04-10

Rev. 29, Oct 15/2021

P. L ENG TAT HEAT or R ENG TAT HEAT

- (1) Leave icing conditions. Affected engine T₂ probe is not heated.

Q. Loss of FAN VIB Indicator

- (1) Monitor fan vibration indicator on operative side.
- (2) Leave icing conditions.

R. N₁ Fan Vibration



It is not recommended that an engine be shut down unless there is another indication of a severe engine abnormality including high oil temperature, low oil pressure, uncontrolled excessive ITT and/or continuous abnormal airframe vibration.

- If icing conditions or ice accumulation is suspected, proceed to step (1).

- If in non-icing conditions, proceed to step (8).

- (1) In icing conditions or ice accumulation is suspected:

NOTE

If both engines are affected the following steps need to be done for one engine at a time.

- (2) Affected thrust lever Confirm and IDLE, then immediately set thrust to CLB

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Power Plant

05-04-11

Rev. 29, Oct 15/2021

- (3) Wait 30 seconds with affected thrust lever at CLB detent.

NOTE

1. In colder conditions several attempts/minutes may be required to shed ice.
 2. If more than one attempt is required to reduce fan vibration to within normal operating range, icing conditions should be considered severe.
 3. Ice shedding process may be accompanied by the following:
 - an airframe vibration and change in engine noise;
 - sharp metallic noise as ice impacts inside of the nacelle;
 - vibrations may increase;
 - vibrations may momentarily indicate full scale.
- **If after 30 seconds, vibration can be controlled or reduced to within normal operating range, proceed to step (11).**
 - **If after 30 seconds, vibration cannot be controlled or reduced to within normal operating range, proceed to step (4).**
- (4) Repeat steps (2) and (3) above as many times as required to shed the ice.
- (5) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

- (6) Engine indications Monitor
- (7) **If vibrations still cannot be controlled or reduced to within normal operating range, proceed to step (13).**
- (8) **Non-icing conditions:**
- (9) Affected thrust lever Confirm and IDLE, then immediately adjust thrust to the required setting.
- **If vibration can be controlled or reduced to within normal operating range, proceed to step (11).**

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Power Plant

05-04-12

Rev. 29, Oct 15/2021

- If vibration cannot be controlled or reduced to within normal operating range, proceed to step (10).

(10) Airplane altitude Descend by 4000 feet or to lowest safe altitude, whichever is higher.

- If after altitude reduction vibration can be controlled or reduced to within normal operating range, proceed to step (11).

- If after altitude reduction vibration cannot be controlled or reduced to within normal operating range, proceed to step (13).

(11) Vibration can be controlled or reduced to within normal operating range:

(12) Engine indications Monitor

(13) Vibration cannot be controlled or reduced to within normal operating range:

(14) Affected engine Adjust thrust to maintain vibration levels within normal range.

- If vibration can be maintained within normal operating range, proceed to step (15).

- If vibration still cannot be maintained within normal operating range, proceed to step (17).

(15) Vibration can be maintained within normal operating range:

(16) Engine indications Monitor

(17) Vibration still cannot be maintained within normal operating range:

(18) Single Engine Procedures, In-flight Engine Shutdown Accomplish

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – SINGLE
ENGINE PROCEDURES – In-flight Engine
Shutdown.)

S. N₂ Core Vibration



It is not recommended that an engine be shut down unless there is another indication of a severe engine abnormality, i.e., high oil temperature, high oil pressure, or abnormal engine vibration is felt through the airframe.

(1) Affected engine Adjust thrust to maintain vibration levels within normal range

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Power Plant

05-04-13

Rev. 29, Oct 15/2021

If vibration can be controlled or reduced to within normal operating range:

- (2) Engine indications Monitor

If vibration cannot be controlled or reduced to within normal operating range, and other abnormal engine operation persists:

- (2) Single Engine Procedures, In-flight Engine Shutdown Accomplish

(Refer to ABNORMAL PROCEDURES – Single Engine Procedures – In-flight Engine Shutdown.)

T. Engine Oscillations

- (1) ENGINES, SYNCH switch OFF

If engine stabilizes:

- (2) ENGINES, SYNCH switch Select alternate

If engine does not stabilize:

- (2) Engine instruments Monitor

U. L ENG DEGRADED or R ENG DEGRADED

- (1) Engine instruments Monitor

NOTE

1. Engine performance/operation may be degraded.
2. If **L ENG DEGRADED** and **R ENG DEGRADED** caution messages are displayed simultaneously after wing anti-ice selection, then monitor for higher than normal ITTs at CLB thrust setting and above. Thrust reduction will reduce ITTs to normal values. In this condition, flight with wing anti-ice on may continue.

V. Left Engine or Right Engine High Oil Temperature Indication

Indication: Affected engine oil temperature is $\geq 156^{\circ}\text{C}$.

NOTE

1. During take-off or APR settings, operation of 15 minutes or less is permitted in the amber range with no action required.
2. Abnormal oil level is indicated by **L or R OIL LEVEL LO** status message (in flight) when oil level is less than 57%.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES
Power Plant

05-04-14

Rev. 29, Oct 15/2021

If oil temperature is above normal (green) range:

- (1) Affected thrust lever Adjust to maintain oil temperature within normal (green) range.

If oil temperature cannot be adjusted within normal (green) range, and oil pressure and oil level are within normal range:

- (2) Affected thrust lever Select and maintain at IDLE

If oil temperature cannot be adjusted within normal (green) range, and oil pressure or oil level are not within normal range:

- (2) Single Engine Procedures, In-flight Engine Shutdown Accomplish

(Refer to ABNORMAL PROCEDURES –
SINGLE ENGINE PROCEDURES – In-flight
Engine Shutdown).

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Air-conditioning, Bleed and Pressurization

05-05-1

Rev. 28, Jun 04/2021

1. AIR-CONDITIONING SYSTEM

A. L PACK TEMP or R PACK TEMP

- (1) Affected PACK switch OFF

NOTE <2111>

Airplane altitude not above 25000 feet during single PACK operations.

- (2) Pressurization Monitor

If L PACK TEMP caution message persists:

- (3) BLEED SOURCE switch R ENG
(4) ISOL switch CLSD
(5) BLEED VALVES switch MANUAL

If in icing, then:

- (6) WING A/I CROSS BLEED switch FROM RIGHT
(7) ANTI-ICE, LH COWL switch OFF
(8) Leave icing conditions to prevent ice accumulation on inoperative cowl.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

If R PACK TEMP caution message persists:

- (3) BLEED SOURCE switch L ENG
(4) ISOL switch CLSD
(5) BLEED VALVES switch MANUAL

If in icing, then:

- (6) WING A/I CROSS BLEED switch FROM LEFT
(7) ANTI-ICE, RH COWL switch OFF
(8) Leave icing conditions to prevent ice accumulation on inoperative cowl.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Air-conditioning, Bleed and Pressurization

05-05-2

Rev. 28, Jun 04/2021

B. L PACK AUTOFAIL or R PACK AUTOFAIL

- (1) Affected AIR-CONDITIONING, MAN switch MAN
- (2) Affected manual mode temperature control switch As required

C. L PACK or R PACK

- (1) Affected PACK switch OFF

NOTE <2111>

Airplane altitude not above 25000 feet during single PACK operations.

- (2) Pressurization Monitor

If L PACK or R PACK caution message persists:

- (3) BLEED SOURCE switch Select alternate source to isolate affected PACK

NOTE

1. APU bleed can only be used to a maximum of 25000 feet for ECS.
2. Do not select the APU as the bleed source if wing or cowl anti-ice is required.

- (4) ISOL switch CLSD

- (5) BLEED VALVES switch MANUAL

- (6) WING A/I CROSS BLEED switch Select non-affected side

- (7) ANTI-ICE, LH or RH COWL switch Affected side OFF

- (8) Leave icing conditions to prevent ice accumulation on inoperative cowl.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Air-conditioning, Bleed and Pressurization

05-05-3

Rev. 28, Jun 04/2021

2. AVIONICS COOLING SYSTEM

A. AVIONICS FAN

On the ground:

- (1) Do not take-off.

In flight:

- (1) AVIONICS FAN switchFLT ALTN

B. DISPLAY COOL

On the ground:

- (1) DSPLY FAN selectorGND ALTN

If after 60 seconds DISPLAY COOL caution message persists:

- (2) DSPLY FAN selectorSTDBY

In flight:

- (1) DSPLY FAN selectorFLT ALTN

If after 60 seconds DISPLAY COOL caution message persists:

- (2) DSPLY FAN selectorSTDBY

- (3) CKPT temperature selectorCOLD

If after another 60 seconds DISPLAY COOL caution message still persists:

- (4) Applicable PFD/EICAS reversionAs required

- (5) Land at the nearest suitable airport.

C. OVBD COOL (On Ground Only)

- (1) Do not take-off.

3. BLEED SYSTEM

A. BLEED MISCONFIG

- (1) BLEED VALVES switchAUTO

NOTE

If AUTO is inoperative, it may be necessary to cycle the BLEED VALVES (select switch from MANUAL to CLSD) to allow a reconfiguration of the bleed system.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Air-conditioning, Bleed and Pressurization

05-05-4

Rev. 28, Jun 04/2021

If manual bleed operation is required:

- (2) Manual Bleed Procedure Accomplish
(Refer to ABNORMAL PROCEDURES –
Air-conditioning, Bleed and Pressurization –
BLEED SYSTEM – Manual Bleed
Procedure.)

If manual bleed operation is not required:

- (2) No further action required.

B. Manual Bleed Procedure

To select both engines as the bleed source:

NOTE

Operate only one PACK per engine.

- (1) ISOL switch CLSD
(2) BLEED SOURCE switch BOTH ENG
(3) BLEED VALVES switch MANUAL

To select only one engine as the bleed source:

NOTE

Operate only one PACK per engine.

- (1) ISOL switch CLSD

NOTE

If it is necessary to operate a PACK from the opposite engine bleed, set the ISOL switch to OPEN.

- (2) BLEED SOURCE switch L ENG or R ENG
(3) BLEED VALVES switch MANUAL
(4) Inoperative PACK switch OFF

NOTE <2111>

Airplane altitude not above 25000 feet during single PACK operations.

- (5) WING A/I CROSS BLEED switch Select source engine side
(6) ANTI-ICE, LH or RH COWL switch Non-source engine side OFF

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Air-conditioning, Bleed and Pressurization

05-05-5

Rev. 28, Jun 04/2021

- (7) Leave icing conditions to prevent ice accumulation on inoperative cowl.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

To select the APU as the bleed source:

NOTE

1. Do not select the APU as the bleed source if wing or cowl anti-ice is required.
2. APU bleed can only be used to a maximum of 25000 feet for ECS.

- (1) APU (37000 feet and below)Start
(2) ANTI-ICE, WING switchOFF
(3) ANTI-ICE, LH and RH COWL switchesOFF
(4) BLEED SOURCE switchAPU
(5) ISOL switchOPEN
(6) BLEED VALVES switchMANUAL

To close the engine bleeds and the APU LCV:

- (1) BLEED VALVES switchCLSD

NOTE

1. The isolation valve will open when the BLEED VALVES switch is set to CLSD.
2. With the BLEED VALVES switch set to CLSD, pressurization and wing and cowl anti-ice will be inoperative.

C. L ENG BLEED or R ENG BLEED

- (1) BLEED SOURCE switchSelect non-affected engine source
(2) ISOL switchCLSD
(3) BLEED VALVES switchMANUAL
(4) Affected side PACK switchOFF

NOTE <2111>

Airplane altitude not above 25000 feet during single pack operations.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Air-conditioning, Bleed and Pressurization

05-05-6

Rev. 28, Jun 04/2021

- (5) WING A/I CROSS BLEED switchSelect non-affected side
- (6) ANTI-ICE, LH or RH COWL switchAffected side OFF
- (7) Leave icing conditions to prevent ice accumulation on inoperative cowl.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

D. L BLEED LOOP or R BLEED LOOP

- (1) BLEED SOURCE switchSelect non-affected side
- (2) ISOL switchCLSD
- (3) BLEED VALVES switchMANUAL
- (4) Affected side PACK switchOFF

NOTE <2111>

Airplane altitude not above 25000 feet during single pack operations.

- (5) WING A/I CROSS BLEED switchSelect non-affected side
- (6) ANTI-ICE, LH or RH COWL switchAffected side OFF
- (7) Leave icing conditions to prevent ice accumulation on inoperative cowl.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

E. ISOL FAIL

If ISOL FAIL caution message and ISOL OPEN status message on:

- (1) BLEED SOURCE switchL ENG or R ENG
- (2) ISOL switchOPEN
- (3) BLEED VALVES switchMANUAL
- (4) L or R PACK switchOFF

NOTE <2111>

Airplane altitude not above 25000 feet during single pack operations.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Air-conditioning, Bleed and Pressurization

05-05-7

Rev. 28, Jun 04/2021

- (5) WING A/I CROSS BLEED switchSelect non-affected side
- (6) ANTI-ICE, LH or RH COWL switchAffected side OFF
- (7) Leave icing conditions to prevent ice accumulation on inoperative cowl.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

If ISOL FAIL caution message and ISOL CLOSED status message on:

- (1) BLEED SOURCE switch BOTH ENG
- (2) ISOL switch CLSD
- (3) BLEED VALVES switch MANUAL

F. L BLEED DUCT or R BLEED DUCT



If **L BLEED DUCT** or **R BLEED DUCT** warning message persists for 30 seconds, all bleed air sources will be closed causing loss of pressurization.

NOTE

The **L BLEED DUCT** or **R BLEED DUCT** warning message will be replaced by a **L BLEED DUCT** or **R BLEED DUCT** caution message following automatic bleed valve closure and leak isolation.

- (1) ECS synoptic pageSelect to determine affected side

If both L and R engine bleed valves are closed:

- (2) DescentInitiate to 10000 feet MSL or lowest safe altitude, whichever is higher.
- (3) BLEED VALVES switchCLSD
- (4) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

- (5) ANTI-ICE, WING switchOFF

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Air-conditioning, Bleed and Pressurization

05-05-8

Rev. 28, Jun 04/2021

- (6) ANTI-ICE, LH and RH COWL switches OFF
- (7) Unpressurized Flight Procedure (PACKs off)..... Accomplish as follows:
 - (a) Airplane altitude..... Not above 10000 feet MSL or lowest safe altitude, whichever is higher.
 - (b) Airspeed Not less than 210 KIAS

NOTE

Recommended during cruise to provide sufficient airflow to passengers within cabin.

- (c) EMER DEPRESS switch ON
- (d) L and R PACK switches OFF
- (e) AIR CONDITIONING, AFT CARGO switch OFF
- (f) RECIRC FAN switch OFF
- (g) RAM-AIR switch OPEN

NOTE

If **RAM AIR OPEN** status message does not come on, the cockpit and/or cabin temperature can rise quickly. Expedite landing at nearest suitable airport.

If either L or R engine bleed valves are open:

- (2) BLEED SOURCE switch Select non-affected engine source
- (3) ISOL switch CLSD
- (4) BLEED VALVES switch MANUAL
- (5) Affected PACK switch OFF

NOTE <2111>

Airplane altitude not above 25000 feet during single pack operations.

- (6) WING A/I CROSS BLEED switch Select non-affected side
- (7) ANTI-ICE, LH or RH COWL switch Affected side OFF
- (8) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES

Air-conditioning, Bleed and Pressurization

05-05-9

Rev. 28, Jun 04/2021

4. PRESSURIZATION SYSTEM

A. ALT LIMITER

- (1) Airplane altitude Not above 25000 feet

B. AUTO PRESS

- (1) MAN ALT switch HOLD
(2) PRESS CONT switch MAN
(3) Manual Pressurization Control Procedure Accomplish

(Refer to ABNORMAL PROCEDURES –
Air-conditioning, Bleed and Pressurization –
PRESSURIZATION SYSTEM – Manual
Pressurization Control Procedure.)

C. CABIN ALT

- (1) BLEED VALVES switch AUTO
(2) L and R PACK switches Check on
(3) EMER DEPRESS switch Check off
(4) MAN ALT switch HOLD
(5) PRESS CONT switch MAN then reset

If CABIN ALT caution message persists:

- (6) PRESS CONT switch MAN
(7) Manual Pressurization Control Procedure Accomplish

(Refer to ABNORMAL PROCEDURES –
Air-conditioning, Bleed and Pressurization –
PRESSURIZATION SYSTEM – Manual
Pressurization Control Procedure.)

If CABIN ALT caution message goes out:

- (6) Pressurization Monitor

D. EMER DEPRESS

If not required:

- (1) EMER DEPRESS switch Select off

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Air-conditioning, Bleed and Pressurization

05-05-10

Rev. 28, Jun 04/2021

E. Manual Pressurization Control Procedure

- (1) MAN ALT switch HOLD
(2) PRESS CONT switch MAN

To increase cabin altitude:

- (3) MAN ALT switch UP
(4) MAN RATE selector As required

To decrease cabin altitude:

- (3) MAN ALT switch DN
(4) MAN RATE selector As required

To maintain cabin altitude:

- (5) MAN ALT switch HOLD when reaching target cabin altitude
(refer to the table that follows)

Cruise Flight Level	180	200	220	240	260	280	290	310	330	350	370	390	410
Target Cabin Altitude	1100	1500	2000	2400	2900	3500	3800	4500	5300	6000	6700	7400	8000

Effectivity:

- When operating at airport pressure altitudes between 8000 and 10000 feet, for:
- Airplanes 15250 and subsequent, or
- Airplanes 15001 thru 15249 **incorporating** the following Service Bulletin:
 - SB 670BA-21-030, Air Conditioning – Cabin Pressure Controller (CPC) – Software Upgrade.

Descent:

At the top of descent:

- (1) Cabin altitude Adjust to 8000 feet

At 21000 feet airplane altitude:

- (2) Cabin altitude Adjust to landing field elevation

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Air-conditioning, Bleed and Pressurization

05-05-11

Rev. 28, Jun 04/2021

Before landing:

- (1) Cabin altitude Check and set to landing field elevation.

NOTE

When in manual pressurization control mode, the **CABIN ALT** caution and warning messages are reset to be posted at their nominal values of 8500 feet and 10000 feet, respectively.

Before landing:

- (1) Cabin altitude Adjust to landing field elevation.

NOTE

Do not set cabin altitude below destination field elevation.

If differential pressure is not zero upon landing:

- (2) MAN ALT switch UP
(3) MAN RATE selector Maximum INCR

F. Unpressurized Flight Procedure (PACKs off)

- (1) Airplane altitude Not above 10000 feet MSL or lowest safe altitude, whichever is higher.
(2) Airspeed Not less than 210 KIAS

NOTE

Recommended during cruise to provide sufficient airflow to passengers within cabin.

- (3) EMER DEPRESS switch ON
(4) L and R PACK switches OFF
(5) AIR-CONDITIONING, AFT CARGO switch OFF
(6) RECIRC FAN switch OFF
(7) RAM-AIR switch OPEN

NOTE

If **RAM AIR OPEN** status message does not come on, the cockpit and/or cabin temperature can rise quickly. Expedite landing at nearest suitable airport.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES
Air-conditioning, Bleed and Pressurization

05-05-12

Rev. 28, Jun 04/2021

G. Unpressurized Flight Procedure (PACKs on)

- (1) Airplane altitude Not above 10000 feet MSL or lowest safe altitude, whichever is higher.
- (2) EMER DEPRESS switch ON

5. AFT CARGO BAY VENTILATION SYSTEM <1201>

A. AFT CARGO OVHT

- (1) AIR-CONDITIONING, AFT CARGO switch AIR

If AFT CARGO OVHT caution message persists:

- (2) AIR-CONDITIONING, AFT CARGO switch OFF

If live cargo are loaded in the aft cargo bay:

- (3) Land at the nearest suitable airport.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES

Automatic Flight Control System

05-06-1

Rev. 28, Jun 04/2021

1. AUTOMATIC FLIGHT CONTROL SYSTEM (AFCS)

A. AP TRIM IS LWD or AP TRIM IS RWD or AP TRIM IS NU or AP TRIM IS ND

NOTE

Anticipate out-of-trim condition when disengaging autopilot.

- (1) Autopilot Disengage
- (2) Airplane Retrim
- (3) Autopilot Engage
- (4) Autopilot operation Monitor

If AP TRIM IS LWD or AP TRIM IS RWD or AP TRIM IS NU or AP TRIM IS ND caution message persists:

NOTE

Anticipate out-of-trim condition when disengaging autopilot.

- (5) Autopilot Disengage

B. AP PITCH TRIM

NOTE

Anticipate out-of-trim condition when disengaging autopilot.

- (1) Autopilot Disengage
- (2) Airplane Retrim
- (3) Autopilot Engage
- (4) Autopilot operation Monitor

If AP PITCH TRIM caution message persists:

NOTE

Anticipate out-of-trim condition when disengaging autopilot.

- (5) Autopilot Disengage

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Automatic Flight Control System

05-06-2

Rev. 28, Jun 04/2021

C. YAW DAMPER

(1) YAW DAMPER, YD 1 and YD 2 switches Engage

If YAW DAMPER caution message persists:

(2) YAW DAMPER, DISC button Select

NOTE

Select the runway available with minimum cross-wind.

If YAW DAMPER caution message goes out:

(2) Autopilot As required

D. Flight Director Guidance Failure

If FD annunciator flag displayed on PFD and autopilot/FD coupled to affected side:

(1) AP/FD XFR switch Transfer

If sensor failure indicated (red line across affected mode indication):

(1) Affected FD mode switch Deselect

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Auxiliary Power Unit

05-07-1

Rev. 28, Jun 04/2021

1. AUXILIARY POWER UNIT (APU)

A. APU LCV OPEN

If the APU generator is required:

- (1) BLEED SOURCE switch R ENG
- (2) ISOL switch CLSD
- (3) BLEED VALVES switch MANUAL

NOTE

Disregard the **APU BLEED ON** caution message, if present.

- (4) L PACK switch OFF
- (5) WING A/I CROSS BLEED switch FROM RIGHT
- (6) ANTI-ICE, LH COWL switch OFF
- (7) Leave icing conditions to prevent ice accumulation on inoperative engine cowl.

If the APU generator is not required:

- (1) BLEED SOURCE switch BOTH ENG
- (2) ISOL switch CLSD
- (3) BLEED VALVES switch MANUAL

NOTE

Disregard the **BLEED MISCONFIG** caution message.

- (4) APU, START/STOP switch Select off

NOTE

The APU is available for restart, if the RPM is stabilized at 0.

- (5) APU RPM Monitor

If the APU RPM is more than 0:

- (6) BLEED SOURCE switch R ENG
- (7) L PACK switch OFF
- (8) WING A/I CROSS BLEED switch FROM RIGHT
- (9) ANTI-ICE, LH COWL switch OFF

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Auxiliary Power Unit

05-07-2

Rev. 28, Jun 04/2021

- (10) Leave icing conditions to prevent ice accumulation on inoperative engine cowl.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

B. APU LCV CLSD

- (1) BLEED SOURCE switch Select alternate source, if required

NOTE

1. Do not select the APU as the bleed source if wing or cowl anti-ice is required.
2. APU bleed can only be used to a maximum of 25000 feet for ECS.

- (2) Manual Bleed Procedure (to select both engines as the bleed source) Accomplish

(Refer to ABNORMAL PROCEDURES – Air-conditioning, Bleed and Pressurization – BLEED SYSTEM – Manual Bleed Procedure.)

C. APU BLEED ON

If APU BLEED ON caution message occurs during normal ECS operation:

- (1) Select another bleed source or descend to an altitude where the message goes out.

If APU BLEED ON caution message occurs during a “Starter-Assisted APU Bleed Relight”:

- (1) No action required.

D. APU FAULT

If the APU generator is required:

- (1) APU indications Monitor
(Refer to LIMITATIONS – Power Plant – AUXILIARY POWER UNIT (APU).)

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Auxiliary Power Unit

05-07-3

Rev. 28, Jun 04/2021

If the APU generator is not required:

- (1) APU, START/STOP switch Select off
- (2) APU, PWR FUEL switch Select off

E. APU PUMP

If the APU generator is required:

- (1) APU operation Monitor
- (2) Altitude Not above 20000 feet

If the APU generator is not required:

- (1) APU, START/STOP switch Select off
- (2) APU, PWR FUEL switch Select off

F. APU ECU FAIL

If the APU generator is required:

- (1) APU generator frequency and voltage Monitor for abnormal operation.

If the APU generator maintains sufficient electrical power:

- (2) No further action required.

If the APU generator cannot maintain sufficient electrical power:

- (2) APU, START/STOP switch Select off
- (3) APU, PWR FUEL switch Select off
- (4) Do not restart the APU.

If the APU generator is not required:

- (1) APU, START/STOP switch Select off
- (2) APU, PWR FUEL switch Select off

G. APU Door Failure

APU DOOR OPEN caution message (primary display) and DOOR OPEN amber message (STAT page):

- (1) Airspeed Not more than 220 KIAS

NOTE

The APU may be restarted and operated throughout the remainder of the flight without any airspeed restriction.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Auxiliary Power Unit

05-07-4

Rev. 28, Jun 04/2021

If APU message area indicates DOOR INHIB/CLSD:

- (1) APU, START/STOP switch Select off
- (2) APU, PWR FUEL switch Select off

If APU message area indicates DOOR INHIB/OPEN:

If the APU is operating:

- (1) No further action required.

If the APU is not operating:

- (1) Airspeed Not more than 220 KIAS

If APU message area indicates DOOR INHIB - - - or DOOR - - -:

If the APU is operating:

- (1) APU, START/STOP switch Select off
- (2) APU, PWR FUEL switch Select off
- (3) Airspeed Not more than 220 KIAS

If the APU is not operating:

- (1) Do not attempt to start the APU.
- (2) Airspeed Not more than 220 KIAS

H. APU SOV FAIL

- (1) APU, START/STOP switch Select off
- (2) APU, PWR FUEL switch Select off

I. APU SOV OPEN

- (1) APU, START/STOP switch Select off
- (2) APU, PWR FUEL switch Select off

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Doors

05-08-1

Rev. 28, Jun 04/2021

1. PAX DOOR

A. PAX DR OUT HNDL

- | | |
|----------------------------|----------------|
| (1) SEAT BLTS switch | ON |
| (2) Cabin pressure | Check normal |
| (3) Passenger door | Check visually |

NOTE

Check that green witness marks (registers) on all latches (rotary and sliding) are correctly aligned.

If cabin pressure is normal and green witness marks are aligned:

- (4) No further action required.

If cabin pressure is not normal or any of the green witness marks are not aligned:

Effectivity:

- When operating at airport pressure altitudes between 8000 and 10000 feet, for:
- Airplanes 15250 and subsequent, or
- Airplanes 15001 thru 15249 **incorporating** the following Service Bulletin:
 - SB 670BA-21-030, Air Conditioning – Cabin Pressure Controller (CPC) – Software Upgrade.

NOTE

When in manual pressurization control mode, the CABIN ALT caution and warning messages are reset to be posted at their nominal values of 8500 feet and 10000 feet, respectively.

- | | |
|-----------------------------|-------------|
| (4) MAN ALT switch | HOLD |
| (5) PRESS CONT switch | MAN |
| (6) MAN ALT switch | As required |

NOTE

1. Maintain cabin altitude at 8000 feet to minimize the pressure differential across the affected door.
2. Set the MAN ALT switch to "UP" to increase cabin altitude; "DN" to reduce cabin altitude.

- (7) MAN RATE selector As required

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Doors

05-08-2

Rev. 28, Jun 04/2021

When reaching 8000 feet cabin altitude:

- (8) MAN ALT switch HOLD
(9) Descent Initiate to 10000 feet MSL or lowest safe altitude, whichever is higher.
(10) Land at the nearest suitable airport.

Effectivity:

- When operating at airport pressure altitudes between 8000 and 10000 feet, for:
- Airplanes 15250 and subsequent, or
- Airplanes 15001 thru 15249 **incorporating** the following Service Bulletin:
 - SB 670BA-21-030, Air Conditioning – Cabin Pressure Controller (CPC) – Software Upgrade.

At 21000 feet airplane altitude:

- (11) Cabin altitude Adjust to landing field elevation.

At 10000 feet MSL or lowest safe altitude, whichever is higher:

- (11) Cabin altitude Adjust to landing field elevation.

B. PAX DR LATCH

- (1) SEAT BLTS switch ON
(2) Cabin pressure Check normal

If cabin pressure is normal:

- (3) No further action required.

If cabin pressure is not normal:

Effectivity:

- When operating at airport pressure altitudes between 8000 and 10000 feet, for:
- Airplanes 15250 and subsequent, or
- Airplanes 15001 thru 15249 **incorporating** the following Service Bulletin:
 - SB 670BA-21-030, Air Conditioning – Cabin Pressure Controller (CPC) – Software Upgrade.

NOTE

When in manual pressurization control mode, the CABIN ALT caution and warning messages are reset to be posted at their nominal values of 8500 feet and 10000 feet, respectively.

- (3) MAN ALT switch HOLD

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES Doors

05-08-3

Rev. 28, Jun 04/2021

- (4) PRESS CONT switch MAN
(5) MAN ALT switch As required

NOTE

1. Maintain cabin altitude at 8000 feet to minimize the pressure differential across the affected door.
2. Set the MAN ALT switch to "UP" to increase cabin altitude; "DN" to reduce cabin altitude.

- (6) MAN RATE selector As required

When reaching 8000 feet cabin altitude:

- (7) MAN ALT switch HOLD
(8) Descent Initiate to 10000 feet MSL or lowest safe altitude, whichever is higher.
(9) Land at the nearest suitable airport.

Effectivity:

- When operating at airport pressure altitudes between 8000 and 10000 feet, for:
- Airplanes 15250 and subsequent, or
- Airplanes 15001 thru 15249 **incorporating** the following Service Bulletin:
 - SB 670BA-21-030, Air Conditioning – Cabin Pressure Controller (CPC) – Software Upgrade.

At 21000 feet airplane altitude:

- (10) Cabin altitude Adjust to landing field elevation.

At 10000 feet MSL or lowest safe altitude, whichever is higher:

- (10) Cabin altitude Adjust to landing field elevation.

2. MISCELLANEOUS DOORS

A. AV BAY DOOR or FWD CARGO DOOR or CTR CARGO DOOR or AFT CARGO DOOR or L FWD EMER DOOR or R FWD EMER DOOR or L AFT EMER DOOR or R AFT EMER DOOR or FWD SERVICE DOOR or Crew Escape Hatch Unsafe

- (1) SEAT BLTS switch ON
(2) Cabin pressure Check normal

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Doors

05-08-4

Rev. 28, Jun 04/2021

If cabin pressure is normal:

- (3) No further action required.

If cabin pressure is not normal:

Effectivity:

- When operating at airport pressure altitudes between 8000 and 10000 feet, for:
- Airplanes 15250 and subsequent, or
- Airplanes 15001 thru 15249 **incorporating** the following Service Bulletin:
 - SB 670BA-21-030, Air Conditioning – Cabin Pressure Controller (CPC) – Software Upgrade.

NOTE

When in manual pressurization control mode, the CABIN ALT caution and warning messages are reset to be posted at their nominal values of 8500 feet and 10000 feet, respectively.

- (3) MAN ALT switch HOLD
(4) PRESS CONT switch MAN
(5) MAN ALT switch As required

NOTE

1. Maintain cabin altitude at 8000 feet to minimize the pressure differential across the affected door.
2. Set the MAN ALT switch to “UP” to increase cabin altitude; “DN” to reduce cabin altitude.

- (6) MAN RATE selector As required

When reaching 8000 feet cabin altitude:

- (7) MAN ALT switch HOLD

NOTE

Full cabin depressurization is not recommended.

- (8) Descent Initiate to 10000 feet MSL or lowest safe altitude, whichever is higher.
(9) Land at the nearest suitable airport.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Doors

05-08-5

Rev. 28, Jun 04/2021

Effectivity:

- When operating at airport pressure altitudes between 8000 and 10000 feet, for:
 - Airplanes 15250 and subsequent, or
 - Airplanes 15001 thru 15249 **incorporating** the following Service Bulletin:
 - SB 670BA-21-030, Air Conditioning – Cabin Pressure Controller (CPC) – Software Upgrade.

At 21000 feet airplane altitude:

(10) Cabin altitude Adjust to landing field elevation.

At 10000 feet MSL or lowest safe altitude, whichever is higher:

(10) Cabin altitude Adjust to landing field elevation.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES

Doors

05-08-6

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES

Electrical

05-09-1

Rev. 28, Jun 04/2021

1. ELECTRICAL

A. AC 1 AUTOXFER

If AC BUS 1 caution message is also displayed:

- (1) APU (if available, at 37000 feet and below) START
- (2) GEN 1 switch OFF/RESET
- (3) APU GEN switch AUTO
- (4) AC BUS 1 inoperative, affected airplane systems Review

If AC BUS 1 caution message is not displayed:

- (1) No action required.

B. AC 2 AUTOXFER

If AC BUS 2 caution message is also displayed:

- (1) APU (if available, at 37000 feet and below) START
- (2) GEN 2 switch OFF/RESET
- (3) APU GEN switch AUTO
- (4) AC BUS 2 inoperative, affected airplane systems Review

If AC BUS 2 caution message is not displayed:

- (1) No action required.

C. AC BUS 1

- (1) GEN 1 switch OFF/RESET then AUTO

If AC BUS 1 caution message persists:

- (2) APU (if available, at 37000 feet and below) Start
- (3) GEN 1 switch OFF/RESET
- (4) APU GEN switch AUTO

If AC BUS 1 caution message still persists:

- (5) AC BUS 1 inoperative, affected airplane systems Review

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Electrical

05-09-2

Rev. 28, Jun 04/2021

D. AC BUS 2

- (1) GEN 2 switch OFF/RESET then AUTO

If AC BUS 2 caution message persists:

- (2) APU (if available, at 37000 feet and below) Start
(3) GEN 2 switch OFF/RESET
(4) APU GEN switch AUTO

If AC BUS 2 caution message still persists:

- (5) HYDRAULIC 3B pump switch ON
(6) AC BUS 2 inoperative, affected airplane systems Review

E. AC ESS BUS

- (1) AC ESS XFER switch ALTN

If AC ESS BUS caution message persists:

- (2) Affected airplane systems Review

F. AC SERV BUS

- (1) Affected airplane systems Review

G. APU BATT OFF

- (1) BATTERY MASTER switch ON

If APU BATT OFF caution message persists:

- (2) DC ELECTRICAL page Monitor
(3) Affected airplane systems Review

NOTE

1. APU start is not possible.
2. The APU shutdown sequence may be altered. Wait 30 seconds before selecting the APU, PWR FUEL switch to off or the BATTERY MASTER switch to OFF (the 30-second wait allows the APU ECU to log all events). The APU door may not close.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Electrical

05-09-3

Rev. 28, Jun 04/2021

H. APU GEN OFF

- (1) APU GEN switch OFF/RESET then AUTO
- (2) AC ELECTRICAL page Monitor
If APU GEN OFF caution message persists:
- (3) APU GEN switch OFF/RESET

I. APU GEN OVLD

- (1) AC ELECTRICAL page Monitor
- (2) AC loads Reduce as necessary

J. BATTERY BUS

- (1) Affected airplane systems Review
- (2) Airplane altitude Not above 13000 feet
- (3) Land at the nearest suitable airport.

Prior to landing:

- (4) L and R PACK switches OFF

K. DC BUS 1

- (1) Affected airplane systems Review

L. DC BUS 2

- (1) Affected airplane systems Review

M. DC EMER BUS

- (1) Affected airplane systems Review
 - Engine and APU fire extinguishing systems are inoperative;
 - APU fuel feed shut-off valves and ENG FUEL shut-off valves will not close; and
 - Engine hydraulic shut-off valves will not close.
- (2) Land at the nearest suitable airport.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Electrical

05-09-4

Rev. 28, Jun 04/2021

N. DC ESS BUS

- (1) Affected airplane systems Review
(2) Land at the nearest suitable airport.

O. DC SERV BUS

- (1) DC SERVICE switch ON

If DC SERV BUS caution message persists:

- (2) DC SERVICE switch OFF
(3) Affected airplane systems Review

P. GEN 1 OFF

- (1) GEN 1 switch OFF/RESET then AUTO

If GEN 1 OFF caution message persists:

- (2) GEN 1 switch OFF/RESET
(3) APU (if available, at 37000 feet and below) Start

If GEN 1 OFF caution message goes out:

- (2) Electrical loads Monitor

Q. GEN 2 OFF

- (1) GEN 2 switch OFF/RESET then AUTO

If GEN 2 OFF caution message persists:

- (2) GEN 2 switch OFF/RESET
(3) APU (if available, at 37000 feet and below) Start

If GEN 2 OFF caution message goes out:

- (2) Electrical loads Monitor

R. GEN 1 OVLD

- (1) AC ELECTRICAL page Monitor GEN 1 load
(2) AC loads Reduce as necessary

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Electrical

05-09-5

Rev. 28, Jun 04/2021

S. GEN 2 OVLD

- (1) AC ELECTRICAL page Monitor GEN 2 load
- (2) AC loads Reduce as necessary

T. IDG 1

- (1) GEN 1 switch OFF/RESET
- (2) IDG 1 DISC switch Confirm and DISC
- (3) APU (if available, at 37000 feet and below) Start

U. IDG 2

- (1) GEN 2 switch OFF/RESET
- (2) IDG 2 DISC switch Confirm and DISC
- (3) APU (if available, at 37000 feet and below) Start

V. MAIN BATT OFF

- (1) BATTERY MASTER switch ON
- If **MAIN BATT OFF** caution message persists:
- (2) DC ELECTRICAL page Monitor
 - (3) Affected airplane systems Review

NOTE

If main battery voltage is less than 20 volts, both clocks have to be reset.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES
Electrical

05-09-6

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES

Fire Protection

05-10-1

Rev. 28, Jun 04/2021

1. FIRE PROTECTION

A. APU FIRE FAIL

If the APU generator is required:

- (1) APU operation Monitor

If the APU generator is not required:

- (1) APU, START/STOP switch Select off
(2) APU, PWR FUEL switch Select off

B. APU SQB

If the APU generator is required:

- (1) APU operation Monitor

If the APU generator is not required:

- (1) APU, START/STOP switch Select off
(2) APU, PWR FUEL switch Select off

C. L FIRE FAIL or R FIRE FAIL

- (1) Engine instruments Monitor

D. L ENG SQB or R ENG SQB

- (1) Fire extinguishing on the affected side is not available.

E. FWD CARGO DET

- (1) Land at the nearest suitable airport.

F. FWD CARGO SQB 1 or FWD CARGO SQB 2

- (1) Land at the nearest suitable airport.

G. AFT CARGO DET

- (1) Land at the nearest suitable airport.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Fire Protection

05-10-2

Rev. 28, Jun 04/2021

H. AFT CARGO SQB 1 or AFT CARGO SQB 2

- (1) AIR-CONDITIONING, AFT CARGO switch OFF
- (2) Land at the nearest suitable airport.

I. FIRE SYS FAULT

- (1) FIRE DETECTION / FIREX MONITOR
TEST button Select

NOTE

Carry out the appropriate procedure for any or all related messages which come on during the test.

J. APU BTL LO

If fire not detected:

- (1) BLEED SOURCE switch Select alternate source, if required

If the APU generator is required:

- (2) APU operation Monitor

If the APU generator is not required:

- (2) APU, START/STOP switch Select off
- (3) APU, PWR FUEL switch Select off

K. ENG BTL 1 LO or ENG BTL 2 LO

- (1) No action required.

L. CARGO BTL LO

- (1) AIR-CONDITIONING, AFT CARGO switch OFF
- (2) Land at the nearest suitable airport.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Flight Controls

05-11-1

Rev. 28, Jun 04/2021

1. FLIGHT CONTROLS

A. STALL FAIL

- (1) STALL PTCT PUSHER switch (left or right) OFF
- (2) Approach speed Not less than V_{REF} (FLAPS 45) + 10 KIAS
- (3) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.15 (15%)	1.10 (10%)



The low speed awareness cue may represent preset/default settings and should not be relied upon for proximity to stall shaker. Increase all reference speeds by 10 KIAS.

If left channel of stall protection system has failed:

NOTE

Windshear guidance is operative on copilot's side PFD only.

If right channel of stall protection system has failed:

NOTE

Windshear guidance is operative on pilot's side PFD only.

If both channels of stall protection system have failed:

NOTE

Windshear detection and guidance is inoperative. **WINDSHEAR FAIL** status message comes on.

B. PITCH FEEL

- (1) Avoid excessive pitch inputs. Use stabilizer trim to alleviate forces on controls.

Prior to landing:

- (2) GRND PROX, FLAP switch OVRD
- (3) Landing FLAPS 20
- (4) Approach speed Not less than V_{REF} (FLAPS 45) + 12 KIAS

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES Flight Controls

05-11-2

Rev. 28, Jun 04/2021

- (5) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.25 (25%)

C. RUD LIMITER

If rudder limiter failed at or near full travel:



Excessive rudder input may result in unacceptable handling characteristics or exceed structural limits.

- (1) Avoid excessive rudder inputs.
- (2) Airspeed Reduce to 200 KIAS or lower
- (3) Land at the nearest suitable airport.

NOTE

Flight controls synoptic page indications – Limit markers (goalposts) should be amber.

If rudder limiter failed at an intermediate or most limited position:



Rudder travel is limited. Additional aileron input may be required to maintain directional control.

- (1) Land at the nearest suitable airport.
- (2) Select the runway available with minimum cross-wind and turbulence.

Prior to landing:

- (3) GRND PROX, FLAP switch OVRD
- (4) Landing FLAPS 20
- (5) Approach speed Not less than $V_{REF} (\text{FLAPS } 45) + 12 \text{ KIAS}$

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Flight Controls

05-11-3

Rev. 28, Jun 04/2021

- (6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.25 (25%)

NOTE

Flight controls synoptic page indications – Limit markers (goalposts) should be amber.

D. ELEVATOR SPLIT

- (1) Autopilot Disengage
(2) Airspeed Reduce to 200 KIAS or lower
(3) Avoid excessive elevator inputs.

NOTE

Use pitch trim as necessary to minimize elevator deflections. Use aileron control as necessary to stabilize the airplane.

- (4) Land at the nearest suitable airport.

Prior to landing:

NOTE

Controllability is reduced. Select the longest runway available with minimum cross-wind and turbulence.

- (5) GRND PROX, FLAP switch OVRD
(6) Landing FLAPS 20
(7) Approach speed Not less than $V_{REF} (\text{FLAPS } 45) + 12$ KIAS
(8) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.25 (25%)

After landing:

Airplane structure may be compromised and must be inspected for damage.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Flight Controls

05-11-4

Rev. 28, Jun 04/2021

E. Aileron PCU Runaway

Indication: PLT ROLL or CPLT ROLL light on the glareshield and/or higher than normal roll control forces required to maintain level flight.

NOTE

1. The PLT ROLL or CPLT ROLL light on the glareshield indicates the operative aileron.
2. If the PLT ROLL or CPLT ROLL light is not on, identify the failed side by verifying aileron response to handwheel movements in the FLIGHT CONTROLS synoptic page.

- (1) Airplane control Transfer to pilot with operative aileron
- (2) Autopilot Disengage
- (3) ROLL DISC handle PULL and TURN to lock

NOTE

1. Following disconnect, the inoperative side handwheel will go hardover in the direction of the failure.
2. Roll controllability is reduced. The roll disconnect will result in half feel during airplane handling.

- (4) PLT ROLL or CPLT ROLL switch Select operative side

NOTE

If the PLT ROLL or CPLT ROLL switch is not selected within 20 seconds of pulling the ROLL DISC handle, the **SPOILERONS ROLL** caution message will come on.

- (5) Land at the nearest suitable airport.

Prior to landing:

NOTE

Select the longest runway available with minimum cross-wind and turbulence.

- (6) GRND PROX, FLAP switch OVRD
- (7) Landing FLAPS 20
- (8) Approach speed Not less than $V_{REF} (\text{FLAPS } 45)$ + 12 KIAS

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Flight Controls

05-11-5

Rev. 28, Jun 04/2021

- (9) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.25 (25%)

F. MACH TRIM

- (1) STAB TRIM, CH 1 and CH 2 switches ENGAGE

NOTE

1. With a Mach trim failure, do not exceed 250 KIAS (0.7 M) unless the autopilot is engaged and operating normally.
2. At least one STAB TRIM channel engagement is required for MACH TRIM operation.

- (2) MACH TRIM switch ENGAGE

G. STAB TRIM

- (1) STAB TRIM, CH 1 and CH 2 switches ENGAGE

If STAB TRIM caution message persists:

- (2) Airspeed Not more than 250 KIAS (0.7 M)

NOTE

Autopilot, stabilizer trim and Mach trim are not available.

Prior to landing:

- (3) GRND PROX, FLAP switch OVRD
- (4) Landing FLAPS 20
- (5) Approach speed Not less than $V_{REF} (\text{FLAPS } 45) + 12$ KIAS
- (6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.25 (25%)

If STAB TRIM caution message goes out:

- (2) MACH TRIM switch ENGAGE

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Flight Controls

05-11-6

Rev. 28, Jun 04/2021

H. STAB TRIM LIMIT

NOTE

An out-of-trim condition may exist when disengaging autopilot.

- (1) Autopilot Disengage

NOTE

A slight back force in pitch may be required.

- (2) Airplane Retrim
(3) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

I. FLAPS FAIL

- (1) SLATS/FLAPS lever Select last position and then re-select

If FLAPS FAIL caution message does not persist:

- (2) No further action required.

If FLAPS FAIL caution message persists:

- (2) Flaps position Determine using FLIGHT CONTROLS synoptic page

If flaps failure occurred at a detented position:

- (3) SLATS/FLAPS lever Select detented position. Do not attempt to operate flaps until further advised.

- (4) Maximum enroute airspeed V_{FE} for detented flap position

- (5) Altitude Not above 15000 feet

NOTE

If the flaps are confirmed retracted (0), reduction of cruise airspeed/altitude is not required.

- (6) Proceed to "Prior to landing".

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Flight Controls

05-11-7

Rev. 28, Jun 04/2021

If flaps failure occurred at an intermediate position:

- (3) SLATS/FLAPS lever Select closest detented position less than actual flap position. Do not attempt to operate flaps any further.
- (4) Maximum airspeed V_{FE} for next greater flap setting from failed position.
- (5) Altitude Not above 15000 feet

Prior to landing:

- (6) GRND PROX, FLAP switch OVRD
- (7) HYDRAULIC 1, 2 and 3B pump switches ON

If the flaps are confirmed retracted (0):

- (8) SLATS/FLAPS lever Select 1
- (9) Final approach speed $V_{REF} (\text{FLAPS } 45) + \Delta V_{REF}$ from the following table:

Flaps Position	ΔV_{REF}	
	20	25
0-7	24	Not Applicable
8-19	18	Not Applicable
20-29	12	Not Applicable
30-44	Not Applicable	8
45	Not Applicable	0

NOTE

Windshear escape guidance is inoperative.

- (10) Actual landing distance Increase

Final Approach Speed ΔV_{REF} (kt)	Actual Landing Distance Factor (Without Thrust Reversers)	Actual Landing Distance Factor (With Thrust Reversers)
24	1.45	1.35
18	1.40	1.30
12	1.35	1.25
8	1.30	1.20

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES Flight Controls

05-11-8

Rev. 28, Jun 04/2021

If the ΔV_{REF} is 18 or 24 knots:

- (11) Maximum landing weightDetermine using [Figure 05-11-1](#) and correct for wind.

OAT		Pressure Altitude (Feet)					
		0	2000	4000	6000	8000	10000
°C	°F	Landing Weight kg (lb) Associated with max. Tire Speed					
-40	-40	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)
-20	-4	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)
0	32	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	36655 (80811)
20	68	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	37167 (81939)	33977 (74907)
40	104	39000 (85980)	39000 (85980)	39000 (85980)	37826 (83393)	34531 (76127)	31601 (69668)

CRJ900_ABN_LAND_WT_225MPH_P18TO24KT_VREF_JM_24FEB2005

Wind Corrections:

Headwind: increase landing weight by 2000 kg (4410 lb) per 10 kts of headwind

Tailwind: decrease landing weight by 6500 kg (14330 lb) per 10 kts of tailwind

Maximum Landing Weight Limited by Tire Speed – Flaps Fail Procedure – Landing with ΔV_{REF} of 18 or 24 knots
Figure 05-11-1

NOTE

1. The actual landing weight must not exceed the corrected maximum landing weight due to tire speed.
2. A slight pitch-up tendency may occur upon selection of reverse thrust. This can readily be corrected by the application of nose-down elevator and/or brakes.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Flight Controls

05-11-9

Rev. 28, Jun 04/2021

J. SLATS FAIL

(1) SLATS/FLAPS lever Select last position and then re-select

If SLATS FAIL caution message goes out:

(2) No further action required.

If SLATS FAIL caution message persists:

(2) Slats position Determine using FLIGHT CONTROLS synoptic page

(3) SLATS/FLAPS lever SELECT using the table that follows. Do not attempt to operate flaps until further advised.

Slats Position	Select SLATS/FLAPS Lever to Position
0-19	0
20-24	1
25	20

(4) Maximum enroute airspeed V_{FE} for detented flap position

NOTE

With FLAPS 0, do not exceed 230 KIAS unless slats are confirmed retracted (0).

(5) Altitude Not above 15000 feet

NOTE

If the flaps and the slats are confirmed retracted (0), reduction of cruise airspeed/altitude is not required.

Prior to landing:

(6) HYDRAULIC 1, 2 and 3B pump switches ON

(7) SLATS/FLAPS lever Select 45

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Flight Controls

05-11-10

Rev. 28, Jun 04/2021

- (8) Final approach speed $V_{REF\ (FLAPS\ 45)} + \Delta V_{REF}$ from the following table:

ΔV_{REF}		
Flaps Position	Slats Position	
	0-24	25
45	10	0

NOTE

Windshear escape guidance is inoperative.

- (9) Actual landing distance Increase

Final Approach Speed ΔV_{REF} (kt)	Actual Landing Distance Factor (Without Thrust Reversers)	Actual Landing Distance Factor (With Thrust Reversers)
10	1.30	1.25

K. FLAPS FAIL and SLATS FAIL

- (1) SLATS/FLAPS lever Select last position and then re-select

If FLAPS FAIL and SLATS FAIL caution messages persist:

- (2) Flaps and slats position Determine using FLIGHT CONTROLS synoptic page

If flaps failure occurred at a detented position:

- (3) SLATS/FLAPS lever Select detented position. Do not attempt to operate flaps any further.

- (4) Maximum enroute airspeed V_{FE} for detented flap position

NOTE

With FLAPS 0, do not exceed 230 KIAS unless slats are confirmed retracted (0).

- (5) Altitude Not above 15000 feet

NOTE

If the flaps and the slats are confirmed retracted (0), reduction of cruise airspeed/altitude is not required.

- (6) Proceed to “Prior to landing.”

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Flight Controls

05-11-11

Rev. 28, Jun 04/2021

If flaps failure occurred at an intermediate position:

- (3) SLATS/FLAPS lever Select closest detented position less than actual flap position. Do not attempt to operate flaps any further.
- (4) Maximum airspeed V_{FE} for next greater flap setting from failed position
- (5) Altitude Not above 15000 feet

Prior to landing:

- (6) GRND PROX, FLAP switch OVRD
- (7) HYDRAULIC 1, 2 and 3B pump switches ON
- (8) Final approach speed $V_{REF} (\text{FLAPS } 45) + \Delta V_{REF}$ from the following table:

Flaps Position	ΔV_{REF}		
	Slats Position		
	0-19	20-24	25
0-7	40	24	24
8-19	30	18	18
20-29	30	12	12
30-44	24	24	8
45	10	10	0

NOTE

Windshear escape guidance is inoperative.

- (9) Actual landing distance Increase

Final Approach Speed ΔV_{REF} (kt)	Actual Landing Distance Factor (Without Thrust Reversers)	Actual Landing Distance Factor (With Thrust Reversers)
40	1.70	1.60
30	1.55	1.50
24	1.45	1.35
18	1.40	1.30
12	1.35	1.25
10	1.30	1.25
8	1.30	1.20

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES Flight Controls

05-11-12

Rev. 28, Jun 04/2021

If the ΔV_{REF} is 40 knots:

- (10) Maximum landing weightDetermine using [Figure 05-11-2](#) and correct for wind.

OAT		Pressure Altitude (Feet)					
		0	2000	4000	6000	8000	10000
$^{\circ}\text{C}$	$^{\circ}\text{F}$	Landing Weight kg (lb) Associated with max. Tire Speed					
-40	-40	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	35865 (79069)
-20	-4	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	35862 (79063)	32571 (71807)
0	32	39000 (85980)	39000 (85980)	39000 (85980)	35970 (79301)	32677 (72040)	29634 (65331)
20	68	39000 (85980)	39000 (85980)	36224 (79861)	32944 (72630)	29920 (65962)	27103 (59752)
40	104	39000 (85980)	36646 (80790)	33360 (73546)	30341 (66891)	27479 (60580)	24833 (54748)

CRJ900_ABN_LAND_WT_225MPH_F40KT_VREF_JM_24FEB2005

Wind Corrections:

Headwind: increase landing weight by 2000 kg (4410 lb) per 10 kts of headwind

Tailwind: decrease landing weight by 7000 kg (15430 lb) per 10 kts of tailwind

Maximum Landing Weight Limited by Tire Speed – Flaps Fail and Slats Fail Procedure – Landing with ΔV_{REF} of 40 knots
Figure 05-11-2

NOTE

1. The actual landing weight must not exceed the corrected maximum landing weight due to tire speed.
2. A slight pitch-up tendency may occur upon selection of reverse thrust. This can readily be corrected by the application of nose-down elevator and/or brakes.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Flight Controls

05-11-13

Rev. 28, Jun 04/2021

If the ΔV_{REF} is 18, 24, or 30 knots:

(11) Maximum landing weightDetermine using Figure 05-11-3 and correct for wind.

OAT		Pressure Altitude (Feet)					
		0	2000	4000	6000	8000	10000
°C	°F	Landing Weight kg (lb) Associated with max. Tire Speed					
-40	-40	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)
-20	-4	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	36982 (81532)
0	32	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	37276 (82179)	33979 (74912)
20	68	39000 (85980)	39000 (85980)	39000 (85980)	37738 (83198)	34398 (75835)	31374 (69168)
40	104	39000 (85980)	39000 (85980)	38241 (84307)	34868 (76871)	31797 (70101)	28948 (63819)

Wind Corrections:

Headwind: increase landing weight by 2000 kg (4410 lb) per 10 kts of headwind

Tailwind: decrease landing weight by 6700 kg (14770 lb) per 10 kts of tailwind

Maximum Landing Weight Limited by Tire Speed – Flaps Fail and Slats Fail Procedure – Landing with ΔV_{REF} of 18, 24, or 30 knots
Figure 05-11-3

NOTE

1. The actual landing weight must not exceed the corrected maximum landing weight due to tire speed.
2. A slight pitch-up tendency may occur upon selection of reverse thrust. This can readily be corrected by the application of nose-down elevator and/or brakes.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Flight Controls

05-11-14

Rev. 30, Mar 25/2022

L. SLATS/FLAPS Lever Jammed or Disconnected

If undesirable slat/flap configuration is present:

Prior to landing:

- (1) Airspeed Not more than 220 KIAS

NOTE

Selecting the EMER FLAP switch will extend the slats and set the flaps to 20.

- (2) GRND PROX, FLAP switch OVRD
(3) EMER FLAP switch DEPLOY
(4) Approach speed Not less than $V_{REF} (\text{FLAPS 45}) + 12 \text{ KIAS}$
(5) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.25 (25%)

M. FLT SPLR DEPLOY

- (1) FLIGHT SPOILER lever RETRACT

N. IB FLT SPLRS

- (1) FLIGHT SPOILER lever RETRACT
(2) Airplane altitude <1071>..... No restriction
• If IB SPOILERONS caution message is also displayed, proceed to step (3).
• If IB SPOILERONS caution message is not displayed, proceed to step (7).
(3) IB SPOILERONS caution message is also displayed:
(4) Prior to landing:
(5) Approach speed Not less than $V_{REF} (\text{FLAPS 45}) + 10 \text{ KIAS}$

NOTE

1. Select the runway available with minimum cross-wind.
2. The landing distance factors that follow are based upon inboard and outboard multi-function spoilers failed.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Flight Controls

05-11-15

Rev. 30, Mar 25/2022

- (6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)

- (7) **IB SPOILERONS caution message is not displayed:**

- (8) No further action required.

O. OB FLT SPLRS

- (1) FLIGHT SPOILER lever RETRACT
- (2) Airplane altitude <1071>..... No restriction
- If OB SPOILERONS caution message is also displayed, proceed to step (3).
 - If OB SPOILERONS caution message is not displayed, proceed to step (7).
- (3) OB SPOILERONS caution message is also displayed:
- (4) Prior to landing:
- (5) Approach speed Not less than V_{REF} (FLAPS 45) + 10 KIAS

NOTE

1. Select the runway available with minimum cross-wind.
2. The landing distance factors that follow are based upon inboard and outboard multi-function spoilers failed.

- (6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)

- (7) **OB SPOILERONS caution message is not displayed:**

- (8) No further action required.

P. SPOILERONS ROLL

On the side with the operative roll control:

- (1) PLT ROLL or CPLT ROLL switch Select to operative side

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Flight Controls

05-11-16

Rev. 30, Mar 25/2022

Q. IB SPOILERONS

NOTE

Select the runway available with minimum cross-wind.

- If IB FLT SPLRS caution message is also displayed, proceed to step (1).
- If IB FLT SPLRS caution message is not displayed, proceed to step (7).

(1) **IB FLT SPLRS caution message is also displayed:**

(2) FLIGHT SPOILER lever RETRACT

(3) Airplane altitude <1071>..... No restriction

(4) **Prior to landing:**

(5) Approach speed Not less than V_{REF} (FLAPS 45) + 10 KIAS

NOTE

The landing distance factors that follow are based upon inboard and outboard multi-function spoilers failed.

(6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)

(7) **IB FLT SPLRS caution message is not displayed:**

(8) No further action required.

R. OB SPOILERONS

NOTE

Select the runway available with minimum cross-wind.

- If OB FLT SPLRS caution message is also displayed, proceed to step (1).
- If OB FLT SPLRS caution message is not displayed, proceed to step (7).

(1) **OB FLT SPLRS caution message is also displayed:**

(2) FLIGHT SPOILER lever RETRACT

(3) Airplane altitude <1071>..... No restriction

(4) **Prior to landing:**

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Flight Controls

05-11-17

Rev. 30, Mar 25/2022

- (5) Approach speed Not less than V_{REF} (FLAPS 45) + 10 KIAS

NOTE

The landing distance factors that follow are based upon inboard and outboard multi-function spoilers failed.

- (6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)

- (7) OB FLT SPLRS caution message is not displayed:

- (8) No further action required.

S. FLIGHT SPOILER Lever Jammed (Spoilers Deployed)

- (1) Thrust Set as required

Prior to landing:

- (2) Approach speed Not less than V_{REF} (FLAPS 45) + 10 KIAS

NOTE

The landing distance factors that follow are based upon loss of all multi-function spoilers.

- (3) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)

T. GND SPLR DEPLOY

- (1) GND LIFT DUMPING switch MAN DISARM

Prior to landing:

- (2) GRND PROX, FLAP switch OVRD

- (3) Landing FLAPS 20

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Flight Controls

05-11-18

Rev. 30, Mar 25/2022

(4) Approach speed Not less than V_{REF} (FLAPS 45) + 12 KIAS

NOTE

1. Select the runway available with minimum cross-wind.
2. The landing distance factors that follow are based upon complete loss of ground lift dumping.

(5) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.45 (45%)	1.35 (35%)

After touchdown:

(6) GND LIFT DUMPING switch MAN ARM

U. IB GND SPLRS

(1) GND LIFT DUMPING switch MAN DISARM

Prior to landing:

(2) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.30 (30%)	1.25 (25%)

After touchdown:

(3) GND LIFT DUMPING switch MAN ARM

V. OB GND SPLRS

(1) GND LIFT DUMPING switch MAN DISARM

Prior to landing:

(2) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.30 (30%)	1.25 (25%)

After touchdown:

(3) GND LIFT DUMPING switch MAN ARM

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Flight Controls

05-11-19

Rev. 30, Mar 25/2022

W. GLD UNSAFE

- (1) GND LIFT DUMPING switch MAN DISARM

NOTE

The landing distance factors that follow are based upon complete loss of ground lift dumping.

- (2) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.25 (25%)

After touchdown:

- (3) GND LIFT DUMPING switch MAN ARM

X. GLD NOT ARMED

- (1) GND LIFT DUMPING switch MAN ARM

If GLD NOT ARMED caution message persists:

Prior to landing:

NOTE

The landing distance factors that follow are based upon complete loss of ground lift dumping.

- (2) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.25 (25%)

After touchdown:

- (3) FLIGHT SPOILER lever Select MAX

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES
Flight Controls

05-11-20

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Fuel

05-12-1

Rev. 28, Jun 04/2021

1. FUEL

A. FUEL CH 1/2 FAIL

- (1) Engine thrust Adjust as required to maintain equal fuel flow to the engines.
- (2) Fuel balance Maintain using the FUEL USED indication on the FMS PERF MENU – FUEL MGMT page 2/3.
- (3) Land at the nearest suitable airport.
- (4) Gravity Cross-feed Procedure Accomplish as required
(Refer to ABNORMAL PROCEDURES – Fuel – Gravity Cross-feed Procedure.)

B. L MAIN EJECTOR and L SCAV EJECTOR or R MAIN EJECTOR and R SCAV EJECTOR

- (1) Left and right fuel boost pumps Confirm operating
- (2) Fuel tank quantities Monitor

If total fuel quantity is depleting abnormally:

- (3) Affected FUEL, BOOST PUMP switch Confirm and select off

If leak from engine is suspected:

- (4) Fuel Leak Procedure Accomplish
(Refer to ABNORMAL PROCEDURES – Fuel – Fuel Leak Procedure.)

C. FUEL IMBALANCE

- (1) Automatic fuel cross-flow Confirm operating

If leak into centre tank is suspected:

- (2) Abnormal Increase of Centre Tank Quantity or Suspected Leak into Centre Tank procedure Accomplish

(Refer to ABNORMAL PROCEDURES – Fuel – Abnormal Increase of Centre Tank Quantity or Suspected Leak into Centre Tank.)

If automatic fuel cross-flow is operating and fuel imbalance persists:

- (2) Fuel Leak Procedure Accomplish
(Refer to ABNORMAL PROCEDURES – Fuel – Fuel Leak Procedure.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Fuel

05-12-2

Rev. 28, Jun 04/2021

If automatic fuel cross-flow is inoperative:

- (2) AUTO OVERRIDE switch MAN
- (3) Affected low tank L or R XFLOW switch ON
- (4) Fuel tank quantities Monitor

If leak from wing tank is suspected (fuel imbalance persists):

- (5) Fuel Leak Procedure Accomplish
(Refer to ABNORMAL PROCEDURES – Fuel – Fuel Leak Procedure.)

D. L ENG SOV OPEN or R ENG SOV OPEN

- (1) Affected FUEL SOV circuit breaker Closed
 - L ENG circuit breaker (1R8)
 - R ENG circuit breaker (1R7)

E. L ENG SOV CLSD or R ENG SOV CLSD

- (1) Engine instruments Confirm engine shutdown

If engine failure is confirmed:

- (2) Single Engine Procedures, In-flight Engine Shutdown Accomplish
(Refer to ABNORMAL PROCEDURES – Single Engine Procedures – In-flight Engine Shutdown.)

F. L ENG SOV FAIL or R ENG SOV FAIL

- (1) Normal engine operation Confirm
- (2) Engine instruments Monitor

If engine parameters can be maintained within normal limits:

- (3) No further action required.

If engine parameters cannot be maintained within normal limits:

- (3) Single Engine Procedures, In-flight Engine Shutdown Accomplish
(Refer to ABNORMAL PROCEDURES – Single Engine Procedures – In-flight Engine Shutdown.)

