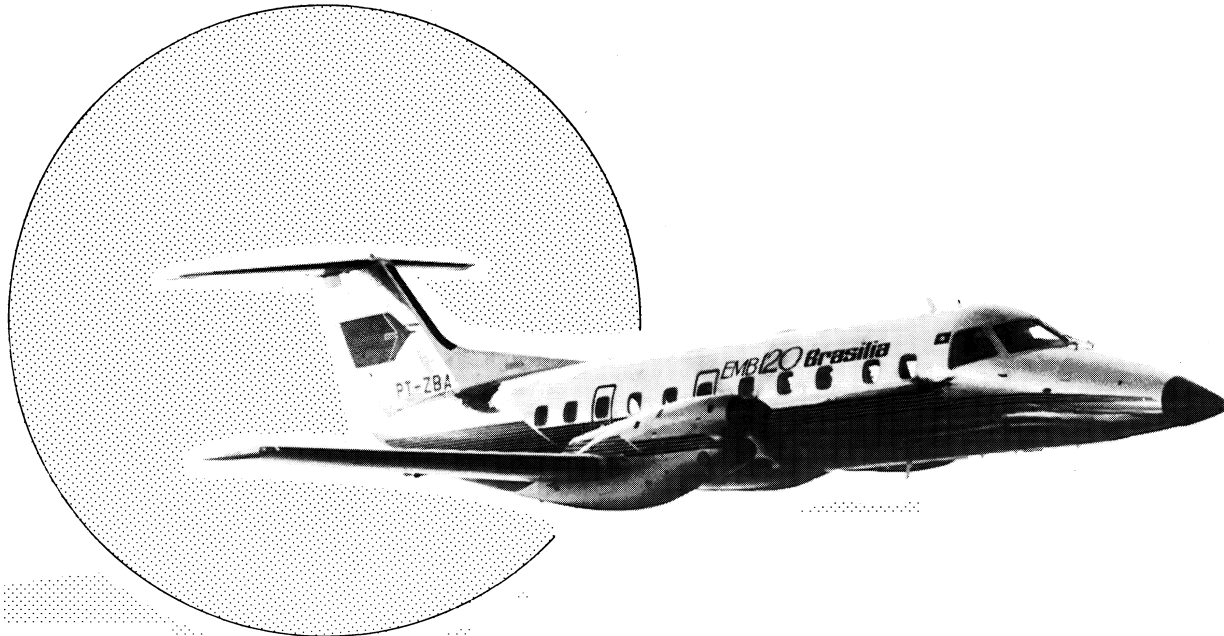




MINISTÉRIO DA AERONÁUTICA  
DEPARTAMENTO DE PESQUISA E DESENVOLVIMENTO  
CENTRO TÉCNICO AEROSPACIAL



**EMB120 Brasília**

## MASTER MINIMUM EQUIPMENT LIST

THIS PUBLICATION IS APPLICABLE TO EMB-120 MODELS (RT, ER, QC e FC) CERTIFIED FOR OPERATION UNDER ANAC AIRWORTHINESS REQUIREMENTS.

APPROVED BY: \_\_\_\_\_

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Centro Técnico Aeroespacial







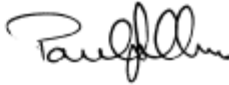

Date: 12 / 18 /1985

REVISION 21 IS A FULL REISSUE  
OF THIS MANUAL.

MMEL -120/CTA  
REVISION 21 — AUGUST 13, 2012




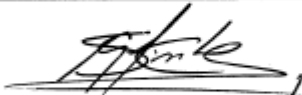

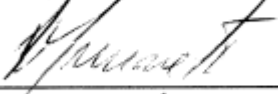



**MASTER MINIMUM EQUIPMENT LIST  
CTA APPROVED**

**LOG OF REVISIONS**

REVISION NUMBER	REVISED PAGES	CTA APPROVAL	
		DATE	SIGNATURE
1 July 04, 1986	A, i, ii, iv, 21-2, 23-1, 24-2, 33-2, 34-1, 73-1, 73-2, and 77-1 deleted.	7/4/86	
2 October 22, 1987	A, i, 21-1, 21-2, 21-3, 21-4, 21-5, 22-1, 23-2, 24-1, 24-2, 26-1, 28-1, 33-3, 34-2, and 73-1.	22/10/87	
3 January 29, 1988	A, i, 21-2, 21-3, 21-4, 21-5, 21-6, 22-1, 22-2, 23-1, 23-2, 24-3, 25-1, 25-2, 27-1, 30-2, 30-4, 31-1, 31-2, 33-2, 35-1, 36-1, 75-1, AMI-1 and AMI-2.	29/01/88	
4 October 31, 1988	A, 21-2, 21-6, 22-1, 24-3, 25-2, 27-1, 29-1, 31-2, 32-1, 33-3, 49-1, 61-1, 79-1 and AMI-2.	31/10/88	
5 April 05, 1989	A, iv, 29-1, 29-2, 33-2, 33-3, 33-4, 73-1	05 04 89	
6 November 21, 1989	A, 21-6 and 32-1	21 11 89	
7 March 27, 1990	A, 21-3, 23-1, 23-2, 24-2, 24-3, 25-1, 25-2, 26-1, 26-2, 27-1, 28-2, 30-1, 30-2, 31-2, 32-1, 32-2, 33-2, 34-1, 34-3, 35-1 and 36-1.	27 MAR 90	
8 December 04, 1990	A, i, 32-1, 32-2, 49-1 and 77-1.	4 DEC 90	

**MASTER MINIMUM EQUIPMENT LIST  
CTA APPROVED**

**LOG OF REVISIONS**

REVISION NUMBER	REVISED PAGES	CTA APPROVAL	
		DATE	SIGNATURE
9 November 21, 1991	A, i, 24-2, 24-3, 27-1, 27-2, 34-1, 34-1A, 49-1 and 77-1	NOV 21 <sup>ST</sup> , 1991	
10 February 09, 1993	A, i, 21-4, 21-5, 27-1, 27-2, 28-1, 28-2, 32-1, 32-2, 33-2, 34-1 and AMI-2	FEB 09 <sup>TH</sup> 1993	
11 September 13, 1994	All	SEP 13 <sup>TH</sup> 1994	
12 September 06, 1995	A, i, 23-2, 23-3, 25-1, 33-2, 33-3, and 33-4	SEP 6 <sup>TH</sup> , 1995	
13 August 04, 1997	A and 30-5	AUG 4, 97	
14 August 31, 1998	A and 36-1	AUG 31 - 98	
15 March 25, 1999	A, i, 24-3, 26-1, 26-2, 26-3, 26-4, 27-2, 38-1, 75-1 and 76-1	MAR 25, 99	
16 June 07, 2001	A, i, v, 25-3, 26-1, 26-3, 30-5 and 30-6	JUN 07, 2001	
17 August 24, 2001	A and 30-6	August 24, 2001	

NOVEMBER 21, 1991

REV. 17 - AUGUST 24, 2001

# MASTER MINIMUM EQUIPMENT LIST

CTA APPROVED

LOG OF REVISIONS

REVISION NUMBER	REVISED PAGES	CTA APPROVAL	
		DATE	SIGNATURE
18 March 12, 2002	A, 34-4, 34-5 and 34-6	March 12, 2002	<i>[Signature]</i>
19 July 31, 2002	A, B and 30-6	July 31, 2002	<i>[Signature]</i>
20 December 07, 2004	A and 27-1	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;">                     MMEL-120/CTA Revision 20 approved by CTA on December 07, 2004. <i>[Signature]</i> </div>	
21 August 13, 2012	All pages	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;">                     MMEL-120/CTA Revision 21 approved by ANAC on August 13, 2012. <i>[Signature]</i> </div>	

MARCH 12, 2002

REV. 21 – AUGUST 13, 2012

**MMEL-120/CTA**

**HIGHLIGHTS OF CHANGE**

**REVISION 21 – AUGUST 13, 2012**

Front Page	Updated front page for EMB-120 models applicability.
Preamble	Updated definitions and symbology according to PL-25, whenever applicable.
21-30-1 pg 21-1	Updated item for better clarification.
21-31-1 pg 21-1	Updated item for better clarification.
21-31-2 pg 21-2	Updated item for better clarification.
21-31-3 pg 21-2	Updated item for better clarification.
21-50-1 pg 21-3	Updated item for better clarification.
22-10-1 pg 22-1	Updated item for better clarification.
22-11-1 pg 22-1	Updated item for better clarification.
23-15-1 pg 23-1	Updated item according to PL-95, whenever applicable.
23-21-1 pg 23-1	Updated item for better clarification.
23-30-1 pg 23-1	Updated item according to PL-009, whenever applicable.
23-41-1 pg 23-2	Updated item according to PL-009, whenever applicable.
23-41-2 pg 23-3	Included new item according to PL-009, whenever applicable.
23-50-1 pg 23-3	Deleted item since it is already covered on item 25-60-4 (Observer Seat).
23-80-1 pg 23-4	Included new item according to PL-58, whenever applicable.
24-30-1 pg 24-1	Updated item for better clarification.
24-31-1 pg 24-2	Updated item for better relief.
25-21-1 pg 25-1	Updated item according to PL-97, whenever applicable.
25-22-1 pg 25-2	Updated item according to PL-104, whenever applicable.
25-30-1 pg 25-3	Updated item according to PL-79, whenever applicable.
25-30-2 pg 25-3	Included new item according to PL-96, whenever applicable.
25-40-1 pg 25-3	Included new item according to PL-85, whenever applicable.
25-50-1 pg 25-4	Included new item according to EMB-120 FAA MMEL (compatibility).
25-50-2 pg 25-4	Updated item dividing into two subitems for better clarification.
25-60-1 pg 25-4	Updated item according to PL-120, whenever applicable.
25-60-2 pg 25-4	Updated item according to PL-116, whenever applicable.
25-60-4 pg 25-5	Updated item according to PL-56, whenever applicable.
25-60-6 pg 25-5	Updated item according to PL-47, whenever applicable.
25-60-8 pg 25-5	Updated item number required for dispatch since its depends on requirements.
25-60-9 pg 25-6	Included new item according to PL-73, whenever applicable.
25-60-10 pg 25-6	Included new item according to PL-89, whenever applicable.
25-64-02 pg 25-6	Included new item according to requirement 25.1415 (e).
26-13-1 pg 26-1	Updated item according to PL-24, whenever applicable.
26-15-0 pg 26-1	Included new item according to PL-102 and 108, whenever applicable.
26-21-1 pg 26-1	Updated item for better clarification.
26-22-2 pg 26-1	Updated item for better clarification.
26-23-0 pg 26-2	Included new item according to PL-102 and 108, whenever applicable.
26-23-1 pg 26-2	Updated item according to PL-24, whenever applicable.
26-26-1 pg 26-2	Updated item according to PL-75, whenever applicable.
27-21-1 pg 27-1	Updated item including (M) since there is a maintenance procedure associated.
27-50-0 pg 27-1	Deleted item since item it is a ferry flight condition and it is already described at AFM supplement 9 (Ferry Flight with Flaps up).

