DEPARTMENT OF THE ARMY
HEADQUARTERS, US ARMY AVIATION AND MISSILE COMMAND
FIXED WING PRODUCT MANAGEMENT OFFICE
REDSTONE ARSENAL, ALABAMA 35898-5280

AMSAM-DSA-AS-FW 9 November 2001

MEMORANDUM FOR Commanders, units operating C-23 aircraft

SUBJECT: Current C-23 Required Equipment List

1. The purpose of this memorandum is to distribute the current approved C-23 Required Equipment List (REL). It replaces the previous C-23 MEL in its entirety.

2. The Directorate of Evaluation and Standardization (DES), USAAVNC, Fort Rucker is the final approval authority for all operational RELs and has approved the attached version.

3. DES has identified all operational Minimum Equipment Lists as RELs. The REL governs what items of equipment may be inoperative for flight operations.

4. Subsequent approved RELs for these aircraft will be annotated with a revision number on each page, approved by DES, and distributed by the Fixed Wing Product Manager's Office (FWPMO). Upon receipt of the current REL, units are required to replace the existing MEL in the Airplane Flight Manual (AFM).

5. The point of contact is Ken Butler, FWPMO at DSN 788-9569 or (256) 842-9569.

/S/
STEPHEN WALTERS
LTC, AV
Product Manager, Fixed Wing Aircraft

Encl
as

DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY AVIATION CENTER AND FORT RUCKER
453 NOVOSEL STREET
FORT RUCKER ALABAMA 36362-5105

REPLY TO
ATTENTION OF

ATZQ-ES

24 October 2001

MEMORANDUM FOR HEADQUATERS, U S ARMY AVIATION AND MISSILE COMMAND, ATTN: LTC WALTERS, PM FIXED WING AIRCRAFT, REDSTONE ARESENAL, ALABAMA 35898-5280

SUBJECT: C-23 Aircraft Required Equipment List (REL)

1. The Directorate of Evaluation and Standardization (DES), USAAVNC, Fort Rucker, has reviewed and concurs to content and format of the attached C-23 Aircraft REL dated 24 October 2001.

2. The point of contact this action is CW5 Bean, DES Fixed Wing Branch Chief, phone number DSN: 558-2453.

Encls
as

MICHAEL R. BOZEMAN
Colonel, Aviation
Director of Evaluation
and Standardization

US ARMY APPROVED REQUIRED EQUIPMENT LIST – C-23

1. GENERAL. Required Equipment List (REL) is the Army terminology for an operational minimum equipment list and is equivalent to the civilian Minimum Equipment List (MEL) required for civil aircraft to operate with an inoperative item. This REL is the Army approved list for flight operations of the C-23 aircraft. It has been coordinated with the Master Minimum Equipment List (MMEL) prepared by the manufacturer and approved by the FAA for the civilian counterpart aircraft. The Directorate of Evaluation and Standardization (DES), USAAVNC has reviewed and approved this REL. Any modification or recommended change to this REL must be submitted to the Fixed-Wing Branch, DES for final approval. DES will routinely update the list with any changes published to the MMEL. Modifications, additions, deletions, or amendments to the REL without DES approval are not authorized.

2. FLIGHT OPERATIONS. This REL is intended to govern flight operations with inoperative components or equipment as specified in the list. A copy of the REL must be inserted in the Airplane Flight Manual (AFM) and carried on the aircraft for all flight operations. It precludes additional interpretation or comparisons to any other regulatory requirements by the crew.

a. Maintenance MEL. This REL is not to be confused with the Minimum Equipment List (MEL) published in the Life Cycle Contract Support (LCCS) maintenance contract statement of work (SOW). The MEL in the SOW is intended to specify required maintenance by the maintenance contractor and does not supercede this REL for flight operations.

b. Acceptable level of safety. Due to the redundancy of equipment on the aircraft, flight operations in accordance with this REL provide an acceptable level of safety.

c. Minimum repair time and design level of safety. This REL is intended to permit necessary operations with inoperative items of equipment for the minimum period of time necessary until repairs can be accomplished. It is critical that repairs be made at the earliest opportunity to return the aircraft to its design level of safety.

3. NUMBERING SYSTEM. The REL items are numbered so as to match the numbering within the MMEL. Consequently, in the list under any given major system, the individual items may not be numbered sequentially. When numbers are absent it is because the item on the MMEL is not installed on this aircraft.

4. "M", "O"AND "P" SYMBOLOGY. Some items on the REL will have an "M", "O" and/or "P" in the "REMARKS or EXCEPTIONS" column with the following meanings:

a. M – indicates the requirement for a specific maintenance procedure that must be accomplished prior to operation of the aircraft with the listed item inoperative.

b. O – indicates the requirement for a specific operational procedure that must be accomplished in planning for and/or operating the aircraft with the listed item inoperative. If the operational procedures specified are to be used for items annotated with an "O"on the REL then those procedures must be addressed in the unit SOP.

c. "(P)" – indicates that a placard identifying the item or system as inoperative must be affixed to or adjacent to the inoperative item or system. Required placarding of defective/missing items indicated thus (P) is to be carried out as detailed below:

i) Placard Label: To consist of BLACK lettering on a WHITE background.

ii) Placard Position: To be attached with adhesive/tape etc. to or near the item required to be placarded, in a position that can be easily seen by the crew and/or passengers.

iii) Placard Wording: Placard to contain the word "INOPERATIVE" and the reference number in the REL that allows the aircraft to be operated with the item or system inoperative.

5. ITEMS NOT ON THE REL. If an item of equipment or a component installed on the aircraft is not listed on this REL it is required for flight operations and the aircraft will not be dispatched with that item or component inoperative.

6. PROPOSED CHANGES. Recommendations for changes to the REL should be forwarded to the Directorate of Evaluations and Standardization:

Commander, US Army Aviation Center (USAAVNC)
Director of Standardization and Evaluation
ATZQ-DPT-ESC-CF
Ft. Rucker, AL 36362-5000

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LOG OF REVISIONS

REVISION	INSERTED BY	DATE
Original Issue	Bombardier Services America Corporation	8 August 8, 2000
Revision 1: 1. Incorporate Operation and Maintenance procedures into MEL body. 2. Crew and Passenger Oxygen requirements aligned to AR 95-1	Bombardier Services America Corporation	1 November, 2000
Revision 2: Note added to item 32-3 for inoperative TCAS	Bombardier Services America Corporation	8 November, 2000
Revision 3: 1. Clarifies Partial Mission Capable (PMC) and identifies PMC items. 2. Clarifies time frame for repair intervals.	Bombardier Services America Corporation	14 November, 2000
Revision 4: 1. When referring to this document, Minimum Equipment List (MEL) has been changed to Required Equipment List (REL). 2. Anti-Collision Beacon and Strobe Light System requirements amended.	Bombardier Services America Corporation	27 August, 2001
Revision 5: Formatted REL into single document.	Bombardier Services America Corporation	10 September, 2001

LIST OF EFFECTIVE PAGES

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DEFINITIONS

1. System Definitions.

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

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions

Figure 1

b. "Item" means the equipment, system, component, or function listed in the "System and/or Component" column, also referred to as Column 1.

c. "Number of Items Installed" (also referred to as Column 2) is the number (quantity) of items normally installed in the aircraft. Should the number be a variable (e.g., passenger cabin items) a number is not required.

d. "Day VMC" (also referred to as Column 3) is the minimum number (quantity) of items required for operation in Day VMC, provided the conditions specified in Column 8 are met.

e. "Night VMC" (also referred to as Column 4) is the minimum number (quantity) of items required for operation in Night VMC, provided the conditions specified in Column 8 are met.

f. "Day IMC" (also referred to as Column 5) is the minimum number (quantity) of items required for operation in Day IMC, provided the conditions specified in Column 8 are met.

g. "Night IMC" (also referred to as Column 6) is the minimum number (quantity) of items required for operation in Night IMC, provided the conditions specified in Column 8 are met.

h. "Icing Conditions" (also referred to as Column 7) is the minimum number (quantity) of items required for operation in icing conditions, provided the conditions specified in Column 8 are met.

i. "Remarks and/or Exceptions" (also referred to as Column 8) 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.

j. "Notes:" in Column 8 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.

