Scan to verify version & source of information

Bell Helicopter 429

Description:	Bell Helicopter 429 - original
Language:	English
Supplement:	
Manufacturers:	BELL HELICOPTER TEXTRON CANADA LIMITED
Product type:	Rotorcraft (CS-29, CS-27, CS-VLR)

EUROPEAN AVIATION SAFETY AGENCY

MASTER MINIMUM EQUIPMENT LIST (MMEL)

BELL 429 HELICOPTER

REVISION: Initial Issue

RESTRICTED DISCLOSURE NOTICE IS ON PAGE iii

14 March, 2011

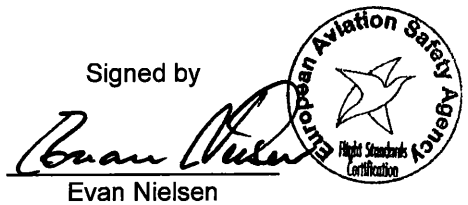
EUROPEAN AVIATION SAFETY AGENCY

MASTER MINIMUM EQUIPMENT LIST

BELL 429 HELICOPTER

This Master Minimum Equipment List (MMEL) is accepted by the European Aviation Safety Agency (EASA) at the above revision and is recommended for approval as the basis of the preparation and approval of individual operators' Minimum Equipment Lists (MELs) for aircraft of this type as certified by the European Aviation Safety Agency and operated under the jurisdiction of EASA member states National Authorities.

Signed by



Evan Nielsen
Head of Certification Flight Standards
for and on behalf of EASA

Correspondence concerning this document should be addressed to the office listed below:

Bell Helicopter Textron Canada Limited
12,800 rue de l'Avenir
Mirabel, Quebec
Canada
J7J 1R4

Attention:
Manager, Airworthiness

European Aviation Safety Agency
Postfach 10 12 53
50452 Koln
Germany

Attention:
Head of Certification Flight Standards

RESTRICTED DISCLOSURE NOTICE

DRAWINGS, SPECIFICATIONS, DESCRIPTIONS, AND OTHER TECHNICAL DATA ATTACHED HERETO ARE PROPRIETARY AND CONFIDENTIAL TO BELL HELICOPTER TEXTRON INC., AND/OR BELL HELICOPTER TEXTRON CANADA LTD. AND CONSTITUTE TRADE SECRETS FOR PURPOSES OF THE TRADE SECRET AND FREEDOM OF INFORMATION ACTS. NO DISCLOSURE TO OTHERS, EITHER IN THE UNITED STATES, CANADA OR ABROAD OR REPRODUCTION OF ANY PART OF THE INFORMATION SUPPLIED IS TO BE MADE, AND NO MANUFACTURE, SALE OR USE OF ANY INVENTION OR DISCOVERY DISCLOSED HEREIN SHALL BE MADE, EXCEPT BY WRITTEN AUTHORIZATION OF BELL HELICOPTER TEXTRON INC. OR BELL HELICOPTER TEXTRON CANADA LTD. THIS NOTICE WILL NOT OPERATE TO NULLIFY OR LIMIT RIGHTS GRANTED BY CONTRACT. THE DATA SUBJECT TO THIS RESTRICTION IS CONTAINED IN ALL SHEETS AND IS DISCLOSED TO PERSONNEL OF BELL HELICOPTER TEXTRON INC., AND BELL HELICOPTER TEXTRON CANADA LTD. FOR THE PURPOSE(S) OF INTERNAL USE AND DISTRIBUTION ONLY.