**REVISION 21 – AUGUST 13, 2012 (CONTINUED)**

27-70-1 pg 27-1	Updated item for better clarification.
28-22-1 pg 28-1	Updated item for better clarification.
28-42-1 pg 28-1	Updated item for better clarification.
29-10-1 pg 29-1	Updated item for better clarification.
29-31-1 pg 29-1	Updated item for better clarification.
29-31-2 pg 29-1	Updated item for better clarification.
30-10-2 pg 30-1	Updated item for better clarification.
30-33-1 pg 30-2	Updated item for better clarification.
30-41-1 pg 30-2	Updated item for better clarification.
31-32-1 pg 31-1	Updated item according to PL-87, whenever applicable.
31-52-1 pg 31-2	Updated item for better clarification.
31-53-1 pg 31-2	Updated item for better clarification.
32-42-2 pg 32-1	Updated item including restrictions since AFM supplement request system to be operative on wet, contaminated and unpaved runways.
32-60-1 pg 32-1	Updated item for better clarification.
33-11-1 pg 33-1	Updated item according to PL-77, whenever applicable.
33-20-1 pg 33-1	Updated item for better clarification (including AD number).
33-22-1 pg 33-1	Updated item according to PL-123, whenever applicable.
33-42-1 pg 33-1	Updated item for better clarification.
33-44-1 pg 33-2	Updated item for better clarification.
33-45-1 pg 33-2	Updated item for better clarification.
33-47-1 pg 33-2	Updated item for better clarification and relief.
33-50-1 pg 33-2	Updated item for better clarification.
34-13-1 pg 34-1	Updated item according to PL-39, whenever applicable.
34-21-1 pg 34-1	Updated item for better clarification.
34-21-2 pg 34-1	Updated item according to PL-32, whenever applicable.
34-24-1 pg 34-2	Updated item according to PL-111, whenever applicable.
34-40-1 pg 34-3	Updated item according to PL-54, whenever applicable.
34-41-1 pg 34-3	Updated item for better clarification.
34-51-1 pg 34-3	Updated item according to PL-3, whenever applicable.
34-52-1 pg 34-3	Updated item according to PL-76, whenever applicable.
34-60-1 pg 34-4	Updated item for better clarification.
34-60-2 pg 34-4	Updated item for better clarification.
35-20-1 pg 35-1	Updated item for better clarification.
35-30-2 pg 35-1	Updated item for better clarification.
38-10-1 pg 38-1	Updated item according to PL-83, whenever applicable.
38-30-1 pr 38-1	Updated item according to PL-83, whenever applicable.
49-00-1 pg 49-1	Updated item for better clarification.
49-72-1 pg 49-1	Updated item for better clarification.
56-10-1 pg 56-1	Deleted item according to PL-124.
73-34-1 pg 73-1	Updated item for better clarification.
75-32-2 pg 75-1	Updated item for better clarification.
76-11-2 pg 76-1	Deleted item since it is a ferry flight condition.
77-11-1 pg 77-1	Updated item according to AC 20-88A.
77-12-1 pg 77-1	Updated item according to AC 20-88A.
77-12-2 pg 77-1	Updated item according to AC 20-88A.
77-20-1 pg 77-1	Updated item according to AC 20-88A.
79-32-1 pg 79-1	Updated item for better clarification.
Amendment CAT II	Updated item for better clarification.

# MASTER MINIMUM EQUIPMENT LIST

## LIST OF EFFECTIVE PAGES

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REVISION ..... 3 ..... JAN 29, 1988  
REVISION ..... 4 ..... OCT 31, 1988  
REVISION ..... 5 ..... APR 05, 1989  
REVISION ..... 6 ..... NOV 21, 1989  
REVISION ..... 7 ..... MAR 27, 1990  
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REVISION ..... 11 ..... SEP 13, 1994  
REVISION ..... 12 ..... SEP 06, 1995  
REVISION ..... 13 ..... AUG 04, 1997  
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REVISION ..... 16 ..... JUN 07, 2001  
REVISION ..... 17 ..... AUG 24, 2001  
REVISION ..... 18 ..... MAR 12, 2002  
REVISION ..... 19 ..... JUL 31, 2002  
REVISION ..... 20 ..... DEC 07, 2004  
REVISION ..... 21 ..... AUG 13, 2012

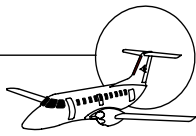
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# MASTER MINIMUM EQUIPMENT LIST

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## **MASTER MINIMUM EQUIPMENT LIST PREAMBLE**

The Airworthiness Regulations require that all equipment installed on an airplane in compliance with the Airworthiness Standards and the Operating Rules must be operative. However, the Rules also permit the publication of a Minimum Equipment List (MEL) where compliance with certain equipment requirements is not necessary in the interests of safety under all operating conditions. Experience has shown that with the various levels of redundancy designed into airplane, operation of every system or installed component may not be necessary when the remaining operative equipment can provide an acceptable level of safety. A Master Minimum Equipment List (MMEL) is developed by the Airworthiness Authority, with participation by the aviation industry, to improve airplane utilization and thereby provide more convenient and economic air transportation for the public. The Airworthiness Authority approved MMEL includes those items of equipment related to airworthiness and operating regulations and other items of equipment which the Administrator finds may be inoperative and yet maintain an acceptable level of safety by appropriate conditions and limitations; it does not contain obviously required items such as wings, flaps, and rudders. The MMEL is the basis for development of individual operator MELs which take into consideration the operator's particular airplane equipment configuration and operational conditions. Operator MELs, for administrative control, may include items not contained in the MMEL; however, relief for administrative control items must be approved by the Airworthiness Authority. An operator's MEL may differ in format from the MMEL, but cannot be less restrictive than the MMEL. The individual operator's MEL, when approved and authorized, permits operation of the airplane with inoperative equipment.

Equipment not required by the operation being conducted and equipment in excess of Airworthiness Regulations requirements are included in the MEL with appropriate conditions and limitations. The MEL must not deviate from the Airplane Flight Manual Limitations, Emergency Procedures or with Airworthiness Directives. It is important to remember that all equipment related to the airworthiness and the operating regulations of the airplane not listed on the MMEL must be operative.

Suitable conditions and limitations in the form of placards, maintenance procedures, crew operating procedures and other restrictions as necessary are specified in the MEL to ensure that an acceptable level of safety is maintained.

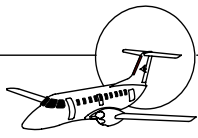
The MEL is intended to permit operation with inoperative items of equipment for a period of time until repairs can be accomplished. It is important that repairs be accomplished at the earliest opportunity. In order to maintain an acceptable level of safety and reliability the MMEL establishes limitations on the duration of and conditions for operation with inoperative equipment. The MEL provides for release of the airplane for flight with inoperative equipment. When an item of equipment is discovered to be inoperative, it is reported by making an entry in the Airplane Maintenance Record/Logbook as prescribed by Airworthiness Regulations. The item is then either repaired or may be deferred per the MEL or other approved means acceptable to the Airworthiness Authority prior to further operation. MEL conditions and limitations do not relieve the operator from determining that the airplane is in condition for safe operation with items of equipment inoperative.

When these requirements are met, an Airworthiness Release, Airplane Maintenance Record/Logbook entry, or other approved documentation is issued as prescribed by Airworthiness Regulations. Such documentation is required prior to operation with any item of equipment inoperative.

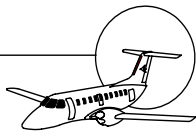
Operators are responsible for exercising the necessary operational control to ensure that an acceptable level of safety is maintained. When operating with multiple inoperative items, the interrelationships between those items and the effect on airplane operation and crew workload will be considered.

Operators are to establish a controlled and sound repair program including the parts, personnel, facilities, procedures, and schedules to ensure timely repair.

**WHEN USING THE MEL, COMPLIANCE WITH THE STATED INTENT OF THE PREAMBLE, DEFINITIONS, AND THE CONDITIONS AND LIMITATIONS SPECIFIED IN THE MEL IS REQUIRED.**



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## DEFINITIONS AND SYMBOLOGY

### 1) System definitions.

System numbers are based on Air Transport Association (ATA) Specification Number 100 and items are numbered sequentially.

- a. "Item" (Column 1) means the equipment, system, component, or function listed in the "Item" Column. Repair interval categories (A, B, C and D) are listed on right side of column 1. Repair intervals are described in definition 22.
- b. "Number Installed" (Column 2) is the number (quantity) of items normally installed in the airplane. This number represents the airplane configuration considered in developing this MMEL. Should the number be a variable (e.g., passenger cabin items) a number is not required.
- c. "Number Required for Dispatch" (Column 3) is the minimum number (quantity) of items required for operation provided the conditions specified in the column 4 are met.

**NOTE:** Where the MMEL shows a variable number required for dispatch, the MEL must reflect the actual number required for dispatch or an alternate means of configuration control approved by the administrator.

- d. "Remarks or Exceptions" (Column 4) in this column includes a statement either prohibiting or permitting operation with a specific number of items inoperative, provisos (conditions and limitations) for such operation, and appropriate notes.
- e. A vertical bar (change bar) in the margin indicates a change, addition or deletion in the adjacent text for current revision of that page only. The change bar is dropped at the next MMEL revision of that page.
- f. A change bar adjacent to the page number indicates that the page was renumbered only and that no change was made in the text.

2) "Airplane/Rotorcraft Flight Manual" (AFM/RFM) is the document required for the type certification and approved by the responsible ANAC Aircraft Certification Office. The CTA/ANAC approved AFM/RFM for the specific aircraft is listed on the applicable Type Certificate Data Sheet.

3) "As required by local regulations" means that the listed item is subject to certain provisions (restrictive or permissive) expressed in the RBAC/RBHA operating rules. The number of items required by local regulations must be operative. When the listed item is not required by RBAC/RBHA it may be inoperative for time specified by repair category.

4) Each inoperative item must be placarded to inform and remind the crewmembers and maintenance personnel of the equipment condition.

**NOTE:** To the extent practical, placards should be located adjacent to the control or indicator for the item affected; however, unless otherwise specified, placard wording and location will be determined by the operator.

5) "-" symbol in Column 2 and/or Column 3 indicates a variable number (quantity) of the item installed.

6) "Deleted" in the remarks column after a sequence item indicates that the item was previously listed but is now required to be operative if installed in the aircraft.

7) Reserved.

8) "Regulamento Brasileiro de Homologação Aeronáutica" (RBHA) or "Regulamentos Brasileiros de Aviação Civil" (RBAC) means the applicable requirement for the certified airplane.

9) "Flight Day" means a 24 hour period (from midnight to midnight) either Universal Time Coordinated (UTC) or local time, as established by the operator, during which at least one flight is initiated for the affected airplane.

10) "Icing Conditions" means an atmospheric environment that may cause ice to form on the aircraft (structural) or in the engine(s) (induction).

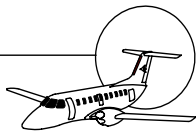
11) Alphabetical symbol in Column 4 indicates a proviso (condition or limitation) that must be complied with for operation with the listed item inoperative.

12) "Inoperative" means a system and/or component malfunctions to the extent that it does not accomplish its intended purpose and/or is not consistently functioning normally within its approved operating limit(s) or tolerance(s).

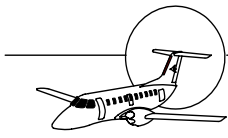
13) "Notes:" in Column 4 provides additional information for crewmember or maintenance consideration. Notes are used to identify applicable material which is intended to assist with compliance, but do not relieve the operator of the responsibility for compliance with all applicable requirements. Notes are not a part of the provisos.



