



RECREATIONAL AVIATION AUSTRALIA

TECHNICAL MANUAL

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GRANDFATHER CLAUSE

All RAAus aircraft operating prior to Issue 4 of this Technical Manual may continue operating under grandfathering arrangements.

(A grandfather clause is a provision in which an old rule continues to apply to some existing situations, while a new rule will apply to all future cases. Those exempt from the new rule are said to have grandfathered rights or acquired rights.)

ABBREVIATIONS AND DEFINITIONS

This Section contains Abbreviations and Definitions used in this Manual. Where an abbreviation of limited use is used it will be defined in the associated Section. Abbreviations and definitions listed in the RAAus Operations Manual may be repeated here for ease of reference or when they have a different meaning e.g. AD may mean Airworthiness Directive or Aerodrome.

ABBREVIATIONS

ABI	Amateur Built Inspector (RAAus)
AC	Advisory Circular (CASA or FAA)
AD	Airworthiness Directive Issued by CASA or an overseas National Airworthiness Authority
AFM	Aircraft Flight Manual
AN	Airworthiness Notices issued by RAAus
AP	Authorised Person – holds a CASA Instrument of Appointment to perform certain specified airworthiness functions
APVD-P	Approved Person – An RAAus Maintenance Authority holder of the level specified within the particular Technical Manual section or subsection
ASTM	ASTM International (formally the American Society for Testing and Materials), referred to in AC 21.42 who issue standards such as the Standard Practice for Continued Operational Safety Monitoring of a Light Sport Aircraft.
BCAR-S	British Civil Airworthiness Requirements – Small Light Aeroplanes
CAA	Civil Aviation Authority UK
CAAP	Civil Aviation Advisory Publication
CAO	Civil Aviation Order
CAR	Civil Aviation Regulations 1988
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulations 1998
CoA	Certificate of Airworthiness
SCoA	Special Certificate of Airworthiness
CG	Centre of Gravity
CoR	Certificate of Registration
CoTA	Certificate of Type Acceptance (issued by RAAus)

ABBREVIATIONS (cont.)

ENG	Engine
EASA	European Aviation Safety Agency (Europe)
FAA	Federal Aviation Administration (USA).
FOT	First of Type
HGFA	Hang Gliding Federation of Australia
ICAO	International Civil Aviation Organisation
LAME	Licensed Aircraft Maintenance Engineer (Part 66)
LM	Line Maintenance
LSA	Light Sport Aircraft
E-LSA	Experimental Light Sport Aircraft
MA	Maintenance Authorisation/Authority
MARAP	Modification And Repair Approval Process
MOS	Manual of Standards (CASA)
MTOW	Maximum Take-off Weight
NAA	National Airworthiness Authority. This is the authorised regulatory body responsible for the administration of aircraft standards and certification of an ICAO Contracting State
PFFI	Pre Flight Final Inspection (a TECH Form)
POH	Pilot's Operating Handbook
PM	Pilot Maintenance
RACR	Recreational Aircraft Condition Report (a TECH Form)
RAAus	Recreational Aviation Australia Ltd.
SB	Service/Safety Bulletin - Airworthiness document issued by an aircraft or component manufacturer
SI	Service/Safety Instruction - Airworthiness document issued by an aircraft or component manufacturer
SFP	Special Flight Permit
TA	Type approval
TAC	Type Acceptance Certificate issued by CASA
TC	Type Certificate issued by CASA or a NAA of an ICAO member state.
UL	Ultralight Aircraft (not LSA or E-LSA) – early terminology
W&B	Weight and Balance

DEFINITIONS

Closely Settled Area

See CAO 95.55

In relation to an aeroplane, means an area in which, because of:

- (a) man-made obstructions such as buildings and vehicles; and
- (b) the characteristics of the aeroplane; the aeroplane could not be landed without endangering the safety of persons unconnected with the aeroplane or damaging property in the area.

Maintenance Authentication

Maintenance Authentication is the action of signing the aircraft log book by a suitably qualified person underneath the listing of all maintenance carried out at that time and formally indicating that the maintenance conducted at that time is to the standard specified in the RAAus Technical Manual.

All maintenance must be authenticated by an appropriate person as specified in this RAAus Technical Manual. Persons authenticating maintenance are to sign the aircraft log book, print their name and initials, their RAAus membership number and the date they signed the document.