DOT Approved

Airplane Flight Manual
CSP C-012-219

**G. L FUEL LO PRESS or R FUEL LO PRESS**

(1) Engine instruments Monitor

If accompanied by the same side MAIN EJECTOR caution message and/or SCAV EJECTOR caution message:

(2) Affected engine fuel flow indication Monitor

(3) Fuel tank quantities Monitor

If fuel tank quantity is depleting abnormally:

(4) Affected FUEL, BOOST PUMP switch Confirm and select off

If leak from engine is suspected:

(5) Fuel Leak Procedure Accomplish

(Refer to ABNORMAL PROCEDURES –
Fuel – Fuel Leak Procedure.)**H. L MAIN EJECTOR or R MAIN EJECTOR**

(1) Left and right fuel boost pumps Confirm operating

(2) Engine instruments Monitor

(3) Fuel tank quantity Monitor and balance, if required

If centre tank quantity increasing or leak into centre tank suspected:(4) Abnormal Increase of Centre Tank Quantity
or Suspected Leak into Centre Tank
procedure Accomplish(Refer to ABNORMAL PROCEDURES –
Fuel – Abnormal Increase of Centre Tank
Quantity or Suspected Leak into Centre
Tank.)**I. L SCAV EJECTOR or R SCAV EJECTOR**

(1) Fuel quantity and balance Monitor

NOTE

Collector tank quantity may decrease at high thrust settings. This will be indicated by the fuel quantity indications being displayed amber. If this occurs, reduce pitch attitude and/or thrust on the affected engine to avoid engine flameout.



ABNORMAL PROCEDURES

Fuel

05-12-4

Rev. 28, Jun 04/2021

J. L FUEL PUMP or R FUEL PUMP

- (1) Affected FUEL, BOOST PUMP switch Confirm and select off, then ON

If L FUEL PUMP or R FUEL PUMP caution message persists:

- (2) Engine instruments Monitor

K. L XFER SOV or R XFER SOV

- (1) Left, right and centre fuel tank quantities Compare

- (2) Left and right wing fuel tank quantities Balance, if required

- (3) Centre tank quantity Monitor

If centre tank quantity does not deplete with fuel burn:

- (4) Land immediately at the nearest suitable airport.

L. XFLOW PUMP

- (1) Fuel quantities Monitor

If fuel imbalance condition exists:

- (2) Gravity Cross-feed Procedure Accomplish

(Refer to ABNORMAL PROCEDURES –
Fuel – Gravity Cross-feed Procedure.)

M. BULK FUEL TEMP

- (1) Descend or deviate to warmer air mass and/or increase airspeed.

- (2) Engine instruments Monitor

N. L FUEL LO TEMP or R FUEL LO TEMP

- (1) Engine instruments Monitor

O. L FUEL FILTER or R FUEL FILTER

- (1) Engine instruments Monitor

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Fuel

05-12-5

Rev. 28, Jun 04/2021

P. Boost Pump Cycling

(1) Centre tank quantities Monitor

If centre tank quantity increases abnormally (more than 227 kg [500 lb]):

(2) GRAVITY XFLOW switch OPEN

(3) Land at the nearest suitable airport.

If centre tank quantity continues to increase abnormally (more than 454 kg [1000 lb]):

(4) FUEL, BOOST PUMP switches (both) Select off

NOTE

Do not action **L MAIN EJECTOR** or **R MAIN EJECTOR** caution message (if displayed).

Q. Gravity Cross-feed Procedure

(1) L and R XFLOW switches Select off

(2) AUTO OVERRIDE switch Select off

(3) GRAVITY XFLOW switch OPEN

(4) Steady heading sideslip maneuver Accomplish

- Establish a bank angle of 10 degrees down on the low quantity side. Use rudder pedal/trim to maintain a constant heading/course.

NOTE

During the maneuver, fuel will transfer at a rate of up to 45.4 kg (100 lb) per minute. Fuel tank quantity gauging accuracy will be degraded. Accurate fuel indications will occur after 30 seconds of stabilized and coordinated flight.

(5) Fuel tank quantities Monitor

When main tank quantities are balanced:

(6) Coordinated flight Establish

(7) GRAVITY XFLOW switch Select closed

If fuel imbalance persists and cannot be controlled within limits:

On the low quantity side:

(6) Affected thrust lever Confirm and IDLE

(7) Affected thrust lever Confirm and SHUT OFF

(8) Affected engine, ENG FIRE PUSH switch Confirm and select

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Fuel

05-12-6

Rev. 28, Jun 04/2021

- (9) Single Engine Procedures, In-flight Engine Shutdown Accomplish
(Refer to ABNORMAL PROCEDURES – Single Engine Procedures – In-flight Engine Shutdown.)

R. Abnormal Increase of Centre Tank Quantity or Suspected Leak into Centre Tank

- (1) Fuel tank quantities Monitor

On the low quantity side:

- (2) Affected thrust lever (on low quantity side) Confirm and IDLE
(3) Land immediately at the nearest suitable airport.
(4) GRAVITY XFLOW switch OPEN
(5) Steady heading sideslip maneuver Accomplish
• Establish a bank angle of 10 degrees down on the low quantity side. Use rudder pedal/trim to maintain a constant heading/course.

NOTE

During the maneuver, fuel will transfer at a rate of up to 45.4 kg (100 lb) per minute. Fuel tank quantity gauging accuracy will be degraded. Accurate fuel indications will occur after 30 seconds of stabilized and coordinated flight.

- (6) Fuel tank quantities Monitor

When main tank quantities are balanced:

- (7) Coordinated flight Establish
(8) GRAVITY XFLOW switch Select closed

If centre tank quantity continues to increase (more than 454 kg [1000 lb]) or abnormally full:

- (7) Affected FUEL, BOOST PUMP switch Confirm and select off

NOTE

Do not action **L MAIN EJECTOR** or **R MAIN EJECTOR** caution message (if displayed).

If low quantity (affected side) wing tank depletes to 900 kg (2000 lb) and centre tank quantity is increasing or abnormally full:

On the low quantity side:

- (7) Affected thrust lever Confirm and IDLE
(8) Affected thrust lever Confirm and SHUT OFF

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES Fuel

05-12-7

Rev. 28, Jun 04/2021

- (9) Affected engine, ENG FIRE PUSH switch Confirm and select
(10) Single Engine Procedures, In-flight Engine Shutdown Accomplish

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – In-flight Engine Shutdown.)

S. Fuel Leak Procedure

- (1) Diversion may be required.

NOTE

If visibility permits, a visual check from the cabin may enable identification of the leak source.

If a leak is confirmed or is suspected:

- (2) Land immediately at the nearest suitable airport.
- Do not delay landing while attempting to determine location of the leak.
 - Expedite landing if the **LOW FUEL** caution message is displayed.

NOTE

1. The minimum fuel quantity for go-around is 272 kg (600 lb) per wing (with the airplane level) and assuming a maximum airplane climb attitude of 10 degrees nose up.
2. Do not action **FUEL IMBALANCE**, **L MAIN EJECTOR** or **R MAIN EJECTOR**, **L SCAV EJECTOR** or **R SCAV EJECTOR**, **L FUEL LO PRESS** or **R FUEL LO PRESS** messages.

- (3) Autopilot operation Monitor, anticipate an out-of-trim situation when disengaging the autopilot.

If leak from wing tank is suspected:

If wing tank isolation is required:

- (4) Automatic and gravity cross-flow Inhibit
- AUTO OVERRIDE switch MAN

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Fuel

05-12-8

Rev. 28, Jun 04/2021

- GRAVITY XFLOW switchSelect off

If range is a consideration:

Leak in left tank is confirmed:

- (5) R XFLOWON

When imbalance reaches 363 kg (800 lb):

- (6) R XFLOW switchSelect off

Leak in right tank is confirmed:

- (5) L XFLOWON

When imbalance reaches 363 kg (800 lb):

- (6) L XFLOW switchSelect off

If landing with a fuel imbalance is a consideration:

- (4) Select the runway available with minimum turbulence and cross-wind.
- (5) GRND PROX, FLAP switchOVRD
- (6) Approach and landing FLAPS20
- (7) Final approach speedNot less than $V_{REF} (\text{FLAPS } 45) + 12 \text{ KIAS}$
- (8) Actual landing distanceIncrease

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.25 (25%)

If leak into centre tank is suspected:

- (4) Abnormal Increase of Centre Tank Quantity or Suspected Leak into Centre Tank procedureAccomplish

(Refer to ABNORMAL PROCEDURES – Fuel – Abnormal Increase of Centre Tank Quantity or Suspected Leak into Centre Tank.)

If leak from engine is suspected:

On the low quantity side:

- (4) Affected thrust leverConfirm and IDLE
- (5) Affected thrust leverConfirm and SHUT OFF
- (6) Affected engine, ENG FIRE PUSH switchConfirm and select

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Fuel

05-12-9

Rev. 28, Jun 04/2021

- (7) Single Engine Procedures, In-flight Engine ShutdownAccomplish

(Refer to ABNORMAL PROCEDURES –
Single Engine Procedures – In-flight Engine
Shutdown.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES
Fuel

05-12-10

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-1

Rev. 28, Jun 04/2021

1. HYDRAULIC POWER

A. General Notes, Cautions and Warnings

NOTE

If during the accomplishment of a hydraulic system low pressure procedure, a second system also fails, disregard both single system failures and proceed directly to the applicable double system failure procedure.

B. HYD 1 LO PRESS

- (1) HYDRAULIC 1 pump switchON
(2) Hydraulic pressureMonitor

If system 1 pressure is equal to or greater than 1800 psi:

- (3) No further action required.

If system 1 pressure is less than 1800 psi:

- (3) HYDRAULIC 1 pump switchOFF
(4) L HYD SOV switchCLOSED
(5) FLIGHT CONTROLS synoptic page and
HYDRAULIC synoptic pageSelect and review affected systems
(a) **OB FLT SPLRS** caution message on:
• FLIGHT SPOILER leverRETRACT
• Airplane altitude <1071>No restriction
(b) **OB GND SPLRS** and **OB SPOILERONS** caution messages on:
• No action required.
(6) Land at the nearest suitable airport.

Prior to landing:

- (7) GRND PROX, FLAP switchOVRD
(8) LH THRUST REVERSER switchOFF
(9) Landing FLAPS20
(10) Approach speedNot less than V_{REF} (FLAPS 45) + 12 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the outboard multi-function spoilers, outboard ground spoilers, and left thrust reverser.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-2

Rev. 28, Jun 04/2021

- (11) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.45 (45%)	1.40 (40%)



An asymmetric thrust condition will exist, using the thrust reverse system with the left thrust reverser not operating. Rudder control assistance (on ground) at high speed will be required to maintain directional control.

C. HYD 2 LO PRESS

- (1) HYDRAULIC 2 pump switch ON
(2) Hydraulic pressure Monitor

If system 2 pressure is equal to or greater than 1800 psi:

- (3) No further action required.

If system 2 pressure is less than 1800 psi:

- (3) HYDRAULIC 2 pump switch OFF
(4) R HYD SOV switch CLOSED
(5) FLIGHT CONTROLS synoptic page and HYDRAULIC synoptic page Select and review affected systems
(a) **IB FLT SPLRS** caution message on:
• FLIGHT SPOILER lever RETRACT
• Airplane altitude <1071> No restriction
(b) **OB BRAKE PRESS** and/or **IB SPOILERONS** caution message(s) on:
• No action required.
(c) LG ALT EXT affected:
• No action required.
(6) Land at the nearest suitable airport.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-3

Rev. 28, Jun 04/2021

Prior to landing:

(7) Brake pressure Check

NOTE

Brake pressure may continue to deplete. Monitor brake pressure until commencing the approach to adjust maximum landing weight if required.

If the brake pressure is equal to or greater than 1800 psi for outboard brakes:

(8) Proceed to step (9).

If the brake pressure is less than 1800 psi for the outboard brakes:

(8) Maximum landing weight Determine using [Figure 05-13-1](#) and correct for wind and slope.

(9) GRND PROX, FLAP switch OVRD

(10) RH THRUST REVERSER switch OFF

(11) Landing FLAPS 20

(12) Approach speed Not less than $V_{REF} (\text{FLAPS } 45) + 12 \text{ KIAS}$

NOTE

The landing distance factors that follow are based upon the loss of the inboard multi-function spoilers, outboard brakes, and right thrust reverser.

(13) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.90 (90%)	1.75 (75%)



1. An asymmetric thrust condition will exist, using the thrust reverse system with the right thrust reverser not operating. Rudder control assistance (on ground) at high speed will be required to maintain directional control.
2. Anticipate the loss of outboard brakes during landing when the system 2 brake accumulator depressurizes.

(14) Use a steady brake application upon landing. Do not cycle the brakes.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-4

Rev. 28, Jun 04/2021

OAT		Airport Pressure Altitude (Feet)					
		0	2000	4000	6000	8000	10000
°C	°F	Landing Weight kg (lb) Due to Maximum Brake Energy					
-40	-40	38270 (84371)	36765 (81053)	35324 (77876)	33952 (74852)	32611 (71894)	31281 (68964)
-20	-4	36577 (80638)	35177 (77553)	33821 (74562)	32499 (71649)	31208 (68803)	29943 (66013)
0	32	35063 (77300)	33754 (74414)	32461 (71564)	31192 (68767)	29954 (66037)	28739 (63359)
20	68	33725 (74350)	32466 (71576)	31235 (68861)	30022 (66187)	28829 (63558)	27660 (60981)
40	104	32519 (71693)	31305 (69015)	30118 (66400)	28958 (63841)	27800 (61290)	26665 (58786)

Wind Corrections:

CRJ900_ABN_LAND_WT_MBE_F20_SINGLE_HYDR_FAIL_JM_24FEB2005

Headwind: increase maximum landing weight by 1000 kg (2200 lb) per 10 kts of headwind

Tailwind: decrease maximum landing weight by 4400 kg (9700 lb) per 10 kts of tailwind

Runway Slope Corrections:

Uphill: increase maximum landing weight by 600 kg (1320 lb) per 1% uphill slope

Downhill: decrease maximum landing weight by 800 kg (1760 lb) per 1% downhill slope

Maximum Landing Weight Limited by Maximum Brake Energy – Single Hydraulic System Failure
Figure 05-13-1

NOTE

The actual landing weight must not exceed the corrected maximum landing weight due to brake energy.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-5

Rev. 28, Jun 04/2021

D. HYD 3 LO PRESS

- (1) HYDRAULIC 3B pump switch ON
(2) Hydraulic pressure Monitor

If system 3 pressure is equal to or greater than 1800 psi:

- (3) No further action required.

If system 3 pressure is less than 1800 psi:

- (3) HYDRAULIC 3A and 3B pump switches OFF
(4) FLIGHT CONTROLS synoptic page and
HYDRAULIC synoptic page Select and review affected systems

IB BRAKE PRESS and/or **IB GND SPLRS** caution message(s) on:

- No action required.

- (5) Land at the nearest suitable airport.

Prior to landing:

- (6) Brake pressure Check

NOTE

Brake pressure may continue to deplete. Monitor brake pressure until
commencing the approach to adjust maximum landing weight if required.

If the brake pressure is equal to or greater than 1800 psi for inboard brakes:

- (7) Proceed to step (8).

If the brake pressure is less than 1800 psi for inboard brakes:

- (7) Maximum landing weight Determine using [Figure 05-13-2](#) and
correct for wind and slope.
(8) GRND PROX, FLAP switch OVRD
(9) N/W STRG switch OFF
(10) Landing FLAPS 20
(11) Approach speed Not less than $V_{REF} (\text{FLAPS } 45) + 12 \text{ KIAS}$
(12) LDG GEAR lever DN
(13) LANDING GEAR MANUAL RELEASE
handle Pull to full extension

NOTE

The landing distance factors that follow are based upon the loss of the
inboard ground spoilers and inboard brakes.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-6

Rev. 28, Jun 04/2021

(14) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
2.00 (100%)	1.70 (70%)

NOTE

1. Select the longest runway available with minimum cross-wind and turbulence.
2. Use differential braking, rudder and engine thrust as required to assist in directional control.
3. Maximize the use of reverse thrust.



Anticipate the loss of inboard brakes during landing when the system 3 brake accumulator depressurizes.

(15) Use a steady brake application upon landing. Do not cycle the brakes.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-7

Rev. 28, Jun 04/2021

OAT		Airport Pressure Altitude (Feet)					
		0	2000	4000	6000	8000	10000
°C	°F	Landing Weight kg (lb) Due to Maximum Brake Energy					
		38270 (84371)	36765 (81053)	35324 (77876)	33952 (74852)	32611 (71894)	31281 (68964)
-40	-40	36577 (80638)	35177 (77553)	33821 (74562)	32499 (71649)	31208 (68803)	29943 (66013)
0	32	35063 (77300)	33754 (74414)	32461 (71564)	31192 (68767)	29954 (66037)	28739 (63359)
20	68	33725 (74350)	32466 (71576)	31235 (68861)	30022 (66187)	28829 (63558)	27660 (60981)
40	104	32519 (71693)	31305 (69015)	30118 (66400)	28958 (63841)	27800 (61290)	26665 (58786)

CRJ900_ABN_LAND_WT_MBE_F20_SINGLE_HYDR_FAIL_FS_30JAN2013

Wind Corrections:

Headwind: increase maximum landing weight by 1000 kg (2200 lb) per 10 kts of headwind

Tailwind: decrease maximum landing weight by 4400 kg (9700 lb) per 10 kts of tailwind

Runway Slope Corrections:

Uphill: increase maximum landing weight by 600 kg (1325 lb) per 1% uphill slope

Downhill: decrease maximum landing weight by 800 kg (1765 lb) per 1% downhill slope

Maximum Landing Weight Limited by Maximum Brake Energy – Single Hydraulic System Failure
Figure 05-13-2

NOTE

The actual landing weight must not exceed the corrected maximum landing weight due to brake energy.

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



ABNORMAL PROCEDURES

Hydraulic Power

05-13-8

Rev. 28, Jun 04/2021

Effectivity:

- Airplanes 15001 thru 15199, 15202, 15204 **not incorporating** the following Service Bulletin:
 - SB 670BA-29-005 – Hydraulic Systems No. 1 and No. 2 – Installation of the Hydraulic Thermal Fuses (SFAR 88).

E. HYD 1 HI TEMP

(1) HYD 1 HI TEMP procedure Accomplish

(Refer to EMERGENCY PROCEDURES –
Hydraulic Power – HYD 1 HI TEMP.)

Effectivity:

- Airplanes 15200, 15201, 15203, 15205 and subsequent or,
- Airplanes 15001 thru 15199, 15202, 15204 **incorporating** the following Service Bulletin:
 - SB 670BA-29-005 – Hydraulic Systems No. 1 and No. 2 – Installation of the Hydraulic Thermal Fuses (SFAR 88).

E. HYD 1 HI TEMP

(1) L HYD SOV switch CLOSED

NOTE

No action is required for the **HYD 1 LO PRESS** caution message, continue HYD 1 HI TEMP procedure until landing.

(2) HYDRAULIC synoptic page Check L HYD SOV closed

(3) HYDRAULIC 1 pump switch ON

(4) System 1 temperature Monitor

If system 1 temperature is increasing or L HYD SOV remains open or HYD 1 LO PRESS caution message is ON:

(5) HYDRAULIC 1 pump switch OFF

(6) FLIGHT CONTROLS synoptic page and HYDRAULIC synoptic page Select and review affected systems

(a) **OB FLT SPLRS** caution message on:

• FLIGHT SPOILER lever RETRACT

• Airplane altitude <1071> No restriction

(b) **OB GND SPLRS** and **OB SPOILERONS** caution messages on:

• No action required.

(7) Land at the nearest suitable airport.

Prior to landing:

(8) GRND PROX, FLAP switch OVRD

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES

Hydraulic Power

05-13-9

Rev. 28, Jun 04/2021

(9) LH THRUST REVERSER switch	OFF
(10) Landing FLAPS	20
(11) Approach speed	Not less than V_{REF} (FLAPS 45) + 12 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the outboard multi-function spoilers, outboard ground spoilers and left thrust reverser inoperative.

(12) Actual landing distance	Increase
------------------------------------	----------

Without Thrust Reversers	With One Thrust Reverser
1.45 (45%)	1.40 (40%)



An asymmetric thrust condition will exist, using the thrust reverse system with the left thrust reverser not operating. Rudder control assistance (on ground) at high speed will be required to maintain directional control.

If system 1 temperature is not increasing and the L HYD SOV is closed and HYD 1 LO PRESS caution message is OFF:

(5) HYDRAULIC 1 pump switch	AUTO
(6) System 1 temperature	Monitor

Effectivity:

- Airplanes 15001 thru 15199, 15202, 15204 **not incorporating** the following Service Bulletin:
 - SB 670BA-29-005 – Hydraulic Systems No. 1 and No. 2 – Installation of the Hydraulic Thermal Fuses (SFAR 88).

F. HYD 2 HI TEMP

(1) HYD 2 HI TEMP procedure	Accomplish (Refer to EMERGENCY PROCEDURES – Hydraulic Power – HYD 2 HI TEMP.)
-----------------------------------	---

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-10

Rev. 28, Jun 04/2021

Effectivity:

- Airplanes 15200, 15201, 15203, 15205 and subsequent or,
- Airplanes 15001 thru 15199, 15202, 15204 **incorporating** the following Service Bulletin:
 - SB 670BA-29-005 – Hydraulic Systems No. 1 and No. 2 – Installation of the Hydraulic Thermal Fuses (SFAR 88).

F. HYD 2 HI TEMP

(1) R HYD SOV switch CLOSED

NOTE

No action is required for the **HYD 2 LO PRESS** caution message, continue HYD 2 HI TEMP procedure until landing.

(2) HYDRAULIC synoptic page Check R HYD SOV closed

(3) HYDRAULIC 2 pump switch ON

(4) System 2 temperature Monitor

If system 2 temperature is increasing or R HYD SOV remains open or HYD 2 LO PRESS caution message is ON:

(5) HYDRAULIC 2 pump switch OFF

(6) FLIGHT CONTROLS synoptic page and
HYDRAULIC synoptic page Select and review affected systems

(a) **IB FLT SPLRS** caution message on:

• FLIGHT SPOILER lever RETRACT

• Airplane altitude <1071> No restriction

(b) **OB BRAKE PRESS** and/or **IB SPOILERONS** caution message(s) on:

• No action required.

(c) LG ALT EXT affected:

• No action required.

(7) Land at the nearest suitable airport.

Prior to landing:

(8) Brake pressure Check

If the brake pressure is equal to or greater than 1800 psi for outboard brakes:

(9) Proceed to step (10).

If the brake pressure is less than 1800 psi for outboard brakes:

(9) Maximum landing weight Determine using [Figure 05-13-3](#)
and correct for wind and slope.

(10) GRND PROX, FLAP switch OVRD

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-11

Rev. 28, Jun 04/2021

(11) RH THRUST REVERSER switch	OFF
(12) Landing FLAPS	20
(13) Approach speed	Not less than V_{REF} (FLAPS 45) + 12 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the inboard multi-function spoilers, outboard brakes and right thrust reverser inoperative.

(14) Actual landing distance	Increase
------------------------------------	----------

Without Thrust Reversers	With One Thrust Reverser
1.90 (90%)	1.75 (75%)



1. An asymmetric thrust condition will exist, using the thrust reverse system with the right thrust reverser not operating. Rudder control assistance (on ground) at high speed will be required to maintain directional control.
2. Anticipate the loss of outboard brakes during landing when the system 2 brake accumulator depressurizes.

(15) Use a steady brake application upon landing. Do not cycle the brakes.
--

If system 2 temperature is not increasing and the R HYD SOV is closed and HYD 2 LO PRESS caution message is OFF:

(5) HYDRAULIC 2 pump switch	AUTO
(6) System 2 temperature	Monitor



ABNORMAL PROCEDURES

Hydraulic Power

05-13-12

Rev. 28, Jun 04/2021

OAT		Airport Pressure Altitude (Feet)					
		0	2000	4000	6000	8000	10000
		Landing Weight kg (lb) Due to Maximum Brake Energy					
-40	-40	38270 (84371)	36765 (81053)	35324 (77876)	33952 (74852)	32611 (71894)	31281 (68964)
-20	-4	36577 (80638)	35177 (77553)	33821 (74562)	32499 (71649)	31208 (68803)	29943 (66013)
0	32	35063 (77300)	33754 (74414)	32461 (71564)	31192 (68767)	29954 (66037)	28739 (63359)
20	68	33725 (74350)	32466 (71576)	31235 (68861)	30022 (66187)	28829 (63558)	27660 (60981)
40	104	32519 (71693)	31305 (69015)	30118 (66400)	28958 (63841)	27800 (61290)	26665 (58786)

CRJ900_ABN_LAND_WT_MBE_F20_SINGLE_HYDR_FAIL_FS_30JAN2013

Wind Corrections:

Headwind: increase maximum landing weight by 1000 kg (2200 lb) per 10 kts of headwind
Tailwind: decrease maximum landing weight by 4400 kg (9700 lb) per 10 kts of tailwind

Runway Slope Corrections:

Uphill: increase maximum landing weight by 600 kg (1325 lb) per 1% uphill slope
Downhill: decrease maximum landing weight by 800 kg (1765 lb) per 1% downhill slope

Maximum Landing Weight Limited by Maximum Brake Energy – Single Hydraulic System Failure
Figure 05-13-3

NOTE

The actual landing weight must not exceed the corrected maximum landing weight due to brake energy.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES

Hydraulic Power

05-13-13

Rev. 28, Jun 04/2021

G. HYD 3 HI TEMP

- (1) HYDRAULIC 3B pump switch ON
(2) HYDRAULIC 3A pump switch OFF

NOTE

No action is required for the **HYD 3 LO PRESS** caution message. Continue HYD 3 HI TEMP procedure until landing.

- (3) System 3 temperature Monitor

If temperature stabilizes or decreases and HYD 3 LO PRESS caution message is OFF:

- (4) Affected HYDRAULIC pump switch Leave OFF
(5) System 3 temperature Monitor

If temperature increases or HYD 3 LO PRESS caution message is ON:

- (4) HYDRAULIC 3A pump switch ON
(5) HYDRAULIC 3B pump switch OFF
(6) System 3 temperature Monitor

If temperature stabilizes or decreases and HYD 3 LO PRESS caution message is OFF:

- (7) Affected HYDRAULIC pump switch Leave OFF
(8) System 3 temperature Monitor

If temperature increases or HYD 3 LO PRESS caution message is ON:

- (7) HYDRAULIC 3A and 3B pump switches OFF
(8) System 3 temperature Monitor
(9) FLIGHT CONTROLS synoptic page and HYDRAULIC synoptic page Select and review affected systems

IB BRAKE PRESS and/or **IB GND SPLRS** caution message(s) on:

- No action required.

If the temperature is less than 96°C:

Prior to landing:

- (10) HYDRAULIC 3A and 3B pump switches ON/AUTO

If the temperature is 96°C or higher:

- (10) Land at the nearest suitable airport.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-14

Rev. 28, Jun 04/2021

Prior to landing:

- (11) Brake pressure Check

NOTE

Brake pressure may continue to deplete. Monitor brake pressure until commencing the approach to adjust maximum landing weight if required.

If the brake pressure is equal to or greater than 1800 psi for inboard brakes:

- (12) Proceed to step (13).

If the brake pressure is less than 1800 psi for inboard brakes:

- (12) Maximum landing weight Determine using [Figure 05-13-4](#) and correct for wind and slope.
- (13) GRND PROX, FLAP switch OVRD
- (14) N/W STRG switch OFF
- (15) Landing FLAPS 20
- (16) Approach speed Not less than $V_{REF} (\text{FLAPS } 45) + 12 \text{ KIAS}$
- (17) LDG GEAR lever DN
- (18) LANDING GEAR MANUAL RELEASE handle Pull to full extension

NOTE

The landing distance factors that follow are based upon the loss of the inboard ground spoilers and inboard brakes.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-15

Rev. 28, Jun 04/2021

(19) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
2.00 (100%)	1.70 (70%)

NOTE

1. Select the longest runway available with minimum cross-wind and turbulence.
2. Use differential braking, rudder and engine thrust as required to assist in directional control.
3. Maximize the use of reverse thrust.



Anticipate the loss of inboard brakes during landing when the system 3 brake accumulator depressurizes.

(20) Use a steady brake application upon landing. Do not cycle the brakes.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-16

Rev. 28, Jun 04/2021

OAT		Airport Pressure Altitude (Feet)					
		0	2000	4000	6000	8000	10000
°C	°F	Landing Weight kg (lb) Due to Maximum Brake Energy					
		38270 (84371)	36765 (81053)	35324 (77876)	33952 (74852)	32611 (71894)	31281 (68964)
-40	-40	36577 (80638)	35177 (77553)	33821 (74562)	32499 (71649)	31208 (68803)	29943 (66013)
0	32	35063 (77300)	33754 (74414)	32461 (71564)	31192 (68767)	29954 (66037)	28739 (63359)
20	68	33725 (74350)	32466 (71576)	31235 (68861)	30022 (66187)	28829 (63558)	27660 (60981)
40	104	32519 (71693)	31305 (69015)	30118 (66400)	28958 (63841)	27800 (61290)	26665 (58786)

CRJ900_ABN_LAND_WT_MBE_F20_SINGLE_HYDR_FAIL_FS_30JAN2013

Wind Corrections:

Headwind: increase maximum landing weight by 1000 kg (2200 lb) per 10 kts of headwind

Tailwind: decrease maximum landing weight by 4400 kg (9700 lb) per 10 kts of tailwind

Runway Slope Corrections:

Uphill: increase maximum landing weight by 600 kg (1325 lb) per 1% uphill slope

Downhill: decrease maximum landing weight by 800 kg (1765 lb) per 1% downhill slope

Maximum Landing Weight Limited by Maximum Brake Energy – Single Hydraulic System Failure
Figure 05-13-4

NOTE

The actual landing weight must not exceed the corrected maximum landing weight due to brake energy.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-17

Rev. 28, Jun 04/2021

H. HYD EDP 1A or HYD EDP 2A

- (1) Associated HYDRAULIC (1 or 2) pump switch ON
- (2) Hydraulic pressure and fluid quantity Monitor

I. HYD PUMP 1B

- (1) HYDRAULIC 1 pump switch ON
- (2) Hydraulic pressure and fluid quantity Monitor

If HYD PUMP 1B caution message persists:

- (3) HYDRAULIC 1 pump switch OFF

J. HYD PUMP 2B

- (1) HYDRAULIC 2 pump switch ON
- (2) Hydraulic pressure and fluid quantity Monitor

If HYD PUMP 2B caution message persists:

- (3) HYDRAULIC 2 pump switch OFF

K. HYD PUMP 3A

- (1) HYDRAULIC 3B pump switch ON
- (2) HYDRAULIC 3A pump switch OFF
- (3) Hydraulic pressure and fluid quantity Monitor

L. HYD PUMP 3B

- (1) HYDRAULIC 3B pump switch ON
- (2) Hydraulic pressure and fluid quantity Monitor

If HYD PUMP 3B caution message persists:

- (3) HYDRAULIC 3B pump switch OFF

M. HYD SOV 1 OPEN or HYD SOV 2 OPEN

- (1) Land at the nearest suitable airport.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-18

Rev. 28, Jun 04/2021

N. HYD 1 LO PRESS and HYD 2 LO PRESS

- (1) HYDRAULIC pump switches (all)ON
 - (2) Systems 1 and 2 hydraulic pressureMonitor
- If system 1 and 2 pressure is equal to or greater than 1800 psi:
- (3) No further action required.

If system 1 and 2 pressure is less than 1800 psi:

- (3) HYDRAULIC 1 and 2 pump switchesOFF
- (4) L and R HYD SOV switchesCLOSED
- (5) FLIGHT CONTROLS synoptic page and HYDRAULIC synoptic pageSelect and review affected systems
 - (a) **IB FLT SPLRS** and **OB FLT SPLRS** caution messages on:
 - FLIGHT SPOILER leverRETRACT
 - Airplane altitude <1071>.....No restriction
 - (b) **OB BRAKE PRESS** and/or **IB SPOILERONS, OB SPOILERONS, OB GND SPLRS** caution message(s) on:
 - No action required.
 - (c) LG ALT EXT affected:
 - No action required.

- (6) Land at the nearest suitable airport.

Prior to landing:

- (7) Maximum landing weightDetermine using [Figure 05-13-5](#) and correct for wind and slope.
- (8) GRND PROX, FLAP switchOVRD
- (9) LH and RH THRUST REVERSER switchesOFF
- (10) Landing FLAPS20
- (11) Approach speedNot less than $V_{REF} (\text{FLAPS } 45) + 12 \text{ KIAS}$

NOTE

The landing distance factors that follow are based upon the loss of the inboard/outboard multi-function spoilers, outboard ground spoilers, outboard brakes, and both thrust reversers.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES
Hydraulic Power

05-13-19

Rev. 28, Jun 04/2021

(12) Actual landing distance Increase

Condition	Without Thrust Reversers
Hydraulic systems 1 and 2 failed	2.15 (115%)



Anticipate the loss of outboard brakes during landing when the system 2 brake accumulator depressurizes.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-20

Rev. 28, Jun 04/2021

- (13) Use a steady brake application upon landing. Do not cycle the brakes.

OAT		Airport Pressure Altitude (Feet)					
		0	2000	4000	6000	8000	10000
°C	°F	Landing Weight kg (lb) Due to Maximum Brake Energy					
-40	-40	37792 (83318)	36312 (80055)	34892 (76924)	33541 (73946)	32217 (71027)	30903 (68130)
-20	-4	36114 (79617)	34745 (76600)	33407 (73650)	32102 (70773)	30827 (67963)	29577 (65206)
0	32	34618 (76320)	33327 (73473)	32058 (70677)	30805 (67914)	29583 (65219)	28383 (62574)
20	68	33290 (73393)	32049 (70657)	30835 (67979)	29645 (65357)	28467 (62760)	27313 (60216)
40	104	32095 (70758)	30897 (68117)	29727 (65538)	28583 (63014)	27447 (60510)	26326 (58039)

Wind Corrections:

Headwind: increase maximum landing weight by 1000 kg (2200 lb) per 10 kts of headwind

Tailwind: decrease maximum landing weight by 4400 kg (9700 lb) per 10 kts of tailwind

Runway Slope Corrections:

Uphill: increase maximum landing weight by 700 kg (1540 lb) per 1% uphill slope

Downhill: decrease maximum landing weight by 1000 kg (2200 lb) per 1% downhill slope

Maximum Landing Weight Limited by Maximum Brake Energy – Double Hydraulic System Failure
Figure 05-13-5

NOTE

The actual landing weight must not exceed the corrected maximum landing weight due to brake energy.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-21

Rev. 28, Jun 04/2021

O. HYD 1 LO PRESS and HYD 3 LO PRESS

- (1) HYDRAULIC pump switches (all) ON
(2) Systems 1 and 3 hydraulic pressure Monitor

If system 1 and 3 pressure is equal to or greater than 1800 psi:

- (3) No further action required.

If system 1 and 3 pressure is less than 1800 psi:

- (3) HYDRAULIC 1, 3A and 3B pump switches OFF
(4) L HYD SOV switch CLOSED
(5) FLIGHT CONTROLS synoptic page and HYDRAULIC synoptic page Select and review affected systems
(a) **OB FLT SPLRS** caution message on:
• FLIGHT SPOILER lever RETRACT
• Airplane altitude <1071> No restriction
(b) **IB BRAKE PRESS** and/or **OB SPOILERONS, IB GND SPLRS, OB GND SPLRS** caution message(s) on:
• No action required.
(c) LH aileron will upfloat:
• Use aileron trim as required to compensate.
(6) Land at the nearest suitable airport.

Prior to landing:

- (7) Maximum landing weight Determine using [Figure 05-13-6](#) and correct for wind and slope.
(8) GRND PROX, FLAP switch OVRD
(9) LH THRUST REVERSER switch OFF
(10) N/W STRG switch OFF
(11) Landing FLAPS 20
(12) LDG GEAR lever DN
(13) LANDING GEAR MANUAL RELEASE handle Pull to full extension
(14) Approach speed Not less than $V_{REF} (\text{FLAPS } 45) + 12 \text{ KIAS}$

NOTE

The landing distance factors that follow are based upon the loss of the outboard multi-function spoilers, inboard/outboard ground spoilers, inboard brakes, and left thrust reverser.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Hydraulic Power

05-13-22

Rev. 28, Jun 04/2021

(15) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
2.15 (115%)	1.90 (90%)

NOTE

1. Flight path control is limited with hydraulic systems 1 and 3 failed.
2. Select the longest runway available with minimum cross-wind and turbulence.
3. Rudder control is adequate for normal flight and should be used in coordination with aileron, if necessary, during turns.



1. An asymmetric thrust condition will exist, using the thrust reverse system with the left thrust reverser not operating. Rudder control assistance (on ground) at high speed will be required to maintain directional control.
2. Anticipate the loss of inboard brakes upon landing, when the system 3 brake accumulator depressurizes.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Hydraulic Power

05-13-23

Rev. 28, Jun 04/2021

- (16) Use a steady brake application upon landing. Do not cycle the brakes.

OAT		Airport Pressure Altitude (Feet)					
		0	2000	4000	6000	8000	10000
		Landing Weight kg (lb) Due to Maximum Brake Energy					
-40	-40	37792 (83318)	36312 (80055)	34892 (76924)	33541 (73946)	32217 (71027)	30903 (68130)
-20	-4	36114 (79617)	34745 (76600)	33407 (73650)	32102 (70773)	30827 (67963)	29577 (65206)
0	32	34618 (76320)	33327 (73473)	32058 (70677)	30805 (67914)	29583 (65219)	28383 (62574)
20	68	33290 (73393)	32049 (70657)	30835 (67979)	29645 (65357)	28467 (62760)	27313 (60216)
40	104	32095 (70758)	30897 (68117)	29727 (65538)	28583 (63014)	27447 (60510)	26326 (58039)

Wind Corrections:

Headwind: increase maximum landing weight by 1000 kg (2200 lb) per 10 kts of headwind

Tailwind: decrease maximum landing weight by 4400 kg (9700 lb) per 10 kts of tailwind

Runway Slope Corrections:

Uphill: increase maximum landing weight by 700 kg (1540 lb) per 1% uphill slope

Downhill: decrease maximum landing weight by 1000 kg (2200 lb) per 1% downhill slope

Maximum Landing Weight Limited by Maximum Brake Energy – Double Hydraulic System Failure Figure 05-13-6

NOTE

The actual landing weight must not exceed the corrected maximum landing weight due to brake energy.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES

Hydraulic Power

05-13-24

Rev. 28, Jun 04/2021

P. HYD 2 LO PRESS and HYD 3 LO PRESS (Caution Messages)

- (1) HYD 2 LO PRESS and HYD 3 LO PRESS
procedureAccomplish

(Refer to EMERGENCY PROCEDURES –
Hydraulic Power – HYDRAULIC POWER –
HYD 2 LO PRESS and HYD 3 LO PRESS.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Ice and Rain Protection

05-14-1

Rev. 28, Jun 04/2021

1. PNEUMATIC ANTI-ICE

A. ANTI-ICE DUCT

- (1) ANTI-ICE DUCT emergency procedureAccomplish
(Refer to EMERGENCY PROCEDURES –
Ice and Rain Protection – ANTI-ICE DUCT.)

B. L COWL A/I or R COWL A/I

NOTE

With a **L COWL A/I** or **R COWL A/I** caution message displayed, APU starter-assisted start is not available.

If cowl anti-ice is selected on:

- (1) BLEED VALVES switchAUTO

NOTE

Cowl anti-ice is not available when the APU is the bleed source.

- (2) ANTI-ICE, LH or RH COWL switchAffected side OFF then ON

If L COWL A/I or R COWL A/I caution message persists:

- (3) Leave icing conditions to prevent ice accumulation on the inoperative cowl.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

If cowl anti-ice is selected off:

- (1) ANTI-ICE, LH or RH COWL switchAffected side ON then OFF
(2) Engine instrumentsMonitor ITT

C. L COWL A/I OPEN or R COWL A/I OPEN

NOTE

With a **L COWL A/I OPEN** or **R COWL A/I OPEN** caution message displayed, APU starter-assisted start is not available.

- (1) ANTI-ICE, LH or RH COWL switchAffected side ON then OFF

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



ABNORMAL PROCEDURES Ice and Rain Protection

05-14-2

Rev. 28, Jun 04/2021

- (2) Engine instruments Monitor ITT

D. ANTI-ICE LOOP (On Ground Only)

- (1) Do not take-off.

E. L COWL LOOP or R COWL LOOP (On Ground Only)

- (1) Do not take-off.

F. L WING A/I or R WING A/I

NOTE

The **L WING A/I** or **R WING A/I** caution message indicates either a low temperature condition or a system failure.

- (1) Affected engine thrust Increase (Not less than 75% N₂)
(2) BLEED VALVES switch AUTO

If **L WING A/I** or **R WING A/I** caution message persists:

- (3) WING A/I CROSS BLEED switch Select non-affected side

If after 30 seconds, **L WING A/I** or **R WING A/I** caution message still persists:

- (4) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

If ice accumulation is observed on the heated portion of the wing leading edge:

- (5) Ice Dispersal Procedure Accomplish

(Refer to ABNORMAL PROCEDURES – Ice and Rain Protection – ICE DISPERSAL – Ice Dispersal Procedure.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Ice and Rain Protection

05-14-3

Rev. 28, Jun 04/2021

G. L WING A/I and R WING A/I

NOTE

The **L WING A/I** and **R WING A/I** caution messages indicate either a low temperature condition or a system failure.

- (1) Engine thrust Increase (Not less than 75% N₂)
- (2) BLEED VALVES switch AUTO

If L WING A/I and R WING A/I caution messages persist:

- (3) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

If ice accumulation is observed on the heated portion of the wing leading edge:

- (4) Ice Dispersal Procedure Accomplish
(Refer to ABNORMAL PROCEDURES – Ice and Rain Protection – ICE DISPERSAL – Ice Dispersal Procedure.)

H. WING A/I SNSR

- (1) ANTI-ICE, WING switch OFF
- (2) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

If ice accumulation is observed on the heated portion of the wing leading edge:

- (3) Ice Dispersal Procedure Accomplish
(Refer to ABNORMAL PROCEDURES – Ice and Rain Protection – ICE DISPERSAL – Ice Dispersal Procedure.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Ice and Rain Protection

05-14-4

Rev. 28, Jun 04/2021

I. WING XBLEED

If WING A/I CROSS BLEED switch is set to NORMAL:

- (1) WING A/I CROSS BLEED switchSelect FROM LEFT or FROM RIGHT

If WING A/I CROSS BLEED switch is set to FROM LEFT or FROM RIGHT:

- (1) ANTI-ICE, WING switchOFF
(2) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

If ice accumulation is observed on the heated portion of the wing leading edge:

- (3) Ice Dispersal ProcedureAccomplish
(Refer to ABNORMAL PROCEDURES – Ice and Rain Protection – ICE DISPERSAL – Ice Dispersal Procedure.)

2. ELECTRICAL ANTI-ICE

A. ICE

- (1) ANTI-ICE, WING switchON
(2) ANTI-ICE, LH and RH COWL switchesON

NOTE

When the BLEED VALVES switch is set to MANUAL, ensure that either L ENG, R ENG or BOTH ENG is selected as the bleed source, prior to activation of the wing and cowl anti-ice systems.

B. ICE DET FAIL (Caution Message) or ICE DET 1 FAIL or ICE DET 2 FAIL (Status Message)

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Ice and Rain Protection

05-14-5

Rev. 28, Jun 04/2021

If icing conditions are present or are anticipated:

- (1) ANTI-ICE, WING switch ON
- (2) ANTI-ICE, LH and RH COWL switches ON

NOTE

When the BLEED VALVES switch is set to MANUAL, ensure that either L ENG, R ENG or BOTH ENG is selected as the bleed source, prior to activation of the wing and cowl anti-ice systems.

C. L AOA HEAT or R AOA HEAT

- (1) ANTI-ICE, LH or RH PROBES switch Affected side OFF then ON

D. L AOA HEAT and R AOA HEAT

- (1) ANTI-ICE, LH and RH PROBES switches OFF then ON

If L AOA HEAT and R AOA HEAT caution messages persist:

- (2) STALL PTCT PUSHER switch (either left or right) OFF
- (3) Avoid icing conditions.

NOTE

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the SAT is -40°C (-40°F) or below.

Prior to landing:

- (4) Approach speed Not less than V_{REF} (FLAPS 45) + 10 KIAS
- (5) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.15 (15%)	1.10 (10%)

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Ice and Rain Protection

05-14-6

Rev. 28, Jun 04/2021

E. L PITOT HEAT

If L STATIC HEAT and L AOA HEAT caution messages are also displayed:

- (1) No further action required.

If L STATIC HEAT and L AOA HEAT caution messages are NOT displayed:

- (1) ANTI-ICE, LH PROBES switchOFF then ON.

If L PITOT HEAT caution message persists:

- (2) AIR DATA source selectorSelect 2

(Refer to ABNORMAL PROCEDURES – Instruments System – INSTRUMENTS SYSTEM – ADC 1 Failure.)

F. R PITOT HEAT

If R STATIC HEAT, TAT PROBE HEAT and R AOA HEAT caution messages are also displayed:

- (1) No further action required.

If R STATIC HEAT, TAT PROBE HEAT and R AOA HEAT caution messages are NOT displayed:

- (1) ANTI-ICE, RH PROBES switchOFF then ON.

If R PITOT HEAT caution message persists:

- (2) AIR DATA source selectorSelect 1

(Refer to ABNORMAL PROCEDURES – Instruments System – INSTRUMENTS SYSTEM – ADC 2 Failure.)

G. L STATIC HEAT

If L PITOT HEAT and L AOA HEAT caution messages are also displayed:

- (1) No further action required.

If L PITOT HEAT and L AOA HEAT caution messages are NOT displayed:

- (1) ANTI-ICE, LH PROBES switchOFF then ON.

If L STATIC HEAT caution message persists:

- (2) Do not rely on the ISI airspeed and altitude information.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Ice and Rain Protection

05-14-7

Rev. 28, Jun 04/2021

H. R STATIC HEAT

If TAT PROBE HEAT, R PITOT HEAT and R AOA HEAT caution messages are also displayed:

- (1) No further action required.

If TAT PROBE HEAT, R PITOT HEAT and R AOA HEAT caution messages are NOT displayed:

- (1) ANTI-ICE, RH PROBES switchOFF then ON.

If R STATIC HEAT caution message persists:

- (2) Do not rely on the ISI airspeed and altitude information.

I. STBY PITOT HEAT

- (1) ANTI-ICE, LH PROBES switchOFF then ON

If STBY PITOT HEAT caution message persists:

- (2) Do not rely on the ISI airspeed information.

J. TAT PROBE HEAT

- (1) ANTI-ICE, LH PROBES switchOFF then ON

If TAT PROBE HEAT caution message persists:

- (2) Do not rely on the air temperature indications.

K. L WINDOW HEAT or R WINDOW HEAT

- (1) ANTI-ICE, LH or RH WSHLD switchAffected side OFF/RESET then LOW or HI, as required

If L WINDOW HEAT or R WINDOW HEAT caution message persists:

- (2) Leave icing conditions.

NOTE

Icing conditions exist in flight at a **TAT** of 10°C (50°F) or below and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the **SAT** is -40°C (-40°F) or below.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Ice and Rain Protection

05-14-8

Rev. 28, Jun 04/2021

L. L WSHLD HEAT or R WSHLD HEAT

- (1) ANTI-ICE, LH or RH WSHLD switch Affected side OFF/RESET then LOW or HI, as required

If L WSHLD HEAT or R WSHLD HEAT caution message persists:

- (2) Leave icing conditions.

NOTE

Icing conditions exist in flight at a TAT of 10°C (50°F) or below, and visible moisture in any form is encountered (such as clouds, rain, snow, sleet or ice crystals), except when the SAT is -40°C (-40°F) or below.

To remove ice accumulation from affected windshield:

- (3) Airspeed Increase to V_{MO}/M_{MO} , if possible, to disperse ice.

M. Windshield or Window Cracking, Shattering, Arcing or Delamination

- (1) ANTI-ICE, LH or RH WSHLD switch Affected side OFF
- If above 28000 feet, proceed to step (2).
 - If at 28000 feet or lower altitude, proceed to step (3).

Above 28000 feet:

- (2) Descent Initiate to 28000 feet or lower altitude.

At 28000 feet or lower altitude:

- (3) Crew and passenger oxygen On, if required
- (4) PRESS CONT switch MAN
- (5) MAN RATE selector Maximum INCR
- (6) MAN ALT switch Adjust to achieve target cabin altitude per table that follows.

NOTE

CABIN ALT caution or warning message will be posted when cabin altitude exceeds 8500 feet or 10000 feet, respectively.

Cruise Flight Level	280	260	240	220	200	180
Target Cabin Altitude	7900	6800	5700	4600	3500	2200

To increase cabin altitude:

- (7) MAN ALT switch UP

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Ice and Rain Protection

05-14-9

Rev. 28, Jun 04/2021

(8) MAN RATE selector As required

To decrease cabin altitude:

(9) MAN ALT switch DN

(10) MAN RATE selector As required

To hold cabin altitude:

(11) MAN ALT switch HOLD

When below 8000 feet MSL:

- If windshield core ply or inboard ply shattered, proceed to step (12).

- If windshield core ply or inboard ply not shattered, proceed to step (14).

Windshield core ply or inboard ply shattered:

(12) Airspeed Reduce to 205 KIAS

(13) Proceed to step (14).

Windshield core ply or inboard ply not shattered:

(14) Cabin altitude Set to destination airport elevation.

Before landing:

(15) Cabin altitude Check and set to landing field elevation.

NOTE

Do not set cabin altitude below destination field elevation.

- If differential pressure is not zero upon landing, proceed to step (16).

- If differential pressure is zero upon landing, proceed to step (18).

Differential pressure is not zero upon landing:

(16) MAN ALT switch UP

(17) MAN RATE selector Maximum INCR

Differential pressure is zero upon landing:

(18) No further action required.

Effectivity:

- When operating at airport pressure altitudes between 8000 and 10000 feet, for:
 - Airplanes 15250 and subsequent, or
 - Airplanes 15001 thru 15249 incorporating the following Service Bulletin:
 - SB 670BA-21-030, Air Conditioning – Cabin Pressure Controller (CPC) – Software Upgrade.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Ice and Rain Protection

05-14-10

Rev. 28, Jun 04/2021

N. Windshield or Window Cracking, Shattering, Arcing or Delamination

(1) ANTI-ICE, LH or RH WSHLD switch Affected side OFF

• If above 28000 feet, proceed to step (2).

• If at 28000 feet or lower altitude, proceed to step (3).

Above 28000 feet:

(2) Descent Initiate to 28000 feet or lower altitude.

At 28000 feet or lower altitude:

(3) Crew and passenger oxygen On, if required

(4) PRESS CONT switch MAN

(5) MAN RATE selector Maximum INCR

(6) MAN ALT switch Adjust to achieve cabin altitude of 8000 feet.

NOTE

CABIN ALT caution or warning message will be posted when cabin altitude exceeds 8500 feet or 10000 feet, respectively.

To increase cabin altitude:

(7) MAN ALT switch UP

(8) MAN RATE selector As required

To decrease cabin altitude:

(9) MAN ALT switch DN

(10) MAN RATE selector As required

To hold cabin altitude:

(11) MAN ALT switch HOLD

At 21000 feet airplane altitude:

(12) Cabin altitude Adjust to landing field elevation.

Before landing:

(13) Cabin altitude Check and set to landing field elevation.

NOTE

- When in manual pressurization control mode, the **CABIN ALT** caution and warning messages are reset to be posted at their nominal values of 8500 feet and 10000 feet, respectively.
- Do not set cabin altitude below destination field elevation.

- If differential pressure is not zero upon landing, proceed to step (14).

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Ice and Rain Protection

05-14-11

Rev. 28, Jun 04/2021

- If differential pressure is zero upon landing, proceed to step (16).

Differential pressure is not zero upon landing:

(14) MAN ALT switch UP

(15) MAN RATE selector Maximum INCR

Differential pressure is zero upon landing:

(16) No further action required.

3. ICE DISPERSAL

A. Ice Dispersal Procedure

After leaving icing conditions and if ice accumulation is observed on the heated portion of the wing leading edge:

(1) Airspeed Increase to V_{MO}/M_{MO} , if possible, to disperse ice

If not able to remove ice from the wing leading edge and in order to assure adequate stall margin:

(2) Maneuvering airspeed Not less than 200 KIAS

WARNING

Even small accumulations of ice on the wing leading edge can change the stall speed, stall characteristics or the warning margins provided by the stall protection system.

Prior to landing:

(3) GRND PROX, FLAP switch OVRD

(4) Landing FLAPS 20

(5) Approach speed Not less than $V_{REF}(\text{FLAPS } 45) + 25$ KIAS

(6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.50 (50%)	1.40 (40%)

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES
Ice and Rain Protection

05-14-12

Rev. 28, Jun 04/2021

Just prior to touchdown:

- (7) Thrust levers Retard to IDLE and do not prolong the flare

NOTE

A slight pitch-up tendency may occur upon selection of reverse thrust.
This can be readily corrected by the application of nose-down elevator
and/or brakes.

DOT Approved

Airplane Flight Manual
CSP C-012-219



1. INSTRUMENTS SYSTEM

A. EFIS COMP MON <1025>

If EFIS COMP MON caution message on, and PFD displays HDG:

- (1) EFIS and standby compass Cross-check

If autopilot/FD coupled to unaffected side:

- (2) Proceed to step (3).

If autopilot/FD coupled to affected side:

- (2) AP/FD XFR switch Transfer

- (3) Affected IRS Select ATT mode

- (4) FMS Enter present heading on IRS control page.

If IRS operation in ATT mode is acceptable (AP remains operational):

- (5) FMS Update heading on IRS control page as often as required.

If IRS operation in ATT mode is not acceptable:

- (5) ATTD HDG source selector Select to reliable side

- (6) Inertial Reference System Failure procedure Review

(Refer to ABNORMAL PROCEDURES – Instruments System – Inertial Reference System Failure.)

If EFIS COMP MON caution message on, and PFD displays ROL or PIT:

- (1) EFIS and ISI Cross-check

- (2) ATTD HDG source selector Select to reliable side

- (3) Inertial Reference System Failure procedure Review

(Refer to ABNORMAL PROCEDURES – Instruments System – Inertial Reference System Failure.)



ABNORMAL PROCEDURES Instruments System

05-15-2

Rev. 28, Jun 04/2021

If EFIS COMP MON caution message on, and PFD displays ALT and/or IAS:

- (1) EFIS and ISI Cross-check

NOTE

Use **Unreliable Airspeed In-flight** procedure in the emergency procedures chapter:

- If pitch attitude, thrust setting or external noise not consistent with indicated airspeed,
- If no reliable airspeed side can be determined.

- (2) AIR DATA source selector Select to reliable side

- (3) ADC 1 Failure or ADC 2 Failure procedure Review

(Refer to ABNORMAL PROCEDURES – Instruments System – ADC 1 Failure, or ADC 2 Failure.)

If EFIS COMP MON caution message on, and PFD displays FD, GS or LOC:

If non-visual, during approach:

- (1) Go-around Initiate

If EFIS COMP MON caution message on, and PFD displays RA:

- (1) Radio Altimeter Failure procedure <1045> Accomplish

(Refer to ABNORMAL PROCEDURES – Instruments System – Radio Altimeter Failure.)

B. EFIS COMP INOP

- (1) Affected flight instruments Monitor

- (2) ISI Cross-check

NOTE

1. ISI ILS is valid for front course ILS only.
2. Use **Unreliable Airspeed In-flight** procedure in the emergency procedures chapter:
 - If pitch attitude, thrust setting or external noise not consistent with indicated airspeed,
 - If no reliable airspeed side can be determined.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Instruments System

05-15-3

Rev. 28, Jun 04/2021

C. Primary Flight Display Failure

- (1) Affected display reversionary panel selector Select PFD

D. DISPLAY TEMP Annunciation

On any two displays:

- (1) Land at the nearest suitable airport.

E. Display Control Panel Failure

- (1) DSPL CONT source selector Select operative side

If autopilot/FD coupled to affected side:

- (2) AP/FD XFR switch Transfer

F. ADC 1 Failure

- (1) AIR DATA source selector 2

NOTE

1. Use **Unreliable Airspeed In-flight** procedure in the emergency procedures chapter:
 - If pitch attitude, thrust setting or external noise not consistent with indicated airspeed,
 - If no reliable airspeed side can be determined.
2. Windshear guidance is operative on PFD 2 only.

If autopilot/FD coupled to affected side:

- (2) AP/FD XFR switch Transfer

G. ADC 2 Failure

- (1) AIR DATA source selector 1

NOTE

1. Use **Unreliable Airspeed In-flight** procedure in the emergency procedures chapter:
 - If pitch attitude, thrust setting or external noise not consistent with indicated airspeed,
 - If no reliable airspeed side can be determined.
2. Windshear guidance is operative on PFD 1 only.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Instruments System

05-15-4

Rev. 28, Jun 04/2021

If autopilot/FD coupled to affected side:

- (2) AP/FD XFR switch Transfer

H. Radio Altimeter Failure <1045>

If both RAs have failed:

NOTE

1. Traffic alert and collision avoidance system is inoperative. **TCAS FAIL** status message comes on.
2. Enhanced ground proximity warning system is inoperative. **GPWS FAIL** status message comes on.
3. Windshear detection and guidance is inoperative. **WINDSHEAR FAIL** status message comes on.

- (1) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)

After touchdown:

- (2) FLIGHT SPOILER lever Select MAX

If one RA has failed:

- (1) No action required.

NOTE

1. If RA 1 has failed, windshear guidance is operative on PFD 2 only.
2. If RA 2 has failed, windshear guidance is operative on PFD 1 only.
3. With one radio altimeter failed, both TCAS and EGPWS remain operational.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Instruments System

05-15-5

Rev. 28, Jun 04/2021

I. Inertial Reference System Failure <1025>

If IRS 1 has failed:

NOTE

1. Autopilot and affected yaw damper will disconnect.
2. Flight director 1 is inoperative, **YD 1 INOP** and **FD 1 FAIL** status messages come on.
3. Windshear guidance is operative on PFD 2 only.

(1) ATTD HDG source selector 2

If autopilot/FD coupled to affected side:

(2) AP/FD XFR switch Transfer

If IRS 2 has failed:

NOTE

1. Autopilot and affected yaw damper will disconnect.
2. Flight director 2 is inoperative, **YD 2 INOP** and **FD 2 FAIL** status messages come on.
3. Windshear guidance is operative on PFD 1 only.

(1) ATTD HDG source selector 1

If autopilot/FD coupled to affected side:

(2) AP/FD XFR switch Transfer

J. Radio Tuning Unit Failure

(1) Affected RTU INHIB switch Select

(2) Operable RTU Use 1/2 switch to tune cross-side radio.

K. Position Information Unreliable <2040>

Indication: IRS ONLY message on FMS CDU, or insufficient sensors available on the MFD FMS POSITION SUMMARY page. <1025>

(1) GRND PROX, TERRAIN switch OFF

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Instruments System

05-15-6

Rev. 28, Jun 04/2021

Effectivity:

- Airplanes 15380 and subsequent, or
- Airplanes **incorporating** the following Service Bulletin:
 - SB 670BA-34-044 – Navigation – Mode S Transponder System – Installation of Automatic Dependent Surveillance-Broadcast (ADS-B OUT) – DO-260B Compliant for Aircraft that have Mode S Transponder TDR-94D/TSS-4100.
 - Airplanes **incorporating** the following Service Bulletin:
 - SB 670BA-34-045 – Navigation – Mode S Transponder System – Installation of Automatic Dependent Surveillance-Broadcast (ADS-B OUT) – DO-260B Compliant for Aircraft that have Mode S Dual Transponder TDR-94D.

L. XPDR FAIL

If ATC SEL selected to 1 or ATC SEL selected 2:

- (1) ATC SEL switch Select to reliable side

NOTE

XPDR 1 INOP or **XPDR 2 INOP** status message comes on.

If ATC SEL selected to STBY:

- (1) ATC SEL switch Select to reliable side

NOTE

Unreliable side indicated by **XPDR 1 INOP** or **XPDR 2 INOP** status message.

If XPDR FAIL caution message persists:

- (2) Air Traffic Control Notify as required
(3) ADS-B operations shall not be commenced or continued.

Effectivity:

- Airplanes 15380 and subsequent, or
- Airplanes **incorporating** the following Service Bulletin:
 - SB 670BA-34-044 – Navigation – Mode S Transponder System – Installation of Automatic Dependent Surveillance-Broadcast (ADS-B OUT) – DO-260B Compliant for Aircraft that have Mode S Transponder TDR-94D/TSS-4100.
 - Airplanes **incorporating** the following Service Bulletin:
 - SB 670BA-34-045 – Navigation – Mode S Transponder System – Installation of Automatic Dependent Surveillance-Broadcast (ADS-B OUT) – DO-260B Compliant for Aircraft that have Mode S Dual Transponder TDR-94D.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES Instruments System

05-15-7

Rev. 28, Jun 04/2021

M. ADS-B OUT FAIL

If ATC SEL selected to 1:

- (1) ATC SEL switch 2

NOTE

ADS-B OUT 1 FAIL status message comes on.

If ATC SEL selected to 2:

- (1) ATC SEL switch 1

NOTE

ADS-B OUT 2 FAIL status message comes on.

If ADS-B OUT FAIL caution message persists:

- (2) Air Traffic Control Notify as required
(3) ADS-B operations shall not be commenced or continued.

NOTE

Position information broadcasted will show a degraded navigation integrity indicator when received by ATC.

N. Uncommanded True Heading Indication <1025>

Indication: White **TRU**, **TRU1** or **TRU2** indicators on PFD above HSI lubber line and on MFD near digital heading indication. Indicators will continuously flash below 10000 feet.

NOTE

This procedure is not applicable if operating in the regions where true heading is used intentionally.

- (1) EFIS and standby compass Cross-check if difference is more than 3 degrees, use standby heading.

- (2) Air Traffic Control Notify as required

When flight conditions permit, on FMS CDU:

- (3) INDEX function key Select to access INDEX menu page.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



ABNORMAL PROCEDURES Instruments System

05-15-8

Rev. 28, Jun 04/2021

- (4) FMS CTL line select key Select to access FMS CONTROL page.

NOTE

On DISPLAY MODE line **MAG** is displayed in white and **TRUE** is displayed in green.

- (5) MAG/TRUE line select key Select

NOTE

Expect **REQ PENDING** message to be displayed for a few seconds.

- If **MAG** is displayed in green and **TRUE** is displayed in white, proceed to step (6).
- If **MAG** is displayed in white and **TRUE** is displayed in green, proceed to step (8).

MAG is displayed in green and TRUE is displayed in white:

- (6) Confirm that PFD and MFD no longer display white TRU indicator.
(7) No further action required.

MAG is displayed in white and TRUE is displayed in green:

- (8) EFIS and standby compass Continue to cross-check if difference is more than 3 degrees, use standby heading.
(9) Air Traffic Control Notify as required

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Landing Gear, Wheel and Brake System

05-16-1

Rev. 28, Jun 04/2021

1. LANDING GEAR, WHEEL AND BRAKE SYSTEM

A. A/SKID INBD

NOTE

1. Inboard brake BTMS indications are not available.
2. The landing distance factors that follow are based upon both anti-skid systems inoperative.

- (1) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
2.10 (110%)	1.75 (75%)

After touchdown:

- (2) FLIGHT SPOILER lever Select MAX



Extreme caution is required during braking to avoid tire damage or blowout.
Maximize use of reverse thrust.

B. A/SKID OUTBD

NOTE

1. Outboard brake BTMS indications are not available.
2. The landing distance factors that follow are based upon both anti-skid systems inoperative.

- (1) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
2.10 (110%)	1.75 (75%)

After touchdown:

- (2) FLIGHT SPOILER lever Select MAX

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



ABNORMAL PROCEDURES

Landing Gear, Wheel and Brake System

05-16-2

Rev. 28, Jun 04/2021



Extreme caution is required during braking to avoid tire damage or blowout.
Maximize use of reverse thrust.

C. A/SKID INBD and A/SKID OUTBD

NOTE

Inboard and outboard brake BTMS indications are not available.

- (1) ANTI SKID switch OFF
- (2) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
2.10 (110%)	1.75 (75%)

NOTE

Land with a firm touchdown to ensure that main gear weight-on-wheels signal is achieved for GLD deployment.

After touchdown:

- (3) FLIGHT SPOILER lever Select MAX



Extreme caution is required during braking to avoid tire damage or blowout.
Maximize use of reverse thrust.