- 14)**Inoperative components of an inoperative system: Inoperative items which are components of a system which is inoperative are usually considered components directly associated with and having no other function than to support that system (Warning/Caution systems associated with the inoperative system must be operative unless relief is specifically authorized per the MMEL).
- 15)**"(M)" symbol indicates a requirement for a specific maintenance procedure which must be accomplished prior to operation with the listed item inoperative. Normally these procedures are accomplished by maintenance personnel; however, other personnel may be qualified and authorized to perform certain functions. Procedures requiring specialized knowledge or skill, or requiring the use of tools or test equipment should be accomplished by maintenance personnel. The satisfactory accomplishment of all maintenance procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as part of the operator's manual or MEL.
- 16)**"(O)" symbol indicates a requirement for a specific operations procedure which must be accomplished in planning for and/or operating with the listed item inoperative. Normally these procedures are accomplished by the flight crew; however, other personnel may be qualified and authorized to perform certain functions. The satisfactory accomplishment of all procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as a part of the operator's manual or MEL.
- NOTE:** The (M) and (O) symbols are required in the operator's MEL unless otherwise authorized by the Administrator.
- 17)**"Deactivated" and "Secured" means that the specified component must be put into an acceptable condition for safe flight. An acceptable method of securing or deactivating will be established by the operator.
- 18)**"Visual Flight Rules" (VFR) is as defined by local regulations. This precludes a pilot from filing an Instrument Flight Rules (IFR) flight plan.
- 19)**"Visual Meteorological Conditions" (VMC) means the atmospheric environment is such that would allow a flight to proceed under the visual flight rules applicable to the flight. This does not preclude operating under Instrument Flight Rules.
- 20)**"Visible Moisture" means an atmospheric environment containing water in any form that can be seen in natural or artificial light; for example, clouds, fog, rain, sleet, hail, or snow.
- 21)**"Passenger Convenience Items" means those items related to passenger convenience, comfort or entertainment such as, but not limited to, galley equipment, movie equipment, ash trays, stereo equipment, overhead reading lamps, etc.
- 22)**Repair Intervals: All users of an MEL approved under local regulations must effect repairs of inoperative systems or components, deferred in accordance with the MEL, at or prior to the repair times established by the following letter. The letter designators are inserted adjacent to Column 2.
- Category A: Items in this category shall be repaired within the time interval specified in the remarks column of the operator's approved MEL. For times intervals specified in "calendar days" or "flight days", the day of malfunction was recorded in the aircraft maintenance record/logbook is excluded. For all other time intervals (flights, flight legs, cycles, hours, etc), repair tracking begins at the point when the malfunction is deferred in accordance with the operator's approved MEL.
- Category B: Items in this category shall be repaired within three (3) consecutive calendar days (72 hours), excluding the day the malfunction was recorded in the aircraft maintenance record/logbook. For example, if it was recorded at 10 a.m. on January 26<sup>th</sup>, the three day interval would begin at midnight the 26<sup>th</sup> and end at midnight the 29<sup>th</sup>.
- Category C: Items in this category shall be repaired within ten (10) consecutive calendar days (240 hours), excluding the day the malfunction was recorded in the aircraft maintenance record/logbook. For example, if it was recorded at 10 a.m. on January 26<sup>th</sup>, the ten day interval would begin at midnight the 26<sup>th</sup> and end at midnight February 5<sup>th</sup>.
- Category D: Items in this category shall be repaired within one hundred and twenty (120) consecutive calendar days (2880 hours), excluding the day the malfunction was recorded in the aircraft maintenance log and/or record.
- 23)**Visual Warning System – The EMB-120 is equipped with a visual warning system that consists of: Alarm/Indication Lights, Multiple Alarm Panel, WARNING and CAUTION Lights, Control Switches and Alarm Lights Controller. Failures that affect dispatchability are presented to the flight crew at one of these levels. Failures that effect dispatchability are presented to the flight crew at one of these levels.



- 24)**"Administrative control item" (ACI) means an item listed by the operator in the MEL for tracking and informational purposes. As an example, ACI may be used to track ETOPS accomplishment of required APU cold soak, or in-flight verification starts. It may be added to an operator's MEL by approval of the Principal Operations Inspector provided no relief is granted, or provided conditions and limitations are contained in an approved document (i.e. Structural Repair Manual, airworthiness directive, etc.). If relief other than that granted by an approved document is sought for an administrative control item, a request must be submitted to the Administrator. If the request results in review and approval by the ANAC, the item becomes an MMEL item rather than an administrative control item.
- 25)**"IF INSTALLED" term in Column 1 indicates an item which may have been installed on some models of aircraft covered by this MMEL. This item may be included on the operator's MEL after the approving office has determined that the item has been installed on one or more of the operator's aircraft. The term, however, shall not be carried forward into the operator's MEL. It should be noted that neither this policy nor the use of this term provides authority to install or remove an item from an aircraft.
- 26)**"Excess Items" means those items that have been installed that are redundant to the requirements of the RBAC's/RBHA's.
- 27)**"Day of Discovery" is the calendar day an equipment/instrument malfunction was recorded in the aircraft maintenance log and or record. This day is excluded from the calendar days or flight days specified in the MMEL for the repair of an inoperative item of equipment. This provision is applicable to all MMEL items, i.e., categories "A, B, C, and D".
- 28)**"Considered Inoperative", as used in the provisos means that item must be treated for dispatch, taxi and flight purposes as though it were inoperative. The item shall not be used or operated until the original deferred item is repaired. Additional actions include: documenting the item on the dispatch release (if applicable), placarding, and complying with all remarks, exceptions, and related MMEL provisions, including any (M) and (O) procedures and observing the repair category.
- 29)**"Is not used" in the provisos, remarks or exceptions for an MMEL item may specify that another item relieved in the MMEL "is not used". In such cases, crewmembers should not activate, actuate, or otherwise utilize that component or system under normal operations. It is not necessary for the operators to accomplish the (M) procedures associated with the item. However, operational requirements must be complied with, and an additional placard must be affixed, to the extent practical, adjacent to the control or indicator for the item that is not used to inform crewmembers that a component or system is not to be used under normal operations.
- 30)**As used in MMELs, Heavy Maintenance Visit (HMV) is a scheduled C-Check/D-check or airworthiness maintenance program inspection where the aircraft is scheduled to be out of service for 4 or more days.
- 31)**"Combustible material" is defined as being a material which is capable of catching fire and burning.
- NOTE:** When the MMEL item specifies that only non-combustible materials shall be carried, it is operator's responsibility to determine that all material (including packages, containers, contents, etc.) in the compartment is of a non-combustible nature. If it cannot be determined whether any proposed cargo is non-combustible, it must be loaded in the compartment.



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<b>21 AIR CONDITIONING</b>					
-23-1	Passenger Cabin Air Conditioning Shutoff Valve (If installed)	D	1	0	May be inoperative open.
-24-1	Gasper Fan	C	1	0	
-25-1	Recirculation Fans	C	2	1	
		C	2	0	(O) Both may be inoperative provided the associated temperature control is not set to the maximum cold position when in MAN mode.
-27-1	Electronic Bay Ventilation (Exhaust Fan/Air Shutoff Valve)	C	2	1	One exhaust fan or one air shutoff valve may be inoperative for temperatures below ISA + 27°C.
		C	2	1	(O) One exhaust fan or one air shutoff valve may be inoperative for temperatures above ISA + 27°C provided radar and transponder are turned on not more than 10 minutes before takeoff.
-28-1	Windshield Defog	C	1	0	May be inoperative provided windshield heating system operates normally and is used as required for windshield defogging.
-30-1	Outflow Valves				
	1) Electropneumatic	C	1	0	(M)(O) May be inoperative provided: a) Valve is secured closed, and b) Manual cabin pressure control system operates normally.
	2) Pneumatic	C	1	0	(M) May be inoperative provided: a) Valve is secured closed, and b) Automatic cabin pressure control system operates normally.
	3) Electropneumatic and Pneumatic	C	2	0	(M)(O) May be inoperative provided: a) Flight is conducted in an unpressurized configuration, and b) Both valves are secured open.
-31-1	Cabin Pressure Control Systems				
	1) Automatic	C	1	0	(M)(O) May be inoperative provided: a) Manual system operates normally, and b) Electropneumatic outflow valve is secured closed.
	2) Manual	C	1	0	(M)(O) May be inoperative provided: a) Automatic system operates normally, and b) Pneumatic outflow valve is secured closed.
	3) Automatic and Manual	C	2	0	(M)(O) Both systems may be inoperative provided: a) Flight is conducted in an unpressurized configuration, and b) Both outflow valves are secured open.

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<b>21 AIR CONDITIONING</b>				
-31-2 Cabin Altitude Warning System	C	1	0	(O) May be inoperative provided flight is conducted at or below 10000 ft MSL.
	C	1	0	(M)(O) May be inoperative provided: a) Flight is conducted in an approved unpressurized configuration, and b) AFM limitations are complied with.
1) Aural Warning System	C	1	0	(M) May be inoperative provided visual warning system operates normally.
2) Visual Warning System	C	1	0	(M) May be inoperative provided aural warning system operates normally.
-31-3 Pressurization Triple Indicator				
1) Cabin Differential Pressure Indicator	C	1	0	(O) May be inoperative provided: a) Cabin altitude indicator operates normally, and b) A chart is provided to convert cabin altitude to cabin differential pressure.
	C	1	0	(M)(O) May be inoperative provided: a) Flight is conducted in an approved unpressurized configuration, and b) AFM limitations are complied with.
2) Cabin Altitude Indicator	C	1	0	(O) May be inoperative provided: a) Cabin differential pressure indicator operates normally, and b) A chart is provided to convert cabin differential pressure to cabin altitude.
	C	1	0	(M)(O) May be inoperative provided: a) Flight is conducted in an unpressurized configuration, and b) AFM limitations are complied with.
3) Cabin Rate of Change Indicator	C	1	0	(O) May be inoperative provided: a) Automatic pressurization operates normally, and b) Cabin differential pressure indicator and cabin altitude indicator operate normally.
	C	1	0	(M)(O) May be inoperative provided: a) Flight is conducted in an unpressurized configuration, and b) AFM limitations are complied with.
-31-4 Cockpit Door Blow Out Shear Plate	C	2	0	(M)(O) May be inoperative provided the door is secured in the open position.



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<b>21 AIR CONDITIONING</b>					
-50-1 Pack Pressure Regulator/Shutoff Valves					
1) Bleed Economizer Function	C	2	0		
2) Shutoff Function	C	2	1		(M)(O) One may be inoperative provided: a) Associated engine and APU bleed air shutoff valves operate normally and are verified closed, b) Crossbleed valve operates normally and is verified closed, and c) AFM limitations are complied with.
	C	2	0		(M)(O) Both may be inoperative provided: a) Flight is conducted in an approved unpressurized configuration, b) Engine (1 and 2) and APU bleed air shutoff valves operate normally and are verified closed, and c) AFM limitations are complied with.
-50-2 Air Conditioning Packs	C	2	1		(O) One may be inoperative provided: a) Flight is conducted at or below FL 250, and b) Both recirculation fans operate normally.
	C	2	0		(M)(O) One or both may be inoperative provided: a) Both recirculation fans operate normally, b) Flight is conducted in an approved unpressurized configuration, and c) AFM limitations are complied with.
-51-1 Ram Air Valves	C	2	1		(M) One may be inoperative secured open provided the associated air conditioning pack is not used.
	C	2	0		(M)(O) Both may be inoperative secured open provided: a) Flight is conducted in an approved unpressurized configuration, b) Air conditioning packs are not used, and c) AFM limitations are complied with.
	C	2	0		(M) One or both may be inoperative secured closed provided the associated air conditioning pack operates normally.
-51-2 Ground Cooling Fans	C	2	0		(O) One or both may be inoperative provided the associated pack is used only in flight.
-51-3 Ram Air Check Valves (Flap Valves)	C	2	0		(M)(O) One or both may be inoperative provided: a) Affected valve is not locked closed, and b) Associated pack is used only in flight.
-60-1 Cockpit and Cabin Automatic Temperature Controls	C	2	0		(O) One or both may be inoperative provided the associated manual control operates normally.
-60-2 Cockpit and Cabin Manual Temperature Controls	C	2	0		(O) One or both may be inoperative provided the associated automatic control operates normally.
-60-3 Cockpit and Cabin Temperature Indicators	C	2	0		

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<b>22 AUTO FLIGHT</b>					
-10-1	Electrical Trim System				
	1) Autopilot Computer Trim Channel	C	2 0		(O) One or both may be inoperative provided autopilot is not used and the pitch trimming is manually performed.
	2) Pitch Trim Switches	C	2 0		(O) One or both may be inoperative provided the pitch trimming is manually performed.
-11-1	Autopilot/Flight Director System				
	1) Autopilot System	C	2 0		May be inoperative provided enroute or approach minimums do not require its use.
	2) Flight Director System	C	2 0		May be inoperative provided enroute or approach minimums do not require its use and autopilot system is considered inoperative. <b>NOTE 1:</b> Any mode which functions normally may be used. <b>NOTE 2:</b> Autopilot system could be operative for respective flight director operative.
-11-2	Autopilot Disconnect Switches				
		C	2 1		One may be inoperative provided autopilot is not used below 1500 ft AGL.
		C	2 0		Both may be inoperative provided autopilot is not used.
-11-3	Yaw Damper System				
		C	2 1		(O) One may be inoperative for ILS coupled approach provided: a) Affected yaw damper is disengaged, and b) The associated autopilot of the operative yaw damper operates normally.
		C	2 0		(O) One or both may be inoperative provided flight is conducted with yaw damper disengaged and the weather minimums do not impose the autopilot use.

