The COPA Guide to the Owner-Maintenance Category

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Background

The Owner-Maintenance Category was developed to allow certain older certified fixed-wing gliders and single engine airplanes to be maintained and restored under similar regulations as amateur built aircraft.

The proposal for this category grew from a cross-Canada series of town hall meetings for pilots conducted by Transport Canada recreational aviation specialist Lindsay Cadenhead during 1994-95.

During the meetings, recreational aircraft owners expressed their concern for the spiraling cost and lack of availability of certified parts and expertise for older, out of production aircraft.

This concern was turned into a proposal from several aviation associations, including COPA. It called for a new category for these aircraft that would allow owner-maintenance, part substitution and limited aircraft modification.

An Owner-Maintenance Category became part of Transport Canada's new Recreational Aviation Policy in June 1996. That policy was accepted by the aviation community and approved by the Minister of Transport.

Scope of This Guide

This COPA Guide is designed to give you the background information that you will need to get involved in O-M aircraft, whether you are buying an aircraft already in the category of going thorough the process of converting a certified aircraft to an O-M aircraft. This Guide will cover some of the pitfalls, regulations and choices available. It is designed to get you started!

This COPA Guide is **not** designed to tell you how to do maintenance on an O-M aircraft. That is a big subject and it is best covered in specialized (and much thicker) books than this!

Suggestions for improvements to this COPA Guide are welcome! COPA updates and rewrites its COPA Guides on a regular basis to keep them up to date and relevant. Send your suggestions for improvements to benefits@copanational.org.

NOTE

This guide contains information of a general nature only.
While this guide does discuss the rules for building
and flying an amateur-built aircraft it is not legislative.
Ensure that you read and understand the current CARs
regarding O-M aircraft before commencing
your own work on and O-M aircraft.

Under the O-M Category, Aircraft Pilot/Owners are Eligible To:

- maintain an airplane
- conduct and sign for the annual inspection
- refurbish all or part of an airplane
- overhaul all or part of an airplane
- install certified and uncertified parts
- install or replace any instruments or avionics
- modify an airplane within certain limits
- rebuild an airplane that is out of service
- sign the maintenance release.

NOTE: The pilot/owner pilot can do any work on an airplane or hire someone (such as an AME) to do the work for the owner/pilot. Either an AME or the pilot/owner can then sign the maintenance release.

The Special Certificate of Airworthiness – Owner-Maintenance

During 1998 and 1999, the Owner-Maintenance Aircraft Category had passed through the CARAC Part V Technical Committee but stalled in the Department of Justice during the rule-making process.

Feedback from more than 400 COPA members identified the importance of the new category. In February 2000, Transport Canada issued ministerial exemptions to provide for the issue of a *Flight Permit – Specific Purpose – Owner-Maintenance*.

In March 2002 the new rules were enacted, entered the CARs and the exemption phase ended. Aircraft in this category now may qualify for a *Special Certificate of Airworthiness – Owner-Maintenance*.

Changing the Rules

The following CARs were some of those affected and outline some of the privileges and benefits of the category:

- CAR 507.10 The pilot/owner of an O-M Category aircraft no longer has to have inspections performed or supervised by an AME.

- CAR 571.06 The pilot/owner can sign the maintenance release for a major repair or overhaul on an O-M aircraft and only needs to show that the repair conforms to the requirements of "acceptable data".

  Sources of "acceptable data" include, but are not limited to:

  - Drawings and methods recommended by the manufacturer of the aircraft, component, or appliance
  - STC documents for that type or other types of aircraft
  - Transport Canada advisory documents;
  - FAA Advisory Circular 43.13-1B and –2A Acceptable Methods, Techniques & Practices,
  - UK CAA Civil Aircraft Inspection Procedures (CAIP),
  - JAA Advisory Circulars, (ACJ) and
  - Publications issued by recognized authorities on the subject matter concerned.
  - Pilot/Owners may devise their own data, which need not be approved, but must be subject to an appropriate level of review or analysis, or be shown

to comply with recognized industry standards, or commonly accepted practice.

- Changes that affect the structural strength, performance, power plant operation, or flight characteristics of an aircraft must be reported to the Minister before further flight of the aircraft; such changes may require re-evaluation to confirm that the aircraft continues to comply with the applicable standards.

NOTE: The Minister of Transport is the final authority for determining the acceptability of data.

- CAR 571.10 and CAR 571.11 The owner of an O-M aircraft, who is a pilot, can sign all the maintenance releases for the aircraft using the following wording: *"The described maintenance has been performed in accordance with the applicable airworthiness requirements."*

- CAR 571.07 The pilot/owner can install new and used certified and uncertified parts on an O-M aircraft.

- STD 507.06(13)(a) The pilot/owner of an O-M aircraft may apply for a *Special Certificate of Airworthiness – Owner-Maintenance* without having to have available an approved Aircraft Flight Manual or approved operating limitations.

- STD 571.13 Aircraft in the O-M category are excluded from the requirement that only those parts specified in the type design of the aeronautical product are eligible for installation on that product.

- CAR 605.84 Pilot/owners of aircraft operated under a *Special Certificate of Airworthiness – Owner-Maintenance* are not compelled to comply with Airworthiness Directives or to operate in accordance with airworthiness limitations applicable to the type design for the aircraft although they may voluntarily do so.

- CAR 605.92 Pilot/owners of aircraft operated under a *Special Certificate of Airworthiness – Owner-Maintenance* are allowed to keep the required technical record reports in the Journey Log rather than keeping one or more technical records.

