

MD – RAMinister's Delegates - Recreational Aviation
Représentants du Ministre - Aviation de loisir

Inspection Service

Service d'inspection

JOURNEY LOG ENTRIES

The certification statements shown below are required entries in the aircraft journey log. **Suggested wording** for these entries is indicated in **bold type**.

1. MAGNETIC COMPASS CALIBRATION

Example: **I certify that the magnetic compass was calibrated**

Note: Compass calibration certification must be entered in the journey log. Compass correction card data shall be recorded in the log book. A current compass deviation card must be mounted with the compass. See example of such a card below.

COMPASS DEVIATION CARD					
REGISTRATION C-_____			DATE:_____		
FOR	STEER	FOR	STEER	FOR	STEER
N		120		240	
030		150		W	
060		S		300	
E		210		330	

2. PITOT AND STATIC SYSTEM LEAK TEST

Example: **I certify that the pitot and static system has been tested as per Standard 571 Appendix B para, (a) and has been found leak free.**

3. ALTIMETER SYSTEM TEST AND INSPECTION

Example: **I certify that the altimeter system test and inspection has been performed as per Standard 571 Appendix B, and has been found to meet the precision requirements of the applicable tables.**

4. AUTOMATIC PRESSURE ALTITUDE REPORTING AND ATC TRANSPONDER PERFORMANCE TESTS

Example: **I certify that the automatic pressure altitude reporting and ATC transponder performance tests have been performed as per Standard 571 Appendix F and have been found to meet the precision requirements of the applicable paragraphs.**

5. ELT OPERATIONAL TESTING

Example: **I certify that the ELT was tested as per Standard 571 Appendix G - Maintenance of Emergency Locator, Operational Testing and was found serviceable.**

6. AFTER FINAL INSPECTION:

Example: **I certify that this aircraft complies with all the requirements of Appendix A of the Exemption from Section 549.01 of the Canadian Aviation Regulations, and Chapter 549 of the Airworthiness Manual, and is safe for flight.**

Note: All documents used/generated as a result of performing the above described maintenance tasks must be permanently included in the log book. All these entries must be entered in the aircraft Journey Log Book and must be dated and signed by the builder/owner.

6. JOURNEY LOG BOOK

Canadian Regulations allow owners of amateur built aircraft to enter all data, (operational and maintenance) concerning their aircraft in the Journey Log Book.

A Canadian Journey Log Book is mandatory.

The following data are to be entered on the first page, to identify the aircraft and its characteristics.

Aircraft Registration Mark	C-XXXX			
Manufacturer	builder of aircraft from Data Plate			
Model	Name of aircraft from Data Plate			
Serial Number	Number from Data Plate			
Fuel	Capacity	in CDN gal.	Grade as recommended by engine manufacturer	
Oil Grade	Grade as recommended by engine manufacturer			
Hydraulic Fluid	Grade as recommended by aircraft builder			
Maintenance Schedule	CAR 625 appx B & C			
Maximum Gross Weight	as per Weight & Balance, (W & B) Report			
Empty Mass and Centre of Gravity	as per Weight & Balance Report			
Configuration	Mass	CG	Signature	Date
Wheels / Floats	Empty mass from W & B	Empty CG from W & B	Builder	date of entry in log book

Magnetic Direction Indicator / Compass Deviation Card / EFIS / Back-up Battery

Definition:

Magnetic Compass,

Contains ferrous-magnets which interact with the earth's magnetic field and aligns itself to the direction of the local magnetic field.

Stand-Alone,

Means that the compass is in no way connected to any other directional devices and/or electrical power source, in the aircraft. Generally use as the sole source of magnetic direction on light aircraft and as back-up in more sophisticated aircraft.

Magnetic Sensor/Magnetometer,

Solid state electronic device which interacts with the earth's magnetic field and electronically produce outputs proportional to the local magnetic lines of forces. Magnetic heading source of information as displayed on the EFIS Magnetic Direction Indicator. The magnetic sensor/magnetometer is an integrated element of an Air Data Attitude/Heading Reference System, (ADAHRS), in an EFIS.

Magnetic Direction Indicator,

Displays the heading and/or track, (course) of the aircraft, together with the source of navigation information. The, displays can be slaved to magnetic compass, track to next waypoint, VOR radials etc... It is the main direction indicator on an IFR instrument panel.

Independent,

Means that when the primary electrical power source fails, the EFIS system will automatically switch to the back-up battery to display magnetic heading for a minimum of 45 minute on the EFIS. Where multiple EFIS are installed, the builder/operator of the aircraft should have complete knowledge of the failure modes and effects of the complete system. As part of the final/import inspection the builder/operator will be required to demonstrate the different failure modes and their effects to the inspector.

Aircraft Magnetic Deviation,

When the aircraft generated magnetic field(s) are aligned with the earth magnetic field, it causes a deviation of the output of the magnetic sensor. The aircraft generated magnetic field(s) can change location, vary in magnitude and intensity dependant on what is operated at the time. When calibrating a compass the status of the electrical and mechanical equipment should replicate as close a possible the actual in-flight conditions. The engine should be running with all electrical power activated.

Compass Deviation Card,

A card recording the aircraft magnetic deviation at no less than 30 degrees increment through 360 degrees. The card must be installed in view of the Magnetic Direction Indicator and as close as possible.

Magnetic Direction Indicator Calibration,

Magnetic Direction Indicator(s) must be calibrated before the issue of the Special Certificate of Airworthiness. Each calibration reading must be in terms of magnetic headings in not more than 30° increments. The results of the calibration must be written in the journey log book and a compass deviation card must be installed on the instrument panel as close as possible from the Magnetic Direction Indicator. When a deviation of more than 10 degrees is encountered, caused by the operation of electrical equipment, the compass deviation card must state which electrical load, or combination of loads, causes the deviation of more than 10 degrees when turned on.

