

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Revision: 6 b
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WASHINGTON, D.C.

M A S T E R M I N I M U M E Q U I P M E N T L I S T

BELL HELICOPTER
222 SERIES, 230, 430

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FEDERAL AVIATION ADMINISTRATION
MASTER MINIMUM EQUIPMENT LIST

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Log of Revisions

REV.NO.	DATE	PAGE NUMBERS	INITIALS
ORIGINAL	11/27/1981		
1	02/06/1985	Complete revision	
2	04/18/1989	All pages (ABC)	
3	06/22/1989	HIGHLIGHTS OF REV., DEFINITIONS	
3	06/22/1989	PREAMBLE	
4	04/16/1992	HIGHLIGHTS OF REV., DEFINITIONS	
4	04/16/1992	GUIDELINES	
4	04/16/1992	21-1, 22-1, 23-1, 24-1, 25-1	
4	04/16/1992	25-2, 26-1, 27-1, 28-1, 30-1	
4	04/16/1992	31-1, 32-1, 33-1, 33-2, 34-1	
4	04/16/1992	34-2, 34-3, 34-4, 35-1, 52-1	
4	04/16/1992	65-1, 65-2, 77-1, 79-1	
4a	12/14/1992	HIGHLIGHTS OF REV., GUIDELINES	
4a	12/14/1992	21-1, 22-1, 24-1, 30-1, 32-1	
4a	12/14/1992	33-1	
5	02/17/1995	HIGHLIGHTS OF REV., DEFINITIONS	
5	02/17/1995	21-1, 22-1, 23-1, 24-1, 25-1	
5	02/17/1995	25-2, 26-1, 27-1, 30-1, 31-1	
5	02/17/1995	32-1, 33-1, 33-2, 34-1, 34-2	
5	02/17/1995	35-1, 52-1, 65-1, 65-2, 77-1	
5a	10/09/1997	HIGHLIGHTS OF REV., DEFINITIONS	
5a	10/09/1997	22-1, 27-1, 34-1, 34-2	
6	01/26/1998	HIGHLIGHTS OF REV., DEFINITIONS	
6	01/26/1998	22-1, 24-1, 31-1, 77-1	
6a	07/29/1998	HIGHLIGHTS OF REV., DEFINITIONS	
6a	07/29/1998	GUIDELINES	
6a	07/29/1998	24-1, 28-1, 31-1, 34-3	
6b	02/02/2001	HIGHLIGHTS OF REV., DEFINITIONS	
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Control Page

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	VI	6	01/31/1995
	VII	6	01/31/1995
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	IX	6	01/31/1995
	X	6	01/31/1995
	XI	6	01/31/1995
	XII	6	01/31/1995
Preamble	XIII	2	06/14/1989
	XIV	2	06/14/1989
Guidelines for (O) & (M) Procedures	XV	6 a	07/29/1998
21	21-1	5	02/17/1995
22	22-1	6	01/26/1998
23	23-1	5	02/17/1995
24	24-1	6 a	07/29/1998
25	25-1	5	02/17/1995
	25-2	5	02/17/1995
26	26-1	5	02/17/1995
27	27-1	5 a	10/09/1997
28	28-1	6 a	07/29/1998
30	30-1	5	02/17/1995
31	31-1	6 a	07/29/1998
32	32-1	5	02/17/1995
33	33-1	5	02/17/1995
	33-2	5	02/17/1995
34	34-1	5 a	10/09/1997
	34-2	5 a	10/09/1997
	34-3	6 b	02/02/2001
35	35-1	5	02/17/1995
52	52-1	5	02/17/1995
65	65-1	5	02/17/1995
	65-2	5	02/17/1995
77	77-1	6	01/26/1998

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Highlights of Change

- ATA 24 item 7. Allows relief for Inverter Voltmeter.
- ATA 28 item 1. Allows relief for Auxiliary Fuel Tank.
- ATA 28 item 2. Allows relief for Solenoid Drain Valve System.
- ATA 31 item 2. Excludes model 430.
- ATA 31 item 3. Excludes model 430.
- ATA 31 item 7. Allows relief for Data Sources for NP, NG, and/or NR.
- ATA 31 item 8. Allows relief for Chip Detector Power Unit.
- ATA 34 item 20. Allows relief for four tube EFIS Display.
- ATA 34 item 21. Allows relief for two tube EFIS Display.
- ATA 34 item 22. Allows relief for Vertical Gyro, EFIS configuration only.
- ATA 34 item 23. Allows relief for Directional Gyro, EFIS configuration only.