Eligible Aircraft

To be eligible for the Owner-Maintenance Category, the aircraft model must appear on the Transport Canada list of O-M airplanes (Appendix A to this guide – this list is also found in CAR STD 507 Appendix H or on the list of aircraft waiting to be put in Appendix H found on the TC website).

To add a new aircraft to the list it must fit into the following CAR Standard 507.03 (6) (e) requirements:

(i) the aircraft is of a type certified in accordance with CAR STD 522 *(Gliders and Powered Gliders)* or 523 *(Small Aeroplanes)*, or an equivalent foreign standard;

(ii) the aircraft type certificate does not authorize more than four occupants;

(iii) the maximum certificated take-off weight (MCTOW) of the aircraft does not exceed 1,814 kg (4,000 pounds);

(iv) the aircraft is of a type and model that has not been manufactured during the 60 months preceding the date of application;

(v) fewer than 10% of Canadian aircraft of the type and model concerned are operating in Canadian commercial air service at the time of application;

(vi) the aircraft type and model is powered by a single, normally aspirated, piston engine, and is unpressurized; and

(vii) except for gliders, powered gliders or aircraft with airframes of wooden construction, the aircraft type and model has a fixed landing gear and a fixed pitch propeller.

A request to add a new aircraft to the list must be made in writing (on paper or via e-mail) to:

Transport Canada, Director - Aircraft Maintenance and Manufacturing – AARP,
Tower C, Place de Ville 2nd Floor,
330 Sparks Street,
Ottawa, Ontario K1A 0N8
SHERRID@tc.gc.ca

You will need to show that the aircraft complies with each requirement stated in CAR Standard 507.03 (6) (e) above.

Some of the aircraft on the current list were originally accepted during early negotiations on the establishment of the O-M category. Transport Canada has issued the following statement to explain why some of the aircraft on the original O-M list would not qualify to be added to the list today, but can stay on the list:

"The original list of types and models of aeroplane eligible for inclusion in the owner maintenance classification was established on an individual basis, prior to the development of specific eligibility criteria. Some of the types and models listed do not comply with all the criteria that were subsequently established. Notwithstanding this difference, the types and models in question remain eligible on the basis of their original evaluation. However, the above situation does not constitute a precedent. No further types or models will be added to the list unless they meet the eligibility criteria of STD 507.03(6) (e)."

In recent years it has taken quite a long time for TC to complete the process to add a new aircraft type to the Owner Maintenance (O-M) category.

An aircraft owner would request the type be added and then it would be evaluated, be submitted to the CARAC Part V Maintenance & Manufacturing Technical Committee for approval and wind its way through the TC system until it made its way into CAR Standard 507 Appendix H and was officially on the list. This process could take a very long time.

TC has tried to make the process much more streamlined and has introduced some changes that have shortened the process from up to a year down to a few weeks.

One of the challenges has been to find a place to list new types that have been accepted onto the O-M list in the time between TC acceptance and the formal amendment of the CAR Standard 507 Appendix H list.

Effective in October 2004 new aircraft added to the O-M list but not yet in Appendix H may now be found in English at:
http://www.tc.gc.ca/civilaviation/maintenance/aarpe/Recreational/Classification.htm

and in French at:
http://www.tc.gc.ca/AviationCivile/maintenance/aarpe/Loisir/Categorie.htm

Aircraft in the O-M Category

As of October 2004 the O-M category had the 284 aircraft registered in it, consisting of the following aircraft types:

Aero Commander 100	1
Aeronca models	65
Alon Ercoupes	2
American Aviation AA-1B	1
Beech 23 Musketeer	1
Bellanca models	5
Grob gliders	2
Cessna models	24
Champion models	14
Colonial C-2	1
Cub Aircraft	1
Dehavilland	3
Erco Ercoupes	17
Fleet 80 Canuck	4
Glaser Dirks glider	1
Luscombe models	12
Maule M-4	1

Mooney M20	3
PIK 20	2
Piper models	84
Republic RC-3 Seabee	9
Schleicher ASW12	1
Schweizer gliders	2
Stinson 108 models	5
Taylorcraft models	22
Volaircraft 10	1

No Experimental Aircraft Flight Permits

Owner-maintenance aircraft are ineligible to be operated under an experimental aircraft flight permit. Experimental aircraft flight permits are issued only to aircraft manufactured for, or engaged in aeronautical research and development.

Amateur-built aircraft are currently excluded from eligibility for such flight permits and aircraft in the owner-maintenance classification share this exclusion.

Helicopters on the List?

There are no helicopters on the list of O-M aircraft. Only aircraft that are small powered fixed wing aircraft or gliders qualify for the O-M list.

Amateur-built and ultralight aircraft do not qualify either, as they are not certified aircraft. They are both already “owner maintenance” categories, anyway.

Checklist for Converting Aircraft to O-M Category

To put an eligible aircraft into the O-M category you need to do the following:

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1. Check the published list of eligible aircraft models (Appendix A). Only these certified aircraft qualify for conversion.

2. To transfer an aircraft into the O-M category, pilot/owners of eligible aircraft should contact their nearest Transport Canada Centre in their Transport Canada Region to obtain a copy of the application form.

3. Before the application is submitted, each aircraft shall have on the side of the fuselage and in a position that is readily visible to persons entering the aircraft, the warning statement below. The placard shall be in letters at least 10mm (3/8”) high and of a colour contrasting with the background and must contain both the English and French statements.