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<b>23 COMMUNICATION</b>					
-11-1 HF Communications Transmitters/Receivers (If installed)	D	-	-	-	Any in excess of those required by regulations may be inoperative.
-15-1 VHF Communications Transmitters/Receivers	D	-	-	-	Any in excess of those required by regulations may be inoperative provided it is not powered by an Emergency Bus and not required for emergency procedures.
1) Memory and Preset display functions (CTL-22 VHF COM Control Panel)	D	-	-	-	May be inoperative provided active frequency display/function operates normally.
-21-1 Selective Call System (SELCAL) (If installed)	C	1	0	0	(O) May be inoperative provided alternate procedure are established and used.
	D	1	0	0	May be inoperative provided procedures do not require its use.
-30-1 Passenger Address System					
1) Passenger Configuration (RT, ER or QC model)	B	1	0	0	(O) May be inoperative provided: a) Alternate, normal and emergency procedures, and/or operating restrictions are established and used, and b) Flight attendant alerting system (audio and visual) operates normally. <b>NOTE:</b> Any station function(s) that operate normally may be used.
	C	1	0	0	(O) May be inoperative provided: a) PA not required by local regulations, and b) Alternate, normal and emergency procedures, and/or operating restrictions are established and used. <b>NOTE:</b> Any station function(s) that operate normally may be used.
a) Lavatory Speakers	C	1	0	0	(O) May be inoperative provided alternate procedures are established and used.
2) Cargo Configuration (QC model)	C	1	0	0	May be inoperative provided alternate, normal and emergency restrictions are established and used.
	D	1	0	0	May be inoperative provided procedures are established and used.
a) Lavatory Speakers	C	1	0	0	(O) May be inoperative provided alternate procedures are established and used.
	D	1	0	0	May be inoperative provided procedures do not require its use.
-31-1 Prerecorded Passenger Announcement System (If installed)	D	1	0	0	(O) May be inoperative provided alternate procedures are established and used. <b>NOTE:</b> Not required for all cargo operations.
-31-2 Headsets, Speakers and Microphones	C	-	-	-	As required by local regulations. <b>NOTE:</b> For airplanes operating under Brazilian regulations, one microphone and one speaker or headset are required for each crewmember on flight deck duty.

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23 COMMUNICATION				4. Remarks and/or exceptions	
-41-1	Crewmember Interphone System(s)	C	2	1	
	1) Passenger Configuration (RT, ER or QC model)				
	a) Flight Deck to Cabin, Cabin to Flight Deck Functions	B	-	-	(O) May be inoperative provided: a) Flight deck to cabin and cabin to flight deck interphone functions operate normally on at least fifty percent of the cabin handsets, and b) Alternate communications procedures between the affected flight attendants station(s) are established and used. <b>NOTE:</b> Any station function(s) that operate normally may be used.
	b) Flight Deck to Ground Function	C	-	0	(O) May be inoperative provided alternate procedures are established and used.
		D	-	0	May be inoperative provided procedures do not require its use.
	2) Cargo Configuration (FC or QC model)				
	a) Flight Deck to Cabin, Cabin to Flight Deck functions (QC model only)	C	1	0	(O) May be inoperative provided alternate, normal and emergency procedures, and/or operating restrictions are established and used.
		D	1	0	May be inoperative provided procedures do not require its use.
	b) Flight Deck to Ground Function	C	-	0	(O) May be inoperative alternate procedures are established and used.
		D	-	0	May be inoperative provided procedures do not require its use.

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<b>23 COMMUNICATION</b>					
-41-2 Alerting System (Audio/Visual)					
1) Passenger Configuration (RT, ER or QC model)					
a) Flight Deck Call Visual Alerting System	B	1	0		May be inoperative provided the flight deck audio alerting system operates normally. <b>NOTE:</b> The flight deck audio alerting must always be operative.
b) Flight Attendant Visual Alerting System	B	1	0		(O) May be inoperative provided: a) PA system operates normally, b) If affected visual alerting system is used for lavatory smoke detector alerting, an alternate lavatory smoke detector alert (audio or visual) is installed and operates normally, and c) Alternate procedures for contacting flight attendants are established and used. <b>NOTE 1:</b> Passenger to Attendant Call System is considered Non-Essential Equipment and Furnishings (NEF). <b>NOTE 2:</b> Any visual alerting system function(s) that operates normally may be used.
c) Flight Attendant Audio Alerting System	B	-	0		(O) May be inoperative provided: a) PA system operates normally, b) If affected audio alerting system is used for lavatory smoke detector alerting, an alternate lavatory smoke detector alert (audio or visual) is installed and operates normally, and c) Alternate procedures for contacting flight attendants are established and used. <b>NOTE 1:</b> Passenger to Attendant Call System is considered Non-Essential Equipment and Furnishings (NEF). <b>NOTE 2:</b> Any audio alerting system function(s) that operates normally may be used.
2) Cargo Configuration (FC or QC model)					
a) Flight Deck Call Visual Alerting System	B	1	0		May be inoperative provided the flight deck audio alerting system operates normally.
-50-1 Integrated Audio System					Deleted Rev 21. <b>NOTE:</b> Refer to item 25-60-4 for Observer's Audio Panel relief.

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<b>23 COMMUNICATION</b>					
-50-2 PTT function (Airplanes equipped with PTT on Glareshield Panel) (If installed)	C	4	2		(O) May be inoperative provided: a) At least one PTT function is available at each pilot station, and b) The HOT function (cockpit intercomm) on the control wheel operates normally.
-70-1 Cockpit Voice Recorder System (If installed)	A	1	0		May be inoperative provided: a) Flight Data Recorder (FDR) operates normally, and b) Repairs are made within three flight days.
-80-1 Boom Microphones					
1) Cockpit Voice Recorder equipped to record Boom Microphone	A	-	0		May be inoperative provided: a) Flight Data Recorder (FDR) operates normally, and b) It is not required by local regulations, and c) Repairs are made within three flight days.
2) Cockpit Voice Recorder not equipped to record Boom Microphone (If installed)	D	-	0		Any in excess of those required by local regulation may be inoperative.

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<b>24 ELECTRICAL POWER</b>				
-20-1 Inverter INOP Lights	C	2	1	(O) May be inoperative provided the associated inverter operates normally.
-20-2 AC BUS OFF Lights	C	4	3	(O) One may be inoperative provided: a) The associated bus operates normally, and b) All other BUS OFF lights operate normally.
-30-1 Engine Starter/Generators 1) Generators Functions	B	9	8	(O) One generator function may be inoperative provided: a) The associated starter operates normally, b) APU generator operates normally and it is used continuously to supply power in parallel with the operating generator, and c) Associated generator control switch is OFF.
-30-2 APU Generator (If installed)	C	1	0	
-30-3 Engine Starter/Generator GEN OFF BUS Lights	C	2	1	(O) One may be inoperative provided: a) BUS TIE functions operate normally, b) CENTRAL BUS OFF light and associated BUS OFF light operate normally, c) Associated generator is monitored on the voltmeter throughout the flight, and d) For GEN 1 light only, the EMERG BUS OFF light operates normally.
-30-4 APU GEN OFF BUS Light	C	1	0	(O) One may be inoperative provided: a) CENTRAL BUS OFF light operates normally, and b) APU generator is monitored on the voltmeter when the APU is connected to the central bus.
-30-5 CENTRAL BUS OFF Light	C	1	0	(O) May be inoperative provided both BUS OFF lights and the BATT OFF BUS light operate normally.

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<b>24 ELECTRICAL POWER</b>				
-31-1 Auxiliary Generators	B	2	1	(M)(O) One may be inoperative provided: a) The associated generator control switch is OFF, and b) The affected generator is removed or verified for physical integrity and free noiseless movement of the rotor shaft.
	C	2	1	(M)(O) One may be inoperative provided: a) The associated generator is control switch is OFF, b) The affected generator is removed or verified for physical integrity and free noiseless movement of the rotor shaft, and c) APU generator operates normally.
	B	2	0	(M)(O) One or both may be inoperative provided: a) The associated generator control switch is OFF, b) The affected generator is removed or verified for physical integrity and free noiseless movement of the rotor shaft, and c) APU generator operates normally.
-31-2 Voltammeters	C	2	1	Either the left or right entire voltammeter function only may be inoperative.
-31-3 Auxiliary Generator GEN OFF BUS Lights	C	2	1	
-40-1 External Power System	C	1	0	
-40-2 GPU AVAILABLE Light (If installed)	C	1	0	



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<b>25 EQUIPMENT/FURNISHING</b>					
-02-2	Crewmember Seat Adjustment Mechanism	A	-	-	(M) Adjustment mechanism in vertical and lateral modes may be inoperative provided: a) Inoperative adjustment is locked to the individual crewmember requirements, b) Fore and aft adjustment mechanism must be operative, and c) Operations are limited to not more than 10 flight hours before repairs are made.
-11-1	Flight Crew Power Seat Adjustment System (If installed)	D	-	0	(M)(O) May be inoperative provided: a) System is secured deactivated, and b) Manual seat adjustment system operates normally.
-21-1	Cabin Attendant's Seat (RT, ER or QC model)	A	1	0	(M)(O) May be inoperative provided: a) Affected seat is not occupied, b) Flight attendant displaced by inoperative seat occupies the passenger seat most accessible to the inoperative seat, c) Alternate procedures are established and used as published in crewmember manuals, d) Folding type seat is stowed or secured in the retracted position, e) Passenger seat assigned to flight attendant is placarded "FOR FLIGHT ATTENDANT USE ONLY", and f) Repairs are made within 2 flight days. <b>NOTE 1:</b> An automatic folding seat that will not stow automatically is considered inoperative. <b>NOTE 2:</b> A seat with a missing or inoperative restraint system is considered inoperative. <b>NOTE 3:</b> The above provisos apply to flight attendant seats. Individual operators, when operating with inoperative seats, will consider the locations and combinations of seats to ensure that the proximity to exits and distribution requirements of the applicable regulations are met.
		D	1	0	(M) May be inoperative provided: a) Flight attendant is not required by local regulations, b) Affected seat is not occupied, and c) Folding type seat stows automatically or is secured in the retracted position. <b>NOTE 1:</b> An automatic folding seat that will not stow automatically is considered inoperative. <b>NOTE 2:</b> A seat position with an inoperative or missing restraint system is considered inoperative.

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<b>25 EQUIPMENT/FURNISHING</b>				
-22-1	Storage Bins/Cabin, Galley and Lavatory Storage Compartments/Closets (RT, ER or QC model)	C	-	- (M) May be inoperative provided: a) Procedures are established to secure the affected bin, compartment or closet in the closed position, b) Affected bin, compartment or closet is prominently placarded "DO NOT USE", c) Any emergency equipment located in the affected compartment is considered inoperative, and d) Affected bin, compartment or closet is not used for storage of any items except for those permanently affixed. <b>NOTE:</b> For overhead bins, if no partitions are installed, the entire overhead bin is considered inoperative.
		C	-	- (M)(O) May be inoperative provided: a) Affected door is removed or secured in the retracted position (fully open) position, b) Affected bin, compartment or closet is not used for storage of any items except those permanently affixed, c) Affected bin, compartment or closet is prominently placarded "DO NOT USE", d) Procedures are established and used to alert crewmembers and passengers of inoperative bins, compartments or closets, and e) Passengers are briefed that affected bin, compartment or closet is not used. <b>NOTE 1:</b> For overhead bins, if no partitions are installed, the entire overhead bin is considered inoperative. <b>NOTE 2:</b> Any emergency equipment located in the affected bin, compartment or closet (permanently affixed) is available for use.