REVISION RECORD / REASON

Rev	Description	Date	By	Checked	Approved

TABLE OF CONTENTS

Paragraph **Page**

LIST OF EFFECTIVE PAGES

Page	Revision	Page	Revision	Page	Revision
All	Initial				

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
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

EUROPEAN AVIATION SAFETY AGENCY
BELL 429 Master Minimum Equipment List (MMEL)

PREAMBLE

The following is applicable for authorized certificate holders operating under European operating regulations (JAR-OPS3). The regulations require that all equipment installed on an aircraft in compliance with the Airworthiness code and the operating requirements must be operative. However, the regulations also permit the publication of a Minimum Equipment List (MEL) where compliance with certain equipment requirements is not necessary in the interest of safety under all operating conditions. Experience has shown that with the various levels of redundancy designed into aircraft, operation of every system installed or component may not be necessary when the remaining operative equipment can provide an acceptable level of safety.

The Master Minimum Equipment List (MMEL) is developed by the Type Certificate Holder to improve aircraft utilization and thereby provide more convenient and economic air transportation for the public. The EASA MMEL includes those items of equipment related to airworthiness and operating requirements and other items of equipment which EASA 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 rotor blades, stabilizers and engines.

The MMEL is the basis for development of individual operator's MELs which take into consideration the operator's particular aircraft equipment configuration and operational conditions. 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 Airworthiness Directives or any other Mandatory Requirement. It is important to remember that all equipment related to the airworthiness and the operating requirements 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 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 rectification's can be accomplished. It is important that rectifications be accomplished at the earliest opportunity. In order to maintain an acceptable level of safety and reliability the MMEL establishes limitation on the duration of and conditions for operation with inoperative equipment.

Rectification Interval Extension, as prescribed in JAR-MMEL/MEL.081, has been taken into account in the development of this MMEL. Therefore operators, with the approval of their authority, may consider use of the referenced procedure as being within the scope of this MMEL. 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 the applicable regulations. The item is then either rectified or may be deferred per the MEL or other approval means acceptable to the competent Authority prior to further operation. MEL conditions and limitation do not relieve the operator from determining that the aircraft is in a 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 the applicable regulations. Such documentation is required prior to operation with any item of equipment inoperative.

Operators are responsible for exercising the necessary operational control to ensure that an acceptable level of safety is maintained. The exposure to additional failures during continued operation with inoperative system or components must also be considered. Wherever possible, account has been taken in this MMEL of multiple inoperative items. However, it is unlikely that all possible combinations of this nature have been accounted for. Therefore, when operating with multiple inoperative items, the inter-relationships between those items and the effect on aircraft operation and crew workload must be considered.

Operators are to establish a controlled and sound rectification program including the parts, personnel, facilities, procedures and schedules to ensure timely rectification. This program should identify the actions required for Maintenance discrepancy messages.

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

The definition(s) presented here are additional to any which are otherwise applicable:

System Definitions

1) In this list, the items of equipment are classified in systems according to the ATA 100 specification. Individual items within a given ATA classification are numbered sequentially.

2) **"Item"** (Column 1) means the equipment, system, component, or function listed in the "Item" column.

3) **"***":** Indicates the listed item of equipment is not applicable to all models or configurations. It does not imply that the aircraft may be operated in accordance with this MMEL with the item removed.

4) Items annotated in UPPER CASE letters indicate the precise flight deck legend used.

5) **"Rectification Intervals"** (column 2): the following definitions are used throughout this document:
Category A: Items in this category shall be rectified in accordance with the conditions stated in the Remarks column (5) of the MMEL.

Category B: Items in this category shall be repaired within three (3) consecutive calendar days (72 hours); excluding the day the malfunction was recorded in the aircraft maintenance record/logbook. For example, if it 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.

6) **"Number Installed"** (Column 3) 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.

7) **"Number Required for Dispatch"** (Column 4) is the minimum number (quantity) of items required for operation provided the conditions specified in Column 5 are met. 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 competent Authority.

8) **"Remarks or Exceptions"** (Column 5): 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.

A note in column 5 indicates additional information and references for crew and/or maintenance personnel consideration; they are not part of the provisos.

Where references are stated in column 5 theses are to identify certain inter-relationships between the subject item and other MMEL items, AFM material etc. These references are intended to assist, but not relieve, an operator of the responsibility for determining such inter-relationships as stated in the Preamble.