WARNING
SPECIAL CERTIFICATE OF AIRWORTHINESS – OWNER – MAINTENANCE
THIS AIRCRAFT DOES NOT COMPLY WITH INTERNATIONALLY RECOGNIZED AIRWORTHINESS STANDARDS

AVIS
CERTIFICAT SPECIAL DE NAVIGABILITE – MAINTENANCE PAR LE PROPRIETAIRE
CET AERONEF N'EST PAS CONFORME AUX NORMES DE NAVIGABILITE INTERNATIONALES RECONNUES.

4. Each engine, propeller and life-limited item installed on such an aircraft shall have an "X" permanently etched, engraved or stamped at the end of the model designation and serial number on the identification plate required by CAR 201.01. Under CAR 201.03 you need to apply for permission to put the "X"s on the dataplates, so contact your local TC office before you do this.

NOTE: A life-limited part is one that the manufacturer has designated a fixed number of hours or years between overhaul or replacement.

5. Submit the *Special Certificate of Airworthiness – Owner-Maintenance* application form to the TC office.

6. Surrender the original *Certificate of Airworthiness* for each aircraft to the Transport Canada Centre.

7. Attach a cheque with each application for a *Special Certificate of Airworthiness – Owner-Maintenance* for $250, made out to the Receiver General for Canada.

8. The aircraft will also require a new *Certificate of Registration*, as the model number and the serial number will have changed (remember those "X"s?). To apply for the new C of R use the form that came with the existing C of R and make sure that you submit a clear, legible photograph of the aircraft dataplate. TC will not process the C of R change with the photograph of the dataplate. The fee will be $65 as this is an amendment to a C of R.

NOTE: If aircraft pilot/owners have current *Certificate of Airworthiness* suspension notices (for safety issues) on the Transport Canada aircraft files, these suspension notices have to be cleared before the aircraft can be transferred.

NOTE: Once the process is started to transfer the aircraft to the O-M Category the flight authority is no longer valid and until the new *Special Certificate of Airworthiness – Owner-Maintenance* is issued and the owner is in possession of it, the aircraft cannot be flown.

NOTE: Once the process is started to transfer the aircraft to the O-M Category the *Certificate of Registration* is also no longer valid (because the serial number and model

number have been changed by the addition of the “X”s). Until the new *Certificate of Registration* is issued and the owner is in possession of it, the aircraft cannot be flown.

A list of Transport Canada Centres can be found on TC's website

About Those “X”s

As stated above each engine, propeller and life-limited item installed on an O-M aircraft shall have an ‘X’ permanently etched, engraved or stamped at the end of the model designation and serial number on the identification plate required by CAR 201.01. This means that the letter “X” is permanently etched, engraved or stamped at the end of the model designation and serial number with no space and no hyphen (i.e.: PA22-125X).

If engines, propellers and life-limited parts are replaced after the issue of the *Special Certificate of Airworthiness – Owner-Maintenance* there a requirement for these new component dataplates to be marked with an “X”, too.

The “X” is one of the conditions that must be met in order to have an aircraft in this category. The owner will have no authority to sign the maintenance release on a component that does not carry an “X.” Remember, any modification to dataplates requires an authorization from the Minister pursuant to CAR 201.03(3) and 201.12(4).

If an “X”-marked engine from an O-M aircraft is removed and sent to an approved overhaul shop and this engine is overhauled as per the manufacturer recommendations and specifications it still retains its “X” on the serial number. The owner cannot request the modification of the information on the engine identification plate to remove the “X”. As explained in CAR 201.12(4), an authorization is required from the Minister to modify information on the engine data plate. The “X” cannot be removed without that authorization.

As mentioned earlier under CAR 201.03 you need to apply for permission to put the “X”s on the dataplates, so contact your local TC office before you do this.

Important Note on Licences

The pilot/owner of an O-M aircraft must be an aircrew license or permit holder with privileges on that aircraft type. This is very important as only the owner who is a pilot or an AME can sign the maintenance entries for an O-M aircraft.

Flying in the USA?

The FAA has some issues regarding the Canadian O-M category and has been refusing permission for Canadian O-M aircraft to operate in the USA or in any US airspace since July 2002. Their reasons for this are outlined in their policy paper on the subject - Flight

Standards Information Bulletin for Airworthiness FSAW 03-03 Special Flight Authorization (SFA) for Canadian "Owner-Maintenance" Category Aircraft.

COPA is currently working on this issue, but we don't have a solution at this time and it looks like it will not be resolved in the near future.

If you need to be able to fly your airplane outside of Canada do not put it in the O-M category!

Importing an Aircraft into O-M

Several COPA members have asked if it is possible to import an aircraft from another country, usually the USA, and register in Canada directly into the O-M category without it having to go through the whole "certified aircraft importation inspection process".

The answer is "yes". TC HQ has confirmed that this is specifically allowed and the CARs will be amended shortly to provide some specific guidance on this.

In this case the aircraft would be directly registered in the O-M category and the owner can do the import inspection. TC always reserves the right to inspect the aircraft, of course, and they can do so at importation, if they wish to do so.

What Can I Do In This Category?

The O-M category gives pilot/owners the authority to:

- maintain an airplane
- conduct and sign for the annual inspection
- refurbish all or part of an airplane
- overhaul all or part of an airplane
- install certified and uncertified parts
- install or replace any instruments or avionics
- modify an airplane within certain limits
- rebuild an airplane that is out of service
- sign the maintenance release.

If in doubt, contact the nearest Transport Canada Center.