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- ATA 34 item 24. Allows relief for Traffic Alert/Advisory Systems.

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Definitions

1. System Definitions.

System numbers are based on the 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.
- b. "Number Installed" (Column 2) is the number (quantity) of items normally installed in the aircraft. This number represents the aircraft 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 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 the current revision of that page only. The change bar is dropped at the next revision of that page.

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

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Certificate Data Sheet.

3. "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.

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. "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 120-42A.

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

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

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

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

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operation with the listed item inoperative.

12. "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).

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

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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 in FAR Part 91. 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 FAR 121, 125, 129 and 135 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 designators:

Category A. Items in this category shall be repaired within the time interval specified in the remarks column of 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

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record/logbook. For example, if it were recorded at 10 a.m. on January 26th, the three day interval would begin at midnight the 26th and end at midnight the 29th.

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 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.

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.

The letter designators are inserted adjacent to Column 2.

23. Electronic fault alerting system - General

New generation aircraft display system fault indications to the flight crew by use of computerized display systems. Each aircraft manufacturer has incorporated individual design philosophies in determining the data that would be represented. The following are customized definitions (specific to each manufacturer) to help determine the level of messages affecting the aircraft's dispatch status. When preparing the MEL document, operators are to select the proper Definition No. 23 for their aircraft, if appropriate.

a. BOEING (B-757/767, B-747-400, B-777)

Boeing airplanes equipped with Engine Indicating and Crew Alerting Systems (EICAS), provide different priority levels of system messages (WARNING, CAUTION, ADVISORY, STATUS and MAINTENANCE). Any messages that affects airplane dispatch status will be displayed at a STATUS message level or higher. The absence of an EICAS STATUS or higher level (WARNING, CAUTION, ADVISORY) indicates that the system/component is operating within its approved operating limits or tolerances.

System conditions that result only in a maintenance level message, i.e. no correlation with a higher level EICAS message,

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do not affect dispatch and do not require action other than as addressed within an operators standard maintenance program.

b. DOUGLAS (MD-11)

Some Douglas aircraft are equipped with an alerting function which is a subsystem within the Electronic Instrument System (EIS). The alerting function provides various levels of system condition alerts (WARNING, CAUTION, ADVISORY, MAINTENANCE and STATUS).

Alerts that affect aircraft dispatch will include WARNING, CAUTION, STATUS or MAINTENANCE level. MAINTENANCE alerts are displayed on the status page of the EIS display panel under the maintenance heading.

A MAINTENANCE alert on the EIS indicates the presence of a system fault which can be identified by the Central Fault Display System (CFDS) interrogation. The systems are designed to be fault tolerant, however, for any MAINTENANCE alert, the MEL must be verified for dispatch purposes.

c. AIRBUS (A-300-600, A-310, A-320/319/321, A-330, A-340)

Airbus aircraft equipped with Electronic Centralized Aircraft Monitoring (ECAM) provide different levels of system condition messages (WARNING, CAUTION, STATUS, and ADVISORY). A-320/319/321, A-330, and A-340 also provide MAINTENANCE status messages.

Any message that effects airplane dispatchability will normally be at the WARNING, CAUTION or STATUS level. MAINTENANCE messages (A-320/319/321, A-330, and A-340 only) are also indicated on ECAM Status Page below the white Maintenance label.

A MAINTENANCE status (Class II) message on ECAM indicates the presence of a system fault which can be identified by CFDS (A-320/319/321) or CMS (A-330/A-340) interrogation. The systems are designed to be fault tolerant, however for any MAINTENANCE status (Class II) message, the A-320/319/321 MEL must be verified for dispatch capability. For the A-330 and A-340, MAINTENANCE status messages do not affect dispatch.

d. FOKKER (FK-100)

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Fokker aircraft are equipped with Multi Function Display System (MFDS) which provides electronic message referring to the different priority levels of system information (WARNING (red), CAUTION (amber), AWARENESS (cyan) AND STATUS (white). Any messages that affects aircraft dispatch will be at the WARNING, CAUTION or AWARENESS level. In these cases the MEL must be verified for dispatch capability and maintenance may be required.

System conditions that only require maintenance are not presented on the flight deck. These maintenance indications/messages may be presented on the Maintenance & Test Panel (MAP) or the Centralized Fault Display Unit (CFDU) and by dedicated Built In Test Evaluation (BITE) of systems.

