TRANSPORT CANADA
MASTER MINIMUM EQUIPMENT LIST (MMEL)
BELL 429 HELICOPTER

REVISION: 1

14 January 2013

Chief, Flight Test,
Aircraft Certification,
For Minister of Transport

Date: 17 January 2013

REVISION RECORD / REASON

Rev	Description	Date	By	Checked	Approved
1	Pages 31-1, 31-2, 33-2 & 34-2 updated to reflect operation per BHT-429-FMS-11 (Internal Gross Weight greater than 7000 lb) Page 23-1 updated to add TR bonding straps	14-01-13	M. Deer		

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ACRONYM LIST

AAPS	Airspeed Activated Pedal Stop
AD	Airworthiness Directive
ADAHRS	Air Data Attitude Heading Reference System
ADC	Air Data Computer
ADF	Automatic Direction Finder
ADIU	Aircraft Data Interface Unit
AP	Autopilot
ATA	Air Transport Association
CAR	Canadian Aviation Regulation
CVR	Cockpit Voice Recorder
DME	Distance Measuring Equipment
DU	Display Unit
ELT (AD)	Automatically Deployable Emergency Locator Transmitter
ELT (F)	Fixed Emergency Locator Transmitter
ELT (S)	Survival Emergency Locator Transmitter
EGPWS	Enhanced Ground Proximity Warning System
EMS	Emergency Medical System
FDR	Flight Data Recorder
FLIR	Forward Looking Infra Red
FWD	Forward
GPS	Global Positioning System
HF	High Frequency
HUMS	Health Usage Monitoring System
IBF	Inlet Barrier Filter
ICS	Inter Communication System
IFR	Instrument Flight Rules
ILS	Instrument Landing System
MEL	Minimum Equipment List
MMEL	Master Minimum Equipment List
NEF	Non Essential Furnishing
NVG	Night Vision Goggles
OAT	Outside Air Temperature
PIC	Pilot in Command
PNF	Pilot Not Flying
RFM	Rotorcraft Flight Manual
RMI	Radio Magnetic Indicator
TCAD	Traffic Collision Alert Device
TCAS	Traffic Collision Alert System
UCT	Universal Coordinated Time
UHF	Ultra High Frequency
VFR	Visual Flight Rules
VHF-AM	Very High Frequency – Amplitude Modulation
VHF-FM	Very High Frequency – Frequency Modulation
VMC	Visual Meteorological Conditions
VOR	VHF Omni directional Range

Transport Canada
Master Minimum Equipment List
Bell 429

Preamble

All equipment installed on an aircraft in compliance with the Airworthiness Standards and the Operating Rules must be operative. However, CAR 605.07, permits the publication of a Master Minimum Equipment List (MMEL) where compliance with certain equipment requirements is not necessary 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 the required level of safety. A Master Minimum Equipment List (MMEL) is developed by Transport Canada, with participation by the aviation industry, to improve aircraft utilization and thereby provide more convenient and economic air transportation for the public. The approved MMEL includes those items of equipment related to airworthiness and operating regulations and other items of equipment Transport Canada finds may be inoperative and yet maintain the required level of safety by applying appropriate conditions and limitations; it does not contain obviously required items such as rotors and transmissions. 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. 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, permits operation of the aircraft with inoperative equipment.

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

Suitable conditions and limitations in the form of placards, maintenance procedures, crew operating procedures and other restrictions as necessary are specified in the MEL to ensure that the required 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 the required level of safety and reliability the MMEL establishes limitations on the duration of and conditions for operation 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/ Journey Logbook. The item is then either repaired or deferred as per the MEL. Alternatively, the aircraft must be in compliance with CAR sections 605.08 (2) or 605.09 (2) which specify the requirements for operating an aircraft subject to the conditions of a flight permit and the subordinate position of a MEL with regard to an Airworthiness Directive (AD) for the same Item.. MEL conditions and limitations do not relieve the operator from determining that the aircraft is in a safe condition for operation with items of equipment inoperative. [See CAR 605.08 (1)]

Operators are responsible for exercising the necessary operational control to ensure that the required 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 must 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.