Pilot/owners must keep in mind that replacement parts may not be available and manufacturer's product support may be non-existent. This may mean that parts will have to be made for the aircraft.

Rebuilding and Modifying Aircraft in the O-M Category

Under the Owner-Maintenance category, aircraft pilot/owners are allowed to perform and certify regular and specialized maintenance. This means that aircraft pilot/owners are allowed to rebuild damaged aircraft, run-out components and engines and modify existing aircraft within certain limits.

The airplane being rebuilt or modified must be one that is type-approved in the certified category. The aircraft type will have to be eligible for a *Special Certificate of Airworthiness – Owner-Maintenance*. If an aircraft to be rebuilt or modified appears on the eligible list, contact the nearest Transport Canada Centre and notify them of your intentions. Once you are given the go ahead and before a *Special Certificate of Airworthiness – Owner-Maintenance* is issued, the government reserves the right to inspect the aircraft.

Transport Canada's current policy is that there will be no systematic inspections of aircraft involved in applications for a *Special Certificate of Airworthiness – Owner-Maintenance*. However, CAR 103.02 gives the Minister the authority to inspect if he so wishes. For example, an aircraft with a valid Certificate of Airworthiness being converted to the O-M category may not need to be inspected. An aircraft that has been out of valid flight authority for some period may need to be inspected. The decision to inspect or not to inspect rests with the Transport Canada inspector on behalf of the Minister.

Owners of O-M aircraft are required to comply with CAR 571.12 and report major repairs and modifications to the aircraft to Transport Canada. Where the change involves the engine, the owner has to report to TC and have the flight authority re-issued. The information on the Special C of A specifies the engine and must correspond with the aircraft.

Limits on Modifying O-M Aircraft

Changes to CAR STD 507.03 introduced in January 2003 limit the extent to which you can modify an aircraft in the O-M category.

Under these rules the aircraft can not be modified so that it no longer would qualify to enter the O-M category.

This means that you **cannot**:

- Modify an aircraft to increase the number of seats to more than four.

- Change the engine so that it is powered by an engine that is not a single, normally aspirated, piston engine. This means no turbochargers and no turboprops, turbofans or turbojets, rockets, etc.

- Unless the aircraft is a glider, a powered glider, an aircraft with a wooden airframe or one of those aircraft that was accepted on the original list with either retractable landing gear or a variable pitch propeller then it cannot be modified to have

retractable landing gear or a variable pitch propeller. Ground-adjustable pitch propellers are acceptable. In a ruling in April 2005 TC indicated that this also covers amphibious floats as they would modify an aircraft to have retractable landing gear and are therefore not permitted.

- You cannot increase the gross weight of the aircraft - the maximum take-off mass cannot be greater than that shown on the original aircraft file.

- The operating conditions that are part of O-M aircraft shall not authorize aircraft flight operation privileges other than those presently permitted by the aircraft flight manual, pilot operating handbook, aircraft operating manual or other equivalent document. This means that you cannot, for instance, add aerobatic maneuvers to an aircraft that was not previously approved for them.

Installing Parts

Installing parts on your plane is a subject that confuses a lot of people. What parts are you allowed to install and what paperwork is required for which parts?

O-M aircraft are authorized in CAR 571.07 to have non-certified parts installed. It is recommended that aviation quality parts be installed, but it is not required. The decision is left to the owner as to the choice of parts. No certification document is required for new parts installed on these aircraft. A used part that has undergone maintenance will need a document releasing that work. The release can, of course, be signed by the owner of the aircraft.

Reversing the Classification of an O-M Aircraft

Returning re-classified aircraft to a certified category will be expensive, time consuming and difficult. This was done on purpose as the category was not intended to be one where aircraft would move into it and then back again.

To move an aircraft from the O-M category back to the certified category the aircraft engine, propeller and primary flight instruments will have to be overhauled by an approved maintenance organization. The whole aircraft, aircraft systems and equipment will have to be inspected for conformity to type design and an appropriately rated AME must sign a maintenance release.

Pilot/owners who anticipate selling their aircraft internationally or for commercial use should not re-classify their aircraft into the Owner-Maintenance Category.

Insurance for O-M Aircraft

Under CAR 606.02 owner-maintenance aircraft require the same minimum Third Party Liability insurance as other aircraft flying in Canada, which is:

- $100,000 public liability for aircraft 2,300 lb and below
- $500,000 for aircraft between 2,301 and 5,000 lb.

This does not require insurance for passengers, crew or the aircraft hull, just for damage to "third party" property.

COPA's aircraft insurance plans, administered through Marsh Insurance, will cover owner-maintenance aircraft on the same basis and for the same rates as certified aircraft are covered.

COPA's aviation insurance programs include third-party property damage and bodily injury, passenger legal liability, pilot accident coverage, ground and air hull insurance and work-in-progress insurance. For more information on COPA Insurance, see COPA's website.

If you are considering moving your certified aircraft to the O-M category and are not insured through COPA's aviation insurance program you should discuss the implications with your insurance broker to ensure that you will still qualify for coverage through their program.

Licensed Pilots Only

There is one important difference between amateur-built aircraft and the Owner-maintenance Category. With amateur-built aircraft, the aircraft owner may certify the maintenance. In the owner-maintenance category, the owner must also be a licensed pilot in order to certify the maintenance, as described in CAR 571.11. This might not be a problem for most people interested in the O-M category, but there may be some pilots who want to register an aircraft in the name of a non-pilot spouse.