Recognised Foreign Countries & other agencies

Under CASR 21.010B, CASA recognises Type Certificates and Type Acceptance Certificates from the following countries: Canada, New Zealand, France, Federal Republic of Germany, Netherlands, United Kingdom, USA.

EASA (European Aviation Safety Agency) is also a recognised agency.

Recognised Standard Parts

Lists of commercially available parts which do not require separate substantiation where such substantiation is required. The designer of the part is responsible for specifying the purpose intended for the part.

Recognised Standard

Any Australian or international aircraft, aircraft equipment, aircraft operational, and airworthiness standard acceptable to CASA.

RAAus Technical Manual

The RAAus Technical manual means a manual acceptable to CASA that is issued by RAAus and contains:

- Airworthiness, design and maintenance standards in accordance with CAOs 95.10, 95.32, 95.55;
- Any aeronautical practices, test procedures and processes, in respect of aeroplanes registered with RAAus;
- Aircraft Registration processes
- The responsibilities of the Technical Manager.

SECTION 1.1

TECHNICAL POLICY

- 1.1 Civil Aviation Orders (CAO) 95.10, 95.32 and 95.55 require that all Recreational Aircraft technical activities be specified in the Recreational Aviation Australia Ltd. (RAAus) Technical Manual, which contains RAAus Technical Policies and Procedures.
- 1.2 In the complementary Constitutional Rules, each member of the Association shall be subject to all the obligations pursuant to the Constitution & Rules. This Technical Manual forms one of those obligations. For these reasons, Recreational Aircraft operators, maintainers and all other persons associated therewith are to comply with the requirements of this Manual.
- 1.3 The activities of RAAus are met, in part, by compliance with the Operations Manual and Technical Manual, both of which are published and amended following acceptance by the Civil Aviation Safety Authority. RAAus administers the content of the Operations Manual and the Technical Manual. The Operations Manual contains the procedures and instructions necessary to ensure the safe operation of aeroplanes registered with RAAus. The Technical Manual contains airworthiness, design and maintenance standards and aeronautical practices, test procedures and processes in respect of aeroplanes registered with the RAAus.

Owners of Recreational Aircraft are responsible for ensuring the standards of this manual are met and maintained. Registration of an aircraft by RAAus is not in itself a certification that the aircraft is airworthy. Similarly, the standards for operation of Recreational Aircraft are prescribed by the provisions of the Operations Manual, the Technical Manual, and other applicable Regulations. Pilots in Command of Recreational Aircraft are responsible for the operation of these aircraft in accordance with the standards provided for in the Pilots Operating Handbook, the RAAus Operations and Technical Manuals, and other applicable Regulations as amended from time to time.

- 1.4 This Manual and its supplements, annexes and associated TECH FORMS are the recognised documents for the control of Recreational Aircraft technical activities.
- 1.5 For amendments to this manual, see the RAAus Policy on Document Review Process.
- 1.6 Members should keep their Technical Manual in a suitable folder. Alternatively, the manuals may be stored electronically for ease of reference.
- 1.7 Recreational aircraft technical activities which may be undertaken by members include design, development, manufacture, repair, modification and overhaul. This manual provides RAAus guidance for the conduct of those activities. This manual will contain airworthiness, maintenance and technical policy and procedures relevant to Recreational Aircraft operations.
- 1.8 The RAAus Board and the Technical Manager shall be the sole authority for the interpretation of all or part of this Manual. Arbitration, if necessary, will be conducted by the RAAus Board and will be final. Appeals may be heard in accordance with the RAAus disciplinary and complaints handling process.