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<b>25 EQUIPMENT/FURNISHING</b>					
-30-1 Passenger Seat(s) (RT, ER or QC model)	D	-	-	-	May be inoperative provided: a) Seat does not block an Emergency Exit, b) Seat does not restrict any passenger from access to the main airplane aisle, and c) The affected seat(s) are blocked and placarded "DO NOT OCCUPY".  <b>NOTE 1:</b> A seat with an inoperative seat belt is considered inoperative. <b>NOTE 2:</b> Inoperative seats do not affect the required number of flight attendants. <b>NOTE 3:</b> Affected seat(s) may include the seat(s) behind and/or adjacent outboard seats.
1) Recline Mechanism	D	-	-	-	(M) May be inoperative and seat occupied provided seat back is secured in the full upright position.
	D	-	-	-	May be inoperative and seat occupied provided seat back is immovable in full upright position.
2) Underseat Baggage Restraint Bars	C	-	-	-	(O) May be inoperative provided: a) Baggage is not stowed under seat with inoperative restraining bar, b) Associated seat is placarded "DO NOT STOW BAGGAGE UNDER THIS SEAT", and c) Procedures are established to alert cabin crew of inoperative restraining bar.
3) Armrest					
a) Armrest with Recline Mechanism	D	-	-	-	(M) May be inoperative or missing and seat occupied provided: a) Armrest does not block an Emergency Exit, b) Armrest does not restrict any passenger from access to the main airplane aisle, and c) If armrest is missing, seat is secured in the full upright position.
b) Armrest without Recline Mechanism	D	-	-	-	May be inoperative or missing and seat occupied provided: a) Armrest does not block an Emergency Exit, and b) Armrest does not restrict any passenger from access to the main airplane aisle.
-30-2 Galley Waste Receptacles Access Doors/Covers (RT, ER or QC model)	C	-	-	-	(M)(O) May be inoperative provided: a) The container is empty and the access is secured to prevent waste introduction into the compartment, and b) Procedures are established to ensure that sufficient galley waste receptacles are available to accommodate all waste that may be generated on a flight.
-40-1 Exterior Lavatory Door Ashtrays (RT, ER or QC model)	A	1	0	0	May be inoperative provided it is replaced within 3 calendar days.

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System & Sequence Number	ITEM	2. Number installed		
		3. Number required for dispatch		
4. Remarks and/or exceptions				
<b>25 EQUIPMENT/FURNISHING</b>				
-50-1 Cargo Restraint Systems (If installed)	C	-	-	May be inoperative or missing such that the effect is that the item must be considered inoperative, provided cargo compartment remains empty.
	C	-	-	May be inoperative or missing such that the effect is that the item must be considered inoperative, provided pallet with inoperative lock(s) is removed.
-50-2 Cargo Compartment Smoke Partition or Smoke Partition Door (If installed)	C	1	0	May be damaged or missing provided cargo compartment remains empty.
	C	1	0	May be damaged or missing provided only non-combustible materials are carried.
-60-1 Emergency Locator Transmitter (ELT)				
1) Survival Type ELTs	D	-	-	Any in excess of those required by local regulations may be inoperative or missing.
2) Fixed ELTs	A	-	0	(M) May be inoperative provided: a) System is deactivated, and b) Repairs are made according to local regulations.
	A	-	0	May be missing provided repairs are made according to local regulations.
	D	-	-	(M) Any in excess of those required by local regulations may be inoperative provided system is deactivated.
	D	-	-	Any in excess of those required by local regulations may be missing.
-60-2 Passenger Convenience/NEF Item(s) (ER, RT or QC model)				
1) Passenger Convenience Items		-	0	Passenger convenience item, as expressed in this MMEL, are those items related to passenger convenience, comfort or entertainment, such as, but not limited to: galley equipment, movie equipment, ashtrays, stereo equipment, overhead reading lamps, etc. Items addressed elsewhere in this document shall not be included. (M) or (O) procedures, if required, must be available to the flight crew and included in the operator's appropriate document. <b>NOTE:</b> Exterior lavatory door ashtrays are not considered passenger convenience items.
2) Non-Essential Equipment & Furnishings (NEF)		-	0	May be inoperative, damaged or missing provided that the item(s) is deferred in accordance with the NEF deferral program. The NEF program, procedures and processes are outlined in the operator's (insert name) Manual. (M) and (O) procedures, if required, must be available to the flight crew and included in the operator's appropriate document. <b>NOTE:</b> Exterior lavatory door ashtrays are not considered NEF items.

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<b>EMB-120 BRASILIA</b>				<b>25-5</b>	
System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
<b>25 EQUIPMENT/FURNISHING</b>					
-60-4 Observer Seat (Including Associated Equipment)	A	1	0	0	May be inoperative provided: a) Passenger seat in the cabin is made available to an Authority Flight Inspector for the performance of official duties, and b) Repairs are made within 2 flight days.
	A	1	0	0	May be inoperative provided: a) Required minimum safety equipment (safety belt and oxygen) is available, b) Seat is acceptable to an Authority Flight Inspector for the performance of official duties, and c) Repairs are made within 2 flight days. <b>NOTE 1:</b> These provisos are intended to provide for occupancy of the above seat by an Authority Flight Inspector when the minimum safety equipment (oxygen and safety belt) is functional and the inspector determines the conditions to be acceptable. <b>NOTE 2:</b> The pilot-in-command will determine if the minimum safety equipment is functional for other people authorized to occupy observer seat.
-60-5 Flight Attendant Flashlight Holder Assemblies	C	-	-	-	May be inoperative or missing provided crewmember has a flashlight of equivalent characteristics readily available.
-60-6 Megaphone (If installed)	D	-	-	-	Any in excess of those required by local regulations may be inoperative or missing provided: a) Inoperative megaphone is removed from the passenger cabin, b) Associated placard is removed or obscured, and c) Required distribution is maintained.
-60-7 Flight Deck Flashlight Holder Assemblies	C	-	0	0	May be inoperative or missing provided crewmember has a flashlight of equivalent characteristics readily available.
-60-8 Pyrotechnic Signal Device (If installed)	C	-	-	-	Any in excess of those required by local regulations may be inoperative provided inoperative unit is removed from the passenger cabin.

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<b>EMB-120 BRASILIA</b>				<b>25-6</b>	
System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
<b>25 EQUIPMENT/FURNISHING</b>					
-60-9	Emergency Medical Equipment (RT, ER or QC model)				
	1) Emergency Medical Kit (EMK) and/or associated equipment	A	- 0		(O) May be incomplete, missing or inoperative provided: a) EMK is resealed in a manner that will identify it as a unit that can not be mistaken for a fully serviceable unit, and b) Repairs or replacements are made within 1 flight.
		D	- -		Any in excess of those required by local regulations may be incomplete, missing or inoperative.
	2) First Aid Kit (FAK) and/or associated equipment.	A	- 0		(O) if more than one is required by local regulations, only one of the required FAKs may be incomplete, missing or inoperative provided: a) FAK is resealed in a manner that will identify it as a unit that can not be mistaken for a fully serviceable unit, and b) Repairs or replacements are made within 1 flight.
		D	- -		Any in excess of those required by local regulations may be incomplete, missing or inoperative.
-60-10	"FASTEN SEAT BELTS WHILE SEATED" signs or placards (ER, RT or QC model)	C	- -		One or more signs or placards may be illegible or missing provided a legible sign or placard is readable from each occupied passenger seat.
-64-2	Flotation Equipment				
	1) Cabin Life Vest (If installed)	D	- -		(O) Any in excess of those required by local regulations may be missing. <b>NOTE:</b> Inoperative equipment must be removed from passenger cabin.

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<b>EMB-120 BRASILIA</b>				<b>26-1</b>
System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch
				4. Remarks and/or exceptions
<b>26 FIRE PROTECTION</b>				
-12-1 APU Fire Detection System	C	1	0	May be inoperative provided APU is not used.
-13-1 Lavatory Smoke Detection System (ER, RT or QC model)	C	1	-	(M)(O) For each lavatory, the lavatory smoke detection system may be inoperative provided: a) Lavatory waste receptacle is empty, b) Lavatory door is locked, closed and placarded "INOPERATIVE – DO NOT ENTER", and c) Lavatory is used only by crewmembers. <b>NOTE 1:</b> These provisos are not intended to prohibit lavatory inspection by crewmembers. <b>NOTE 2:</b> Lavatory smoke detection system is not required for all cargo operations.
-14-1 Cabin Smoke Detection System (If installed)	C	1	0	May be inoperative for passenger configuration.
-15-0 Baggage Compartment Smoke Detection System	C	1	0	(O) May be inoperative provided procedures are established and used to ensure the associated compartment remains empty, or is verified to contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), and/or Fly Away Kits. <b>NOTE:</b> Operator MELs must define which items are approved for inclusion in the Fly Away Kit, and which materials can be used as ballast.
-21-1 Engine/Wheelwell Fire Extinguishing Indicator Lights				
1) ABLE Lights (green)	C	2	0	(M) One or both may be inoperative provided an approved procedure is used once each flight day to verify that the associated squib circuit operates normally.
2) INOP Lights (amber)	C	2	1	(M) One may be inoperative provided an approved procedure is used once each flight day to verify the extinguisher bottles are properly charged.
-21-2 Engine/Wheelwell Extinguisher Bottle Thermal Discharge Discs	C	2	0	(M) One or both may be missing provided gauge readings or other approved means are used to verify an adequate charge once each flight day.
-22-1 APU Fire Extinguishing System	C	1	0	May be inoperative provided APU is not used.
-22-2 APU Fire Extinguishing System Indicator Lights				
1) ABLE Light (green)	C	1	0	(M) May be inoperative provided an approved procedure is used once each flight day to verify the associated squib circuit operates normally.
2) INOP Light (amber)	C	1	0	(M) May be inoperative provided an approved procedure is used once each flight day to verify that extinguisher bottle is properly charged.
-22-3 APU Extinguisher Bottle Thermal Discharge Disc	C	1	0	(M) May be missing provided gauge reading or other approved means are used to verify an adequate charge once each flight day.

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<b>EMB-120 BRASILIA</b>				<b>26-2</b>	
System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
<b>26 FIRE PROTECTION</b>					
-23-0 Baggage Compartment Fire Suppression System (If installed)	C	1	0	(O) May be inoperative provided procedures are established and used to ensure the associated compartment remains empty, or is verified to contain only empty cargo handling equipment, ballast (ballast may be loaded in ULDs), and/or Fly Away Kits. <b>NOTE 1:</b> Operator MELs must define which items are approved for inclusion in the Fly Away Kits, and which materials can be used as ballast. <b>NOTE 2:</b> Class E cargo compartments require only the installation of smoke or fire detection systems (not suppression).	
-23-1 Lavatory Fire Extinguisher System (If installed)	C	1	0	May be inoperative provided lavatory smoke detector system operates normally.	
	C	1	0	(M)(O) May be inoperative provided: a) Lavatory waste receptacle is empty, b) Lavatory door is locked, closed and placarded "INOPERATIVE – DO NOT ENTER", and c) Lavatory is used only for crewmembers. <b>NOTE 1:</b> These provisos are not intended to prohibit lavatory inspection by crewmember. <b>NOTE 2:</b> A lavatory fire extinguisher system is not required for all cargo operations.	
-26-1 Portable Fire Extinguishers	D	-	-	(M) Any in excess of those required by local regulations may be inoperative or missing provided: a) Inoperative fire extinguisher is tagged inoperative, removed from the installed location, and placed out of sight so it can not be mistaken for a functional unit, and b) Required distribution is maintained.	



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System & Sequence Number	ITEM	1.	2. Number installed		4. Remarks and/or exceptions
			3. Number required for dispatch		
<b>27 FLIGHT CONTROLS</b>					
-13-1 Control Disengage Warning System	C	1	0		(O) May be inoperative provided an appropriate check is made by crew prior to each departure.
-21-1 Pedal Adjustment Mechanism	C	2	0		(M)(O) May be inoperative provided the respective pedal(s) is properly adjusted by other means before takeoff.
-34-1 Fast-Slow Indicators (If installed)	C	2	0		
-36-2 Stall Warning Systems	A	2	1		(M)(O) One system may be inoperative provided: a) Remaining channel is verified to operate normally before each departure, b) Airplane is not operated in known or forecast icing conditions, and c) Repairs are made within 3 flight legs.
-50-0 Flap System					Deleted Rev 21.
-50-1 Flap Position Indicator	C	1	0		(O) May be inoperative provided the light bars on the Annunciator Panel operate normally.
-50-2 Flap Warning Indication Lights (ASYMMETRY, CONTROL FAULT, DISAGREEMENT) (If installed)	C	3	0		(O) May be inoperative provided light bars on the Annunciator Panel operate normally.
-50-3 Flap Annunciator Panel Light Bars (only for flap annunciator panel version 2 equipped with dual light bars on each column)	C	14	7		In a column, one or more LEDs of the same light bar may be inoperative provided all LEDs from the opposite light bar operate normally.
-70-1 Gust Lock	C	1	0		(M)(O) May be inoperative provided: a) System is verified to be unlocked before each departure, and b) Appropriate measures are taken to prevent damage from gust while on the ground.