9) **Dash "-":** This symbol in Column 3 and/or Column 4 indicates a variable number (quantity) of the item.

10) **"Inoperative":** 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).

11) **"(M)":** The use of this 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.

12) **"(O)":** The use of this 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 required to be published as a part of the operator's manual or MEL.

13) **"Rotorcraft Flight Manual"** (RFM) is the document required for type certification and approval by EASA

14) **"As required by Operational Requirements":** The associated item must comply with JAR-OPS 3 or any other legislation in force during the flight. Operators should refer to JAR-OPS 3 MEL Policy Document (Administrative and Guidance Material, Section Four: Operations, Part Three: Temporary Guidance Leaflet number 26) for suitable alleviations based upon the required equipment identified within JAR-OPS 3, subparts K and L. The indicated rectification interval and number required applies when operational requirement do not require the use of the associated item.

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

16) **"Deleted":** When 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 helicopter.

17) **"Flight Day":** 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.

18) **"Flight Hour":** The time from the moment a helicopter leaves the surface of the earth until it touches it at the next point of landing.

19) **"Flight":** For the purpose of a MEL, a flight is the period of time between the moment when a helicopter begins to move by its own means, for the purpose of preparing for take-off, until the moment the helicopter comes to a complete stop on its parking area, after the subsequent landing (and no subsequent take-off).

20) **"Icing Conditions":** An atmospheric environment that may cause ice to form on the aircraft or in the engine(s).

21) **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).

22) **"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.

23) **"Visual Flight Rules" (VFR):** is as defined in the JARS. This precludes a pilot from filing an Instrument Flight Rules (IFR) flight plan.

24) **"Visual Meteorological Conditions" (VMC)** are meteorological conditions in terms of visibility, distance from cloud, and ceiling, equal to or better than the minima specified in Appendix 1 to JAR-OPS 3.465. This definition does not include 'VFR-on-Top' or 'over-the-top'.

25) **"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.

26) **"Adequate External Attitude Reference"** is defined as meteorological conditions and visual cues that permit the helicopter attitude and flight path to be determined without sole reference to instruments.

27) **"Extended Over Water Flight:"** Refer to JAR-OPS 3 Subpart K for definition.

28) **"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.

29) **"Excess Items"** means those items that have been installed that are redundant to the requirements of the Operating Requirements.

30) **"Authority":** The competent regulatory authority according to the country of registry.

31) **"Combustible (Material)":** refers to material which is capable of catching fire and burning. In particular: if a MMEL item prohibits loading of combustible (or flammable or inflammable) material, no material may be loaded except the following:
    i) Cargo handling equipment (unloaded, empty or with ballast);
    ii) Fly away kits (excluding e.g. cans of hydraulic fluid, cleaning solvents, batteries, capacitors, chemical generators, etc.); and
    iii) In-flight service material (return catering – only closed catering trolley/boxes, no newspapers, no alcohol or duty free goods).

32) **"System":** System means the group of directly related components which together perform a specified function, for example "RPM Indication System" would include the RPM Indicator, tachometer generator, circuit breaker and associated circuitry.

33) **"Dispatch":** The point at which an aircraft first moves under its own power for the purpose of commencing a flight.

34) **"Day of Discovery":** is the calendar day an equipment/instrument malfunction was recorded in the helicopter 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."

35) **"Considered Inoperative":** as used in the provisions means that item must be treated for dispatch, taxi and flight purposes as though it were inoperative. The item shall not be used or operated until the original deferred item is repaired. Additional actions include: complying with all remarks, exceptions, and related MMEL provisions, including any (M) and (O) procedures and observing the repair category.

36) The base document used for the preparation of this MMEL is:
   a) TCCA approved MMEL Bell Helicopter 429, dated TBD
   b) JAA TGL 26 dated 01.06.2007

   Note that the item numbering arrangement for the TCCA MMEL was maintained for continuity.