2. Alphabetical symbol in Column 8 indicates a proviso (condition or limitation) that must be complied with for operation with the listed item inoperative.

NOTE: Where an item is annotated (O)/(M), the "/" is defined as "and/or", which shows that there may be different options available in respect of the REL procedures.

a. "(M)" symbol indicates a requirement for a specific maintenance procedure that 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.

b. "(O)" symbol indicates a requirement for a specific operations procedure that 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.

c. “(P)” symbol indicates that a placard identifying the item or system as inoperative must be affixed to or adjacent to the inoperative item or system. Required placarding of defective/missing items indicated thus (P) is to be carried out as detailed below:

iv) Placard Label: To consist of BLACK lettering on a WHITE background.

v) Placard Position: To be attached with adhesive/tape etc. to or near the item required to be placarded, in a position that can be easily seen by the crew and/or passengers.

vi) Placard Wording: Placard to contain the word “INOPERATIVE” and the reference number in the REL that allows the aircraft to be operated with the item or system inoperative.

3. "Airplane Flight Manual" (AFM) is the document required for type certification and approved by the responsible FAA Aircraft Certification Office. The FAA approved AFM for the specific aircraft is listed on Type Certificate Data Sheet A41EU.

4. "As required by FAR" means that the listed item is subject to certain provisions (restrictive or permissive) expressed in the Federal Aviation Regulations operating rules. The number of items required by the FAR must be operative. When the listed item is not required by FAR it may be inoperative for time specified by repair category.

5. Central Warning Panel (CWP) or similar systems that provide electronic messages refer to a system capable of providing different priority levels of systems information messages (e.g., Warning, Caution, Advisory Status and Maintenance). Any airplane discrepancy message that affects dispatchability will normally be at status message level (e.g., Advisory Status) or higher.

6. "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 REL for the repair of an inoperative item of equipment. This provision is applicable to all REL items.

7. "-" (Dash symbol) in Column 2 through Column 7 inclusive indicates a variable number (quantity) of the item installed.

8. "Deactivated" and "Secured" means that the specified component must be put into an acceptable condition for safe flight.

9. "Deleted" in the Remarks and/or Exceptions column after a sequence item indicates that the item was previously listed but is now required to be operative if installed in the aircraft.

10. "ER" refers to extended range operations of a two-engine airplane which has a type design approval for ER operations and complies with the provisions of Advisory Circular 120-42.

11. "Excess Items" means those items that have been installed that are redundant to the requirements of the FARs.

12. "Federal Aviation Regulations" (FAR) means the applicable portions of the Federal Aviation Act and Federal Aviation Regulations.

13. "Flight Day" means a 24 hour period (from midnight to midnight) or local time, during which at least one flight is initiated for the affected aircraft. A flight is initiated when an aircraft first moves under its own power for the purpose of commencing a flight.

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

15. "Inoperative" means a system and/or component malfunction 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).

16. 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.

    NOTE: Warning/caution systems associated with the inoperative system must be operative unless relief is specifically authorized per the REL.

17. "Instrument Flight Rules" (IFR) is as defined in FAR Part 91. This precludes a pilot from filing a Visual Flight Rules (VFR) flight plan.

18. "Instrument Meteorological Conditions" (IMC) means the atmospheric environment is such that would allow a flight to proceed under the instrument flight rules applicable to the flight. This precludes operating under Visual Flight Rules.

19. Placarding: Each inoperative item must be placarded to inform and remind the crewmembers and maintenance personnel of the equipment condition. To the extent practicable the placard must be placed on or adjacent to the affected unit, component or controls such that it is clear to the operating crew that it or it's associated system is inoperative.

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, ashtrays, stereo equipment, overhead reading lamps, etc.

22. Repair Intervals: All users of an the REL must effect repairs of inoperative systems or components, deferred in accordance with the REL, at or prior to the repair times established:

a. Calendar Day: A period of 24 hours elapsed time, commencing at midnight on the day of discovery and recording of a malfunction in the aircraft's maintenance record/logbook and ending at midnight on the next day.

b. Full Mission Capable (FMC). Condition when the number of operable items on the aircraft is equal to the Number of Items Installed (Column 2) of the REL or in excess of the operable items required in Column 3 through 7 inclusive.

c. Partially Mission Capable (PMC). PMC items shall be repaired within ten (10) consecutive calendar days excluding the day the malfunction was recorded in the aircraft maintenance record/logbook. For example, if it were recorded at 10 a.m. on January 26th, the 10-day interval would begin at midnight the 26th and end at midnight February 5th.

d. Repair Intervals for other than PMC items in the REL will be repaired in not less than 30 days, or in accordance with the interval identified in Column 8.

23. PMC shall be determined in accordance with AR700-138, Table 3-1, Table 3-12, and Table 3-13. "PMC" will be included in Column 8 for items subject to PMC constraints. Affected systems include:

1. Communication Equipment
- UHF/VHF
- HF
- IFF Transponder, Modes 3 and/or 4

2. Navigation/Landing Equipment
- ADF
- VOR
- ILS
- Radar Altimeter
- GPS

3. Cockpit Management Subsystems
- Multi-Functional Displays
- Keyboard
- Radio Frequency Display
- Flight Data Recorder
- Control Display System

4. Other
- Dual Controls
- Anti-Icing

24. System means the group of directly related components which together performs a specified function, for example the RPM indicator, tachometer generator, circuit breaker and associated circuitry.

25. "Visual Flight Rules" (VFR) is as defined in FAR Part 91. This precludes a pilot from filing an Instrument Flight Rules (IFR) flight plan.

26. "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.

27. A vertical bar (change bar) in the margin indicates a change, addition or deletion in the adjacent text for the current revision of that page only. The change bar is dropped at the next revision of that page.

PREAMBLE

1. This Required Equipment List (REL) is applicable to the owners, operators and maintainers of United States Army National Guard (ARNG) C-23 aircraft identified below:
   a. OEM designation SD3 Sherpa, serial numbers SH3201 through SH3216 inclusive.
   b. OEM designation SD3-60 Sherpa, serial numbers SH3401 through SH3428 inclusive.

2. Application of the REL in accordance with Contract DAAH23-00-C-0030:
   a. C-23 aircraft are to be maintained in accordance with Federal Aviation Regulations (FAR) Parts 25, 43, 65 and 91.
   b. C-23 aircraft are not operated under FAR Parts 121, 125, 129 or 135.
   c. In case of regulatory conflict between the Army and Federal Aviation Administration (FAA), the FAA regulations will take precedence for maintenance operations (SOW Paragraph 2.0) and Army regulations take precedence for flight operations.
   This REL is designed to allow the aircraft to meet the requirements of the FARs when operated within the guidance of the REL.

3. Federal Aviation Regulations (FAR) 91.213 require, for operations within the National Airspace System (NAS), that all equipment installed on an aircraft must be operative for flight operations unless that aircraft is operated in accordance with an approved Minimum Equipment List (MEL). The Federal Aviation Administration (FAA) does not approve US Army MELs as it must for civilian aircraft. The Army Required Equipment List (REL) is the equivalent of the MEL. Approval authority for the REL is the United States Army Aviation Center (USAAVNC) Directorate of Evaluation and Standardization (DES). The REL is coordinated with the MMEL for the aircraft, adjusted to Army regulations, approved by DES, and distributed by the US Army Aviation and Missile Command (AMCOM) Fixed Wing Product Management Office (FWPMO).

4. Experience has shown that with the various levels of redundancy designed into aircraft, operation of every system or installed component may not be necessary when the remaining operative equipment can provide an acceptable level of safety. The FAA and the United Kingdom Civil Aviation Authority (CAA) have developed Master Minimum Equipment Lists (MMEL). The FAA/CAA approved MMEL includes those items of equipment related to airworthiness and operating regulations and other items of equipment which the regulatory authorities find may be inoperative and yet maintain an acceptable level of safety by appropriate conditions and limitations. The FAA/CAA MMEL are the basis for development of this REL.