SECTION 2.1

TECHNICAL MANAGER'S DUTY STATEMENT

- 1.1 The Technical Manager is responsible through the CEO to the RAAus Board for the oversight of all technical matters. The Technical Manager is delegated by the Board for the oversight of the RAAus aircraft Register. Technical matters may include matters relating to aeronautical engineering, aircraft manufacture, aircraft maintenance, related legislation and quality control.
- 1.2 The Technical Manager's duties include, but are not limited to:
- (a) Preparation, implementation and development of recommendations on aeronautical engineering, aircraft manufacture and maintenance, relevant legislation and quality control policy on behalf of or for the RAAus Board.
 - (b) Preparation and oversight of changes to the RAAus Technical Manual, RAAus Airworthiness Notices, Safety Bulletins and other technical documentation and correspondence.
 - (c) Oversight of the accreditation system for the conduct of aircraft maintenance by RAAus members.
 - (d) Monitor technical trends in recreational aviation in Australia and overseas.
 - (e) Monitor the standard of recreational aviation engineering and maintenance throughout Australia and overseas to advise the RAAus Board on acceptable aeronautical standards and practice.
 - (f) Oversight of technical functions between RAAus, other aviation and engineering organisations, and the Civil Aviation Safety Authority (CASA).
 - (g) Investigate breaches of technical policy and implement remedial action or recommendations for appropriate action to the RAAus Board.
 - (h) Manage and provide technical advice and recommendations to the RAAus Board and RAAus members relating to the findings of accidents and incidents and their investigation.

- (i) Develop, implement and monitor an appropriate and practicable technical training system for RAAus members.
- (j) In consultation with the RAAus Operations Manager, advise on flight test schedules and limitations associated with amateur and factory built aircraft, and maintenance activities.
- (k) Develop and maintain a technical library of aircraft data for which the RAAus has responsibility and other material where the retention of such material would be in the interests of RAAus members.
- (l) Represent RAAus at meetings, conferences, forums and exhibitions as directed by the CEO.
- (m) Action all RAAus Board directives promptly and maintain regular contact with the CEO.
- (n) In the case of a breach of the procedures and/or regulations set out in this manual, or amendments to this manual, or the relevant CAOs, and following full investigation by a person appointed by the Technical Manager, the Technical Manager may restrict, suspend or cancel any, or all, maintenance authorities held by the offending authority holder.

1.3 The Technical Manager may consider for approval, any matter not covered at all, or adequately, within this manual. Anything outside this manual may require consultation with CASA before any approvals are given. Such approvals may result in amendments to this manual where deemed appropriate and of benefit to RAAus and its members.

SECTION 3.1

AMATEUR BUILT AND KIT BUILT AIRCRAFT (NON E-LSA)

(Low momentum recreational aeroplanes, weight shift controlled aeroplanes, & powered parachutes, three-axis recreational aeroplanes)

Under a Grandfather clause all amateur built aircraft whose construction commenced prior to 01/08/2016 may complete the amateur built registration process under issue 3 of the RAAus Technical Manual or may comply with this section. All amateur built aircraft where construction commences after 01/08/2016 must comply with this section.

1 INTRODUCTION

- 1.1 CAO 95.10 provides for the operation of certain amateur built single place low momentum recreational aeroplanes.
- 1.2 CAO 95.32 provides for the operation of certain amateur built single or two place weight shift controlled aeroplanes and powered parachutes.
- 1.3 CAO 95.55 provides for the operation of certain amateur built single or two place recreational aeroplanes.
- 1.4 The definition of an RAAus Amateur Built Aircraft is an aircraft that has been or is being built by an individual or group of individuals, for educational and or recreational purposes, and the major portion of the aircraft has been completed by the builder/s. Evidence is to be supplied in the form of a builders log.

A builder's log records the details of the aircraft's construction. A log should contain matters such as the date of the work, the work performed, any assistance received, the hours worked for that session, details of any stage inspections conducted, any other pertinent information. Sufficient photographs should be taken during construction to support the builders log.

- 1.5 Members intending to build and register an Amateur Built Aircraft with RAAus should obtain a copy of **FAA AC 43.13-1B Acceptable Methods, Techniques and Practices – Aircraft Inspection and Repair** available from the FAA website www.faa.gov and at various aviation suppliers or book stores.

The document contains valuable advice regarding not only inspection and repair as the title suggests, but practical information for constructors of aircraft.

- 1.6 The design of an Amateur Built Aircraft under this Section need not be of an approved design, or be constructed from certified type materials. The aircraft can be of any origin, including an existing amateur built aircraft that has been modified or altered in some manner, but remains within the weight and stall speed requirements set out in CAO 95.10, 95.32 or 95.55 and complies with all relevant and current Advisory Circulars, kit manufacturer's bulletins and RAAus Airworthiness Notices. Essentially the choice of aircraft type and model, including engine(s), is at the discretion of the builder.
- 1.7 Two seat aircraft which comply with the requirements of this section may also be eligible to be used for the purpose of training the builder (or each person in a group of builders) for the issue of a Pilot Certificate. Such aircraft must have satisfactorily completed all required flight testing and a **Permit to Fly – Ongoing** must have been issued.