DEFINITIONS AND EXPLANATORY NOTES

1. System Definition.

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

a) "System & Sequence Nº 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.

NOTE: Where the MMEL shows a variable number installed, the MEL must reflect the actual number installed or an alternate means of configuration control must be approved by Transport Canada.

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 approved means of configuration control approved by Transport Canada.

d) "Remarks or Exceptions" (Column 4) includes a statement either prohibiting or permitting operation with a specific number of items inoperative, (conditions and limitations) for such operation, and appropriate notes.

e) References given in Column 4 are to bring attention to certain interrelationships between the subject item and other MMEL items or AFM material. These references are intended to assist with compliance but do not relieve the operator of responsibility for determining such other interrelationships, as stated in the preamble.

f) 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.

g) A revision (change) bar adjacent to an item or page number indicates that the item or page was renumbered only and that no technical content change was made in the text.

2. "Rotorcraft Flight Manual" (RFM) is the document required for type certification and is certified by Transport Canada. The certified RFM for the specific aircraft is listed on the applicable Type Certificate Data Sheet.

3. "As required by regulation" means that the listed item is subject to certain provisions (restrictive or permissive) expressed in the Canadian Aviation Regulations, the Airworthiness Manual or other operating rules. The number of items required by such a rule must be operative. Items installed that are in excess of the requirements may be permitted by the operator's MEL to be inoperative if not otherwise required by the MMEL.

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.

   NOTE: Where the MMEL shows a variable number installed, the MEL must reflect the actual number installed or an alternate means of configuration control approved by Transport Canada.

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. "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.

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

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

10. "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 tolerances.

11. "NOTE(S):" in Column 4 provides additional information for crew member or maintenance consideration. Notes are used to identify applicable material which is intended to assist with compliance but does not relieve the operator of the responsibility for compliance with all applicable requirements. Notes are not a part of the provisos.

12. 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).

13. "(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 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.

14. "(O)" symbol indicates a requirement for a specific operations procedure which must be accomplished in planning for and / or operating with the listed item inoperative. Normally these procedures are accomplished by the flight crew; however, other personnel may be qualified and authorized to perform certain functions. The satisfactory accomplishment of all procedures, regardless of who performs them, is the responsibility of the operator. Appropriate procedures are required to be published as a part of the operator's manual or MEL.

    NOTE: The (M) and (O) symbols are required in the operator's MEL unless otherwise authorized by Transport Canada.

15. "Deactivated" and/or "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.

16. 'Visual Flight Rules" (VFR) is as defined in the CAR's. This precludes a pilot from filing an Instrument Flight Rules (IFR) flight plan.

17. "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.

18. "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.

19. "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.

20. "Day of Discovery" is the calendar day an equipment/instrument malfunction was discovered. 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".

21. Repair Intervals: (Column 1) All users of a MEL 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 within this category shall be repaired within (3) consecutive calendar days excluding the day of discovery. For example, if it were discovered 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 excluding the day of discovery. For example, if it were discovered at 10 a.m. on January 26th, the ten-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 excluding the day of discovery.

22. "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 provided no relief is granted, or to provide conditions and limitations 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 Transport Canada. If the request results in review and approval, the item becomes a MMEL item rather than an administrative control item.

23. "***" 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 provides authority to install or remove an item from an aircraft. The "***" symbol maybe considered equivalent to the term "if installed".

24. "Excess Items" means those items that have been installed and are redundant to the requirements.

GUIDELINES FOR (M) & (O) PROCEDURES

A need has been identified 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:

In addition to the instructions provided herein, the operator is responsible to assure all appropriate inspections and checklists have been accomplished prior to the next flight. The below annexed procedures are not included in the Maintenance Manual because they are driven by the MMEL process. Refer to Maintenance Manual for standard procedures.

21-1 (O) The pilot is responsible to ensure cockpit air vent is verified operative by inspection and to select the flapper valve to “DEFOG” position when needed.