D. IB BRAKE PRESS or OB BRAKE PRESS

- (1) Hydraulic pressure and fluid quantity Check affected system
- (2) Brake pressure Check

Prior to landing:

If brake pressure is greater than 1800 psi for the applicable brakes:

- (3) Use a steady brake application upon landing. Do not cycle the brakes.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES
Landing Gear, Wheel and Brake System

05-16-3

Rev. 28, Jun 04/2021

If brake pressure is less than 1800 psi for the applicable brakes:

- (3) Maximum landing weightDetermine using Figure 05-16-1 and correct for wind and slope

OAT		Airport Pressure Altitude (Feet)					
		0	2000	4000	6000	8000	10000
°C	°F	Landing Weight kg (lb) Due to Maximum Brake Energy					
-40	-40	39000 (85980)	39000 (85980)	39000 (85980)	39000 (85980)	38212 (84244)	36624 (80743)
-20	-4	39000 (85980)	39000 (85980)	39000 (85980)	38184 (84181)	36635 (80766)	35133 (77456)
0	32	39000 (85980)	39000 (85980)	38172 (84156)	36682 (80870)	35237 (77684)	33812 (74542)
20	68	39000 (85980)	38239 (84302)	36767 (81058)	35345 (77922)	33973 (74898)	32625 (71927)
40	104	38373 (84597)	36917 (81388)	35511 (78289)	34152 (75293)	32814 (72343)	31514 (69477)

Wind Corrections:

Headwind: increase maximum landing weight by 1000 kg (2200 lb) per 10 kts of headwind

Tailwind: decrease maximum landing weight by 4000 kg (8820 lb) per 10 kts of tailwind

Runway Slope Corrections:

Uphill: increase maximum landing weight by 700 kg (1540 lb) per 1% uphill slope

Downhill: decrease maximum landing weight by 900 kg (1980 lb) per 1% downhill slope

Maximum Landing Weight Limited by Maximum Brake Energy – IB BRAKE PRESS or
OB BRAKE PRESS Failure
Figure 05-16-1

NOTE

The actual landing weight must not exceed the corrected maximum landing weight due to brake energy.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Landing Gear, Wheel and Brake System

05-16-4

Rev. 28, Jun 04/2021

- (4) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.70 (70%)	1.50 (50%)

NOTE

With the inboard or outboard brakes inoperative, maximize the use of reverse thrust.

E. PARK BRAKE SOV

- (1) PARKING BRAKE handle Check stowed

After landing:

- (2) Wheel chocks Install before turning off hydraulic systems 2 and 3

NOTE

The parking brake system will deplete more rapidly than normal with the parking brake set and hydraulic systems 2 and 3 selected off.

F. STEERING INOP

- (1) N/W STRG switch OFF

- (2) Use differential braking, rudder and engine thrust as required to assist in directional control.

NOTE

1. Select the longest runway available with minimum turbulence and cross-wind.
2. In high cross-wind conditions, rudder effectiveness may be limited after landing with maximum reverse thrust selected.

G. MLG OVHT FAIL

- (1) No action required. The MLG bay overheat detection system is inoperative.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Landing Gear, Wheel and Brake System

05-16-5

Rev. 28, Jun 04/2021

H. Landing Gear Manual Extension

- (1) Airspeed Not more than 220 KIAS
- (2) HYDRAULIC 3B pump switch ON
- (3) LDG GEAR lever DN

If any landing gear fails to down and lock:

- (4) HYDRAULIC 2 pump switch ON
- (5) LANDING GEAR MANUAL RELEASE handle Pull to full extension

NOTE

Main landing gear extension relies upon free fall following a manual landing gear extension.

WARNING

The nosegear will not extend during the Landing Gear Manual Extension Procedure with **HYD 2 LO PRESS** caution message displayed. Side slip may be required for the main landing gear to achieve down lock.

CAUTION

Nosewheel steering may be inoperative.

If the unsafe landing gear condition persists:

- (6) Landing Gear Up / Unsafe Landing Procedure Accomplish

(Refer to EMERGENCY PROCEDURES –
Landing Gear, Wheel and Brake System –
Landing Gear Up / Unsafe Landing
Procedure.)

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Landing Gear, Wheel and Brake System

05-16-6

Rev. 28, Jun 04/2021

I. PROX SYSTEM

NOTE

1. Nuisance "TERRAIN PULL UP" and "TOO LOW GEAR" aural warnings may be announced.
2. The following systems are inoperative:
 - Landing gear indication and control,
 - Nose landing light,
 - Airplane door indications,
 - No smoking and seat belt lights.

Prior to landing:

- (1) Airspeed Not more than 220 KIAS
- (2) HYDRAULIC 2 and 3B pump switches ON
- (3) LDG GEAR lever DN
- (4) LANDING GEAR MANUAL RELEASE handle Pull to full extension
- (5) N/W STRG switch OFF

NOTE

Select the longest runway available with minimum turbulence and cross-wind.

- (6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)



Touchdown protection for the brakes is lost. Do not depress brake pedals until after touchdown.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Landing Gear, Wheel and Brake System

05-16-7

Rev. 28, Jun 04/2021

After touchdown:

- (7) FLIGHT SPOILER lever Select MAX

NOTE

Use differential braking, rudder and engine thrust as required to assist in directional control.

At 30 knots (ground speed):

NOTE

This failure could lead to a loss of the inboard and outboard brakes during taxi.
Revert to manual braking (anti-skid disabled) at low taxi speed.

- (8) ANTI-SKID switch OFF

After landing:

- (9) HEATERS circuit breakers Open

- TAT circuit breaker (1A12),
- AOA R circuit breaker (1A13),
- PITOT R circuit breaker (1A14),
- STATIC R circuit breaker (1G14),
- PITOT L circuit breaker (1T7),
- AOA L circuit breaker (1T8),
- PITOT STBY circuit breaker (1T9),
- STATIC L circuit breaker (2S1).

- (10) CRT displays Monitor, for possible overheat

Before removing AC electrical power:

- (11) ADG DEPLOY AUTO circuit breaker (2N6) Open

- (12) HYDRAULIC 3B pump switch ON

- (13) Landing gear locking pins Install

NOTE

Do not leave the APU unattended. Automatic APU fire extinguishing is not available on the ground.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Landing Gear, Wheel and Brake System

05-16-8

Rev. 28, Jun 04/2021

J. PROX SYS CHAN

NOTE

1. Nuisance “TERRAIN PULL UP” and “TOO LOW GEAR” aural warnings may be announced.
2. The nose landing light may be inoperative.
3. The no smoking and seat belt lights system may be inoperative even if the **NO SMOKING** and **SEAT BELTS** status messages are displayed.
4. The landing gear UP symbol indication may be lost.
5. Airplane door indications may be inoperative.



Touchdown protection for the brakes may be lost. Do not depress brake pedals until after touchdown.

After landing:

Before removing AC electrical power:

- (1) ADG DEPLOY AUTO circuit breaker (2N6) Open

NOTE

Do not leave the APU unattended. The automatic shutdown protection is inhibited.

K. WOW INPUT

Prior to landing:

NOTE

Nosewheel steering may be inoperative upon landing.

- (1) EMER DEPRESS switch ON

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Landing Gear, Wheel and Brake System

05-16-9

Rev. 28, Jun 04/2021

- (2) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)



Touchdown protection for the brakes may be lost. Do not depress brake pedals until after touchdown.

After touchdown:

- (3) FLIGHT SPOILER lever Select MAX

At 30 knots (ground speed):

NOTE

This failure could lead to a loss of the inboard and outboard brakes during taxi.
Revert to manual braking (anti-skid disabled) at low taxi speed.

- (4) ANTI-SKID switch OFF

Prior to shutdown:

- (5) HEATERS circuit breakers Open

- TAT circuit breaker (1A12),
- AOA R circuit breaker (1A13),
- PITOT R circuit breaker (1A14),
- STATIC R circuit breaker (1G14),
- PITOT L circuit breaker (1T7),
- AOA L circuit breaker (1T8),
- PITOT STBY circuit breaker (1T9),
- STATIC L circuit breaker (2S1).

- (6) CRT displays Monitor, for possible overheat

Before removing AC electrical power:

- (7) ADG DEPLOY AUTO circuit breaker (2N6) Open

NOTE

Do not leave the APU unattended. Automatic APU fire extinguishing is not available on the ground.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Landing Gear, Wheel and Brake System

05-16-10

Rev. 28, Jun 04/2021

L. WOW OUTPUT

NOTE

Nosewheel steering may not be available.

If STALL FAIL caution message is on:

- (1) STALL PTCT PUSHER switch (left or right) OFF
- (2) Approach speed Not less than V_{REF} (FLAPS 45) + 10 KIAS
- (3) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.15 (15%)	1.10 (10%)

After landing, before removing AC electrical power:

- (4) ADG DEPLOY AUTO circuit breaker (2N6) Open

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES Miscellaneous Systems

05-17-1

Rev. 28, Jun 04/2021

1. MISCELLANEOUS SYSTEMS

A. ELT ON

- (1) ELT switch <Type Spec> or <1092>.....ON, then ARM/RESET. Check that the ELT is not transmitting.

B. EMER LTS OFF

- (1) EMER LTS switch Check status of EMER LTS

C. OXY LO PRESS

If oxygen is in use or leak is suspected:

- (1) Descent Initiate to a safe altitude

If oxygen is not in use:

- (1) Oxygen pressure Monitor

D. PASS OXY ON

- (1) Passenger oxygen Check status

E. Passenger Oxygen, Auto-deploy Failure

If cabin altitude is above 14250 (± 750) feet and oxygen masks have not deployed automatically:

- (1) PASS OXY switch ON

If masks do not deploy:

- (2) Flight attendant(s) Advise to open oxygen mask compartments manually.

If masks deploy:

- (2) No further action required.

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES
Miscellaneous Systems

05-17-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES

Aural/Visual Warning System

05-18-1

Rev. 28, Jun 04/2021

1. AURAL/VISUAL WARNING SYSTEM

A. EICAS Primary Display Failure

- (1) EICAS source selector ED 2
- (2) Applicable display reversionary panel selector EICAS

B. EICAS Secondary Display Failure

- (1) Applicable display reversionary panel selector EICAS

C. EICAS Control Panel Failure

To display a synoptic page (ECS, HYDRAULIC, AC ELECTRICAL or DC ELECTRICAL, FUEL, FLIGHT CONTROLS, ANTI-ICE, or DOORS):

- (1) STEP button Select as required

NOTE

PRI, STAT, and CAS buttons are operable.

D. TCAS System Failure (TCAS FAIL Flag on PFD/MFD)

- (1) Radio tuning unit, TCAS main display page, MODE line select key STBY mode

E. TCAS Resolution Advisory Failure (TCAS RA FAIL Flag on PFD)

- (1) Radio tuning unit, TCAS main display page, MODE line select key TA mode only

F. TCAS Traffic Display Failure (TCAS DISPLAY FAIL Flag on MFD)

If TCAS DISPLAY FAIL flag displayed on one MFD:

- (1) Functional MFD Use for TCAS data

DOT Approved

Airplane Flight Manual
CSP C-012-219



ABNORMAL PROCEDURES
Aural/Visual Warning System

05-18-2

Rev. 28, Jun 04/2021

G. DCU 1 INOP or DCU 2 INOP or DCU 1 AURAL INOP or DCU 2 AURAL INOP (Status Message)

- (1) Affected AUDIO WARNING switchDISABLE
(2) Operative AUDIO WARNING switchNormal

DOT Approved

Airplane Flight Manual
CSP C-012-219



CHAPTER 6A - PERFORMANCE (CAFM)

GENERAL <2098>

INTRODUCTION	06A-01-1
CONVERSION DATA	06A-01-1
Temperature Conversion	06A-01-1
Weight Conversion	06A-01-4
Wind Component	06A-01-4
CALIBRATION	06A-01-6
Description	06A-01-6
Airspeed Position Error Correction – Primary Flight Display	06A-01-6
Altitude Position Error Correction – Primary Flight Display	06A-01-8
Airspeed Position Error Correction – Integrated Standby Instrument	06A-01-10
Altitude Position Error Correction – Integrated Standby Instrument	06A-01-12
FLIGHT CAPABILITIES	06A-01-14
Stall Speeds	06A-01-14
Maneuvering Capabilities	06A-01-14
Climb Speeds	06A-01-14
PERFORMANCE CONDITIONS AND CONFIGURATIONS	06A-01-15
Minimum Control Speed, Air (V_{MCA})	06A-01-15
Minimum Control Speed, Ground (V_{MCG})	06A-01-15
Minimum Control Speed, Landing (V_{MCL})	06A-01-15
Demonstrated Cross-wind (Take-off and Landing)	06A-01-15
Configurations and Thrusts	06A-01-15

THRUST SETTINGS <2098>

THRUST SETTINGS	06A-02-1
-----------------------	----------

TAKE-OFF PERFORMANCE <2098>

INTRODUCTION	06A-03-1
General	06A-03-1
Runway Conditions	06A-03-1
TAKE-OFF PERFORMANCE CALCULATIONS	06A-03-2
MAXIMUM ALLOWABLE BRAKE TEMPERATURE FOR TAKE-OFF	06A-03-3
BTMS Operative	06A-03-3
BTMS Inoperative	06A-03-3



PERFORMANCE (CAFIM) Table of Contents <2098>

06A-00-2

Rev. 28, Jun 04/2021

OBSTACLE CLEARANCE <2098>

INTRODUCTION	06A-04-1
TAKE-OFF PATH DETERMINATION	06A-04-1
GRADIENT LOSS IN A STEADY TURN	06A-04-3

ENROUTE PERFORMANCE <2098>

INTRODUCTION	06A-05-1
ENROUTE CLIMB GRADIENT AND NET CEILING	06A-05-1

APPROACH AND LANDING <2098>

INTRODUCTION	06A-06-1
APPROACH CLIMB PERFORMANCE	06A-06-1
LANDING CLIMB PERFORMANCE	06A-06-1
LANDING WEIGHT LIMITED BY CLIMB REQUIREMENTS	06A-06-1
LANDING DISTANCE AND SPEED	06A-06-1
MAXIMUM PERMISSIBLE QUICK TURN-AROUND LANDING WEIGHT	06A-06-2
BTMS Operative	06A-06-2
BTMS Inoperative	06A-06-2

LIST OF ILLUSTRATIONS

GENERAL <2098>

Figure 06A-01-1	Temperature Conversion	06A-01-3
Figure 06A-01-2	Wind Component	06A-01-5
Figure 06A-01-3	Airspeed Position Error Correction – Primary Flight Display	06A-01-7
Figure 06A-01-4	Altitude Position Error Correction – Primary Flight Display	06A-01-9
Figure 06A-01-5	Airspeed Position Error Correction – Integrated Standby Instrument	06A-01-11
Figure 06A-01-6	Altitude Position Error Correction – Integrated Standby Instrument	06A-01-13

OBSTACLE CLEARANCE <2098>

Figure 06A-04-1	Take-off Path	06A-04-2
-----------------	---------------------	----------

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



**PERFORMANCE (CAFM)
Table of Contents <2098>**

06A-00-3

Rev. 28, Jun 04/2021

APPROACH AND LANDING <2098>

Figure 06A-06-1	Maximum Permissible Quick Turn-around Landing Weight	06A-06-3
-----------------	--	----------

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



**PERFORMANCE (CAFM)
Table of Contents <2098>**

06A-00-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



1. INTRODUCTION

The data is the section present the general performance information and must be used when determining the Airplane performance using the Computerized airplane Flight Manual (CAFM).

The airspeeds and airplane configurations for take-off, climb and landing, as presented in this chapter, must be adhered to during the appropriate phase of flight.

All performance data are based on the following conditions:

- Minimum guaranteed engine thrust with allowance made for the installation effects, including bleed and mechanical horsepower extraction.
- Maximum nominal brake operating pressure of 3000 psi, with anti-skid and automatic ground lift dumping operational.
- International Standard Atmosphere (ISA), with corrections for non-standard conditions, when applicable.
- Wind speed is measured at a height of 10 metres (33 feet) above the surface during the take-off and landing phases.
- Enroute wind speed is based upon the reported wind at altitude.
- The performance data in this chapter are not valid when:
 - The weight exceeds the maximum weight as limited by climb requirements.
 - Data are extrapolated from the values shown in the charts.
- For weights below 24950 kg (55000 lb) assume a weight of 24950 kg (55000 lb).

2. CONVERSION DATA

A. Temperature Conversion

A table to convert air temperature at a given pressure altitude into a value of temperature above or below the International Standard Atmosphere (ISA) is shown on [Figure 06A-01-1](#).

Example:

[Figure 06A-01-1](#) shows that at ISA + 10°C at an altitude of 29000 feet, the air temperature is -32°C.

Also given by [Figure 06A-01-1](#) is a conversion of temperature from °C to °F, or vice versa.



PERFORMANCE (CAFM)
General <2098>

06A-01-2

Rev. 28, Jun 04/2021

Example:

59°F is equivalent to 15°C.

NOTE

In the CAFM calculator, temperature selection can be made in either the Outside Air Temperature (OAT) mode or Deviation from International Standard Atmosphere (DISA) mode.

When selecting a new temperature reference (OAT or DISA), there is no automatic temperature conversion and the appropriate temperature value must be entered in the temperature field.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



PERFORMANCE (CAFM)
General <2098>

06A-01-3

Rev. 28, Jun 04/2021

Alt. ft	ISA - 30 C		ISA - 20 C		ISA - 10 C		ISA		ISA + 10 C		ISA + 20 C		ISA + 30 C	
	C	F	C	F	C	F	C	F	C	F	C	F	C	F
0	-15.0	5.0	-5.0	23.0	5.0	41.0	15.0	59.0	25.0	77.0	35.0	95.0	45.0	113.0
1000	-17.0	1.4	-7.0	19.4	3.0	37.4	13.0	55.4	23.0	73.4	33.0	91.4	43.0	109.4
2000	-18.9	-2.1	-8.9	15.9	1.1	33.9	11.1	51.9	21.1	69.9	31.1	87.9	41.1	105.9
3000	-20.9	-5.7	-10.9	12.3	-0.9	30.3	9.1	48.3	19.1	66.3	29.1	84.3	39.1	102.3
4000	-22.9	-9.3	-12.9	8.7	-2.9	26.7	7.1	44.7	17.1	62.7	27.1	80.7	37.1	98.7
5000	-24.9	-12.8	-14.9	5.2	-4.9	23.2	5.1	41.2	15.1	59.2	25.1	77.2	35.1	95.2
6000	-26.9	-16.4	-16.9	1.6	-6.9	19.6	3.1	37.6	13.1	55.6	23.1	73.6	33.1	91.6
7000	-28.9	-20.0	-18.9	-2.0	-8.9	16.0	1.1	34.0	11.1	52.0	21.1	70.0	31.1	88.0
8000	-30.8	-23.5	-20.8	-5.5	-10.8	12.5	-0.8	30.5	9.2	48.5	19.2	66.5	29.2	84.5
9000	-32.8	-27.1	-22.8	-9.1	-12.8	8.9	-2.8	26.9	7.2	44.9	17.2	62.9	27.2	80.9
10000	-34.8	-30.7	-24.8	-12.7	-14.8	5.3	-4.8	23.3	5.2	41.3	15.2	59.3	25.2	77.3
11000	-36.8	-34.2	-26.8	-16.2	-16.8	1.8	-6.8	19.8	3.2	37.8	13.2	55.8	23.2	73.8
12000	-38.8	-37.8	-28.8	-19.8	-18.8	-1.8	-8.8	16.2	1.2	34.2	11.2	52.2	21.2	70.2
13000	-40.8	-41.4	-30.8	-23.4	-20.8	-5.4	-10.8	12.6	-0.8	30.6	9.2	48.6	19.2	66.6
14000	-42.7	-44.9	-32.7	-26.9	-22.7	-8.9	-12.7	9.1	-2.7	27.1	7.3	45.1	17.3	63.1
15000	-44.7	-48.5	-34.7	-30.5	-24.7	-12.5	-14.7	5.5	-4.7	23.5	5.3	41.5	15.3	59.5
16000	-46.7	-52.1	-36.7	-34.1	-26.7	-16.1	-16.7	1.9	-6.7	19.9	3.3	37.9	13.3	55.9
17000	-48.6	-55.6	-38.6	-37.6	-28.6	-19.6	-18.6	-1.6	-8.6	16.4	1.4	34.4	11.4	52.4
18000	-50.7	-59.2	-40.7	-41.2	-30.7	-23.2	-20.7	-5.2	-10.7	12.8	-0.7	30.8	9.3	48.8
19000	-52.7	-62.8	-42.7	-44.8	-32.7	-26.8	-22.7	-8.8	-12.7	9.2	-2.7	27.2	7.3	45.2
20000	-54.6	-66.3	-44.6	-48.3	-34.6	-30.3	-24.6	-12.3	-14.6	5.7	-4.6	23.7	5.4	41.7
21000	-56.6	-69.9	-46.6	-51.9	-36.6	-33.9	-26.6	-15.9	-16.6	2.1	-6.6	20.1	3.4	38.1
22000	-58.6	-73.5	-48.6	-55.5	-38.6	-37.5	-28.6	-19.5	-18.6	-1.5	-8.6	16.5	1.4	34.5
23000	-60.5	-77.0	-50.5	-59.0	-40.5	-41.0	-30.5	-23.0	-20.5	-5.0	-10.5	13.0	-0.5	31.0
24000	-62.5	-80.6	-52.5	-62.6	-42.5	-44.6	-32.5	-26.6	-22.5	-8.6	-12.5	9.4	-2.5	27.4
25000	-64.5	-84.2	-54.5	-66.2	-44.5	-48.2	-34.5	-30.2	-24.5	-12.2	-14.5	5.8	-4.5	23.8
26000	-66.5	-87.7	-56.5	-69.7	-46.5	-51.7	-36.5	-33.7	-26.5	-15.7	-16.5	2.3	-6.5	20.3
27000	-68.5	-91.3	-58.5	-73.3	-48.5	-55.3	-38.5	-37.3	-28.5	-19.3	-18.5	-1.3	-8.5	16.7
28000	-70.5	-94.9	-60.5	-76.9	-50.5	-58.9	-40.5	-40.9	-30.5	-22.9	-20.5	-4.9	-10.5	13.1
29000	-72.4	-98.4	-62.4	-80.4	-52.4	-62.4	-42.4	-44.4	-32.4	-26.4	-22.4	-8.4	-12.4	9.6
30000	-74.4	-102.0	-64.4	-84.0	-54.4	-66.0	-44.4	-48.0	-34.4	-30.0	-24.4	-12.0	-14.4	6.0
31000	-76.4	-105.6	-66.4	-87.6	-56.4	-69.6	-46.4	-51.6	-36.4	-33.6	-26.4	-15.6	-16.4	2.4
32000	-78.4	-109.1	-68.4	-91.1	-58.4	-73.1	-48.4	-55.1	-38.4	-37.1	-28.4	-19.1	-18.4	-1.1
33000	-80.4	-112.7	-70.4	-94.7	-60.4	-76.7	-50.4	-58.7	-40.4	-40.7	-30.4	-22.7	-20.4	-4.7
34000	-82.4	-116.3	-72.4	-98.3	-62.4	-80.3	-52.4	-62.3	-42.4	-44.3	-32.4	-26.3	-22.4	-8.3
35000	-84.3	-119.8	-74.3	-101.8	-64.3	-83.8	-54.3	-65.8	-44.3	-47.8	-34.3	-29.8	-24.3	-11.8
36000	-86.3	-123.4	-76.3	-105.4	-66.3	-87.4	-56.3	-69.4	-46.3	-51.4	-36.3	-33.4	-26.3	-15.4
37000	-86.5	-123.7	-76.5	-105.7	-66.5	-87.7	-56.5	-69.7	-46.5	-51.7	-36.5	-33.7	-26.5	-15.7
38000	-86.5	-123.7	-76.5	-105.7	-66.5	-87.7	-56.5	-69.7	-46.5	-51.7	-36.5	-33.7	-26.5	-15.7
39000	-86.5	-123.7	-76.5	-105.7	-66.5	-87.7	-56.5	-69.7	-46.5	-51.7	-36.5	-33.7	-26.5	-15.7
40000	-86.5	-123.7	-76.5	-105.7	-66.5	-87.7	-56.5	-69.7	-46.5	-51.7	-36.5	-33.7	-26.5	-15.7
41000	-86.5	-123.7	-76.5	-105.7	-66.5	-87.7	-56.5	-69.7	-46.5	-51.7	-36.5	-33.7	-26.5	-15.7

UNIT-C-F - 09/04/92

Temperature Conversion
Figure 06A-01-1

DOT Approved

Airplane Flight Manual
CSP C-012-219



PERFORMANCE (CAF M) General <2098>

06A-01-4

Rev. 28, Jun 04/2021

B. Weight Conversion

Weight conversion from imperial units (lb) to metric units (kg) and vice versa, is automatically accomplished in the CAFM upon selection of the desired unit of measure.

C. Wind Component

A chart to convert wind velocity into a headwind or tailwind component is shown on [Figure 06A-01-2](#).

Example:

[Figure 06A-01-2](#) shows that for a wind velocity of 40 kt at an angle of 60 degrees to the runway centerline, the wind component parallel to the runway (headwind) is 20 knots, with a cross-wind velocity of 34.5 knots.

DOT Approved

Airplane Flight Manual
CSP C-012-219

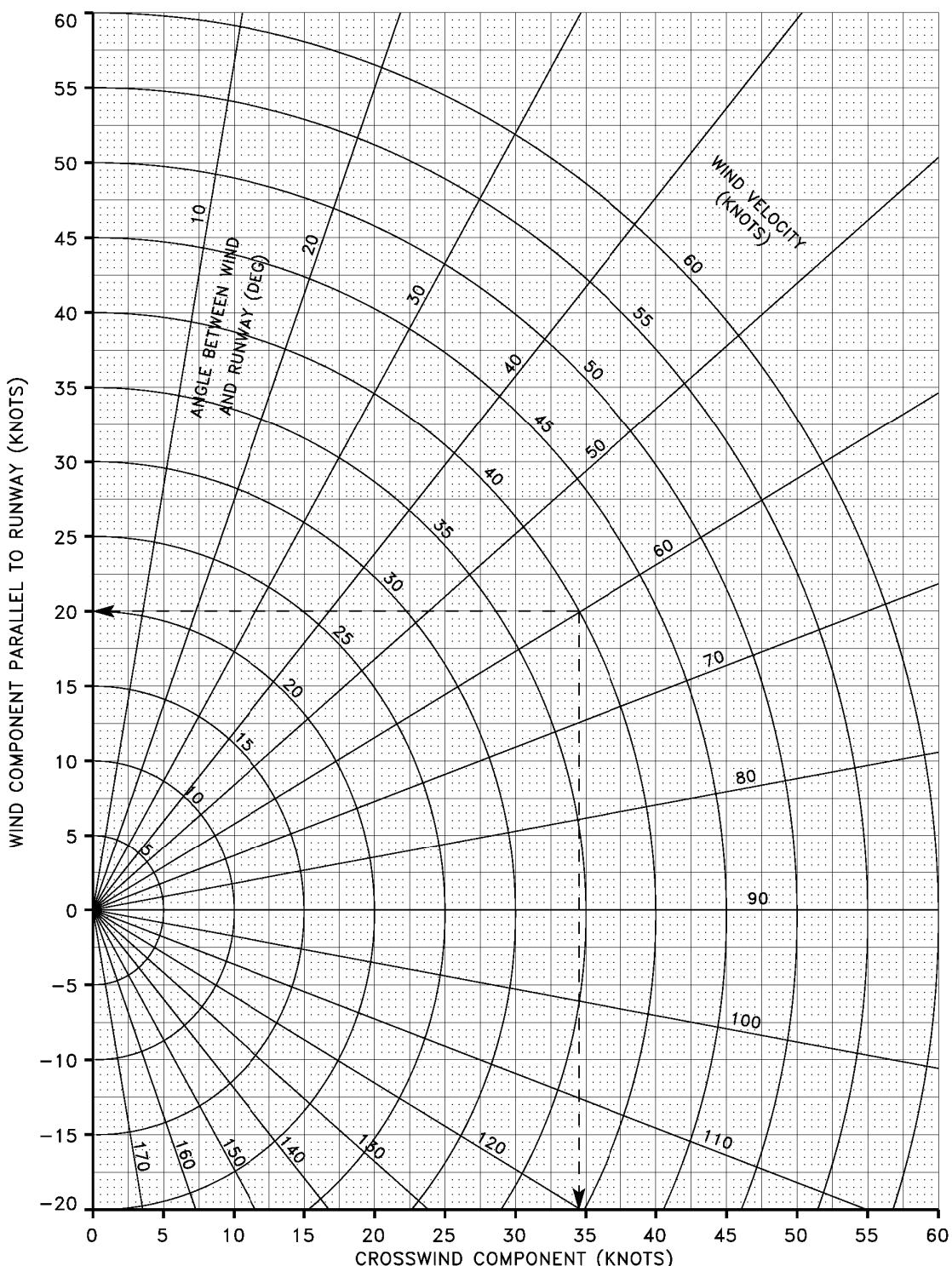


PERFORMANCE (CAF M)
General <2098>

06A-01-5

Rev. 28, Jun 04/2021

CHP1-02-17APR92





3. CALIBRATION

A. Description

The position error corrections for airspeed and altitude for varying airplane speeds and flap settings are shown on [Figure 06A-01-3](#) through [Figure 06A-01-6](#).

Position error correction variation with airplane weight is negligible. All figures assume instrument error to be zero and are valid for both the landing gear extended or retracted configuration.

Position error corrections to altitude, airspeed and Mach number for the FLAPS 0 configuration, are negligible for both the primary flight displays and the integrated standby instrument.

The displayed Static Air Temperature (SAT) is unreliable on the ground since the TAT probe gives inaccurate readings when the airplane is static or at a low forward speed. In flight, the difference between OAT and indicated SAT is negligible.

Ground airspeed position errors for FLAPS 8 and FLAPS 20 are negligible.

B. Airspeed Position Error Correction – Primary Flight Display

[Figure 06A-01-3](#) provides the airspeed position error correction for varying flap settings and indicated airspeed, for the primary flight display.

To obtain the Calibrated Airspeed (CAS), add the airspeed position error correction (ΔV) to the Indicated Airspeed (IAS).

Example:

$$\text{Indicated Airspeed (IAS)} = 155 \text{ KIAS}$$

$$\text{Flaps setting} = \text{FLAPS 1}$$

$$\text{Position correction } (\Delta V) = -0.5 \text{ knot}$$

$$\begin{aligned}\text{Calibrated Airspeed (CAS)} &= \text{IAS} + \Delta V \\ &= 155 + (-0.5) \\ &= 154.5 \text{ KCAS}\end{aligned}$$

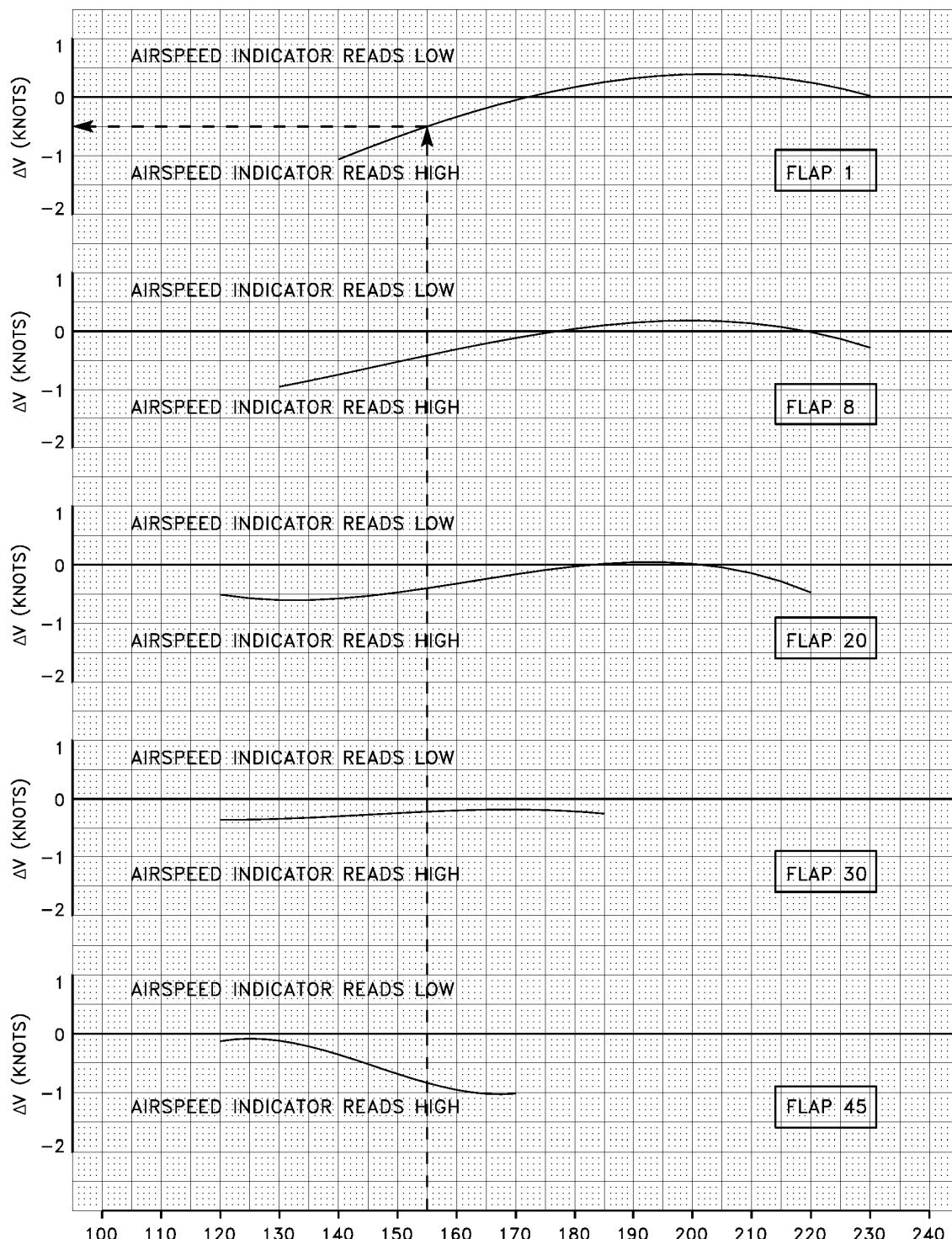


PERFORMANCE (CAFM)
General <2098>

06A-01-7

Rev. 28, Jun 04/2021

CR900_primary_spd_ip_01nov01_revNC



Airspeed Position Error Correction – Primary Flight Display
Figure 06A-01-3

DOT Approved

Airplane Flight Manual
CSP C-012-219



C. Altitude Position Error Correction – Primary Flight Display

Figure 06A-01-4 provides the altitude position error correction for varying conditions of flap settings and indicated airspeed, for the primary flight display.

To obtain the true pressure altitude (H_P), add the altitude position error correction (ΔH) to the indicated altitude (H_I).

Example:

$$\text{Indicated altitude } (H_I) = 1500 \text{ feet}$$

$$\text{Indicated Airspeed (IAS)} = 155 \text{ KIAS}$$

$$\text{Flaps setting} = \text{FLAPS } 8$$

$$\text{Position correction } (\Delta H) = -4.5 \text{ feet}$$

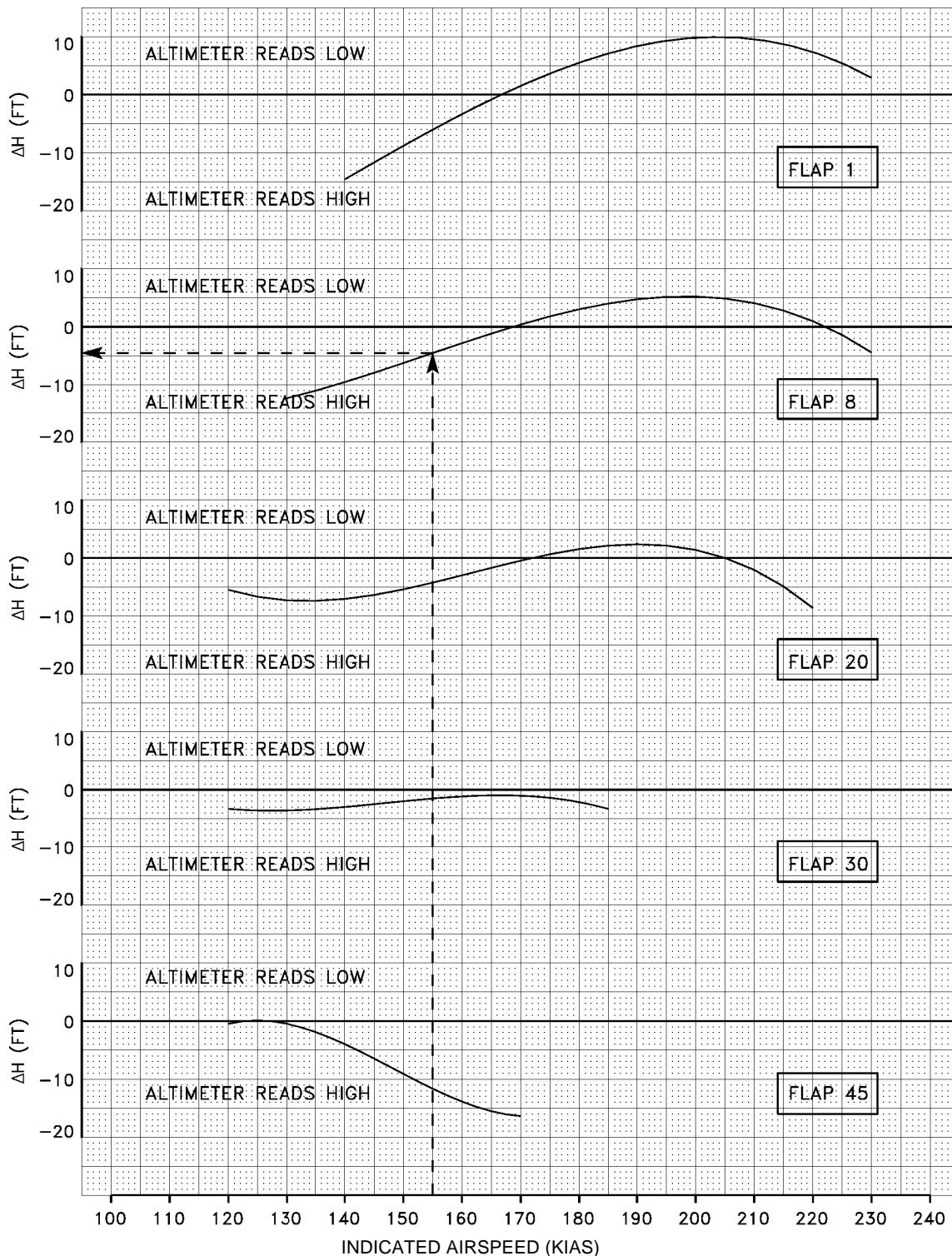
$$\begin{aligned}\text{True pressure altitude } (H_P) &= H_I + \Delta H \\ &= 1500 + (-4.5) \\ &= 1495.5 \text{ feet}\end{aligned}$$



PERFORMANCE (CAFM)
General <2098>

06A-01-9

Rev. 28, Jun 04/2021



Altitude Position Error Correction – Primary Flight Display
Figure 06A-01-4

DOT Approved

Airplane Flight Manual
CSP C-012-219

**D. Airspeed Position Error Correction – Integrated Standby Instrument**

Figure 06A-01-5 provides the airspeed position error correction for varying conditions of flap settings and indicated airspeed, for the integrated standby instrument.

To obtain the Calibrated Airspeed (CAS), add the airspeed position error correction (ΔV) to the Indicated Airspeed (IAS).

Example:

$$\text{Indicated Airspeed (IAS)} = 170 \text{ KIAS}$$

$$\text{Flaps setting} = \text{FLAPS } 20$$

$$\text{Position correction } (\Delta V) = -0.8 \text{ knot}$$

$$\begin{aligned}\text{Calibrated Airspeed (CAS)} &= \text{IAS} + \Delta V \\ &= 170 + (-0.8) \\ &= 169.2 \text{ KCAS}\end{aligned}$$

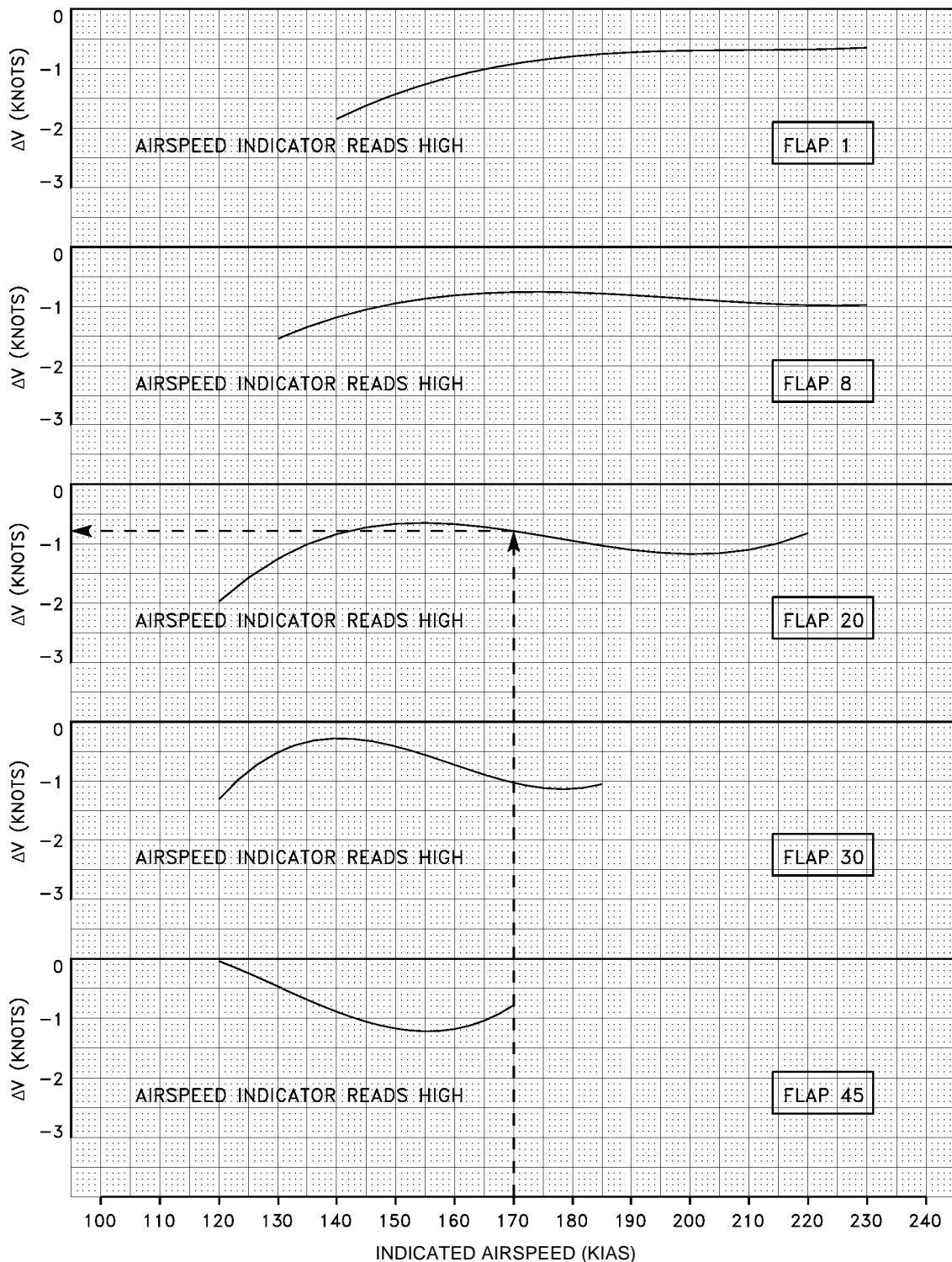


PERFORMANCE (CAF M)
General <2098>

06A-01-11

Rev. 28, Jun 04/2021

CRJ900_alternate_spd_ip_01nov01_revNC



Airspeed Position Error Correction – Integrated Standby Instrument
Figure 06A-01-5

DOT Approved

Airplane Flight Manual
CSP C-012-219



E. Altitude Position Error Correction – Integrated Standby Instrument

Figure 06A-01-6 provides the altitude position error correction for varying conditions of flap settings and indicated airspeed, for the integrated standby instrument.

To obtain the true pressure altitude (H_P), add the altitude position error correction (ΔH) to the indicated altitude (H_I).

Example:

$$\text{Indicated Airspeed (IAS)} = 200 \text{ KIAS}$$

$$\text{Indicated altitude } (H_I) = 10000 \text{ feet}$$

$$\text{Flaps setting} = \text{FLAPS 1}$$

$$\text{Position correction } (\Delta H) = -13 \text{ feet}$$

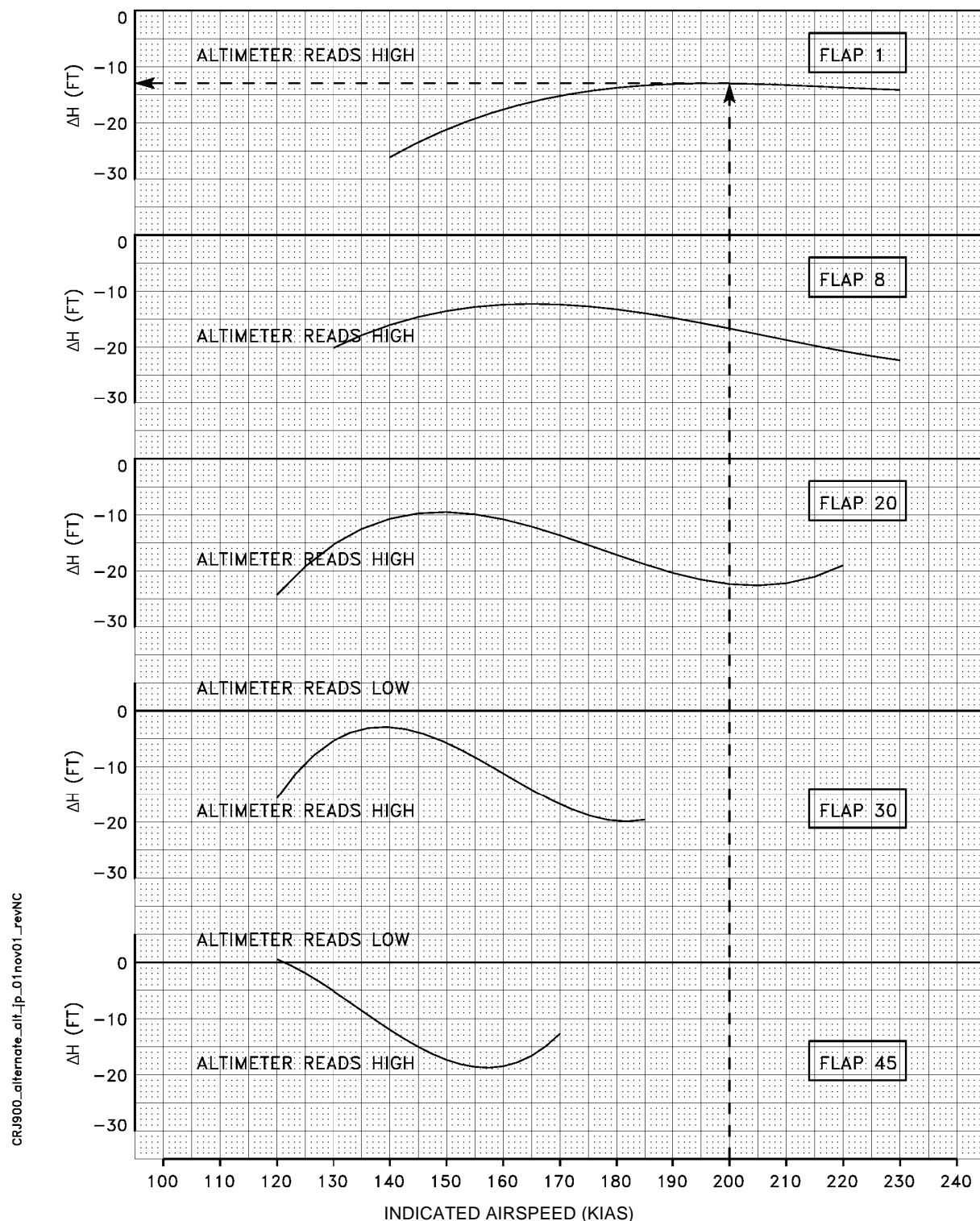
$$\begin{aligned}\text{True pressure altitude } (H_P) &= H_I + \Delta H \\ &= 10000 + (-13) \\ &= 9987 \text{ feet}\end{aligned}$$



PERFORMANCE (CAFM)
General <2098>

06A-01-13

Rev. 28, Jun 04/2021



Altitude Position Error Correction – Integrated Standby Instrument
Figure 06A-01-6

DOT Approved

Airplane Flight Manual
CSP C-012-219



4. FLIGHT CAPABILITIES

A. Stall Speeds

Stall speed calculations for various configurations (flap setting and landing gear position) are provided within the General Module of the CAFM.

In the CAFM, the stall speed is equal to the reference stall speed (V_{SR}). V_{SR} is equal to 1.02 V_{S1G} for a FLAPS 0 / Gear Up configuration. V_{SR} is equal to 1.0 V_{S1G} for all other configurations.

B. Maneuvering Capabilities

Maneuvering Capability calculations are also presented within the General Module of the CAFM. These calculations establish the maneuvering margin for a given load factor, bank angle, weight, CG position, altitude and speed combination and is calculated relative to buffet onset or stick shaker activation, whichever occurs first.

This mode provides the following sub-calculations:

- Maximum altitude,
- Maximum weight,
- Minimum and maximum Mach number, and
- Maximum load factor and bank angle.

C. Climb Speeds

The climb speeds to be employed for the various phases of flight are provided in the CAFM as follows:

- The climb speed to be employed during the final take-off phase (V_{FTO}) is provided in the Take-off Performance Module.
- The climb speed to be employed during the enroute phase (V_{ENR}) is obtained from the Enroute Performance Module.
- The climb speed to be employed during the approach climb phase ($V_{2\text{ GO-AROUND}}$ or V_{2GA}), is determined in the Approach and Landing Performance Module.
- The climb speed to be employed during the landing climb or initial phase of an all engine go-around with the airplane in the FLAPS 45 configuration (V_{LC}), is also calculated within the Approach and Landing Performance Module.



5. PERFORMANCE CONDITIONS AND CONFIGURATIONS

A. Minimum Control Speed, Air (V_{MCA})

- V_{MCA} (FLAPS 8) = 114 KIAS (113 KCAS),
- V_{MCA} (FLAPS 20) = 110 KIAS (109 KCAS).

B. Minimum Control Speed, Ground (V_{MCG})

- V_{MCG} (FLAPS 8) = 109 KIAS (109 KCAS),
- V_{MCG} (FLAPS 20) = 114 KIAS (114 KCAS).

C. Minimum Control Speed, Landing (V_{MCL})

- V_{MCL} (FLAPS 20) = 113 KIAS (112 KCAS),
- V_{MCL} (FLAPS 45) = 102 KIAS (101 KCAS).

V_{MCL} does not affect the scheduling of the relevant reference speeds.

D. Demonstrated Cross-wind (Take-off and Landing)

The maximum demonstrated cross-wind component for take-off (at 33 feet [10 metres] tower height) is 35 knots and is not considered limiting.

The maximum demonstrated cross-wind component for landing (at 33 feet [10 metres] tower height) is 32 knots and is not considered limiting.

NOTE

In high cross-wind conditions, rudder effectiveness may be limited after landing with maximum reverse thrust selected.

E. Configurations and Thrusts

Phase of Flight	Speed	Engine Thrust Setting	FLAPS	Landing Gear
Take-off	Take-off speeds (V_1 , V_R , V_2)	Normal take-off thrust, 2 engines to V_{EF} , then 1 engine at APR thrust	8 or 20	Down
First Segment Climb	V_2	APR thrust, 1 engine	8 or 20	Down
Second Segment Climb	V_2	Same as First Segment	8 or 20	Up



**PERFORMANCE (CAFIM)
General <2098>**

06A-01-16

Rev. 28, Jun 04/2021

Phase of Flight	Speed	Engine Thrust Setting	FLAPS	Landing Gear
Final Take-off Climb	Final take-off climb speed (V_{FTO})	Maximum continuous thrust, 1 engine	0	Up
Enroute Climb	Enroute speed (V_{ENR})	Maximum continuous thrust, 1 engine	0	Up
Approach Climb	V_2 Go-around (V_{2GA})	Go-around thrust, 1 engine	8	Up
Landing Climb	V_{LC}	Go-around thrust, 2 engines	45	Down
Landing	V_{REF}	Idle, 2 engines	45	Down

Take-off performance data are presented with the effects of engine bleeds.

NOTE

FLAPS 30 is an intermediate flap position and no procedures or performance data are predicated on its use.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



PERFORMANCE (CAFM) Thrust Settings <2098>

06A-02-1

Rev. 28, Jun 04/2021

1. THRUST SETTINGS

Engine fan speed N_1 settings required for various ambient temperatures, pressure altitudes and engine bleed configurations are presented in the Thrust Setting Module of the CAFM. These data correspond to the N_1 thrust settings as calculated by the Full Authority Digital Engine Control (FADEC), for normal ground and flight operations.

A printout of the applicable thrust setting data generated from the CAFM should be provided to the flight crew as a means of verifying the accuracy of the thrust set by the FADEC for the particular phase of flight, in accordance with the following:

Thrust Setting	Tolerance
Normal take-off thrust, from static (0) to 65 KIAS.	$\pm 1.0\% N_1$ (for static operations)
All-engine go-around or normal take-off thrust, for a nominal airspeed of 140 KIAS.	
Single-engine go-around or APR thrust, for a nominal airspeed of 140 KIAS.	
Single-engine maximum continuous thrust, for a climb airspeed of 170 KIAS.	$\pm 0.2\% N_1$
Single-engine maximum continuous thrust, for a climb airspeed of 230 KIAS.	

DOT Approved

Airplane Flight Manual
CSP C-012-219



PERFORMANCE (CAFM)
Thrust Settings <2098>

06A-02-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



1. INTRODUCTION

A. General

The Take-off Performance Module in the CAFM calculates all items in the take-off segment, including the various take-off distances (OEI and AEO), take-off speeds, maximum tire speed, brake energy and climb limitations, in varying conditions of temperature, airport pressure altitude and airplane weight for the specified take-off configurations.

The maximum allowable take-off weight is limited by the most restrictive of the following:

- Maximum approved take-off weight (refer to LIMITATIONS – Structural Weight – STRUCTURAL WEIGHT LIMITATION.),
- Take-off field length requirements:
 - OEI and AEO take-off distance,
 - OEI and AEO take-off run,
 - Accelerate-stop distance.
- Climb requirements,
- Obstacle clearance requirements,
- Maximum tire speed.

B. Runway Conditions

(1) Dry

The first runway selection given in the drop-down menu of the Runway Surface Condition section under the Runway Data window of the CAFM is “Dry Runway” and is used when operating in dry runway conditions. If operating in runway conditions other than dry, the dry runway calculations still need to be run, for comparison purposes (see below).

(2) Wet

A wet runway condition has a deteriorating effect on the stopping performance of the airplane and appropriate corrections should be made to compensate for this degradation.

A runway is considered to be wet when there is sufficient moisture on the runway surface to cause it to appear reflective, but without significant areas of standing water.

NOTE

A runway with standing water would be a contaminated runway.

There are two wet runway selections given in the drop-down menu of the Runway Surface Condition section under the Runway Data window. For wet smooth runways, “Wet Runway” must be selected. For wet runways that have been grooved or treated with porous friction course material, select “Wet Grooved Runway”.

If the take-off weight obtained from the CAFM calculation for a wet runway is higher than the take-off weight for a dry runway, use the take-off weight for a dry runway.



2. TAKE-OFF PERFORMANCE CALCULATIONS

The Take-off Performance Module in the CAFM includes the following calculation scenarios:

- One engine inoperative take-off,
- All engines operating take-off,
- Accelerate-stop,
- V_1 limited by brake energy (V_{1MBE}),
- V_1 limited by control on the ground (V_{1MCG}),
- Full take-off,
- Take-off weight limited by tire speed, and
- Take-off weight limited by climb requirements.

For details on the listed items, refer to the CAFM On-line Help.

The CAFM user can select the take-off speed V_2 to be used during the take-off run and the first and second climb segment:

The following options are available:

(1) **Minimum V_2/V_s :**

The minimum V_2 speed is determined using the minimum V_2/V_s Ratio. The CAFM verifies that the resulting V_2 speed meets all the minimum take-off speeds requirements.

(2) **Specified V_2/V_s :**

The operator can select a V_2/V_s ratio between minimum and maximum allowed values. The CAFM will also verify that the resulting V_2 speeds meets all the minimum take-off speeds requirements.

Take-off overspeed (i.e. V_2/V_s greater than minimum V_2/V_s) usually results in improved climb performance, i.e. higher take-off weights limited by minimum climb requirements and, in some conditions, limited by obstacle clearance.

The use of take-off overspeed will also result in increase of take-off speed and distances and may have a subsequent effect on the take-off weight limited by field performance, tire speed, brake energy and obstacle clearance limitations.



3. MAXIMUM ALLOWABLE BRAKE TEMPERATURE FOR TAKE-OFF

A. BTMS Operative

The minimum brake cooling time after a landing or a rejected take-off and the maximum allowable brake temperature for take-off specified in this section must be observed to ensure sufficient brake energy capability in the event of a rejected take-off.

A minimum brake cooling time of fifteen (15) minutes must be observed between a landing stop or a rejected take-off and the subsequent take-off. If a brake overheat warning is displayed on EICAS, an inspection of the wheel fuse plugs is required before the next take-off.

BTMS brake temperatures must be in the green range before take-off.

B. BTMS Inoperative

NOTE

Dispatch with the BTMS inoperative must be conducted with an approved Minimum Equipment List (MEL)

The minimum brake cooling time at the ramp specified in this section must be observed following a landing or a rejected take-off, to ensure sufficient brake energy capability in the event of a subsequent rejected take-off.

Brake cooling times are specified for different V_1/V_{1MBE} ratios where V_1 and V_{1MBE} are calculated based upon the appropriate take-off conditions.

Following a rejected take-off with a brakes application speed of not more than 80 KIAS, or a landing at a weight not exceeding the maximum permissible quick turn-around landing weight as derived from [Figure 06A-06-1](#), the following brake cooling times must be observed:

V_1/V_{1MBE}	Minimum Brake Cooling Time (minutes)
≤ 0.89	15
≤ 0.91	20
≤ 1.00	30

Following a rejected take-off with a brakes application speed greater than 80 KIAS, or a landing at a weight exceeding the maximum permissible quick turn-around landing weight as derived from [Figure 06A-06-1](#), the following brake cooling times must be observed, followed by an inspection of the wheel fuse plugs:

V_1/V_{1MBE}	Minimum Brake Cooling Time (minutes)
≤ 1.00	60



PERFORMANCE (CAFM)
Take-off Performance <2098>

06A-03-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



1. INTRODUCTION

The gross and net take-off path are determined through the Take-off Path Module of the CAFM. This module provides for the calculation of the take-off path in either the fixed level-off height or the maximum level-off height scenario.

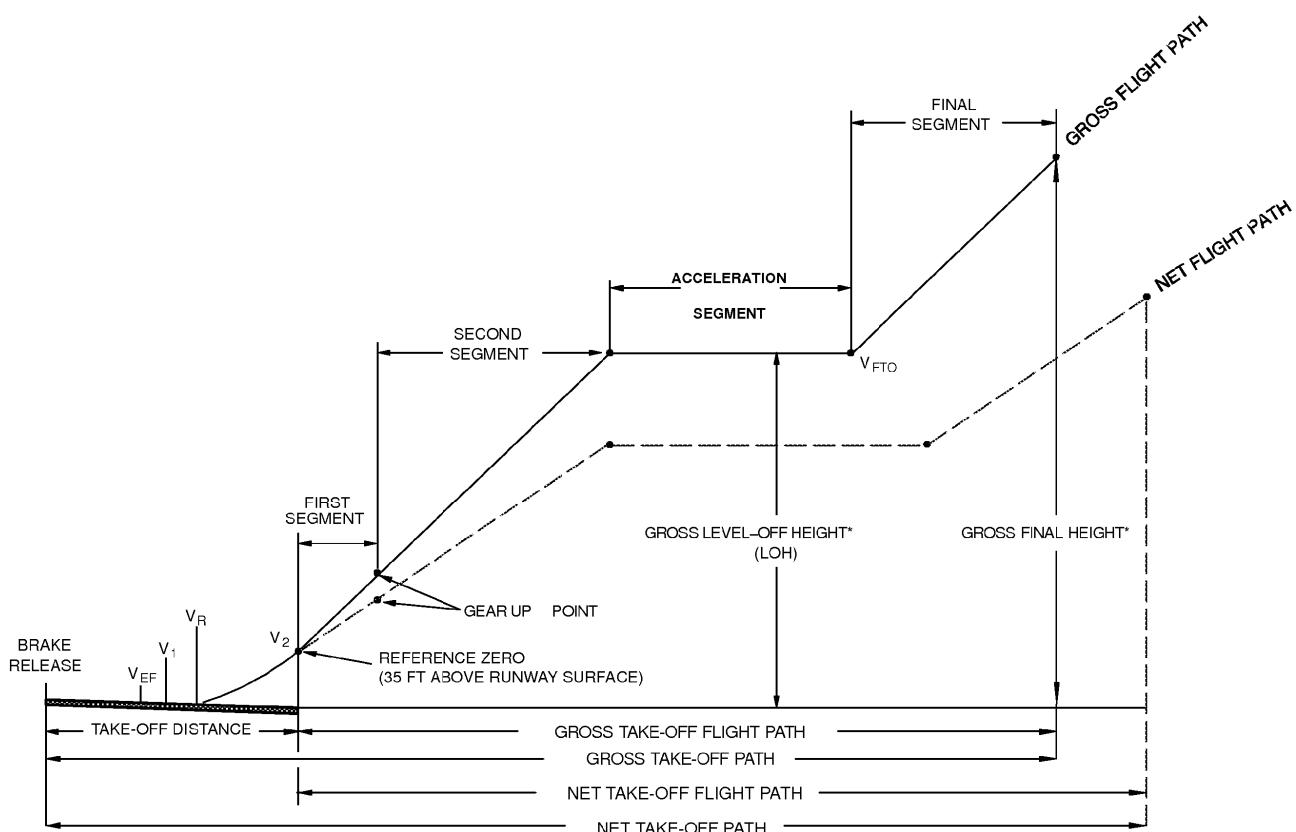
2. TAKE-OFF PATH DETERMINATION

The take-off path is determined using a segmental approach, including the take-off distance, first, second, level-off acceleration and final segments (as applicable). The take-off distance information is obtained from the take-off performance module. The take-off path extends up to a minimum gross height of 1500 ft above the runway surface (see [Figure 06A-04-1](#)).

The take-off path begins at the start of the take-off distance and ends at 1500 feet above the take-off surface, or at the point where transition from take-off to enroute configuration is completed, whichever is higher.

The CAFM also allows the calculation of a take-off path that includes an additional final segment extending beyond the take-off path defined previously, up to a gross final height defined by the user. When determining the take-off path, the airplane is assumed to be at a height of 35 feet above the take-off surface at the end of the take-off distance, irrespective of the runway surface condition. All flight path data are calculated relative to the runway surface at the end of the take-off distance, irrespective of the runway slope value.

The net flight path must clear all obstacles by a vertical distance of at least 35 feet.



* HEIGHT RELATIVE TO THE RUNWAY SURFACE AT THE END OF THE TAKE-OFF DISTANCE

Take-off Path
Figure 06A-04-1

DOT Approved

Airplane Flight Manual
CSP C-012-219



3. GRADIENT LOSS IN A STEADY TURN

The gradient loss in a steady turn is tabulated below for a 15-degree bank angle.

For bank angles less than 15 degrees, the gradient loss may be considered proportional to bank angle.

SLATS/FLAPS	GRADIENT LOSS (%)
FLAPS 0	0.25
FLAPS 8	0.55
FLAPS 20	0.65



PERFORMANCE (CAFM)
Obstacle Clearance <2098>

06A-04-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



PERFORMANCE (CAFM) Enroute Performance <2098>

06A-05-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

The CAFM Enroute Performance Module is used to determine the single-engine net enroute climb gradient and net ceiling versus weight, as well as enroute climb speeds V_{ENR} (IAS), at FLAPS 0, with the operating engine at maximum continuous thrust rating.