24. "Administrative control item" means an item listed by the operator in the MEL for tracking and informational purposes. 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 FOEB, the item becomes an MMEL item rather than an administrative control item.

25. "****" symbol in Column 1 indicates an item which is not required by regulation but 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 symbol, however, shall not be carried forward into the operator's MEL. It should be noted that neither this policy nor the use of this symbol provide 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 FARs.

27. "Day of Discovery" is the calendar day an equipment/instrument malfunction was recorded in the aircraft

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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."

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Preamble
(Effective 6/14/89)

The following is applicable for authorized certificate holders operating under Federal Aviation Regulations (FAR) Parts 121, 125, 129, 135: The FAR require that all equipment installed on an aircraft 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 aircraft, 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 FAA, with participation by the aviation industry, to improve aircraft utilization and thereby provide more convenient and economic air transportation for the public. The FAA 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 aircraft 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 Administrator. 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 aircraft with inoperative equipment.

Equipment not required by the operation being conducted and equipment in excess of FAR requirements are included in the MEL with appropriate conditions and limitations. The MEL must not deviate from the Aircraft 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 aircraft not listed on the MMEL must be operative.

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Preamble
(Effective 6/14/89)

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 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 FAR. The item is then either repaired or may be deferred per the MEL or other approved means acceptable to the Administrator prior to further operation. MEL conditions and limitations, do not relieve the operator from determining that the aircraft is in condition for safe operation with items of equipment inoperative.

When these requirements are met, an Airworthiness Release, Aircraft Maintenance Record/Logbook entry, or other approved documentation is issued as prescribed by FAR. 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 aircraft 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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Guidelines for (O) & (M) Procedures

The FOEB has identified a need for certain procedures to provide an adequate level of safety while providing relief for some items. Those procedures must be established by the operator. The following guidelines specify the objectives of the required procedures:

- 24-2 (M) Procedure to determine airworthiness of the generator, deactivate electrical source and determine that the bus interconnect is operating properly. Note: If bus interconnect is not operational, find and repair fault prior to dispatching the aircraft.
- 28-1 (M) Procedure to insure Auxiliary Fuel Tank Valve is closed and to insure there are no fuel leaks.
- 28-2 (O) Procedure to verify manual drain valve is closed.
- 31-8 (M) Procedure to verify Chip Detectors are functional.
- 32-1 (M) Procedure to determine that there is no electrical short(s) & the main and nose gear down lock actuator pins are engaged.
- 32-2 (M) Procedure to determine that the main gear and nose gear down lock actuators are engaged and determine there is no hydraulic leak.
- 32-3 (M) Procedure to deactivate landing gear retraction system, and ensure that the main and nose gear lock actuator pins are engaged.
- 32-6 (M) Procedure to determine that the locking pin is in place. Note: If pin is sheared, a procedure is required to ensure that the nose gear is free to swivel.
- 33-7b (O) Alternate procedure for passenger notification.
- 65-1 (M) Procedure to determine that the rotor brake disc is free and there is no hydraulic leak.

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21	AIR CONDITIONING				
1.	Cockpit Vent & Defog Blower Fan	C	2	0	May be inoperative provided: a) Respective heated windshield(s) (Item 30-5) is(are) installed and operative. OR b) A bleed air heater is installed and operative, and c) Heater/Defog Valve is operative.
2.	Heater/Defog Valve	C	1	0	May be inoperative provided heated windshield (Item 30-5) is installed and operative.
3.	Bleed Air Heater	C	-	0	May be inoperative provided heated windshield (Item 30-5) is installed and operative.
4.	Environmental *** Control System (ECU)	C	-	0	
5.	Freon Air *** Conditioning System	C	-	0	