5. The C-23 REL may include items not contained in the MMEL The C-23 REL may differ in format from the MMEL and normally will not be less restrictive than the MMEL.

6. The C-23 REL, when approved and authorized by DES and FWPMO, permits operation of the aircraft with inoperative equipment.

7. Equipment not required by the operation being conducted and equipment in excess of FAR requirements are included in the REL with appropriate conditions and limitations. All equipment related to the airworthiness and the operating regulations of the aircraft not listed on the REL must be operative.

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

9. The REL 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 REL establishes limitations on the duration of and conditions for operation with inoperative equipment. The REL provides for release of the aircraft for flight with inoperative equipment. When an item of equipment is discovered to be inoperative, it is reported by making an entry in the Aircraft Maintenance Record/Logbook as prescribed by DA PAM 738-751.

10. The item is then either repaired or may be deferred per the REL or other approved means acceptable to the AMCOM Fixed Wing Product Manager prior to further operation. REL conditions and limitations do not relieve the operator from determining that the aircraft is in condition for safe operation with items of equipment inoperative.

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

12. 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 aircraft operation and crew workload will be considered.

13. A controlled and sound repair program including the parts, personnel, facilities, procedures, and schedules to ensure timely repair has been established under Contract DAAH23-00-C-0030.

14. When using the REL, compliance with the stated intent of the preamble, definitions, and the conditions and limitations specified in the REL is required.

15. The REL does not include items such as wings, engines and landing gear that are always required, nor is reference made to equipment such as passenger convenience and entertainment items which when inoperative obviously do not affect airworthiness.

16. Any item which is related to the airworthiness of the aircraft and which is not included in the REL is always required to be operative before further flight.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 21 Air Conditioning							
1. Air Conditioning System	1	0	0	0	0	0	May be inoperative provided: a) Both HA/SOVs are secured CLOSED or selected CLOSED and monitored utilizing HA/SOV Indicator, and b) Airplane is operated in accordance with AFM. **(P) (M) (O)** • Select CLOSED both HA/SOVs. • Check that valve indicators show both valves to be SHUT. • With all the Rams/Fans OFF, run both engines and check that no air flows from the air conditioning ducts. • Select Ram/Fans ON for ventilation as required.
2. Air Conditioning Engine Bleed Systems	2	0	0	0	0	0	Both may be inoperative provided Air Conditioning System is considered inoperative. **(P) (M) (O)** • Select CLOSED the HA/SOV pertaining to the engine with the defective bleed system • Check that the appropriate valve indicator shows the valve to be SHUT. • With all the Rams/Fans OFF, run the engine having the defective bleed system and check that no air flows from the air cond ducts.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 21 Air Conditioning							
3. Cabin Automatic Temperature Control System	1	0	0	0	0	0	May be inoperative provided Cabin Manual Temperature Control System is operative. **(P) (O)** • Select air conditioning ON, engine(s) running. • Select cabin temperature control switch to MANual. • Operating the HOT/COLD switch, ensure that the temperature of the air flowing from the ducts follows that selected.
4. Flight Deck Automatic Temperature Control System	1	0	0	0	0	0	May be inoperative provided Flight Deck Manual Temperature Control System is operative. **(P) (O)** • Select air conditioning ON, engine(s) running. • Select flight deck temperature control switch to MANual. • Operating the HOT/COLD switch, ensure that the temperature of the air flowing from the ducts follows that selected.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 21 Air Conditioning							
5. Cabin Manual Temperature Control System	1	0	0	0	0	0	May be inoperative provided Cabin Automatic Temperature Control System is operative. **(P) (O)** • Select air conditioning ON, engine(s) running. • Select cabin temperature control switch to AUTOmatic. • (Check that AUTO CONTROL is selected to PILOT) • Operating the temperature selector, ensure that the temperature of the air flowing from the ducts follows that selected.
6. Flight Deck Manual Temperature Control System	1	0	0	0	0	0	May be inoperative provided Flight Deck Automatic Temperature Control System is operative. **(P) (O)** • Select air conditioning ON, engine(s) running. • Select flight deck temperature control switch to AUTOmatic. • Operating the temperature selector, ensure that the temperature of the air flowing from the ducts follows that selected.
7. Main Fan System	1	0	0	0	0	0	**(P)**

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 21 Air Conditioning							
8. Hot Air/Shutoff (HA/SOV) Valves	2	0	0	0	0	0	Both may be inoperative provided: a) Affected valve is secured CLOSED or selected CLOSED and monitored using HA/SOV indicator, and b) Associated Air Conditioning Engine Bleed System is considered inoperative. **(P) (M) (O)** • Select the defective HA/SOV CLOSED • Check that the valve indicator shows the valve to be SHUT. • With all the Rams/Fans OFF, run the engine having the defective valve and check that no air flows from the air conditioning ducts.
9. HA/SOV Indicators	2	0	0	0	0	0	Both may be inoperative provided Air Conditioning System and Air Conditioning Engine Bleed Systems are operative. **(P) (O)** • CLOSE the HA/SOV(s) with defective indicator(s) • With all the Rams/Fans OFF, run the engine(s) having the defective indicator(s) and check that no air flows from the air conditioning ducts. • OPEN the valve(s) (in turn) and check that air flows from the ducts.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 21 Air Conditioning							
10. Flight Deck Fans	2	0	0	0	0	0	**(P)**
11. Gaspers and Gasper Boost Systems	2	0	0	0	0	0	**(P)**
12. Anti-Fog System	1	0	0	0	0	0	**(P)**
ATA 22 Autopilot							
1. Autopilot System Computer	2	0	0	0	0	0	**(P) (O)** May be inoperative provided the affected system(s) is not used or required to be used during the flight. NOTE: If the servo motor function to the aileron, elevator, or rudder is inoperative, the autopilot is considered inoperative.
2. Electric Pitch Trim Switch	2	0	0	0	0	0	**(P) (O)** One or both may be inoperative provided manual operation of the trim wheel is assured before each flight. NOTE: If the elevator pitch trim servo is inoperative, the electric pitch trim system is considered inoperative.
3. Yaw Damper	1	0	0	0	0	0	**(P) (O)** May be inoperative provided normal operation of the rudder control circuit is unimpeded.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 22 Autopilot							
4. AP ENG/AP DIS Indicator Switch	2	0	0	0	0	0	One or both may be inoperative provided: (a) All indications on the Flight Control Panel (FCP-65) are available (b) All indications on the Autopilot Panel (APP-65A) are available (c) If the affected indicator/switch illuminates continuously, an approved procedure is used to ensure the light is not visible in flight OR (d) The affected system is not used or required to be used during the flight **(P) (O)** • Verify all indicators on the Flight Control Panel (1P) are operational. • Verify all indicators on the autopilot panel (center console) are operational. If inoperative indicator is continuously 'ON' it must be masked off.
5. Pitch Sync Button	2	0	0	0	0	0	**(P)** One or both may be inoperative.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 22 Autopilot							
6. Control Panel Annunciation (Center Console)	1	0	0	0	0	0	May be inoperative provided: (a) AP DIS/AP ENG Indicator/Switch is available (b) All Flight Control Panel Indications (1P) operate normally **(P) (O)** • Verify operation and indication of AP DIS/AP ENG indicator switch. • Check flight control panel (1P) indicators are operative.
7. Control Panel (Center Console)							**(P)**
(a) Autopilot Engage Button	1	0	0	0	0	0	**(O)** May be inoperative provided system is not used or required to be used during the flight
(b) Turn Knob	1	0	0	0	0	0	)
(c) Vertical Control	1	0	0	0	0	0	)
(d) Yaw Engage Button	1	0	0	0	0	0	)May be inoperative
(e) Soft Ride Button	1	0	0	0	0	0	)
(f) 1/2 Mode Select Button							)
8. Flight Control Panel (1P) (Autopilot Modes)	2	0	0	0	0	0	May be inoperative provided: (a) AP ENG/AP DIS indicator/switches operate normally (b) Center Console APP-65A Panel operates normally **(P) (O)** • Verify operation and indication of AP DIS/AP ENG indicator/switch. • Check autopilot panel (center console) is operative.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 22 Autopilot							
9. AP/TFR Indicator/Switch	2 2	1 0	1 0	1 0	1 0	1 0	**(P)** One may be inoperative provided all other Autopilot indications and functions are operative **(P) (O)** Both may be inoperative provided the autopilot system is not used or required to be used during the flight
ATA 23 Communications							
1. Flight Deck Interphone Systems	2	1	1	1	1	1	Normal Mode may be inoperative provided interphone function is operative with selector switch in the FAIL position. **(P) (O)** • Follow instructions as listed at bottom of the Audio switch panel associated with the interphone failure.
2. Cabin Interphone System	1	0	0	0	0	0	May be inoperative provided: a) PA system is operative, and b) Alternate Normal and Emergency procedures are established and used. **(P) (O)** • Check full operation of P.A. system from flight deck, verifying all systems operative.
3. Flight Deck Communications Speakers	2	0	0	0	0	0	**(P)** Both may be inoperative provided an operative headset is provided for each person on cockpit duty.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 23 Communications							
4. Communication Systems							As required by FAR or AR 700-138.
4.a VHF	2	1	1	1	1	1	**(P) (O)** • Switch INOPERATIVE TRANSCEIVER OFF. • SELECT ROTARY SWITCH TO 'EMERGENCY'. • RESUME communication using a headset and the 'PRESS TO TX' button on the audio panel.
4.b UHF	2	1	1	1	1	1	
4.c HF (when installed)	1	0	0	0	0	0	
5. Cockpit Voice Recorder (CVR) System	1	0	0	0	0	0	May be inoperative and/or removed for repair for not more than 15 days (FAR 91.609 (b)(5)(i). An additional 15 days may be allowed in accordance with FAR 91.609 (b)(5)(ii). **(P) (O)** • Verify operation of Flight Data Recorder System
6. Cockpit Headsets	-	2	2	2	2	2	**(P) (O)** Any in excess of those required for flight deck crewmembers may be inoperative
7. Audio Selector Control Panels	-	2	2	2	2	2	**(P)**
8. Baker Audio Panels (SD3-60 Sherpa only)	3	0	0	0	0	0	**(P)**