2. ENROUTE CLIMB GRADIENT AND NET CEILING

The net enroute climb gradient is calculated by reducing the gross enroute climb gradient by 1.1%. The CAFM calculator allows for the determination of wind effect (headwind or tailwind) on the climb gradient.

The net ceiling is determined for the specified weight input(s) by calculating the altitude at which a net enroute climb gradient of 0% is achieved. Wind is not accounted for in the calculations of the net ceiling.

DOT Approved

Airplane Flight Manual
CSP C-012-219



PERFORMANCE (CAFM)
Enroute Performance <2098>

06A-05-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



1. INTRODUCTION

The Approach and Landing Performance Module of the CAFM provides for the following scenarios:

- Approach climb performance,
- Landing climb performance,
- Landing weight limited by climb requirements,
- Landing distance and speed.

The maximum allowable landing weight is limited by the most restrictive of the following:

- Maximum approved landing weight,
- Runway length available,
- Climb requirements.

2. APPROACH CLIMB PERFORMANCE

This scenario calculates the gross approach climb gradient and the approach climb speed (V_{2GA} [IAS]) for a specified airport pressure altitude and other associated conditions.

3. LANDING CLIMB PERFORMANCE

This scenario calculates the gross landing climb gradient and the landing climb speed (V_{LC} [IAS]) for a specified airport pressure altitude and other relevant conditions.

4. LANDING WEIGHT LIMITED BY CLIMB REQUIREMENTS

This scenario calculates the landing weight limited by climb requirements and the limiting segment (approach or landing).

5. LANDING DISTANCE AND SPEED

This scenario calculates the landing distance and speed. The landing distance is calculated for ISA temperature only and assumes no runway slope. The landing distance is calculated considering the following segments:

- Airborne distance from 50 ft height point to touchdown,
- Delay distance from touchdown to full braking configuration including de-rotation,
- Braking distance.



6. MAXIMUM PERMISSIBLE QUICK TURN-AROUND LANDING WEIGHT

A. BTMS Operative

NOTE

If the BTMS is operative, calculation of the quick turn-around landing weight is not required.

Fifteen (15) minutes after landing, if a brake overheat warning is displayed on EICAS, an inspection of the wheel fuse plugs is required before the next take-off.

BTMS brake temperatures must be in the green range before take-off.

B. BTMS Inoperative

NOTE

Dispatch with the BTMS inoperative must be conducted in accordance with an approved Minimum Equipment List (MEL).

If the landing weight exceeds the quick turn-around landing weight determined from [Figure 06A-06-1](#), a minimum brake cooling period of 60 minutes is required followed by an inspection of the wheel fuse plugs.

Depending on the brake energy requirements for the subsequent take-off, a longer waiting period may be necessary prior to taxi-out (refer to PERFORMANCE – Take-off Performance – MAXIMUM ALLOWABLE BRAKE TEMPERATURE FOR TAKE-OFF, in this chapter).

(1) Quick Turn-around Landing Weight

[Figure 06A-06-1](#) is used during BTMS inoperative conditions. [Figure 06A-06-1](#) provides the maximum permissible quick turn-around landing weights for varying conditions of airport pressure altitude, ambient temperature, wind and runway slope.

Example:

Associated conditions:

Ambient temperature	= -10°C
Airport pressure altitude	= 10000 feet
Wind	= 10 knots (tailwind)
Runway slope	= +2% (upslope)

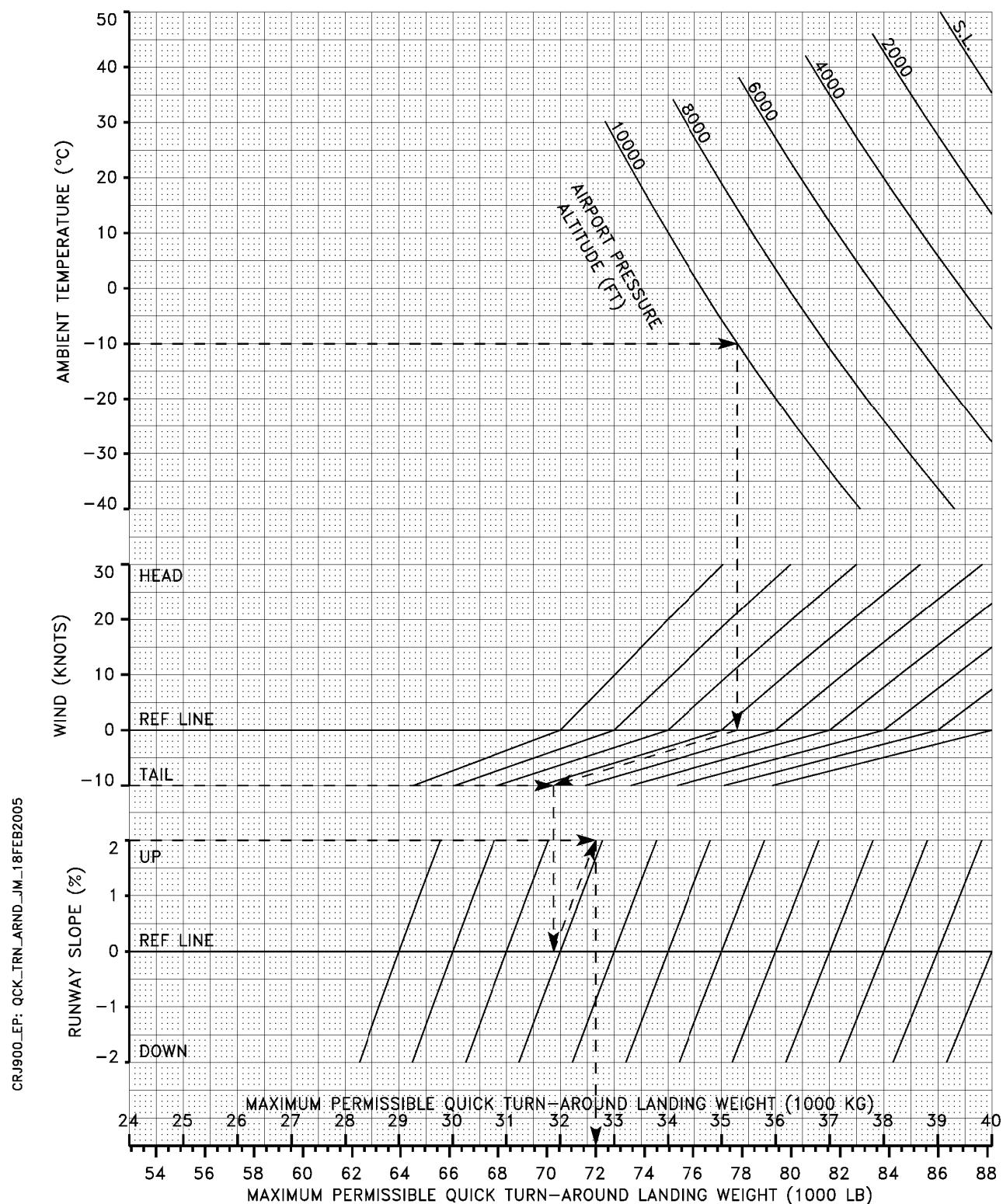
The example in [Figure 06A-06-1](#) shows that for the previous associated conditions, the maximum quick turn-around landing weight is 32670 kg (72000 lb).



PERFORMANCE (CAF M)
Approach and Landing <2098>

06A-06-3

Rev. 28, Jun 04/2021



Maximum Permissible Quick Turn-around Landing Weight
Figure 06A-06-1

DOT Approved

Airplane Flight Manual
CSP C-012-219



**PERFORMANCE (CAFM)
Approach and Landing <2098>**

06A-06-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENTS
List of Supplements

07-00-00-1

Rev. 28, Jun 04/2021

CHAPTER 7 - SUPPLEMENTS
TABLE OF CONTENTS

SUPPLEMENT 1	Noise Characteristics <TC> or <EASA>.....	07-01-00-1
SUPPLEMENT 2A	Reduced Thrust Take-off (CAFM) <2098>.....	07-02A-00-1
SUPPLEMENT 3A	Operation on Contaminated Runways (CAFM) <2098>	07-03A-00-1
SUPPLEMENT 4A	Category II Operations (CAFM) <2098>	07-04A-00-1
SUPPLEMENT 5A	Flight with Landing Gear Down (CAFM) <2098>	07-05A-00-1
SUPPLEMENT 6	Ferry Kit	07-06-00-1
SUPPLEMENT 7	Not Applicable	07-07-00-1
SUPPLEMENT 8	Not Applicable	07-08-00-1
SUPPLEMENT 9A	Anti-skid System – One Channel Inoperative (CAFM) <2098>....	07-09A-00-1
SUPPLEMENT 10	Not Applicable	07-10-00-1
SUPPLEMENT 11	Not Applicable	07-11-00-1
SUPPLEMENT 12	Not Applicable	07-12-00-1
SUPPLEMENT 13	Not Applicable	07-13-00-1
SUPPLEMENT 14A	Performance Penalties for Operation with Airplane Systems Inoperative (CAFM) <2098>.....	07-14A-00-1
SUPPLEMENT 15	Not Applicable	07-15-00-1
SUPPLEMENT 16A	Fuel Feed Check Valve Test <JAA>.....	07-16A-00-1
SUPPLEMENT 17A	Computerized AFM Performance Data <2098>.....	07-17A-00-1
SUPPLEMENT 18B	Operation with Reduced Landing Reference Speed (V_{REF}) <2098>	07-18B-00-1
SUPPLEMENT 19	Air-conditioning – Airplane Dispatch in Single Pack Configuration	07-19-00-1
SUPPLEMENT 20	Not Applicable	07-20-00-1
SUPPLEMENT 21	Operational Capabilities	07-21-00-1
SUPPLEMENT 22	Operations Using QFE Altimeter Settings	07-22-00-1
SUPPLEMENT 23	Not Applicable	07-23-00-1
SUPPLEMENT 24	Approaches between 3.5 Degrees and 4.0 Degrees	07-24-00-1
SUPPLEMENT 25A	Not Applicable	07-25A-00-1
SUPPLEMENT 26	Temporary Cargo Carrying Operations <2252>.....	07-26-00-1

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENTS
List of Supplements

07-00-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 1
Noise Characteristics <TC> or <EASA>

07-01-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

INTRODUCTION	07-01-01-1
LIMITATIONS	07-01-01-1
EMERGENCY PROCEDURES	07-01-01-1
NORMAL PROCEDURES	07-01-01-1
ABNORMAL PROCEDURES	07-01-01-1
PERFORMANCE	07-01-01-1
NOISE CHARACTERISTICS	07-01-01-1
Certification Airplane Configuration	07-01-01-1
Certificated Noise Levels	07-01-01-2

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 1
Noise Characteristics <TC> or <EASA>

07-01-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 1
Noise Characteristics <TC> or <EASA>

07-01-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

This supplement contains the noise characteristics data which comply with the following:

- AWM 516, 2nd Edition, Change 516-7;
- ICAO Annex 16, Amendment 7, Volume 1, Chapter 4; and
- 14 CFR Part 36, Stage 4; and
- AP Part 36, Stage 4.

The effect of this supplement on the basic Airplane Flight Manual (AFM) is as follows:

2. LIMITATIONS

The limitations in Chapter 2 are applicable.

3. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable.

4. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable.

5. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable.

6. PERFORMANCE

The performance data in Chapter 6 are applicable.

7. NOISE CHARACTERISTICS

A. Certification Airplane Configuration

Compliance has been demonstrated in the following configuration:

- (1) Flyover and Lateral Noise Levels

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 1
Noise Characteristics <TC> or <EASA>

07-01-01-2

Rev. 28, Jun 04/2021

Flyover and lateral noise levels were established as per the following configuration:

- Maximum take-off weight

kg	lb	Airplane Option Code
37995	83765	<2006>

- Climb speed = $V_2 + 10$ KIAS
- Flaps setting = FLAPS 8
- BLEED VALVES = AUTO
- APU = Off
- Air-conditioning PACKs (both) = On
- Wing and cowl anti-ice = Off
- Normal take-off thrust (both engines operating)

(2) Approach Noise Levels

Landing approach noise levels were established as per the following configuration:

- Glide slope = 3 degrees
- Landing gear = Down
- Landing weight:

kg	lb	Airplane Option Code
34065	75100	<2005> or <2006>

- Approach speed = $V_{REF} + 10$ KIAS
- Flaps setting = FLAPS 45
- BLEED VALVES = AUTO
- APU = On
- Air-conditioning PACKs (both) = On
- Wing and cowl anti-ice = Off

B. Certificated Noise Levels

These noise level values are stated for reference conditions of standard atmospheric pressure at sea level, 25°C (77°F) ambient temperature, 70% relative humidity and zero wind.

The demonstrated effective perceived noise levels (EPNdB), noise limits and margins of compliance are given in the tables that follow:

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 1
Noise Characteristics <TC> or <EASA>

07-01-01-3

Rev. 28, Jun 04/2021

CF34-8C5A1 Engine <Type Spec> and <2052>						
Airplane Option Code	Weight		Measured Points			Margin
	MTOW	MLW	Description	Noise Limit	Measured Level	
<2006>	37995 kg (83765 lb)	34065 kg (75100 lb)	Flyover	89.0	83.2	5.8
			Lateral	94.3	89.4	4.9
			Approach	98.3	92.4	5.9
			Compliance with Chapter/Stage 4			6.6

ICAO Annex 16, Amendment 7, Volume 1, Chapter 4, compliance has been demonstrated with the previously mentioned margins.

No determination has been made such that the noise levels of this airplane are or should be, acceptable or unacceptable for operation at, into or out of, any airport.

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



SUPPLEMENT 1
Noise Characteristics <TC> or <EASA>

07-01-01-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 2A
Reduced Thrust Take-off (CAFM) <2098>

07-02A-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

INTRODUCTION	07-02A-01-1
LIMITATIONS	07-02A-01-1
EMERGENCY PROCEDURES	07-02A-01-2
NORMAL PROCEDURES	07-02A-01-2
Procedures	07-02A-01-2
ABNORMAL PROCEDURES	07-02A-01-2
PERFORMANCE	07-02A-01-3
Calculation of the Assumed Temperature	07-02A-01-3
Thrust Setting Tables	07-02A-01-3
SUPPLEMENTS	07-02A-01-3

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 2A
Reduced Thrust Take-off (CAFM) <2098>

07-02A-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



**SUPPLEMENT 2A
Reduced Thrust Take-off (CAFM) <2098>**

07-02A-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

This supplement contains the reduced thrust (also known as flex [FLX] thrust) take-off data and procedure.

This supplement is presented as an alternate means of establishing the engine take-off thrust level at less than normal take-off thrust in order to prolong engine life. This procedure utilizes the assumed temperature method.

Reduced thrust take-off N₁ settings are presented in the Thrust Setting Module of the CAFM as a function of pressure altitudes, assumed and ambient temperatures, for various engine bleed configurations.

The reduced thrust take-off N₁ setting is automatically calculated by the FADEC based on a manual input by the flight crew of a valid assumed temperature. The reduced thrust N₁ will then be set when the thrust levers are selected to the TOGA detent. Applying reduced take-off thrust will not adversely affect the airplane systems and functions, and its application is always at the discretion of the pilot.

These data complement or supersede data contained in the basic Airplane Flight Manual and its supplements. The following data must therefore be used in conjunction with the basic Airplane Flight Manual and its supplements.

2. LIMITATIONS

The limitations established in Chapter 2 are applicable, with the addition of the following:

- The reduced engine thrust take-off procedure must not be used:
 - with an engine which cannot achieve available full rated thrust. The operator must establish a means to verify the availability of full take-off thrust to ensure that engine deterioration does not exceed authorized limits.

NOTE

1. Trend monitoring can be used to verify the availability of full rated take-off thrust with any approved trend monitoring program such as "Diagnostics", "Sage" or similar, which will continuously, either by regular MDC downloading or by automatic transmission, monitor and alert for ITT shifts.
 2. If any such trend monitoring program is not used (or inoperative, as per the MMEL), a take-off at full rated thrust (non-FLX) must be accomplished every 100 flights.
 - if wing and/or cowl anti-icing bleeds are in use.
 - on runways contaminated with standing water, slush, snow or ice.
 - when warnings of windshear or downdrafts have been forecast.
 - when the anti-skid system is inoperative.
- The reduced engine thrust procedure may be used on wet runways, provided that wet runway performance data are used.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 2A Reduced Thrust Take-off (CAFM) <2098>

07-02A-01-2

Rev. 28, Jun 04/2021

3. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable.

4. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable, with the addition of the following:

- A printout of the reduced thrust setting data generated using the Thrust Setting Module of the CAFM should be provided to the flight crew as a means of verifying the accuracy of the thrust set by the FADEC.
- The flight crew must verify (with the engines running) that the target N_1 displayed on the EICAS, following input of the assumed temperature, is equal to or greater than the appropriate N_1 value contained in the reduced thrust setting tables generated from the CAFM.
- The reduced thrust function may be cancelled at any time, by accomplishing any of the following actions:
 - Insertion of the delete function (DEL) in the assumed temperature field on the FMS CDU; or
 - Selection of the cancel function on the EICAS MENU page (for non-FMS airplanes); or
 - Manual selection of the thrust levers out of the TOGA detent momentarily and then back to the TOGA detent; or
 - Manual selection of the thrust levers to the MAX POWER detent (commands full rated APR thrust).

A. Procedures

To determine the reduced engine thrust take-off setting, use the following procedures:

- (1) Determine the N_1 value from the appropriate CAFM output of the reduced thrust setting using the assumed temperature (refer to paragraph 6.A. in this supplement) and the current ambient temperature for the desired PACK and engine bleed configuration.
- (2) Enter the assumed temperature, as follows:
 - on the PERF MENU page of the FMS; or
 - on the EICAS MENU page for non-FMS airplanes.
- (3) Compare the displayed target N_1 value (with the engines running) with the value from step (1). If the displayed N_1 value is less than the tabulated value of N_1 , the assumed temperature must be reduced and re-entered into the FMS (or the EICAS MENU page) until the two N_1 values match or the displayed N_1 is greater.

5. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable.

- In the event of an engine failure with the thrust levers set to the TOGA detent, the FADEC will set the operating engine to fully rated APR.

DOT Approved

Airplane Flight Manual
CSP C-012-219



**SUPPLEMENT 2A
Reduced Thrust Take-off (CAFM) <2098>**

07-02A-01-3

Rev. 28, Jun 04/2021

6. PERFORMANCE

The performance data in Chapter 6A – PERFORMANCE (CAFM) are applicable, except as modified by paragraphs A. and B. <2098>

A. Calculation of the Assumed Temperature

To calculate the assumed temperature, use the following procedures:

- (1) For the actual airplane take-off gross weight, determine the maximum permissible ambient temperature for each of the following requirements from the applicable CAFM Performance module:
 - (a) Runway length available,
 - (b) Climb requirements,
 - (c) Obstacle clearance,
 - (d) Maximum tire speed.
- (2) The lowest (maximum) temperature determined from the conditions stated in step (1) is the most critical temperature and is referred to as the ASSUMED temperature.
- (3) Determine V_1 , V_R and V_2 speeds using the airplane take-off gross weight, the airport pressure altitude and the ASSUMED temperature determined from step (2).
- (4) If V_1 determined from step (3) exceeds V_{1MBE} at the actual temperature, then reduce the assumed temperature as required.
- (5) Accomplish the procedures given in paragraph 4. NORMAL PROCEDURES, in the previous page.

B. Thrust Setting Tables

A printout of the reduced thrust setting tables that contain the scheduled fan speeds for various PACK and engine bleed configurations as a function of assumed and ambient temperature conditions at various airport pressure altitudes, should be provided to the flight crew in order to accomplish the required verification in accordance with the procedures given in paragraph 4. NORMAL PROCEDURES, in the previous page.

7. SUPPLEMENTS

The supplementary data in Chapter 7 are applicable.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 2A
Reduced Thrust Take-off (CAFM) <2098>

07-02A-01-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



**SUPPLEMENT 3A
Operation on Contaminated Runways
(CAFM) <2098>**

07-03A-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

INTRODUCTION	07-03A-01-1
General	07-03A-01-1
Runway Conditions	07-03A-01-1
LIMITATIONS	07-03A-01-2
Maximum Depth of Contaminant	07-03A-01-2
EMERGENCY PROCEDURES	07-03A-01-3
NORMAL PROCEDURES	07-03A-01-3
ABNORMAL PROCEDURES	07-03A-01-3
PERFORMANCE	07-03A-01-3
SUPPLEMENTS	07-03A-01-3

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 3A
Operation on Contaminated Runways
(CAFM) <2098>

07-03A-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



**SUPPLEMENT 3A
Operation on Contaminated Runways
(CAFM) <2098>**

07-03A-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

A. General

This supplement contains information and procedures for operation on runways contaminated by standing water, slush, wet snow, dry snow, compacted snow or ice.

This information has been prepared by the manufacturer and approved as guidance material, to assist operators in developing suitable guidance, recommendations or instructions for use by their flight crews when operating on contaminated runway surface conditions.

The data have been prepared using reasonable estimates of the effects of contaminated runway surface conditions on the accelerating ground roll and the braking ground roll. The effects of actual conditions may differ from those used to establish the data.

The level of safety is decreased when operating on contaminated runways, therefore, every effort should be made to ensure that the runway surface is cleared adequately of any significant precipitation.

Contaminated runway performance data were estimated assuming that the runway is completely contaminated, with the contaminant (standing water, slush or snow) to be of uniform depth and density.

The provision of performance data for contaminated runways should not be taken as implying that ground handling characteristics on these surfaces will be as good as can be achieved on dry or wet runways, in particular, in cross-winds and when using reverse thrust.

Performance calculations in the CAFM automatically take into account the runway surface condition as required, based upon the selection made in the drop-down list of the Runway Surface Condition section under the Runway Data pane of the CAFM calculator.

B. Runway Conditions

(1) Dry Runway

A runway is considered to be dry when the runway surface is not "wet" or "contaminated".

(2) Wet Runway

A runway is considered to be wet when there is sufficient moisture on the runway surface to cause it to appear reflective, but without significant areas of standing water.

NOTE

A runway with standing water would be a contaminated runway.

(3) Runway Contaminated by Standing Water or Slush or Wet Snow

A runway is considered to be contaminated, when more than 25% of the runway surface area (whether in isolated areas or not), within the required length and width being used, is covered by more than 3 millimetres (1/8 inch) of standing water or its equivalent in slush or wet snow.

The following table gives the equivalent depths of slush or wet snow corresponding to various depths of standing water:

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 3A
Operation on Contaminated Runways
(CAFM) <2098>

07-03A-01-2

Rev. 28, Jun 04/2021

Depth of Standing Water	Equivalent Depth	
	Slush	Wet Snow
3.2 mm (0.125 in.)	3.8 mm (0.15 in.)	3.8 mm (0.15 in.)
6.4 mm (0.25 in.)	7.4 mm (0.29 in.)	7.4 mm (0.29 in.)
12.7 mm (0.50 in.)	15.0 mm (0.59 in.)	15.0 mm (0.59 in.)

Standing water is accumulated water on the runway surface caused by heavy rainfall or by poor drainage.

Slush is partly melted snow or ice with high water content such that it cannot significantly resist compression.

Wet snow is snow wherein water can be squeezed out when compacted by hand.

(4) Runway Contaminated by Dry Snow

A runway is considered to be contaminated, when more than 25% of the runway surface area (whether in isolated areas or not), within the required length and width being used, is covered by more than 20 millimetres (4/5 inch) of dry snow.

Dry snow is fresh snow with relatively little water content such that water cannot be squeezed out when compressed by hand.

(5) Runway Contaminated by Compacted Snow

A runway is considered to be contaminated by compacted snow when covered by snow which has been compacted into a solid mass which resists further compression and will hold together or break into lumps if picked up.

(6) Runway Contaminated by Ice

A runway surface condition where braking action is expected to be very low, due to the presence of ice.

2. LIMITATIONS

A. Maximum Depth of Contaminant

The limitations established in Chapter 2 of the basic Airplane Flight Manual (AFM) are applicable, with the addition of the following:

- The maximum depths of runway contaminants covering an appreciable part of the runway are:

Contaminant	Take-off	Landing
Standing Water	12.7 mm (0.50 in.)	19.1 mm (0.75 in.)
Slush	15.0 mm (0.59 in.)	22.4 mm (0.88 in.)

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 3A
Operation on Contaminated Runways
(CAFM) <2098>

07-03A-01-3

Rev. 28, Jun 04/2021

Contaminant	Take-off	Landing
Wet Snow	15.0 mm (0.59 in.)	22.4 mm (0.88 in.)
Dry Snow	76.2 mm (3.0 in.)	95.3 mm (3.75 in.)

- When operating on runways contaminated with ice, both thrust reversers must be operative prior to dispatch.

3. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable.

4. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable.

5. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable.

6. PERFORMANCE

The performance data in Chapter 6A – PERFORMANCE (CAFM) are applicable. <2098>

- Contaminated runway distances are calculated under the assumption that the runway is completely contaminated. However, selection of the type and amount of contaminant should be based on the runway conditions where the high speed portion of the take-off will occur and, in the case of an ice covered runway, where braking would be used during a rejected take-off.
- The landing distance calculations on contaminated runways for a FLAPS 45 landing, with both engines operating, are predicated upon speeds at the runway threshold from V_{REF} to $V_{REF} + 10$ KIAS, corrected for the effects of wind and usage of thrust reversers.

NOTE

The landing distance on contaminated runways must be factored by 1.15 and this is accomplished in the CAFM by entering the factor in the "Ldg Dist Factor" field within the "Landing Distance and Speed" Calculator. This factored landing distance output must then be compared with the corresponding factored landing distance output for wet runways and the longer of the two utilized. <EASA/JAA>

7. SUPPLEMENTS

The supplementary data in Chapter 7 are applicable.

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



SUPPLEMENT 3A
Operation on Contaminated Runways
(CAFM) <2098>

07-03A-01-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



TABLE OF CONTENTS

GENERAL NOTES, CAUTIONS AND WARNINGS	07-04A-01-1
INTRODUCTION	07-04A-01-1
LIMITATIONS	07-04A-01-1
EMERGENCY PROCEDURES	07-04A-01-2
Autopilot Failure / AFCS MSG FAIL Warning Message	07-04A-01-2
NORMAL PROCEDURES	07-04A-01-2
Approach	07-04A-01-2
Before Landing	07-04A-01-3
ABNORMAL PROCEDURES	07-04A-01-3
Single Engine Approach and Landing <JAA>	07-04A-01-3
Engine Failure During Approach <JAA>	07-04A-01-3
Air Data Computer Failure	07-04A-01-3
VHF Navigation Receiver Failure	07-04A-01-3
Flight Director Guidance Failure	07-04A-01-3
Inertial Reference System Failure <1025>	07-04A-01-4
Radio Altimeter Failure (Dual Installation) <1045>	07-04A-01-4
STAB TRIM	07-04A-01-4
Primary Flight Display Failure	07-04A-01-4
EFIS COMP MON	07-04A-01-4
GEN 1 OFF or GEN 2 OFF	07-04A-01-4
AP PITCH TRIM <JAA>	07-04A-01-5
Yaw Damper Failure	07-04A-01-5
Any Hydraulic System Caution Message	07-04A-01-5
Autopilot Fails to Disengage When Using the AP/SP DISC switch	07-04A-01-5
PERFORMANCE	07-04A-01-6
Maximum Demonstrated Wind Components	07-04A-01-6
Maximum Allowable Landing Weight for Category II Operations	07-04A-01-6
SUPPLEMENTS	07-04A-01-6



SUPPLEMENT 4A
Category II Operations (CAFM) <2098>

07-04A-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



**SUPPLEMENT 4A
Category II Operations (CAFIM) <2098>**

07-04A-01-1

Rev. 28, Jun 04/2021

1. GENERAL NOTES, CAUTIONS AND WARNINGS

NOTE

This Airplane Flight Manual (AFM) Supplement does not constitute approval to conduct Category II operations.

2. INTRODUCTION

The airplane has been shown to meet the airworthiness requirements for Category II Operations contained in Appendix 1 of AC 120-29 and Subpart 2 of JAR-AWO Change 2.

The data in this supplement must be used when conducting Category II operations.

These data complement or supersede data contained in the basic AFM and its supplements. The following data must therefore be used in conjunction with the basic AFM and its supplements.

The effect of this supplement on the basic AFM is as follows.

3. LIMITATIONS

The limitations in Chapter 2 are applicable, except as modified by the following:

- An ILS approach to Category II minima must not be commenced or continued unless all required airborne equipment, specified in the Category II Required Equipment List table and their ground installations, are operating satisfactorily.

Category II Required Equipment List	
Equipment	Prior to Approach
VHF NAV 1 and 2	Both must be operational.
VHF COM 1 and 2	Both must be operational.
PFD 1 and 2	One (1) PFD available and operational for each side.
Stab Channel 1 and 2	One (1) channel must be operational.
Radio Altimeter 1 and 2 <1045>	Both must be operational, with display on both sides.
IRS 1 and 2 <1025>	Both must be operational.
ADC 1 and 2	Both must be operational.
FD 1 and 2	Both must be operational.
EFIS Comparator Monitors	Must be operational.
AFCS PITCH TRIM	Must be operational.
Autopilot <JAA>	Must be operational.
Yaw Damper 1 and 2	Both must be operational.

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



SUPPLEMENT 4A
Category II Operations (CAFM) <2098>

07-04A-01-2

Rev. 28, Jun 04/2021

Category II Required Equipment List	
Equipment	Prior to Approach
Hydraulics (3)	All systems must be on and operational.
Electrics	Two (2) generators on and sharing load, i.e., two (2) main generators or one (1) main generator and APU generator on.

- Manual (flight director only) Category II approaches are prohibited. <JAA>
- Operation of the autopilot is prohibited below 60 feet AGL. <JAA>
- During single engine operations, Category II approaches are prohibited. <JAA>

4. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable, except as modified by the following:

A. Autopilot Failure / AFCS MSG FAIL Warning Message

If above 800 feet AGL, on a stabilized approach:

- (1) Autopilot Disengage using AP/SP DISC switch or the AP DISC switch on the FCP.
- (2) Manual control Resume
- (3) Approach Continue to Category I minima, or go-around

If below 800 feet AGL and the runway is not in sight:

- (1) Go-around Initiate

5. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable, except as modified by the following:

A. Approach

Refer to the Flight Crew Operating Manual (FCOM), Volume 2 (CSP C-013): NORMAL PROCEDURES – Prior to Landing – APPROACH for details of approach procedures and checks.

Prior to the approach:

- (1) RA TEST switches Press

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



B. Before Landing

- (1) Autopilot (if engaged) <JAA> Disengage at an altitude not below 60 feet AGL

6. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable, except as modified by the following:

A. Single Engine Approach and Landing <JAA>

Single engine approach and landing during Category II operations is prohibited.

- (1) Go-around Initiate
(Refer to ABNORMAL PROCEDURES – Single Engine Procedures – Single Engine Go-around.)

B. Engine Failure During Approach <JAA>

Single engine approach and landing during Category II operations is prohibited.

- (1) Go-around Initiate
(Refer to ABNORMAL PROCEDURES – Single Engine Procedures – Single Engine Go-around.)

C. Air Data Computer Failure

First failure during approach (of the two required units):

- (1) Go-around Initiate
(2) AIR DATA source selector Select operative side

D. VHF Navigation Receiver Failure

First failure during approach (of the two required units):

- (1) Go-around Initiate
(2) NAV SOURCE selector Select operative side

E. Flight Director Guidance Failure

First failure during approach (of the two required units):

- (1) Go-around Initiate

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



SUPPLEMENT 4A
Category II Operations (CAFM) <2098>

07-04A-01-4

Rev. 28, Jun 04/2021

F. Inertial Reference System Failure <1025>

First failure during approach (AP will disengage):

- (1) Manual control Resume
- (2) Go-around Initiate
- (3) ATTD HDG source selector Select operative side

G. Radio Altimeter Failure (Dual Installation) <1045>

- (1) Go-around Initiate

H. STAB TRIM

Failure during approach:

- (1) Go-around Initiate

I. Primary Flight Display Failure

Failure during approach:

- (1) Affected display reversionary panel selector Select operative side

If below 800 feet AGL:

- (1) Go-around Initiate

J. EFIS COMP MON

- (1) Go-around Initiate

K. GEN 1 OFF or GEN 2 OFF

If APU is available:

- (1) APU Start
- (2) APU GEN Check on-line

If APU generator is on-line and airplane is above 800 feet AGL:

- (3) Approach Continue to Category II minima

If APU is not available or airplane is below 800 feet AGL:

- (1) Go-around Initiate

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



L. AP PITCH TRIM <JAA>

- (1) Go-aroundInitiate

M. Yaw Damper Failure

First failure during approach (of the two required units):

- (1) Go-aroundInitiate

N. Any Hydraulic System Caution Message

Failure during approach:

- (1) Applicable abnormal procedureAccomplish
(Refer to ABNORMAL PROCEDURES –
Hydraulic Power.)

If above 800 feet AGL and all three hydraulic systems have normal pressure after completing preceding procedure:

- (2) ApproachContinue to Category II minima

If below 800 feet AGL and/or all three hydraulic systems do not have normal pressure after completing preceding procedure:

- (2) Go-aroundInitiate

O. Autopilot Fails to Disengage When Using the AP/SP DISC switch

- (1) AutopilotDisengage using AP DISC switch on FCP

If autopilot still remains engaged:

- (2) AutopilotLeave engaged

NOTE

Expect higher than normal control forces during landing.

If autopilot disengages:

- (2) AirplaneTrim manually using stab trim



SUPPLEMENT 4A
Category II Operations (CAFM) <2098>

07-04A-01-6

Rev. 28, Jun 04/2021

7. PERFORMANCE

The performance data in Chapter 6A – PERFORMANCE (CAFM) are applicable, except as modified by the following: <2098>

A. Maximum Demonstrated Wind Components

The maximum demonstrated wind components, measured at 10 metres (33 feet) tower height, for Category II operations are:

- 17 knots cross-wind; and
- 16 knots headwind.

B. Maximum Allowable Landing Weight for Category II Operations

The maximum allowable landing weight is limited by the most restrictive of the following:

- Maximum approved landing weight,
- Runway length available,
- Climb requirements.

The maximum allowable landing weight limited by climb requirements for Category II operations is determined from the Approach and Landing Performance Module, using the calculation scenario “Landing Weight Limited by Climb Requirements”. In order for the CAFM calculator to take into account the Category II climb requirements, the CAT II field in the Aircraft Data pane must be selected to “Yes”.

8. SUPPLEMENTS

The supplementary data in Chapter 7 are applicable.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 5A
Flight with Landing Gear Down (CAFM) <2098>

07-05A-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

INTRODUCTION	07-05A-01-1
LIMITATIONS	07-05A-01-1
EMERGENCY PROCEDURES	07-05A-01-1
NORMAL PROCEDURES	07-05A-01-1
Before Landing Check	07-05A-01-1
ABNORMAL PROCEDURES	07-05A-01-2
PERFORMANCE	07-05A-01-2
SUPPLEMENTS	07-05A-01-2

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 5A
Flight with Landing Gear Down (CAFIM) <2098>

07-05A-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 5A
Flight with Landing Gear Down (CAFМ) <2098>

07-05A-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

The data in this supplement must be used when operating the airplane with the landing gear fixed in the down position.

This supplement is only applicable when used in conjunction with a Minimum Equipment List (MEL) approved by the appropriate authority.

To enable the CAFM to take this condition into account, select "Flight with Landing Gear Down" in the MMEL section of the CAFM calculator.

The following data must be used in conjunction with the basic Airplane Flight Manual (AFM), its supplements and the CAFM.

2. LIMITATIONS

The limitations established in Chapter 2 are applicable, except as modified by the following:

- Flight in known or anticipated icing conditions is not permitted.
- The maximum airspeed during flight is V_{LE} (220 KIAS).
- Category II operations are prohibited.
- The slats/flaps system must be fully operational.
- Both main landing gears and nose landing gear must be locked down with locking pins prior to dispatch.

3. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable.

4. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable, except as modified by the following:

A. Before Landing Check

- (1) Flight attendant ADVISED
- (2) PASS SIGNS ON
- (3) THRUST REVERSERS ARMED
- (4) LDG GEAR DN

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 5A
Flight with Landing Gear Down (CAFM) <2098>

07-05A-01-2

Rev. 28, Jun 04/2021

- (5) N/W STRG switchSelect OFF then
ARMED

NOTE

Cycle the N/W STRG switch from ARMED to OFF and back to ARMED to enable nosewheel steering monitoring when the flight has been performed with the landing gear down.

- (6) FLAPS() Indicating

5. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable.

6. PERFORMANCE

The performance data in Chapter 6A – PERFORMANCE (CAFM) are applicable, with the addition of the following: <2098>

- Activate the MMEL extension of the CAFM calculator and toggle the check box for “Landing Gear Retraction System: Flight with Landing Gear Down”, in the MMEL listing of inoperative systems.

7. SUPPLEMENTS

The supplementary data in Chapter 7 are applicable.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 6
Ferry Kit

07-06-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

GENERAL NOTES, CAUTIONS AND WARNINGS	07-06-01-1
INTRODUCTION	07-06-01-1
LIMITATIONS	07-06-01-1
EMERGENCY PROCEDURES	07-06-01-1
NORMAL PROCEDURES	07-06-01-2
ABNORMAL PROCEDURES	07-06-01-2
PERFORMANCE	07-06-01-2
SUPPLEMENTS.....	07-06-01-2

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 6
Ferry Kit

07-06-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 6 Ferry Kit

07-06-01-1

Rev. 28, Jun 04/2021

1. GENERAL NOTES, CAUTIONS AND WARNINGS

NOTE

This supplement is no longer applicable when the ferry kit is removed.

2. INTRODUCTION

This supplement contains data applicable when a ferry kit is installed.

These data complement or supersede data contained in the basic Airplane Flight Manual (AFM) and its supplements. The following data must therefore be used in conjunction with the basic AFM and its supplements.

3. LIMITATIONS

The limitations in Chapter 2 are applicable, except as modified by the following:

- Maximum occupants:
 - Flight crew, and
 - Cabin occupants as governed by the following, when the ferry kit is installed in a completed and approved cabin configuration:
 - Approved number of seats,
 - Approved number of supplemental oxygen bottles, and
 - Approved number of life vests and life rafts.

NOTE

1. Before flight, each cabin occupant must be advised of the location and use of all emergency equipment.
2. Cabin occupants must be briefed on the proper use of the following equipment during emergency situations:
 - Supplemental oxygen system (at assigned seat locations),
 - Life vests, and
 - Life rafts.

4. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable.

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 6 Ferry Kit

07-06-01-2

Rev. 28, Jun 04/2021

5. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable.

6. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable.

7. PERFORMANCE

The performance data in Chapter 6 are applicable.

8. SUPPLEMENTS

The supplementary data in Chapter 7 are applicable.

DOT Approved

Airplane Flight Manual
CSP C-012-219

**SUPPLEMENT 7**
Not Applicable

07-07-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

This Section Intentionally Left Blank	07-07-01-1
---	------------

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 7
Not Applicable

07-07-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 7
Not Applicable

07-07-01-1

Rev. 28, Jun 04/2021

THIS SECTION INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 7
Not Applicable

07-07-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 8
Not Applicable

07-08-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

This Section Intentionally Left Blank 07-08-01-1

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 8
Not Applicable

07-08-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 8
Not Applicable

07-08-01-1

Rev. 28, Jun 04/2021

THIS SECTION INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 8
Not Applicable

07-08-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 9A
Anti-skid System – One Channel Inoperative
(CAFM) <2098>

07-09A-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

GENERAL NOTES, CAUTIONS AND WARNINGS	07-09A-01-1
INTRODUCTION	07-09A-01-1
LIMITATIONS	07-09A-01-1
EMERGENCY PROCEDURES	07-09A-01-2
Rejected Take-off Before Achieving V ₁	07-09A-01-2
NORMAL PROCEDURES	07-09A-01-3
After touchdown:	07-09A-01-3
ABNORMAL PROCEDURES	07-09A-01-3
PERFORMANCE	07-09A-01-3
SUPPLEMENTS	07-09A-01-3

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 9A
Anti-skid System – One Channel Inoperative
(CAFM) <2098>

07-09A-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 9A
Anti-skid System – One Channel Inoperative
(CAFM) <2098>

07-09A-01-1

Rev. 28, Jun 04/2021

1. GENERAL NOTES, CAUTIONS AND WARNINGS

NOTE

This Airplane Flight Manual (AFM) Supplement does not constitute approval to conduct operations with both the inboard and the outboard anti-skid channels inoperative.

2. INTRODUCTION

The data in this supplement must only be used when operating the airplane with one anti-skid channel inoperative.

This supplement is only applicable when used in conjunction with a Minimum Equipment List (MEL) approved by the appropriate authority.

To enable the CAFM to take this condition into account, select the “Anti-skid System: One Channel Inoperative” check box in the MMEL section of the CAFM calculator.

The following data must be used in conjunction with the basic AFM, its supplements and the CAFM.

3. LIMITATIONS

The limitations established in Chapter 2 are applicable, except as modified by the following:

- The thrust reversers must be operative,
- The inboard and the outboard ground spoilers must be operative,
- The inboard and outboard wheel brakes must be operative,



Aggressive use of maximum braking may cause brake locking and result in blown tires on the wheels with the inoperative anti-skid channel.

- BTMS indications associated with the operative anti-skid channel must be operative,
- Reduced thrust take-off operations are prohibited,
- Take-off and landing on contaminated runways are prohibited, and
- Take-off from wet runways is prohibited.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 9A
Anti-skid System – One Channel Inoperative
(CAFM) <2098>

07-09A-01-2

Rev. 28, Jun 04/2021

4. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable, except as modified by the following:

- Replace the “Rejected Take-off Before Achieving V₁” emergency procedure in Chapter 3 – EMERGENCY PROCEDURES – Rejected Take-off, with the following:

A. Rejected Take-off Before Achieving V₁

Simultaneously:

- (1) Thrust levers IDLE



Aggressive use of maximum braking may cause brake locking and result in blown tires on the wheels with the inoperative anti-skid channel.

- (2) Wheel brakes Moderate to maximum braking (without locking the brakes) until a safe stop
(3) Ground spoilers Check extended. Consider manual flight spoiler deployment as a back-up.
(4) Thrust reverser(s) (operating engine[s]) Maximum, consistent with directional control

After the airplane has been safely brought to a stop:

- (5) PARKING BRAKE ON

If take-off was rejected due to an engine fire or severe damage:

- (6) L ENG FIRE or R ENG FIRE or Severe Engine Damage (On Ground) procedure Accomplish
(Refer to EMERGENCY PROCEDURES – Power Plant – L ENG FIRE or R ENG FIRE or Severe Engine Damage (On Ground).)

If evacuation is required:

- (7) Passenger Evacuation procedure Accomplish
(Refer to EMERGENCY PROCEDURES – Evacuation – Passenger Evacuation.)

If evacuation is not required:

- (7) Passengers Advise to remain in their seats

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 9A
Anti-skid System – One Channel Inoperative
(CAFM) <2098>

07-09A-01-3

Rev. 28, Jun 04/2021

5. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable, except as modified by the following:

A. After touchdown:

- (1) FLIGHT SPOILER lever Select MAX deployment
- (2) Both engines Apply maximum reverse thrust



Extreme caution is required during braking to avoid tire damage.
Maximize use of reverse thrust.

- (3) Brakes Apply light to moderate braking until safe taxi speed is maintained

6. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable and should be used in conjunction with the landing distance data obtained from Chapter 6A – PERFORMANCE (CAFM). <2098>

The following messages/indications will be posted during this condition:

- **A/SKID INBD** caution message and inboard brakes BTMS indications invalid (dashed); or
- **A/SKID OUTBD** caution message and outboard brakes BTMS indications invalid (dashed).

7. PERFORMANCE

The performance data in Chapter 6A – PERFORMANCE (CAFM) are applicable, with the addition of the following: <2098>

- Activate the MMEL extension of the CAFM calculator and toggle the check box for one channel of the anti-skid system in the MMEL listing of inoperative systems.

8. SUPPLEMENTS

The supplementary data in Chapter 7 are applicable.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 9A
Anti-skid System – One Channel Inoperative
(CAFM) <2098>

07-09A-01-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 10
Not Applicable

07-10-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

This Section Intentionally Left Blank 07-10-01-1

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 10
Not Applicable

07-10-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 10
Not Applicable

07-10-01-1

Rev. 28, Jun 04/2021

THIS SECTION INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 10
Not Applicable

07-10-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219

**SUPPLEMENT 11**
Not Applicable

07-11-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

This Section Intentionally Left Blank 07-11-01-1

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 11
Not Applicable

07-11-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 11
Not Applicable

07-11-01-1

Rev. 28, Jun 04/2021

THIS SECTION INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 11
Not Applicable

07-11-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 12
Not Applicable

07-12-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

This Section Intentionally Left Blank 07-12-01-1

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 12
Not Applicable

07-12-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 12
Not Applicable

07-12-01-1

Rev. 28, Jun 04/2021

THIS SECTION INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 12
Not Applicable

07-12-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 13
Not Applicable

07-13-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

This Section Intentionally Left Blank 07-13-01-1

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 13
Not Applicable

07-13-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 13
Not Applicable

07-13-01-1

Rev. 28, Jun 04/2021

THIS SECTION INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 13
Not Applicable

07-13-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 14A
Performance Penalties for Operation with
Airplane Systems Inoperative (CAFM) <2098>

07-14A-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

INTRODUCTION	07-14A-01-1
LIMITATIONS	07-14A-01-1
Hydraulic 3A Pump Inoperative	07-14A-01-1
Nosewheel Steering Inoperative	07-14A-01-1
EMERGENCY PROCEDURES	07-14A-01-1
NORMAL PROCEDURES	07-14A-01-1
ABNORMAL PROCEDURES	07-14A-01-1
PERFORMANCE	07-14A-01-1
SUPPLEMENTS	07-14A-01-2

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 14A
Performance Penalties for Operation with
Airplane Systems Inoperative (CAFM) <2098>

07-14A-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 14A
Performance Penalties for Operation with
Airplane Systems Inoperative (CAFMs) <2098>

07-14A-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

This supplement is only applicable when used in conjunction with a Minimum Equipment List (MEL) approved by the appropriate authority.

The performance corrections to be applied when dispatching with airplane systems inoperative as allowed by the MEL, are calculated automatically in the CAFM when specified in the MMEL section of the CAFM calculator. In order for the effect of these inoperative equipment to be taken into account in the calculation, the MMEL extension of the CAFM calculator dialog must be open or activated.

The following data must be used in conjunction with the basic Airplane Flight Manual (AFM), its supplements and the CAFM.

2. LIMITATIONS

The limitations established in Chapter 2 are applicable, except as modified by the following:

A. Hydraulic 3A Pump Inoperative

- Category II operations are prohibited.

B. Nosewheel Steering Inoperative

- The maximum cross-wind component for take-off and landing is 15 knots.
- Operation on contaminated runways is prohibited.

3. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable.

4. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable.

5. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable.

6. PERFORMANCE

The performance data in Chapter 6A – PERFORMANCE (CAFMs) are applicable, with the addition of the following: <2098>

- Activate the MMEL extension of the CAFM calculator and toggle the check box for the appropriate item(s) in the MMEL listing of inoperative systems.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 14A
Performance Penalties for Operation with
Airplane Systems Inoperative (CAFM) <2098>

07-14A-01-2

Rev. 28, Jun 04/2021

7. SUPPLEMENTS

The supplementary data in Chapter 7 are applicable.

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 15
Not Applicable

07-15-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

This Section Intentionally Left Blank 07-15-01-1

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 15
Not Applicable

07-15-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 15
Not Applicable

07-15-01-1

Rev. 28, Jun 04/2021

THIS SECTION INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 15
Not Applicable

07-15-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



**SUPPLEMENT 16A
Fuel Feed Check Valve Test <JAA>**

07-16A-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

INTRODUCTION	07-16A-01-1
LIMITATIONS	07-16A-01-1
EMERGENCY PROCEDURES	07-16A-01-1
NORMAL PROCEDURES	07-16A-01-1
Cleared to Start Check	07-16A-01-1
Shutdown Check	07-16A-01-2
ABNORMAL PROCEDURES	07-16A-01-3
PERFORMANCE	07-16A-01-4
SUPPLEMENTS	07-16A-01-4

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 16A
Fuel Feed Check Valve Test <JAA>

07-16A-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



**SUPPLEMENT 16A
Fuel Feed Check Valve Test <JAA>**

07-16A-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

The data in this supplement must be used to conduct the fuel feed check valve test.

These data complement or supersede data contained in the basic Airplane Flight Manual and its supplements. The following data must therefore be used in conjunction with the basic Airplane Flight Manual and its supplements.

The effect of this supplement on the basic Airplane Flight Manual is given below.

2. LIMITATIONS

The limitations in Chapter 2 are applicable.

3. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable.

4. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable, except as modified by the following:

A. Cleared to Start Check

- Add the following details to step (12) of the Cleared to Start Check procedure:

Before starting the other engine:

- (12) Fuel feed check valve test Complete First flight of the day.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 16A
Fuel Feed Check Valve Test <JAA>

07-16A-01-2

Rev. 28, Jun 04/2021

- (a) FUEL, L BOOST PUMP and R BOOST PUMP switches Off • **L FUEL LO PRESS or R FUEL LO PRESS** caution message comes on for the non-started engine.

If after two (2) minutes and if the **L FUEL LO PRESS** or **R FUEL LO PRESS** caution message is still not displayed for the non-started engine:

- (b) Non-started engine Dry motor (30 seconds maximum) Applicable **L FUEL LO PRESS** or **R FUEL LO PRESS** caution message should be displayed.
- during motoring as the residual fuel pressure is reduced, and
 - remains displayed after motoring is completed.

NOTE

Absence of the **L FUEL LO PRESS** or **R FUEL LO PRESS** caution message on the EICAS is an indication that the fuel feed check valve has failed in the open position, operation of the engine is not recommended with this failure.

- (c) FUEL, L BOOST PUMP and R BOOST PUMP switches ON • **L FUEL PUMP ON** and **R FUEL PUMP ON** advisory messages come on.
- **L FUEL LO PRESS or R FUEL LO PRESS** caution message goes out.

B. Shutdown Check

- Add the following details to step (5) of the Shutdown Check procedure:

On the first shutdown of the day:

- (5) Fuel feed check valve test Complete First flight of the day.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 16A
Fuel Feed Check Valve Test <JAA>

07-16A-01-3

Rev. 28, Jun 04/2021

- (a) Engine that was started first Shut down
- L FUEL PUMP ON and R FUEL PUMP ON advisory messages come on.
 - FUEL, L BOOST PUMP ON and R BOOST PUMP ON lights come on.
- (b) FUEL, L BOOST PUMP and R BOOST PUMP switches Off
- L FUEL LO PRESS or R FUEL LO PRESS caution message comes on for the shutdown engine.
 - FUEL, L BOOST PUMP INOP and R BOOST PUMP INOP lights come on.

If after two (2) minutes and if the L FUEL LO PRESS or R FUEL LO PRESS caution message is still not displayed for the shutdown engine:

- (c) Shutdown engine Dry motor (30 seconds maximum)
- Applicable L FUEL LO PRESS or R FUEL LO PRESS caution message should be displayed.
- during motoring as the residual fuel pressure is reduced, and
 - remains displayed after motoring is completed.

NOTE

Absence of the L FUEL LO PRESS or R FUEL LO PRESS caution message is an indication that the fuel feed check valve has failed in the open position.

- (d) Other engine Shut down

5. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 16A
Fuel Feed Check Valve Test <JAA>

07-16A-01-4

Rev. 28, Jun 04/2021

6. PERFORMANCE

The performance data in Chapter 6 are applicable.

7. SUPPLEMENTS

The supplements data in Chapter 7 are applicable.

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 17A
Computerized AFM Performance Data <2098>

07-17A-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

INTRODUCTION	07-17A-01-1
General	07-17A-01-1
LIMITATIONS	07-17A-01-1
EMERGENCY PROCEDURES	07-17A-01-1
NORMAL PROCEDURES	07-17A-01-1
ABNORMAL PROCEDURES	07-17A-01-2
PERFORMANCE	07-17A-01-2
SUPPLEMENTS	07-17A-01-2
Supplement 1 – Noise Characteristics	07-17A-01-2
Supplement 2 – Reduced Thrust Take-off	07-17A-01-2
Supplement 3 – Operation on Contaminated Runways	07-17A-01-2
Supplement 4 – Category II Operations	07-17A-01-2
Supplement 5 – Flight with Landing Gear Down	07-17A-01-2
Supplement 6 – Ferry Kit	07-17A-01-2
Supplement 9 – Anti-skid System – One Channel Inoperative	07-17A-01-2
Supplement 14 – Performance Penalties for Operation with Airplane Systems Inoperative	07-17A-01-2
Supplement 16 – Fuel Feed Check Valve Test <JAA>	07-17A-01-3
Supplement 18B – Operation with Reduced Landing Reference Speed (V_{REF})	07-17A-01-3

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 17A
Computerized AFM Performance Data <2098>

07-17A-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 17A
Computerized AFM Performance Data <2098>

07-17A-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

The data in this supplement must be used when determining the airplane performance using the Computerized Airplane Flight Manual (CAFM). The most current approved version of the software and its corresponding database/data files must be verified to be applicable to the particular airplane model and configuration, as follows:

Airplane Model	Engine Model	Performance Options	Item	Part Number
CL-600-2D24 <Type Spec> and <2052>	CF34-8C5A1	None	CAFM Software	SW0000001-00332
			Performance Data File	SW0000002-00211
			Aircraft Database	SW0000003-00309
			Configuration File	SW0000004-XXXXX

The CAFM replaces or supplements most of the certified performance data given in Chapter 6 and Chapter 7 of the basic Airplane Flight Manual (AFM) and has been approved by Transport Canada to generate said airplane performance information. Any modification to the approved CAFM software application, or subsequent revision to the generated output, will cancel the airworthiness approval of this information, unless the change was approved by Transport Canada. This provision remains applicable regardless of any approval statement printed on a generated output.

The data in this supplement complement or supersede data contained in the basic AFM and its supplements. The following data must therefore be used in conjunction with the basic AFM and its supplements.

A. General

The general information established in Chapter 1 is applicable unless otherwise stated in the CAFM. The definitions and abbreviations in the CAFM take precedence over similar definitions and abbreviations found in Chapter 1 of the paper AFM.

2. LIMITATIONS

The limitations established in Chapter 2 are applicable.

3. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable.

4. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable.

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



SUPPLEMENT 17A
Computerized AFM Performance Data <2098>

07-17A-01-2

Rev. 28, Jun 04/2021

5. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable.

6. PERFORMANCE

The performance data in Chapter 6A – PERFORMANCE (CAFIM) are applicable. <2098>

7. SUPPLEMENTS

The supplementary data in Chapter 7 are applicable, unless modified by the following:

A. Supplement 1 – Noise Characteristics

The noise characteristics data in Section 07-01 are applicable.

B. Supplement 2 – Reduced Thrust Take-off

The reduced thrust take-off data in Section 07A-02 are applicable. <2098>

C. Supplement 3 – Operation on Contaminated Runways

The data for operation on contaminated runways in Section 07-03A are applicable. <2098>

D. Supplement 4 – Category II Operations

The data for Category II operations in Section 07-04A are applicable. <2098>

E. Supplement 5 – Flight with Landing Gear Down

The data for flight with the landing gear fixed down in Section 07-05A are applicable. <2098>

F. Supplement 6 – Ferry Kit

The ferry kit data in Section 07-06 are applicable.

G. Supplement 9 – Anti-skid System – One Channel Inoperative

The data for operation with one anti-skid channel inoperative in Section 07-09A are applicable. <2098>

H. Supplement 14 – Performance Penalties for Operation with Airplane Systems Inoperative

The performance penalties for operation with airplane systems inoperative in Section 07-14A are applicable. <2098>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 17A
Computerized AFM Performance Data <2098>

07-17A-01-3

Rev. 28, Jun 04/2021

I. Supplement 16 – Fuel Feed Check Valve Test <JAA>

The fuel feed check valve test data in Section 07-16 are applicable.

J. Supplement 18B – Operation with Reduced Landing Reference Speed (V_{REF})

The operation with reduced landing reference speed (V_{REF}) in Section 07-18B are applicable. <2098>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 17A
Computerized AFM Performance Data <2098>

07-17A-01-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



**SUPPLEMENT 18B
Operation with Reduced Landing Reference
Speed (V_{REF}) <2098>**

07-18B-00-1

Rev. 30, Mar 25/2022

TABLE OF CONTENTS

INTRODUCTION	07-18B-01-1
LIMITATIONS	07-18B-01-1
EMERGENCY PROCEDURES	07-18B-01-1
EMER PWR ONLY	07-18B-01-1
Loss of All AC Power	07-18B-01-2
Aileron System Jammed	07-18B-01-2
Elevator System Jammed	07-18B-01-3
Rudder System Jammed	07-18B-01-3
Stabilizer Trim Runaway	07-18B-01-3
ANTI-ICE DUCT	07-18B-01-4
PARKING BRAKE	07-18B-01-4
HYD 1 HI TEMP (Caution Message)	07-18B-01-4
HYD 2 HI TEMP (Caution Message)	07-18B-01-5
HYD 2 LO PRESS and HYD 3 LO PRESS (Caution Messages)	07-18B-01-6
NORMAL PROCEDURES	07-18B-01-6
Go-around Procedure	07-18B-01-6
ABNORMAL PROCEDURES	07-18B-01-7
Engine Failure During Approach	07-18B-01-7
Single Engine Approach and Landing	07-18B-01-7
Single Engine Go-around	07-18B-01-7
L REV UNLOCKED or R REV UNLOCKED	07-18B-01-8
L FADEC or R FADEC	07-18B-01-8
STALL FAIL	07-18B-01-8
PITCH FEEL	07-18B-01-9
RUD LIMITER	07-18B-01-9
ELEVATOR SPLIT	07-18B-01-9
Aileron PCU Runaway	07-18B-01-9
STAB TRIM	07-18B-01-10
FLAPS FAIL	07-18B-01-10
SLATS FAIL	07-18B-01-11
FLAPS FAIL and SLATS FAIL	07-18B-01-12
SLATS/FLAPS Lever Jammed or Disconnected	07-18B-01-13
IB FLT SPLRS	07-18B-01-13
OB FLT SPLRS	07-18B-01-14
IB SPOILERONS	07-18B-01-14
OB SPOILERONS	07-18B-01-15
FLIGHT SPOILER Lever Jammed (Spoilers Deployed)	07-18B-01-15

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



**SUPPLEMENT 18B
Operation with Reduced Landing Reference
Speed (V_{REF}) <2098>**

07-18B-00-2

Rev. 30, Mar 25/2022

GND SPLR DEPLOY	07-18B-01-15
IB GND SPLRS	07-18B-01-16
OB GND SPLRS	07-18B-01-16
GLD UNSAFE	07-18B-01-16
GLD NOT ARMED	07-18B-01-17
HYD 1 LO PRESS	07-18B-01-17
HYD 2 LO PRESS	07-18B-01-17
HYD 3 LO PRESS	07-18B-01-18
HYD 1 HI TEMP	07-18B-01-18
HYD 2 HI TEMP	07-18B-01-19
HYD 3 HI TEMP	07-18B-01-19
HYD 1 LO PRESS and HYD 2 LO PRESS	07-18B-01-20
HYD 1 LO PRESS and HYD 3 LO PRESS	07-18B-01-20
L AOA HEAT and R AOA HEAT	07-18B-01-20
Ice Dispersal Procedure	07-18B-01-21
Radio Altimeter Failure <1045>	07-18B-01-21
A/SKID INBD	07-18B-01-22
A/SKID OUTBD	07-18B-01-22
A/SKID INBD and A/SKID OUTBD	07-18B-01-22
IB BRAKE PRESS or OB BRAKE PRESS	07-18B-01-23
PROX SYSTEM	07-18B-01-23
WOW INPUT	07-18B-01-23
WOW OUTPUT	07-18B-01-24
PERFORMANCE	07-18B-01-24
BTMS Operative	07-18B-01-24
BTMS Inoperative	07-18B-01-25
SUPPLEMENTS	07-18B-01-27

LIST OF ILLUSTRATIONS

Figure 07-18B-01-1 Maximum Permissible Quick Turn-around Landing Weight	07-18B-01-26
---	--------------

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

The data in this supplement must be used when operating the airplane with reduced landing reference speeds (V_{REF}).

These data complement or supersede data contained in the basic Airplane Flight Manual (AFM) and its supplements. The following data must therefore be used in conjunction with the basic AFM and its supplements.

2. LIMITATIONS

The limitations established in Chapter 2 are applicable.

3. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable, except as modified by the following:

A. EMER PWR ONLY

Replace step (14) under **EMER PWR ONLY**, within Chapter 3 – EMERGENCY PROCEDURES – Electrical – **EMER PWR ONLY**, with the following:

- (14) Final approach speed Not less than V_{REF} (FLAPS 45) + 3 KIAS
(15) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
2.40 (140%)	1.85 (85%)

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-2

Rev. 28, Jun 04/2021

B. Loss of All AC Power

Replace steps (12) and (13) under **Loss of all AC Power – Prior to landing:**, within Chapter 3 – EMERGENCY PROCEDURES – Electrical – Loss of all AC Power, with the following:

- (12) Final approach speed $V_{REF \text{ (FLAPS 45)}} + \Delta V_{REF}$ from the following table:

Flaps Position	ΔV_{REF}		
	0-19	20-24	25
0-7	43	27	27
8-19	33	21	21
20-29	33	15	15
30-44	27	27	11
45	13	13	3

- (13) Actual landing distance Increase

Final Approach Speed $\Delta V_{REF}(\text{kt})$	Actual Landing Distance Factor (Without Thrust Reversers)	Actual Landing Distance Factor (With Thrust Reversers)
43	4.10	2.90
33	3.60	2.65
27	3.25	2.45
21	3.05	2.30
15	2.95	2.20
13	2.80	2.10
11	2.80	2.10
3	2.40	1.85

C. Aileron System Jammed

Replace steps (9) and (10) under **Aileron System Jammed – Prior to landing:**, within Chapter 3 – EMERGENCY PROCEDURES – Flight Controls – Aileron System Jammed, with the following:

- (9) Approach speed Not less than $V_{REF \text{ (FLAPS 45)}} + 15 \text{ KIAS}$

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-3

Rev. 28, Jun 04/2021

- (10) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)

D. Elevator System Jammed

Replace steps (9) and (10) under **Elevator System Jammed – Prior to landing:**, within Chapter 3 – EMERGENCY PROCEDURES – Flight Controls – Elevator System Jammed, with the following:

- (9) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS
(10) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)

E. Rudder System Jammed

Replace steps (6) and (7) under **Rudder System Jammed – Prior to landing:**, within Chapter 3 – EMERGENCY PROCEDURES – Flight Controls – Rudder System Jammed, with the following:

- (6) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS
(7) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)

F. Stabilizer Trim Runaway

Replace steps (8) and (9) under **Stabilizer Trim Runaway – Prior to landing:**, within Chapter 3 – EMERGENCY PROCEDURES – Flight Controls – Stabilizer Trim Runaway, with the following:

- (8) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS
(9) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-4

Rev. 28, Jun 04/2021

G. ANTI-ICE DUCT

Replace steps (9) and (10) under **ANTI-ICE DUCT – Prior to landing:**, within Chapter 3 – EMERGENCY PROCEDURES – Ice and Rain Protection – **ANTI-ICE DUCT**, with the following:

- (9) Approach speed Not less than V_{REF} (FLAPS 45) + 28 KIAS

NOTE

The landing distance factors that follow are based upon an ice accumulation and FLAPS 20 landing.