21-2 (M) Deactivate the system by pulling the “CABIN HEATER” circuit breaker on “EMER BUS 1”. Secure the system by locking the deactivated circuit breaker and placard accordingly.

21-3 (M) Deactivate the system by pulling the ”AC CONTRL” circuit breaker on “RH NON ESS BUS”. Secure the system by locking the deactivated circuit breaker and placard accordingly.

21-5 (O) The pilot is responsible to ensure only one fan is inoperative by verifying the “DU FAN MAINT” advisory message is illuminated.

22-4 (O) The pilot is responsible to deactivate the Force Trim using the “TRIM” switch, and must verify the movement and friction of the controls prior to flight.

23-1 (O) The pilot is responsible for reviewing prior to flight the communications requirements of the proposed route and heliports to be used during the flight and ensuring that safe communications can be maintained throughout the entire planned flight.

23-2 (O) The pilot is responsible for reviewing prior to flight the communications requirements of the proposed route and heliports to be used during the flight and ensuring that safe communications can be maintained throughout the entire planned flight.

23-3 (O) The pilot is responsible for ensuring all audio warnings are checked per the RFM.

23-4 (O) Passenger briefing can be provided orally by the pilot or by using the cabin ICS system. It is the pilot's responsibility to ensure appropriate alternate normal and emergency procedures for communications with the cabin are established. It is the pilot's responsibility to ensure all the passengers can hear the briefing and understand their responsibility during emergencies.

24-1 (O) Deactivate the affected starter/generator by ensuring the switch (GEN1 or GEN2) is in the "OFF" position.

24-2 (O) Deactivate the associated starter/generator by ensuring the switch (GEN1 or GEN2) is in the "OFF" position.

25-1 (M) Secure passenger seat in the upright position and placard "DO NOT OCCUPY". Make sure the placard is clearly visible and firmly secured.

25-4 (M) Install placard in the cockpit indicating the date the ELT was removed from the aircraft.

25-7 (M) Deactivate the system by pulling the "FLOATS" circuit breaker on "EMRG BUS 1". Secure the system by locking the deactivated circuit breaker and placard accordingly.

25-8 (M) Deactivate the system by pulling the "RAFT" circuit breaker on "EMRG BUS 2". Secure the system by locking the deactivated circuit breaker and placard accordingly.

25-9 (M) Deactivate the system by pulling the "HOIST BOOM" circuit breaker on the "HOIST BUS". Secure the system by locking the deactivated circuit breaker and placard accordingly.

25-10 (M) Deactivate the system by pulling the appropriate circuit breaker(s). Secure the system by locking all the deactivated circuit breakers and placard accordingly.

25-13 (M) Refer to seat manufacturer's maintenance manual for procedure to inspect and secure flight crew seats.

26-1 (M) The inoperative fire extinguisher bottle must be placarded inoperative or removed per Maintenance Manual instructions so it cannot be mistaken for an operable unit. A placard must also be installed in close proximity to the fire extinguisher activation switch in the cockpit to indicate the inoperative or removed fire extinguisher bottle ("MAIN" or "RESERVE").

26-1 (O) The pilot is responsible to select the operative fire extinguisher system “MAIN” or “RESERVE” in the event of an engine fire.

28-1 (O) The pilot is responsible to ensure manual drain valve is verified closed prior to flight.

28-2 (O) The pilot is responsible to ensure the transfer pump switch is “OFF”, transfer valve is “OPEN” (using FUEL/WEIGHT & BAL page on the DU), and flight plan is based on 150 lbs of unusable fuel in forward tanks.

28-2 (M) Deactivate the system by pulling the ”FUEL XFER PUMP” circuit breaker on “ESS BUS 1”. Secure the system by locking the deactivated circuit breaker and placard accordingly.

28-3 (O) The pilot is responsible to ensure OAT indicator is operative and fuel temperature is assumed to match OAT or alternate source is available.