Transport Canada has confirmed that holders of a *Pilot Permit - Recreational Aeroplane* and *Pilot Permit – Ultralight Aeroplane* are also qualified to own and sign for aircraft in the O-M category even though they are permit holders rather than license holders. The following limitations apply:

- *Pilot Permit – Ultralight Aeroplane* holders may sign for O-M aircraft that fit the limits of that permit:
  - Any single-engined aeroplane having not more than two seats, a maximum take-off weight not exceeding 544 kg (1,200 pounds) and a stall speed in the landing configuration (V_{so}) of not more than 39 knots
- *Pilot Permit – Recreational Aeroplane* holders may sign for O-M aircraft that fit the limits of that permit:

- the aeroplane is a single-engined aeroplane that is not a high-performance aeroplane and the aeroplane is designed, or is authorized by a type certificate, to carry a maximum of four persons.

- *Student Pilot Permits* - A student pilot cannot sign a maintenance release even if they are the owner of the aircraft. The privileges of a *Student Pilot Permit* are restricted to training activities.

Who Can Work On O-M Aircraft?

Anyone can work on an O-M aircraft but only people with two qualifications can sign the maintenance release for the work done:

1. The owner, who is also a pilot, can sign for the work done with a maintenance release as described in CAR 571.11.

2. Aircraft maintenance engineers (AMEs) are the only people, other than pilot/owners, who are allowed to sign out work on an O-M aircraft.

Pilot/owners with a pilot license can still use the services of an AME, but may certify the work themselves. This may mean that some AMEs, who would be reluctant to work on an aircraft and then sign for non-certified repairs, may be more comfortable doing the work and allowing the pilot/owner to sign the maintenance release.

What happens if a pilot's Medical Certificate has been suspended or is expired? A pilot's medical validates the privileges of the licence for flying. Without a valid medical, pilot/owners may continue to sign off maintenance on their O-M aircraft.

You should note that a *Minister's Delegate – Recreational Aircraft* cannot conduct O-M inspections. The MD-RA's function is to inspect an amateur-built aircraft in order to ascertain that it is designed and constructed in conformity with CAR STD 507 Appendix C. Any work on owner-maintained aircraft by an MD-RA would be outside the scope of

their current delegation and would not be covered under their duty as a minister's delegate

What Does the Maintenance Release Have to Say?

The owner, who is a pilot, may sign any maintenance release for an O-M aircraft, or an AME may sign. The wording should be as described in CAR 571.10:

"The described maintenance has been performed in accordance with the applicable airworthiness requirements." or a similarly worded statement.

Annual Inspection

O-M aircraft still need an annual inspection. CAR 625.86 Maintenance Schedules specifies that O-M aircraft, like all other aircraft (except ultralights and hang gliders), need an inspection every 12 months. This means that the inspection expires exactly a year after the last annual inspection. If the last annual inspection was May 15th 2005, then the aircraft cannot be flown again after May 15th 2006. You cannot keep flying it until May 30th 2006, as there is no latitude for the inspection to be done "before the end of the month".

Of course the annual inspection specified in CAR 625 Appendix "B" can be carried out by the owner of the aircraft (who is a pilot) and the maintenance release for the annual inspection signed by them.

What About the "Out of Phase" Maintenance Items?

CAR 625 Appendix "C" lists the "out of phase items" that don't form part of the aircraft's annual inspection. O-M aircraft are required to comply with the requirements of this appendix, except where they are specifically exempted.

Most of the items are fairly straightforward and within the capabilities of most pilot/owners, but some items require specialized equipment. Pilot/owners may want to contract out that work to specialty shops.

A review of CAR 625 Appendix "C" is a good idea to plan your maintenance requirements and ensure that you don't miss anything.

Here are some of the key items that may require outside assistance to complete the requirements:

1. **Variable Pitch Propellers** – O-M aircraft are now exempted from this requirement to have these overhauled every ten years. The owner can now decide when these need overhauling.

2. **Tachometers** – to be calibrated annually – this will require a "tach check" or other calibration device.

3. **Compass Calibration** – every 12 months – requires a compass rose or ground compass system and an assistant to complete.

4. **ELT** – must be bench-tested annually in accordance with Appendix G of CAR STD 571. This involves a bench-test of power output and frequency stability and generally cannot be completed by the pilot/owner

5. **Altimeters used for IFR flight or VFR in Class "B" airspace** – calibrated every 24 months

6. **Transponders and Mode "C" encoders (when installed)** – calibrated every 24 months in accordance with Appendix F of CAR STD 571. This involves a bench test and also generally cannot be completed by the pilot/owner unless you have access to specialized equipment.

IFR, Night, VFR-OTT

Aircraft under the Owner-Maintenance Category are normally issued a *Special Certificate of Airworthiness – Owner-Maintenance* that restricts them to Day VFR flight only.

O-M aircraft may qualify for night, IFR and VFR-Over-The-Top under certain circumstances. Each individual O-M aircraft will need an approval that will include showing that the aircraft is properly equipped and that it has had a correlation check completed that shows that all parts of the avionics and instrument suite are working correctly together. The requirement for instrumentation is contained in:

CAR 605.16 for Night VFR
CAR 605.18 for IFR
CAR 605.15 for VFR OTT.

Additional equipment can be installed and signed off by the pilot/owner. Outside specialized work, such as altimeter and Mode C calibration will be necessary, unless you have access to the specialized equipment required.