- (10) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.55 (55%)	1.45 (45%)

H. PARKING BRAKE

Replace step (2) under **PARKING BRAKE – Prior to landing:**, within Chapter 3 – EMERGENCY PROCEDURES – Landing Gear, Wheel and Brake System – **PARKING BRAKE**, with the following:

- (2) Approach speed Not less than V_{REF} (FLAPS 45) + 3 KIAS
(3) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
2.20 (120%)	1.85 (85%)

I. HYD 1 HI TEMP (Caution Message)

Replace steps (18) and (19) under **HYD 1 HI TEMP (Caution Message) – If system 1 temperature is increasing or L HYD SOV remains open: – Prior to landing:**, within Chapter 3 – EMERGENCY PROCEDURES – Hydraulic Power – **HYD 1 HI TEMP (Caution Message)**, with the following:

- (18) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the outboard multi-function spoilers, outboard ground spoilers, left thrust reverser and left engine inoperative.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-5

Rev. 28, Jun 04/2021

(19) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.50 (50%)	1.45 (45%)

Replace steps (11) and (12) under **HYD 1 HI TEMP (Caution Message)** – If system 1 temperature is not increasing and L HYD SOV is closed: – If system 1 temperature is equal to or greater than 96°C or HYD 1 LO PRESS caution message is ON – Prior to Landing:, within Chapter 3 – EMERGENCY PROCEDURES – Hydraulic Power – **HYD 1 HI TEMP (Caution Message)**, with the following:

(11) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the outboard multi-function spoilers, outboard ground spoilers and left thrust reverser.

(12) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.50 (50%)	1.45 (45%)

J. HYD 2 HI TEMP (Caution Message)

Replace steps (20) and (21) under **HYD 2 HI TEMP (Caution Message)** – If system 2 temperature is increasing or R HYD SOV remains open: – Prior to landing:, within Chapter 3 – EMERGENCY PROCEDURES – Hydraulic Power – **HYD 2 HI TEMP (Caution Message)**, with the following:

(20) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the inboard multi-function spoilers, outboard brakes, right thrust reverser and right engine inoperative.

(21) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
2.00 (100%)	1.80 (80%)

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-6

Rev. 28, Jun 04/2021

Replace steps (13) and (14) under **HYD 2 HI TEMP (Caution Message)** – If system 2 temperature is not increasing and R HYD SOV is closed: – If the brake pressure is less than 1800 psi for outboard brakes:, within Chapter 3 – EMERGENCY PROCEDURES – Hydraulic Power – **HYD 2 HI TEMP (Caution Message)**, with the following:

(13) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the inboard multi-function spoilers, outboard brakes and right thrust reverser.

(14) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
2.00 (100%)	1.80 (80%)

K. HYD 2 LO PRESS and HYD 3 LO PRESS (Caution Messages)

Replace step (21) under **HYD 2 LO PRESS and HYD 3 LO PRESS (Caution Messages)** – Prior to Landing:, within Chapter 3 – EMERGENCY PROCEDURES – Hydraulic Power – **HYD 2 LO PRESS and HYD 3 LO PRESS (Caution Messages)**, with the following:

(21) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

4. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable, except as modified by the following:

A. Go-around Procedure

Replace steps (3) and (4) under **Go-around Procedure**, within Chapter 4 – NORMAL PROCEDURES – Consolidated Procedures – Go-around Procedure, with the following:

(3) FLAPS 20

(4) Pitch attitude Adjust to achieve an airspeed of not less than V_{2GA} + 10 as the flaps are retracted to 20 degrees.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-7

Rev. 28, Jun 04/2021

5. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable, except as modified by the following:

A. Engine Failure During Approach

Replace step (5) under **Engine Failure During Approach**, within Chapter 5 – ABNORMAL PROCEDURES – In-flight Engine Failures – Engine Failure During Approach, with the following:

(5) Airspeed Increase to V_{REF} (FLAPS 45) + 15 KIAS

Replace steps (8) and (9) under **Engine Failure During Approach**, within Chapter 5 – ABNORMAL PROCEDURES – In-flight Engine Failures – Engine Failure During Approach, with the following:

(8) Final approach speed Maintain V_{REF} (FLAPS 45) + 15 KIAS

(9) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.35 (35%)	1.30 (30%)

B. Single Engine Approach and Landing

Replace steps (3) and (4) under **Single Engine Approach and Landing**, within Chapter 5 – ABNORMAL PROCEDURES – Single Engine Procedures – Single Engine Approach and Landing, with the following:

(3) Final approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

(4) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.35 (35%)	1.30 (30%)

C. Single Engine Go-around

Replace steps (4) and (5) under **Single Engine Go-around**, within Chapter 5 – ABNORMAL PROCEDURES – Single Engine Procedures – Single Engine Go-around, with the following:

(4) FLAPS 20

(5) Pitch attitude Adjust to achieve an airspeed of not less than V_{2GA} as the flaps are retracted to 20 degrees

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



**SUPPLEMENT 18B
Operation with Reduced Landing Reference
Speed (V_{REF}) <2098>**

07-18B-01-8

Rev. 28, Jun 04/2021

D. L REV UNLOCKED or R REV UNLOCKED

Replace steps (6) and (7) under **L REV UNLOCKED or R REV UNLOCKED – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Power Plant – **L REV UNLOCKED or R REV UNLOCKED**, with the following:

- (6) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS
(7) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.35 (35%)	1.30 (30%)

E. L FADEC or R FADEC

Replace steps (6) and (7) under **L FADEC or R FADEC – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Power Plant – **L FADEC or R FADEC**, with the following:

- (6) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS
(7) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.35 (35%)	1.30 (30%)

F. STALL FAIL

Replace steps (2) and (3) and the CAUTION under **STALL FAIL**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **STALL FAIL**, with the following:

Replace steps (2) and (3) and the CAUTION under **STALL FAIL**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **STALL FAIL**, with the following:

- (2) Approach speed Not less than V_{REF} (FLAPS 45) + 13 KIAS
(3) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.20 (20%)	1.10 (10%)



The low speed awareness cue may represent preset/default settings and should not be relied upon for proximity to stall shaker. Increase all reference speeds by 13 KIAS.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-9

Rev. 28, Jun 04/2021

G. PITCH FEEL

Replace steps (4) and (5) under **PITCH FEEL – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **PITCH FEEL**, with the following:

- (4) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS
(5) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.35 (35%)	1.30 (30%)

H. RUD LIMITER

Replace steps (5) and (6) under **RUD LIMITER – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **RUD LIMITER**, with the following:

- (5) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS
(6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.35 (35%)	1.30 (30%)

I. ELEVATOR SPLIT

Replace steps (7) and (8) under **ELEVATOR SPLIT – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **ELEVATOR SPLIT**, with the following:

- (7) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS
(8) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.35 (35%)	1.30 (30%)

J. Aileron PCU Runaway

Replace steps (8) and (9) under **Aileron PCU Runaway – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – Aileron PCU Runaway, with the following:

- (8) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-10

Rev. 28, Jun 04/2021

- (9) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.35 (35%)	1.30 (30%)

K. STAB TRIM

Replace steps (5) and (6) under **STAB TRIM – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **STAB TRIM**, with the following:

- (5) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS
(6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.35 (35%)	1.30 (30%)

L. FLAPS FAIL

Replace steps (9) and (10) under **FLAPS FAIL – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **FLAPS FAIL**, with the following:

- (9) Final approach speed V_{REF} (FLAPS 45) + ΔV_{REF} from the following table:

Flaps Position	ΔV_{REF}	
	Slats Position	
	20	25
0-7	27	Not Applicable
8-19	21	Not Applicable
20-29	15	Not Applicable
30-44	Not Applicable	11
45	Not Applicable	0

NOTE

Windshear escape guidance is inoperative.

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-11

Rev. 28, Jun 04/2021

(10) Actual landing distance Increase

Final Approach Speed ΔV_{REF} (kt)	Actual Landing Distance Factor (Without Thrust Reversers)	Actual Landing Distance Factor (With Thrust Reversers)
27	1.45	1.40
21	1.40	1.35
15	1.35	1.30
11	1.30	1.25

Replace the statement prior to step (11) under **FLAPS FAIL – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **FLAPS FAIL**, with the following:

If the ΔV_{REF} is 21 or 27 knots:

M. SLATS FAIL

Replace steps (8) and (9) under **SLATS FAIL – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **SLATS FAIL**, with the following:

(8) Final approach speed V_{REF} (FLAPS 45) + ΔV_{REF} from the following table:

ΔV_{REF}		
Flaps Position	Slats Position	
	0-24	25
45	13	0

NOTE

Windshear escape guidance is inoperative.

(9) Actual landing distance Increase

Final Approach Speed ΔV_{REF} (kt)	Actual Landing Distance Factor (Without Thrust Reversers)	Actual Landing Distance Factor (With Thrust Reversers)
13	1.30	1.25

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-12

Rev. 28, Jun 04/2021

N. FLAPS FAIL and SLATS FAIL

Replace steps (8) and (9) under **FLAPS FAIL and SLATS FAIL – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **FLAPS FAIL and SLATS FAIL**, with the following:

- (8) Final approach speed $V_{REF} (\text{FLAPS } 45) + \Delta V_{REF}$ from the following table:

Flaps Position	ΔV_{REF}		
	0-19	20-24	25
0-7	43	27	27
8-19	33	21	21
20-29	33	15	15
30-44	27	27	11
45	13	13	0

NOTE

Windshear escape guidance is inoperative.

- (9) Actual landing distance Increase

Final Approach Speed ΔV_{REF} (kt)	Actual Landing Distance Factor (Without Thrust Reversers)	Actual Landing Distance Factor (With Thrust Reversers)
43	1.75	1.65
33	1.60	1.50
27	1.45	1.40
21	1.40	1.35
15	1.35	1.30
13	1.30	1.25
11	1.30	1.25

Replace the statement prior to step (10) under **FLAPS FAIL and SLATS FAIL – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **FLAPS FAIL and SLATS FAIL**, with the following:

If the ΔV_{REF} is 43 knots:

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-13

Rev. 30, Mar 25/2022

Replace the statement prior to step (11) under **FLAPS FAIL and SLATS FAIL – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **FLAPS FAIL** and **SLATS FAIL**, with the following:

If the ΔV_{REF} is 21, 27, or 33 knots:

O. SLATS/FLAPS Lever Jammed or Disconnected

Replace steps (4) and (5) under **SLATS/FLAPS Lever Jammed or Disconnected**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – SLATS/FLAPS Lever Jammed or Disconnected, with the following:

- (4) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS
(5) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.35 (35%)	1.30 (30%)

P. IB FLT SPLRS

Replace step (5) and step (6) under **IB FLT SPLRS – If IB SPOILERONS caution message is also displayed: – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **IB FLT SPLRS**, with the following:

- (5) Approach speed Not less than V_{REF} (FLAPS 45) + 13 KIAS

NOTE

1. Select the runway available with minimum cross-wind.
2. The landing distance factors that follow are based upon inboard and outboard multi-function spoilers failed.

- (6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.40 (40%)	1.35 (35%)

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-14

Rev. 30, Mar 25/2022

Q. OB FLT SPLRS

Replace step (5) and step (6) under **OB FLT SPLRS – If OB SPOILERONS caution message is also displayed:** – **Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **OB FLT SPLRS**, with the following:

(5) Approach speed Not less than V_{REF} (FLAPS 45) + 13 KIAS

NOTE

1. Select the runway available with minimum cross-wind.
2. The landing distance factors that follow are based upon inboard and outboard multi-function spoilers failed.

(6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.40 (40%)	1.35 (35%)

R. IB SPOILERONS

Replace step (5) and step (6) under **IB SPOILERONS – If IB FLT SPLRS caution message is also displayed:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **IB SPOILERONS**, with the following:

(5) Approach speed Not less than V_{REF} (FLAPS 45) + 13 KIAS

NOTE

The landing distance factors that follow are based upon inboard and outboard multi-function spoilers failed.

(6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.40 (40%)	1.35 (35%)

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-15

Rev. 30, Mar 25/2022

S. OB SPOILERONS

Replace step (5) and step (6) under **OB SPOILERONS – If OB FLT SPLRS caution message is also displayed:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **OB SPOILERONS**, with the following:

(5) Approach speed Not less than V_{REF} (FLAPS 45) + 13 KIAS

NOTE

The landing distance factors that follow are based upon inboard and outboard multi-function spoilers failed.

(6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.40 (40%)	1.35 (35%)

T. FLIGHT SPOILER Lever Jammed (Spoilers Deployed)

Replace steps (2) and (3) under **FLIGHT SPOILER Lever Jammed (Spoilers Deployed) – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **FLIGHT SPOILER Lever Jammed (Spoilers Deployed)**, with the following:

(2) Approach speed Not less than V_{REF} (FLAPS 45) + 13 KIAS

NOTE

The landing distance factors that follow are based upon the loss of all multi-function spoilers.

(3) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.40 (40%)	1.35 (35%)

U. GND SPLR DEPLOY

Replace steps (4) and (5) under **GND SPLR DEPLOY – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **GND SPLR DEPLOY**, with the following:

(4) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

NOTE

1. Select the runway available with minimum cross-wind.
2. The landing distance factors that follow are based upon complete loss of ground lift dumping.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-16

Rev. 30, Mar 25/2022

- (5) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.50 (50%)	1.40 (40%)

V. IB GND SPLRS

Replace steps (2) and (3) under **IB GND SPLRS – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **IB GND SPLRS**, with the following:

- (2) Approach speed Not less than V_{REF} (FLAPS 45) + 3 KIAS
(3) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.35 (35%)	1.30 (30%)

After touchdown:

- (4) GND LIFT DUMPING switch MAN ARM

W. OB GND SPLRS

Replace steps (2) and (3) under **OB GND SPLRS – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **OB GND SPLRS**, with the following:

- (2) Approach speed Not less than V_{REF} (FLAPS 45) + 3 KIAS
(3) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.35 (35%)	1.30 (30%)

After touchdown:

- (4) GND LIFT DUMPING switch MAN ARM

X. GLD UNSAFE

Replace steps (2) and (3) under **GLD UNSAFE**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **GLD UNSAFE**, with the following:

- (2) Approach speed Not less than V_{REF} (FLAPS 45) + 3 KIAS
(3) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.35 (35%)	1.30 (30%)

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-17

Rev. 30, Mar 25/2022

After touchdown:

- (4) GND LIFT DUMPING switch MAN ARM

Y. GLD NOT ARMED

Replace steps (2) and (3) under **GLD NOT ARMED – If GLD NOT ARMED caution message persists: – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Flight Controls – **GLD NOT ARMED**, with the following:

- (2) Approach speed Not less than V_{REF} (FLAPS 45) + 3 KIAS
(3) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.35 (35%)	1.30 (30%)

After touchdown:

- (4) FLIGHT SPOILER lever Select MAX

Z. HYD 1 LO PRESS

Replace steps (10) and (11) under **HYD 1 LO PRESS – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Hydraulic Power – **HYD 1 LO PRESS**, with the following:

- (10) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the outboard multi-function spoilers, outboard ground spoilers and left thrust reverser.

- (11) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.50 (50%)	1.45 (45%)

AA. HYD 2 LO PRESS

Replace steps (12) and (13) under **HYD 2 LO PRESS – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Hydraulic Power – **HYD 2 LO PRESS**, with the following:

- (12) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the inboard multi-function spoilers, outboard brakes and right thrust reverser.

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-18

Rev. 30, Mar 25/2022

(13) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
2.00 (100%)	1.80 (80%)

AB. HYD 3 LO PRESS

Replace step (11) under **HYD 3 LO PRESS – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Hydraulic Power – **HYD 3 LO PRESS**, with the following:

(11) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

Replace step (14) under **HYD 3 LO PRESS – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Hydraulic Power – **HYD 3 LO PRESS**, with the following:

(14) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
2.05 (105%)	1.75 (75%)

AC. HYD 1 HI TEMP

Replace step (11) and (12) under **HYD 1 HI TEMP – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Hydraulic Power – **HYD 1 HI TEMP**, with the following:

(11) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the outboard multi-function spoilers, outboard ground spoilers and left thrust reverser inoperative.

(12) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
1.50 (50%)	1.45 (45%)

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-19

Rev. 30, Mar 25/2022

AD. HYD 2 HI TEMP

Replace step (13) and (14) under **HYD 2 HI TEMP – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Hydraulic Power – **HYD 2 HI TEMP**, with the following:

(13) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the inboard multi-function spoilers, outboard brakes and right thrust reverser inoperative.

(14) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
2.00 (100%)	1.90 (90%)

AE. HYD 3 HI TEMP

Replace step (16) under **HYD 3 HI TEMP – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Hydraulic Power – **HYD 3 HI TEMP**, with the following:

(16) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

Replace step (19) under **HYD 3 HI TEMP – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Hydraulic Power – **HYD 3 HI TEMP**, with the following:

NOTE

The landing distance factors that follow are based upon the loss of the inboard ground spoilers and inboard brakes.

(19) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
2.05 (105%)	1.75 (75%)

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 18B
Operation with Reduced Landing Reference
Speed (V_{REF}) <2098>

07-18B-01-20

Rev. 30, Mar 25/2022

AF. HYD 1 LO PRESS and HYD 2 LO PRESS

Replace steps (11) and (12) under **HYD 1 LO PRESS and HYD 2 LO PRESS – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Hydraulic Power – **HYD 1 LO PRESS and HYD 2 LO PRESS**, with the following:

(11) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the inboard/outboard multi-function spoilers, outboard ground spoilers, outboard brakes and both thrust reversers.

(12) Actual landing distance Increase

Condition	Without Thrust Reversers
Hydraulic systems 1 and 2 failed	2.20 (120%)

AG. HYD 1 LO PRESS and HYD 3 LO PRESS

Replace steps (14) and (15) under **HYD 1 LO PRESS and HYD 3 LO PRESS – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Hydraulic Power – **HYD 1 LO PRESS and HYD 3 LO PRESS**, with the following:

(14) Approach speed Not less than V_{REF} (FLAPS 45) + 15 KIAS

NOTE

The landing distance factors that follow are based upon the loss of the outboard multi-function spoilers, inboard/outboard ground spoilers, inboard brakes, and left thrust reverser.

(15) Actual landing distance Increase

Without Thrust Reversers	With One Thrust Reverser
2.20 (120%)	1.95 (95%)

AH. L AOA HEAT and R AOA HEAT

Replace steps (4) and (5) under **L AOA HEAT and R AOA HEAT – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Ice and Rain Protection – **L AOA HEAT and R AOA HEAT**, with the following:

(4) Approach speed Not less than V_{REF} (FLAPS 45) + 13 KIAS

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-21

Rev. 30, Mar 25/2022

- (5) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.20 (20%)	1.10 (10%)

AI. Ice Dispersal Procedure

Replace steps (5) and (6) under **Ice Dispersal Procedure – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Ice and Rain Protection – L AOA HEAT and R AOA HEAT, with the following:

- (5) Approach speed Not less than V_{REF} (FLAPS 45) + 28 KIAS

NOTE

The landing distance factors that follow are based upon an ice accumulation and FLAPS 20 landing.

- (6) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reverser
1.55 (55%)	1.45 (45%)

AJ. Radio Altimeter Failure <1045>

Replace steps (1) and (2) under **Radio Altimeter Failure <1045> – If both RAs have failed:**, within Chapter 5 – ABNORMAL PROCEDURES – Instruments System – Radio Altimeter Failure <1045>, with the following:

If both RAs have failed:

- (1) Approach speed Not less than V_{REF} (FLAPS 45) + 3 KIAS
(2) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)

After touchdown:

- (3) FLIGHT SPOILER lever Select MAX deployment

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-22

Rev. 30, Mar 25/2022

AK. A/SKID INBD

Replace steps (1) and (2) under **A/SKID INBD**, within Chapter 5 – ABNORMAL PROCEDURES – Landing Gear, Wheel and Brake System – **A/SKID INBD**, with the following:

- (1) Approach speed Not less than V_{REF} (FLAPS 45) + 3 KIAS
(2) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
2.20 (120%)	1.85 (85%)

After touchdown:

- (3) FLIGHT SPOILER lever Select MAX deployment

AL. A/SKID OUTBD

Replace steps (1) and (2) under **A/SKID OUTBD**, within Chapter 5 – ABNORMAL PROCEDURES – Landing Gear, Wheel and Brake System – **A/SKID OUTBD**, with the following:

- (1) Approach speed Not less than V_{REF} (FLAPS 45) + 3 KIAS
(2) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
2.20 (120%)	1.85 (85%)

After touchdown:

- (3) FLIGHT SPOILER lever Select MAX deployment

AM. A/SKID INBD and A/SKID OUTBD

Replace steps (2) and (3) under **A/SKID INBD and A/SKID OUTBD**, within Chapter 5 – ABNORMAL PROCEDURES – Landing Gear, Wheel and Brake System – **A/SKID INBD** and **A/SKID OUTBD**, with the following:

- (2) Approach speed Not less than V_{REF} (FLAPS 45) + 3 KIAS

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-23

Rev. 30, Mar 25/2022

- (3) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
2.20 (120%)	1.85 (85%)

NOTE

Land with a firm touchdown to ensure that main gear weight-on-wheels signal is achieved for GLD deployment.

After touchdown:

- (4) FLIGHT SPOILER lever Select MAX deployment

AN. IB BRAKE PRESS or OB BRAKE PRESS

Replace step (4) under **IB BRAKE PRESS or OB BRAKE PRESS**, within Chapter 5 – ABNORMAL PROCEDURES – Landing Gear, Wheel and Brake System – **IB BRAKE PRESS or OB BRAKE PRESS**, with the following:

- (4) Approach speed Not less than V_{REF} (FLAPS 45) + 3 KIAS
(5) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.75 (75%)	1.55 (55%)

AO. PROX SYSTEM

Replace step (6) under **PROX SYSTEM – Prior to landing**: within Chapter 5 – ABNORMAL PROCEDURES – Landing Gear, Wheel and Brake System – **PROX SYSTEM**, with the following and renumber the subsequent steps accordingly:

- (6) Approach speed Not less than V_{REF} (FLAPS 45) + 3 KIAS
(7) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)



SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-24

Rev. 30, Mar 25/2022

AP. WOW INPUT

Replace step (2) under **WOW INPUT – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Landing Gear, Wheel and Brake System – **WOW INPUT**, with the following and renumber the subsequent steps accordingly:

- (2) Approach speed Not less than V_{REF} (FLAPS 45) + 3 KIAS
(3) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.35 (35%)	1.30 (30%)

AQ. WOW OUTPUT

Replace steps (2) and (3) under **WOW OUTPUT – Prior to landing:**, within Chapter 5 – ABNORMAL PROCEDURES – Landing Gear, Wheel and Brake System – **WOW OUTPUT**, with the following and renumber the subsequent steps accordingly:

- (2) Approach speed Not less than V_{REF} (FLAPS 45) + 13 KIAS
(3) Actual landing distance Increase

Without Thrust Reversers	With Thrust Reversers
1.20 (20%)	1.10 (10%)

6. PERFORMANCE

The performance data in Chapter 6A are applicable, with the selection of Reduced V_{REF} approach/landing configuration.

The Maximum Permissible Quick Turn-around Landing Weights performance data in Chapter 6A are applicable, except as modified by the following:

6. MAXIMUM PERMISSIBLE QUICK TURN-AROUND LANDING WEIGHT

A. BTMS Operative

The BTMS Operative data under paragraph 6. MAXIMUM PERMISSIBLE QUICK TURN-AROUND LANDING WEIGHT given in Chapter 6A – PERFORMANCE – Landing Performance, remain applicable.

DOT Approved

Airplane Flight Manual
CSP C-012-219



**SUPPLEMENT 18B
Operation with Reduced Landing Reference
Speed (V_{REF}) <2098>**

07-18B-01-25

Rev. 30, Mar 25/2022

B. BTMS Inoperative

The BTMS Inoperative data under paragraph 6. MAXIMUM PERMISSIBLE QUICK TURN-AROUND LANDING WEIGHT given in Chapter 6A – PERFORMANCE – Landing Performance, remain applicable, except as modified by the following:

- Quick Turn-around Landing Weight

Figure 07-18B-01-1 is used during BTMS inoperative conditions. Figure 07-18B-01-1 provides the maximum permissible quick turn-around landing weights for varying conditions of airport pressure altitude, ambient temperature, wind and runway slope.

Example:

Associated conditions:

Ambient temperature	= -10°C
Airport pressure altitude	= 10000 feet
Wind	= 10 knots (tailwind)
Runway slope	= +2% (upslope)

The example in Figure 07-18B-01-1 shows that for the previous associated conditions, the maximum quick turn-around landing weight is 33400 kg (73630 lb).

DOT Approved

**Airplane Flight Manual
CSP C-012-219**

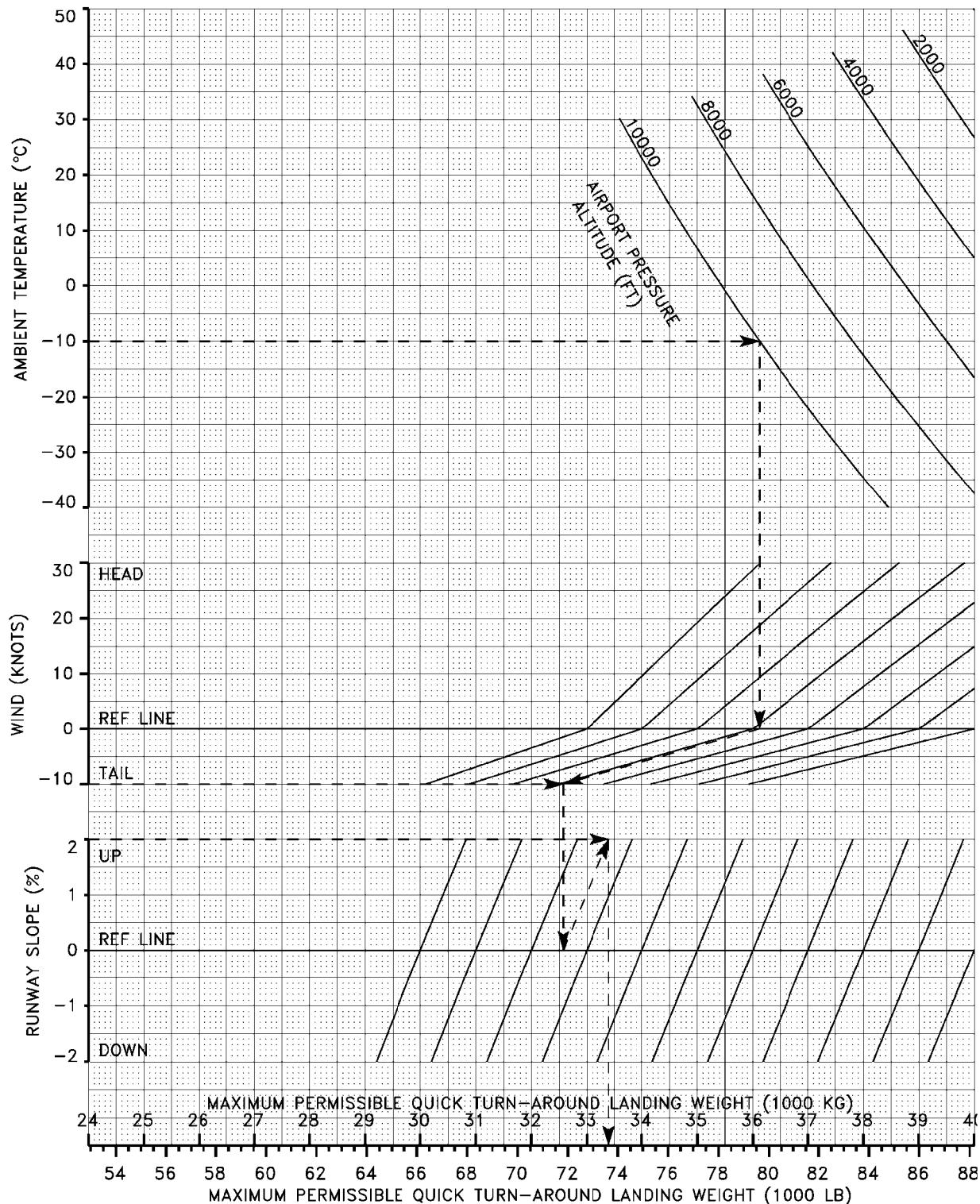


SUPPLEMENT 18B
Operation with Reduced Landing Reference Speed (V_{REF}) <2098>

07-18B-01-26

Rev. 30, Mar 25/2022

CRJ900_EP: QCK_TRN_ARND_RED_VREF_XW_10AUG2005



Maximum Permissible Quick Turn-around Landing Weight
Figure 07-18B-01-1

DOT Approved

Airplane Flight Manual
CSP C-012-219



**SUPPLEMENT 18B
Operation with Reduced Landing Reference
Speed (V_{REF}) <2098>**

07-18B-01-27

Rev. 30, Mar 25/2022

7. SUPPLEMENTS

The supplementary data in Chapter 7 – Supplement – Noise Characteristics and Chapter 7 (CAF) are applicable.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



**SUPPLEMENT 18B
Operation with Reduced Landing Reference
Speed (V_{REF}) <2098>**

07-18B-01-28

Rev. 30, Mar 25/2022

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 19
Air-conditioning – Airplane Dispatch in Single Pack Configuration

07-19-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

GENERAL NOTES, CAUTIONS AND WARNINGS	07-19-01-1
INTRODUCTION	07-19-01-1
LIMITATIONS	07-19-01-1
Maximum Occupants and Operating Altitude	07-19-01-1
EMERGENCY PROCEDURES	07-19-01-1
NORMAL PROCEDURES	07-19-01-1
ABNORMAL PROCEDURES	07-19-01-1
PERFORMANCE	07-19-01-1
SUPPLEMENTS	07-19-01-1

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 19
Air-conditioning – Airplane Dispatch in Single
Pack Configuration

07-19-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 19
Air-conditioning – Airplane Dispatch in Single Pack Configuration

07-19-01-1

Rev. 28, Jun 04/2021

1. GENERAL NOTES, CAUTIONS AND WARNINGS

NOTE

This Airplane Flight Manual (AFM) Supplement does not constitute approval to conduct operations with both air-conditioning packs inoperative.

2. INTRODUCTION

The data in this supplement must be used when operating the airplane with one air-conditioning pack inoperative.

This supplement is only applicable when used in conjunction with a Master Minimum Equipment List (MMEL) approved by the appropriate authority.

The following data must be used in conjunction with the basic AFM, and its supplements.

3. LIMITATIONS

The limitations established in Chapter 2 are applicable, except as modified by the following:

A. Maximum Occupants and Operating Altitude

If airplane dispatch in a single pack configuration is required, the maximum operating altitude and corresponding number of cabin occupants is as per approved MMEL.

4. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable.

5. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable.

6. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable.

7. PERFORMANCE

The performance data in Chapter 6 are applicable.

8. SUPPLEMENTS

The supplementary data in Chapter 7 are applicable.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 19
Air-conditioning – Airplane Dispatch in Single
Pack Configuration

07-19-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 20
Not Applicable

07-20-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

This Section Intentionally Left Blank 07-20-01-1

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 20
Not Applicable

07-20-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 20
Not Applicable

07-20-01-1

Rev. 28, Jun 04/2021

THIS SECTION INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 20
Not Applicable

07-20-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 21
Operational Capabilities

07-21-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

INTRODUCTION	07-21-01-1
LIMITATIONS	07-21-01-1
EMERGENCY PROCEDURES	07-21-01-1
NORMAL PROCEDURES	07-21-01-1
ABNORMAL PROCEDURES	07-21-01-1
PERFORMANCE	07-21-01-1
SUPPLEMENTS	07-21-01-1
NAVIGATION	07-21-01-2
Reduced Vertical Separation Minimum (RVSM) <1030>	07-21-01-2
Traffic Alert and Collision Avoidance System (TCAS)	07-21-01-2
Flight Management System (FMS)	07-21-01-2
FM Immunity <1103>	07-21-01-8
SURVEILLANCE	07-21-01-9
Mode S Elementary Surveillance	07-21-01-9
Automatic Dependent Surveillance–Broadcast (ADS–B)	07-21-01-9

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 21
Operational Capabilities

07-21-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 21 Operational Capabilities

07-21-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

This supplement provides data for operational capabilities and the applicable standards of certain airplane systems.

Compliance with the standards in this supplement does not constitute an operational approval.

This supplement complements or supersedes data contained in the basic Airplane Flight Manual (AFM), and must therefore be used in conjunction with the basic AFM and its supplements.

2. LIMITATIONS

The limitations in Chapter 2 are applicable.

3. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable.

4. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable.

5. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable.

6. PERFORMANCE

The performance data in Chapter 6A – PERFORMANCE (CAFIM) are applicable. <2098>

7. SUPPLEMENTS

The supplement data in the Chapter 7 are applicable.

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 21 Operational Capabilities

07-21-01-2

Rev. 28, Jun 04/2021

8. NAVIGATION

A. Reduced Vertical Separation Minimum (RVSM) <1030>

The airplane is certified capable of RVSM operations in accordance with the FAA Advisory Circular 91-85, "Authorization of Aircraft and Operators for Flight in Reduced Vertical Separation Minimum Airspace", dated 8/21/09 and with the EASA Temporary Guidance Leaflet, TGL No. 6, Revision 1, RVSM.

NOTE

Compliance with these FAA and JAA standards does not constitute an operational approval.

RVSM operations must not be started or continued unless all required equipment, as specified in the table that follows, is operational:

RVSM Required Equipment List	
Equipment	Requirements for RVSM
Autopilot	Must be operational.
Altitude Alerting System	Must be operational.
Altitude Reporting Transponder	One (1) must be operational.
Air Data Computer	Two (2) must be operational.

B. Traffic Alert and Collision Avoidance System (TCAS)

Pilots are authorized to deviate from their ATC clearance in order to comply with a TCAS Resolution Advisory (RA) command.

C. Flight Management System (FMS)

The FMS meets the enroute, terminal and non-precision approach lateral performance / accuracy criteria of AC 20-130A, Navigation or Flight Management Systems Integrating Multiple Navigation Sensors.

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 21 Operational Capabilities

07-21-01-3

Rev. 28, Jun 04/2021

The FMS has been demonstrated capable of, and has been shown to meet the requirements for the following operations:

(1) North Atlantic (NAT) High Level Airspace (HLA) <1024> and <1027> or <1025> or <1236>

The dual FMS, operating and receiving usable navigation information from any two independent long range navigation sensors (LRNS) consisting of any combination of GNSS, when used in conjunction with the **832-3443-005** (or later version) prediction program, or IRS, (or one FMS and one LRNS for those routes requiring only one LRNS), meets the applicable requirements of AC 20-138D for flight into North Atlantic (NAT) minimum navigation performance specification (MNPS) airspace – also known as North Atlantic (NAT) High Level Airspace (HLA), (subject to a maximum duration of 6.2 hours following loss of GNSS).

NOTE

The demonstration of performance with the above criteria applies only to RNP-10 routes and does not apply to RNP-4 routes. It also does not constitute operational approval.

(2) RNAV-10/RNP-10 <1024> and <1027> or <1025> or <1236>

The dual FMS, operating and receiving usable navigation information from any two independent long range navigation sensors (LRNS) consisting of any combination of GNSS, when used in conjunction with the 832-3443-005 (or later version) prediction program, or IRS, (or one FMS and one LRNS for those routes requiring only one LRNS), meets the applicable requirements of AC 20-138D for flight in **RNAV-10/RNP-10** airspace.

NOTE

The demonstration of performance with the above criteria does not constitute operational approval.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 21 Operational Capabilities

07-21-01-4

Rev. 28, Jun 04/2021

(3) RNP-2 (Continental) Operations <1024> or <1027>

Effectivity:

- Airplanes **equipped** with FMC 822-0783-015 (SCID 832-4119-016)

FMS 99

The dual FMS, operating and receiving usable navigation information from each GNSS and operating in GNSS navigation mode, meets the applicable requirements for Special Authorization (SA) for RNP-2 (Continental) Operations per Appendix B of Transport Canada Advisory Circular AC 700-038 when used in conjunction with the 832-3443-005 (or later version) prediction program, provided:

- RNP-2 operations are not conducted within the region defined by boundaries. Latitude ranges from N27° to N67°, Longitude ranges from W010° to W060°,
- The crew monitors the aircraft track using the FMS MAP displayed on an MFD with the scaling of the inner ring set to 2.5 NM, and
- none of the following messages are displayed on any PFD or CDU:
 - CHK POS,
 - FMS DR,
 - GPS NOT AVAILABLE,
 - NO GPS RAIM,
 - GPS-FMS DISAGREE,
 - IRS ONLY, <1025>
 - VOR/DME DIST >75 NM,
 - FMS NAV INVALID.

NOTE

1. The FMS employs a Spherical Earth model as opposed to WGS-84 or equivalent geodetic model; this is mitigated by the leg length limitation.
2. Routes designated as RNP-2 may have additional requirements for communication, surveillance, and operations.
3. The demonstration of performance with the above criteria does not constitute operational approval.

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 21 Operational Capabilities

07-21-01-5

Rev. 28, Jun 04/2021

(4) RNAV-2, RNAV-1, PRNAV, RNAV Routes (DPs, STARS, Q and T Routes)

Effectivity:

- Airplanes **equipped** with FMC 822-0783-015 (SCID 832-4119-016)

FMS 99

Provided, all of the required equipment specified in the PRNAV Required Equipment List table is operational:

PRNAV Requirement Equipment List	
Equipment	Requirements for PRNAV
Flight Management Computer	One (1) must be operational.
FMS Control Display Unit	One (1) must be operational and controlling an operational FMC.
GPS	One (1) GPS must be operational and RAIM available must be configured with the 832-3443-005 (or later version) prediction.

- None of the following messages are displayed:
 - FMS DR,
 - IRS ONLY, <1025>
 - FMS NAV INVALID,
 - GPS NOT AVAILABLE,
 - NO GPS RAIM,
 - GPS-FMS DISAGREE.

The installed system meets the applicable requirements of AC 20-138D for RNAV-2, RNAV-1, PRNAV, RNAV Routes (DPs, STARS, Q and T Routes) and JAA TGL-10 for PRNAV/RNAV-1.

NOTE

This does not constitute an operational approval.

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 21
Operational Capabilities

07-21-01-6

Rev. 28, Jun 04/2021

(5) RNAV-2, RNAV-1, PRNAV, RNAV Routes (DPs, STARS, Q and T Routes), RNP-2, RNP-1

Effectivity:

- Airplanes **equipped** with FMC 822-0783-028 (SCID 832-4119-030) or FMC 822-0783-032 (SCID 832-4119-034) or FMC 822-0783-036 (SCID 832-4119-038)

FMS 4.1, FMS 4.1.1 and FMS 4.2

Provided, all of the required equipment specified in the PRNAV Required Equipment List table is operational:

PRNAV Requirement Equipment List	
Equipment	Requirements for PRNAV
Flight Management Computer	One (1) must be operational.
FMS Control Display Unit	One (1) must be operational and controlling an operational FMC.
VHF NAV, DME, GPS	One (1) VHF NAV and one (1) DME must be operational, or One (1) GPS must be operational with Receiver Autonomous Integrity Monitoring (RAIM) availability confirmed by the 832-3443-005 (or later version) prediction program (see note).

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 21 Operational Capabilities

07-21-01-7

Rev. 28, Jun 04/2021

- None of the following messages are displayed:
 - FMS DR,
 - IRS ONLY, <1025>
 - VOR/DME ONLY or V/D ONLY,
 - VOR/DME DIST >40 NM,
 - FMS NAV INVALID.
- For procedures that require GPS or GPS is the only sensor available:
 - GNSS NOT AVAILABLE,
 - GNSS–FMS DISAGREE,
 - LOSS OF INTEGRITY.

The installed system meets the applicable requirements of AC 20-138D for RNAV-2, RNAV-1, PRNAV, RNAV Routes (DPs, STARS, Q and T Routes), RNP-2, RNP-1 and JAA TGL-10 for PRNAV/RNAV-1.

NOTE

1. The demonstration of performance with the above criteria does not constitute operational approval.

(6) RNP APCH <1024> or <1050> or <1214> or <1215>

The FMS has been demonstrated capable of RNP APCH operations in accordance with AC 20-138D provided:

- FMS is receiving information from a GNSS sensor,
- The aircraft is operated using the Flight Director (FD) or autopilot–coupled, and
- GPS APPR annunciation is shown on PFD at the Final Approach Fix (FAF).

NOTE

The demonstration of performance with the above criteria does not constitute operational approval.

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 21 Operational Capabilities

07-21-01-8

Rev. 28, Jun 04/2021

(7) RF Legs

Effectivity:

- Airplanes **equipped** with FMC 822-0783-028 (SCID 832-4119-030) or FMC 822-0783-032 (SCID 832-4119-034) or FMC 822-0783-036 (SCID 832-4119-038)

FMS 4.1, FMS 4.1.1 and FMS 4.2

The FMS has been demonstrated capable of and has been shown to meet the performance criteria for RF legs used with RNP-1 and RNP APCH operations in accordance with AC 20-138D provided FMS is receiving information from a GNSS sensor and the aircraft is operated using the Flight Director (FD) or autopilot-coupled.

NOTE

The demonstration of performance with the above criteria does not constitute operational approval.

(8) Enroute, Terminal and Approach Vertical Navigation (VNAV)

Effectivity:

- Airplanes **equipped** with FMC 822-0783-028 (SCID 832-4119-030) or FMC 822-0783-032 (SCID 832-4119-034) or FMC 822-0783-036 (SCID 832-4119-038)

FMS 4.1, FMS 4.1.1 and FMS 4.2

- The VNAV system meets the criteria for enroute, terminal and approach operations of AC 20-138D.
- The actual VNAV path may deviate significantly below the intended VNAV path in cold temperatures.

D. FM Immunity <1103>

The VHF NAV radios installed comply with FM immunity requirements per ICAO Annex 10, and:

- ED-22B / DO-196 for VOR receivers,
- ED-46B / DO-195 for LOC receivers.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 21 Operational Capabilities

07-21-01-9

Rev. 28, Jun 04/2021

9. SURVEILLANCE

A. Mode S Elementary Surveillance

The Mode S transponder has been certified to meet the requirements of Elementary Mode S Surveillance as defined by JAA TGL 13.

Effectivity:

- Airplanes 15380 and subsequent, or
- Airplanes **incorporating** the following Service Bulletin:
 - SB 670BA-34-044 – Navigation – Mode S Transponder System – Installation of Automatic Dependent Surveillance-Broadcast (ADS-B OUT) – DO-260B Compliant for Aircraft that have Mode S Transponder TDR-94D/TSS-4100.
 - Airplanes **incorporating** the following Service Bulletin:
 - SB 670BA-34-045 – Navigation – Mode S Transponder System – Installation of Automatic Dependent Surveillance-Broadcast (ADS-B OUT) – DO-260B Compliant for Aircraft that have Mode S Dual Transponder TDR-94D.

B. Automatic Dependent Surveillance–Broadcast (ADS–B)

The installed ADS–B Out system meets the equipment requirements of EASA CS.ACNS.D.ADSB (1090 MHz Extended Squitter ADS–B Out) and FAA AC 20–165A.

From January 1, 2020 until December 31, 2024, ADS–B operations shall not be commenced or continued in the United States ADS–B out airspace as defined by 14 CFR 91.225, unless satellite availability for the route has been confirmed using the FAA Automatic Dependent Surveillance–Broadcast (ADS–B) Service Availability Prediction Tool (SAPT) or equivalent preflight availability prediction tool accepted by the FAA. <1027> or <1047>

This AFM entry does not, by itself, constitute an operational approval where such an approval is required.

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 21
Operational Capabilities

07-21-01-10

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 22
Operation Using QFE Altimeter Settings

07-22-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

INTRODUCTION	07-22-01-1
LIMITATIONS	07-22-01-1
Take-off, Landing and Operating Limits	07-22-01-1
Enhanced Ground Proximity Warning System (EGPWS) <2040>	07-22-01-1
Navigation System Limitations	07-22-01-2
EMERGENCY PROCEDURES	07-22-01-2
NORMAL PROCEDURES	07-22-01-2
PRIOR TO START	07-22-01-2
AFTER TAKE-OFF	07-22-01-3
PRIOR TO LANDING	07-22-01-3
This Section Intentionally Left Blank <JAA>	07-22-01-3
ABNORMAL PROCEDURES	07-22-01-3
PERFORMANCE	07-22-01-3
SUPPLEMENTS	07-22-01-3

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 22
Operation Using QFE Altimeter Settings

07-22-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 22

Operation Using QFE Altimeter Settings

07-22-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

This supplement contains data specific to airplane operations when using QFE altimeter settings.

The difference between QFE and the more commonly used QNH altimeter settings is as follows:

- **Altitude** – QNH is used when flying an altitude referenced to mean sea level. Using a local QNH altimeter setting, the altimeter should read field elevation when on the ground.
- **Height** – QFE is used when flying a height above an aerodrome (from which the QFE altimeter setting has been established). Using a local QFE altimeter setting, the altimeter should read 0 feet when on the ground.

These data complement or supersede data contained in the basic Airplane Flight Manual and its supplements. The following data must therefore be used in conjunction with the basic Airplane Flight Manual and its supplements.

2. LIMITATIONS

The limitations in Chapter 2 are applicable, except as modified by the following:

A. Take-off, Landing and Operating Limits

Maximum airport pressure altitude for take-off and landing is 8000 feet.

B. Enhanced Ground Proximity Warning System (EGPWS) <2040>

Effectivity:

- Airplanes **equipped** with FMC 822-0783-015 (SCID 832-4119-016)
 - If GPS is inoperative (identified by NO GPS RAIM, GPS NOT AVAILABLE or GPS – FMS DISAGREE message on the FMS CDU), the terrain awareness alerting and display functions must be inhibited during QFE (atmospheric pressure at airport elevation) operations.

Effectivity:

- Airplanes **equipped** with FMC 822-0783-028 (SCID 832-4119-030) or FMC 822-0783-032 (SCID 832-4119-034)
 - If GPS is inoperative (identified by LOSS OF INTEGRITY, GNSS NOT AVAILABLE or GNSS – FMS DISAGREE message on the FMS CDU), the terrain awareness alerting and display functions must be inhibited during QFE (atmospheric pressure at airport elevation) operations.

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 22
Operation Using QFE Altimeter Settings

07-22-01-2

Rev. 28, Jun 04/2021

C. Navigation System Limitations

NOTE

FMS thrust, range and fuel management information is based on QNH operation.
This advisory information will not be accurate during QFE operations.

- Advisory VNAV must be disabled when flying FMS approaches in QFE.
- Use of advisory VNAV prior to the approach phase is permitted in QFE operations, provided that all vertical constraints are edited to agree with the applicable current publications.

NOTE

Altitudes in the FMS navigation database are referenced Above Mean Sea Level (AMSL). There will be a vertical error if these altitudes are used during QFE operations.

- For GPS availability and integrity (RAIM) predictions, altitude aiding must be considered unavailable during QFE operations.

3. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable.

4. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable, except as modified by the following:

2. PRIOR TO START

E. Before Start Check

Replace the Before Start Check in Chapter 4 – NORMAL PROCEDURES Consolidated Procedures – Before Start Check with the following:

- (1) PASS SIGNS ON
- (2) LDG ELEV Set to 0 feet
- (3) Altimeters (_____) Set
- (4) FMS/IRS <1025> Set
- (5) Radios and Nav aids Set for departure
- (6) Take-off briefing Complete

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 22 Operation Using QFE Altimeter Settings

07-22-01-3

Rev. 28, Jun 04/2021

4. AFTER TAKE-OFF

A. Climb Check <TC> or <FAA> or <JAA>

Replace the Climb Check <TC> or <FAA> or <JAA> in Chapter 4 – NORMAL PROCEDURES Consolidated Procedures – Climb Check <TC> or <FAA> or <JAA> with the following:

- (1) Altimeters(_____) Set
- (2) FUEL, XFLOW Auto
- (3) Bleeds and APU Set
- (4) LDG ELEV Set to destination airport elevation
- (5) Lights and PASS SIGNS As required
- (6) THRUST REVERSERS OFF
- (7) CAS Checked and cleared

5. PRIOR TO LANDING

B. Approach Check <JAA>

Replace the Approach Check <JAA> in Chapter 4 – NORMAL PROCEDURES Consolidated Procedures – Approach Check <JAA> with the following:

- (1) Altimeters(_____) Set
- (2) APU and bleeds Set
- (3) LDG ELEV Set to 0 feet
- (4) Lights and PASS SIGNS As required

5. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable.

6. PERFORMANCE

The performance data in Chapter 6 are applicable.

7. SUPPLEMENTS

The supplementary data in Chapter 7 are applicable.

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 22
Operation Using QFE Altimeter Settings

07-22-01-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 23
Not Applicable

07-23-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

This Section Intentionally Left Blank 07-23-01-1

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 23
Not Applicable

07-23-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 23
Not Applicable

07-23-01-1

Rev. 28, Jun 04/2021

THIS SECTION INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 23
Not Applicable

07-23-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 24
Approaches between 3.5 Degrees and
4.0 Degrees

07-24-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

GENERAL	07-24-01-1
INTRODUCTION	07-24-01-1
LIMITATIONS	07-24-01-1
EMERGENCY PROCEDURES	07-24-01-2
NORMAL PROCEDURES	07-24-01-2
Descent Check <JAA>	07-24-01-2
ABNORMAL PROCEDURES	07-24-01-3
Single Engine Approach and Landing	07-24-01-3
PERFORMANCE	07-24-01-3

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 24
Approaches between 3.5 Degrees and
4.0 Degrees

07-24-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 24
Approaches between 3.5 Degrees and
4.0 Degrees

07-24-01-1

Rev. 28, Jun 04/2021

1. GENERAL

This supplement must be used when performing approaches steeper than 3.5 degrees. This supplement is applicable only to aircraft equipped with FCC-127.

The information contained in this supplement complements or supersedes some limitations, procedures and performance data contained in the basic Airplane Flight Manual (AFM). Thus, this supplement must be used in conjunction with the basic AFM.

2. INTRODUCTION

The general information in Chapter 1 is applicable.

3. LIMITATIONS

The limitations established in Chapter 2 are applicable, with the addition of the following:

- The following table identifies the approved autopilot minimum use heights for steeper glide path approaches.

Flight Phase	Glide path Angle	Minimum Use Height
Precision approach (ILS)	>3.5 degrees ≤4.0 degrees	60 feet AGL with both engines operating <EASA> 120 feet AGL with one engine operating

- The decision height shall not be lower than 250 feet AGL.
- Maximum landing pressure altitude is 1000 feet.
- No tailwind component is permitted.
- Landing at an outside air temperature (OAT) exceeding the value in the table that follows is prohibited.

V _{REF}	Maximum Permitted OAT (°C) at Landing Field					
	Glide Slope Angle Degree					
	3.5	3.6	3.7	3.8	3.9	4.0
138	>50	>50	>50	>50	>50	>50
139	↑	↑	↑	↑	↑	47
140						43
141					↓	38
142					>50	34
143					45	30
144				↓	41	25
145				>50	37	21

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



SUPPLEMENT 24
Approaches between 3.5 Degrees and
4.0 Degrees

07-24-01-2

Rev. 28, Jun 04/2021

V _{REF}	Maximum Permitted OAT (°C) at Landing Field					
	Glide Slope Angle Degree					
	3.5	3.6	3.7	3.8	3.9	4.0
146				49	32	17
147				44	28	13
148			↓	40	24	9
149			>50	36	20	6
150			48	32	16	2
151			44	28	12	-2
152		↓	40	24	9	-5
153		>50	36	20	5	-9
154		49	32	16	1	-12
155		45	28	12	-2	-16
156		41	24	9	-6	-19
157	↓	37	20	5	-9	-22
158	>50	33	17	2	-12	-25
159	47	29	13	-2	-16	-28
160	43	25	9	-5	-19	-31

Example: For approach speed (V_{REF}) = 152 knots and a 3.9 degrees glide slope, landing at an OAT above 9°C is prohibited.

4. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable.

5. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable, in addition to the following:

A. Descent Check <JAA>

NOTE

If OAT at the landing field exceeds the value in the Maximum Permitted OAT (°C) at Landing Field table, divert to a suitable landing field with a glide path angle of 3.5 degrees or less.

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



SUPPLEMENT 24
Approaches between 3.5 Degrees and
4.0 Degrees

07-24-01-3

Rev. 28, Jun 04/2021

6. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable, except as modified by the following:

E. Single Engine Approach and Landing

NOTE

If OAT at the landing field exceeds the value in the Maximum Permitted OAT ($^{\circ}\text{C}$) at Landing Field table, divert to a suitable landing field with a glide path angle of 3.5 degrees or less.

7. PERFORMANCE

The performance data in Chapter 6 are applicable.

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 24
Approaches between 3.5 Degrees and
4.0 Degrees

07-24-01-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 25A
Not Applicable

07-25A-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

This Section Intentionally Left Blank 07-25A-01-1

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 25A
Not Applicable

07-25A-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 25A
Not Applicable

07-25A-01-1

Rev. 28, Jun 04/2021

THIS SECTION INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 25A
Not Applicable

07-25A-01-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 26
Temporary Cargo Carrying Operations <2252>

07-26-00-1

Rev. 28, Jun 04/2021

TABLE OF CONTENTS

INTRODUCTION	07-26-01-1
LIMITATIONS	07-26-01-1
CARGO <2252>	07-26-01-2
MAXIMUM OCCUPANTS AND OCCUPANT REQUIREMENTS <2252>	07-26-01-3
TEMPORARY CARGO CARRYING OPERATIONS <2252>	07-26-01-3
EMERGENCY PROCEDURES	07-26-01-4
NORMAL PROCEDURES	07-26-01-5
Before Take-Off Check	07-26-01-5
Before Landing Check	07-26-01-5
ABNORMAL PROCEDURES	07-26-01-6
Drop-Down Oxygen, Auto-Deploy Failure	07-26-01-6
PERFORMANCE DATA	07-26-01-6
SUPPLEMENTS	07-26-01-6

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 26
Temporary Cargo Carrying Operations <2252>

07-26-00-2

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



SUPPLEMENT 26
Temporary Cargo Carrying Operations <2252>

07-26-01-1

Rev. 28, Jun 04/2021

1. INTRODUCTION

Freight carried in the passenger compartment, as defined in CASA 2020-04, that consists of critical products such as food, Personal Protective Equipment (PPE), gloves and other medical supplies that are not classified as dangerous goods is identified in this Supplement as "cargo".

The data in this supplement must be used when operating the aircraft in a temporary cargo carrying configuration per TCCA CASA 2020-04 with passenger seats removed.

This Supplement must be used after the incorporation of Service Bulletin 670BA-25-132.

These data complement or supersede data contained in the basic Airplane Flight Manual (AFM) and its Supplements. The following data must be therefore be used in conjunction with the basic AFM and its Supplements.

The effect of this supplement on the basic AFM are given below.

2. LIMITATIONS

The limitations in Chapter 2 are applicable, except as modified by the following:

In section 04 – Operating Limitations add the following:

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 26
Temporary Cargo Carrying Operations <2252>

07-26-01-2

Rev. 28, Jun 04/2021

8. CARGO <2252>

Sufficient quantity of portable fire extinguishers and additional pieces of Protective Breathing Equipment (PBE) shall be readily available to the designated crew members, over and above the fire extinguisher, PBE and other safety equipment already installed in the passenger compartment.

Hazardous materials and dangerous goods, as defined by the operator's local Regulatory Authority, are prohibited for transport in the passenger compartment.

All cargo carried in the passenger compartment must be contained under approved cargo nets and secured to the passenger seats rails in fore/aft and side to side directions with approved straps and fixtures or contained inside the overhead bins or wardrobe compartment (if available).

The operator of the aircraft shall ensure the loading and distribution of cargo in the passenger compartment is in accordance with Service Bulletin 670BA-25-132. The weight position shall be reflected in the operational weight and balance or loading document provided to the Pilot-In-Command (PIC).

The weight of the cargo shall be distributed so as not to exceed the structural loading limits of the floor and floor panel loading limitations published in the Weight and Balance Manual or the maximum allowable bin or compartment weight.

The total height of cargo shall not be more than 40 inches (101.6 cm) above the floor to ensure contents of passenger compartment can be monitored for smoke or fire by a crew member while seated in a designated seat.

A continuous aisle way of a minimum 18 inches (45.7 cm) width shall be provided along the entire length of the passenger compartment.

An unobstructed opening of at least 16 inches (40.6 cm) width, shall be provided fore and aft of each loaded sections of cargo net, to ensure easy access outboard of the cargo to crew members seeking inspection, detection of smoke and fire fighting.

An unobstructed passageway (clear of any cargo straps retaining devices) shall be provided at the FWD overwing emergency exits on both sides to match the projected opening of the exit. An additional free space of 12 inches (35.6 cm) shall be provided AFT of the FWD overwing emergency exits projected opening to prevent cargo from shifting and blocking the operation of the emergency exit.

Cargo nets and harnesses shall be stowed in the overhead bins or baggage compartment, when not in use, and the weight and position reflected in the operational weight and balance or loading document provided to the PIC.

Carriage of cargo in the aircraft lavatory is prohibited.

Carriage of live animals is prohibited.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 26
Temporary Cargo Carrying Operations <2252>

07-26-01-3

Rev. 28, Jun 04/2021

14. MAXIMUM OCCUPANTS AND OCCUPANT REQUIREMENTS <2252>

No passengers are permitted on-board the aircraft during temporary cargo carrying operations.

Only crew members assigned on-board duties that are directly related to the operations of cargo flight are permitted on-board the aircraft.

Two crew members shall be assigned to monitor the passenger compartment for signs of fire or smoke. One crew member shall be seated in the forward flight attendant seat and one crew member in the observer seat for taxi, take-off and landing or at any other time directed to do so by the PIC.

Means of two-way communication between the designated crew members and flight deck must be provided. This includes but not limited to the cabin public address (PA), chime alerting system, interphone system or other means of communication.

Crew members assigned for on-board duties shall have received training in:

- (1) Crew coordination procedures;
- (2) Use and operation of PBE, fire extinguishers and protective gloves to combat fire in an aircraft cabin;
- (3) Location and operation of the passenger door and emergency exits;
- (4) Use of oxygen equipment and procedures to be followed in case of depressurization; and
- (5) First Aid.

During flight, anytime designated crew members are not positioned in their assigned seats with intention to move around the cabin, including but not limited to the visual inspection, must carry Supplemental Portable Oxygen Equipment.

15. TEMPORARY CARGO CARRYING OPERATIONS <2252>

The cargo shall be checked to ensure proper stowage and no signs of smoke or fire at least in the following instances:

- (1) Before take-off;
- (2) Before landing;
- (3) During flight at intervals not exceeding 30 minutes; and
- (4) Under orders of the PIC.

In section 08 – System Limitations add the following to 1. AIR-CONDITIONING AND PRESSURIZATION:

Operations with one or both air-conditioning PACKs inoperative or with any Minimum Equipment List (MEL) item that requires air-conditioning PACK(s) to be deactivated is prohibited.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



SUPPLEMENT 26
Temporary Cargo Carrying Operations <2252>

07-26-01-4

Rev. 28, Jun 04/2021

3. EMERGENCY PROCEDURES

The emergency procedures in Chapter 3 are applicable, except as modified by the following:

In section 01 – Introduction, **1. INTRODUCTION** add the following statement:

For the purpose of this Supplement all emergency procedures that require communication and coordination with flight attendants and passengers imply communication and coordination with designated crew member(s) in the aircraft cabin.

In section 04 – Smoke/Fire/Fumes, **B. Smoke/Fire/Fumes Procedure** remove **SOURCE IS IDENTIFIED AS CABIN FIRE/SMOKE** sub-part of the procedure in its entirety and replace it with the following:

SOURCE IS IDENTIFIED AS CABIN FIRE/SMOKE:

- (1) EMER LTSON
- (2) Designated crew member(s)Advise
 - (a) To isolate and extinguish source of smoke or fire, and to secure the area.
 - (b) To turn off lights at FWD and AFT flight attendants panel.
 - (i) PSU READING LIGHTSOFF
 - (ii) CEILING LIGHTOFF
 - (iii) SIDEWALL LIGHTOFF
 - (iv) ENTRANCE LIGHTOFF
 - (v) FWD READING LIGHTSOFF
 - (c) To isolate galley services:
 - (i) Potable Water and Galley control panel circuit breakers (all)Open
- (3) Galley, galley heating system and water systemDe-energize
 - (a) GALLEY EXHAUST FAN circuit breaker (2B8)Open
 - (b) GALLEY HEATER circuit breaker (2B11)Open
 - (c) WATER SYSTEM circuit breaker (2D8)Open
 - (d) GALLEY HEATER CONT circuit breaker (2F11)Open
 - (e) LIGHTS GALLEY AREA circuit breaker (2M6)Open
 - (f) WASTE SYST circuit breaker (2M9)Open
 - (g) WATER CONT circuit breaker (2M10)Open
 - (h) LIGHTS CAB UTIL circuit breaker (1P4)Open

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



- (4) PASS SIGNS OFF
- (5) Affected boarding lights / door actuator system De-energize, if required
 - (a) LIGHTS BOARD circuit breaker (2M3) Open
 - (b) PASS DOOR ACT circuit breaker (1E1) Open
 - (c) LIGHTS CAB UTIL circuit breaker (1P4) Open

- If smoke/fire/fumes condition persists, proceed to step (6).
- If smoke/fire/fumes condition ceases, proceed to step (7).

Smoke/fire/fumes condition persists:

- (6) Land immediately at the nearest suitable airport.



Dependent upon severity of the situation, the flight crew should expedite the landing. The crew should also consider an overweight landing, tailwind landing, ditching or forced off-airport landing.

Smoke/fire/fumes condition ceases:

- (7) Smoke or Fumes Removal Procedure Accomplish as required
(Refer to EMERGENCY PROCEDURES – SMOKE/FIRE/FUMES – Smoke or Fumes Removal Procedure.)

4. NORMAL PROCEDURES

The normal procedures in Chapter 4 are applicable, except as modified by the following:

C. Before Take-Off Check

Replace step (4) as follows:

- (4) Cabin cargo Confirm secured

C. Before Landing Check

Replace step (1) as follows:

- (1) Cabin cargo Confirm secured



SUPPLEMENT 26
Temporary Cargo Carrying Operations <2252>

07-26-01-6

Rev. 28, Jun 04/2021

5. ABNORMAL PROCEDURES

The abnormal procedures in Chapter 5 are applicable, except as modified by the following:

In section 17 – Miscellaneous Systems, remove **E. Passenger Oxygen, Auto-deploy Failure** procedure in its entirety and replace it with the following:

E. Drop-Down Oxygen, Auto-Deploy Failure

Cabin altitude is above 14250 (± 750) feet and FWD flight attendant station oxygen mask has not deployed:

- (1) PASS OXY switchON
- If mask still does not deploy, proceed to step (2).
- If mask deploys, proceed to step (4).
- (2) Mask still does not deploy:
 - (3) Designated crew memberAdvise to open oxygen mask compartment manually.
 - (4) Mask deploys:
 - (5) No further action required.

6. PERFORMANCE DATA

The performance data in Chapter 6 are applicable.

7. SUPPLEMENTS

The Supplements data in Chapter 7 are applicable.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



CHAPTER 8 - APPENDICES

APPENDIX 1 – Configuration Deviation List

GENERAL LIMITATIONS	08-01-01-1
CAFM CDL INDEX <2098>	08-01-01-2
DEFINITIONS	08-01-01-2
SYSTEM	
21 AIR–CONDITIONING	
Ram air exhaust duct assembly (L/R) vanes	08-01-21-1
23 COMMUNICATIONS	
Static dischargers and base	08-01-23-1
27 FLIGHT CONTROLS	
Seals between aileron side end and wing	08-01-27-1
Seals between rudder and vertical stabilizer	08-01-27-3
Seals between inboard flaps and fuselage fairing	08-01-27-5
Seals between elevator and horizontal stabilizer upper surface	08-01-27-7
Inboard flap – Outboard seal (seal between flap side end and wing)	08-01-27-9
Outboard flap – Inboard seal (seal between flap side end and wing)	08-01-27-11
Outboard flap – Outboard seal (seal between flap side end and aileron)	08-01-27-13
Seals around flap fairing	08-01-27-15
Bute door seals, outboard flap	08-01-27-17
Skin panel seals, inboard flap	08-01-27-19
P-seal under the Multi-Function Spoilers (MFS) shroud (1 seal per wing side)	08-01-27-21
28 FUEL	
Magnetic level indicators	08-01-28-1
32 LANDING GEAR	
Left or right main landing gear door	08-01-32-1
Main landing gear door brush	08-01-32-3
Main landing gear door blade seal	08-01-32-5
33 LIGHTS	
Navigation light covers on vertical stabilizer	08-01-33-1
Wing inspection light covers	08-01-33-3
Anti-collision light cover on vertical stabilizer	08-01-33-5
Lower/upper beacon (red) light covers	08-01-33-7



APPENDICES Table of Contents

08-00-2

Rev. 29, Oct 15/2021

Logo light covers	08-01-33-9
Exterior emergency light covers	08-01-33-11
51 STRUCTURES	
Aerodynamic sealant	08-01-51-1
Aerodynamic sealant – Air intake	08-01-51-4
Aerodynamic sealant – Engine nozzles	08-01-51-7
Aerodynamic sealant – Pitot static probe	08-01-51-7
52 DOORS	
Low pressure ground air connection access door (182BR)	08-01-52-1
Aft lavatory service door (196ER)	08-01-52-1
Forward waste water service door (142BR)	08-01-52-1
Forward potable water service door (142AR)	08-01-52-2
AC ground power connection door (122DR)	08-01-52-2
Aft potable water service door (195EL)	08-01-52-4
High pressure ground air connection access door (311AL)	08-01-52-4
Deflector around forward and center cargo doors	08-01-52-4
53 FUSELAGE	
Forward jacking pad nylon plug	08-01-53-1
Passenger door hinge fairing	08-01-53-3
Flap stub fairings	08-01-53-5
Wheel bin brushes (3 brushes per wheel bin)	08-01-53-7
Small 4th wheel bin brush	08-01-53-7
55 STABILIZER	
Horizontal stabilizer root seal assembly	08-01-55-1
57 WING	
Wing jacking pad nylon plugs	08-01-57-1
Main landing gear door cut-out seals	08-01-57-3
Left hand or right hand wing slat closing plates	08-01-57-6
Left hand or right hand wing slat seals	08-01-57-8
78 EXHAUST	
Transcowl omega seal	08-01-78-1

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1 Configuration Deviation List

08-01-01-1

Rev. 28, Jun 04/2021

1. GENERAL LIMITATIONS

This Configuration Deviation List (CDL) contains additional limitations for operation without certain secondary airframe and/or nacelle parts. The Limitations in the Airplane Flight Manual (AFM) are applicable except as amended in this appendix.