2 IMPLEMENTATION

- 2.1 At the concept stage, RAAus should be advised for builders of recreational aeroplanes to check with RAAus, SAAA or CASA to establish if a chosen kit or design has been previously accepted under the provisions of CAO 101.28 (ABAA - Amateur Built Aircraft Acceptance). If the chosen kit/design has not been previously accepted, then it will be required to establish that the kit/design complies with the major portion rule. If it complies, construction of the aircraft may commence. RAAus should be advised of the commencement of construction (to minimise the possibility of problems at a later stage) using **TECH FORM 001 – NOTICE OF INTENTION TO BUILD AMATEUR BUILT AIRCRAFT**.
- 2.2 It is required that an RAAus registration number be applied for using **TECH FORM 011 – REGISTRATION NUMBER ALLOCATION**. See the current schedule of fees payable. Having a registration number allocated to a project greatly assists RAAus office functions, opening of an aircraft file, etc. **Note: This is a registration number allocation only and is not in itself permission to fly the aircraft.**
- 2.3 All RAAus Amateur Built Aircraft registered in accordance with this Section will bear the registration numbers as described in Section 5.1 of this manual.

2.4 STAGE INSPECTIONS

In order to provide assurance of appropriate processes and construction techniques during the build process, a minimum of three stage inspections must be carried out by an RAAus L1 (approved by the Technical Manager), L2 or L4. These stage inspections of the project should be conducted at key points of the construction of the aircraft, including, but not limited to, prior to closing of structures, engine installation, painting, rigging of primary flight controls and or wings, etc. Once each inspection is complete, advice of completion is to be supplied by the stage inspector to RAAus using **Tech Form 002 - Stage Inspection Amateur Built Aircraft**

within 14 days. The form is retained in the aircraft file at RAAus. The completion of this inspection does **NOT** guarantee the airworthiness or integrity of the aircraft, or its systems, but is simply an independent inspection.

- 2.5 A construction log book of the build, including photographs, etc, must be maintained for the entire project. The log book will be viewed by the RAAus Amateur Built Inspector to assess the construction of the project, the detail of work carried out by the builder, and any work carried out on behalf of the builder by a third party (for example, specialised welding, painting.)

Where a partially completed project is obtained, the builder/s must also obtain from the seller their construction logbook. Where no log book is available, the data obtained during the three mandatory inspections listed above will be used to verify the construction process. Where there are no records of inspections available, the owner assumes total responsibility for all work completed to date.

3 EQUIPMENT REQUIREMENTS

3.1 Equipment requirements for an RAAus aircraft are:

- (a) The aircraft will have a fireproof data plate (i.e. stainless steel) with the aircraft serial and registration numbers engraved/etched that identifies the aircraft, attached to the airframe. A photo of this data plate is to be supplied to RAAus as part of the registration and re-registration process.
- (b) As a minimum, engine monitoring instruments appropriate for the installed engine, Airspeed Indicator, Altimeter, Magnetic Compass.
- (c) Seat belts shall be fitted to each seating position. Commercially available automotive or aviation seat belts are acceptable providing they have a minimum of three points of attachment. Lap belts only are not acceptable.
- (d) Markings are required on each flight and engine instrument indicating the safe operating range for that particular aircraft. The safe operating ranges must also be contained in the aircraft log book or flight manual as appropriate and can be obtained by flight testing, or from kit or plans designer.
- (e) Cockpit warning placard/label(s) must be affixed to each aircraft in a place where it is conspicuous to and can easily be read by each occupant seated in the aircraft. The required placards/labels are detailed in Section 9 of this manual.
- (f) If the aircraft is fitted with a retractable undercarriage then there must be an indicating system, visible to the pilot in command, to indicate when the wheels are up and locked and when the wheels are down and locked.

3.2 WEIGHT AND BALANCE

Supply to RAAus. Refer to Section 10 of this Manual.

3.3 PRE-FLIGHT FINAL INSPECTION

An RAAus L4 Amateur Built Inspector must supervise the owner's thorough inspection of the aircraft prior to applying for a Permit to Fly. If no L4 is available, an L2 may contact the Technical Manager for a one-off approval to supervise the inspection. This inspection will include a basic review of the weighing and weight & balance calculations for the Centre of Gravity (CG) limits, general appearance and quality of construction, compliance with all current and relevant Advisory Circulars, kit manufacturer's Service Bulletins and any RAAus Airworthiness Notices (ANs). The builder is required to check off all the applicable items listed in **TECH FORM 007 - PRE FLIGHT FINAL INSPECTION**.