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System & Sequence Number	ITEM	1.	2. Number installed		3. Number required for dispatch	4. Remarks and/or exceptions
<b>28 FUEL</b>						
-21-1 Ejector Main Fuel Pumps	C	2	0		(O) One or both may be inoperative provided: a) Two electric pumps in the associated tank operate normally, b) One electric pump in the associated tank is kept on during operation, and c) AFM limitations are complied with.	
-21-2 Electric Fuel Boost Pumps 1)4 Pump Installation	C	4	2		(O) One pump per tank may be inoperative provided all other pumps operate normally.	
-21-3 Motive Flow Shutoff Valves	C	2	0		(M)(O) One or both may be inoperative provided: a) Valve(s) is(are) secured closed, b) Two electric pumps in the associated tank operate normally, c) One electric pump in the associated tank is kept on during operation, and d) AFM limitations are complied with.	
-22-1 Pressure Refueling System 1)Auto Mode	C	1	0			
	C	1	0		(M) May be inoperative provided: a) Manual mode operates normally, and b) Vent valves are verified open.	
	C	1	0			
2)Manual Mode	C	1	0			
-23-1 APU Shutoff Valve	C	1	0		(M) May be inoperative provided: a) APU is not used, and b) Valve is secured closed.	
-24-1 Defueling Shutoff Valves	C	2	0		(M) May be inoperative closed.	
-41-1 Quantity Indicators	C	2	1		(M) One may be inoperative provided: a) Fuel quantity in associated tank is confirmed by an approved procedure prior to each departure, b) Both fuel flow indicators operate normally, and c) Fuel remaining or fuel used function of the totalizer operates normally.	
-42-1 Direct Quantity Measuring System (Dripless Sticks)	C	1	0		(O) May be inoperative provided: a) Fuel quantity is determined by alternate means, and b) There is no evidence of leakage.	

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System & Sequence Number	ITEM	1.	2. Number installed		3. Number required for dispatch	4. Remarks and/or exceptions
<b>29 HYDRAULIC POWER</b>						
-10-1 Electric Hydraulic Pumps 1) Automatic Function	C	2	0		(O) May be inoperative provided the affected pump is manually turned on before takeoff and landing.	
-30-1 FILTER Lights	C	2	1		(M) One may be inoperative provided the filter pop-up indicators are inspected once each flight day.	
-31-1 Hydraulic Pressure Indicator 1) Green System	C	1	0		May be inoperative provided: a) Associate MAIN PUMP LOW PRESS light operates normally, and b) Associated hydraulic quantity indicator operates normally.	
2) Blue System	C	1	0		May be inoperative provided: a) Associated MAIN PUMP LOW PRESS light operates normally, and b) Associated hydraulic quantity indicator operates normally.	
-31-2 Hydraulic Quantity Indicator 1) Green System	C	1	0		(M) May be inoperative provided: a) Associated fluid quantity is verified to be normal before each departure, and b) Associated hydraulic pressure indicator operates normally.	
2) Blue System	C	1	0		(M) May be inoperative provided: a) Associated fluid quantity is verified to be normal before each departure, and b) Associated hydraulic pressure indicator operates normally.	
-31-3 MAIN PUMP LOW PRESS Lights	C	2	0		One or both may be inoperative provided the associated pressure indicator operates normally and is monitored during the flight.	
-31-4 Reservoir LOW LEVEL Lights	C	2	0		One or both may be inoperative provided the associated fluid quantity indicator operates normally and is monitored during the flight.	
-31-5 Reservoir LOW PRESS Lights	C	2	1		(M) One may be inoperative provided reservoir pressurization system operates normally.	

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<b>EMB-120 BRASILIA</b>				<b>30-1</b>		
System & Sequence Number	ITEM	1.	2. Number installed		3. Number required for dispatch	4. Remarks and/or exceptions
<b>30 ICE AND RAIN PROTECTION</b>						
-10-1	Leading Edge Deicing System	B	1	0		(O) May be inoperative provided airplane is not operated in know or forecast icing conditions.
-10-2	Leading Edge Failure Indicating Lights	C	11	5		(M)(O) Wing indicating lights may be inoperative provided: a) Leading edge deicing system is verified to operate normally prior to departure into known or forecast icing conditions, and b) Proper operation of wing deice is visually verified while in icing conditions.
		B	11	0		May be inoperative provided airplane is not operated in known or forecast icing conditions.
-10-3	Leading Edge NORMAL Light	C	1	0		May be inoperative provided all leading edge failure indicating lights operate normally or the system is confirmed to operate normally prior to departure into known or forecast icing conditions.
-20-1	Engine Air Inlet Deicing System	B	2	1		One may be inoperative provided airplane is not operated in known or forecast icing conditions.
		B	2	0		One or both may be inoperative for day VMC flight only provided airplane is not operated in known or forecast icing conditions.
-20-2	Engine Air Inlet NORMAL Lights	C	2	1		(M) One may be inoperative provided associated INOP light operates normally.
		C	2	0		One or both may be inoperative provided airplane is not operated in known or forecast icing conditions.
-20-3	Engine Air Inlet INOP Lights	C	2	1		(M) One may be inoperative provided: a) System is verified to operate normally prior to departure into known or forecast icing conditions, and b) Associated NORMAL light and master caution panel lights operate normally.
		C	2	0		One or both may be inoperative provided airplane is not operated in known or forecast icing conditions.
-20-4	Deicing System Monitor	B	1	0		May be inoperative provided airplane is not operated in known or forecast icing conditions.
-20-5	Leading Edge Deicing System Timers	C	2	1		
		B	2	0		May be inoperative provided airplane is not operated in known or forecast icing conditions.
-31-1	Pitot-Static Tube Heating System	B	3	2		One may be inoperative provided airplane is not operated in visible moisture, or in known or forecast icing conditions.
-31-2	Pitot-Static Tubes INOP Lights	B	3	0		(M)(O) One or more may be inoperative provided: a) Remaining elements of the pitot heat system are checked and functioning normally before each flight day, and b) Airplane is not operated in visible moisture, or in known or forecast icing conditions.

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System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch
				4. Remarks and/or exceptions
<b>30 ICE AND RAIN PROTECTION</b>				
-32-1 AOA Sensor Heating System	B	2	1	One may be inoperative provided airplane is not operated in known or forecast icing conditions.
-33-1 TAT Probe Heating System (If installed)	C	1	0	May be inoperative provided airplane is not operated in known or forecast icing conditions.
	B	1	0	May be inoperative provided: a) Cockpit Voice Recorder (CVR) operates normally, and b) Omega Navigation System is not used.
-34-1 Side Slip Sensor Heading System	C	1	0	May be inoperative provided airplane is not operated in known or forecast icing conditions.
-40-1 Windshield Heating Systems	C	2	0	One or both may be inoperative provided airplane is not operated in known or forecast icing conditions.
-40-2 Windshield Heating ON & INOP Lights	C	4	0	(M) Any or all may be inoperative provided respective windshield heating systems operate normally prior to takeoff. <b>NOTE:</b> Not required for an inoperative windshield heater.
-41-1 Windshield Wipers	C	2	0	One or both may be inoperative provided airplane is not operated in precipitation within 5 nautical miles of the airport of takeoff or intended landing.
1) Low Speed Mode	C	2	0	May be inoperative provided high speed operates normally.
2) High Speed Mode	C	2	0	May be inoperative provided low speed operates normally.
3) Timer Mode	C	2	0	
-60-1 Propeller Deicing Systems	C	2	0	One or both may be inoperative provided airplane is not operated in known or forecast icing conditions.
-60-2 Propeller Deicing System INOP Lights	C	2	0	(M) One or both may be inoperative provided: a) Normal propeller deice function is verified before departure into known or forecast icing conditions, and b) NORMAL light and master caution panel lights operate normally.
-60-3 Propeller Deicing System NORMAL Light	C	1	0	(M) May be inoperative provided: a) Normal propeller deice function is verified before departure into known or forecast icing conditions, and b) INOP and master caution lights operate normally.
-60-4 Propeller Deice System Timers	C	2	1	
	B	2	0	May be inoperative provided airplane is not operated in known or forecast icing conditions.

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<b>EMB-120 BRASILIA</b>				<b>30-3</b>	
System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
<b>30 ICE AND RAIN PROTECTION</b>					
-80-2 Icing Condition Low Speed Alarm System	A	1	0		May be inoperative provided: <ul style="list-style-type: none"> <li>a) Airplane is not operated in known or forecast icing conditions,</li> <li>b) If icing conditions are inadvertently encountered, disconnect the autopilot and exit icing conditions, and</li> <li>c) Repairs are made within 3 calendar days.</li> </ul>

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System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
<b>31 INSTRUMENTS</b>					
-21-1 Clocks	C	-	-	-	As required by local regulations.
-32-1 Flight Data Recorder (FDR) System	C	-	-	-	Any in excess of those required by local regulations may be inoperative.
	A	-	0	-	May be inoperative provided: a) Cockpit Voice Recorder (CVR) operates normally, b) Airplane is not dispatched from a designated airport as listed in the operator's MEL unless: 1) The FDR failure occurs after pushback but prior to takeoff, or 2) The FDR repair was attempted but not successful. c) In those cases where repair is attempted but not successful, the airplane may be dispatched on a flight or series of flights until the next designated airport where repair must be accomplished prior to dispatch, and d) Repairs are made within 3 flight days.
	A	-	0	-	May be inoperative provided: a) Operations are conducted by an operator other than a holder of an air carrier or commercial operator certificate, and b) Repairs are conducted according to local regulations.
1) FDR Recording Parameters required by local regulations	A	-	-	-	Up to 3 recording parameters may be inoperative provided: a) Cockpit Voice Recorder (CVR) operates normally, and b) Repairs are made within 20 calendar days.
2) FDR Recording Parameters not required by local regulations	A	-	-	-	May be inoperative provided repairs are made prior to the completion of the next heavy maintenance visit.
-50-1 Master WARNING Lights	C	2	1	1	One may be inoperative provided master warning aural alert and all discrete warning lights operate normally.
-50-2 Master CAUTION Lights	C	2	1	1	One may be inoperative provided master caution aural alert and all discrete caution lights operate normally.
-50-3 Alarm Cancel Switches	C	2	1	1	
-51-1 Multiple Alarm Panel Lights	C	-	-	-	Up to 3 individual amber caution lights may be inoperative provided: a) Both master caution lights associated with the malfunctioning light operate normally, and b) All discrete lights associated with the malfunctioning light operate normally. <b>NOTE:</b> Individual lights not required if associated system is inoperative.

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<b>31 INSTRUMENTS</b>					
-52-1 ALARM LT Switch					
1) Test Function	C	1	0	(M) Test function may be inoperative provided individual alarm lights are confirmed to operate normally once each flight day.	
2) Dimmer Function	C	1	0	May be inoperative for day operations.	
-53-1 Aural Warning Unit					
1) Primary and Secondary Channels	C	2	1	One channel may be inoperative.	
-53-2 Aural Warning Exclusive Loudspeakers	C	2	0	(O) One or both may be inoperative provided pilots use earphones and/or operate SPKR pushbutton on audio control panels.	



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<b>EMB-120 BRASILIA</b>				<b>32-1</b>
System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch
				4. Remarks and/or exceptions
<b>32 LANDING GEAR</b>				
-31-1 Landing Gear Control Lever Latch System	A	1	0	(M) May be inoperative in the latched position provided: a) Override mechanism operates normally, and b) Repairs are made within 10 flight days.
-42-1 Autobrake System (If installed)	C	1	0	
-42-2 Anti-Skid System	C	1	0	(O) May be inoperative provided: a) AFM supplement "Operation with Anti-Skid Systems inoperative" is complied with, b) Operations are not conducted on wet or contaminated runways, and c) Operations are not conducted on unpaved runways.
-43-1 Emergency/Parking Brake Lights	C	-	0	(M) Any or all may be inoperative provided the parking brake valve operates normally.
-43-2 Emergency/Parking Brake LOW PRESS Light	C	1	0	(M) May be inoperative provided accumulator charge is normal prior to departure.
-43-3 Brake Line Pressure Lights (INBOARD and OUTBOARD)	C	4	0	(M) Any or all may be inoperative provided brakes operate normally.
-50-1 Nosewheel Steering System	B	1	0	(M)(O) May be inoperative provided: a) The system is deactivated, b) The anti-skid system operates normally, and c) The use of rolling takeoff technique is recommended.
-50-2 Nosewheel Steering Disengage Pushbuttons	C	2	1	(O) The copilot's disengage pushbutton may be inoperative provided all other steering functions operate normally.
-60-1 Gear Position Indicating System				
1) System B Lights	B	6	0	(O) System B indication lights may be inoperative provided all system A indication lights operate normally.
2) System A Lights				
a) Airplanes up to S/N 120.291	A	6	0	(M)(O) System A indication lights may be inoperative provided: a) All system B indication lights operates normally, and b) Repairs are made within 3 flight days.
b) Airplanes S/N 120.292 and on	B	6	0	(O) System A indication lights may be inoperative provided all system B indication lights operate normally.