The associated limitations must be listed on a placard affixed in the flight compartment on the instrument panel in clear view of both pilots.

The pilot-in-command (PIC) will be notified of each operation with a missing part(s) by listing the missing part(s) in the flight or dispatch release.

The operator will list in the aircraft logbook an appropriate notation covering the missing part(s) on each flight.

If an additional part is lost in flight, the airplane may not depart the airport at which it landed following this event until it again complies with the limitations of this appendix. This, of course, does not preclude the issuance of a ferry permit to allow the airplane to be flown to a point where the necessary repairs or replacements can be made.

An asterisk (*) against a part indicates that only one flight is permitted to an airport where the necessary repairs or replacement can be made. This flight must not be carried out in known, forecast or anticipated lightning conditions.

A dagger symbol (†) against a CDL item indicates that there is additional information applicable. This information must be read to have a complete understanding of the CDL effect. This information may be in the form of a specific airplane serial number applicability or part number applicability, etc.

No more than one part for any one sub-system in this appendix may be missing unless specifically designated combinations are indicated herein. Unless otherwise specified herein, parts from different systems may be missing. The performance penalties are cumulative unless specifically designated penalties for combination of missing parts are indicated.

Where performance penalties are listed as negligible, no more than three negligible items may be missing for take-off unless the following performance penalty is applied. When more than three negligible items are missing, a performance penalty of 46 kg (100 lb) must be applied for take-off, enroute and landing for each additional negligible item.

DOT Approved

Airplane Flight Manual
CSP C-012-219



APPENDIX 1 Configuration Deviation List

08-01-01-2

Rev. 28, Jun 04/2021

2. CAFM CDL INDEX <2098>

Performance penalties can either be applied using the penalties provided in this Appendix or by calculating actual performance using the CAFM with the CDL index provided in this Appendix. The CAFM CDL index input is used to calculate performance with one or several CDL items missing from the airplane. The CDL index value is entered in the MMEL/CDL window. The CDL index is equal to the drag increment in drag counts (or the drag coefficient multiplied by 10000) rounded-up to one decimal place.

If several CDL items are missing, then the user can add the various CDL index values to get the input CDL index for the CAFM. The minimum and maximum CDL index input values allowed in the CAFM are 0 and 30 respectively. The CDL index is considered in the following CAFM modules:

Take-off weight limited by climb gradients;

Take-off path (Fixed Level Off Height (LOH) and Maximum LOH);

Enroute performance (Net climb gradient and net ceiling);

Approach climb;

Landing climb;

Landing weight limited by c1imb requirements.

The CDL index has no impact on the stall speed, maneuvering capability, thrust settings and landing performance modules.

The CDL index is not considered during take-off speeds or take-off distance calculations.

Take-off field length is unaffected by CDL items because the drag increment has a negligible impact on take-off distance calculations.

The CDL index input box will be greyed-out (no input allowed) for all CAFM modules where the CDL index has no impact on calculations.

When using the CAFM, a CDL index of zero will be used if up to three parts with negligible performance degradation are missing. For each subsequent such part missing, a CDL index of 1.7 shall be added-up to the CAFM CDL index. The CDL index of 1.7 equivalent to the 46 kg (100 lb) penalty (must be applied for take-off, enroute and landing, there is a 32 kg (70 lb) penalty for every drag count or for a CDL index of 1.0).

3. DEFINITIONS

Take-off performance decrements are applicable to take-off gross weights which are limited by field length, first segment climb, second segment climb, final segment climb, or take-off flight path. The actual take-off weight must not exceed the normal take-off weight limit minus the CDL take-off weight penalty.

Enroute performance decrements are applicable to operations which are limited by enroute, one-engine-inoperative climb performance as governed by the applicable operational requirements (e.g., FAR 121.191 for operators under FAA jurisdiction).

DOT Approved

Airplane Flight Manual
CSP C-012-219



APPENDIX 1 Configuration Deviation List

08-01-01-3

Rev. 28, Jun 04/2021

Landing performance decrements are applicable to landing gross weights which are limited by landing field length, landing climb, or approach climb. The maximum allowable landing weight must not exceed the normal landing weight limit minus the CDL landing weight penalty.

The numbering and designation of systems in this appendix is based on ATA 100 Specification. The parts within each system are identified by functional description and, when necessary, by part numbers.

DOT Approved

Airplane Flight Manual
CSP C-012-219



APPENDIX 1
Configuration Deviation List

08-01-01-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



APPENDIX 1
Configuration Deviation List

08-01-21-1

Rev. 28, Jun 04/2021

SYSTEM 21 AIR-CONDITIONING

SUB-SYSTEM	ITEM	
21-51 Ram air exhaust duct assembly (L/R) vanes	8	<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination of vanes may be missing with no performance penalty. CAFM: Use the CDL Index of 0.0 for this item. <2098></p>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



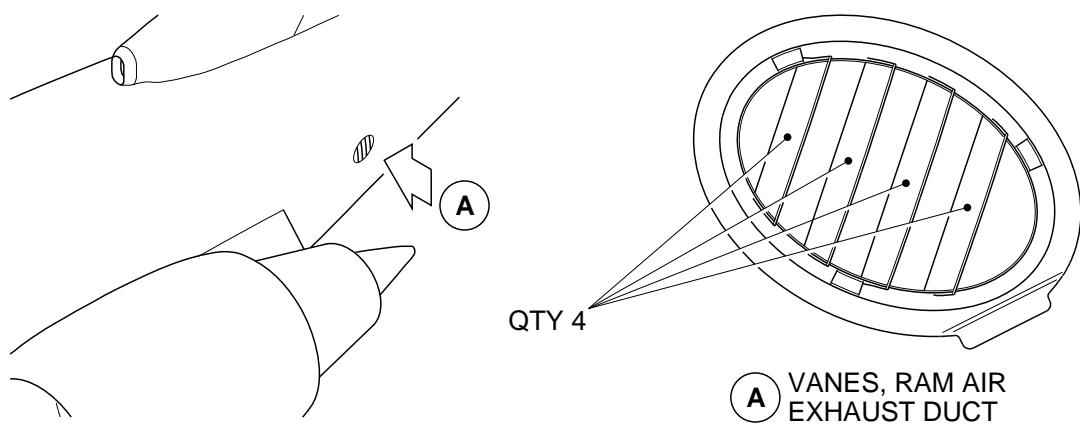
APPENDIX 1
Configuration Deviation List

08-01-21-2

Rev. 28, Jun 04/2021

SYSTEM 21 AIR-CONDITIONING

21-51: Vanes, Ram Air Exhaust Duct



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-23-1

Rev. 28, Jun 04/2021

SYSTEM 23 COMMUNICATIONS

SUB-SYSTEM	ITEM	
23-61 Static dischargers and base	27 or 31 †	<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Certain static dischargers may be damaged or missing, as detailed in the deviation table on the next page.</p> <p>Certain static discharger bases may be damaged or missing, as detailed in the deviation table on the next page.</p> <p>Limitation:</p> <ul style="list-style-type: none">• Missing base must be replaced within 600 flight hours.• Apply SRM Task 51-27-15-001-001-A01.• Detailed speed tape inspection required at each 200 flight hour interval.• CAFM: Use a CDL Index of 0.0 for this item. <2098>

† Airplanes 15036 and subsequent, with the new winglet assembly installed.

DOT Approved

Airplane Flight Manual
CSP C-012-219



**APPENDIX 1
Configuration Deviation List**

08-01-23-2

Rev. 28, Jun 04/2021

SYSTEM 23 COMMUNICATIONS

23-61: Static dischargers and base

Letter Reference	Location	Quantity Installed	Deviation [2]
A	Rudder	3	2 may be damaged or missing
B	Horizontal stabilizer – tip trailing edge (1 each side)	2	1 side may be damaged or missing
C	Elevators (2 each side)	4	1 may be damaged or missing per side
D	Tailcone APU exhaust area	2	1 may be damaged or missing
E	Horizontal stabilizer tail bullet fairing	2	1 may be damaged or missing
H	Aileron (1 each side)	2	1 may be damaged or missing per side
J	Wing trailing edge (3 per side)	6	1 may be damaged or missing per side
K [1]	Winglet trailing edge (3 per side)	6	1 may be damaged or missing per side
L [1]	Upper winglet (2 per side)	4	1 per side may be damaged or missing

[1] Airplanes 15036 and subsequent, with the new winglet assembly installed.

[2] No more than 6 static dischargers total may be damaged or missing from the airplane at any given time.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



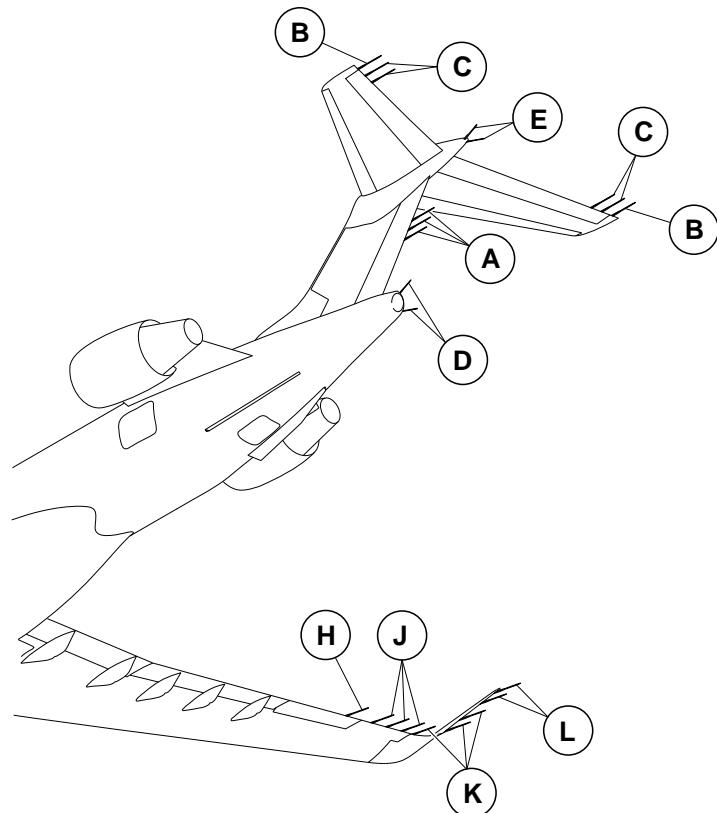
APPENDIX 1
Configuration Deviation List

08-01-23-3

Rev. 28, Jun 04/2021

SYSTEM 23 COMMUNICATIONS

23-61: Static Dischargers



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-23-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



APPENDIX 1
Configuration Deviation List

08-01-27-1

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

SUB-SYSTEM	ITEM																	
27-10 Seals between aileron side end and wing		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><td colspan="2">Take-off Weight</td></tr><tr><td>20.5 kg/seal</td><td>45 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Enroute Climb</td></tr><tr><td>45.5 kg/seal</td><td>100 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Landing Weight</td></tr><tr><td>20.5 kg/seal</td><td>45 lb/seal</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td colspan="2">Fuel Consumption</td></tr><tr><td colspan="2">0.30% on fuel used/seal</td></tr></table> <p>CAFM: Add 0.7 to the CDL Index for every seal missing. <2098></p>	Take-off Weight		20.5 kg/seal	45 lb/seal	Enroute Climb		45.5 kg/seal	100 lb/seal	Landing Weight		20.5 kg/seal	45 lb/seal	Fuel Consumption		0.30% on fuel used/seal	
Take-off Weight																		
20.5 kg/seal	45 lb/seal																	
Enroute Climb																		
45.5 kg/seal	100 lb/seal																	
Landing Weight																		
20.5 kg/seal	45 lb/seal																	
Fuel Consumption																		
0.30% on fuel used/seal																		

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



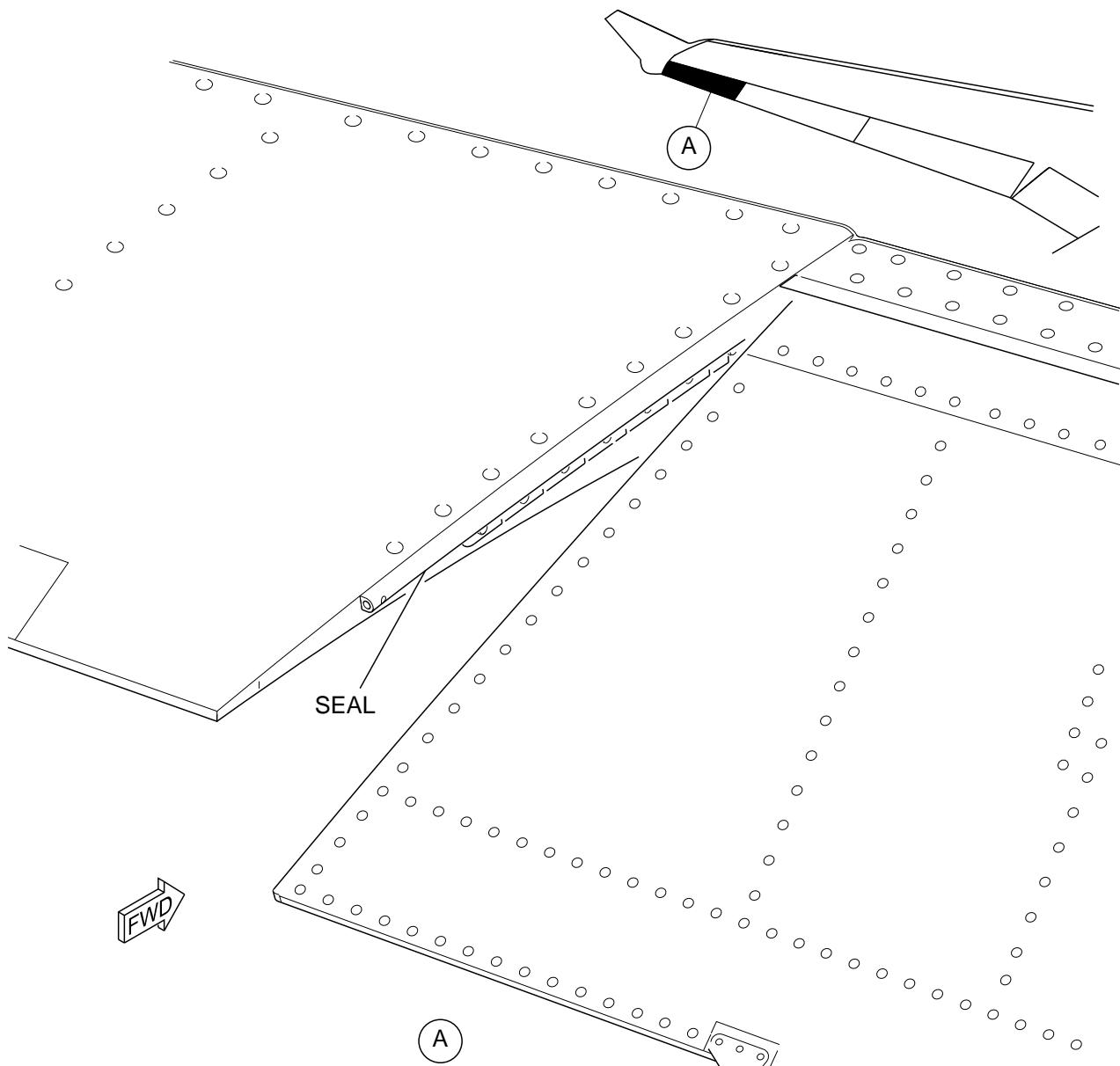
APPENDIX 1
Configuration Deviation List

08-01-27-2

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

27-10: Seals, Aileron Side End and Wing



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-27-3

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

SUB-SYSTEM	ITEM																	
27-20 Seals between rudder and vertical stabilizer		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><td colspan="2">Take-off Weight</td></tr><tr><td>18.5 kg/seal</td><td>40 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Enroute Climb</td></tr><tr><td>39 kg/seal</td><td>85 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Landing Weight</td></tr><tr><td>18.5 kg/seal</td><td>40 lb/seal</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td colspan="2">Fuel Consumption</td></tr><tr><td colspan="2">0.25% on fuel used/seal</td></tr></table> <p>CAFM: Add 0.6 to the CDL Index for every seal missing. <2098></p>	Take-off Weight		18.5 kg/seal	40 lb/seal	Enroute Climb		39 kg/seal	85 lb/seal	Landing Weight		18.5 kg/seal	40 lb/seal	Fuel Consumption		0.25% on fuel used/seal	
Take-off Weight																		
18.5 kg/seal	40 lb/seal																	
Enroute Climb																		
39 kg/seal	85 lb/seal																	
Landing Weight																		
18.5 kg/seal	40 lb/seal																	
Fuel Consumption																		
0.25% on fuel used/seal																		

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



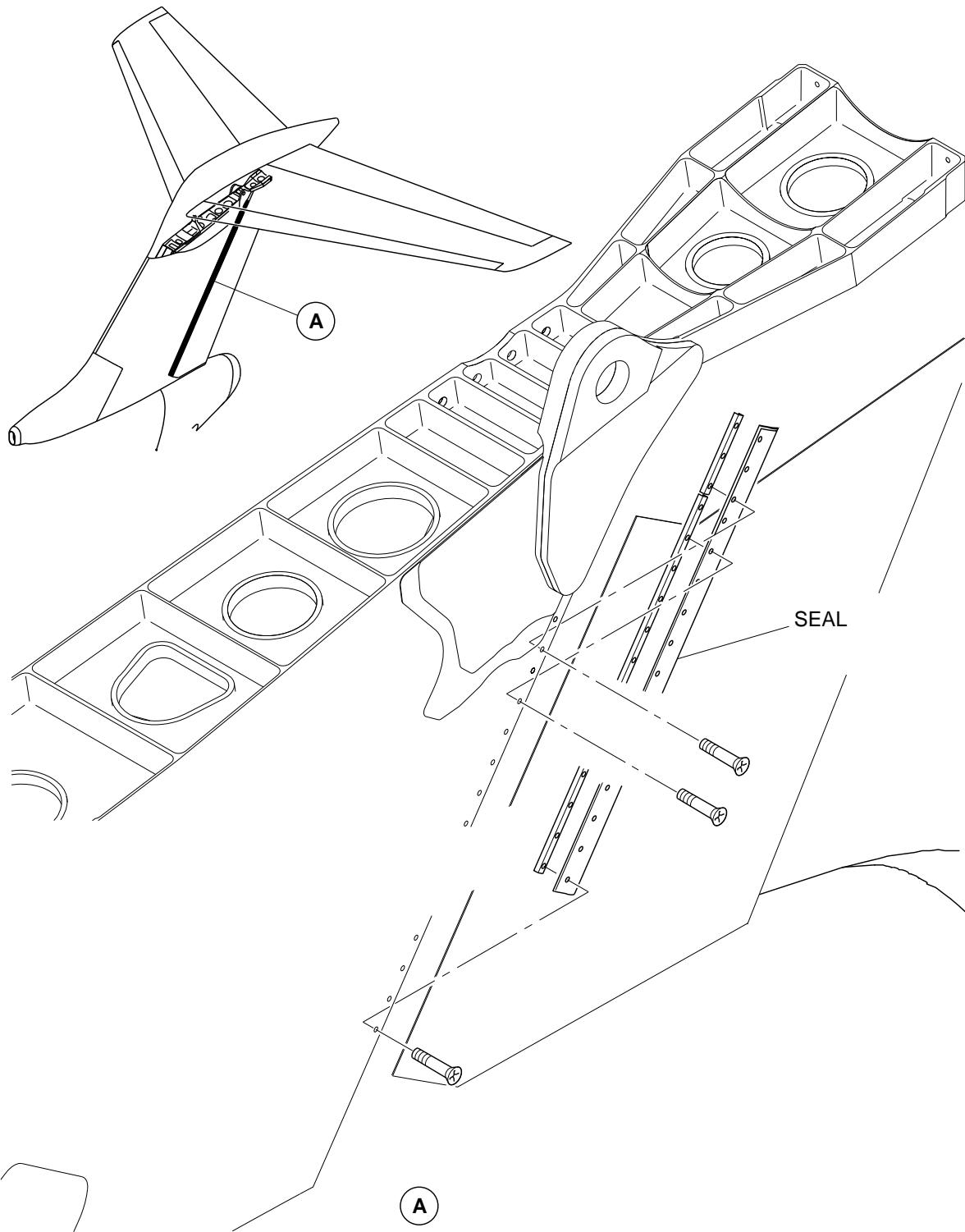
APPENDIX 1
Configuration Deviation List

08-01-27-4

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

27-20: Seals, Rudder and Vertical Stabilizer



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-27-5

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

SUB-SYSTEM	ITEM																	
27-20 Seals between inboard flaps and fuselage fairing		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><td colspan="2">Take-off Weight</td></tr><tr><td>29.5 kg/seal</td><td>65 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Enroute Climb</td></tr><tr><td>64 kg/seal</td><td>140 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Landing Weight</td></tr><tr><td>29.5 kg/seal</td><td>65 lb/seal</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td colspan="2">Fuel Consumption</td></tr><tr><td colspan="2">0.40% on fuel used/seal</td></tr></table> <p>CAFM: Add 1.0 to the CDL Index for every seal missing. <2098></p>	Take-off Weight		29.5 kg/seal	65 lb/seal	Enroute Climb		64 kg/seal	140 lb/seal	Landing Weight		29.5 kg/seal	65 lb/seal	Fuel Consumption		0.40% on fuel used/seal	
Take-off Weight																		
29.5 kg/seal	65 lb/seal																	
Enroute Climb																		
64 kg/seal	140 lb/seal																	
Landing Weight																		
29.5 kg/seal	65 lb/seal																	
Fuel Consumption																		
0.40% on fuel used/seal																		

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



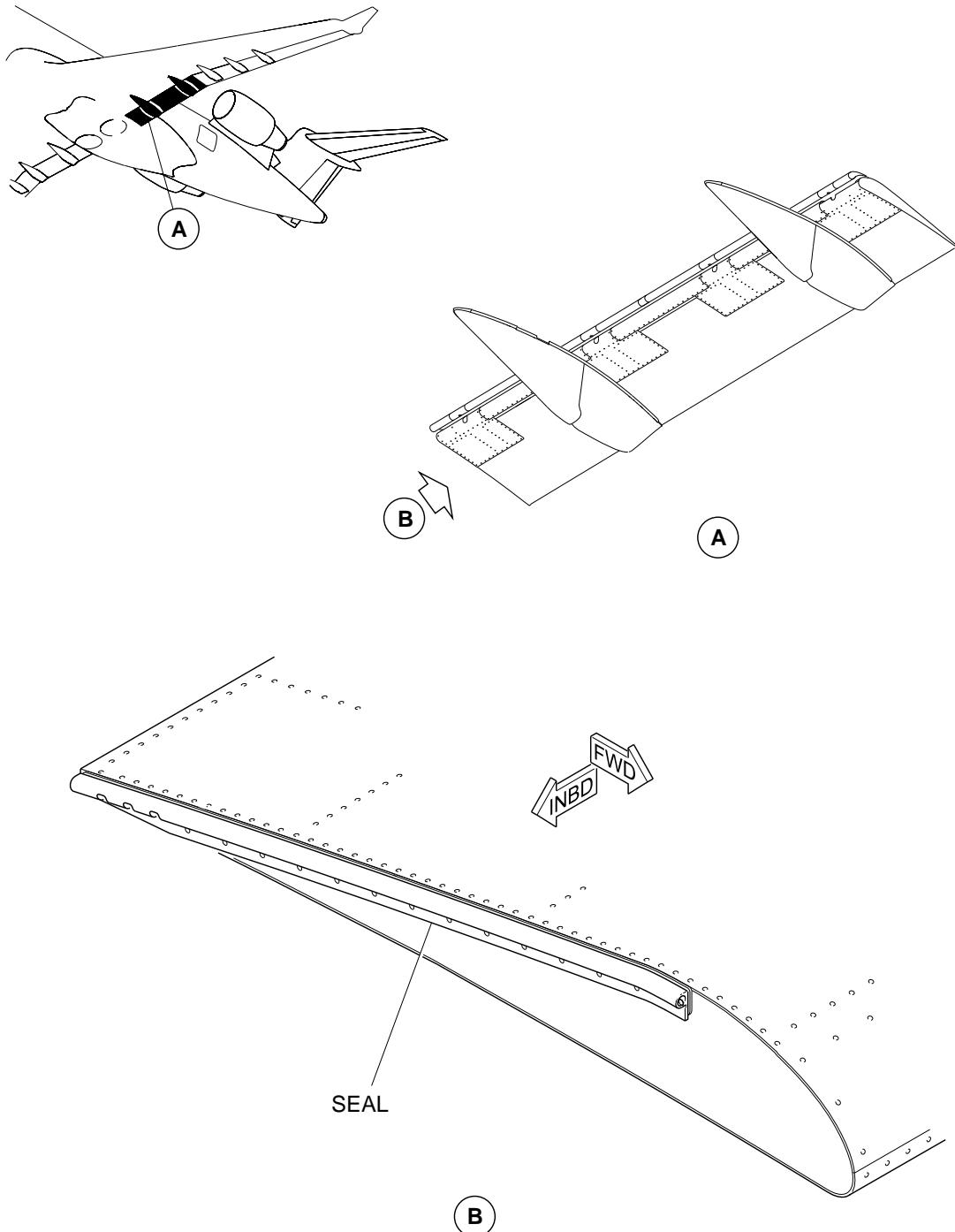
APPENDIX 1
Configuration Deviation List

08-01-27-6

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

27-20: Seals, Inboard Flaps and Fuselage Fairing



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-27-7

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

SUB-SYSTEM	ITEM																	
27-30 Seals between elevator and horizontal stabilizer upper surface		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>4 Any number or combination may be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><td colspan="2">Take-off Weight</td></tr><tr><td>14 kg/seal</td><td>30 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Enroute Climb</td></tr><tr><td>29.5 kg/seal</td><td>65 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Landing Weight</td></tr><tr><td>14 kg/seal</td><td>30 lb/seal</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td colspan="2">Fuel Consumption</td></tr><tr><td colspan="2">0.20% on fuel used/seal</td></tr></table> <p>CAFM: Add 0.5 to the CDL Index for every seal missing. <2098></p>	Take-off Weight		14 kg/seal	30 lb/seal	Enroute Climb		29.5 kg/seal	65 lb/seal	Landing Weight		14 kg/seal	30 lb/seal	Fuel Consumption		0.20% on fuel used/seal	
Take-off Weight																		
14 kg/seal	30 lb/seal																	
Enroute Climb																		
29.5 kg/seal	65 lb/seal																	
Landing Weight																		
14 kg/seal	30 lb/seal																	
Fuel Consumption																		
0.20% on fuel used/seal																		

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



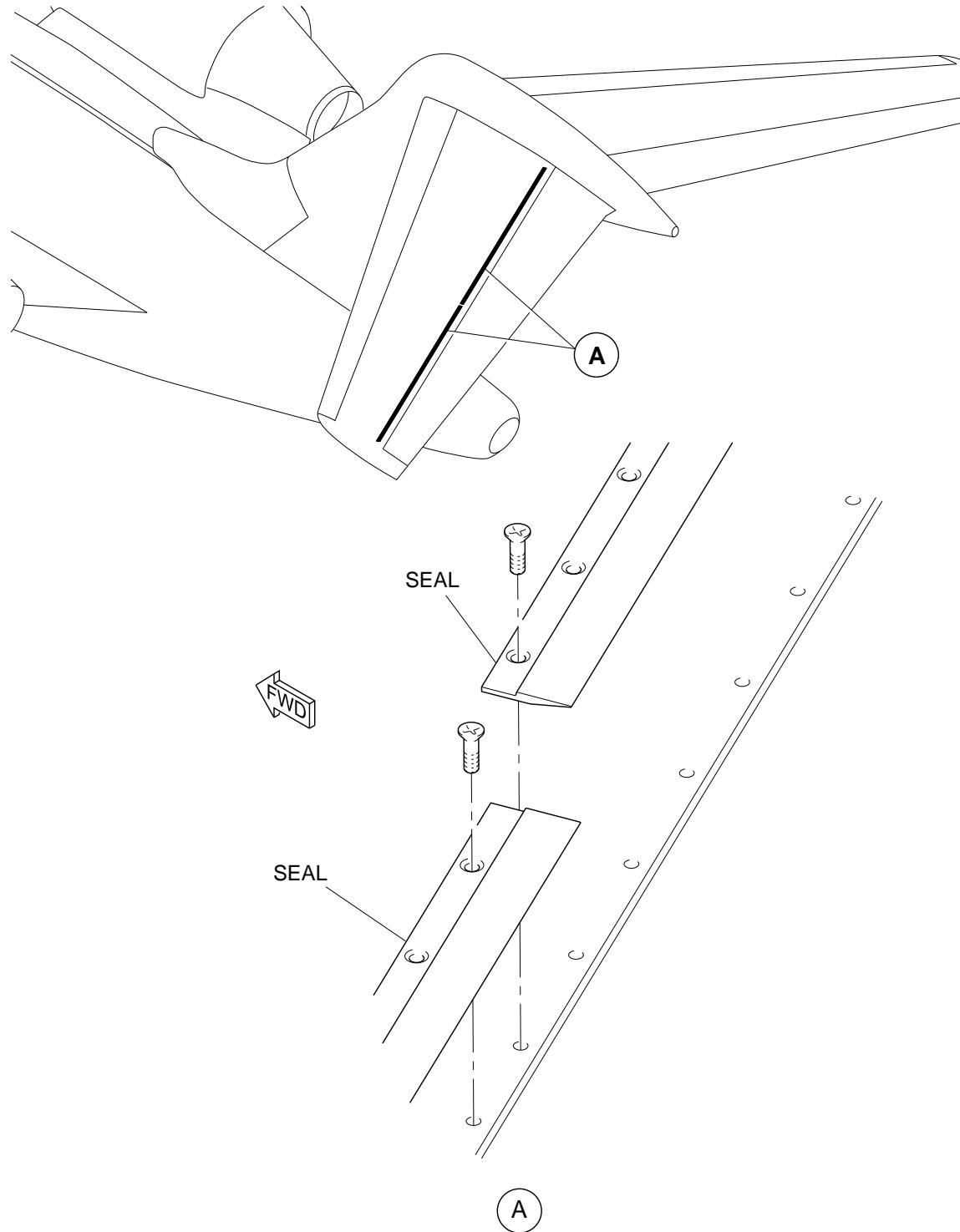
APPENDIX 1
Configuration Deviation List

08-01-27-8

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

27-30: Seals, Elevator and Horizontal Stabilizer Upper Surface



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-27-9

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

SUB-SYSTEM	ITEM																	
27-50 Inboard flap – Outboard seal (seal between flap side end and wing)		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><td colspan="2">Take-off Weight</td></tr><tr><td>34 kg/seal</td><td>75 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Enroute Climb</td></tr><tr><td>75 kg/seal</td><td>165 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Landing Weight</td></tr><tr><td>34 kg/seal</td><td>75 lb/seal</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td colspan="2">Fuel Consumption</td></tr><tr><td colspan="2">0.50% on fuel used/seal</td></tr></table> <p>CAFM: Add 1.2 to the CDL Index for every seal missing. <2098></p>	Take-off Weight		34 kg/seal	75 lb/seal	Enroute Climb		75 kg/seal	165 lb/seal	Landing Weight		34 kg/seal	75 lb/seal	Fuel Consumption		0.50% on fuel used/seal	
Take-off Weight																		
34 kg/seal	75 lb/seal																	
Enroute Climb																		
75 kg/seal	165 lb/seal																	
Landing Weight																		
34 kg/seal	75 lb/seal																	
Fuel Consumption																		
0.50% on fuel used/seal																		

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



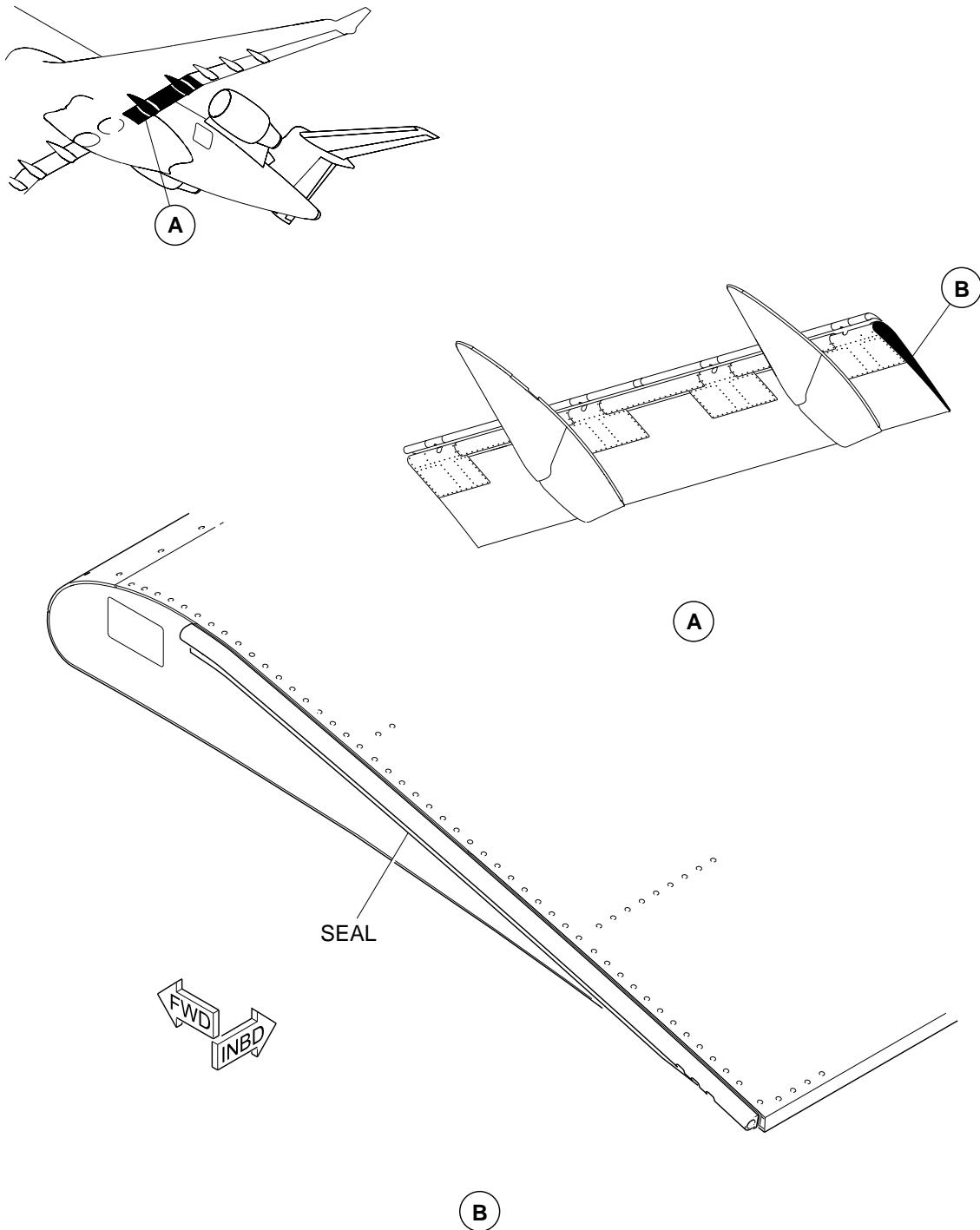
APPENDIX 1
Configuration Deviation List

08-01-27-10

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

27-50: Inboard Flap – Outboard Seal



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-27-11

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

SUB-SYSTEM	ITEM																	
27-50 Outboard flap – Inboard seal (seal between flap side end and wing)		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><td colspan="2">Take-off Weight</td></tr><tr><td>34 kg/seal</td><td>75 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Enroute Climb</td></tr><tr><td>75 kg/seal</td><td>165 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Landing Weight</td></tr><tr><td>34 kg/seal</td><td>75 lb/seal</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td colspan="2">Fuel Consumption</td></tr><tr><td colspan="2">0.45% on fuel used/seal</td></tr></table> <p>CAFM: Add 1.2 to the CDL Index for every seal missing. <2098></p>	Take-off Weight		34 kg/seal	75 lb/seal	Enroute Climb		75 kg/seal	165 lb/seal	Landing Weight		34 kg/seal	75 lb/seal	Fuel Consumption		0.45% on fuel used/seal	
Take-off Weight																		
34 kg/seal	75 lb/seal																	
Enroute Climb																		
75 kg/seal	165 lb/seal																	
Landing Weight																		
34 kg/seal	75 lb/seal																	
Fuel Consumption																		
0.45% on fuel used/seal																		

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



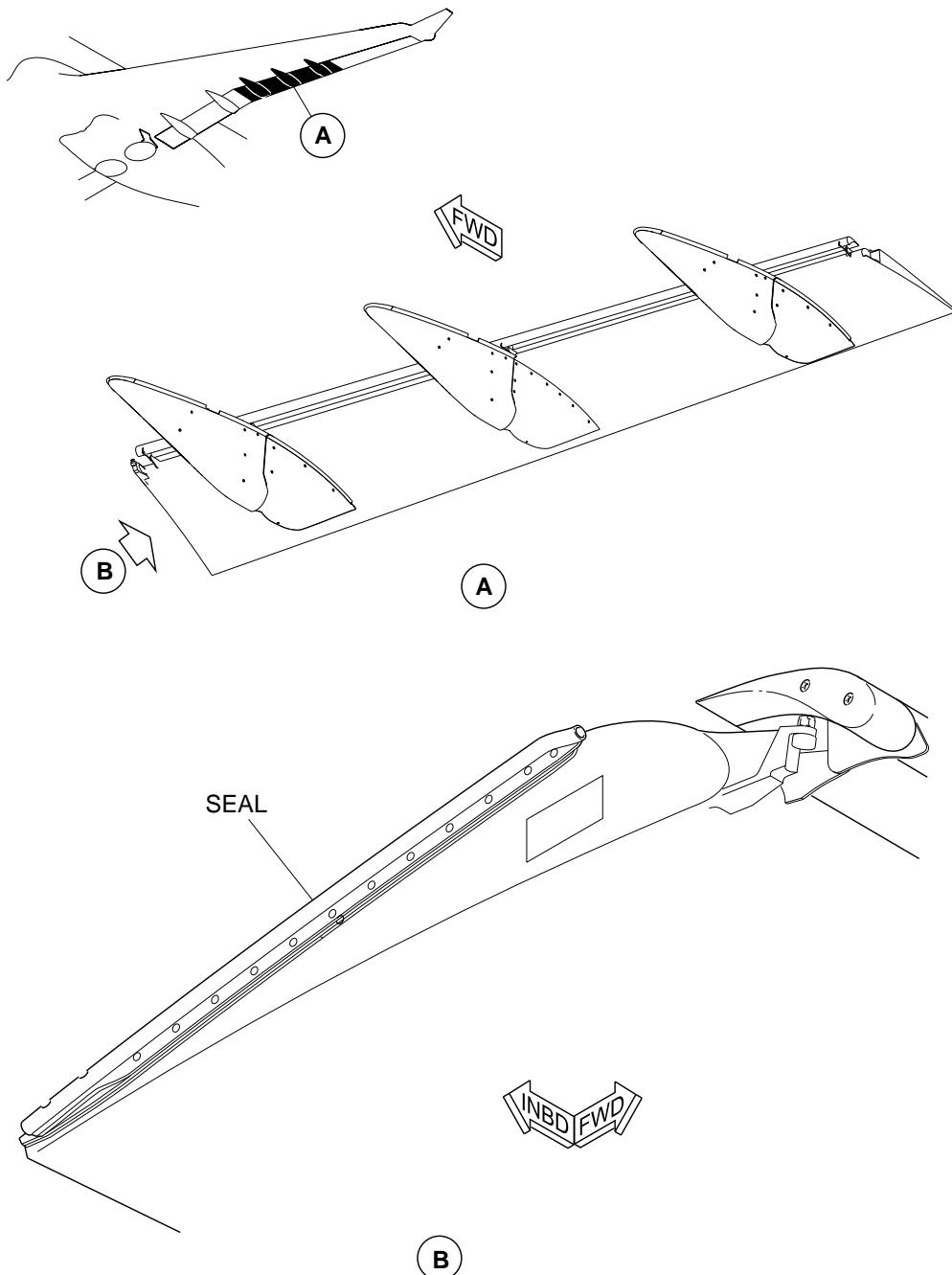
APPENDIX 1
Configuration Deviation List

08-01-27-12

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

27-50: Outboard Flap – Inboard Seal



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-27-13

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

SUB-SYSTEM	ITEM																	
27-50 Outboard flap – Outboard seal (seal between flap side end and aileron)		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><td colspan="2">Take-off Weight</td></tr><tr><td>25 kg/seal</td><td>55 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Enroute Climb</td></tr><tr><td>52.5 kg/seal</td><td>115 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Landing Weight</td></tr><tr><td>25 kg/seal</td><td>55 lb/seal</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td colspan="2">Fuel Consumption</td></tr><tr><td colspan="2">0.35% on fuel used/seal</td></tr></table> <p>CAFM: Add 0.9 to the CDL Index for every seal missing. <2098></p>	Take-off Weight		25 kg/seal	55 lb/seal	Enroute Climb		52.5 kg/seal	115 lb/seal	Landing Weight		25 kg/seal	55 lb/seal	Fuel Consumption		0.35% on fuel used/seal	
Take-off Weight																		
25 kg/seal	55 lb/seal																	
Enroute Climb																		
52.5 kg/seal	115 lb/seal																	
Landing Weight																		
25 kg/seal	55 lb/seal																	
Fuel Consumption																		
0.35% on fuel used/seal																		

DOT Approved

Airplane Flight Manual
CSP C-012-219



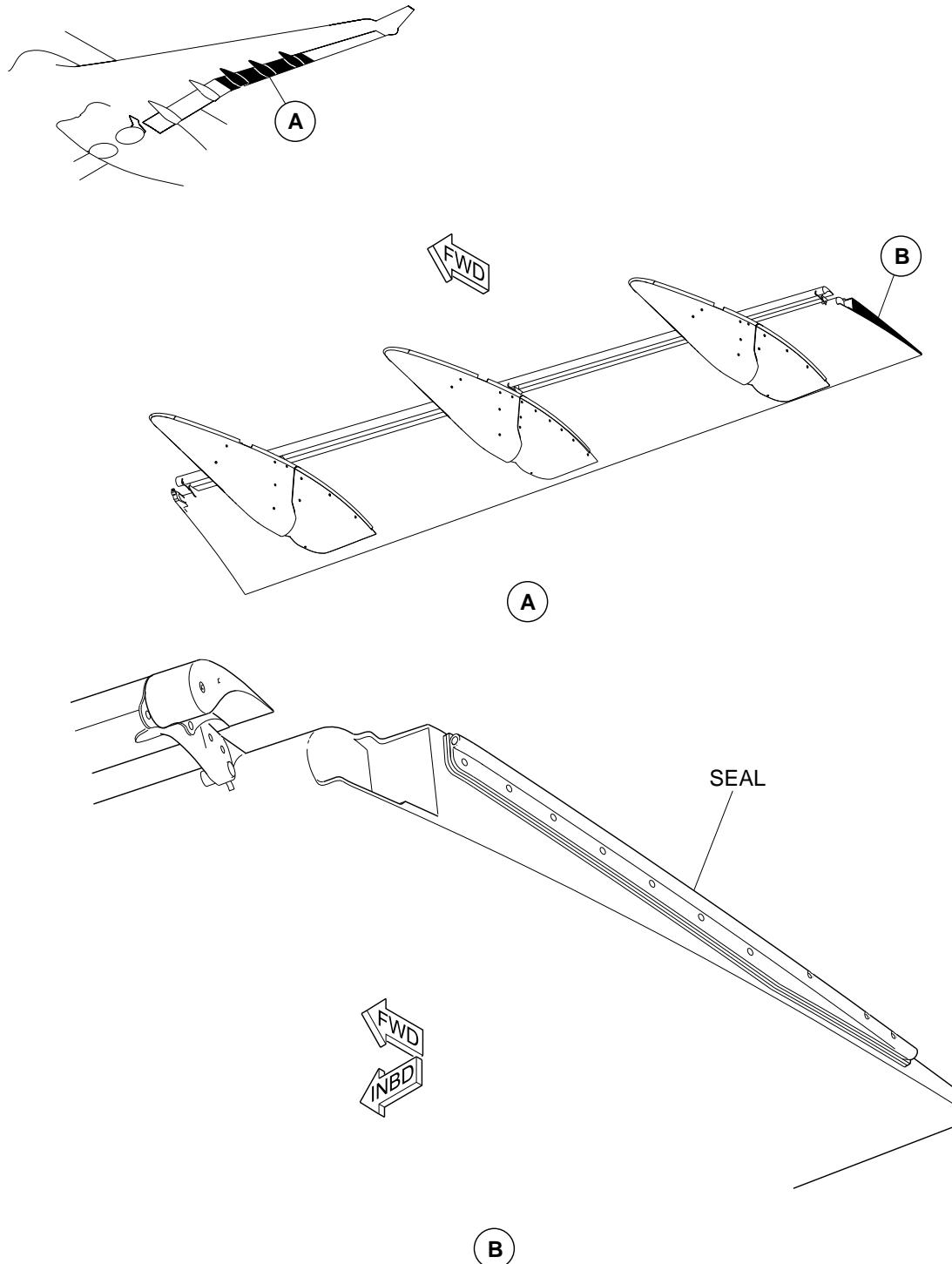
APPENDIX 1
Configuration Deviation List

08-01-27-14

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

27-50: Outboard Flap – Outboard Seal



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-27-15

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

SUB-SYSTEM	ITEM																	
27-50 Seals around flap fairing <ul style="list-style-type: none">• Inboard flaps (WS54.00, WS128.00)• Outboard flaps (WS178.00, WS220.00, WS264.00).	20	<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing provided:</p> <ul style="list-style-type: none">• the performance limited weights are reduced by: <table border="1"><tr><th colspan="2">Take-off Weight</th></tr><tr><td>7 kg/seal</td><td>15 lb/seal</td></tr></table> <table border="1"><tr><th colspan="2">Enroute Climb</th></tr><tr><td>11.5 kg/seal</td><td>25 lb/seal</td></tr></table> <table border="1"><tr><th colspan="2">Landing Weight</th></tr><tr><td>7 kg/seal</td><td>15 lb/seal</td></tr></table> <ul style="list-style-type: none">• the mission fuel requirements are increased by: <table border="1"><tr><th colspan="2">Fuel Consumption</th></tr><tr><td colspan="2">0.10% on fuel used/seal</td></tr></table> <p>CAFM: Add 0.2 to the CDL Index for every seal missing. <2098></p>	Take-off Weight		7 kg/seal	15 lb/seal	Enroute Climb		11.5 kg/seal	25 lb/seal	Landing Weight		7 kg/seal	15 lb/seal	Fuel Consumption		0.10% on fuel used/seal	
Take-off Weight																		
7 kg/seal	15 lb/seal																	
Enroute Climb																		
11.5 kg/seal	25 lb/seal																	
Landing Weight																		
7 kg/seal	15 lb/seal																	
Fuel Consumption																		
0.10% on fuel used/seal																		

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



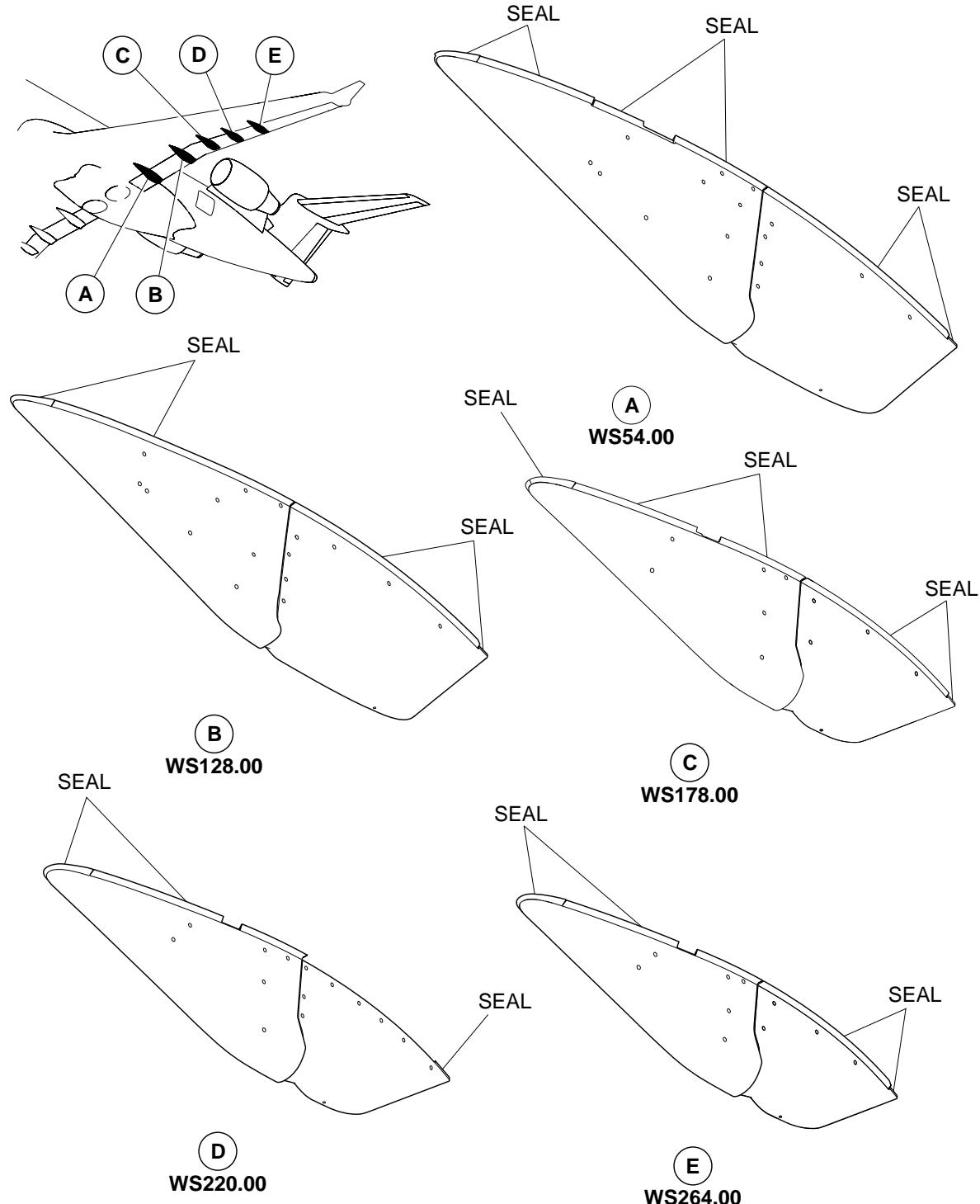
APPENDIX 1
Configuration Deviation List

08-01-27-16

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

27-50: Seals, Flaps Fairing



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-27-17

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

SUB-SYSTEM	ITEM																	
27-54 Bute door seals, outboard flap	8	<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><td colspan="2">Take-off Weight</td></tr><tr><td>5 kg/seal</td><td>10 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Enroute Climb</td></tr><tr><td>11.5 kg/seal</td><td>25 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Landing Weight</td></tr><tr><td>5 kg/seal</td><td>10 lb/seal</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td colspan="2">Fuel Consumption</td></tr><tr><td colspan="2">0.10% on fuel used/seal</td></tr></table> <p>CAFM: Add 0.2 to the CDL Index for every seal missing. <2098></p>	Take-off Weight		5 kg/seal	10 lb/seal	Enroute Climb		11.5 kg/seal	25 lb/seal	Landing Weight		5 kg/seal	10 lb/seal	Fuel Consumption		0.10% on fuel used/seal	
Take-off Weight																		
5 kg/seal	10 lb/seal																	
Enroute Climb																		
11.5 kg/seal	25 lb/seal																	
Landing Weight																		
5 kg/seal	10 lb/seal																	
Fuel Consumption																		
0.10% on fuel used/seal																		

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



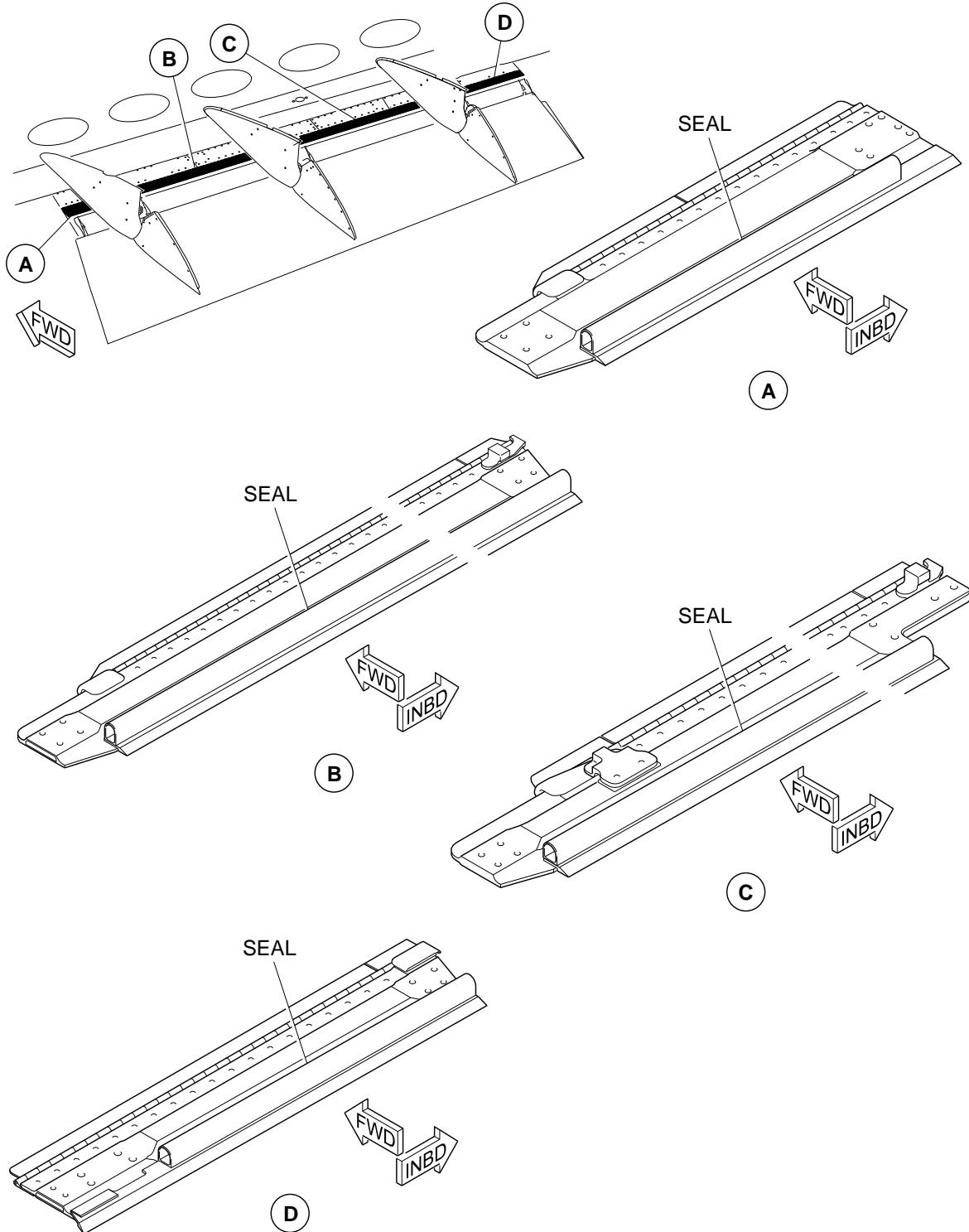
APPENDIX 1
Configuration Deviation List

08-01-27-18

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

27-54: Seals, Bute Doors – Outboard Flap



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-27-19

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

SUB-SYSTEM	ITEM																	
27-54 Skin panel seals, inboard flap	6	<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><td colspan="2">Take-off Weight</td></tr><tr><td>14 kg/seal</td><td>30 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Enroute Climb</td></tr><tr><td>32 kg/seal</td><td>70 lb/seal</td></tr></table> <table border="1"><tr><td colspan="2">Landing Weight</td></tr><tr><td>14 kg/seal</td><td>30 lb/seal</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td colspan="2">Fuel Consumption</td></tr><tr><td colspan="2">0.20% on fuel used/seal</td></tr></table> <p>CAFM: Add 0.5 to the CDL Index for every seal missing. <2098></p>	Take-off Weight		14 kg/seal	30 lb/seal	Enroute Climb		32 kg/seal	70 lb/seal	Landing Weight		14 kg/seal	30 lb/seal	Fuel Consumption		0.20% on fuel used/seal	
Take-off Weight																		
14 kg/seal	30 lb/seal																	
Enroute Climb																		
32 kg/seal	70 lb/seal																	
Landing Weight																		
14 kg/seal	30 lb/seal																	
Fuel Consumption																		
0.20% on fuel used/seal																		

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



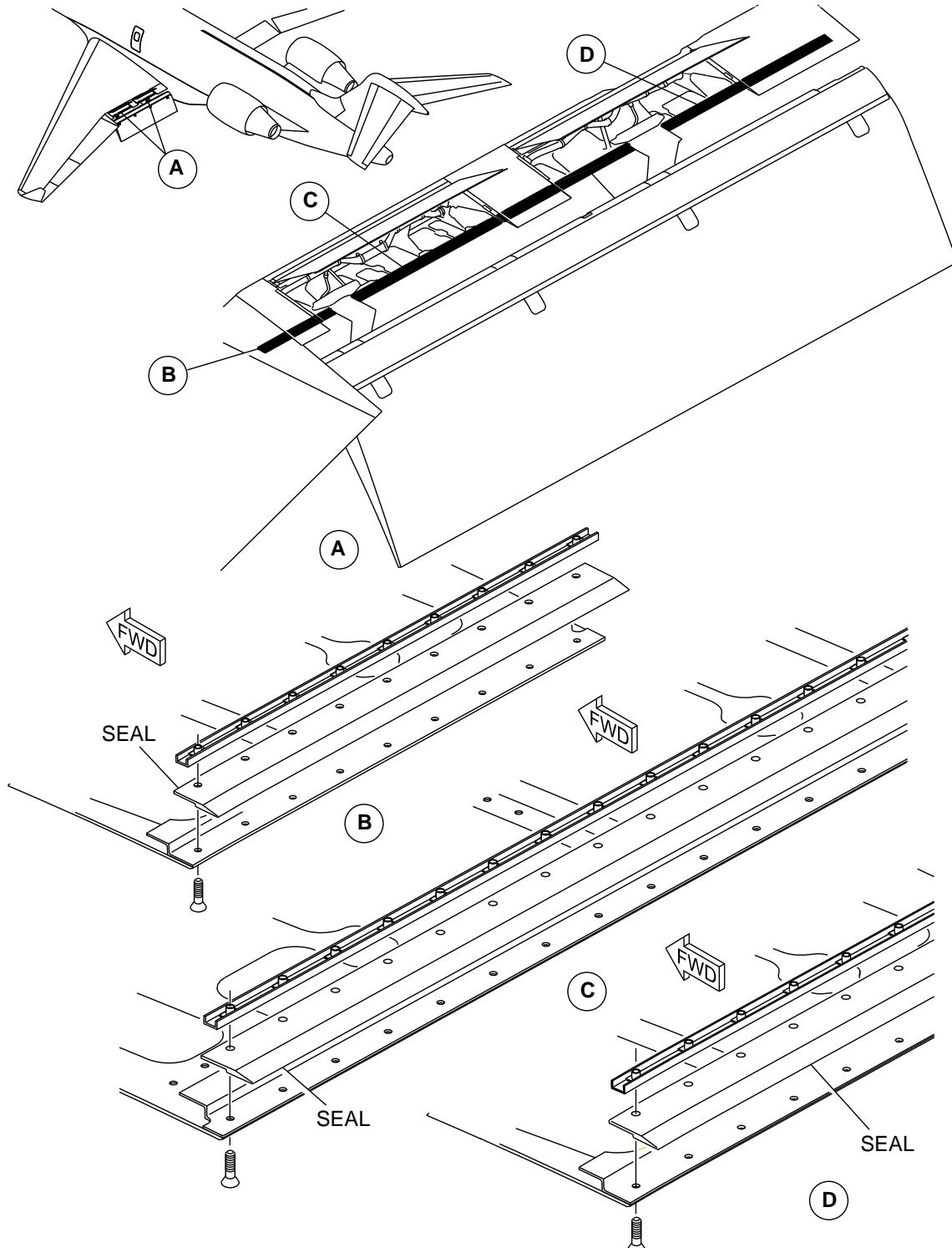
APPENDIX 1
Configuration Deviation List

08-01-27-20

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

27-54: Seals, Skin Panels – Inboard Flap



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-27-21

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

SUB-SYSTEM	ITEM	
27-64 P-seal under the Multi-Function Spoilers (MFS) shroud (1 seal per wing side)		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