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
22	AUTO FLIGHT				
1.	Automatic Flight Control Systems (AFCS)				FOR OPERATIONS WHEN THE AUTO PILOT IS REQUIRED, AFCS, AND FLIGHT DIRECTOR (ITEM 34-15) WITH ALTITUDE HOLD AND HEADING MODES, ARE REQUIRED
	1) Model 222 Only	C	-	0	May be inoperative for VFR.
***	2) Model 222B	C	-	0	As required by FAR.
	3) Model 222U	C	-	0	As required by FAR.
***	4) Model 230	C	-	0	As required by FAR.
	5) Model 430	C	-	0	May be inoperative for VFR.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED		3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
23	COMMUNICATIONS					
1.	Communications Systems (FM, HF, UHF, VHF, etc.)	C	-	0		As required by FAR.
2.	Cockpit Voice Recorder (CVR) (If FDR Required by Regulation)	A	1	0		May be inoperative provided: a) Flight Data Recorder is operating normally, and b) Repairs are made within three flight days.
	Cockpit Voice Recorder (CVR) (If no FDR Required by FAR.)	A	1	0		May be inoperative provided repairs are made within three flight days.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
24	ELECTRICAL POWER				
1.	Battery				DELETED REVISION 2
2.	Starter/Generator	B	2	1	(M)One generator may be inoperative for day VFR. (O)Refer to RFM for operating procedures.
3.	Inverters	B	-	1	One may be inoperative for day VFR.
4.	DC Ammeter Warning System				DELETED REVISION 2
5.	Battery Overtemp. Warning System				DELETED REVISION 2
6.	Generator Voltmeters (Model 430 only)	C	2	0	
7.	Inverter Voltmeter (Model 430 only)	C	-	0	

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
25	EQUIPMENT/FURNISHINGS				
1.	Personnel Flotation Devices				DELETED REVISION 2
2.	Life Raft				DELETED REVISION 2
3.	Pyrotechnic Signaling Devices				DELETED REVISION 2
4.	Helicopter *** Flotation System	C	- 0		As required by FAR.
5.	Passenger Seat Belts	C	- 0		One for each occupied seat. If belt is inoperative or missing, seat must be blocked and placarded.
6.	Crewmember Shoulder Harness	B	- 0		
7.	First Aid Kit				DELETED REVISION 2
8.	Cargo Suspension *** System	C	- 0		
9.	Hoist System ***	C	- 0		
10.	Emergency Locator *** Transmitter (ELT)	C	- 0		As required by FAR.
11.	EMS Equipment ***	C	- 0		May be inoperative provided system is deactivated and secured.

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25	EQUIPMENT/FURNISHINGS				
12. ***	Passenger Convenience Item(s)	C	- 0		Passenger convenience items, as expressed in this MMEL are those 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. Items addressed elsewhere in this document shall not be included. (M) and (O) procedures may be required and included in the air carrier's appropriate document.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
26	FIRE PROTECTION				
1.	Baggage Compartment Smoke Detector System	C	1	0	May be inoperative if compartment is empty.
2.	Engine Fire Detector System				DELETED REVISION 2
3.	Engine Fire Extinguishing System				DELETED REVISION 2
4.	Portable Fire Extinguisher				DELETED REVISION 2