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 23 Communications							
9. Cockpit Boom Microphones	2	0	0	0	0	0	May be inoperative and/or removed for repair for not more than 15 days (FAR 91.609 (b)(5)(i). An additional 15 days may be allowed in accordance with FAR 91.609 (b)(5)(ii). **(P) (M)** May be inoperative provided: a) Flight data recorder (FDR) operates normally, and b) Repairs are made within time allowed by FAR 91.609 (b)(5).
10. Handheld Microphones	2	0	0	0	0	0	**(P) (O)** May be inoperative provided associated boom microphones are operative
11. Selective Call System	1	0	0	0	0	0	**(P) (O)** May be inoperative provided: a) Alternate procedures are established and used. OR b) Procedures do not require its use.
ATA 24 Electrical Power							
1. External Power Contactors	2	0	0	0	0	0	Both may be inoperative provided associated Contactor is verified OPEN. **(P) (M)** • Switch master switch to internal and check full DC power (24v) on aircraft batteries.
2. DC External Power System	1	0	0	0	0	0	**(P)**

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 24 Electrical Power							
3. DC Voltage Indications	2	1	1	1	1	1	One may be inoperative provided all other DC electrical system components are operative **(P) (O)** • Before each take-off (with generator ON line), check the voltage of the busbar having the faulty indication by selecting the opposite generator switch to COUPLE. The action couples the busbars thus enabling the serviceable voltmeter to be used. • Re-select generator ON and check that all other electric indications are normal after this check.
4. DC Amperage Indications	2	1	1	1	1	1	One may be inoperative provided: a) All other DC electrical system components are operative, and b) Operations procedures are established to start engine with operative ammeter first. **(P) (O)** • Select DC power with master switch • Check instruments for normal function, including DC Voltmeter. • Couple battery busbars as normal for starting and start engine on side of operative ammeter first.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 24 Electrical Power							
5. Inverter System	3	2	3	3	3	3	**(P) (O)** One may be inoperative provided airplane is operated Day VMC Only. ***PMC***
6. AC Inverter Failure Indicator Lights	3	0	0	0	0	0	All may be inoperative provided: a) AC Inverter Transfer Indicators are operative, and c) Crew verifies Standby Inverter System and Auto-transfer feature operative in accordance with AFM prior to each departure. **(P) (O)** • Check inoperative inverter AC voltmeter and frequency meter for normal operation. Monitor during aircraft operation.
7. AC Inverter Transfer Indicators	3	0	0	0	0	0	All may be inoperative provided all other AC electrical system components are operative. **(P) (O)** • Before each start-up, trip the left inverter CB 83 on panel 1D and check that the left AC volt/frequency meter gives normal indications. Reset CB. • Repeat the above for right inverter tripping CB 233 on panel 2D.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 24 Electrical Power							
8. DC Electrical System Indicators	10	8	8	8	8	8	Two may be inoperative provided operations procedures are established to monitor system operation by other indications. **(P) (O)** • Refer to the electrical distribution in the crew manual. • Check that one of the services associated with the failed indicator is only operative when the appropriate selection is made.
9. Tail Battery	1	0	0	0	0	0	May be inoperative provided: (a) The aircraft shall not be operated for the purpose of passenger transport and (b) It is not reasonably practical to perform required maint-tenance before commen-cement of the flight. (c) The aircraft shall not exceed three (3) consecutive flights with the tail battery unser-viceable, beginning with the first flight after it was confirmed to be operative. (d) Not more than 48 hours shall have elapsed since the tail battery became unserv-icible. NOTE: This item shall not be used to circumvent the Normal