28-4 (O) The pilot is responsible to ensure adequate fuel quantity in forward and aft tanks is verified for the planned flight and monitor the fuel quantity as defined in RFM procedures.

28-5 (O) The pilot is responsible to ensure adequate fuel quantity in forward and aft tanks is verified for the planned flight, the valve is in closed position and the balance pump and fuel transfer pump are operational (using the FUEL/WEIGHT & BAL page on the DU).

28-6 (O) The pilot is responsible to ensure the transfer valve is in closed position, and the fuel transfer pump and balance pump are operative (using the FUEL/WEIGHT & BAL page on the DU).

28-7 (O) The pilot is responsible to ensure the transfer valve is in open position and flight plan is based on 150 lbs of unusable fuel in forward tanks (using the FUEL/WEIGHT & BAL page on the DU).

31-10 (O) The pilot shall ensure the function of the second ADIU channel by verifying there are no caution or advisory messages for the functioning system.

63-1 (M) Disable rotor brake by securing the handle in the locked-up position to prevent its use. Verify by inspection the rotor brake pads are not in contact with the rotor brake disk and the rotor system is free to rotate. Placard the Rotor Brake as “INOPERATIVE”.

63-2 (O) The pilot is responsible to ensure the oil pressure warning system is operative by verifying illumination and extinguishing of warning message during starting sequence.

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1. System & Sequence Nº Item Nº de système/série article		**2. Number Installed Nombre d'articles installés**	**3. Number Required For Dispatch Nombre d'articles à expédier**	**4. Remarks or Exceptions Remarques ou exceptions**
21 – AIR CONDITIONING				
1 Defog Blower Fan	C	2	1	(O) One may be inoperative provided cockpit air vent is verified operative.
2 Bleed Air Heater ***	C	-	0	(M) May be inoperative provided system is deactivated and secured.
3 Air Conditioner ***	D	-	0	(M) May be inoperative provided system is deactivated and secured.
4 Instrument Fan	C	1	0	May be inoperative per RFM provided planned flight OAT is less than 47°C.
5 Display Unit (DU) Fans	C	-	-	(O) One fan per DU may be inoperative.
6 Avionics Fan	C	1	0	

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1. System & Sequence Nº Item Nº de système/série article		**2. Number Installed Nombre d'articles installés**	**3. Number Required For Dispatch Nombre d'articles à expédier**	**4. Remarks or Exceptions Remarques ou exceptions**
22 - AUTOFLIGHT				
1 Autopilot (AP)	C	2	0	May be inoperative for VFR provided both autopilot systems are selected OFF.
2 Flight Directors	C	2	0	As required by Regulation.
3 Collective Trim ***	C	-	0	May be inoperative provided collective trim is selected OFF.
4 Force Trim	B	1	0	(O) May be inoperative for VFR.

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1. System & Sequence Nº Item Nº de système/série article		**2. Number Installed Nombre d'articles installés**	**3. Number Required For Dispatch Nombre d'articles à expédier**	**4. Remarks or Exceptions Remarques ou exceptions**
23 – COMMUNICATIONS				
1 *** Communications System (VHF-FM, HF, UHF, etc.)	D	-	0	(O) As required by Regulation.
2 Communications System (VHF-AM)	C	2	1	(O) As required by Regulation.
3 Cockpit Audio Control Panel	C	1	0	(O) May be inoperative provided:- (a) The aircraft is flown in single pilot operation, and (b) All audio warnings in the pilot's headset are audible.
4 *** Cabin Intercom System	D	-	0	(O) As required by Regulation.
5 *** Aircraft Tracking System	D	-	0	
6 *** External Loud Speaker	D	-	0	
7 Static Wicks	D	7	4	
8 Tail Rotor Bonding Straps	C	4	2	Note: Intermittent Comm interference may be experienced