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
27	FLIGHT CONTROLS				
1.	Force Trim System	C	-	0	May be inoperative for VFR.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
28	FUEL				
1.	Auxiliary Fuel *** Tank	D	- 0	0	May be inoperative provided: a) Flight is not predicated on the use of the system, AND b) Any fuel in the Auxiliary Fuel Tank is calculated in the weight and balance. (M) Insure Auxiliary Fuel Tank valve is closed and insure there are no fuel leaks. OR Auxiliary Fuel Tank is empty.
2.	Solenoid Drain *** Valve System	D	2 0	0	(O) May be inoperative provided the manual drain valve is verified closed prior to flight.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED		4. REMARKS OR EXCEPTIONS
			3.	NUMBER REQUIRED FOR DISPATCH	
30	ICE AND RAIN PROTECTION				
1.	Pitot Tube Heat	B	2	0	May be inoperative provided aircraft is not operated in known or forecast icing conditions.
2.	Windshield Wipers	C	-	0	May be inoperative for VFR per RFM
3.	Static Port Heaters	C	4	0	May be inoperative provided aircraft is not operated in known or forecast icing conditions.
4.	Engine Inlet Anti-Icing System	C	2	0	May be inoperative if known and forecast conditions for flight are at ambient temperatures above +4.5 degrees C (+40 degrees F) with no visible moisture.
5. ***	Heated Windshields	C	-	0	May be inoperative provided respective Cockpit Vent & Defog Blower Fan (Item 21-1) is operative and OAT is at or above zero degrees F.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
31	INDICATING/RECORDING SYSTEMS				
1.	Clock Displaying Hours, Minutes, and Seconds with Sweep-Second Pointer or Digital Presentation (Except model 430)	C	-	1	Operative clock must be located on the instrument panel in a position that makes it plainly visible to, and usable by, any pilot at the pilot's station.
		C	-	0	May be inoperative for VFR provided Elapsed Timer is installed and operative.
2.	Elapsed Timer *** (Except Model 430)	C	-	0	May be inoperative provided Clock is operative.
3.	Hour Meter *** (Except Model 430)	C	-	0	
4.	Aircraft/Engine *** Monitoring System	C	-	0	
5.	Cockpit Voice Recorder				MOVED TO ATA 23
6.	Flight Data *** Recorder (FDR)	A	1	0	May be inoperative provided: a) Cockpit Voice Recorder operates normally, and b) Repairs are made within three flight days.
7.	NP, NG, and/or NR. Data Sources (Model 430 only)	B	2	1	One data source may be inoperative provided ALT advisory appears below NP, NG, and/or NR readouts.
8.	Chip Detector Power Unit (C.D.P.U.) (Model 430 only)	C	1	0	(M) May be inoperative provided main transmission, tail rotor gearbox and engine chip detectors are verified to be functional.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH		4. REMARKS OR EXCEPTIONS
32	LANDING GEAR					
	(Applicable to Wheel Gear Models Only)					
1.	Landing Gear Position Indicating and Warning System	B	1	0		(M)May be inoperative provided landing gear is secured in the down position.
2.	Landing Gear Extension/Retraction System	C	1	0		(M)May be inoperative provided landing gear is secured in the down position.
3.	Emergency Landing Gear Extension System	C	1	0		(M)May be inoperative provided Landing Gear Retraction System is deactivated and secured.
4.	Parking Brake System					DELETED REVISION 2
5.	Main Landing Gear Brake System					DELETED REVISION 2
6. ***	Nose Wheel Locking System (Applicable to 222 and 222B Models only)	C	-	0		(M) May be inoperative provided nose gear steering is locked or unobstructed.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
33	LIGHTS				
1.	Position Light System	C	1	0	May be inoperative for day operations.
2.	Anti-Collision Light System	B	1	0	May be inoperative for day operations.
3.	Landing/Search Light System	C	1	0	May be inoperative for day operations.
4.	Cockpit Instrument Lighting System	B	-	0	May be inoperative provided: a) Sufficient lighting is operative to make each required instrument, control, and other device for which it is provided easily readable, b) Direct rays and reflections do not impair visibility either inside or outside the aircraft, c) Lighting intensity can be controlled or preset to a satisfactory level for the expected flight conditions, and d) Lighting configuration at dispatch is acceptable to the flight crew. OR e) Copilot station instrument lights may be inoperative provided two pilots are not required by regulation.
5.	Cabin Emergency Lights	C	-	0	May be inoperative provided passengers are not carried.
6.	Cabin Lighting System	C	-	0	May be inoperative provided: a) For day operations. OR b) Inoperative lights do not exceed fifty (50) percent of the total installed.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
33	LIGHTS				
7.	Passenger Notice System (Fasten Seat Belt-No Smoking)	B	-	0	(O)May be inoperative provided: a) Passengers are not carried. OR b) Alternate procedures are used for passenger notification. OR c) Public address system is installed and operative.
8.	Strobe Light System	C	-	0	
9.	External Utility Light(s)	C	-	0	
10.	Supplemental Lighting System	C	-	0	