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 24 Electrical Power							
							Procedures in the Flight Manual relating to recharging of a tail battery with low voltage indication. **(P) (O)** • Trip and tag circuit breakers 139 and 140 on panel 3D to electrically isolate the tail battery busbar from the rest of the DC generation and distribution system.
ATA 25 Equipment Furnishings							
1. Passenger Seats (when installed)	-	-	-	-	-	-	**(M)** All may be inoperative provided: a) Affected seat does not block emergency egress b) Affected seat is marked "DO NOT OCCUPY" NOTE 1: A seat with an inoperative seat belt is considered to be inoperative. NOTE 2: A seat with an inoperative recline mechanism is considered inoperative if the seat back cannot be secured in the upright position.
2. Passenger Seat Ash Trays	-	0	0	0	0	0	
3. FASTEN SEAT BELT WHILE SEATED placard. (When Passenger Seats Installed)	-	-	-	-	-	-	One or more placards may be eligible provided a legible sign or placard is readable from each occupied passenger seat.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 25 Equipment Furnishings							
4. Emergency Locator Transmitter	1	0	0	0	0	0	**(P) (M)** Repairs must be made in no more than 90 days (FAR 91.207(f)(10).
5. Flotation Devices	-	-	-	-	-	-	
6. First Aid Kits	2	0	0	0	0	0	
7. Flight Deck Shoulder Harness Inertia Reel	2	0	0	0	0	0	**(P) (O)** May be inoperative provided the affected harness is adjusted and locked by an approved means to suit the individual pilot's requirements
8. Flight Mechanic Seat/Harness (if installed)	1	0	0	0	0	0	**(P) (O)** May be inoperative provided: a) Seat is not required and is correctly stowed, and b) A passenger seat in the passenger cabin is made available to an inspector for the performance of official duties.
ATA 26 Fire Protection							
1. Baggage Compartment Smoke Detectors	2 2	1 0	1 0	1 0	1 0	1 0	**(P)** **(P) (O)** • Both may be inoperative provided cargo compartment remains empty except for sand or metal ballast.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 26 Fire Protection							
2. Main Cabin Smoke Detector	3 3	2 0	2 0	2 0	2 0	2 0	One may be inoperative in freight/cargo carrying role. **(P) (O)** • Flight Crew visual inspection of cabin compartment at frequent intervals. All may be inoperative provided the aircraft is not operated in freight/cargo carrying role. **(P) (O)** • Flight Crew visual inspection of cabin compartment at frequent intervals.
3. Lavatory Smoke Detector (When Lavatory is Installed)	1	0	0	0	0	0	**(P) (M)** • The toilet compartment must be electrically isolated, the waste bin must be emptied and the toilet must be locked and appropriately placarded, OR **(P) (O)** • May be inoperative provided the toilet is checked at 20 minute intervals for evidence of fire and smoke.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 26 Fire Protection							
4. Lavatory Fire Extinguisher System (When Lavatory is Installed)	1	0	0	0	0	0	**(P) (M) (O)** May be inoperative provided: a) Lavatory Smoke Detector System is operative. OR b) Lavatory waste receptacle is empty, c) Lavatory door is CLOSED, LOCKED and placarded, "INOPERATIVE - DO NOT ENTER", and d) Lavatory is not used for any purpose. NOTE 1: These provisos are not intended to prohibit lavatory inspections by crewmembers. NOTE 2: A lavatory fire extinguisher system is not required for all-cargo operations.
ATA 27 Flight Controls							
1. Flap Position Indicating System	1	0	0	0	0	0	Both pointers may be inoperative provided: a) Flap operation is normal throughout its full travel range, and b) Prior to each departure, a visual check of flap position using fuselage marking is made after engine start. **(P) (O)** • Check flaps operate normally over the full range of travel. • After engine start and before take-off, visually check correct flap setting using flap position markings.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 27 Flight Controls							
2. Trim Tab Position Indicators	3	0	0	0	0	0	All may be inoperative provided: a) Operation of trim tab is not impaired, and b) Visual check of affected trim tab position is made prior to departure to ensure neutral tab position. **(P) (O)** • Exercise trim tab(s) over full range of travel visually checking tab(s) for normal operation. • Visually check tab(s) set n the neutral position prior to each take-off.
3. Stick Shaker Motor System	2	1	1	1	1	1	**(P) (O)** One may be inoperative provided stall warning is verified operative.
ATA 28 Fuel							
1. Flight Deck Fuel Quantity Indicating Systems	2	1	1	1	1	1	One may be inoperative **(P) (M) (O)** • Check that the associated Low Level Fuel System and Fuel Remaining Indicating System (Totalizer) is operative. • Prior to departure, check associated fuel quantity by use of dipsticks or by use of associated Fuel Quantity Indicating System, on Fuel Servicing Panel. • Pilots cross-check the function of the Low Level Fuel System and the Totalizer at regular intervals during flight.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 28 Fuel							
2. Fuel Remaining Indicating System (Totalizer)	1	0	0	0	0	0	**(P)** May be inoperative provided: a) Both Flight Deck Fuel Quantity Indicating Systems are operative, and b) Both item 73-1 Fuel Flow Indicating Systems are operative.
3. Low Level Fuel Warning System	2	0	0	0	0	0	**(P)**
4. Fuel Servicing Panel Fuel Quantity Indicating Systems	2	0	0	0	0	0	**(P) (O)** Both may be inoperative provided: a) Gravity refueling is used. OR b) Associated Flight Deck Fuel Quantity Indicating System is operative, and c) Pressure refueling is limited to 80% of fuel tank capacity based on flight deck gauge indication.
5. Fuel Filter Caution Light Systems	2	1	1	1	1	1	One may be inoperative provided that in the event the operative warning light illuminates, both systems are checked for contamination. **(P) (M)** • Check operative warning system is operative by testing system per Maintenance Manual 28-44-00. • In the event that the operative Warning Light illuminates, check BOTH fuel systems for contamination.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 28 Fuel							
6. Fuel Pressure Caution Lights System (Central Warning Panel)	2	1	1	1	1	1	One may be inoperative **(P) (O)** • Prior to engine start, switch on aircraft electrical power and note that operative LP Warning Light is ON. • Switch on the booster pump associated with the inoperative light and open the crossfeed valve. • Check that the operative LP warning light extinguishes. If the light does not go out, this indicates either a failed booster pump or crossfeed valve. • Shut the crossfeed valve and switch off the booster pump. • Mask inoperative light if failed ON.
7. Crossfeed Indicator Light System (Central Warning Panel)	1	0	0	0	0	0	May be inoperative **(P) (O) (M)** • Prior to engine start, switch on aircraft electrical power and note that both fuel LP warning lights are ON. • Switch on ONE booster pump and check that both LP lights extinguish when crossfeed valve selected OPEN, and only the associated pump light remains ON when the crossfeed valve selected SHUT. If both lights remain ON when the crossfeed valve selected SHUT, then the valve is defective. • Shut the crossfeed valve and switch off the booster pump. • Mask inoperative caution light if failed ON. NOTE: See AFM procedures.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 28 Fuel							
8. Pressure Refueling Systems	1	0	0	0	0	0	May be inoperative **(P) (M)** • Connect fuelling tanker to refuel/defuel coupling on panel 8P in accordance with Maintenance Manual 12-10-28. • With the Master Switch selected to OFF, empty the fuel in the aircraft delivery piping as detailed in Maintenance Manual 12-10-28. In the event that fuel is continually extracted, then the shut-off valve(s) of the cell(s) whose contents is falling has failed open. (None of which are on the REL). If the piping vents as normal with fuel in cells 1,2 and 3, the shut-off valves are proven to be closed. • With the fuelling tanker disconnected, select the Master Switch to REFUEL or DEFUEL. Check that the leveling valve operates and indicates OPEN. Select Master Switch to OFF and check that the leveling valve operates and indicates OPEN. Select Master Switch to OFF and check that the leveling valve reverts to SHUT.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 28 Fuel							
9. Flight Deck and Stub Leveling Valve Indicators	2	1	1	1	1	1	One may be inoperative provided the valve is verified operative prior to each flight. **(P) (M) (O)** • On panel 8P, select the Master Switch to REFUEL or DEFUEL. • Check that the leveling valve operated OPEN, by viewing valve indicators on panels 4P and 8P. • Select Master Switch to OFF and check valve reverts to SHUT. • During Pre-flight checks it is not permissible to select the leveling valve OPEN if the flight deck, panel 4P, indicator is defective. If for fuel management reasons that valve must be opened, then it is necessary that the valve be verified to be closed again by viewing the indicator on panel 8P.
ATA 29 Hydraulic Power							
1. Pump Case Drain Temperature Indicating System	2	1	1	1	1	1	**(P)**
2. Fluid Overheat Caution Light System	1	0	0	0	0	0	**(P)** May be inoperative provided Pump Case Drain Temperature Indicating Systems are operative