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1. System & Sequence Nº Item Nº de système/série article		**2. Number Installed Nombre d'articles installés**	**3. Number Required For Dispatch Nombre d'articles à expédier**	**4. Remarks or Exceptions Remarques ou exceptions**
24 – ELECTRICAL POWER				
1 Starter / Generator (Generator function only)	B	2	1	(O) One generator may be inoperative provided:- (a) Operations are restricted to day VFR, (b) Flight is not conducted for extended flight over water, (c) Operations under Category A are not conducted, and (d) The affected generator is switched OFF.
2 Generator Ammeter	B	2	1	(O) One Ammeter may be inoperative provided:- (a) Operations are restricted to day VFR, (b) Flight is not conducted for extended flight over water, (c) Operations under Category A are not conducted, and (d) The affected generator is switched OFF.
3 Generator Voltmeter	D	2	0	
4 Battery Voltmeter	C	1	0	

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1. System & Sequence Nº Item Nº de système/série article		**2. Number Installed Nombre d'articles installés**	**3. Number Required For Dispatch Nombre d'articles à expédier**	**4. Remarks or Exceptions Remarques ou exceptions**
25 – EQUIPMENT / FURNISHINGS				
1 Passenger Seat(s)	D	-	0	(M) May be inoperative provided:- (a) The seat does not block access to an emergency exit, and (b) The affected seat(s) is blocked and placarded "DO NOT OCCUPY". Note - A seat with an inoperative safety belt or shoulder harness is classified as 'inoperative'. Note - The left seat, adjacent to the pilot's seat, for single pilot operations, is considered as a passenger seat.
2 *** Non-Essential Equipment and Furnishings (NEF)		-	0	May be inoperative, damaged or missing provided that the item(s) is deferred in accordance with the operator's defect rectification and control procedures. The NEF policies are outlined in the operator's Maintenance Control Manual. (M) and (O) procedures, if required, must be available to the flight crew and included in the operator's appropriate document.
3 *** Emergency Medical Service (EMS) Equipment	D	-	0	(M) and/or (O) procedures may be required.
4 *** Emergency Locator Transmitter (ELT (AF))	-	-	-	(M) May be inoperative provided:- (a) Placard is displayed in the flight deck indicating the date ELT has been removed, and (b) Repair or replacement is made within the time interval prescribed by regulations.
5 *** Automatically Deployable Emergency Locator Transmitter (ELT (AD))	D	-	0	Any in excess of those required by Regulation may be inoperative or missing.

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1. System & Sequence Nº Item Nº de système/série article		**2. Number Installed Nombre d'articles installés**	**3. Number Required For Dispatch Nombre d'articles à expédier**	**4. Remarks or Exceptions Remarques ou exceptions**
25 – EQUIPMENT / FURNISHINGS				
6 *** Survival Emergency Locator Transmitter (ELT (S))	D	-	0	Any in excess of those required by Regulation may be inoperative or missing.
7 *** Emergency Floatation System	D	-	0	(M) Any in excess of those required by Regulation may be inoperative provided system is deactivated and secured.
8 *** Life-rafts	D	-	-	(M) Any in excess of those required by Regulation may be inoperative provided system is deactivated and secured.
9 *** Hoist	D	-	0	(M) May be inoperative provided system is deactivated and secured.
10 *** Forward Looking Infra Red (FLIR)	D	-	0	(M) May be inoperative provided system is deactivated and secured.
11 *** Wire Strike Protection	C	-	0	
12 *** Cargo Suspension System	D	-	0	
13 Flight Crew Seats (1) Fore/Aft adjustment	C	1	0	(M) May be inoperative provided seat is secured in a position acceptable to crew member and egress is not impaired.
(2) Height adjustment	C	1	0	(M) May be inoperative provided seat is secured in a position acceptable to crew member and egress is not impaired.

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1. System & Sequence Nº Item Nº de système/série article		**2. Number Installed Nombre d'articles installés**	**3. Number Required For Dispatch Nombre d'articles à expédier**	**4. Remarks or Exceptions Remarques ou exceptions**
26 – FIRE PROTECTION				
1 Engine Fire Extinguisher System	C	-	1	(M) Any in excess of one may be inoperative (O) provided system is deactivated and secured.
2 Hand Fire Extinguishers	D	-	-	Any in excess of those required may be inoperative or missing provided:- (a) The inoperative fire extinguisher is placarded inoperative, removed from the installed location and placed out of sight so it cannot be mistaken for a functional unit, and (b) Required distribution is maintained.