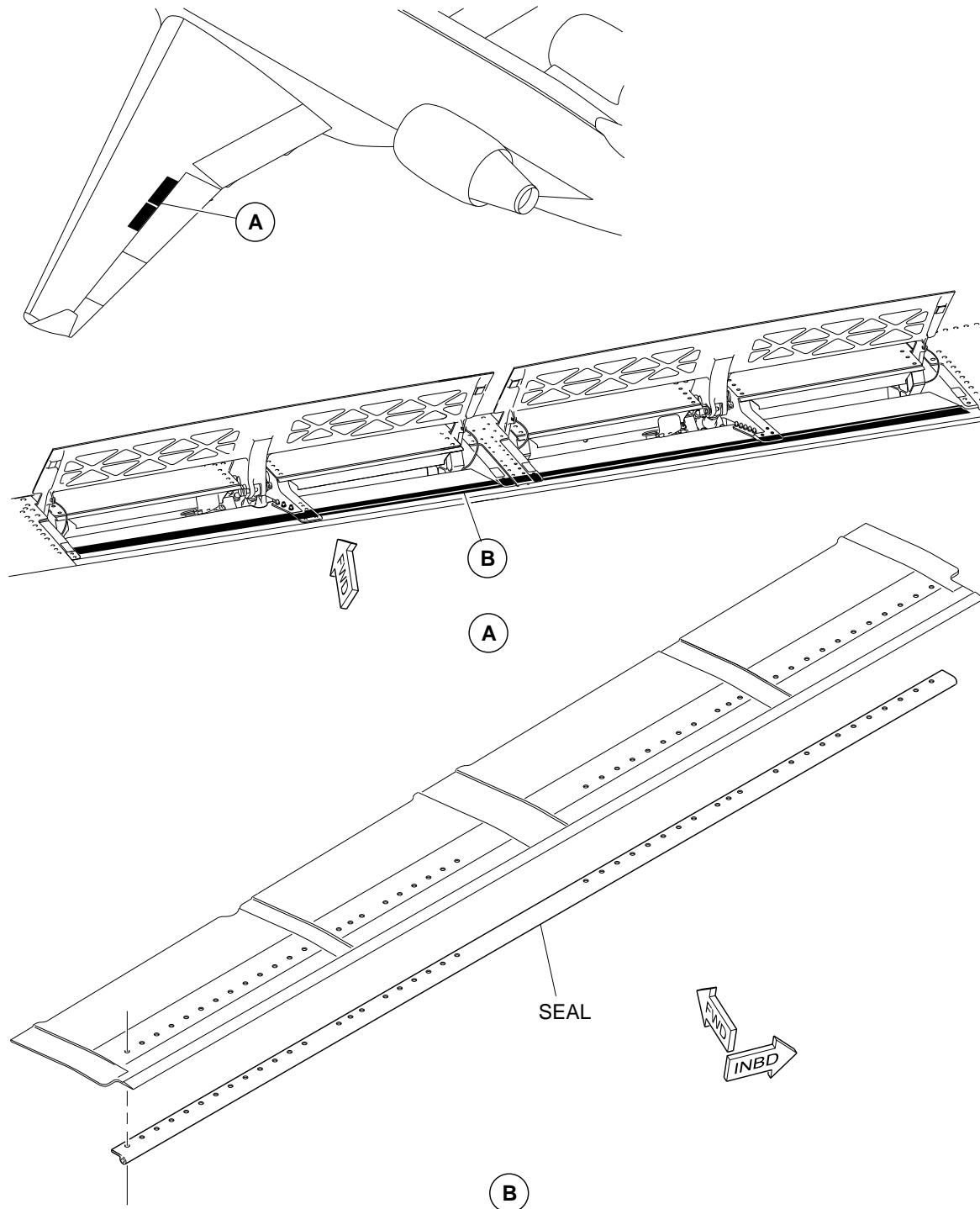
APPENDIX 1
Configuration Deviation List

08-01-27-22

Rev. 28, Jun 04/2021

SYSTEM 27 FLIGHT CONTROLS

27-64: P-Seal, Multi-Function Spoilers (MFS) Shroud



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-28-1

Rev. 28, Jun 04/2021

SYSTEM 28 FUEL

SUB-SYSTEM	ITEM	
28-41 Magnetic level indicators	5	<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



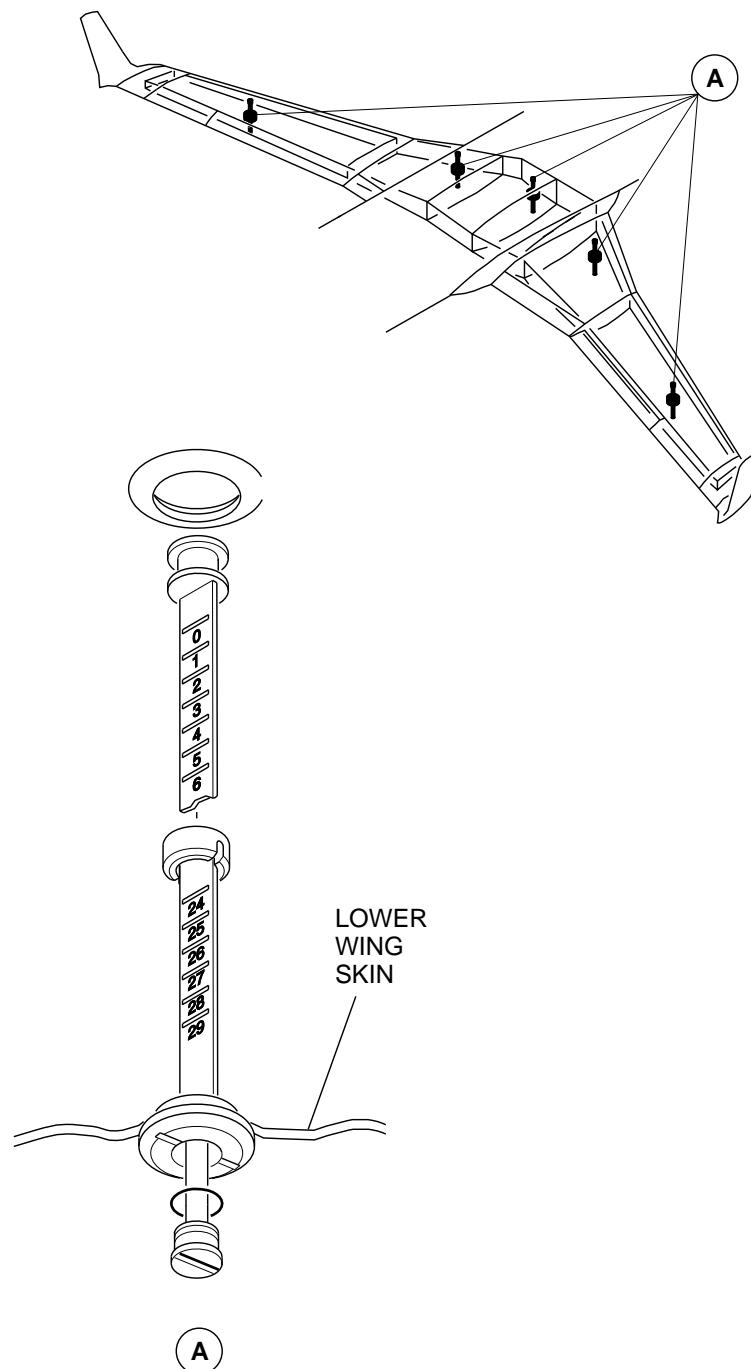
APPENDIX 1
Configuration Deviation List

08-01-28-2

Rev. 28, Jun 04/2021

SYSTEM 28 FUEL

28-41: Magnetic Level Indicators



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-32-1

Rev. 28, Jun 04/2021

SYSTEM 32 LANDING GEAR

SUB-SYSTEM	ITEM																	
32-12 Left or right main landing gear door		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><td colspan="2">Take-off Weight</td></tr><tr><td>245 kg/door</td><td>540 lb/door</td></tr></table> <table border="1"><tr><td colspan="2">Enroute Climb</td></tr><tr><td>551 kg/door</td><td>1215 lb/door</td></tr></table> <table border="1"><tr><td colspan="2">Landing Weight</td></tr><tr><td>245 kg/door</td><td>540 lb/door</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td colspan="2">Fuel Consumption</td></tr><tr><td colspan="2">2.5% on fuel used/door</td></tr></table> <p>CAFM: Add 9.0 to the CDL Index for every door missing. <2098></p> <p>NOTE</p> <p>Reduce the climb ceiling obtained from the Flight Planning and Cruise Control Manual (FPCCM) / Computerized In-Flight Performance (CIFP) must be reduced by 1000 ft/door.</p>	Take-off Weight		245 kg/door	540 lb/door	Enroute Climb		551 kg/door	1215 lb/door	Landing Weight		245 kg/door	540 lb/door	Fuel Consumption		2.5% on fuel used/door	
Take-off Weight																		
245 kg/door	540 lb/door																	
Enroute Climb																		
551 kg/door	1215 lb/door																	
Landing Weight																		
245 kg/door	540 lb/door																	
Fuel Consumption																		
2.5% on fuel used/door																		

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



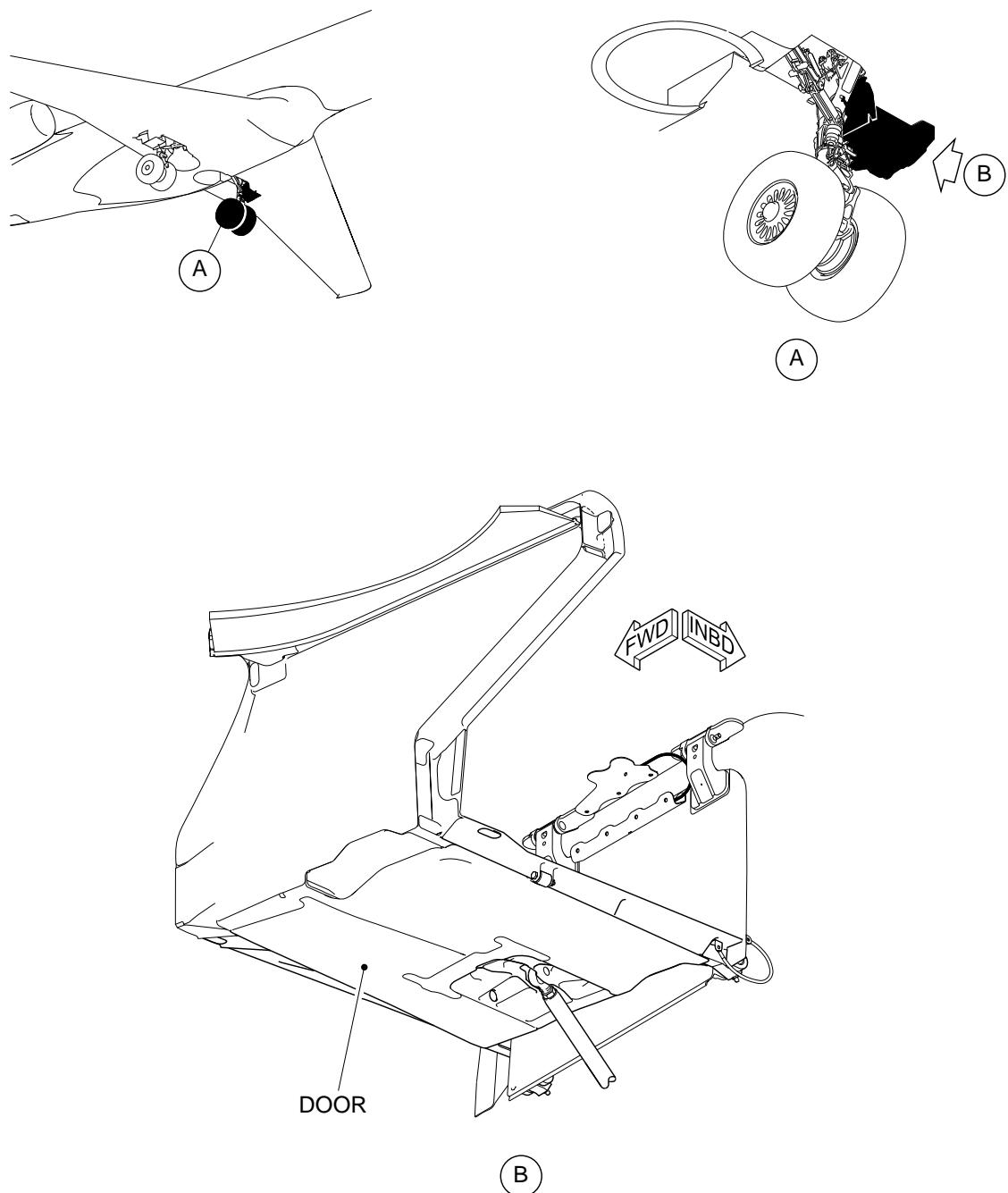
APPENDIX 1
Configuration Deviation List

08-01-32-2

Rev. 28, Jun 04/2021

SYSTEM 32 LANDING GEAR

32-12: Main Landing Gear Doors



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-32-3

Rev. 28, Jun 04/2021

SYSTEM 32 LANDING GEAR

SUB-SYSTEM	ITEM																	
32-12 Main landing gear door brush		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><td colspan="2">Take-off Weight</td></tr><tr><td>32 kg/brush</td><td>70 lb/brush</td></tr></table> <table border="1"><tr><td colspan="2">Enroute Climb</td></tr><tr><td>70.5 kg/brush</td><td>155 lb/brush</td></tr></table> <table border="1"><tr><td colspan="2">Landing Weight</td></tr><tr><td>32 kg/brush</td><td>70 lb/brush</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td colspan="2">Fuel Consumption</td></tr><tr><td colspan="2">0.45% on fuel used/brush</td></tr></table> <p>CAFM: Add 1.1 to the CDL Index for every seal missing. <2098></p>	Take-off Weight		32 kg/brush	70 lb/brush	Enroute Climb		70.5 kg/brush	155 lb/brush	Landing Weight		32 kg/brush	70 lb/brush	Fuel Consumption		0.45% on fuel used/brush	
Take-off Weight																		
32 kg/brush	70 lb/brush																	
Enroute Climb																		
70.5 kg/brush	155 lb/brush																	
Landing Weight																		
32 kg/brush	70 lb/brush																	
Fuel Consumption																		
0.45% on fuel used/brush																		

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



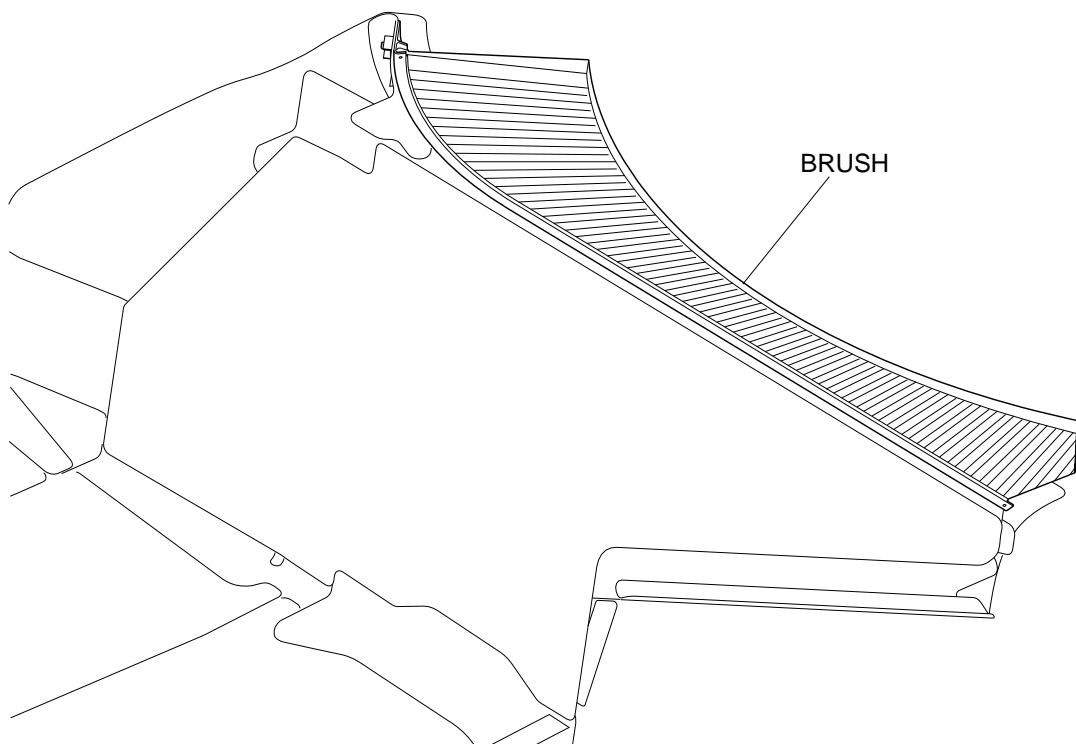
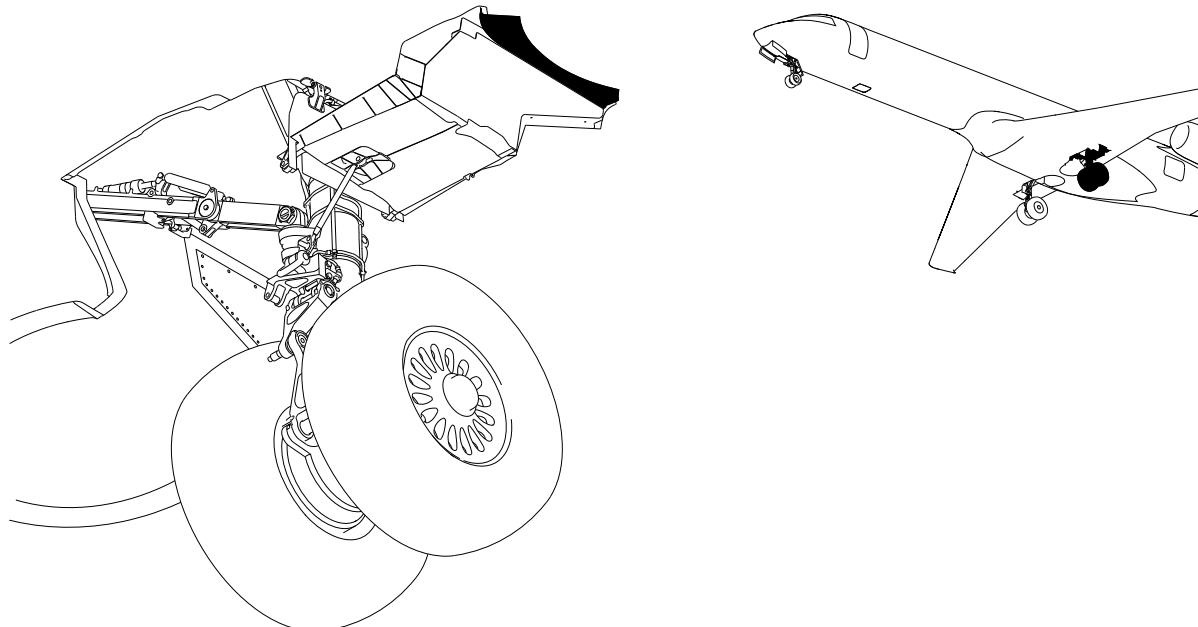
APPENDIX 1
Configuration Deviation List

08-01-32-4

Rev. 28, Jun 04/2021

SYSTEM 32 LANDING GEAR

32-12: Main Landing Gear Door – Door Brush



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-32-5

Rev. 28, Jun 04/2021

SYSTEM 32 LANDING GEAR

SUB-SYSTEM	ITEM	1 Number required for all flight conditions except as provided in column 2	2 Remarks and/or Exceptions
32-12 Main landing gear door blade seal		2	<p>One or both may be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



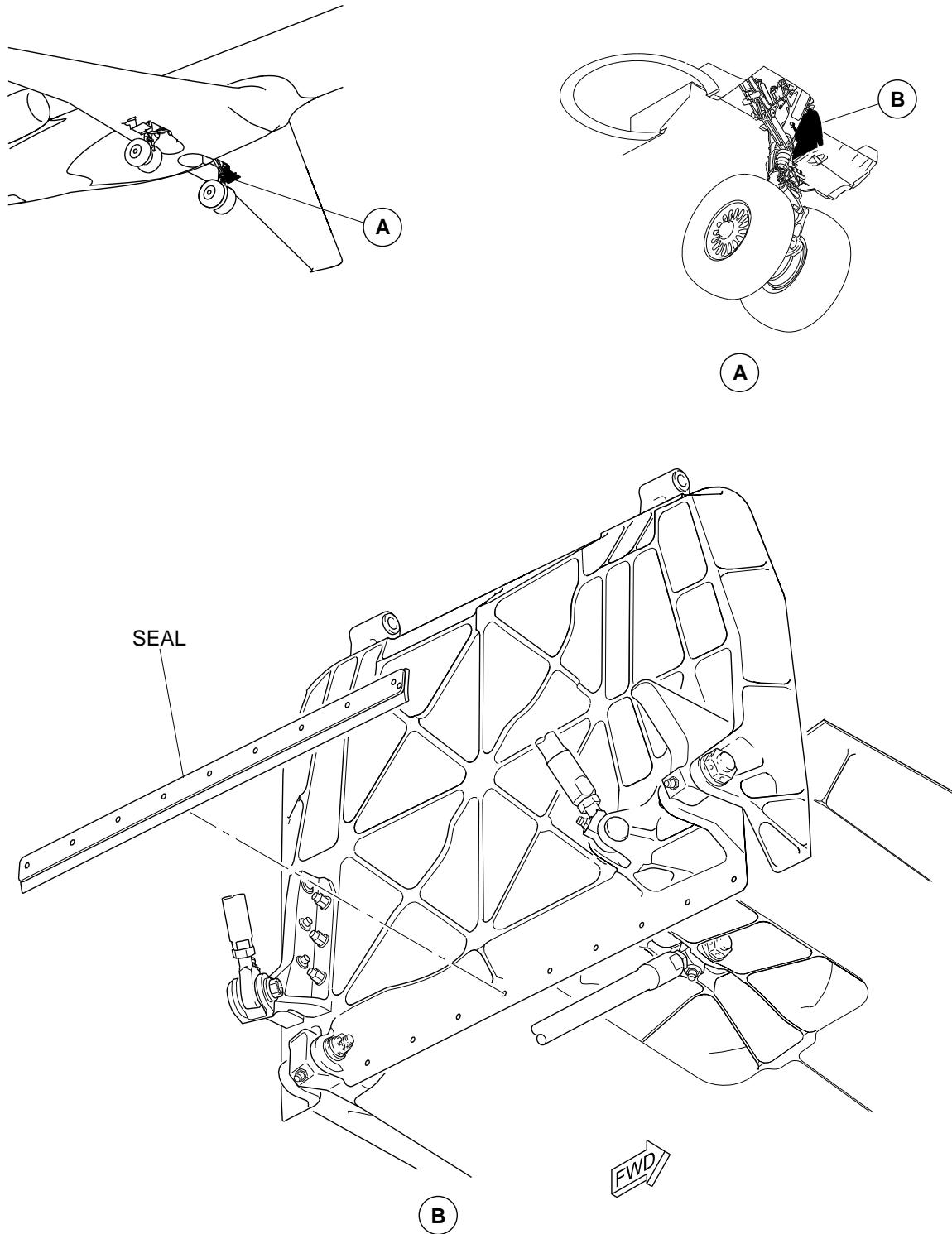
APPENDIX 1
Configuration Deviation List

08-01-32-6

Rev. 28, Jun 04/2021

SYSTEM 32 LANDING GEAR

32-12: Main Landing Gear Door – Door Blade Seal



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-33-1

Rev. 28, Jun 04/2021

SYSTEM 33 LIGHTS

SUB-SYSTEM	ITEM	
33-42 Navigation light covers on vertical stabilizer*		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>One or both may be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



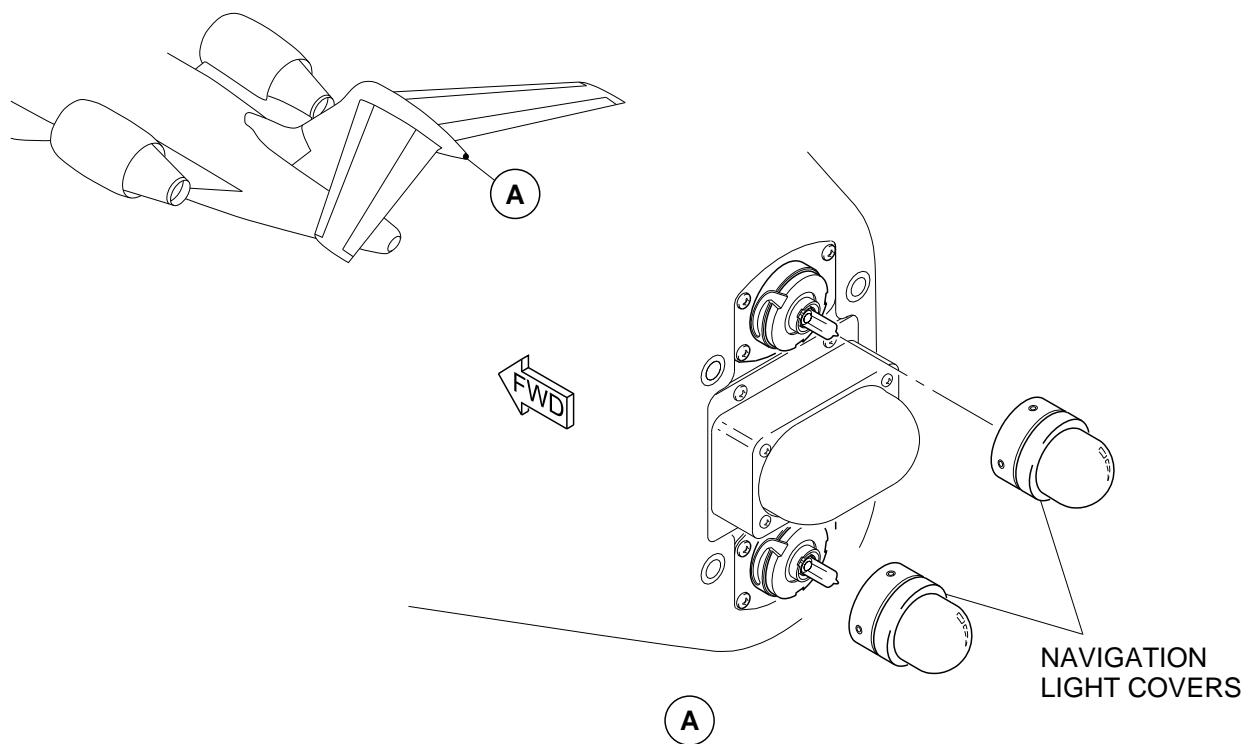
APPENDIX 1
Configuration Deviation List

08-01-33-2

Rev. 28, Jun 04/2021

SYSTEM 33 LIGHTS

33-42: Navigation Light Covers, Vertical Stabilizer



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-33-3

Rev. 28, Jun 04/2021

SYSTEM 33 LIGHTS

SUB-SYSTEM	ITEM	
33-43 Wing inspection light covers*		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>One or both may be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



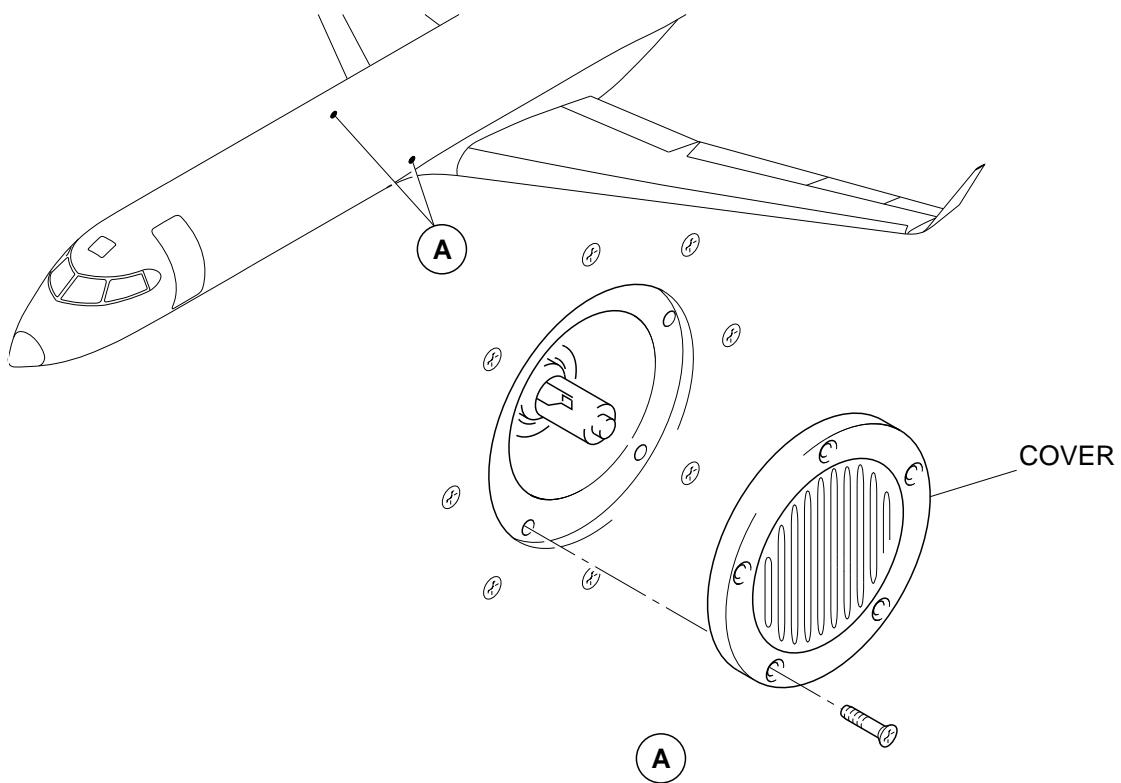
APPENDIX 1
Configuration Deviation List

08-01-33-4

Rev. 28, Jun 04/2021

SYSTEM 33 LIGHTS

33-43: Wing Inspection Light Covers



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-33-5

Rev. 28, Jun 04/2021

SYSTEM 33 LIGHTS

SUB-SYSTEM	ITEM	1 Number required for all flight conditions except as provided in column 2	2 Remarks and/or Exceptions
33-44 Anti-collision light cover on vertical stabilizer*	1		<p>May be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p>

* Only one flight is permitted, to an airport where the necessary repairs or replacements can be made. This flight must not be carried out in known, forecast or anticipated lightning conditions.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



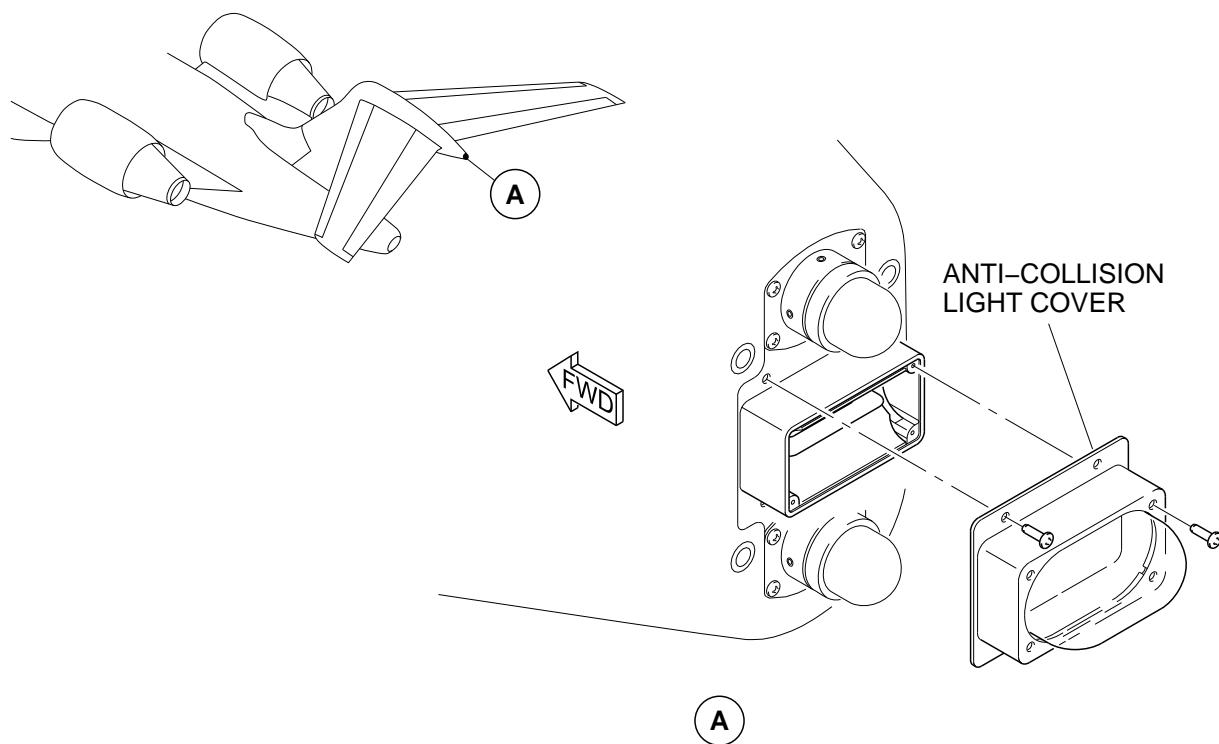
APPENDIX 1
Configuration Deviation List

08-01-33-6

Rev. 28, Jun 04/2021

SYSTEM 33 LIGHTS

33-44: Anti-Collision Light Cover, Vertical Stabilizer



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-33-7

Rev. 28, Jun 04/2021

SYSTEM 33 LIGHTS

SUB-SYSTEM	ITEM																	
33-44 Lower/upper beacon (red) light covers*		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>May be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><td colspan="2">Take-off Weight</td></tr><tr><td>25 kg/cover</td><td>55 lb/cover</td></tr></table> <table border="1"><tr><td colspan="2">Enroute Climb</td></tr><tr><td>54.5 kg/cover</td><td>120 lb/cover</td></tr></table> <table border="1"><tr><td colspan="2">Landing Weight</td></tr><tr><td>25 kg/cover</td><td>55 lb/cover</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td colspan="2">Fuel Consumption</td></tr><tr><td colspan="2">0.35% on fuel used/cover</td></tr></table> <p>CAFM: Add 0.9 to the CDL Index for every cover missing. <2098></p>	Take-off Weight		25 kg/cover	55 lb/cover	Enroute Climb		54.5 kg/cover	120 lb/cover	Landing Weight		25 kg/cover	55 lb/cover	Fuel Consumption		0.35% on fuel used/cover	
Take-off Weight																		
25 kg/cover	55 lb/cover																	
Enroute Climb																		
54.5 kg/cover	120 lb/cover																	
Landing Weight																		
25 kg/cover	55 lb/cover																	
Fuel Consumption																		
0.35% on fuel used/cover																		

* Only one flight is permitted, to an airport where the necessary repairs or replacements can be made. This flight must not be carried out in known, forecast or anticipated lightning conditions.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



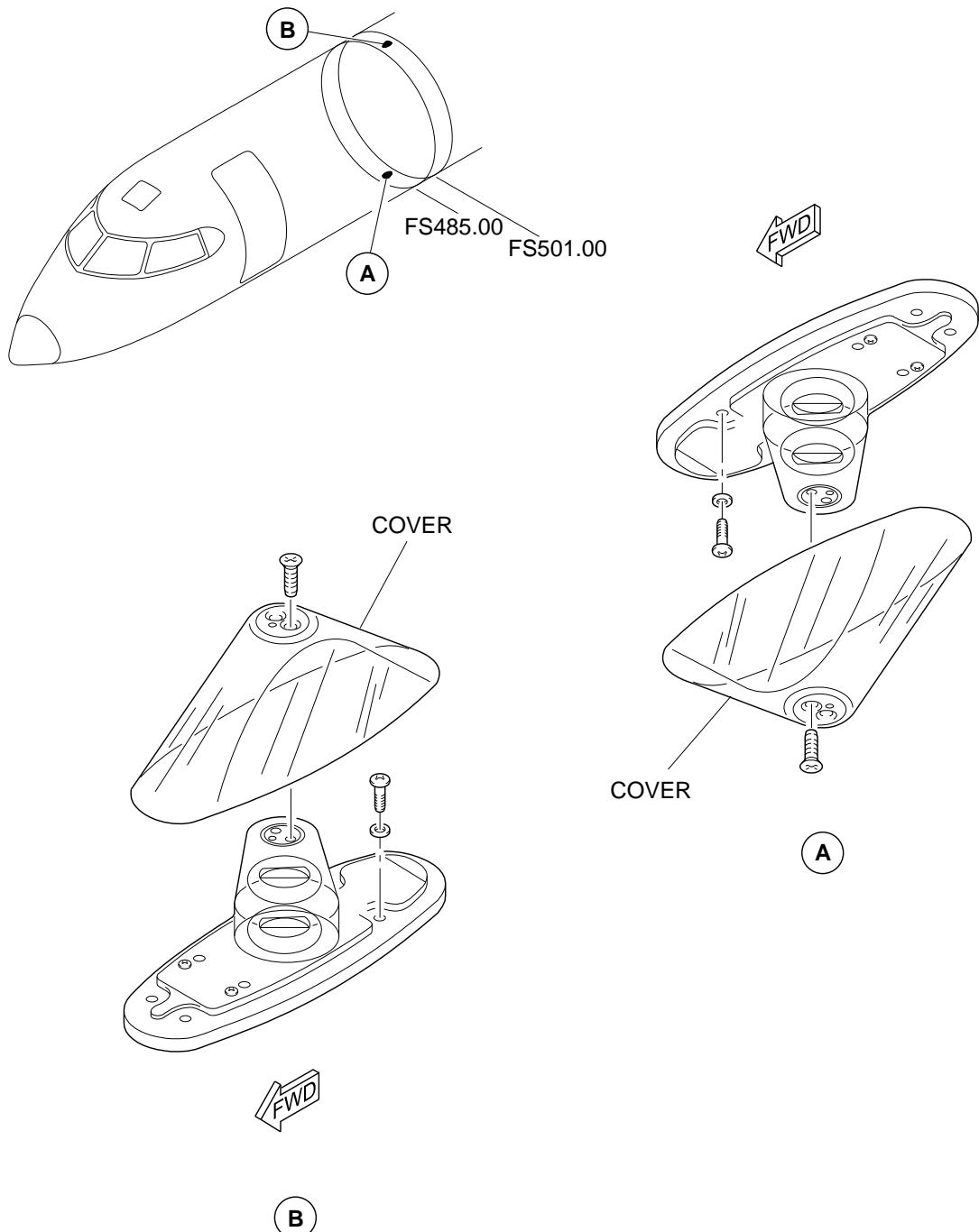
APPENDIX 1
Configuration Deviation List

08-01-33-8

Rev. 28, Jun 04/2021

SYSTEM 33 LIGHTS

33-44: Beacon Light (Red) Covers, Lower/Upper



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-33-9

Rev. 28, Jun 04/2021

SYSTEM 33 LIGHTS

SUB-SYSTEM	ITEM	
33-46 Logo light covers*		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>2 One or both may be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



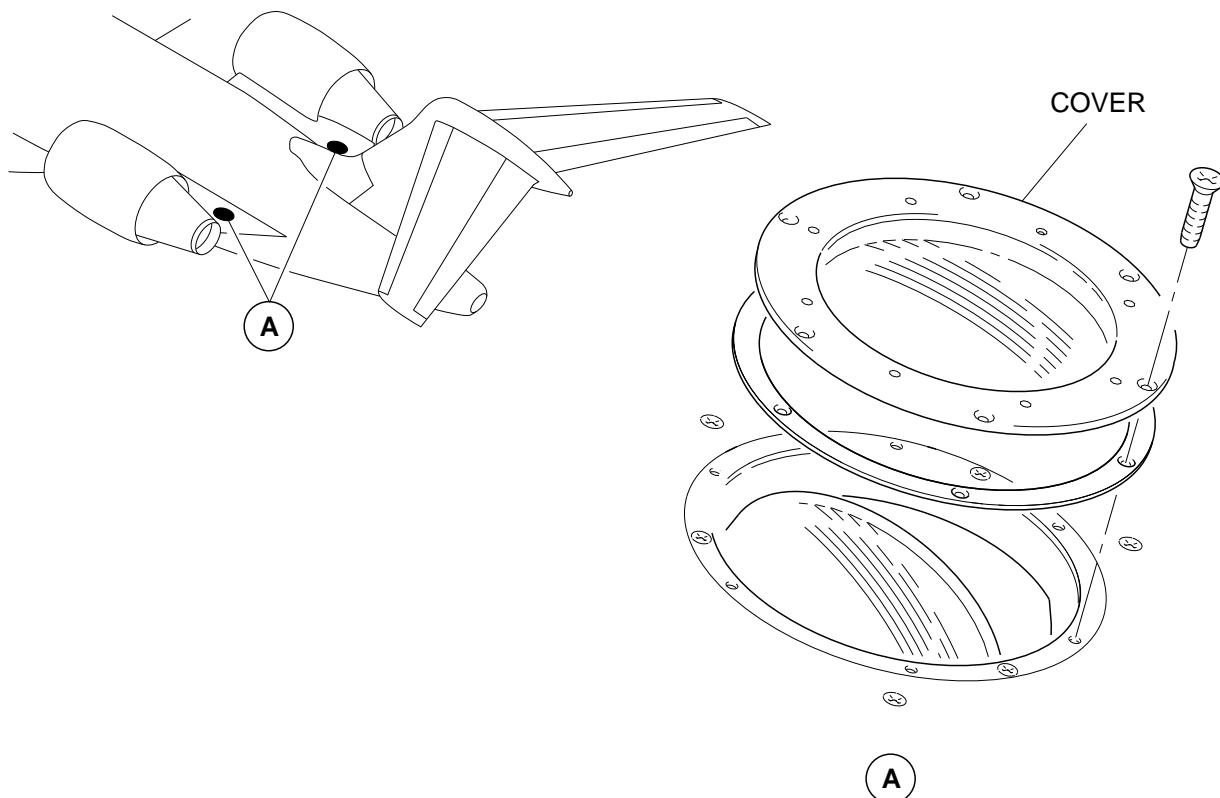
APPENDIX 1
Configuration Deviation List

08-01-33-10

Rev. 28, Jun 04/2021

SYSTEM 33 LIGHTS

33-46: Logo Light Covers



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-33-11

Rev. 28, Jun 04/2021

SYSTEM 33 LIGHTS

SUB-SYSTEM	ITEM	
33-50 Exterior emergency light covers*	8	<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p> <p>NOTE</p> <p>The minimum number of lights required by the operating rules MUST be operative.</p>

* Only one flight is permitted, to an airport where the necessary repairs or replacements can be made. This flight must not be carried out in known, forecast or anticipated lightning conditions.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



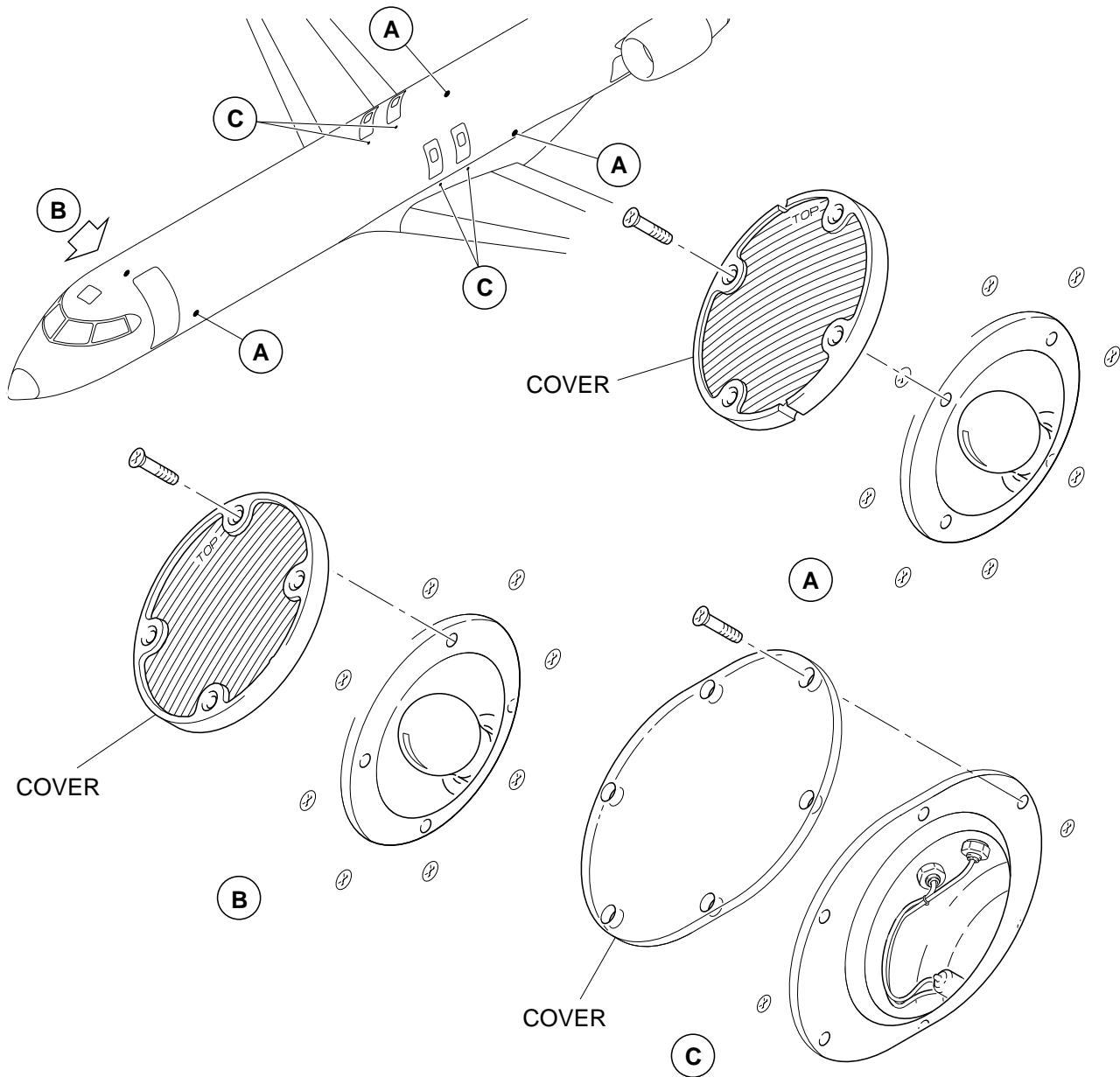
APPENDIX 1
Configuration Deviation List

08-01-33-12

Rev. 28, Jun 04/2021

SYSTEM 33 LIGHTS

33-50: Exterior Emergency Light Covers



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-51-1

Rev. 28, Jun 04/2021

SYSTEM 51 STRUCTURES

SUB-SYSTEM	ITEM	1 Number required for all flight conditions except as provided in column 2																	
51-23 Aerodynamic sealant	-	2 Remarks and/or Exceptions Aerodynamic sealant may be missing on external surfaces provided: <ul style="list-style-type: none">the performance limited weights are reduced by:<table border="1"><thead><tr><th colspan="2">Take-off Weight</th></tr></thead><tbody><tr><td>14 kg per every 3 metres or less missing</td><td>30 lb per every 10 feet or less missing</td></tr></tbody></table><table border="1"><thead><tr><th colspan="2">Enroute Climb</th></tr></thead><tbody><tr><td>27.5 kg per every 3 metres or less missing</td><td>60 lb per every 10 feet or less missing</td></tr></tbody></table><table border="1"><thead><tr><th colspan="2">Landing Weight</th></tr></thead><tbody><tr><td>14 kg per every 3 metres or less missing</td><td>30 lb per every 10 feet or less missing</td></tr></tbody></table><ul style="list-style-type: none">the mission fuel requirements are increased by:<table border="1"><thead><tr><th colspan="2">Fuel Consumption</th></tr></thead><tbody><tr><td colspan="2">0.20% on fuel used per every 3 metres (10 feet) or less missing</td></tr></tbody></table>		Take-off Weight		14 kg per every 3 metres or less missing	30 lb per every 10 feet or less missing	Enroute Climb		27.5 kg per every 3 metres or less missing	60 lb per every 10 feet or less missing	Landing Weight		14 kg per every 3 metres or less missing	30 lb per every 10 feet or less missing	Fuel Consumption		0.20% on fuel used per every 3 metres (10 feet) or less missing	
Take-off Weight																			
14 kg per every 3 metres or less missing	30 lb per every 10 feet or less missing																		
Enroute Climb																			
27.5 kg per every 3 metres or less missing	60 lb per every 10 feet or less missing																		
Landing Weight																			
14 kg per every 3 metres or less missing	30 lb per every 10 feet or less missing																		
Fuel Consumption																			
0.20% on fuel used per every 3 metres (10 feet) or less missing																			

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



**APPENDIX 1
Configuration Deviation List**

08-01-51-2

Rev. 28, Jun 04/2021

SYSTEM 51 STRUCTURES

SUB-SYSTEM	ITEM	1 Number required for all flight conditions except as provided in column 2	2 Remarks and/or Exceptions
51-23 Aerodynamic sealant			<p>CAFM: Add 0.4 to the CDL Index for every 10 feet or less missing. <2098></p> <p>NOTE</p> <p>Aerodynamic sealant must not be missing on the fuselage in the RVSM zones defined as the side surfaces of the forward fuselage between FS185.50 and FS220.00 and between WL76.00 and WL100.00.</p>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-51-3

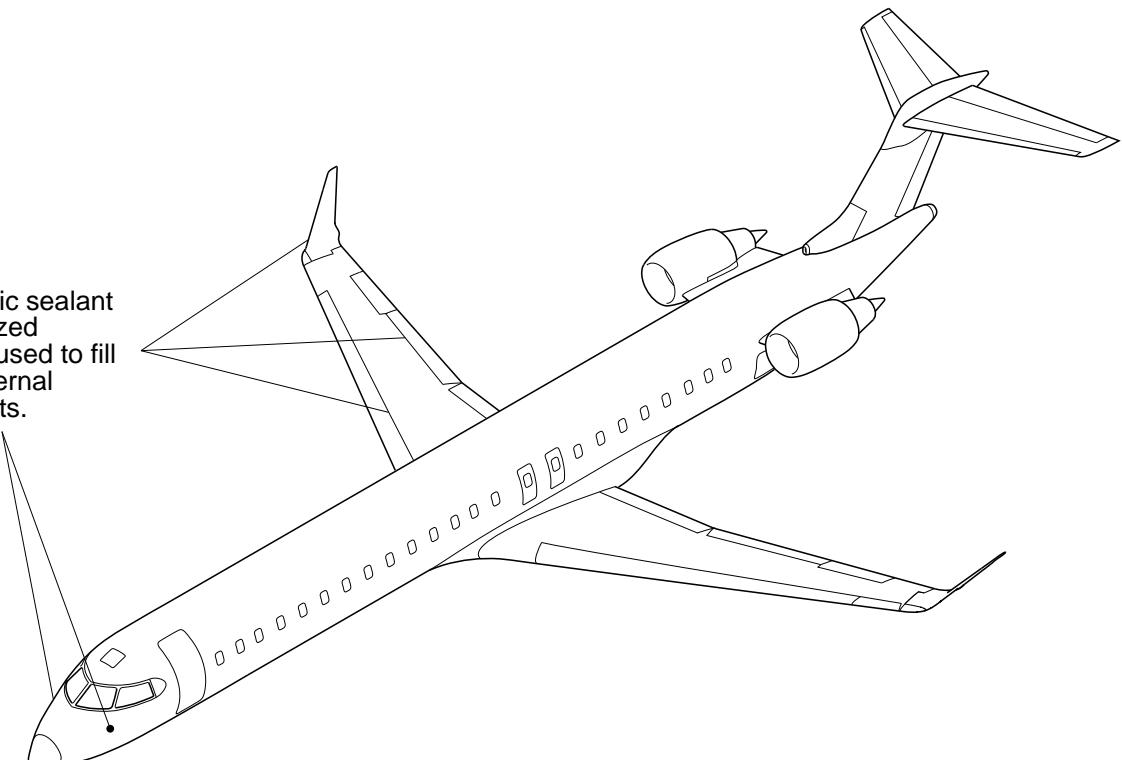
Rev. 28, Jun 04/2021

SYSTEM 51 STRUCTURES

51-23: Aerodynamic Sealant

AERODYNAMIC SEALANT MUST BE INTACT AT ALL JOINTS
ON THE FUSELAGE IN THE RVSM ZONES.

Aerodynamic sealant
is a rubberized
compound used to fill
gaps at external
surface joints.



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



**APPENDIX 1
Configuration Deviation List**

08-01-51-4

Rev. 28, Jun 04/2021

SYSTEM 51 STRUCTURES

SUB-SYSTEM	ITEM	1 Number required for all flight conditions except as provided in column 2	2 Remarks and/or Exceptions
51-23 Aerodynamic sealant – Air intake	-	<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>A maximum cumulative of 61.0 centimetres (24.0 inches) (30.5 centimetres (12.0 inches) for the longitudinal joint as shown in page 08-01-51-4 and 30.5 centimetres (12 inches) as shown in page 08-01-51-5) of the engine inlet internal aerodynamic sealant may be missing provided that the total length of missing sealant at each joint is within the limits stipulated in page 08-01-51-4 and 08-01-51-5 with no impact on performance. These limits are per engine, for a total of up to 122.0 centimetres (48 inches) per aircraft, respecting the above restrictions for each engine.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p>	

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



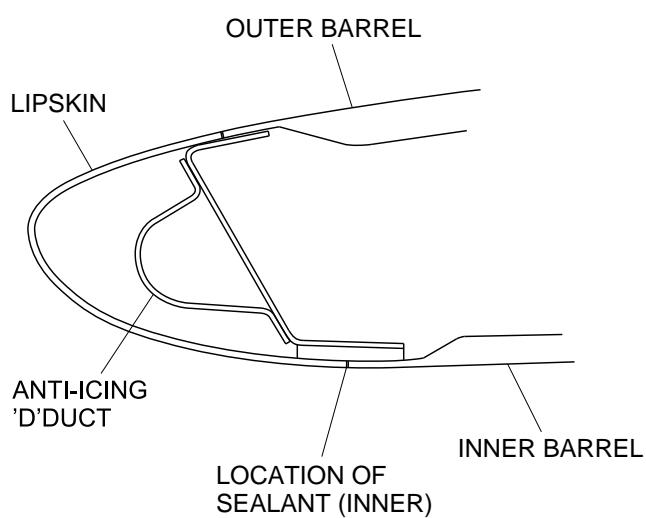
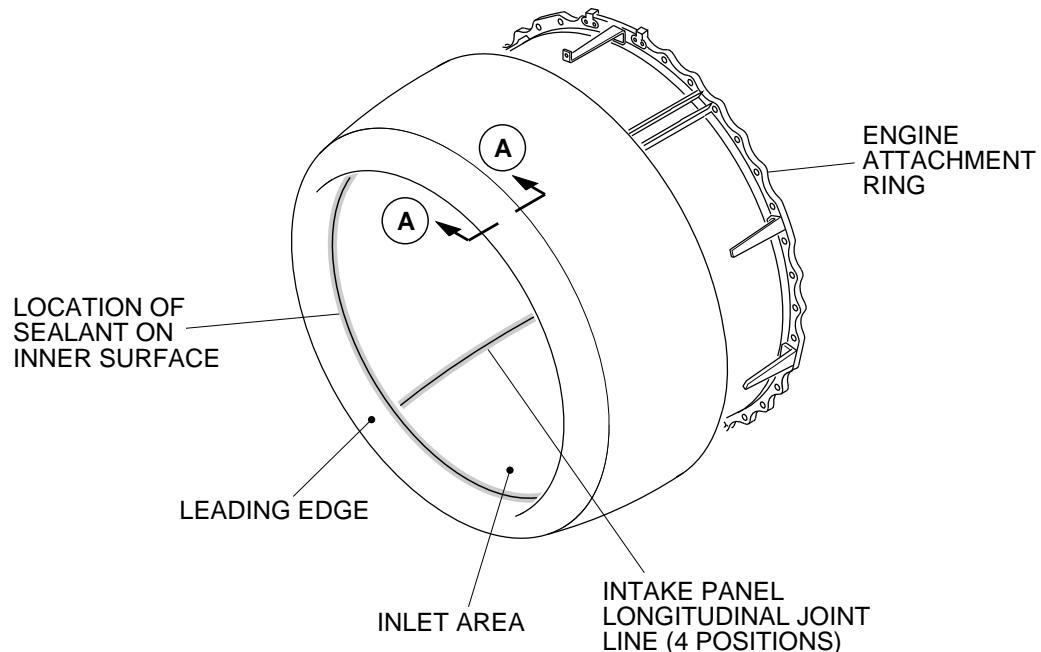
APPENDIX 1
Configuration Deviation List

08-01-51-5

Rev. 28, Jun 04/2021

SYSTEM 51 STRUCTURES

51-23: Aerodynamic Sealant – Air Intake



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

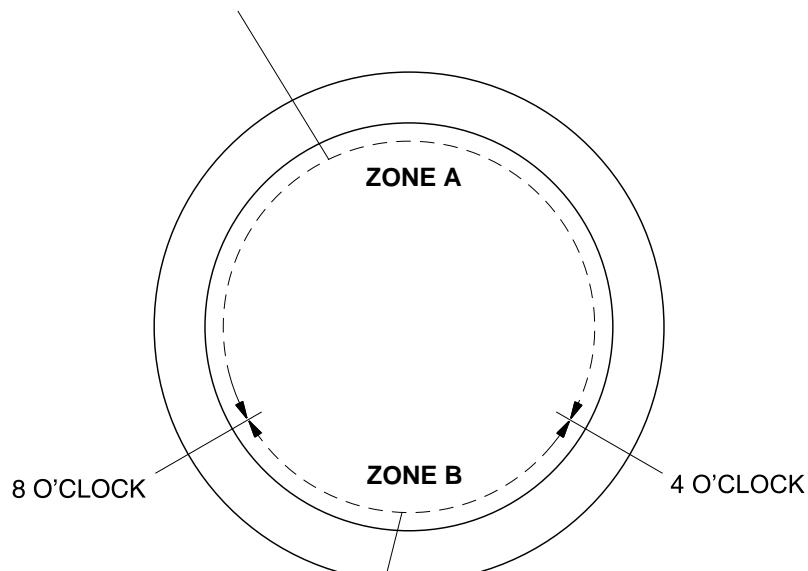
08-01-51-6

Rev. 28, Jun 04/2021

SYSTEM 51 STRUCTURES

51-23: Aerodynamic Sealant – Intake Permitted Zones

203.2 mm (8.0 in.)
8.0 in. (203.2 mm) MAXIMUM
CUMULATIVE LENGTH OF
MISSING SEALANT PERMITTED IN ZONE A



101.6 mm (4.0 in.)
4.0 in. (101.6 mm) MAXIMUM
CUMULATIVE LENGTH OF
MISSING SEALANT PERMITTED IN ZONE B

DOT Approved

Airplane Flight Manual
CSP C-012-219



APPENDIX 1
Configuration Deviation List

08-01-51-7

Rev. 28, Jun 04/2021

SYSTEM 51 STRUCTURES

SUB-SYSTEM	ITEM	1 Number required for all flight conditions except as provided in column 2	2 Remarks and/or Exceptions
51-23 Aerodynamic sealant – Engine nozzles	-		A maximum cumulative of 30.5 centimetres (12.0 inches) (per engine, for a total of 61.0 centimetres 24.0 inches per aircraft) of the engine core cowl aerodynamic sealant may be missing with no impact on performance. CAFIM: Use a CDL Index of 0.0 for this item. <2098>
51-23 Aerodynamic sealant – Pitot static probe	-		When sealant is missing, the aircraft is limited to non-RVSM airspace.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



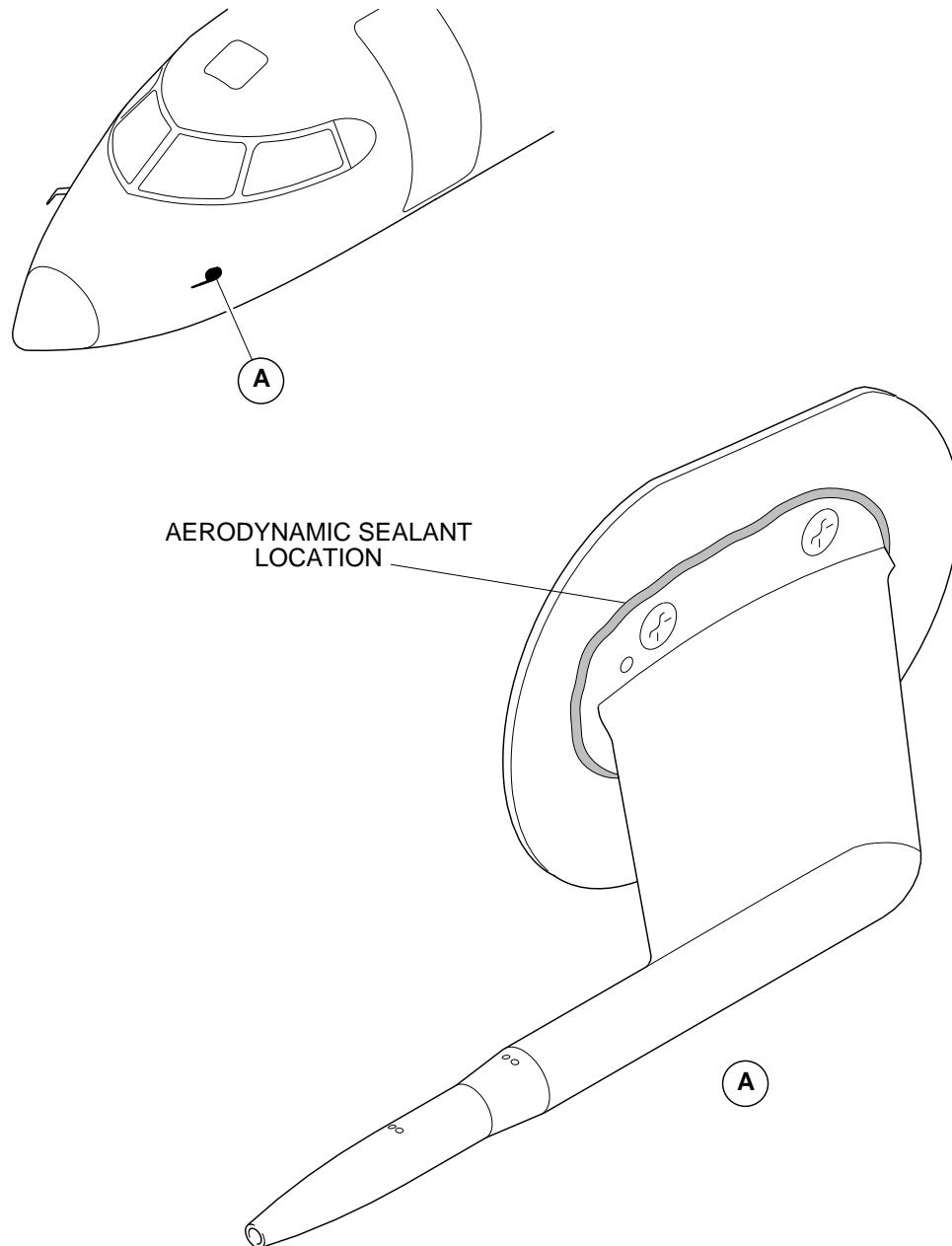
APPENDIX 1
Configuration Deviation List

08-01-51-8

Rev. 28, Jun 04/2021

SYSTEM 51 STRUCTURES

51-23: Aerodynamic Sealant – Pitot Static Probe



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-52-1

Rev. 28, Jun 04/2021

SYSTEM 52 DOORS

SUB-SYSTEM	ITEM	1 Number required for all flight conditions except as provided in column 2	2 Remarks and/or Exceptions																
52-45 Low pressure ground air connection access door (182BR)	1		<p>May be missing with no performance penalty. CAFIM: Use a CDL Index of 0.0 for this item. <2098></p>																
52-45 Aft lavatory service door (196ER)	1		<p>May be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><th colspan="2">Take-off Weight</th></tr><tr><td>29.5 kg/door</td><td>65 lb/door</td></tr></table> <table border="1"><tr><th colspan="2">Enroute Climb</th></tr><tr><td>66 kg/door</td><td>145 lb/door</td></tr></table> <table border="1"><tr><th colspan="2">Landing Weight</th></tr><tr><td>29.5 kg/door</td><td>65 lb/door</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><th colspan="2">Fuel Consumption</th></tr><tr><td colspan="2">0.40% on fuel used/door</td></tr></table> <p>CAFIM: Add 1.1 to the CDL Index for every door missing. <2098></p>	Take-off Weight		29.5 kg/door	65 lb/door	Enroute Climb		66 kg/door	145 lb/door	Landing Weight		29.5 kg/door	65 lb/door	Fuel Consumption		0.40% on fuel used/door	
Take-off Weight																			
29.5 kg/door	65 lb/door																		
Enroute Climb																			
66 kg/door	145 lb/door																		
Landing Weight																			
29.5 kg/door	65 lb/door																		
Fuel Consumption																			
0.40% on fuel used/door																			
52-45 Forward waste water service door (142BR)	1		<p>May be missing with no performance penalty. CAFIM: Use a CDL Index of 0.0 for this item. <2098></p>																

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



**APPENDIX 1
Configuration Deviation List**

08-01-52-2

Rev. 28, Jun 04/2021

SYSTEM 52 DOORS

SUB-SYSTEM	ITEM	1 Number required for all flight conditions except as provided in column 2	2 Remarks and/or Exceptions
52-45 Forward potable water service door (142AR)	1		May be missing with no performance penalty. CAFM: Use a CDL Index of 0.0 for this item. <2098>
52-45 AC ground power connection door (122DR)*	1		May be missing with no performance penalty. CAFM: Use a CDL Index of 0.0 for this item. <2098>

* Only one flight is permitted, to an airport where the necessary repairs or replacements can be made. This flight must not be carried out in known, forecast or anticipated lightning conditions.