37) **"Not Used":** An item number that appeared in the base document (e.g. FAA MMEL) that had been deleted.

BELL 429 MMEL

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	21-1

(1) System & Sequence Numbers		**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 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		

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	22-1

(1) System & Sequence Numbers	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 22 **AUTO FLIGHT**				
1 Autopilot (AP)				
(1) Commercial Air Transport Operations	C	2	0	May be inoperative for day VFR provided both autopilot systems are selected OFF.
(2) Other Operations	D	2	0	May be inoperative for VFR provided both autopilot systems are selected OFF.
2 Flight Directors				
(1) Commercial Air Transport Operations	C	2	1	
(a) Single pilot	C	2	0	May be inoperative for day VFR.
(b) Dual pilot	C	2	0	
(2) Other Operations	D	2	0	
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.

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	23-1

(1) System & Sequence Numbers	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 23 **COMMUNICATIONS**				
1 *** Communications System (VHF-FM, HF, UHF, etc.)	D	-	0	(O) As required by operational requirements.
2 Communications System (VHF-AM)	C	2	1	(O) Comm 2 may be inoperative provided operational requirements do not require its use.
3 Cockpit Audio Control Panel	C	1	0	(O) May be inoperative provided:- a) The aircraft is flown in single pilot operation, and b) Audio warnings in the pilot's headset are verified.
4 *** Cabin Intercom System	C	-	0	(O) Any in excess of those required by operational requirements may be inoperative provided alternate procedures are established and used.
5 Not Used				
6 Not Used				
7 Static Wicks	D	7	4	

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	24-1

(1) System & Sequence Numbers	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 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, and 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, and 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	

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	25-1

(1) System & Sequence Numbers ATA 25 **EQUIPMENT / FURNISHINGS**	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
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 *** Passenger Convenience Item(s)	D	-	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, ash trays, stereo equipment, overhead reading lamps, etc. Items addressed elsewhere in this document shall not be included. (M) and/or (O) procedures may be required and included in operator's appropriate document.
3 Not Used				
4 *** Emergency Locator Transmitter (ELT (AF))	D	-	-	Any in excess of those required by operational requirements may be inoperative.
5 *** Automatically Deployable Emergency Locator Transmitter (ELT (AD))	D	-	-	Any in excess of those required by operational requirements may be inoperative.
6 *** Survival Emergency Locator Transmitter (ELT (S))	D	-	-	(O) Any in excess of those required may be missing or inoperative provided a conspicuous placard stating "NO NOT USE" is installed.

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	25-2

(1) System & Sequence Numbers ATA 25 **EQUIPMENT / FURNISHINGS**	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
7 Emergency Floatation System ***	D	-	0	(M) Any in access of those required by operational requirements may be inoperative provided system is deactivated and secured.
8 Life-rafts ***	D	-	-	(M) Any in excess of those required by operational requirements may be missing.
9 Hoist ***	D	-	0	(M) May be inoperative provided system is deactivated and secured.
10 Not Used				
11 Wire Strike Protection ***	D	-	0	
12 Cargo Suspension System ***	D	-	0	
13 Flight Crew Seats a) 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.
b) 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.

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	26-1

(1) System & Sequence Numbers	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 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	-	-	(M) Any in excess of those required may be (O) inoperative or missing provided:- a) A conspicuous placard stating “NO NOT USE” is installed, and b) Required distribution is maintained.

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	27-1

(1) System & Sequence Numbers	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 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.

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	28-1

(1) System & Sequence Numbers	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 28 **FUEL**				
1 Solenoid Drain Valve System	D	3	0	(O) May be inoperative provided:- a) The drain valve 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.

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	28-2

(1) System & Sequence Numbers	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 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 a maximum of 5 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 provided:- a) Transfer valve is verified in the open position, and b) Flight plan is based on 150 lbs unusable fuel in forward tanks as defined in RFM procedures.
8 Fuel Heater System ***	D	-	0	May be inoperative provided anti-ice additive is used in accordance with RFM.