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1. System & Sequence Nº Item Nº de système/série article		**2. Number Installed Nombre d'articles installés**	**3. Number Required For Dispatch Nombre d'articles à expédier**	**4. Remarks or Exceptions Remarques ou exceptions**
27 – FLIGHT CONTROLS				
1 Airspeed Activated Pedal Stop (AAPS) System	C	1	0	May be inoperative in the not engaged position provided the pilot maintains feet on pedals at all times.

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1. System & Sequence Nº Item Nº de système/série article		**2. Number Installed Nombre d'articles installés**	**3. Number Required For Dispatch Nombre d'articles à expédier**	**4. Remarks or Exceptions Remarques ou exceptions**
28 – FUEL				
1 Solenoid Drain Valve System	D	3	0	(O) May be inoperative provided:- (a) The drain valve(s) is verified closed prior to flight, and (b) Fuel sumps are manually drained, as required.
2 Fuel Transfer Pump	C	1	0	(O) May be inoperative provided:- (M) (a) The Fuel Transfer Pump is deactivated, (b) Transfer valve is verified open, and (c) Flight plan is based on 150 lbs of unusable fuel in forward tanks as defined in RFM procedures.
3 Fuel Temperature Display	C	1	0	(O) May be inoperative provided:- (a) OAT indicator is operative and (b) Fuel temperature is understood to match OAT or alternate source is available. Note: If using Jet-A type fuel*, the fuel temperature, for the purpose of fuel temperature limitation, is assumed to be the coldest temperature to which the aircraft or fuel have been exposed during the previous eight hours. * Jet-A, Jet-A1, JP-5, JP-8, F34 & F44
4 Balance Pump	C	1	0	(O) May be inoperative provided:- (a) Adequate fuel quantity in forward and aft tanks is verified for the planned flight, and (b) Fuel quantity is monitored as defined in RFM procedures.

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28 – FUEL				
5 Interconnect Valve	B	1	0	(O) May be inoperative provided:- (a) Adequate fuel quantity in forward and aft tanks is verified for the planned flight, (b) Interconnect valve is verified in the closed position, and (c) Balance pump, transfer valve and fuel transfer pump are operational.
6 Transfer Valve (Failed Closed)	A	1	0	(O) May be inoperative for flight or series of flights to maintenance facility provided:- (a) Transfer valve is verified in the closed position, and (b) Fuel transfer pump and balance pump are operative. Note: Balance pump may be used during refuelling.
7 Transfer Valve (Failed Open)	B	1	0	(O) May be inoperative per RFM provided:- (a) Transfer valve is verified in the open position, and (b) Flight plan is based on 150 lbs of unusable fuel in forward tanks as defined in RFM procedures.
8 Fuel Heater System ***	D	-	0	(O) May be inoperative provided anti-ice additive is used in accordance with RFM.

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30 – ICE AND RAIN PROTECTION				
1 Pitot / Static Heater System	C	2	0	May be inoperative for day VFR provided there is no visible moisture.
	D	2	0	May be inoperative for day VFR provided OAT is above +4 C.
	C	2	1	One may be inoperative provided OAT is above +10 degrees C.
2 Windshield Wipers ***	D	-	0	