3.4 PERMIT TO FLY

Issue 4 of this Technical Manual brings in the *Permit to Fly* scheme for Amateur Built aircraft.

The builder must complete and submit **TECH FORM 031 – APPLICATION FOR PERMIT TO FLY – TEST FLYING** to the Technical Manager. The Technical Manager or Assistant Technical Manager will issue a **Permit to Fly – Test Flying (Tech Form 032)** the aircraft for the purpose of test flying to establish satisfactory and safe operation.

The following conditions will apply:

- (a) All flights are to be conducted under the day Visual Flight Rules (VFR).
- (b) Flight over closely settled areas are not permitted.
- (c) Flight Test area is within 25nm of _____ airfield (or other area as described).
- (d) The minimum flight test hours to be flown are: _____ hours.
- (e) No passengers or other flight crew are permitted.

- (f) Aircraft is to be flight tested in accordance with the nominated test schedule named as: _____
- (g) Aircraft is to be maintained and operated in accordance with the aircraft and engine operating manuals, instructions and limitations (where available) at all times.
- (h) Aircraft may be flown by the following nominated pilots

- (i) This permit to Fly must be carried in the aircraft at all times.
- (j) Other conditions (as listed by the Technical Manager)

3.5 TEST FLYING HOURS

Aircraft of known or proven design, fitted with a commercially available aircraft engine and propeller combination require a minimum of 25 hours of flight testing. All other aircraft require a minimum of 40 hours of flight testing.

- 3.6 Test flying shall be undertaken in accordance with the RAAus Flight Test Guide for Amateur Built Aircraft, or an alternative approved by the Technical Manager.

4 ACTION REQUIRED OF THE BUILDER AT THE COMPLETION OF THE FLIGHT TEST PERIOD

- 4.1 Upon satisfactory completion of the test flying phase, and to be eligible to receive full RAAus registration, TECH FORM 008 – APPLICATION FOR PERMIT TO FLY – ONGOING is to be forwarded to the Technical Manager. Once received and assessed by the Technical Manager, full registration may be issued and the Technical Manager will issue a Permit to fly – Ongoing (Tech Form 033).

**NO PASSENGER MAY BE FLOWN IN THE AIRCRAFT
UNTIL SUCH TIME AS THE TECHNICAL MANAGER HAS ISSUED THE
*PERMIT TO FLY - ONGOING.***

5 EXISTING AIRCRAFT

- 5.1 Any Amateur Built aircraft previously registered with RAAus, CASA, or imported from an ICAO state may be eligible for operation as an Amateur Built Aircraft with RAAus provided that the aircraft:
- (a) was originally built by an individual (or individuals) for recreational and educational purposes and the majority of the construction was completed by that person/those persons; and
 - (b) meets the criteria of CAO 95.10, 95.32 or 95.55.
- 5.2 Such aircraft may require a test flying phase on a Permit to fly – Test Flying before moving to a Permit to fly – Ongoing, if any significant repairs or changes have been made, if engine and/or propeller have been changed since it last flew.

SECTION 3.2

FACTORY BUILT TYPE CERTIFIED (or accepted) AIRCRAFT

(weight shift controlled aeroplanes, & powered parachutes, recreational aeroplanes)

1 INTRODUCTION

- 1.1 CAO 95.32 provides for the operation of certain single or 2 place weight shift controlled aeroplanes and powered parachutes.
- 1.2 CAO 95.55 provides for the operation of certain single or 2 place recreational aeroplanes.

2 REGISTRATION

- 2.1 An RAAus registration number must be applied for, using **TECH FORM 011 – REGISTRATION NUMBER ALLOCATION**
See the current schedule of fees payable.

Note: this is a registration number allocation only and is not in itself a permission to fly the aircraft.