Switching to Floats

O-M aircraft pilot/owners may sign off a seasonal conversion of the landing gear whereas certified aircraft must have the conversion from wheels to floats and back signed out by a qualified AME.

Conversions of certified aircraft to and from skis may be signed off by the owner, provided the work does not require separation of any hydraulic lines.

Under the owner-maintenance category, pilot/owners may sign off any landing gear work.

Non-Certified Floats for O-M Aircraft

Several new float manufacturers are producing non-certified floats for the homebuilt market. Some of these are suitable for small, certified aircraft that appear on the list of eligible O-M aircraft. These new types of floats can be cheaper, lighter, stronger, more streamlined and easier to repair than the traditional certified floats. New aluminum float designs are also available as kits.

There are no restrictions on installing these non-certified floats on O-M aircraft other than those that involve amphibious floats. Unless the aircraft is an aircraft with a wooden airframe or one of those aircraft that was accepted on the original list with retractable landing gear then it cannot be modified to have retractable landing gear. This means that amphibious floats cannot be installed on these aircraft as this would modify an aircraft to have retractable landing gear.

Handheld Fire Extinguishers

Most pilots know that all powered aircraft except ultralights need fire extinguishers. That requirement is outlined in CAR 602.60 but that CAR is pretty general in nature. It just requires “a hand-held fire extinguisher in the cockpit that is

- ✓ of a type suitable for extinguishing the fires that are likely to occur,
- ✓ designed to minimize the hazard of toxic gas concentrations, and
- ✓ readily available in flight to each flight crew member”

That CAR doesn’t tell you what standard the fire extinguisher has to meet, if any and doesn’t refer to anywhere else in the CARS to look for a standard for fire extinguishers.

As is common in the CARS there is a standard, but it is well hidden and not cross-referenced from the regulation.

The standard for fire extinguishers is hidden away in CAR 551.400. This CAR indicates that it is the standard for “Hand-Held Fire Extinguishers required by CAR 602.60, 604.41, 704.83 and 705.93.” and includes this information note:

“As required by CAR Part VI and VII requirements, hand-held fire extinguishers shall contain a type and quantity of extinguishing agent suitable for the kinds of fires likely to occur in the compartment where the extinguisher is intended to be used. For crew and

passenger compartments, hand-held fire extinguishers shall be designed to minimize the hazard of toxic gas concentrations."

It then lists the acceptable standards that hand held fire extinguishers must comply with. These are any of:

- ✓ TSO C19b,
- ✓ approved by Underwriters Laboratories of Canada, bearing ULC approval label; approved by the British Civil Aviation Authority (BCAA) for aircraft use;
- ✓ approved by the Federal Aviation Administration (FAA) for aircraft use, including extinguishers approved to TSO-C19b "Portable water-solution type fire-extinguishers";
- ✓ approved by Underwriters Laboratories Inc. (U.L.), Factory Mutual Research Corporation to specification U.L. 1093 (construction and operation), and to specification U.L. 711 (rating and testing);
- ✓ approved by U.S. Coastguard under title 46 of the U.S. Code of Federal Regulations, for use in aircraft;
- ✓ approved for aircraft use by the airworthiness authority of any country, whose standards are accepted by the Minister.

The CAR then gives information on the installation: "The installation of hand-held fire extinguishers shall be such that when properly secured in its mounting:
(1) the extinguisher will remain secure when subjected to the ultimate inertia loads established by the aircraft basis of certification, but not less than the following ultimate load factors:

Load Factors	Aeroplanes	Rotorcraft
forward	9.0	4.0
sideward	1.5	2.0
upward	2.0	1.5
downward	4.5	4.0

(2) the extinguisher will have a "quick release" function to enable easy removal from its mount.

The standard then finished with requirements for Identification and Markings:

(1) The hand-held fire extinguisher shall be identified and marked with the applicable specifications as determined by the approving authority per paragraph (b).

(2) A stowage compartment or stowage container that contains a hand-held fire extinguisher shall be clearly marked as to its contents."

So as long as your installed handheld fire extinguisher meets one of those stated standards and is mounted as described then it will meet the CAR requirements.

Duration of Flight Authority

Once the *Special Certificate of Airworthiness - Owner-Maintenance* is issued, the airplane may be flown under the same regulations and standards as when it was a certified aircraft. The same maintenance regulations and standards also apply, except maintenance and inspections on the aircraft may be signed either by the pilot/owner or an AME. Unlike the pervious *Flight Permit – Specific Purpose – Owner-Maintenance* that were used in this category, which were only valid for a year, the current *Special Certificate of Airworthiness – Owner-Maintenance* is valid indefinitely, just like a standard *Certificate of Airworthiness* for certified aircraft.

Owner-Maintenance Aircraft Category – Counterpoint

The following are issues that an aircraft pilot/owner should consider before switching their airplane to the Owner-Maintenance Aircraft Category.

1/ **Safety**

"The most dangerous thing in aviation is a pilot with a screwdriver."

The above quote comes from more than one aircraft maintenance engineer. Most aircraft pilot/owners are trained to fly, not to fix. The prospect of them doing their own airplane maintenance is scary.

It takes three years to educate an apprentice on the basics of aircraft inspection and repair. Amateur-built airplane owners have the benefit of the construction process, which is often much longer than three years, to learn how to work on their airplanes.

Owners of certified aircraft who are not trained in maintenance should continue to use the services of an AME to assist them as they learn the aircraft. The O-M category allows this.