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



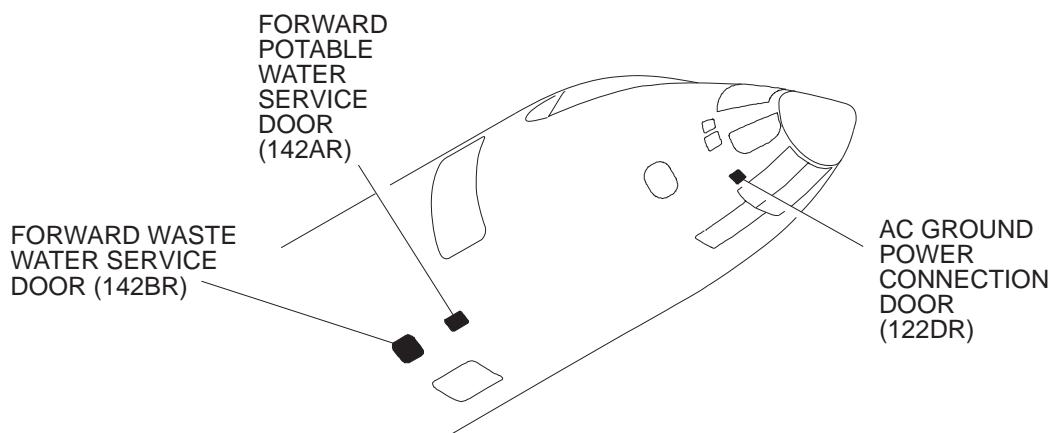
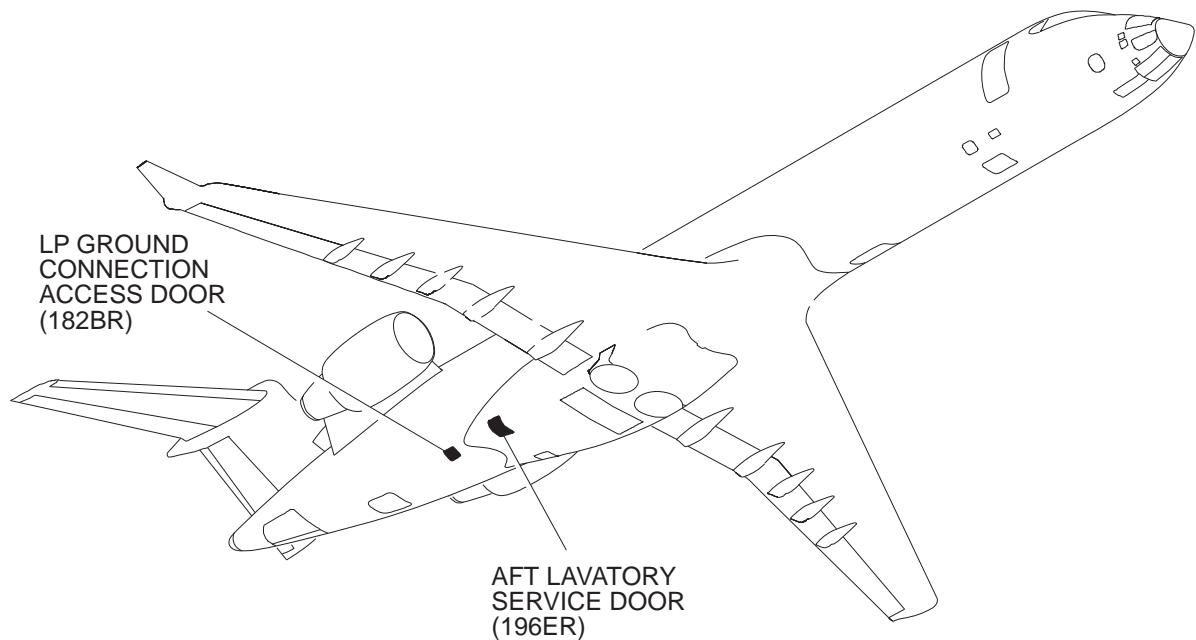
APPENDIX 1
Configuration Deviation List

08-01-52-3

Rev. 28, Jun 04/2021

SYSTEM 52 DOORS

52-45: Doors



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-52-4

Rev. 29, Oct 15/2021

SYSTEM 52 DOORS

SUB-SYSTEM	ITEM	1 Number required for all flight conditions except as provided in column 2																
52-45 Aft potable water service door (195EL)	1	<p>2 Remarks and/or Exceptions</p> <p>May be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><th colspan="2">Take-off Weight</th></tr><tr><td>29.5 kg/door</td><td>65 lb/door</td></tr></table> <table border="1"><tr><th colspan="2">Enroute Climb</th></tr><tr><td>66 kg/door</td><td>145 lb/door</td></tr></table> <table border="1"><tr><th colspan="2">Landing Weight</th></tr><tr><td>29.5 kg/door</td><td>65 lb/door</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><th colspan="2">Fuel Consumption</th></tr><tr><td colspan="2">0.40% on fuel used/door</td></tr></table> <p>CAFM: Add 1.1 to the CDL Index for every door missing. <2098></p>	Take-off Weight		29.5 kg/door	65 lb/door	Enroute Climb		66 kg/door	145 lb/door	Landing Weight		29.5 kg/door	65 lb/door	Fuel Consumption		0.40% on fuel used/door	
Take-off Weight																		
29.5 kg/door	65 lb/door																	
Enroute Climb																		
66 kg/door	145 lb/door																	
Landing Weight																		
29.5 kg/door	65 lb/door																	
Fuel Consumption																		
0.40% on fuel used/door																		
52-45 High pressure ground air connection access door (311AL)	1	<p>May be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p>																
52-45 Deflector around forward and center cargo doors	1	<p>May be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p>																

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



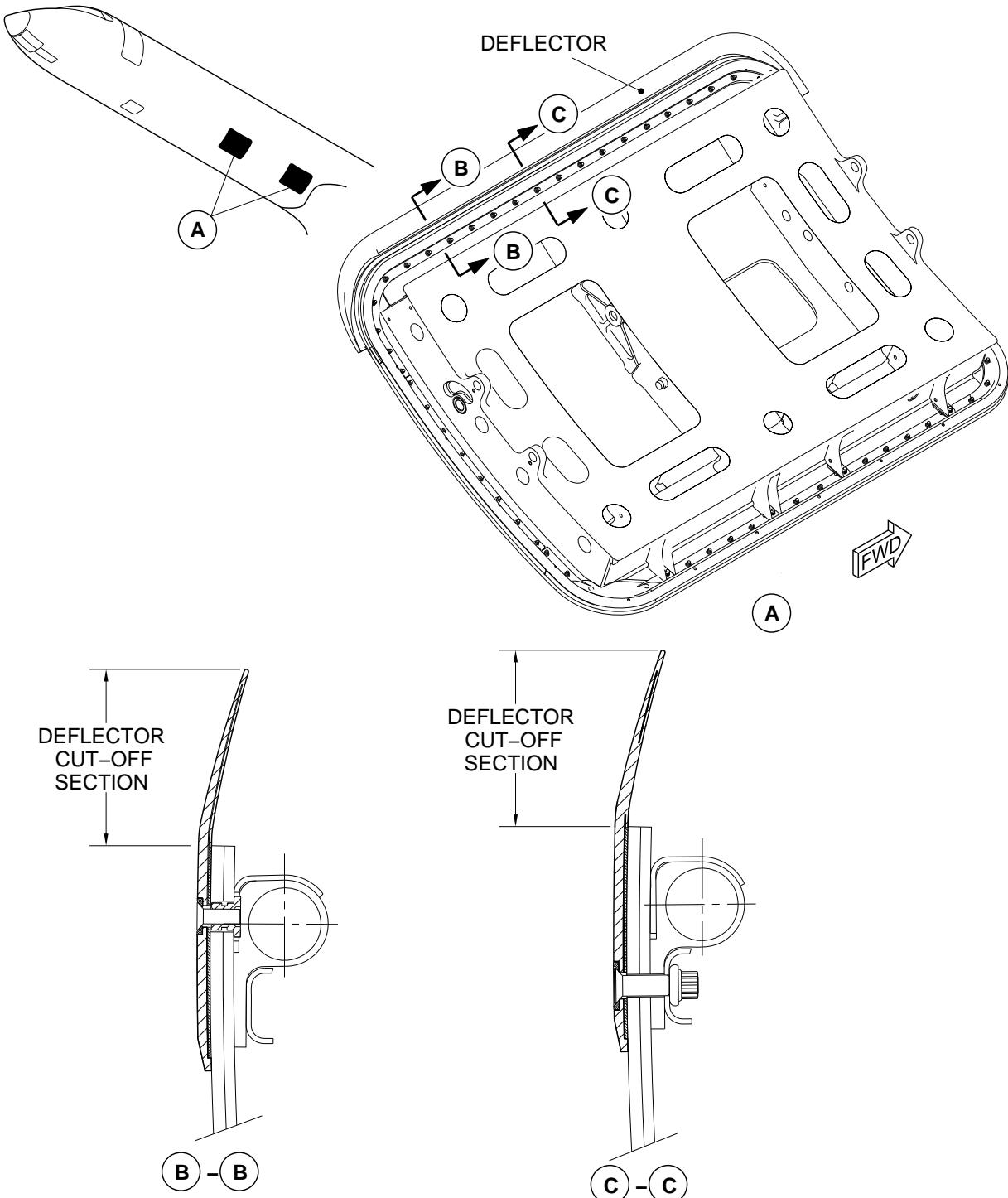
APPENDIX 1
Configuration Deviation List

08-01-52-5

Rev. 28, Jun 04/2021

SYSTEM 52 DOORS

52-45: Deflector around Forward Cargo Doors



TYPICAL DOOR AND DEFLECTOR CROSS SECTIONS

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-52-6

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219



APPENDIX 1
Configuration Deviation List

08-01-53-1

Rev. 28, Jun 04/2021

SYSTEM 53 FUSELAGE

SUB-SYSTEM	ITEM	1 Number required for all flight conditions except as provided in column 2	2 Remarks and/or Exceptions
53-12 Forward jacking pad nylon plug	1		May be missing with no performance penalty. CAFIM: Use a CDL Index of 0.0 for this Item. <2098>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



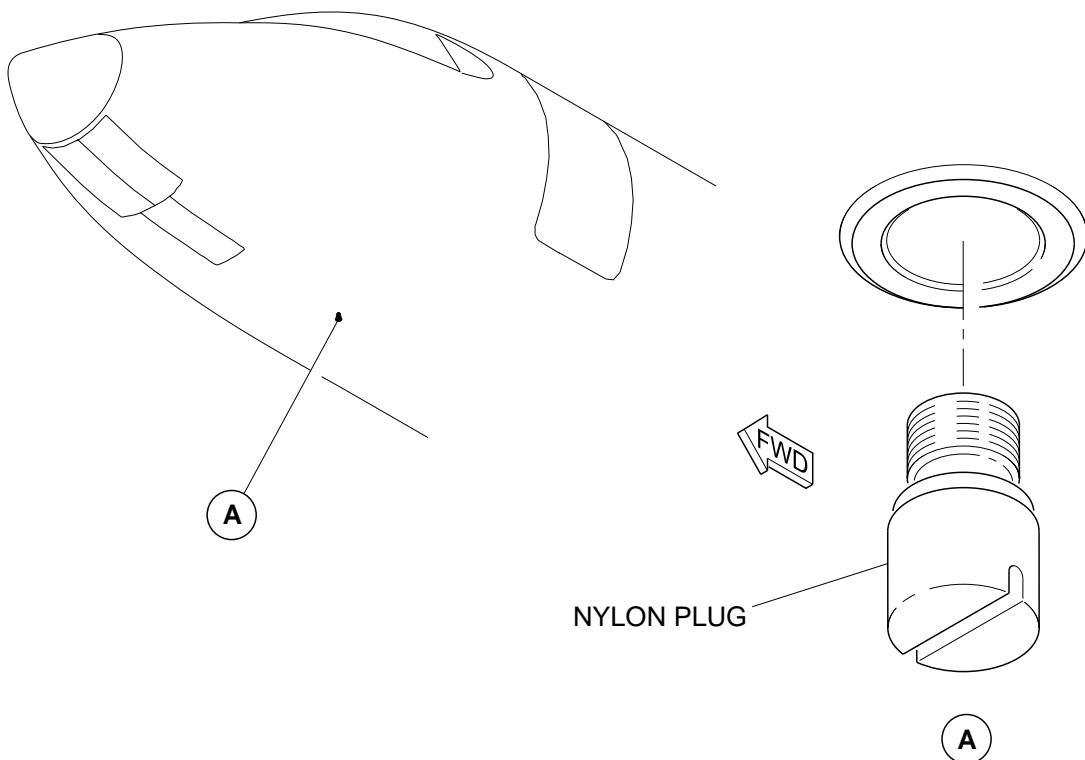
APPENDIX 1
Configuration Deviation List

08-01-53-2

Rev. 28, Jun 04/2021

SYSTEM 53 FUSELAGE

53-12: Forward Jacking Pad Nylon Plug



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-53-3

Rev. 28, Jun 04/2021

SYSTEM 53 FUSELAGE

SUB-SYSTEM	ITEM	1 Number required for all flight conditions except as provided in column 2	2 Remarks and/or Exceptions
53-20 Passenger door hinge fairing		2	<p>Forward and/or aft fairing may be missing with no performance penalty.</p> <p>CAFIM: Use a CDL Index of 0.0 for this Item. <2098></p>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



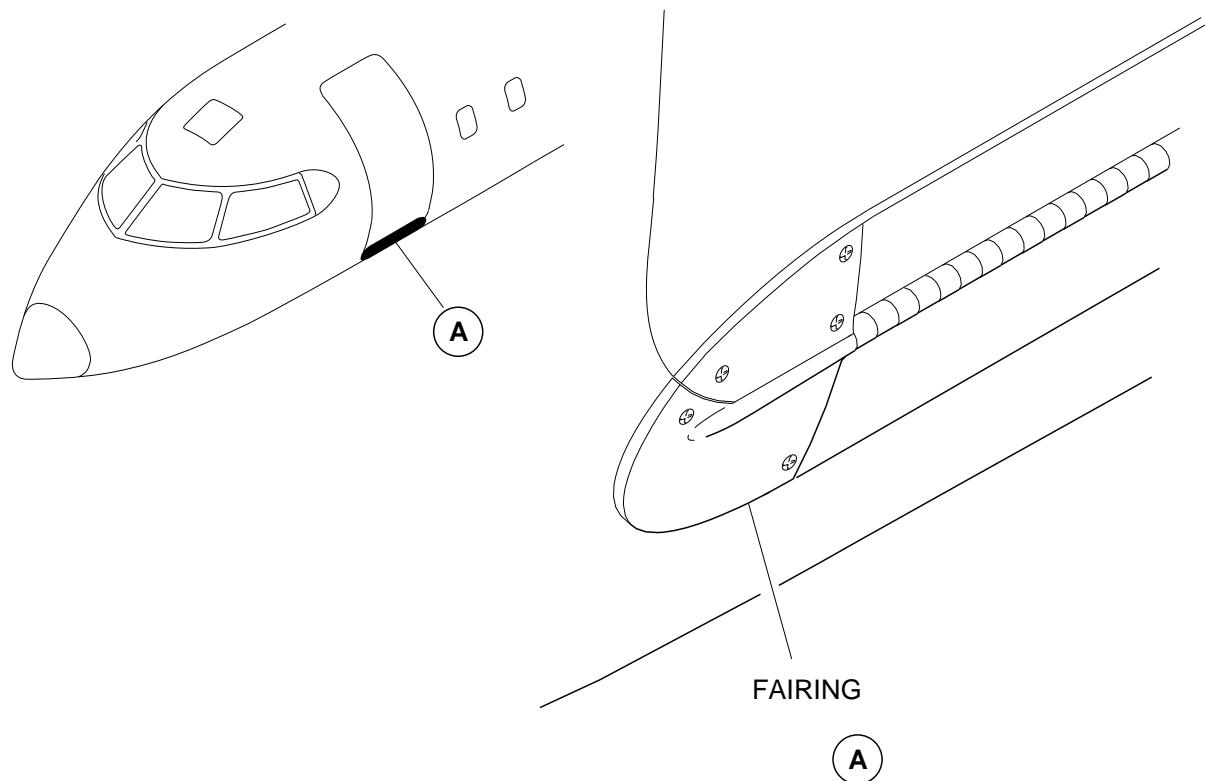
APPENDIX 1
Configuration Deviation List

08-01-53-4

Rev. 28, Jun 04/2021

SYSTEM 53 FUSELAGE

53-20: Passenger Door Hinge Fairing



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-53-5

Rev. 28, Jun 04/2021

SYSTEM 53 FUSELAGE

SUB-SYSTEM	ITEM																	
53-82 Flap stub fairings		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><td colspan="2">Take-off Weight</td></tr><tr><td>27.5 kg/fairing</td><td>60 lb/fairing</td></tr></table> <table border="1"><tr><td colspan="2">Enroute Climb</td></tr><tr><td>61.5 kg/fairing</td><td>135 lb/fairing</td></tr></table> <table border="1"><tr><td colspan="2">Landing Weight</td></tr><tr><td>27.5 kg/fairing</td><td>60 lb/fairing</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td colspan="2">Fuel Consumption</td></tr><tr><td colspan="2">2.0% on fuel used/fairing</td></tr></table> <p>CAFM: Use a CDL Index of 1.0 for every stub fairing missing. <2098></p>	Take-off Weight		27.5 kg/fairing	60 lb/fairing	Enroute Climb		61.5 kg/fairing	135 lb/fairing	Landing Weight		27.5 kg/fairing	60 lb/fairing	Fuel Consumption		2.0% on fuel used/fairing	
Take-off Weight																		
27.5 kg/fairing	60 lb/fairing																	
Enroute Climb																		
61.5 kg/fairing	135 lb/fairing																	
Landing Weight																		
27.5 kg/fairing	60 lb/fairing																	
Fuel Consumption																		
2.0% on fuel used/fairing																		

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



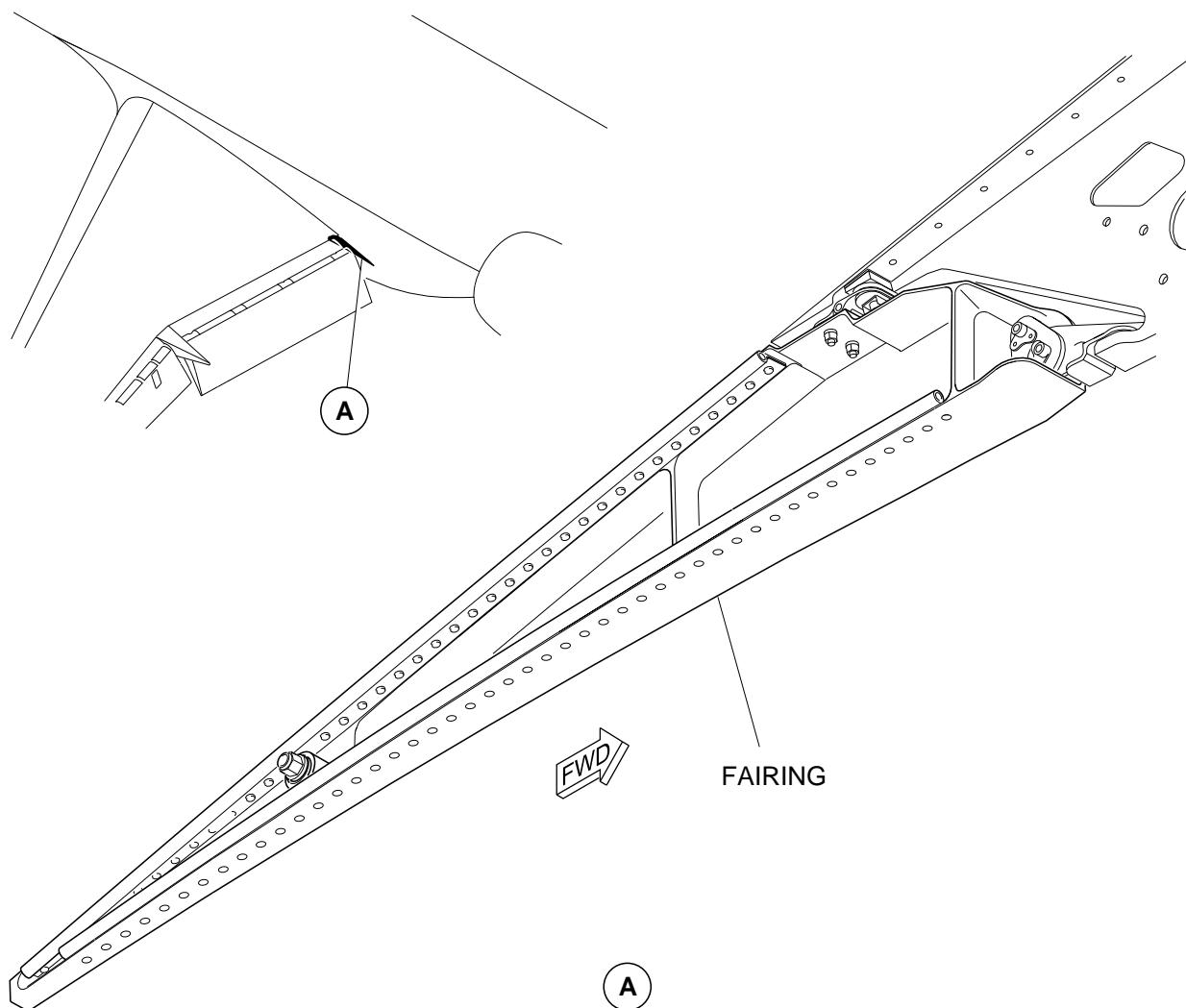
APPENDIX 1
Configuration Deviation List

08-01-53-6

Rev. 28, Jun 04/2021

SYSTEM 53 FUSELAGE

53-82: Flap Stub Fairings



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-53-7

Rev. 28, Jun 04/2021

SYSTEM 53 FUSELAGE

SUB-SYSTEM	ITEM																	
53-83 Wheel bin brushes (3 brushes per wheel bin)	6	<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><tr><td colspan="2">Take-off Weight</td></tr><tr><td>32 kg/brush</td><td>70 lb/brush</td></tr></table> <table border="1"><tr><td colspan="2">Enroute Climb</td></tr><tr><td>70.5 kg/brush</td><td>155 lb/brush</td></tr></table> <table border="1"><tr><td colspan="2">Landing Weight</td></tr><tr><td>32 kg/brush</td><td>70 lb/brush</td></tr></table> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td colspan="2">Fuel Consumption</td></tr><tr><td colspan="2">0.45% on fuel used/brush</td></tr></table> <p>CAFM: Add 1.1 to the CDL Index for every brush missing. <2098></p>	Take-off Weight		32 kg/brush	70 lb/brush	Enroute Climb		70.5 kg/brush	155 lb/brush	Landing Weight		32 kg/brush	70 lb/brush	Fuel Consumption		0.45% on fuel used/brush	
Take-off Weight																		
32 kg/brush	70 lb/brush																	
Enroute Climb																		
70.5 kg/brush	155 lb/brush																	
Landing Weight																		
32 kg/brush	70 lb/brush																	
Fuel Consumption																		
0.45% on fuel used/brush																		
53-83 Small 4th wheel bin brush	2	<p>One or both may be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this Item. <2098></p>																

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



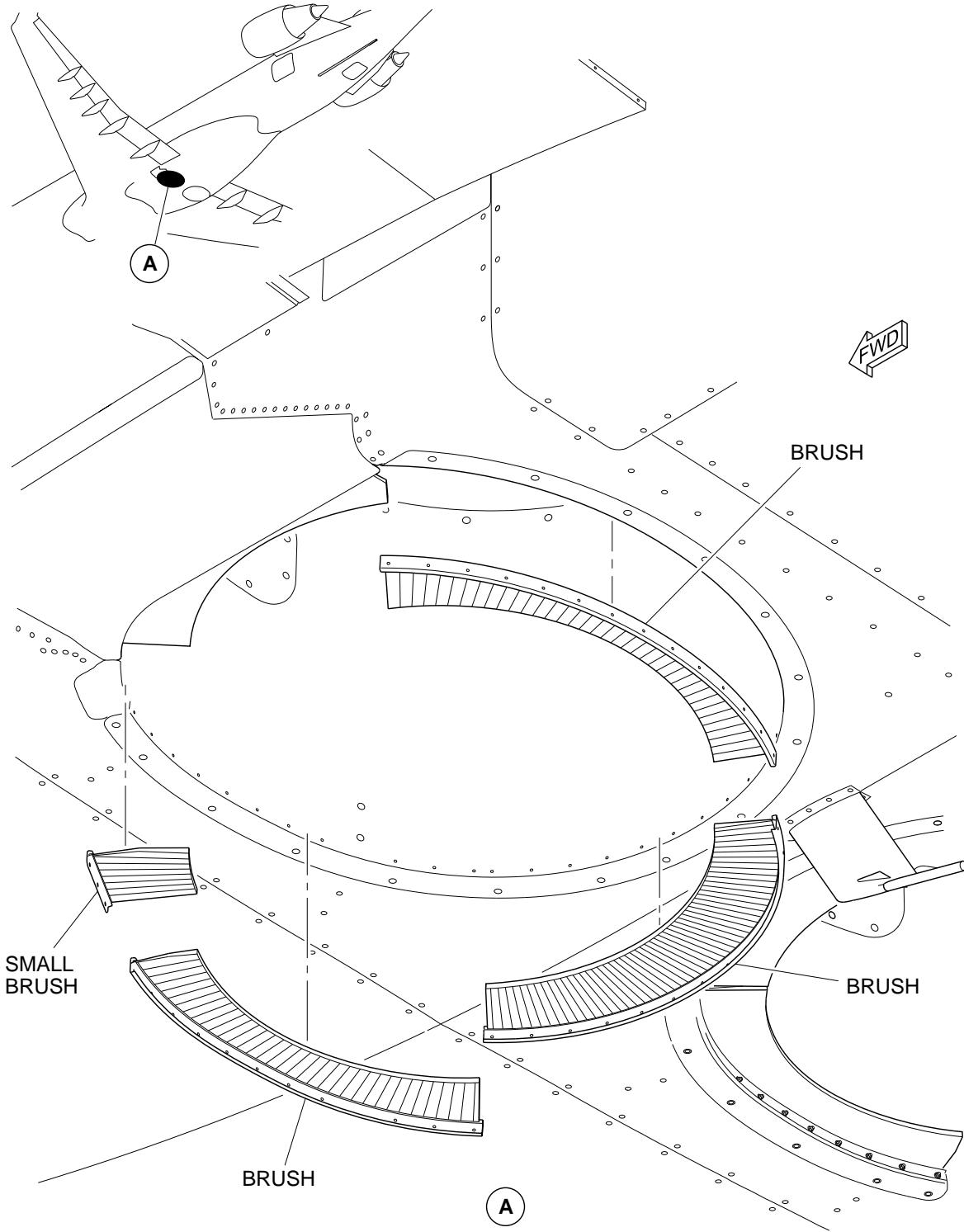
APPENDIX 1
Configuration Deviation List

08-01-53-8

Rev. 28, Jun 04/2021

SYSTEM 53 FUSELAGE

53-83: Wheel Bin Brushes



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-55-1

Rev. 28, Jun 04/2021

SYSTEM 55 STABILIZER

SUB-SYSTEM	ITEM	
55-12 Horizontal stabilizer root seal assembly		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>2 One or both may be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



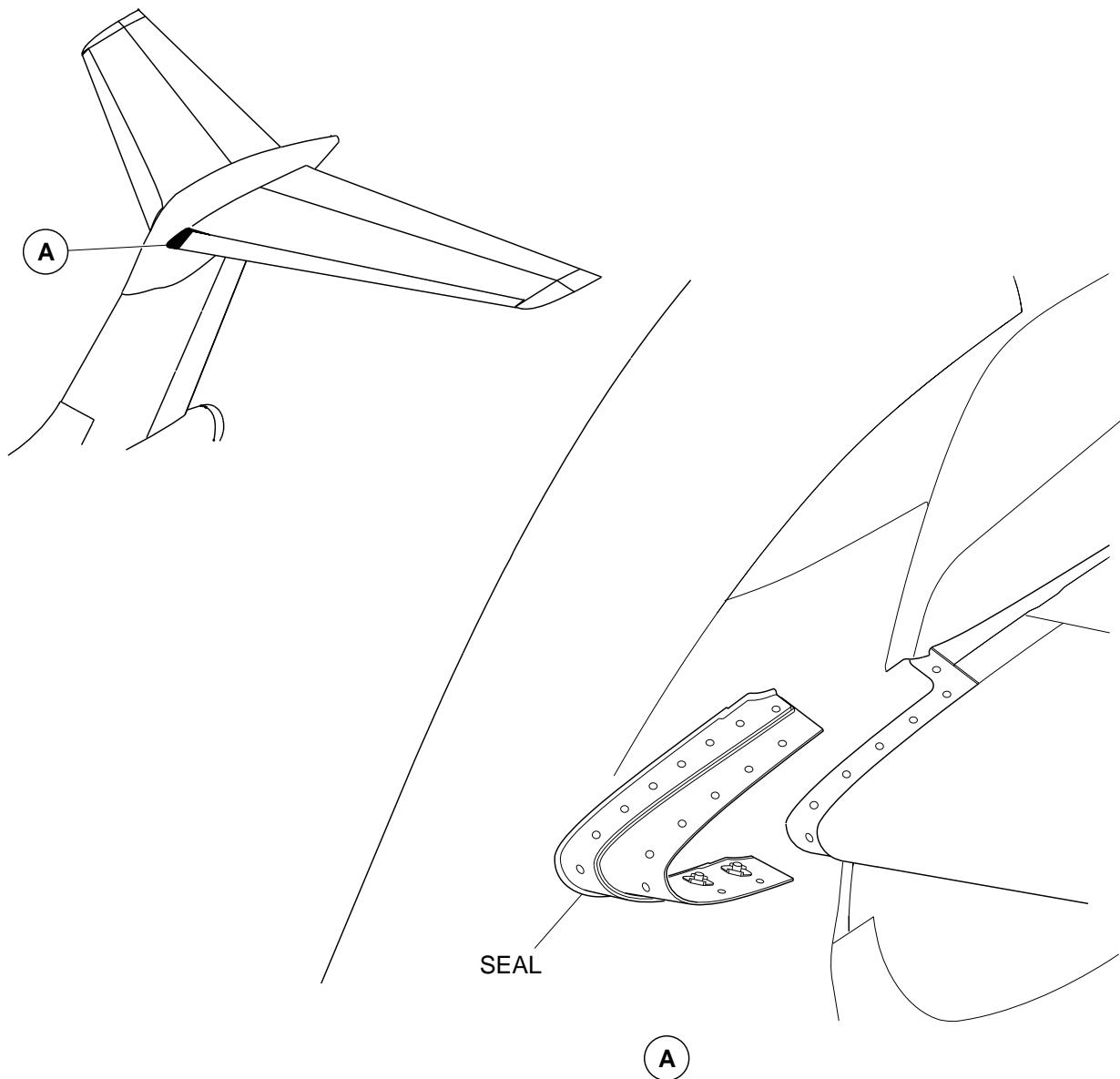
APPENDIX 1
Configuration Deviation List

08-01-55-2

Rev. 28, Jun 04/2021

SYSTEM 55 STABILIZER

55-12: Horizontal Stabilizer Root Seal Assembly



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-57-1

Rev. 28, Jun 04/2021

SYSTEM 57 WING

SUB-SYSTEM	ITEM	
57-20 Wing jacking pad nylon plugs	2	<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>One or both may be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



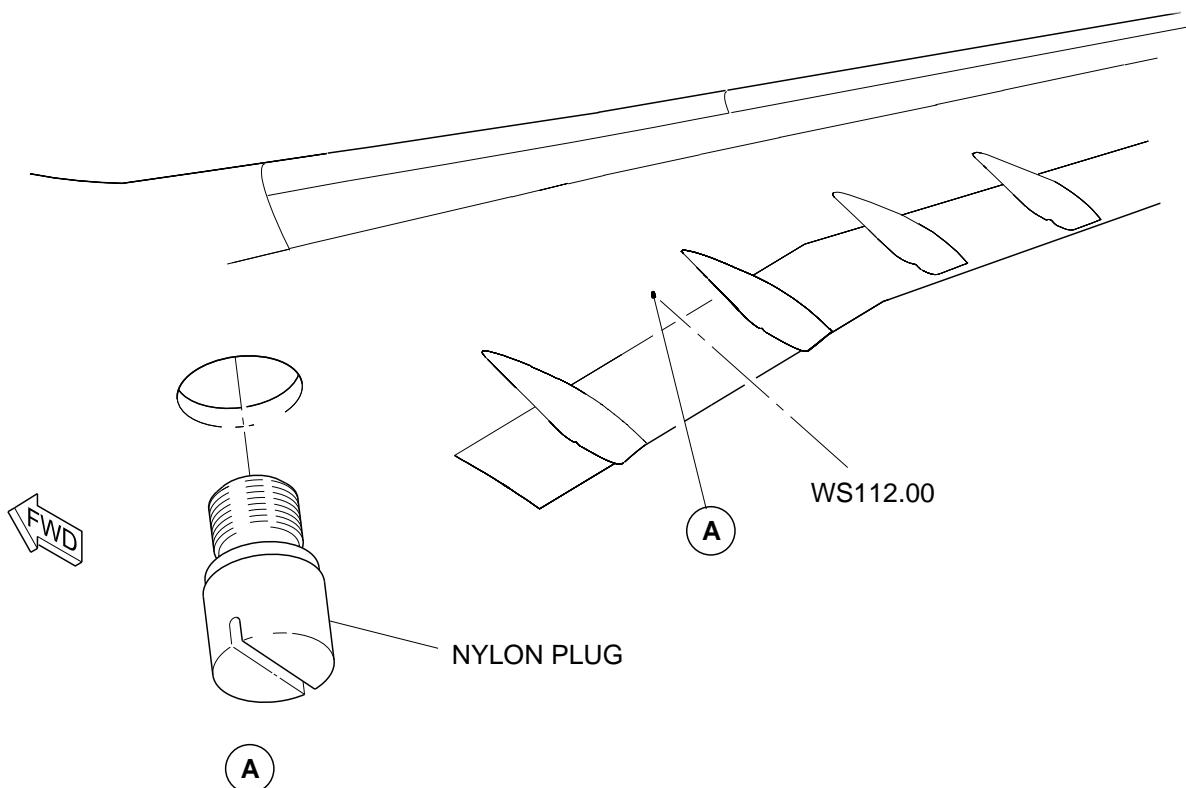
APPENDIX 1
Configuration Deviation List

08-01-57-2

Rev. 28, Jun 04/2021

SYSTEM 57 WING

57-20: Wing Jacking Pad Nylon Plugs



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-57-3

Rev. 28, Jun 04/2021

SYSTEM 57 WING

SUB-SYSTEM	ITEM		
57-21 Main landing gear door cut-out seals		see Note	<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p> <p>NOTE</p> <p>The allowance is applicable to both configurations:</p> <ul style="list-style-type: none">• Flat seals (12 seals total)• D-seals (8 seals total).

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



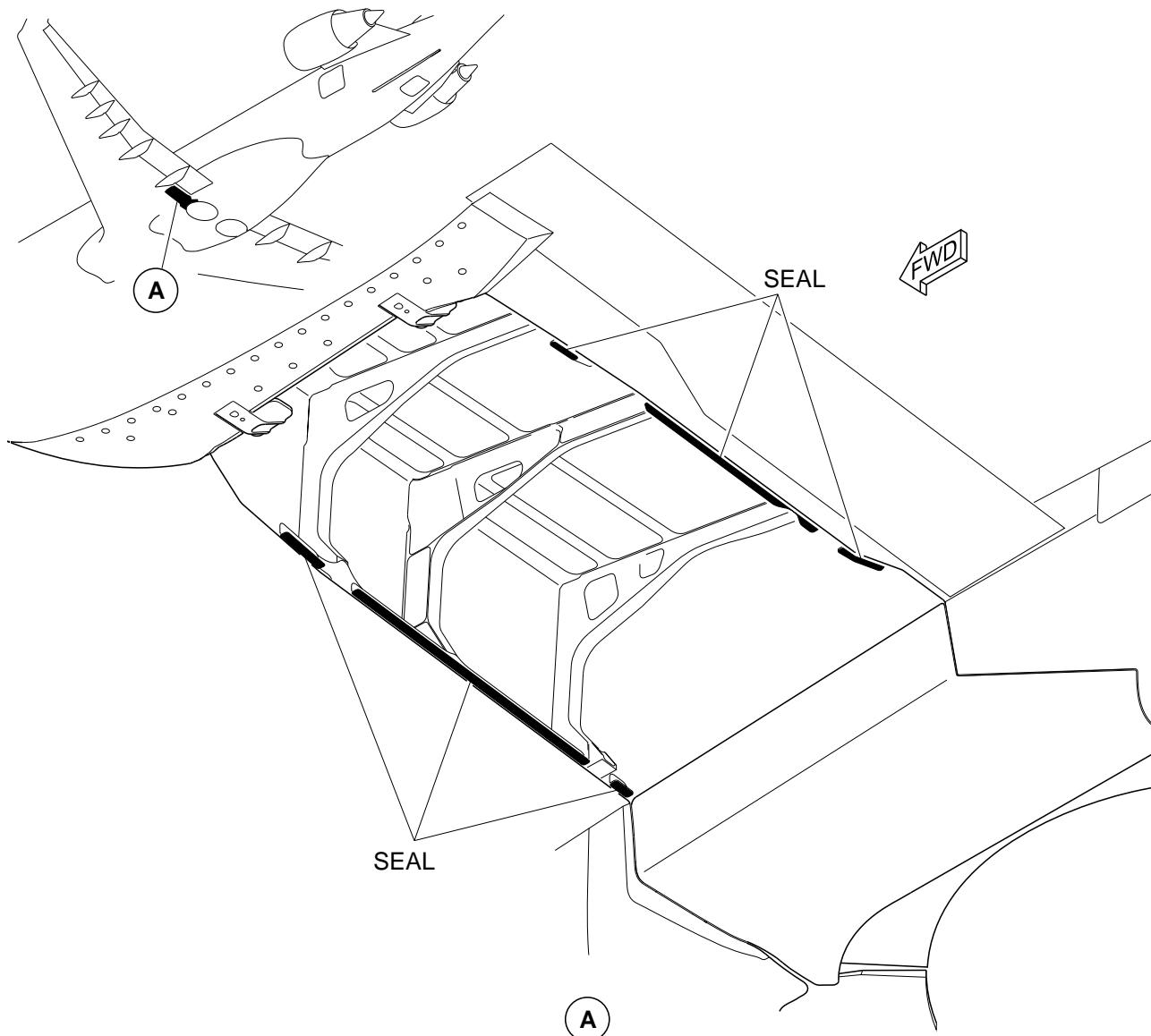
APPENDIX 1
Configuration Deviation List

08-01-57-4

Rev. 28, Jun 04/2021

SYSTEM 57 WING

57-21: Main Landing Gear Door Cut-out Seals (Flat Seals)



**INBOARD DOOR SECTION
REMOVED FOR CLARITY**

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



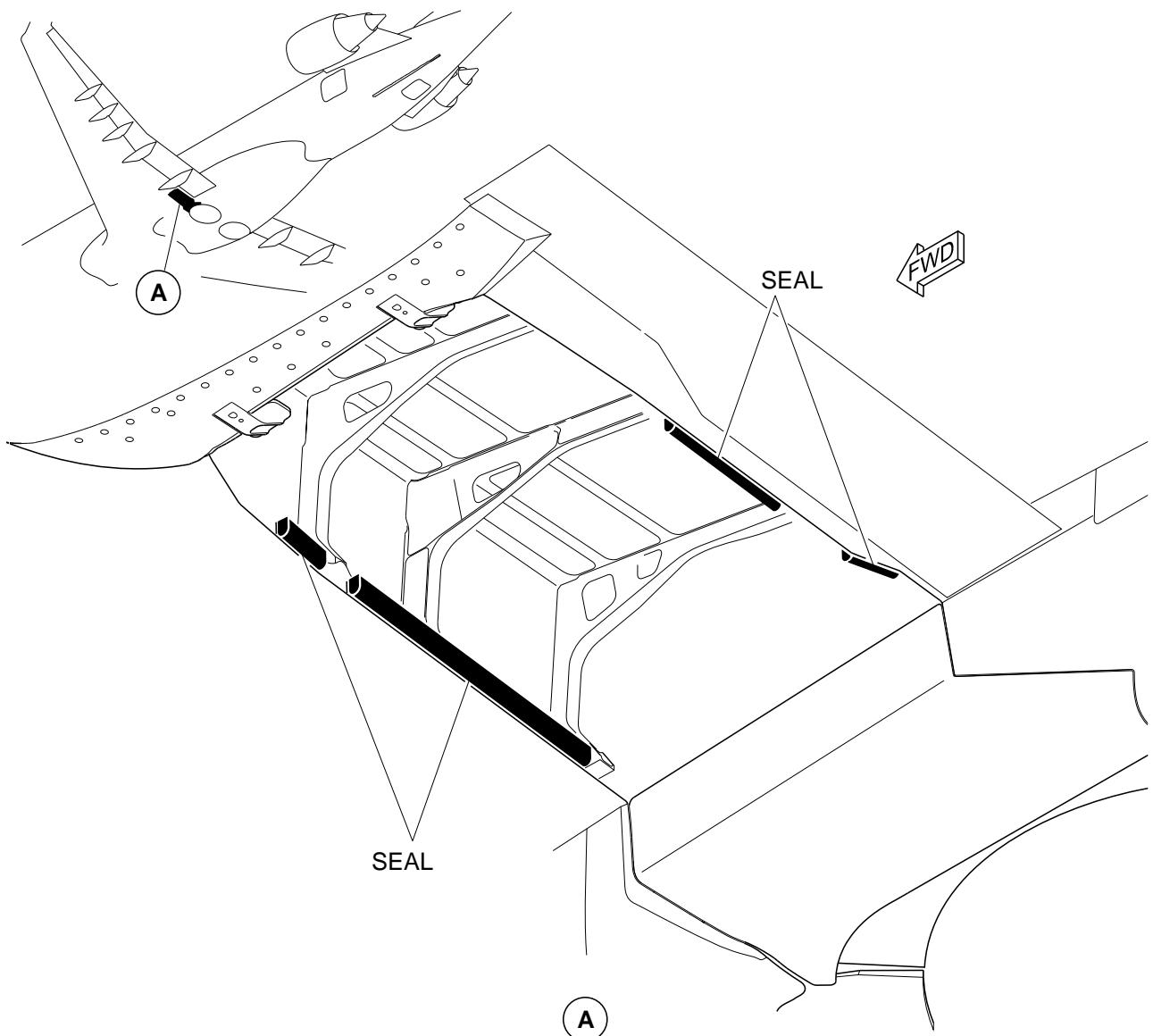
APPENDIX 1
Configuration Deviation List

08-01-57-5

Rev. 28, Jun 04/2021

SYSTEM 57 WING

57-21: Main Landing Gear Door Cut-out Seals (D-Seals)



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



**APPENDIX 1
Configuration Deviation List**

08-01-57-6

Rev. 28, Jun 04/2021

SYSTEM 57 WING

SUB-SYSTEM	ITEM	
57-41 Left hand or right hand wing slat closing plates	<ul style="list-style-type: none">• Closing plate, telescopic anti-ice duct;• Bracket, closing plate, telescopic anti-ice duct; and• Closing plate, slat track.	<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>- Any number or combination may be missing with no performance penalty.</p> <p>CAFM: Use a CDL Index of 0.0 for this item. <2098></p> <p>NOTE</p> <p>Damaged or missing brackets and closing plates on the telescopic anti-ice duct must be replaced at the earliest opportunity.</p>

DOT Approved

**Airplane Flight Manual
CSP C-012-219**



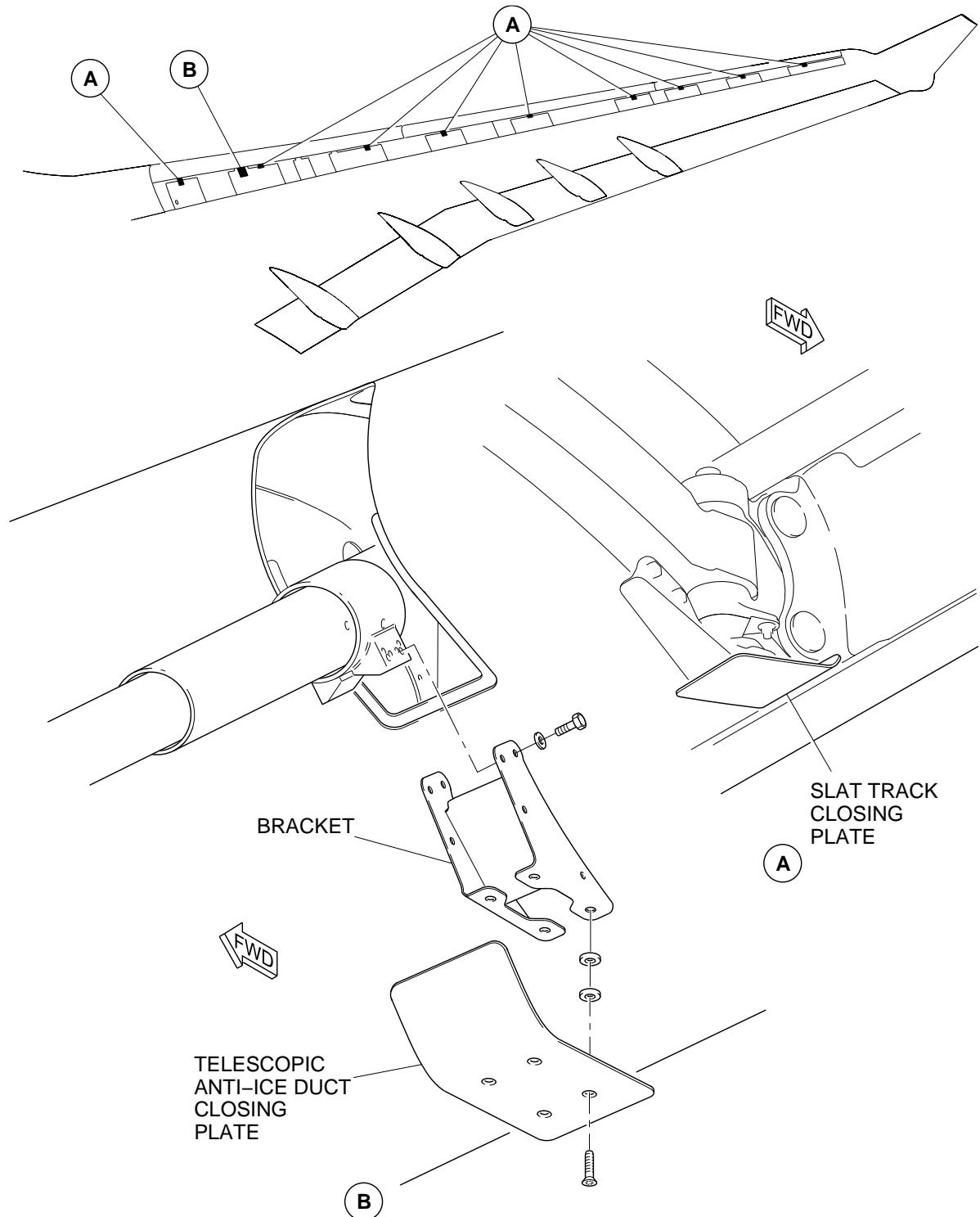
APPENDIX 1
Configuration Deviation List

08-01-57-7

Rev. 28, Jun 04/2021

SYSTEM 57 WING

57-41: Left Hand or Right Hand Wing Slat Closing Plates



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-57-8

Rev. 28, Jun 04/2021

SYSTEM 57 WING

SUB-SYSTEM	ITEM																	
57-41 Left hand or right hand wing slat seals	<ul style="list-style-type: none">• Main slat seal between slat back-end and wing under slat surface;• Dog bone seals;• Seals between inboard and outboard slat and fixed leading edge; and• Chord-wise slat seals fitted on the back face of the slat and sealing the opening made on the wing under slat surface for actuators.	<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>Any number or combination may be missing provided:</p> <ul style="list-style-type: none">• the performance limited weights are reduced by: <table border="1"><tr><th colspan="2">Take-off Weight</th></tr><tr><td>327 kg/wing</td><td>720 lb/wing</td></tr></table> <table border="1"><tr><th colspan="2">Enroute Climb</th></tr><tr><td>367 kg/wing</td><td>810 lb/wing</td></tr></table> <table border="1"><tr><th colspan="2">Landing Weight</th></tr><tr><td>327 kg/wing</td><td>720 lb/wing</td></tr></table> <ul style="list-style-type: none">• the mission fuel requirements are increased by: <table border="1"><tr><th colspan="2">Fuel Consumption</th></tr><tr><td colspan="2">1.55% on fuel used/wing</td></tr></table> <p>CAFM: Any number or combination of seals missing per wing provided: <2098></p> <ul style="list-style-type: none">• Add 12.0 to the CDL Index for the take-off and landing modules. <2098>• Add 6.0 to the CDL Index for the en-route modules. <2098>	Take-off Weight		327 kg/wing	720 lb/wing	Enroute Climb		367 kg/wing	810 lb/wing	Landing Weight		327 kg/wing	720 lb/wing	Fuel Consumption		1.55% on fuel used/wing	
Take-off Weight																		
327 kg/wing	720 lb/wing																	
Enroute Climb																		
367 kg/wing	810 lb/wing																	
Landing Weight																		
327 kg/wing	720 lb/wing																	
Fuel Consumption																		
1.55% on fuel used/wing																		

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



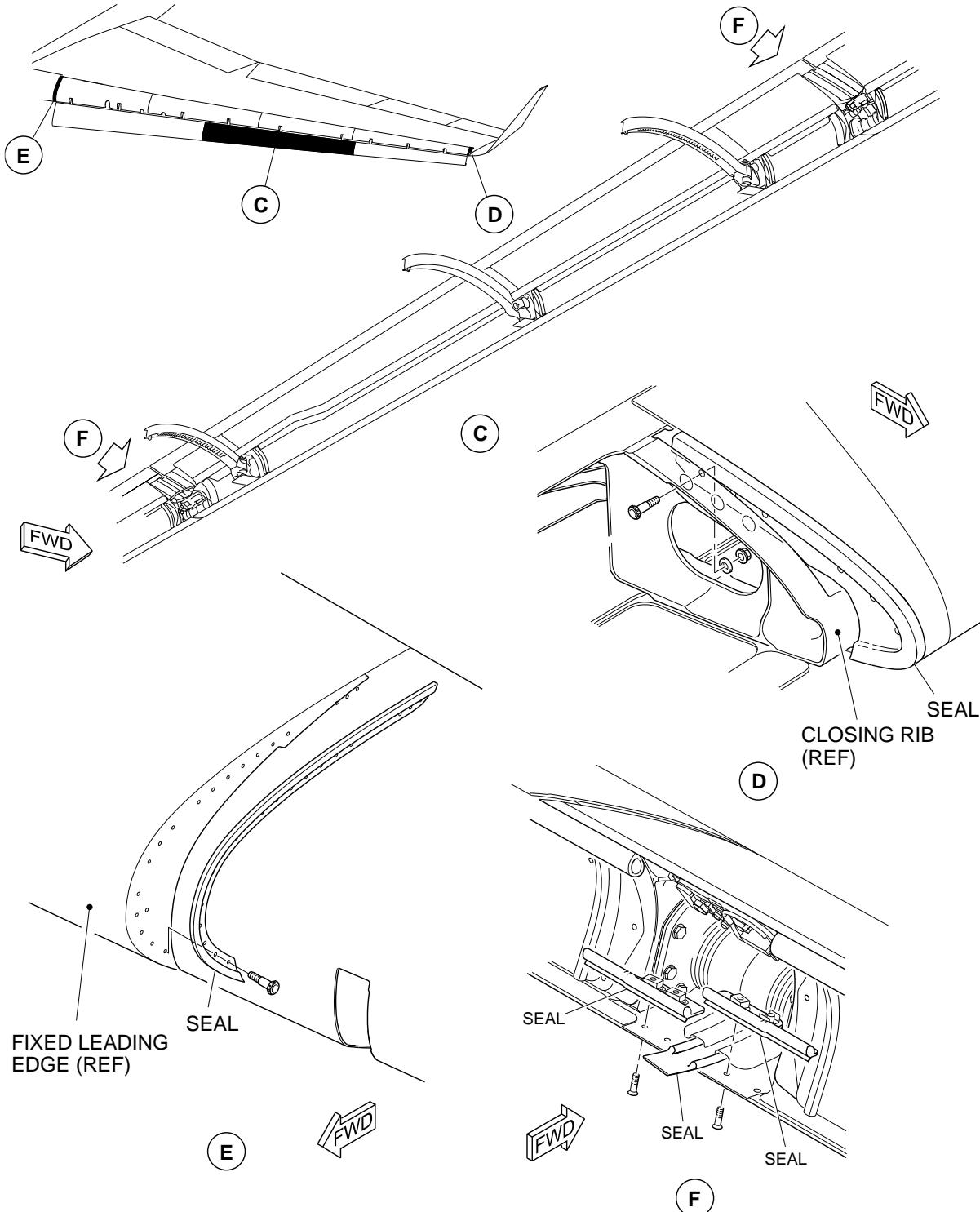
APPENDIX 1
Configuration Deviation List

08-01-57-9

Rev. 28, Jun 04/2021

SYSTEM 57 WING

57-41: Left Hand or Right Hand Wing Slat Seals



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



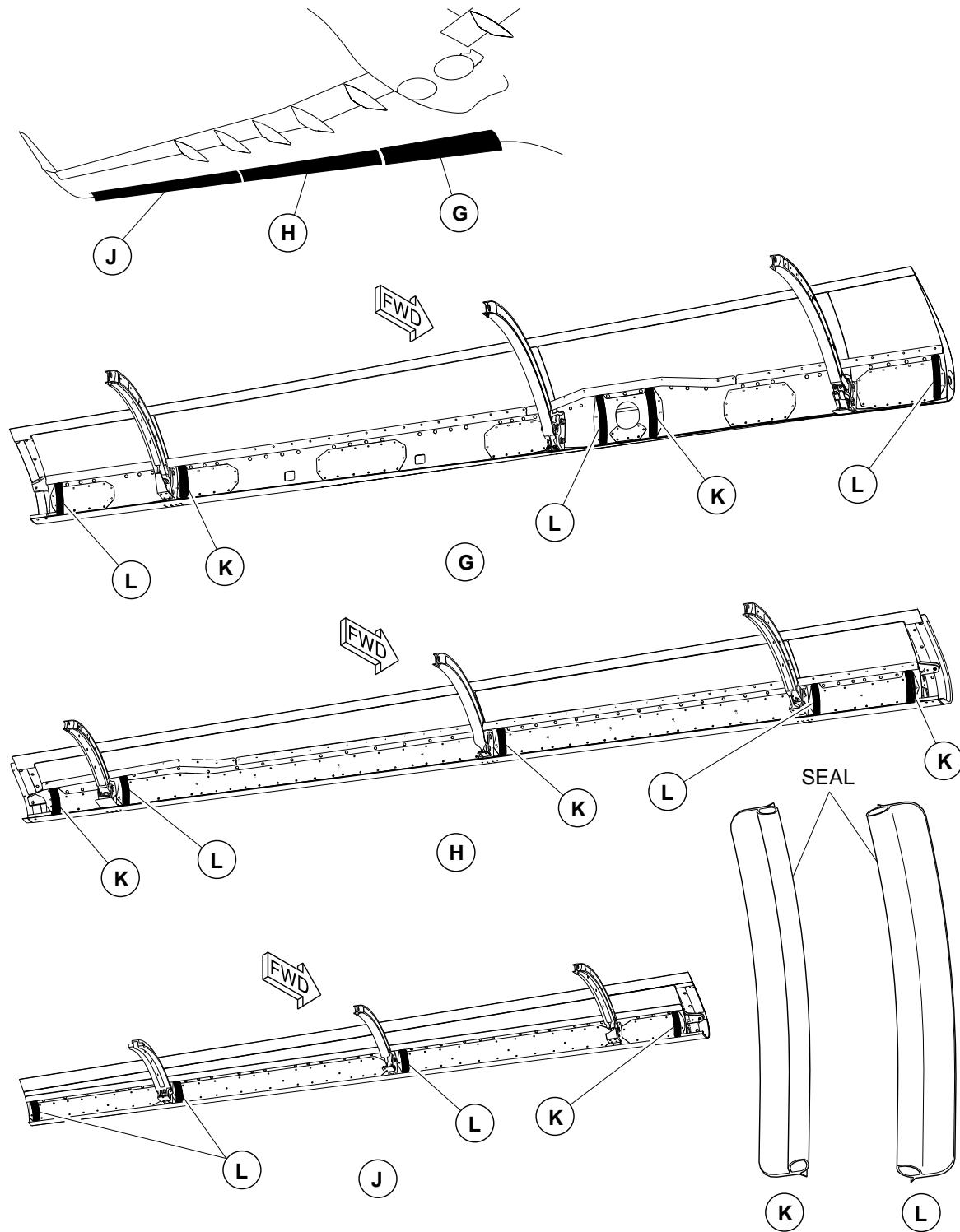
APPENDIX 1
Configuration Deviation List

08-01-57-10

Rev. 28, Jun 04/2021

SYSTEM 57 WING

57-41: Left Hand or Right Hand Wing Slat Seals



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-78-1

Rev. 28, Jun 04/2021

SYSTEM 78 EXHAUST

SUB-SYSTEM	ITEM													
78-33 Transcowl omega seal		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <p>4 One (1) or two (2) omega seals may be missing (see NOTE 1-3) provided:</p> <ul style="list-style-type: none">the performance limited weights are reduced by: <table border="1"><thead><tr><th colspan="2">Take-off Weight</th></tr></thead><tbody><tr><td>363 kg/missing omega seal</td><td>800 lb/missing omega seal</td></tr></tbody></table> <table border="1"><thead><tr><th colspan="2">Enroute Climb</th></tr></thead><tbody><tr><td>560 kg/missing omega seal</td><td>1235 lb/missing omega seal</td></tr></tbody></table> <table border="1"><thead><tr><th colspan="2">Landing Weight</th></tr></thead><tbody><tr><td>347 kg/missing omega seal</td><td>765 lb/missing omega seal</td></tr></tbody></table>	Take-off Weight		363 kg/missing omega seal	800 lb/missing omega seal	Enroute Climb		560 kg/missing omega seal	1235 lb/missing omega seal	Landing Weight		347 kg/missing omega seal	765 lb/missing omega seal
Take-off Weight														
363 kg/missing omega seal	800 lb/missing omega seal													
Enroute Climb														
560 kg/missing omega seal	1235 lb/missing omega seal													
Landing Weight														
347 kg/missing omega seal	765 lb/missing omega seal													

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



APPENDIX 1
Configuration Deviation List

08-01-78-2

Rev. 28, Jun 04/2021

SYSTEM 78 EXHAUST

SUB-SYSTEM	ITEM			
78-33 Transcowl omega seal		<p>1 Number required for all flight conditions except as provided in column 2</p> <p>2 Remarks and/or Exceptions</p> <ul style="list-style-type: none">the mission fuel requirements are increased by: <table border="1"><tr><td>Fuel Consumption</td></tr><tr><td>1.0% on fuel used/missing omega seal</td></tr></table> <p>NOTE</p> <ol style="list-style-type: none">The penalties are for one (1) missing omega seal per propulsion system, with the other omega seal and the arrowhead seals of that propulsion system inspected and in good condition.A maximum of one (1) omega seal missing per propulsion system (i.e., 2 per airplane) is allowable.CDL operation is not permitted for scenarios pertaining to other combinations of missing omega seals. <p>NOTE</p> <ol style="list-style-type: none">Reduce the climb ceiling obtained from the Flight Planning and Cruise Control Manual (FPCCM)/Computerized In-Flight Performance (CIFP) by 500 feet.There is no CDL Index for this item. Apply above weight penalties to baseline CAFM data.	Fuel Consumption	1.0% on fuel used/missing omega seal
Fuel Consumption				
1.0% on fuel used/missing omega seal				

DOT Approved	Airplane Flight Manual CSP C-012-219	
--------------	---	--



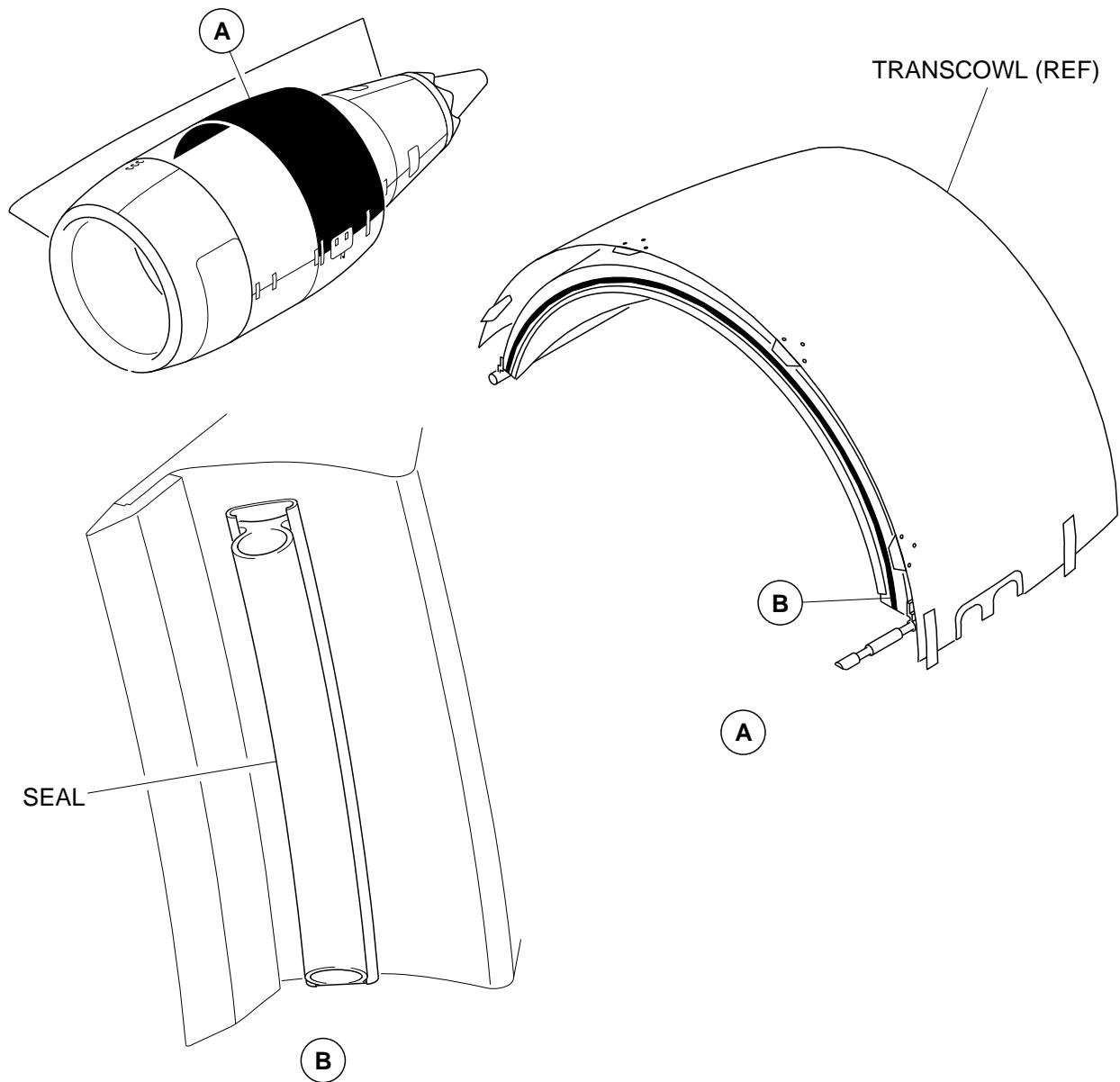
APPENDIX 1
Configuration Deviation List

08-01-78-3

Rev. 28, Jun 04/2021

SYSTEM 78 EXHAUST

78-33: Transcowl Omega Seal



DOT Approved

**Airplane Flight Manual
CSP C-012-219**



APPENDIX 1
Configuration Deviation List

08-01-78-4

Rev. 28, Jun 04/2021

THIS PAGE INTENTIONALLY LEFT BLANK

DOT Approved

Airplane Flight Manual
CSP C-012-219