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 29 Hydraulic Power							
3. Hydraulic Pump Inlet Indicators	2	0	0	0	0	0	One or both may be inoperative **(P) (M) (O)** • With the engines running, momentarily close the pump inlet valve having the inoperative indicator. Check that the hydraulic LP Warning Light illuminates. **NOTE:** The above check confirms the operation of the pump inlet valve, but can be damaging to the pump.
4. Flight Deck Main System Hydraulic Gauge	1	0	0	0	0	0	May be inoperative **(P) (O)** • Prior to engine start, select emergency brakes and operate the brake pedals until the emergency brake pressure gauge reads below 2500 psi. Reset the emergency brake selection handle and check that hydraulic LP Warning Lights are lit. • Start engine(s) and check that the emergency brake pressure rises to 3000 +200/ -100 psi and that LP warning lights extinguish. • In the event of subsequent hydraulic failures as detailed in the AFM, the pressure gauge shall be assumed to read low and the applicable procedure followed.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 29 Hydraulic Power							
5. Flight Deck Wheel Brakes Emergency Accumulator Pressure Gauge	1	0	0	0	0	0	May be inoperative **(P) (M) (O)** • Verify that the Accumulator Pressure Gauge (Stub Wing) is operative by cross checking Emergency Landing Gear Accumulator pressure, indicated on Stub Wing Gauge, with that indicated on Flight Deck Gauge. • Prior to each flight, check Wheel Brakes Emergency Accumulator pressure. • Monitor Main System Pressure Gauge (Flight Deck) ensuring pressure rises to 3000 +200/-100 psi after engine start up.
6. Stub Wing Accumulator Pressure Gauge	1	0	0	0	0	0	May be inoperative provided: a) Flight Deck Wheel Brakes Emergency Accumulator Pressure Gauge is operative b) Associated Flight Deck Accumulator Pressure gauges are used to check accumulator precharge pressures and c) An external pressure gauge is used during accumulator servicing. **(P) (O)** • Monitor Emergency Brake and Emergency Landing Gear flight deck gauges during engine(s) start-up and check that both gauges rise to 3000 +200/-100 psi.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 29 Hydraulic Power							
7. Stub Wing Reservoir Inflation Pressure Gauge	1	0	0	0	0	0	**(P) (M)** May be inoperative provided an external pressure gauge is used during accumulator servicing.
ATA 30 Ice and Rain Protection							
1. Ice Detector System	1	0	0	0	0	1	**(P) (O)** • May be inoperative provided the aircraft is not dispatched into known or forecast icing conditions. ***PMC*** NOTE: See AFM, Section 4
2. Windshield Wiper Systems	2	0	0	0	0	0	**(P) (O)** Both may be inoperative provided: a) Rain Repellent System is operative. OR b) Aircraft in not operated in precipitation within 5 nautical miles of airport of takeoff or intended landing.
3. Rain Repellent System	1	0	0	0	0	0	**(P) (O)** May be inoperative provided: a) Both Windshield Wiper Systems are operative, OR b) Aircraft is not operated in precipitation within 5 nautical miles of airport of takeoff or intended landing.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 30 Ice and Rain Protection							
4. Windshield Heating Systems	2	0	0	0	0	2	**(P) (O)** May be inoperative provided: a) Aircraft is not operated in known or forecast icing conditions ***PMC*** b) Aircraft is operated in accordance with AFM Limitations/Procedures
5. Stall Warning Vane Heater System	2	0	0	0	0	2	Both may be inoperative provided: a) Stall Warning System is verified operative, and b) Aircraft is not operated in known or forecast icing conditions. ***PMC*** **(P) (M) (O)** • For inoperative low indication, verify high indication is operative using test switches. • For inoperative high indication aircraft should not be operated in known or forecast icing conditions.
6. Pitot- Static Heater Systems	2	1	1	1	1	2	**(P) (O)** One may be inoperative provided: a) Aircraft is not operated in visible moisture with ambient temperatures below +4 degrees C, and b) Aircraft is not operated in known or forecast icing conditions. ***PMC*** NOTE: If Pitot Head or either Static Plate Heater on same system is inoperative, that system is considered to be inoperative.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 30 Ice and Rain Protection							
7. Pitot Heat Indicating Light Systems (Central Warning Panel)	2	1	1	1	1	2	One may be inoperative provided: a) Both Pitot Static Heater Systems are verified operative, b) Aircraft is not operated in known or forecast icing conditions ***PMC*** **(P) (O)** • Pre-flight, verify by touch that heaters are operative. • Mask caution light if inoperative ON.
8. Wing Deicer Boot Cycle Indicating Light Systems (Green Lights)	4	0	0	0	0	3	One may be inoperative provided: a) All other components of wing and tail deicing and indicating systems are operative, and b) Wing Illumination Light (Ice Check) is operative for night operations OR c) All other components of wing and tail deicing and indicating systems are operative, and d) A portable lamp, adequate to inspect wings inflight, is available for night operations. **(P) (O)** • After engine start, select Boot De-icer Timer Switch to 1 min cycle. Check that wing de-icer boots inflate and tail de-icer indicates in sequence inner, outer, tail, with 45 seconds dwell period.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 30 Ice and Rain Protection							
9. Tail Deicer Boot Cycle Indicating Light Systems (Green Light)	1	0	0	0	0	1	**(P) (O)** May be inoperative provided aircraft is not operated in known or forecast icing conditions. ***PMC***
10. Wing and Tail Bleed Air Duct Pressure Caution Light Systems	2	0	0	0	0	0	**(P) (O)** Both may be inoperative provided all other components of wing and tail deicing and indicating systems are operative.
11. Propeller Deice Systems	2	0	0	0	0	2	**(P) (O)** Both may be inoperative provided aircraft is not operated in known or forecast icing conditions. ***PMC***
12. Propeller Deice Timer Systems	2	1	1	1	1	1	One may be inoperative provided operative timer is selected. **(P) (O)** • Select inoperative timer switch to transfer during flights in icing conditions. Verify associated propeller de-icer indicator is ON (GREEN).
13. Engine Intake Anti-Icing Systems	2	0	0	0	0	2	**(P) (O)** Both may be inoperative provided aircraft is not operated in known or forecast icing conditions. ***PMC***

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 30 Ice and Rain Protection							
14. Engine Anti-Icing Vane Systems	2	1	1	1	1	1	One may be inoperative provided aircraft is operated in accordance with AFM. **(P) (M) (O)** • Verify that inoperative vane system is in the deployed position via the indicators on panel 4P or by visually inspecting the vanes. • Deactivate the anti-icing vane actuator by tripping the appropriate CB. (CB 62 for LHS or CB 229 for RHS). NOTE 1: System-ON, vanes are deployed; System-OFF, vanes are retracted. NOTE 2: AFM provides performance credit for automatic deployment to System-ON condition during autofeather.
15. Wing and Tail Deicer Boot System	1	0	0	0	0	1	May be inoperative provided: a) System is secured to ensure that boots will remain deflated, and b) Aircraft is not operated in known or forecast icing conditions. ***PMC*** **(P) (M) (O)** • Ensure Boot De-icer Timer switch is selected OFF and placarded. • After engine start, check that all de-icer boots are sucked flat against leading edges. • Monitor wing de-icer boots remain flat during all aircraft operations with the system inoperative.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 30 Ice and Rain Protection							
16. Windshield Wiper Park Modes	2	0	0	0	0	0	**(P)**
ATA 31 Indicating and Recording							
1. Clocks (Cockpit)	2	0	0	1	1	0	**(P) (O)** • Ensure that one operative clock meeting FAR 91.205(d)(6) is positioned in clear view of both pilots.
2. Flight Data Recorder (FDR) System	1	0	0	0	0	0	May be inoperative and/or removed for repair for not more than 15 days in accordance with FAR 91.609 (b)(5)(i). An additional 15 days may be allowed in accordance with FAR 91.609 (b)(5)(ii). **(P) (O)** • Ensure Cockpit Voice Recorder is operational.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 32 Landing Gear							
1. Anti-Skid System	1	0	0	0	0	0	May be inoperative provide aircraft is operated in accordance with AFM. **(P) (O)** • Landing distances required will be increased if either maxaret unit is inoperative. • Check increase indicated in AFM and make allowances accordingly. • Care should be taken to avoid aircraft 'slewing' when brakes are applied.
2. Main Brake Pressure Indicating Systems	2	1	1	1	1	1	**(P) (O)** • During normal ground operations of the aircraft, continually ensure the effectiveness of the normal braking system. • In the event of any malfunctions, select emergency braking and stop aircraft.
3. Landing Gear Normal Extension and Retraction System	1	0	0	0	0	0	May be inoperative provided aircraft is operated with gear extended in accordance with AFM. **(P) (M) (O)** • Fit ground pins to Landing Gear as per AFM. • Placard Landing Gear selection lever such that the pilots will not attempt to raise gear. • Operate aircraft as per AFM. NOTE: TCAS may be inoperative