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34	NAVIGATION				
1.	Airspeed Indicator	B	-	1	Copilot's may be inoperative provided two pilots are not required by FAR.
2.	Sensitive Altimeter Adjustable for Barometric Pressure	B	-	1	Copilot's may be inoperative provided two pilots are not required by FAR.
3.	Magnetic Direction Indicator	B	-	1	Copilot's may be inoperative provided two pilots are not required by FAR.
4.	Slip-Skid Indicator	B	-	1	Copilot's may be inoperative provided two pilots are not required by FAR.
5.	Gyroscopic Bank and Pitch Indicator	B	-	1	Copilot's may be inoperative provided two pilots are not required by FAR.
6.	Gyroscopic Direction Indicator	B	-	1	Copilot's may be inoperative provided two pilots are not required by FAR.
7.	Vertical Speed Indicator	B	-	1	Copilot's may be inoperative provided two pilots are not required by FAR.
8.	Gyroscopic Rate of Turn Indicator	B	-	0	May be inoperative provided: a) Not required by regulation and b) Standby attitude indicator is installed and operative.
9.	OAT/Free Air Temperature Indicator	C	-	1	May be inoperative provided temperature can be obtained from alternate onboard source.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED		4. REMARKS OR EXCEPTIONS
			3.	NUMBER REQUIRED FOR DISPATCH	
34	NAVIGATION				
10.	Alternate Source of Static Pressure for the Altimeter, Airspeed and Vertical Speed Indicators	C	1	0	May be inoperative for VFR.
11.	Navigation Systems *** (VOR, ILS, ADF, Long Range, etc.)	C	-	0	As required by FAR.
12.	Thunderstorm *** Detection Equipment /WX Radar	C	-	0	As required by FAR.
13.	ATC Transponder ***	C	-	0	As required by FAR.
14.	Standby Attitude *** Indicator	B	-	0	May be inoperative provided: a) Not required by FAR, and b) Gyroscopic rate of turn indicator is installed and operative.
15.	Flight Director ***	C	-	0	
16.	Radio Altimeter ***	C	-	0	
17.	Altitude Encoding *** System	C	-	0	As required by FAR.
18.	Marker Beacon ***	C	-	0	May be inoperative provided approach is not predicated on its use.
19.	DME ***	C	-	0	May be inoperative provided navigation is not predicated on its use.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
34	NAVIGATION				
20. ***	EFIS Display Tubes C (Electronic Display) (Models 230 and 430 only)	4	2		One tube at each pilot station may be inoperative for VFR.
21. ***	EFIS Display Tubes C (Electronic Display) (Models 230 and 430 only)	2	1		One tube may be inoperative for VFR.
22. ***	Vertical Gyro B (EFIS configuration only)	2	1		One may be inoperative for single pilot VFR provided: a) Pilot must be able to display remaining Vertical Gyro, AND b) Standby gyroscopic bank and pitch indicator must be operative.
23. ***	Directional Gyro B (EFIS configuration only)	2	1		One may be inoperative for single pilot VFR. Pilot must be able to display remaining Directional Gyro.
24. ***	Traffic Alert/ Advisory Systems (i.e., TCAS, TCAD, TAS, etc.)	C	-	0	

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
35	OXYGEN				
1.	Oxygen System and *** Masks (Crew and Passengers)	C	-	0	As required by FAR.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
52	DOORS				
1.	Door Warning System	C	1	0	May be inoperative provided it is determined through visual check that doors are closed and latched prior to flight.
2.	Door Latching Mechanism				DELETED REVISION 2

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
65	ROTORS				
1.	Rotor Brake System	C	1	0	(M)May be inoperative provided a maintenance inspection determines the rotor disc is free and the system is deactivated and secured.
2.	Rotor RPM Warning System				DELETED REVISION 2
3.	Chip Detector System				DELETED REVISION 2
4.	Transmission Oil Temperature Indicating System	B	1	0	May be inoperative provided: a) Transmission oil temperature warning light system is operative, b) Transmission oil pressure indicating and warning light systems are operative.
5.	Transmission Oil Pressure Indicating System	B	1	0	May be inoperative provided: a) Transmission oil pressure warning light system is operative, b) Transmission oil temperature indicating and warning light systems are operative.
6.	Transmission Oil Temperature Warning Light system	B	1	0	May be inoperative provided: a) Transmission oil temperature indicating system is operative, b) Transmission oil pressure indicating and warning light systems are operative.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1.	2. NUMBER INSTALLED	3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
65	ROTORS				
7.	Transmission Oil Pressure Warning Light System	B	1	0	May be inoperative provided: a) Transmission oil pressure indicating system is operative, and b) Transmission oil temperature indicating and warning light systems are operative.

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SYSTEM & SEQUENCE NUMBERS	ITEM	1. 2. NUMBER INSTALLED		3. NUMBER REQUIRED FOR DISPATCH	4. REMARKS OR EXCEPTIONS
77	ENGINE INDICATING				
1.	Torque Sharing/ Limiting System				DELETED REVISION 2
2.	Triple Tachometer Indicator System (Except Model 430)	C	- 1	1	Copilot's may be inoperative provided two pilots are not required by regulation.
3.	Triple Torque Indicator System (Except Model 430)	C	- 1	1	Copilot's may be inoperative provided two pilots are not required by regulation.
4.	Gas Producer Tach				DELETED REVISION 2
5.	Measured Gas Temp Indicating System				DELETED REVISION 2
6.	Engine-Out Warning Light System				DELETED REVISION 6
7.	Fuel Flow *** Indicator System	C	- 0	0	