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31 – INDICATING /RECORDING SYSTEMS				
1 Clock Displaying Hours, Minutes and Seconds	D	1	0	May be inoperative provided an alternate time source is available.
2 Elapsed Timer	D	1	0	May be inoperative provided an alternate time source is available.
3 Hour Meter	D	1	0	May be inoperative provided alternate means is utilized for recording time in service.
4 Display Units (DU)	A	2	1	One may be inoperative for day VFR for flight or series of flights to maintenance facility provided:- (a) The remaining DU is fully operative, and (b) Standby instruments are operative.
5 *** 3rd (Left) Display Unit (DU)				
(1) Dual Pilot Operation	C	-	0	May be inoperative for day VFR provided:- (a) Center and Right DUs are operative, and (b) PNF is in the left hand seat.
(2) Single Pilot Operation	D	-	0	May be inoperative provided PIC is in the right hand seat.
6 *** Health Usage Monitoring System (HUMS)	D	-	0	
7 *** Hanger Bearing Monitoring	D	-	0	

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31 – INDICATING /RECORDING SYSTEMS				
8 Flight Data Recorder (FDR) ***				
(1) If required by Regulations or if aircraft is operated in accordance with BHT-429-FMS-11 (Internal Gross Weight greater than 7000 lbs)	A	-	0	May be inoperative provided repairs are made within 3 flight days.
(2) If not required by Regulations	D	-	0	
9 Cockpit Voice Recorder (CVR) ***				
(1) If required by Regulations or if aircraft is operated in accordance with BHT-429-FMS-11 (Internal Gross Weight greater than 7000 lbs)	A	-	0	May be inoperative provided repairs are made within 3 flight days
(2) If not required by Regulations	D	-	0	
10 Aircraft Data Interface Unit (ADIU) Channel	A	2	1	(O) Only applicable for "ADIU A MAINT" or "ADIU B MAINT" advisory message. One may be inoperative for VFR provided the remaining ADIU channel is fully operative for flight or series of flights to maintenance facility.

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33 – LIGHTS				
1 Position Lights	C	1	0	May be inoperative for day operations.
2 Anti - Collision Light	B	1	0	May be inoperative for day operations.
3 Landing Light	C	1	0	May be inoperative for day operations.
	C	1	0	May be inoperative for night operations provided:- (a) Operations do not require its use, (b) A secondary landing light is operative, and (c) Category A operations are not conducted.
4 Secondary Landing Light	D	1	0	As required by Regulation.
*** (Search light)	D	1	0	May be inoperative provided Category A night operations are not conducted.
5 Cockpit Instrument Lighting System	D	1	0	May be inoperative for day operations provided emergency instrument lighting is operative.
	C	-	-	For night operations individual lights may be inoperative provided remaining lights are:- (a) Sufficient to clearly illuminate all required instruments, controls and other devices for which lighting is provided, (b) Emergency instrument lighting is operative, (c) Positioned so that direct rays are shielded from flight crew member's eyes, and (d) Lighting configuration and intensity are acceptable to the flight crew.

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33 - LIGHTS				
6 Cockpit Utility Light System	D	1	0	May be inoperative for day operations.
	C	1	0	May be inoperative for night operations provided the cockpit instrument lighting system and the emergency instrument lighting are operable.
7 Cabin Lighting System	D	-	0	May be inoperative for day operations.
	C	-	-	May be inoperative for night operations provided:- (a) No passengers are carried, or (b) Inoperative lights do not exceed fifty (50) percent of the total installed.
8 Baggage Bay Lights	D	4	0	
9 Emergency Instrument Lighting System	C	3	0	May be inoperative for day operations.
	B	3	0	May be inoperative for night operations provided both the cockpit instrument lighting system and the cockpit utility light are operable.
10 *** External Utility Light(s)	D	-	0	
11 *** Supplemental Lighting System	D	-	0	
12 *** NVG Lighting System	D	-	0	May be inoperative provided NVG operations are not conducted.
13 *** Strobe Light	D	-	0	
14 *** Forward Facing Pulse Lights				
(1) If aircraft is operated in accordance with BHT-429-FMS-11 (Internal Gross Weight greater than 7000 lbs)	A	-	0	May be inoperative for a flight or series of flights to a location where repairs will be made.
(2) If aircraft not operated in accordance with BHT-429-FMS-11	D	-	0	