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<b>EMB-120 BRASILIA</b>				<b>33-1</b>	
System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
<b>33 LIGHTS</b>					
-11-1 Flight Compartment and Instrument Lighting System	C	-	-	-	Individual lights may be inoperative provided remaining Lighting System lights are: a) Not on emergency bus, b) Sufficient to clearly illuminate all required instruments, controls and other devices for which it is provided, c) Positioned so that direct rays are shielded from flight crewmember eyes, and d) Lighting configuration and intensity is acceptable to the flight crew. <b>NOTE:</b> Individual button/switch lights and/or annunciators/indications are excluded from this relief.
-20-1 Cabin Interior Illumination System (ER, RT or QC model)	C	-	-	-	(O) Individual lights including up to 10% of the ceiling light lamps may be inoperative provided: a) Sufficient lighting for flight attendants to perform their assigned duties, b) No more than 2 adjacent ceiling light lamps in the longitudinal or lateral direction are inoperative, c) Remaining operational ceiling area lighting must operate normally in BRT setting, and d) Cabin emergency lights operate normally. <b>NOTE:</b> Inoperative ALC (Aerospace Lighting Corporation) system components may require maintenance in accordance with AD 95-22-01.
-22-1 Passenger Lighted Information Sign (ER, RT or QC model)	C	-	-	-	(M) May be inoperative provided: a) Associated passenger seat or lavatory is not occupied from a which a passenger lighted information sign is not readily legible, and b) Associated seat or lavatory is blocked and placarded "DO NOT OCCUPY". <b>NOTE:</b> These conditions are not intended to prohibit lavatory use or inspections by crewmembers.
	C	-	-	-	(O) May be inoperative and associated passenger seat or lavatory may be occupied provided: a) PA system operates normally, and b) PA system is used to notify passengers and cabin crew when associated sign(s) are placed on or off.
-22-5 Sterile Cockpit Light (If installed)	D	1	0	0	(O) May be inoperative provided alternate procedures are established and used.
-30-1 Compartment Lights (Nose, Tail, Cargo and Lavatory)	C	-	-	0	
-41-1 Taxi Lights	C	2	0	0	
-42-1 Landing Lights	C	2	1	1	One may be inoperative for night operations provided at least one taxi light operates normally.
	C	2	0	0	May be inoperative for daylight operations.

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System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
<b>33 LIGHTS</b>					
-44-1 Navigation Lights	C	-	0		May be inoperative for daylight operations.
		-	4		Any light may be inoperative provided one green light, one red light and two white lights operate normally.
-45-1 White Strobe Lights (Anticollision Lights)	B		3	0	May be inoperative for daylight operations.
			3	0	May be inoperative provided red rotating beacon(s) operate normally and it is not equipped with the protection P/N 120-28724-401.
-45-2 Red Rotating Beacon(s) (Auxiliary Anticollision Lights)	B	-	0		(M)(O) May be inoperative provided: a) Strobe lights operate normally, and b) Precautions are taken to clear the area before engine start and while engines are running. <b>NOTE:</b> For airplanes equipped with FDRS, the rotating beacon switch should be positioned to on before engine starting to turn FDR on.
-46-1 Logo Lights	D		2	0	
-47-1 Wing Inspection Lights	C		2	0	May be inoperative for daylight operations.
			2	0	One or both may be inoperative provided a portable lamp/light of adequate capacity for wing and/or control surface inspection is available for night operations in icing conditions.
			2	0	May be inoperative for night operations provided airplane is not operated in known or forecast icing conditions.
-50-1 Emergency Lighting System (Battery-Powered) 1) External Lights System	C	1	0		May be inoperative for daylight operations.
-51-1 Floor Emergency Lights	C	18	12		Up to 6 individual lights may be inoperative provided: a) No 2 consecutive white lights are inoperative at the same time, b) One red light is operative at each exit, and c) At least 3 lamps of the EXIT signs, located at each exit are operative.
		A	18	9	

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			3. Number required for dispatch	4. Remarks and/or exceptions
<b>34 NAVIGATION</b>				
-12-1 Externally Mounted Airspeed/Altimeter Bugs	C	-	2	(O) May be inoperative, broken or missing provided one externally mounted airspeed bug operates normally on each airspeed indicator.
-12-2 Vertical Speed Indicators	B	2	1	One may be inoperative for day VMC only.
-12-3 True Airspeed Computer	C	1	0	
-13-1 Altitude Alert System	C	-	0	(O) May be inoperative provided: a) Autopilot altitude Preselect mode is not used, and b) Enroute operations do not require its use.
-19-1 Air Data Sensor	B	3	2	Only the Air Data Sensor dedicated to the Flight Data Recorder System, GPWS and the Navigation system may be inoperative provided Flight Data Recorder, GPWS and the Navigation System are considered inoperative.
-21-1 Attitude and Heading Reference System (AHRS) 1) Attitude/Heading function	B	4	3	One attitude function or heading function may be inoperative provided: a) Operations in accordance with day VFR, and b) It is not required by local regulations.
-21-2 Traffic Collision and Avoidance System (TCAS I)	B	-	0	(M) May be inoperative provided: a) System is deactivated and secured, and b) Enroute or approach procedures do not require its use.
	C	-	0	(M) May be inoperative provided: a) Not required by local regulations, b) System is deactivated and secured, and c) Enroute or approach procedures do not require its use.
Traffic Collision and Avoidance System (TCAS II)	B	-	0	(M) May be inoperative provided: a) System is deactivated and secured, and b) Enroute or approach procedures do not require its use.
	C	-	0	(M) May be inoperative provided: a) Not required by local regulations, b) System is deactivated and secured, and c) Enroute or approach procedures do not require its use.
1) Combined Traffic Alert (TA) and Resolution Advisory (RA) Dual Display System(s)	C	2	1	May be inoperative on the non-flying pilot side provided: a) TA and RA visual display is operative on the flying pilot side, and b) TA and RA audio function is operative on flying pilot side.
(continued)				

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System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
<b>34 NAVIGATION</b>					
-21-2 Traffic Collision and Avoidance System (TCAS II) (continued)					
2) Resolution Advisory (RA) Display System(s)	C	2	1		May be inoperative on the non-flying pilot side.
	C	-	0		(O) May be inoperative provided: a) Traffic Alert (TA) visual display and audio functions are operative, b) TA only mode is selected by the crew, and c) Enroute or approach procedures do not require its use.
3) Traffic Alert (TA) Display System(s)	C	-	0		(O) May be inoperative provided: a) RA visual display and audio functions are operative, and b) Enroute or approach procedures do not require its use.
4) Audio Functions	B	1	0		May be inoperative provided enroute or approach procedures do not require use of TCAS.
-22-1 EADI/ADI	B	2	1		(O) One may be inoperative for day VMC flight only, provided the standby attitude indicator operates normally and is used as a substitute.
-22-2 EHSI/HSI	C	2	1		(O) One EHSI/HSI may be inoperative for day VMC flight only provided on stabilized heading indication at each pilot station operates normally.
	C	2	1		(O) One EHSI may be inoperative provided MFD operates normally.
-23-1 EFIS Symbol Generators (DPU)	C	2	1		(O) One may be inoperative provided the MPU operates normally.
-23-2 Multifunction Processor Unit (MPU) (If installed)	C	1	0		May be inoperative provided both DPU's operate normally.
-23-3 Multifunction Display (MFD) (If installed)	C	1	0		
-24-1 Standby Attitude Indicator	B	1	0		May be inoperative provided: a) Operations are conducted in day VFR only, and b) Operations are not conducted into known or forecast over-the-top conditions.
-25-1 Standby Magnetic Compass	B	1	0		May be inoperative provided at least 3 stabilized compass systems are installed and operating normally.
-27-1 Turn and Bank Indicators (If installed)	B	-	0		May be inoperative provided standby attitude indicator operates normally.
-30-1 Microwave Landing System (If installed)	C	-	-		As required by local regulations.

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<b>EMB-120 BRASILIA</b>				<b>34-3</b>	
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<b>34 NAVIGATION</b>					
-40-1 Class A TAWS Equipment Required (If installed)					
1) GPWS	A	1	0	(O) May be inoperative provided: a) Alternate procedures are established and used, and b) Repairs are made within 2 flight days.	
a) Modes 1-4	A	4	0	(O) May be inoperative provided: a) Alternate procedures are established and used, and b) Repairs are made within 2 flight days.	
b) Test Mode	A	1	0	May be inoperative provided: a) GPWS is considered inoperative, and b) Repairs are made within 2 flight days.	
c) Glideslope Deviation Mode(s) (mode 5)	C	-	1		
	B	-	0		
d) Advisory Callouts	B	-	0	(O) May be inoperative provided alternate procedures are established and used.	
	C	-	0	(O) May be inoperative provided: a) Advisory callout not required by local regulations, and b) Alternate procedures are established and used.	
2) Terrain System – Forward Looking Terrain Avoidance (FLTA) and Premature Descent Alert (PDA) Functions	B	1	0	(O) May be inoperative provided alternate procedures are established and used.	
3) Terrain Displays	C	-	1		
	B	-	0		
-41-1 Weather Radar System	C	1	-	As required by local regulations.	
1) Stabilization Function	B	1	0	May be inoperative provided: a) Antenna sweep is parallel to airplane pitch axis, and b) Antenna tilt operates normally.	
-42-1 Radio Altimeters	B	-	0	May be inoperative provided approach minimums or operating procedures do not require its use.	
-51-1 DME Systems	D	-	-	Any in excess of those required by local regulations may be inoperative.	
-52-1 ATC Transponders and Automatic Altitude Reporting Systems	B	-	0	May be inoperative provided: a) Operations do not require its use, and b) Prior to flight, approval is obtained from ATC facilities having jurisdiction over the planned route of flight.	
	D	-	-	Any in excess of those required by local regulations may be inoperative.	
1) Memory and Preset display/functions (CTL-62 ADF Control Panel)	C	-	-	May be inoperative provided active frequency display/function operates normally.	

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<b>EMB-120 BRASILIA</b>				<b>34-4</b>	
System & Sequence Number	ITEM	1.		2. Number installed	
				3. Number required for dispatch	
				4. Remarks and/or exceptions	
<b>34 NAVIGATION</b>					
-52-2	Altitude Encoder	C	-	-	As required by local regulations.
-53-1	ADF Systems	C	-	-	As required by local regulations.
	1)ADF Control Panel (CTL-62)	C	-	-	Memory function and preset display/function may be inoperative provided active frequency display/function operates normally.
-53-2	Radio Magnetic Indicators	C	-	0	
-55-1	VOR/ILS Systems	C	2	-	As required by local regulations.
	1)NAV Control Panel (CTL-32)	C	2	-	Memory function and preset display/function may be inoperative provided active frequency display/function operates normally.
-56-1	Marker Beacon System	C	-	-	May be inoperative provided approach minimums do not require its use.
-57-1	Category II Indicator Lights (If installed)	C	2	0	May be inoperative provided approach minimums do not require their use.
-60-1	Long Range Navigation Systems (GPS, INS, Omega, Loran) (If installed)	C	-	0	(O) May be inoperative provided alternate procedures are established and used.
		D	-	0	May be inoperative provided procedures do not require its use.
-60-2	Area Navigation System (RNAV) (If installed)	C	-	0	(O) May be inoperative provided alternate procedures are established and used.
		D	-	0	May be inoperative provided procedures do not require its use.