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 32 Landing Gear							
4. Nosewheel Steering System	1	0	0	0	0	0	**(P) (M) (O)** May be inoperative provided: a) Placard nosewheel steering handle such that pilots will not attempt nosewheel steering. b) The aircraft is not operated from unimproved runways, c) The aircraft is not reversed, d) The nosewheel steering switch is selected to the OFF position and remains in this position throughout the flight, e) The steering input rod adjustable link is removed, f) An approved procedure is used to secure the signalling system (control cable), g) A preflight taxi check is carried out to ensure the nosewheel is free to castor. h) The maximum crosswind component is15 KTS at 90 degrees to the direction of flight. This restriction must be placarded in the flight compartment.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 33 Lights							
1. Cockpit and Instrument Light Systems	-	-	-	-	-	-	**(P)** Individual lights may be inoperative provided: a) Flight deck Emergency Lighting is operative, b) Sufficient lighting is operative to make each instrument, control and other device for which it is provided easily readable, c) Direct rays and reflections do not impair visibility either inside or outside the aircraft, d) Lighting intensity can be controlled or preset to a satisfactory level for the expected flight conditions, and e) Lighting configuration at dispatch is acceptable to the flight crew.
2. Cabin Interior Lighting Systems	-	-	-	-	-	-	**(P)** May be inoperative provided: a) Cabin emergency lighting is operative, b) Sufficient lighting is operative for cabin crew to perform required duties, and c) Lighting configuration at dispatch is acceptable to the flight crew. NOTE: Cabin emergency lighting does not include floor proximity lights.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 33 Lights							
3. Passenger Notice System (No Smoking/ Fasten Seat Belts)	1	0	0	0	0	0	May be inoperative provided procedures are established and used for notifying passengers when seat belts should be fastened and smoking is prohibited. **(P) (O)** • Check full operation of PA system, verifying all systems are operative. • If the PA system is defective, then seats from which an operative briefing sign is not legible or readable must be blocked, not to be used.
4. Landing Lights	2	0	1	0	1	0	**(P) (O)** One may be inoperative for night operation provided taxi lights are operative.
	2	0	0	0	0	0	Both may be inoperative provided aircraft is not operated at night. ***PMC***
5. Taxi Lights	2	0	0	0	0	0	**(P) (O)** All may be inoperative provided: a) Aircraft is not operated at night. OR b) Both Landing Lights are operative for night operations.
6. Wing Illumination Light (Ice Check)	1	0	0	0	0	0	**(P) (O)** 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.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 33 Lights							
7. Navigation Lights	3	0	3	0	3	0	**(P) (O)** All may be inoperative provided aircraft is not operated at night. ***PMC***
8. Exterior Emergency Lighting System	1	0	1	0	1	0	**(P) (O)** All may be inoperative provided aircraft is not operated at night. ***PMC***
9. Anti-Collision Beacon and Strobe Light Systems							**(P) (O)**
a. Fuselage Anti-Collision Light System	1	0	0	0	0	0	a. May be inoperative provided the Strobe Light System is operative.
b. Wing Tip White Strobe Light System	1	0	0	0	0	0	b. May be inoperative provided the Anti-Collision Light System is operative.
10. Floor Proximity Emergency Escape Path Marking System Lights	-	-	-	-	-	-	**(P) (O)** Individual lights may be inoperative as follows: a) All exit identifiers must operate normally, b) A maximum of five (5) aisle floor lighting elements may be inoperative provided that no two (2) inoperative elements are adjacent to each other, OR c. If the conditions of a) and b) are not met, the aircraft may not depart an airport where repairs or replacements can be made.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 34 Navigation							
1. Gyro Magnetic Compass Display (Horizontal Situation Indicator)	2	1	2	2	2	2	One may be inoperative for Day VMC conditions on the copilot's side only provided at least one independent compass heading indicator is available on each pilots instrument panel. ***PMC*** **(P) (O)** • If heading flag is showing and remains ON, during taxi or flight maneuvers, the system must be regarded as inoperative. The operative system must be used. • Heading flag on the first pilot's HSI must not be showing.
2. Gyro Horizon Indicator (Attitude Display Indicator)	2	1	2	2	2	2	**(P) (O)** One may be inoperative for Day VMC conditions on the copilot's side only provided at least one independent gyro horizon indicator is available on each pilots instrument panel. ***PMC***
3. Turn and Slip Indicators	2	1	1	1	1	1	**(P) (O)** Copilot side may be inoperative.
4. Airspeed Indicator	2	1	1	1	1	1	**(P) (O)** Copilot side may be inoperative.
5. Pressure Altimeter	2	1	1	1	1	1	**(P) (O)** Copilot side may be inoperative.
6. Vertical Speed Indicators	2	1	2	2	2	2	**(P) (O)** One may be inoperative for Day VMC conditions on the copilot's side only. ***PMC***

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 34 Navigation							
7. Non Stabilized Magnetic Compass (Standby)	1	0	0	0	0	0	**(P) (O)** May be inoperative provided two independent magnetic stabilized directional compass systems are operative.
8. Flight Director Systems	2	0	0	0	0	0	**(P) (O)** All may be inoperative provided approach minimums are not dependent on its use.
9. Radio Magnetic Indicator (RMI)	2	1	1	1	1	1	**(P) (O)** One may be inoperative provided operations are not dependent on its use.
10. VHF Navigation Systems (VOR/ILS)	2	0	0	1	1	1	**(P)**
11. Distance Measuring Equipment (DME)	2	0	0	0	0	0	**(P)**
12. Automatic Direction Finding Systems (ADF)	2	0	0	0	0	0	**(P)**
13. Marker Beacon Systems	2	0	0	0	0	0	**(P) (O)** Both may be inoperative provided approach minimums are not dependent on its use.
14. ATC Transponders (Includes civilian functions of IFF transponder)	2	0	0	1	1	0	**(P) (O)** As required by FAR 91.215
15. IFF Transponder, Modes 3 and 4	1	0	0	0	0	0	**(P) (O)** Verify operation of ATC transponder. NOTE: TCAS might be inoperative.
16. Altitude Reporting and Encoding Units	2	0	0	0	0	0	**(P) (O)** As required by FAR 91.215 NOTE: TCAS might be inoperative.
17. Altitude Alerter	1	0	0	0	0	0	**(P)**

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 34 Navigation							
18. Radio Altimeter Systems	1	0	0	0	0	0	**(P) (O)** May be inoperative provided: a) Approach minimums or operating procedures are not dependent on its, b) Ground Proximity Warning System (GPWS) is considered inoperative, and c) TCAS is considered inoperative.
19. Ground Proximity Warning System (GPWS)	1	0	0	0	0	0	**(P) (O)** May be inoperative provided alternate procedures are established and used. NOTE: Particular circumstances may require the use of additional or alternate procedures. The alternate procedures would require the Operator to consider the routes over which he is flying and ensure that the pilot adopted a flight path which would give the protection otherwise afforded.
20. Weather Radar System	1	0	0	0	0	0	**(P)**
21. Weather Radar Stabilization Function	1	0	0	0	0	0	**(P) (O)** May be inoperative provided: a) STAB switch is pulled to OFF position, and b) Antenna tilt function is operative.
22. Stormscope	1	0	0	0	0	0	**(P)**

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 34 Navigation							
23. Standby Attitude Indicators	2 2	0 0	0 0	1 0	1 0	0 0	**(P) (O)** • One may be inoperative provided flying pilot's Standby Attitude Indicator is operative for IMC conditions. • Both may be inoperative provided aircraft is operated in Day VMC only.
24. Global Positioning System (GPS)	2	0	0	0	0	0	**(P) (O)** May be inoperative provided enroute, navigation and approach procedures are not dependent on its use.
25. Flight Control Panels	2	0	0	0	0	0	**(P) (O)** Both may be inoperative provided: a) Operations are not dependent on its use, and b) Associated Flight Director / Auto Pilot System is considered inoperative