2/ **One-Way Street**

The owner-maintenance category is designed to be a one-way street. Once an aircraft is converted to the category, it is prohibitively expensive to change it back to being a certified aircraft. The aircraft engine, propeller and primary flight instruments have to be overhauled by an approved maintenance organization. The aircraft systems and

equipment must be inspected for conformity to type design, and a maintenance release has to be signed by an appropriately rated AME. Do not move an airplane into this category with the expectation of returning it to the certified category later on.

3/ **Aircraft Value**

Now that Canadians have some years of experience with the O-M category it is apparent that O-M aircraft are not losing their value in comparison to their certified equivalents. But, that said, aircraft that have prices driven up by demand in the US market may well see lower values in the non-exportable O-M category in the future.

Pilot/owners who keep their aircraft for a long time might regain any lost resale value by operating and maintaining the aircraft more economically and incorporating improvements that would not be possible when certified.

4/ **Only in Canada**

Canada is the first country to launch the Owner-Maintenance category and these aircraft no longer meet ICAO airworthiness standards. This means that O-M aircraft may not be flown in another country without prior written permission.

The O-M Aircraft Category is not recognized outside Canada. As explained in CAR 509.01, an O-M airplane may not be sold to a pilot in another country for operation as an O-M airplane, thus, an *Export Airworthiness Certificate* will not be issued.

To fly outside Canada, validation of the *Special Certificate of Airworthiness – Owner Maintenance* will be required by the foreign Civil Aviation Authority.

Currently the FAA is **not** giving permission for Canadian O-M aircraft to operate in the USA or in US airspace.

If you need to be able to fly your airplane outside of Canada do not put it in the O-M category!

5/ **Flight Training Resistance**

As with amateur-built aircraft, it would not be unreasonable for a flight training organization to refuse to conduct training in an O-M aircraft.

Pilot/owners planning flight training for themselves or their family in their own O-M aircraft should check with their local flying school before switching their aircraft into the non-certified O-M category to see if instructors are available and willing to fly in the aircraft.

6/ **Personal Use Only**

O-M aircraft cannot be used for a commercial air service. They are limited to recreational and private business flying only.

For More Information

1/ **Canadian Owners and Pilots Association**

COPA prints news on the O-M Category in its monthly newspaper, *COPA Flight*, which is included with a COPA membership.

COPA also maintains a large website of information on general aviation at www.copanational.org .

2/ **Transport Canada**

Maintenance & Manufacturing inspectors at the Transport Canada Centres are the O-M information contacts. They are listed on the TC Web site: http://www.tc.gc.ca/CivilAviation/regions.htm .

The Aeronautical Information Publication (AIP) GEN section also contains the telephone numbers of the TC Maintenance & Manufacturing representative in each region.

The Canadian Aviation Regulations, including maintenance regulations, appear on the TC Web site: http://www.tc.gc.ca/civilaviation/regserv/Affairs/cars/menu.htm

Appendix A – Aircraft Currently Eligible for the Owner-Maintenance Category

A
AERO COMMANDER 100, 100 180
AERONCA C3
AERONCA K, KC
AERONCA S11AC, S11BC, S11CC
AERONCA 11AC, 11BC, 11CC
AERONCA 15AC, S15AC
AERONCA S65CA
AERONCA S7CCM, S7DC, S7EC
AERONCA 0 58B
AERONCA 50C
AERONCA 65C, 65CA, 65LA, 65LB
AERONCA 65TAC, 65TC
AERONCA 7AC, 7BCM, 7CCM, 7DC, 7EC
AEROTECHNIK L 13 SEH VIVATALON A2, A2A
AMERICAN AVN AA 1, AA 1A, AA 1B, AA 1C
AMERICAN AVN AA 5, AA 5A, AA 5B
AMERICAN GENERAL AG 5B
AVIONAUTICA M100S
AVRO AVIAN MKIVM

B
BEAGLE AUSTER A61
BEECH 19A
BEECH 23, A23, A23 19, A23 24, A23A, B23
BELLANCA 14 13, 14 13 2, 14 13 3, 14 19

BELLANCA 7ACA, 7ECA, 7GCAA, 7GCBC, 7KCAB
BOEING MODEL 75, A75, E75, E75N1, PT-17
BURKHART GROB G102 ASTIR CS, CS 77
BURKHART GROB G102 CLUB ASTIR III, IIIB
BURKHART GROB G102 STND ASTIR III
BURKHART GROB G103 TWIN ASTIR
BURKHART GROB G103 TWIN II
BURKHART GROB G103A TWIN II ACRO

C
CALLAIR A3, S1B1
CENTRAIR ASW20F
CESSNA 120, 140, 140A, 150*, 150A,150B, 150C, 150D, 150E, 150F, 150G, 150H, 150J, 150K, A150K, 170, 170A, 170B, 172*, 172A, 172B, 172C, 172D, 172E, 172F,

172G, 172H, 175, 175A, 177*, 305A, 305C

(* Note: These aircraft include only the specific 1959-60 model “150”, 1956-59 model “172” and the 1968 model “177” and not any other models)

CHAMPION 402
CHAMPION 7AC, 7BCM, 7EC, 7ECA, 7FC, 7GC, 7GCA, 7GCAA, 7GCB, 7GCBC, 7KC, S7EC
COLONIAL C 1, C 2
CORCORAN B, TG1A
CUB AIRCRAFT J3C65

D
DART G
DE CHATILLON AIR100
DEHAVILLAND DHC 1, DHC 1A 1,
DHC 1B 1, DHC 1B 2,
DHC 1B 2S3, DHC 1B 2S5
DEHAVILLAND DH60GM
DEHAVILLAND DH82A, DH82C
DEHAVILLAND DH83C
DIAMANT 16.5