- 2.2 All RAAus Aircraft registered in accordance with this Section will bear the registration numbers as described in Section 5.1 of this manual.
- 2.3 Apply for registration using **TECH FORM 004**

3 CERTIFICATE OF REGISTRATION REQUIREMENTS

3.1 Documentation

- (a) Evidence that the aircraft indeed meets the requirements of the relevant CAO.
- (b) For second-hand aircraft, if the original Weight & Balance report is no longer available, a Weight and Balance Report as per Section 10 of this Manual will be required.
- (c) An Aircraft Flight Manual, Pilot's Operating Handbook, or operating instructions and limitations placarded in the aircraft in view of the pilot, is required.
- (d) An Aircraft Maintenance Manual (by whatever name) is required.
- (e) All new aircraft are to have been manufacturer test flown and some evidence of this is required.

4 PERMIT TO FLY

- 4.1 Issue 4 of this manual brings in the Permit To Fly scheme for Factory Built Type Certified (or accepted) aircraft.

Upon registration, the Technical Manager will issue **TECH FORM 034 – PERMIT TO FLY TYPE CERTIFIED (or accepted) AIRCRAFT.**

SECTION 3.3

LIGHT SPORT AIRCRAFT (LSA)

1 INTRODUCTION

- 1.1 This Section details applications for registration of a Light Sport Aircraft (LSA) that complies with the provisions of either CAO 95.32 or 95.55.
- 1.2 Owners of LSA must familiarise themselves with all requirements detailed in CASR 1998 Part 21 and CASA Advisory Circulars AC 21.41(**n**) and AC 21.42(**n**). (*where (n) = latest edition*)
Owners and operators of LSA must familiarise themselves with all requirements detailed in CAR 262APA “Light Sport Aircraft Operating Limitations.”

2 SPECIAL CERTIFICATE OF AIRWORTHINESS

- 2.1 This certificate is for Production LSA. These aircraft may be used for private operations, flying training and if so equipped and approved, glider towing. The Special Certificate of Airworthiness remains valid while the aircraft remains registered and provided the manufacturer continues to exist and continues to provide continuing airworthiness requirements, the aircraft is maintained and or repaired in accordance with the requirements of the manufacturer, and the aircraft has not been modified unless approved by the manufacturer.
- 2.2 Special Certificates of Airworthiness can only be issued by a CASA Authorised Person, or CASA. No RAAus maintenance authority holder is eligible to issue such certificates unless they hold a CASA Instrument of Appointment to issue such certificates.
- 2.3 For registration, RAAus must be satisfied that the aircraft complies with the standards and conditions of acceptance under the LSA criteria as described in AC 21.41(**n**) and AC 21.42(**n**). (*where (n) = latest edition*)
- 2.4 Owners of LSA aircraft must apply for a registration number using TECH FORM 011. Upon allocation of a registration number full registration can be applied for using TECH FORM 010

SECTION 3.4

EXPERIMENTAL LIGHT SPORT AIRCRAFT (E-LSA)

1 INTRODUCTION

- 1.1 This Section details applications for registration of an Experimental Light Sport Aircraft (E-LSA) that complies with the provisions of either CAO 95.32 or 95.55.
- 1.2 Owners of E-LSA must familiarise themselves with all requirements detailed in CASR 1998 Part 21 and CASA Advisory Circulars AC 21.41(n) and AC 21.42(n). (*where (n) = latest edition*)

2 EXPERIMENTAL CERTIFICATES

- 2.1 Experimental certificates are available for the following aircraft:

Kit built LSA – Before an experimental certificate for a LSA can be issued, the manufacturer must have produced a production aircraft of the same model issued with a Special Certificate of Airworthiness. These aircraft can only be used for private purposes.

Non-Compliant Production LSA – The experimental certificate provides a means for aircraft that no longer comply with the requirements of the Special C of A for LSA. These aircraft can only be used for private purposes. There are a number of circumstances where this could arise such as the production aircraft has been modified without the manufacturer's approval or has not been maintained in accordance with the manufacturer's requirements. Other circumstances may be that the manufacturer has gone out of business and no suitable persons or organisations have taken over the continuing airworthiness functions for the aircraft, or the aircraft no longer meets the LSA standards. The aircraft must still meet the base definition of LSA within Australian regulations.