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 34 Navigation							
26. Traffic Alert Collision Avoidance System (TCAS) (If Installed)	2	0	0	0	0	0	**(P) (M)** May be inoperative provided the system is deactivated and secured.
27. Combined TA and RA Dual Displays	2	1	1	1	1	1	**(P) (O)** May be inoperative on the non-flying pilot side provided: a) TA and RA elements and audio functions are operative on flying pilot side, and b) TA and RA display indications are visible to the non-flying pilot.
28. Resolution Advisory (RA) Display Systems	2	0	0	0	0	0	**(P) (O)** One may be inoperative on non-flying pilot side. **(P) (O)** May be inoperative provided: a) All Traffic Alert (TA) display elements and voice command audio functions are operative, and b) TA only mode is selected by the crew. **(P) (O)** May be inoperative provided all installed RA display and audio functions are operative.
29. TA Display System	2	0	0	0	0	0	
30. Flight Guidance / Auto Pilot Computers (APC)	2	0	0	0	0	0	**(P) (O)** Both may be inoperative provided: a) Operations are not dependent on its use, and b) Associated Flight Director / Auto Pilot System is considered inoperative

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 34 Navigation							
31. Air Data Sensors	2	0	0	0	0	0	**(P) (O)** Both may be inoperative provided: a) Operations are not dependent on its use, and b) Associated Flight Director / Auto Pilot System is considered inoperative
32. Flight Management Systems (UNS-1K/UNS-1B+)	2	0	0	0	0	0	**(P) (O)** Both may be inoperative provided the systems are not used or required to be used during the flight.
ATA 35 Oxygen							
1. Crew Oxygen System	1	0	0	0	0	0	**(P) (O)** Required by AR 95-1 on flights above 10,000 feet pressure altitude for more than 1 hour or on flights above 12,000 feet pressure altitude for more than 30 minutes
2. Passenger Oxygen System	1	0	0	0	0	0	**(P) (O)** Required by AR 95-1 on flights above 14,000 feet pressure altitude for any period of time
3. Pressure Demand Regulators	4 4	0 3	0 3	0 3	0 3	0 3	**(P) (O)** All may be inoperative provided the aircraft is not operated above 10,000 feet pressure altitude, OR One must be operative at each required crew member station if aircraft is operated above 10,000 feet pressure altitude

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 35 Oxygen							
4. Protective Breathing Equipment (PBE) SD3 Sherpa SD3-60 Sherpa	 - 3	 0 0	 0 0	 0 0	 0 0	 0 0	**(P) (M)** None are required for operation of an aircraft under FAR 91. NOTE: Inoperative unit is to be removed from the aircraft.
5. Passenger Oxygen Masks	-	-	-	-	-	-	**(O)** One mask per occupied passenger seat at cabin pressure altitudes above 14,000 feet pressure altitude.
ATA 52 Doors							
1. Door Warning Indicators	7	0	0	0	0	0	All may be inoperative provided: a) Affected door is visually verified to be CLOSED and LOCKED before each departure, and b) Door warning light on Central Warning Panel operates normally. **(P) (O)** • Open door(s), having defective indicator, in turn. Check that when each door is open the 'DOORS' warning light on the Glareshield panel is lit and extinguishes when the door is closed. • After closing each door having defective indicator, check that the latches engage correctly.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 52 Doors							
2. Airstair Assembly	1	0	0	0	0	0	**(P) (M) (O)** May be inoperative provided: a) Stairs are securely STOWED or removed from the aircraft, and b) An alternate means of entering and exiting the aircraft is available
3. "DOORS" Central Warning Panel Caption	1	0	0	0	0	0	**(P) (O)** May be inoperative provided: a) All doors are visually verified CLOSED and LOCKED before each departure, b) All Door Warning Indicators are operative, and c) Indicator light is masked if inoperative ON.
4. Ramp Door Actuation Systems	2	0	0	0	0	0	**(P) (O)** Ensure rear door OPEN/SHUT indicator on panel 14P shows a green SHUT indication.
5. Ramp Door (OPEN/SHUT) Warning Indicator 14P Panel	1	0	0	0	0	0	**(P) (O)** May be inoperative provided: a) Door warning light on Central Warning Panel is verified operative when associated with the Ramp Door. b) 11P panel indication is operating. normally for the Ramp Door.

System and/orComponent	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 56 Windows							
1. Windshield	2	1	1	1	1	2	**(P) (M) (O)** One windshield panel outer glass layer may be damaged (cracked) provided: a) Visibility through the affected windshield is acceptable to the flight crew and vision is not impaired on the remaining windshield. b) The damage is positively identified as being solely in the outer glass ply with no loose pieces. c) The acrylic main ply is determined to be undamaged. d) The windshield outer glass ply is inspected for condition prior to each departure. e) If cracks adversely affect function of windshield wiper, that windshield wiper system is considered to be inoperative and dispatch is in accordance with item 30-2, f) Associated windscreen heat is selected OFF and appropriately electrically isolated and the aircraft is operated in accordance with item 30-4.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 61 Propellers							
1. Reverse Pitch Indicating Light Systems (Green)	2	0	0	0	0	0	Both may be inoperative provided reverse is not used on either engine. **(P) (M) (O)** • Perform Reverse Power Check prior to the first flight of the day. • Mask both reverse pitch indicating lights if inoperative ON.
2. Propeller Reverse Systems	2	0	0	0	0	0	Both may be inoperative provided: a) Affected system is inspected to ensure Propeller will not reverse, and b) Reverse is not used on either engine. NOTE: See AFM Limitations and Procedures. **(P) (M) (O)** • Check that the Fuel Control Unit input lever contacts its max stop when the Pilot's power lever is fully forward. • With engines running, check that the aircraft does not roll forward when Ground Fine selected, brakes off. • Check that the control locks baulk limits the power lever range to less than 87% Ng.
3. Propeller Synchronizer	1	0	0	0	0	0	**(P)**

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 61 Propellers							
4. Fine Pitch Indicating Light Systems (Blue)	2	1	1	1	1	1	One may be inoperative **(P) (M) (O)** • Check low blade angle (LBA) stop in accordance with the AFM before the first flight of the day. • Ensure reverse pitch indicating light is operative. • Mask fine pitch indicating light if failed ON.
5. Propeller RPM Indicating Systems (Digital Indications)	2	0	0	0	0	0	**(P) (M) (O)** Both may be inoperative provided: a) Analog indication is verified operative, and b) Procedures for engine operation do not depend on digital indication. c) Defective portion of the indicator is covered.
ATA 71 Powerplant							
1. Reserve Takeoff Power System	1	0	0	0	0	0	May be inoperative provided aircraft is operated in accordance with AFM with RTOP set manually. **(P) (M) (O)** • Open circuit breakers 104 and 247 on panels 1D and 2D respectively. • Check Reserve Power switched are OFF and operate aircraft in accordance with AFM.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 73 Engine Fuel and Control							
1. Fuel Flow Indicating System	2	1	1	1	1	1	One may be inoperative provided: a) Both Flight Deck Fuel Quantity Indicating Systems are operative, and b) Fuel Remaining Indicating System is operative. **(P) (O)** • During normal operation of engines, check both Fuel Quantity and Fuel Remaining Indicating Systems function normally. • Cross check quantity used versus total indicated.
ATA 79 Engine Oil							
1. Oil Low Pressure Caution Lights System	2	1	1	1	1	1	**One may be inoperative provided:** a) Caution Light is masked if inoperative ON, and b) Oil pressure/temperature indicator operates normally and is monitored at regular intervals during flight. **(P) (M) (O)** • If caution light is continually lit, mask with black tape or similar. • During normal operation of the aircraft, monitor the actual engine oil pressure and temperature more frequently.

System and/or Component	Numbers of Items Installed						
		Day VMC					
			Night VMC				
				Day IMC			
					Night IMC		
						Icing Conditions	
							Remarks and/or Exceptions
ATA 79 Engine Oil							
2. Oil Low Pressure Caution Lights System	2	1	1	1	1	1	**One may be inoperative provided:** c) Caution Light is masked if inoperative ON, and d) Oil pressure/temperature indicator operates normally and is monitored at regular intervals during flight. **(P) (M) (O)** • If caution light is continually lit, mask with black tape or similar. • During normal operation of the aircraft, monitor the actual engine oil pressure and temperature more frequently.
ATA 80 Starting							
1. Starter Motor Auto Cut-Out Circuits	2	0	0	0	0	0	Both may be inoperative provided start cycle is manually terminated. **(P) (O)** • When engine START light fails to extinguish above 50% Ng, switch starter motor switch to OFF.