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	30-1

(1) System & Sequence Numbers	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 30 **ICE AND RAIN PROTECTION**				
1 Pitot / Static Heater System	C	2	1	(O) One may be inoperative for VFR
	C	2	0	May be inoperative provided:- a) OAT is above +4 degrees C, or b) No visible moisture is present below +4 degrees C.
2 Windshield Wipers ***	D	-	0	

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	31-1

(1) System & Sequence Numbers ATA 31 **INDICATING /RECORDING SYSTEMS**	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
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 5 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 provided:- a) Center and Right DUs are operative, and b) PIC is in the right hand seat.
(2) Single Pilot Operation	D	-	0	May be inoperative provided PIC is in the right hand seat.
6 Not used				
7 Not Used				
8 Flight Data Recorder (FDR) ***	D	-	0	As required by operational requirements.
9 Cockpit Voice Recorder (CVR) ***	D	-	0	As required by operational requirements.

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	31-2

(1) System & Sequence Numbers	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 31 **INDICATING /RECORDING SYSTEMS**				
10 Aircraft Data Interface Unit (ADIU) Channel	A	2	1	(O) One may be inoperative for operations under VFR only, provided the remaining ADIU channel is fully operative for flight or series of 5 flights to maintenance facility. Note: Only applicable for “ADIU A MAINT” or “ADIU B MAINT” advisory message.

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	33-1

(1) System & Sequence Numbers		**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 33 **LIGHTS**					
1	Position Lights	C	-	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 VFR operations.
		C	1	0	May be inoperative for IFR or night operations provided:- a) Operations do not require its use, b) A secondary adjustable landing light is operative, and c) Performance Class 1 and 2 operations are not conducted.
4 ***	Secondary Adjustable Landing Light (Search light)				
	(1) Commercial Air Transport	C	1	0	May be inoperative for day VFR.
	(2) Other Operations	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.

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	33-2

(1) System & Sequence Numbers		**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 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 either the cockpit instrument lighting system or the emergency instrument lighting is operable.
7	Cabin Lighting System	D	-	0	May be inoperative for day operations.
		D	-	-	May be inoperative provided:- a) No passengers are carried, or b) For night operations, inoperative lights do not exceed fifty (50) percent of the total installed.
8	Baggage Bay Lights	D	4	0	
9	Emergency Instrument Lighting System	D	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	Not Used				
11	Not Used				
12	Not Used				
13	Not Used				

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	34-1

(1) System & Sequence Numbers	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 34 **NAVIGATION**				
1 ATC Transponder	D	1	0	As required by operational requirements.
2 Navigation Equipment ***				
(1) Navigation System (VOR/ILS, GPS)	D	2	-	Any navigation function in excess of those required by operational requirements may be inoperative.
(2) (ADF, RMI, etc.)	D	-	0	As required by operational requirements.
3 Skid / Slip Indicator	C	-	0	May be inoperative for day VFR flight with reference to visual landmarks.
	D	-	-	Any in excess of one for each required pilot may be inoperative.
4 OAT Display System	C	2	0	May be inoperative provided:- a) Alternate onboard OAT source is available, and b) 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 required pilot and both ADAHRS are operative.
6 Standby Airspeed Indicator	B	1	0	May be inoperative for VFR provided airspeed indication is displayed for each required pilot and both ADAHRS are operative.
7 Standby Altimeter	C	1	0	May be inoperative for VFR provided altitude indication is displayed for each required pilot and both ADAHRS are operative.
8 Marker Beacon	D	1	0	As required by operational requirements.
9 Radar Altimeter ***	D	-	0	As required by operational requirements. Note: Radar Altimeter is required for Category A Helipad operations.

