

# MD – RA

Minister's Delegates - Recreational Aviation  
Représentants du Ministre - Aviation de loisir

Inspection Service

Service d'inspection

## JOURNEY LOG ENTRIES, IMPORT

Once the imported aircraft is physically in Canada it has to be prepared for its import inspection by a MD-RA inspector. The aircraft must be inspected by the owner, to discover and repair discrepancies, modify the aircraft to meet Canadian homebuilt regulations, (Exemption 549) and to identify all equipment on board which are not inspected on a regular 12 months calendar.

### DISCREPANCIES

All discrepancies must be identified and repaired. The owner is responsible to ensure that all structures have been verified and tested for corrosion, rust, rotten/dry wood, damaged composite structure and composite de-lamination.

Each discrepancy must be entered in the Canadian Journey Log Book. The log entry must detail the discrepancy and the method of correcting the discrepancy. Each entry must be signed and dated by the owner of the imported aircraft. **(Ref CAR 571.10(2))**

### MODIFICATIONS

All modifications performed to meet the requirements of Exemption 549 must be entered in the Journey Log Book, identifying the item modified and how the modification was performed. Each entry must be signed and dated by the owner of the imported aircraft. **(Ref CAR 571.10(2))**

### WEIGHT and BALANCE

A log entry certifying that a Weight and Balance has been performed must be entered in the Journey Log Book.

### OUT-OF-PHASE EQUIPMENT

The Out-of-Phase equipment must be identified and tested as per the requirements of CAR 625 Appendix C. An entry for each out-of-phase item must be made in the Journey Log Book, identifying the equipment and the method of testing employed.

#### 1. PITOT AND STATIC SYSTEM LEAK TEST

**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.**

#### 2. ALTIMETER SYSTEM TEST AND INSPECTION

**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.**

#### 3. AUTOMATIC PRESSURE ALTITUDE REPORTING AND ATC TRANSPONDER PERFORMANCE TESTS

**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.**

### IMPORT INSPECTION

Now that the aircraft meets the requirements of Exemption 549 and every item on the aircraft is serviceable, an import must be performed to ensure that the aircraft is fit to return to service. To perform this inspection, the builder must first use the information contained in CAR 625 Appendices B & C to generate an inspection procedure which meets the requirements of this aircraft.

As part of the import inspection the magnetic compass must be calibrated and a new correction card generated. A certification statement and the correction card data must be recorded in the Journey Log Book. A current compass deviation card must be mounted with the compass. The entry must be signed and dated.

**I certify that the magnetic compass has been calibrated**

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

#### 4. 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.**

When the import inspection is completed a statement must be entered signed and dated in the Journey Log Book.

**An import inspection has been performed on this aircraft, as per CAR 625, Appendices B & C and the described maintenance has been performed in accordance with the applicable airworthiness requirements.**

- Notes:**
1. A maintenance release statement is required following any work performed, and/or modifications made except for elementary work as defined in Std 625 app A .
  2. An independent check requiring 2 signatures on the maintenance release statement is mandatory following any work which disturbs the engine or flight control systems on the aircraft.  
One of these signatures shall be that of the aircraft owner.  
A second entry must be made such as “independent check carried out”.  
Second person signing needs to be educated so that they understand what they are witnessing.

#### 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. **(Ref: Exemption from CAR 549, continuing airworthiness)**

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 app. 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	Importer	date of entry in log book

The aircraft is now ready for an import inspection by an MD-RA inspector. The owner of the imported amateur built aircraft has to ascertain that the Certificate of Registration for his aircraft will be available to the inspector at the beginning of the inspection.

After the aircraft has been inspected and all the discrepancies have been corrected the following statement must be written, signed and dated in the Journey Log Book.

**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 the described maintenance has been performed in accordance with the applicable airworthiness requirements.**

### **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 as 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.

**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

	Column I	Column II	Column III
Item	Aircraft	Area of Operation	Minimum Equipment
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

### 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.

(amended 2007/12/30)

- (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.

(amended 2007/12/30)

- (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.