

TRANSPORT CANADA
DAY/NIGHT VFR OPERATIONS
MASTER MINIMUM EQUIPMENT LIST
BELL MODEL 427 HELICOPTER
FRONT SHEET

Revision A

Approved



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

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PREAMBLE

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All equipment installed on an aircraft in compliance with the Airworthiness Standards and the Operating Rules must be operative and in compliance with the airworthiness standards defined in type certificate data sheet H103 for day/night VFR flight. However, CAR 605.07 permits 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 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 deems fit to remain inoperative and yet maintain the required level of safety by appropriate conditions and limitations; it does not contain obviously required items such as rotor blades and engines. The MMEL is the basis for development of individual operator MEL's which take into consideration the operator's particular aircraft equipment, configuration and operational conditions. Operator MEL's for configuration 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 and authorized, permits operation of the aircraft with inoperative equipment.

Equipment not required by the operation being conducted and equipment in excess of airworthiness 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 Airworthiness Directives. It is important to remember that all equipment related to the airworthiness and the operating regulations of the aircraft not listed in 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.

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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. 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. The item is then either repaired or deferred per the MEL. Note that in the event of a conflict between the MEL and the requirements of an Airworthiness Directive (AD), the Airworthiness Directive prevails [See CAR 605.09(2)]. Also note that the requirements of the MEL may not apply to an aircraft that is operated in compliance with the conditions of a flight permit that has been issued specifically for that purpose.

[See CAR 605.08(2)].

MEL conditions and limitations do not relieve the operator from determining that the aircraft is in a condition for safe operation with items of equipment inoperative.

[See CAR 605.08(1)].

When these requirements are met, an Airworthiness Release, Aircraft Maintenance Record/Logbook entry, or other approved documentation is issued. 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 the required level of safety is maintained. When operating with multiple inoperative items the interrelationship 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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DEFINITIONS

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1. System Definition.

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.

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.

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- 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. “Airplane/Rotorcraft Flight Manual” (AFM/RFM) is the document required for type approval and approved by Transport Canada. The approved AFM / RFM for the specific aircraft is listed on the applicable Type Data Approval 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.

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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. "NOTES:" 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.

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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 “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”.

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21. Repair Intervals: 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.