E
EIRI EINO RIIHELA PIK 20E
EIRIAVION OY PIK 20B
ERCO E, G
ERCO 415C, 415 CD, 415 D

F
FAIRCHILD M62A-3 (CORNELL)
FAUVEL AV36
FLEET80
FORNEY F 1, F 1A
FUNK B85C

G
GARDAN GY 80 160
GENERAL AIRCRAFT G1 80
GLASER DIRKS DG 100, DG 200, DG 200/17 DG 300, DG 400, DG 600
GLASFLUGEL HORNET 206
GLASFLUGEL LIBELLE H301, H301B
GLASFLUGEL MOSQUITO, MOSQUITO B
GLASFLUGEL STND LIBELLE 201, 201B
GLOBE GC 1A
GROB G 109, G 109B

GRUMMAN AA 5B
GULFSTREAM AA 5A, AA 5B

I
ICA BRASOV IS 28B2, IS 29D2

L
LAISTER LP 49
LAISTER KAUFFMANN LK10A
LET L 13 BLANIK
LET L 23 SUPER BLANIK
LET L 33 SOLO
LUSCOMBE 8A, 8C, 8D, 8E, 8F, T8F

M
MAULE M 4, M 4 T
MILES HAWK MAJ M2W
MOLINO OY PIK 20
MONOCOUPE 90AF
MOONEY M18C, M20, M20A, M20B
MORANE SAULNIER MS880B, MS893E
MORRISEY SHINN 2150-A
MUDRY CAP 10B

P
PETERSON J4
PEZETEL KR 03A
PEZETEL SZD 36A, SZD 41A, SZD 48 1, SZD 50 3, SZD 55 1, SZD 59
PILATUS B4PC11, B4PC11AF
PIPER J2
PIPER J3, J3C, J3C50, J3C65, J3C65S, J3F50, J3F60, J3F65, J3L65
PIPER J4A, J4E
PIPER J5A, J5C
PIPER L4B
PIPER PA11, PA11S
PIPER PA12, PA12S
PIPER PA14
PIPER PA15
PIPER PA16, PA16S
PIPER PA17
PIPER PA18, PA18 105, PA18 125, PA18 135, PA18 150, PA18A, PA18A 150, PA18AS 150, PA18S, PA18S 105, PA18S 135, PA18S 150
PIPER PA20, PA20 115, PA20 135, PA20 150, PA20S, PA20S 135
PIPER PA22, PA22 108, PA22 135, PA22 150, PA22 160, PA22S 150, PA22S 160
PIPER PA-28-140, PA-28-180, PA-28-160 CHEROKEE
PITTS S1S, S1T, S2A

PORTERFIELD CP65

R
REARWIN 185
REPUBLIC RC-3
ROLLADEN SCHNEIDER LS 1C, LS 4, LS 6B

S
SCHEIBE BERGFALKE II, II/55
SCHEIBE BERGFALKE III
SCHEIBE L SPATZ III, L SPATZ 55
SCHEIBE SF 26A, 27A
SCHEIBE ZUGVOGEL IIIB
SCHEMPP-HIRTH CIRRUS
SCHEMPP-HIRTH MINI NIMBUS B, C, HS7
SCHEMPP-HIRTH S, SHK 1, SH1
SCHEMPP-HIRTH STANDARD CIRRUS
SCHLEICHER ASK 13
SCHLEICHER ASW 12
SCHLEICHER ASW 15, ASW 15B
SCHLEICHER ASW 17
SCHLEICHER ASW 19, ASW 19B
SCHLEICHER ASW 20, ASW 20B
SCHLEICHER ASW 24
SCHLEICHER K7
SCHLEICHER KA 6 CR, KA 6E
SCHLEICHER K8B
SCHLEICHER RHONLERCHE II
SCHNEIDER WERKE GRUNAU GLIDER II
SCHWEIZER SGS 1 23
SCHWEIZER SGS 1 26, SGS 1 26A,
SGS 1 26B, SGS 1 26C,
SGS 1 26D, SGS 1 26E
SCHWEIZER SGS 1 34
SCHWEIZER SGS 1 35
SCHWEIZER SGS 1 36
SCHWEIZER SGS 2 32
SCHWEIZER SGS 2 33, SGS 2 33A
SCHWEIZER SGU 1 19
SCHWEIZER SGU 1 20
SCHWEIZER SGU 2 22, SGU 2 22C,
SGU 2 22CK, SGU 2 22E,
SGU 2 22EK
SCHWEIZER TG 3A
SCHWEIZER TSC 1A2
START & FLUG H101

STINSON HW 75, 10, 10A, 108, 108-1, 108-2, 108-3

T
TAYLORCRAFT A
TAYLORCRAFT BCS12D
TAYLORCRAFT BC12 65, BC12D, BC12D 4 85, BC12D 85, BC12D1
TAYLORCRAFT BC65
TAYLORCRAFT BF12 65
TAYLORCRAFT BL12 65, BL65
TAYLORCRAFT DCO65
TAYLORCRAFT F19, 19
TAYLORCRAFT F21
THURSTON TSC 1A
THURSTON TSC 1A1

V
VARGA 2150A
VOLAIRE 10

W
WAGGON/MASCH PHOEBUS B1, PHOEBUS C
WOLF HIRTH DOPPEL RAAB IV