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	34-2

(1) System & Sequence Numbers	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 34 **NAVIGATION**				
10 Standby Compass (1) Commercial Air Transport Operations	B	-	0	May be inoperative for day VFR provided:- a) Direction indication is displayed for each required pilot, b) Operations are not conducted overwater out of sight of land or when the visibility is less than 1,500m.
(2) Other Operations	C	-	0	May be inoperative for VFR provided direction indication is displayed for each required pilot.
11 *** Weather Radar System	D	-	0	As required by operational requirements.
12 *** Moving map display system	D	-	0	
13 Not Used				
14 *** Flight Management System	D	-	0	
15 *** Enhanced Ground Proximity Warning System (EGPWS)	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”.

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	35-1

(1) System & Sequence Numbers	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 35 **OXYGEN**				
1 Not Used				

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	52-1

(1) System & Sequence Numbers		**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 52 **DOORS**					
1	Baggage Door Caution System	C	1	0	Baggage door caution system may be inoperative provided the door is verified closed and latched prior to flight.
2	Passenger Door Caution System	C	1	0	Door caution system may be inoperative provided the door is verified closed and latched prior to flight.
3 ***	Aft Doors Caution (Clamshell) System	C	-	0	Door caution system may be inoperative provided the door is verified closed and latched prior to flight.

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	63-1

(1) System & Sequence Numbers	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 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 available for the oil pressure warning system.

Aircraft	**Revision No** -	**Page**
Bell 429	**Date:** 14 March, 2011	71-1

(1) System & Sequence Numbers	**(2) Rectification Interval**	**(3) Number Installed**	**(4) Number Required For Dispatch**	**(5) Remarks or Exceptions**
ATA 71 **POWERPLANT**				
1 Inlet Barrier Filter (IBF) Pressure Transducer ***	C	2	0	(O) May be inoperative provided:- a) Filter is verified not contaminated, b) Bypass doors are verified operational, and c) Flying in severe dusty environment is avoided.
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 environment is avoided.

APENDIX A

Guidelines for (O) & (M) Procedures

Guidelines for (O) Procedures

The MMEL has identified the need for certain procedures to provide an adequate level of safety while providing relief for some items. Examples of appropriate procedures are identified below as a guideline for the operator to establish his own MEL 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.

ATA 21 – Air Conditioning – Item 1 – Defog Blower Fan (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.

ATA 21 – Air Conditioning – Item 5 – Display unit (DU) Fans (O)

The pilot is responsible to ensure only one fan is inoperative by verifying only the “DU FAN MAINT” advisory message is illuminated.

ATA 22 – Autoflight – Item 4 – Force Trim (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.

ATA 23 – Communications – Item 1 – Communications System (VHF-FM, HF, UHF, etc.) (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.

ATA 23 – Communications – Item 2 – Communications System (VHF-AM) (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.

ATA 23 – Communications – Item 3 – Cockpit Audio Control Panel (O)

The pilot is responsible for ensuring all audio warnings are checked per the RFM.

ATA 23 – Communications – Item 4 – Cabin ICS System (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.

ATA 24 – Electrical Power – Item 1 – Starter / Generator (O)

Deactivate the affected starter/generator by ensuring the switch (GEN1 or GEN2) is in the “OFF” position.

ATA 24 – Electrical Power – Item 2 – Generator Ammeter (O)

Deactivate the associated starter/generator by ensuring the switch (GEN1 or GEN2) is in the “OFF” position.

ATA 25 – Equipment / Furnishings Item 6 – Survival Emergency Locator Transmitter (ELT (S)) (O)

The pilot is responsible to ensure that crew and passengers are briefed regarding the status of the inoperative or missing survival ELTs and are aware of the location of serviceable ELTs.

ATA 26 – Fire Protection Item 1 – Engine Fire Extinguisher System (O)

The pilot is responsible to select the operative fire extinguisher system “MAIN” or “RESERVE” in the event of an engine fire.

ATA 26 – Fire Protection Item 2 – Hand Fire Extinguishers (O)

The pilot is responsible to ensure that crew and passengers are briefed regarding the status of the inoperative or missing hand fire extinguishers and are aware of the location of serviceable hand fire extinguishers.