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<b>EMB-120 BRASILIA</b>				<b>35-1</b>	
System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
<b>35 OXYGEN</b>					
-10-2 Crew Oxygen Pressure Indicator	C	1	0	(M) May be inoperative provided an approved procedure is used to ensure that the oxygen supply is at or above the minimum requirements for the flight.	
-10-3 Crew Oxygen Low Pressure Warning Light (CREW OXY)	C	1	0	(O) May be inoperative provided the crew oxygen pressure indicator operates normally and is monitored above FL 250.	
-20-1 Passenger Oxygen System (ER, RT or QC model)	B	1	0	(O) May be inoperative provided: a) Flight is not conducted where the minimum enroute altitude is above 14000 ft MSL, b) All air conditioning packs operate normally, c) All other components of the pressurization system operate normally, d) Flight altitude remains at or below FL 250, e) Portable oxygen units are provided for 10% of the passengers, and f) Passenger are appropriately briefed.	
	B	1	0	(O) May be inoperative provided flight is conducted at or below 10000 ft MSL.	
1) Automatic Presentation System	C	1	0	(M)(O) May be inoperative provided: a) The manual deployment system operates normally, and b) The flight is conducted at or below FL 250.	
2) Passenger Dispensing Units	B	-	0	(M)(O) One or more passenger service units (PSUs) may be inoperative without flight altitude restriction provided: a) Affected seats are placarded and blocked to prevent occupancy, and b) Units operate normally at all usable lavatory and flight attendant locations.	
-30-2 Portable Oxygen Units (Bottles and Mask)	C	-	-	(M) Any in excess of those required by local regulations may be unserviceable or missing provided: a) Required distribution of serviceable bottles is maintained throughout airplane, and b) Bottles not properly serviced are replaced, serviced or removed at the next available maintenance facility.	
-30-3 Protective Breathing Equipment (PBE)	D	-	-	Any in excess of those required by local regulations may be inoperative provided: a) Inoperative unit is removed from passenger cabin, and b) Required distribution is maintained.	



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<b>EMB-120 BRASILIA</b>				<b>36-1</b>	
System & Sequence Number	ITEM	1.	2. Number installed		4. Remarks and/or exceptions
			3. Number required for dispatch		
<b>36 PNEUMATIC</b>					
-10-1	Crossbleed Valve	C	1	0	(M) May be inoperative provided valve is secured closed.
-10-2	Pneumatic Deicing Bleed Shutoff Valves (If installed)	C	2	0	(O) One or both may be inoperative provided flight is not conducted in known or forecast icing conditions.
-10-3	Pneumatic Deicing CLOSED DEICE Lights (If installed)	C	2	0	(M)(O) One or both may be inoperative provided the associated pneumatic deicing bleed shutoff valve operates normally.
-21-1	Engine Bleed DUCT LEAK Lights	C	2	1	(O) One may be inoperative provided: a) Crossbleed valve remains closed, and b) Associated engine bleed shutoff valve remains closed.
-21-2	APU Bleed DUCT LEAK Light (If installed)	C	1	0	(O) May be inoperative for single right air conditioning pack operation provided: a) APU bleed shutoff, crossbleed and left engine bleed valves remains closed, b) Flight is conducted at or below FL 250, and c) Both recirculation fans operate normally.
		C	1	0	(M)(O) May be inoperative for twin air conditioning pack operation provided: a) APU bleed shutoff valve is verified closed, and b) APU bleed check valve is verified to operate normally and closed prior to takeoff.

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<b>EMB-120 BRASILIA</b>				<b>38-1</b>	
System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
<b>38 WATER/WASTE</b>					
-10-1 Potable Water System (ER, RT or QC model)	C	-	-	(M) Individual components may be inoperative provided: a) Associated components are deactivated or isolated, and b) Associated components are verified not to have leaks. <b>NOTE:</b> Any portion of the system which operates normally may be used.	
	C	-	-	(M) May be inoperative provided: a) System is drained, and b) Procedures are established to ensure that system is not serviced.	
-30-1 Lavatory Waste System (ER, RT or QC model)	C	-	-	(M) Individual components may be inoperative provided: a) Associated components are deactivated or isolated, and b) Associated components are verified not to have leaks. <b>NOTE:</b> Any portion of the system which operates normally may be used.	
	C	-	-	(M) Associated lavatory system(s) may be inoperative provided: a) Associated components are deactivated or isolated to prevent leaks, b) The Pilot-in-command will determine if flight duration is acceptable with a lavatory unusable, and c) Associated lavatory door(s) is secured closed and placarded "INOPERATIVE – DO NOT ENTER". <b>NOTE:</b> These provisos are not intended to prohibit inspections by crewmembers.	

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<b>EMB-120 BRASILIA</b>				<b>49-1</b>
System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch
				4. Remarks and/or exceptions
<b>49 AUXILIARY POWER UNIT</b>				
-00-1 Auxiliary Power Unit (If installed)	C	1	0	(M) May be inoperative provided: a) APU is deactivated, and b) Procedures are not dependent upon its use.
-50-1 Fuel LOW PRESS Light	C	1	0	
-52-1 APU Bleed Air System	C	1	0	(O) May be inoperative APU bleed shutoff valve is kept closed during operation.
-70-1 Hourmeter/Cycle Counter	C	1	0	(M) May be inoperative provided alternate means are established and used to accomplish the hourmeter/cycle counter function.
-72-1 RPM Indication System 1) Indicator Function	C	1	0	(M)(O) May be inoperative provided: a) EGT indicator is monitored during start sequence, and b) The Electronic Control Unit and overspeed protection system operate normally.
-90-1 Oil LOW PRESS Light	C	1	0	May be inoperative provided APU is restricted for ground operation only.
-90-2 Oil HIGH TEMP Light	C	1	0	May be inoperative provided APU is restricted for ground operation only.
-90-3 Maintenance Indication System	C	1	0	

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<b>EMB-120 BRASILIA</b>				<b>52-1</b>	
System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
<b>52 DOORS</b>					
-10-1 Forward Door Hydraulic Actuation System	C	1	0		(M) May be inoperative provided damper function operates normally.
-70-1 Door Warning Indication Lihts	C	4	0		(M)(O) May be inoperative provided: a) It is visually confirmed that the affected door(s) are closed and locked prior to each departure, b) Associated door warning light (i.e FORWARD ACTUATOR, FORWARD CARGO or SERVICE) on overhead panel is deactivated or masked, and c) Master warning system operates normally for remaining doors and systems.

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System & Sequence Number	1. ITEM	2. Number installed	3. Number required for dispatch
<b>56 WINDOWS</b>			4. Remarks and/or exceptions
-10-01 Cockpit Windshield			Deleted, rev 21. <b>NOTE:</b> Refer to Aircraft Maintenance Manual (AMM), Structural Repair Manual (SRM) or other approved documentation.

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System & Sequence Number	ITEM	1.	2. Number installed	3. Number required for dispatch	4. Remarks and/or exceptions
<b>61 PROPELLERS</b>					
-24-1 Synchrophaser	C	1	0		(M)(O) May be inoperative provided system is deactivated.

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<b>EMB-120 BRASILIA</b>				<b>73-1</b>		
System & Sequence Number	ITEM	1.	2. Number installed		3. Number required for dispatch	4. Remarks and/or exceptions
<b>73 ENGINE FUEL AND CONTROL</b>						
-21-1 Electronic Engine Controls (EEC)	C	2	0	0	(O) One or both may be inoperative provided: a) Both EECs are selected to MAN, and b) AFM limitations are complied with.	
-23-1 HMU Enrich Solenoid Valves	C	2	0	0	(M)(O) One or both may be inoperative provided: a) Affected valve is verified not locked in the energized position, b) Both EEC are selected to MAN, and c) AFM limitations are complied with.	
-32-1 Fuel Flow Indicators	B	2	1	1	(O) One may be inoperative provided: a) Associated NH, torque and T6 indicators operate normally, and b) Both fuel tank quantity indicators operate normally.	
-32-2 Fuel Totalizer Indicator	C	1	0	0	(M) May be inoperative provided: a) Fuel flow and fuel quantity indicators operate normally, and b) Fuel quantity is verified by other means.	
-33-1 Fuel FILTER Lights	B	2	1	1	(O) One may be inoperative provided associated fuel LOW TEMP light and fuel flow indicator operate normally and are continuously monitored by the crew.	
-34-1 Fuel LOW TEMP Lights	C	2	0	0	(M) May be inoperative provided: a) Associated FILTER light operates normally, and b) Associated fuel flow indicators operate normally.	
-35-1 Fuel LOW PRESS Lights	B	2	1	1	(M)(O) One may be inoperative provided one associated electric pump operates normally and is used continuously.	

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<b>75 BLEED AIR</b>				
-32-1 High Stage Bleed Valve Control Systems	C	2	1	(M) One valve may be inoperative in the open position provided: a) Engine bleed shutoff valve is secured closed, b) Crossbleed valve operates normally, and c) AFM limitations are complied with.
	C	2	0	(M) One or both valves may be inoperative closed.
-32-2 Engine Bleed Shutoff Valves	C	2	1	(M)(O) One may be inoperative provided the valve is secured closed and AFM limitations are complied with.
	C	2	0	(M)(O) Both may be inoperative provided: a) Valves are secured closed, b) Flight is conducted in an unpressurized configuration, and c) AFM limitations are complied with.
	C	2	0	(M)(O) Both may be inoperative provided: a) Valves are secured closed, b) APU is used for pressurization, and c) AFM limitations are complied with.



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<b>76 ENGINE CONTROLS</b>					
-11-1 Secondary Flight Idle Stop (SFIS) System Alarm Lights	A	2	0	(M)(O) One or both may be inoperative provided: a) The alarm lights are repaired within the next 24 flight hours, and b) The SFIS system is verified to operate normally prior to each departure.	
-11-2 Secondary Flight Idle Stop (SFIS) System					Deleted, rev 21.

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<b>77 ENGINE INDICATING</b>				
-11-1 Torque Indicators				
1) Digital Indicators	C	2	0	
-12-1 NP Indicators				
1) Digital Indicators	C	2	0	
-12-2 NH Indicators				
1) Digital Indicators	C	2	0	
-12-3 NL Indicators	C	2	1	(O) For airplanes equipped with PW118 engines, one may be inoperative provided: a) The respective Torque, NP, NH and T6 indicators operate normally, b) The torque of the affected engine is adjusted to the same value as that of the other engine, and c) AFM limitations are complied with.
-20-1 T6 Indicators				
1) Digital Indicators	C	2	0	

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<b>79 OIL</b>					
-32-1 Low OIL PRESS Alarm Lights	C	2	1		(O) One may be inoperative provided: a) Associated oil pressure indicator operates normally, and b) Oil quantity is confirmed to be adequate prior to departure. <b>NOTE:</b> If one aural warning channel is inoperative, the oil pressure must be monitored throughout the flight.
-33-1 Chip Detection Systems	C	2	0		

**AMENDMENT 1 MINIMUM NUMBER REQUIRED FOR PRECISION APPROACHES CAT II**

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System & Sequence Number	ITEM	1.	2. Number installed		4. Remarks and/or exceptions
			3. Number required for dispatch		
<b>FOR COLLINS APS-65B WITH EFIS-86B</b>					
-22-10-1	Electrical Trim System				
	1) Autopilot Computer Trim Channel	B	2	1	One may be inoperative provided the associated autopilot of the operative computer trim channel operates normally.
	2) Pitch Trim Switches	B	2	1	
-22-11-1	Autopilot/Flight Director System				
	1) Autopilot System	B	2	1	
	2) Flight Director System	B	2	2	
-22-11-2	Autopilot Disconnect Switches	B	2	2	
-22-11-3	Yaw Damper System	B	2	1	One may be inoperative provided: a) Affected yaw damper is disengaged, and b) The associated autopilot of the operative yaw damper operates normally.
-22-11-4	CAT II Switch		-	2	
-23-15-1	VHF Communications Transmitters/Receivers		-	2	
-30-41-1	Windshield Wipers		2	2	
-34-12-1	Vertical Speed Indicators		2	2	
-34-21-1	Attitude and Heading Reference System (AHRS)		2	2	
-34-22-1	EADI		2	2	
-34-22-2	EHSI		2	2	
-34-23-1	EFIS Display Processor Unit (DPU)		2	2	
-34-42-1	Radio Altimeters		-	2	
-34-55-1	VOR/ILS Systems		2	2	
-34-56-1	Marker Beacon System		2	2	