Basically nothing has changed concerning the process of testing, calibrating and displaying the results of the calibration. Manufacturers may have additional and/or different testing requirements; the basic procedure as stated above must be performed.

Amateur built aircraft are neither certified nor certifiable but they must operate in the all encompassing environment which is defined in the CAR's.

Below are the applicable paragraphs from the Canadian Aviation Regulation.

Part VI - General Operating and Flight Rules

Division II — Aircraft Equipment Requirements

Power-driven Aircraft — Day VFR

605.14 No person shall conduct a take-off in a power-driven aircraft for the purpose of day VFR flight unless it is equipped with (d) a magnetic compass or a magnetic direction indicator that operates independently of the aircraft electrical generating system;

523.1327 Magnetic Direction Indicator

(a) Except as provided in [paragraph \(b\)](#) of this section:

(1) Each magnetic direction indicator must be installed so that its accuracy is not excessively affected by the aeroplane's vibration or magnetic fields; and

(2) The compensated installation may not have a deviation, in level flight, greater than ten degrees on any heading.

(b) A magnetic non-stabilised direction indicator may deviate more than ten degrees due to the operation of electrically powered systems such as electrically heated windshields if either a magnetic stabilised direction indicator, which does not have a deviation in level flight greater than ten degrees on any heading, or a gyroscopic direction indicator, is installed. Deviations of a magnetic non-stabilised direction indicator of more than 10 degrees must be placarded in accordance with [523.1547 \(e\)](#).

523.1547 Magnetic Direction Indicator

(a) A placard meeting the requirements of this section must be installed on or near the magnetic direction indicator.

(b) The placard must show the calibration of the instrument in level flight with the engines operating.

(c) The placard must state whether the calibration was made with radio receivers on or off.

(d) Each calibration reading must be in terms of magnetic headings in not more than 30° increments.

(e) If a magnetic non-stabilised direction indicator can have a deviation of more than 10 degrees caused by the operation of electrical equipment, the placard must state which electrical loads, or combination of loads, would cause a deviation of more than 10 degrees when turned on.

Standard 625 APPENDIX C - Out of Phase Tasks and Equipment Maintenance Requirements

10. Non-stabilized Magnetic Direction Indicators (MDIs)

(a) Except as provided in (b) and (c), non-stabilized magnetic direction indicators shall be calibrated, and a dated correction card installed for each indicator, at intervals not exceeding 12 months;

Part VI - General Operating and Flight Rules Subpart 5 — Aircraft Requirements 605.38 - ELT

(1) Subject to subsection (3), no person shall operate an aircraft unless it is equipped with one or more ELTs in accordance with subsection (2).

(2) An aircraft set out in column I of an item of the table to this subsection shall, for the area of operation set out in column II of the item, be equipped with the quantity and type of ELTs referred to in column III of that item, which ELTs shall be armed, if so specified in the aircraft flight manual, aircraft operating manual, pilot operating handbook or equivalent document provided by the manufacturer.

TABLE ELT REQUIREMENTS

	Column I	Column II	Column III
Item	Aircraft	Area of Operation	Minimum Equipment
1	All aircraft except those referred to in subsection (3)	Over land	One ELT of Type AD, AF, AP, A or F
2	Large multi-engined turbo-jet aeroplanes engaged in an air transport service carrying passengers	Over water at a distance from land that requires the carriage of life rafts pursuant to section 602.63	Two ELTs of Type W or S or one of each
3	All aircraft that require an ELT other than those set out in item 2	Over water at a distance from land that requires the carriage of life rafts pursuant to section 602.63	One ELT of Type W or S

(3) An aircraft referred to in subsection (1) may be operated without an ELT on board where the aircraft is
(a) a glider, balloon, airship, ultra-light aeroplane or gyroplane;

Standard 625 Appendix B - Maintenance Schedules

Part I - Scheduled Inspections for Small Aircraft other than Balloons

(9) Radio Group

(b) Emergency Locator Transmitters - test performance in accordance with the procedure specified in Appendix G of **Chapter 571 of the Airworthiness Manual** .

Standard 625 APPENDIX C - Out of Phase Tasks and Equipment Maintenance Requirements

12. Emergency Locator Transmitters (ELTs)

(a) Except where powered by water activated batteries, the ELT shall be inspected at intervals not exceeding 12 months, in accordance with Standard 571 of the CARs.

(b) In the case of ELTs powered by water activated batteries, the performance testing required by Appendix G of Standard 571 of the CARs shall be carried out at intervals not exceeding 5 years.

(c) ELT batteries shall be replaced at the interval recommended by the ELT manufacturer.

Standard 571 Appendix G - Maintenance of Emergency Locator

(b) Operational Testing

Information Notes:

(i) ELT operational tests only provide the aircraft operator with an indication that the ELT is transmitting; however, a positive result cannot be interpreted as meaning that the ELT meets all operational parameters.

(ii) The periodicity of operational checks is at the operator's discretion, but the check shall only be conducted during the first five minutes of any UTC , (co-ordinated universal time) hour, and restricted in duration to not more than five seconds.

An acceptable procedure for operational tests is to:

(1) Tune the aircraft or other VHF receiver in the area to 121.5 MHz;

(2) Activate the ELT for not more than five seconds, while monitoring the VHF receiver; approximately three ELT audio sweeps are to be heard;

(3) Reset the ELT to ARM or AUTO, as applicable, and continue to listen to 121.5 MHz for a few seconds to ensure that the ELT does not continue to transmit after the test is terminated.