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34 – NAVIGATION				
1 ATC Transponder	C	1	0	As required by Regulation.
2 Navigation Equipment ***				
(1) Navigation System (VOR/ILS, GPS)	C	2	-	Any navigation function in excess of those required by Regulation may be inoperative.
(2) (ADF, RMI, etc.)	D	-	0	As required by Regulation.
3 Skid / Slip Indicator	C	-	0	May be inoperative for day VFR flight with reference to visual landmarks.
	C	-	-	One required at each pilot station occupied by a pilot.
4 OAT Display System	C	2	0	May be inoperative provided alternate onboard OAT source is available and Vne limitations are observed per placard as described in the RFM.
	D	2	1	
5 Standby Attitude Indicator	C	1	0	May be inoperative for day VFR provided attitude indication is operative for each pilot.
6 Standby Airspeed Indicator	C	1	0	May be inoperative for VFR provided airspeed indication is displayed for each pilot.
7 Standby Altimeter	C	1	0	May be inoperative for VFR provided altitude indication is displayed for each pilot.
8 Marker Beacon	D	1	0	As required by Regulation.

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34 – NAVIGATION				
9 Radar Altimeter ***				
(1) If required by Regulations or if aircraft is operated in accordance with BHT-429-FMS-11 (Internal Gross Weight greater than 7000 lbs)	A	-	0	May be inoperative for a flight or series of flights to a location where repairs will be made. Note: Radar Altimeter is required for Category A Helipad operations.
(2) If not required by Regulations	C	-	0	Note: Radar Altimeter is required for Category A Helipad operations.
10 Standby compass	C	-	0	May be inoperative for VFR provided direction indication is displayed for each pilot.
11 Weather Radar System ***	C	-	0	As required by Regulation.
12 Moving map display system ***	D	-	0	
13 Thunderstorm/ lightning *** detection system	D	-	0	
14 Flight Management System ***	D	-	0	
15 Enhanced Ground Proximity *** Warning System (EGPWS) or Helicopter Terrain Avoidance Warning System (HTAWS)				
(1) If required by Regulations or if aircraft is operated in accordance with BHT-429-FMS-11 (Internal Gross Weight greater than 7000 lbs)	A	-	0	May be inoperative for a flight or series of flights to a location where repairs will be made.
(2) If not required by Regulations	C	-	0	
16 Traffic Collision Alert System *** (ie. TCAS, TCAD, etc.)	C	-	0	
17 Air Data Attitude Heading Reference System (ADAHRS) Channel	B	2	1	One channel may be inoperative for day VFR provided:- (a) Category A operations are not conducted, and (b) Both autopilot systems are selected OFF.

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35 – OXYGEN				
1 *** Oxygen System and Masks (Crew and Passengers)	D	-	0	As required by Regulation.

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52 – DOORS				
1 Baggage Door Caution System	C	1	0	Door caution system may be inoperative provided it is determined through a physical check that the door is closed and latched prior to flight.
2 Passenger Door Caution System	C	1	0	Door caution system may be inoperative provided it is determined through a physical check that the door is closed and latched prior to flight.
3 Aft Doors Caution *** (Clamshell) System	C	-	0	Door caution system may be inoperative provided it is determined through a physical check that the door is closed and latched prior to flight.

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63 – ROTOR DRIVE				
1 Rotor Brake System ***	D	-	0	(M) May be inoperative provided rotor brake master cylinder is secured or de-activated and inspection is performed to determine that the rotor is free.
2 Transmission Oil Pressure Indicating System	B	1	0	(O) May be inoperative provided the transmission oil pressure warning system is verified operative. Note: No relief is available for the oil pressure warning system.

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71 – POWERPLANT				
1 Inlet Barrier Filter (IBF) *** Pressure Transducer	C	2	0	May be inoperative provided:- (a) Filter is not contaminated, (b) Flying in severe dusty environments is avoided, and (c) Bypass doors are verified operational.
2 Inlet Barrier Filter (IBF) Bypass Door ***	C	2	0	May be inoperative provided:- (a) The bypass door(s) is in the fully open position, and (b) Flying in severe dusty environments is avoided.