ATA 28 – Fuel – Item 1 – Solenoid Drain Valve System (O)

The pilot is responsible to ensure manual drain valve is verified closed prior to flight.

ATA 28 – Fuel – Item 2 – Fuel Transfer Pump (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.

ATA 28 – Fuel – Item 3 – Fuel Temperature Display (O)

The pilot is responsible to ensure OAT indicator is operative and fuel temperature is assumed to match OAT or alternate source is available.

ATA 28 – Fuel – Item 4 – Balance Pump (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.

ATA 28 – Fuel – Item 5 – Interconnect Valve (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).

ATA 28 – Fuel – Item 6 – Transfer Valve (Failed Closed) (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).

ATA 28 – Fuel – Item 7 – Transfer Valve (Failed Open) (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).

ATA 30 – Ice and Rain Protection – Item 1 – Pitot / Static Heater System (O)

The pilot shall select the ADC source corresponding to the operative pitot / static heater system.

ATA 31 – Indicating/Recording Systems – Item 10 – Aircraft Data Interface Unit (ADIU) Channel (O)

The pilot shall ensure that the function of the second ADIU channel by verifying there are no caution or advisory messages for the functioning system.

ATA 63 – Rotor Drive – Item 2 – Transmission Oil Pressure Indicating System (O)

The pilot is responsible to ensure the oil temperature warning system is operative by verifying illumination and extinguishing of warning message during starting sequence.

ATA 71 – Powerplant – Item 1 – Inlet Barrier Filter (IBF) Pressure Transducer (O)

The pilot is responsible to ensure that the filter is not contaminated prior to flight and flights are not conducted in a dusty environment. If there is a rise in MGT, the Engine 1 or Engine 2 bypass doors are to be opened by pressing the “ENG 1 INTAKE BYPASS” or “ENG 2 INTAKE BYPASS” Pushbutton Annunciator (PBA) on the pedestal.

Guidelines for (M) Procedures

The MMEL has identified the need for certain procedures to provide an adequate level of safety while providing relief for some items. Examples of appropriate procedures are identified below as a guideline for the operator to establish his own MEL 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.

ATA 21 – Air Conditioning – Item 2 – Bleed Air Heater (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.

ATA 21 – Air Conditioning – Item 3 – Air Conditioning (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.

ATA 25 – Equipment/Furnishings – Item 1 – Passenger Seats (M)

Secure passenger seat in the upright position and placard “DO NOT OCCUPY”. Make sure the placard is clearly visible and firmly secured.

ATA 25 – Equipment/Furnishings – Item 7 – Emergency Floatation System (M)

Deactivate the system by pulling the “FLOATS MAN” circuit breaker on “EMRG BUS 1” and the “FLOATS AUTO” circuit breaker on “EMERG BUS 2”. Secure the system by locking the deactivated circuit breakers and placard accordingly.

ATA 25 – Equipment/Furnishings – Item 8 – Life-rafts (M)

Remove the Life-raft(s) in accordance with manufacturer’s maintenance instructions. If no life-rafts are installed, 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.

ATA 25 – Equipment/Furnishings – Item 9 – Hoist (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.

ATA 25 – Equipment/Furnishings – Item 13 – Flight Crew Seats (M)

Refer to manufacturer’s maintenance instructions for procedure to inspect and secure flight crew seats.

ATA 26 – Fire Protection – Item 1 – Engine Fire Extinguisher System (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").

ATA 26 – Fire Protection – Item 2 – Hand Fire Extinguishers (M)

The inoperative fire extinguisher(s) must be placarded inoperative, removed from installed location and placed out of sight so it cannot be mistaken for functional unit.

ATA 28 – Fuel – Item 2 – Fuel Transfer Pump (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.

ATA 63 – Rotors – Item 1 – Rotor Brake (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".