- 2.2 **Experimental Certificates** can only be issued by a CASA Authorised Person, or CASA. No RAAus maintenance authority holder is eligible to issue such certificates unless they hold a CASA Instrument of Appointment to issue such certificates.
- 2.3 For registration, RAAus must be satisfied that the aircraft complies with the standards and conditions of acceptance under the E-LSA criteria as described in AC 21.41(n) and AC 21.42(n) (*where (n) = latest edition*)

SECTION 4.1

CAO 95.10 AEROPLANE – OWN DESIGNS

1 INTRODUCTION

- 1.1 CAO 95.10 permits the operation of a privately built single place low momentum recreational aeroplane designed, built and owned by 1 to 4 persons. The aircraft must meet the criteria specified within CAO 95.10. All sections of TECH FORM 025 application for registration and the aircraft data sheet TECH FORM 085 must be completed before the aircraft will be accepted for registration. RAAus must be satisfied that the aircraft complies with the weight and wing loading requirements of the Order.

2 DESIGN AND CONSTRUCTION

- 2.1 RAAus sets no design criteria. Builders are free to design as they wish, and build from any materials they wish.

3 SAFETY EQUIPMENT

- 3.1 A seat belt set of commercially available automotive or aviation shoulder harness type shall be fitted that has a minimum of three points of attachment. Points of attachment should be such that a reasonable person/pilot would have confidence in them.

4 EMPTY WEIGHT

- 4.1 The empty weight of each individual aircraft will be specified by an RAAus “qualified weigher”, as will the fuel capacity and payload allowance. A pilot weight of 90Kg will be used.
- 4.2 The sum of the empty weight, 90Kg pilot weight, fuel capacity in Kg and payload allowance must total less than 300Kg, and result in a calculated wing loading of less than 30Kg per sq m.

5 FUEL CAPACITY

- 5.1 If the fuel capacity nominated in accordance with section 4 above is less than the physical fuel tank capacity, the volume and level of fuel nominated must be permanently marked on the fuel tank and also on any visible means of determining the level of fuel in the tank. The nominated fuel tank capacity must not be less than 15 litres unless specifically approved by the RAAus Technical Manager.

6 WEIGHT CERTIFICATION

- 6.1 On application for registration, the qualified weigher must complete and sign the weight verification TECH FORM 083.

7 IMAGES

- 7.1 Images showing the left and right hand side fuselage registration markings must be submitted with each registration application. Refer to section 5.1 for registration marking size and location.

8 PLACARDS

- 8.1 It is a requirement that the warning placard as described in Section 9.1 be affixed to the aircraft in such a way that it is clearly visible and legible to any person occupying the cockpit seat.

SECTION 4.2

CAO 95.10 AEROPLANE – APPROVED KITS

1 INTRODUCTION

- 1.1 CAO 95.10 permits construction of a privately built single place low momentum recreational aeroplane from an approved kit.
- 1.2 CAO 95.10 defines ***approved kits*** for construction of an aeroplane in this category, which are summarised as follows:
- (a) the kit was manufactured by the holder of a certificate of approval for the kit; or
 - (b) the kit was manufactured by an approval given by CASA; or
 - (c) the kit was exported to Australia with a certificate, acceptable to CASA, that relates to the airworthiness of the design; or
 - (d) RAAus or the HGFA have issued a certificate stating the kit meets the respective standards set out in the associated technical manuals.

2 DESIGN AND CONSTRUCTION STANDARDS

- 2.1 RAAus sets no design standards. Kit manufacturers are free to design as they wish, and supply any materials they wish.
- 2.2 Performance and Handling. The manner in which all controls are used shall be determined and recorded in sufficient detail to establish that the flight characteristics are able to be repeated by pilots of average ability. Stall speed and maximum speed demonstrations are to be conducted in accordance with the method outlined in the RAAus Flight Test Guide.

3 SAFETY EQUIPMENT STANDARDS

- 3.1 A seat belt set of commercially available automotive or aviation shoulder harness type shall be provided that has a minimum of three points of attachment. Points of attachment should be such that a reasonable person/pilot would have confidence in them.

4 SALE OF APPROVED KITS

- 4.1 A manufacturer or agent must not sell a CAO 95.10 aircraft kit until that kit has been approved in writing by RAAus, or has other approval as detailed in para 1.2 above.
- 4.2 Each kit offered for sale is to include all of the following items:
- (a) a copy of the RAAus (or other) kit approval
 - (b) an assembly manual or building instructions
 - (c) a Flight Manual or Pilots Operating Handbook
 - (d) a maintenance manual
 - (e) a parts list or catalogue

5 APPROVAL OF A KIT TO BE BASED ON A HISTORY OF SAFE OPERATION

- 5.1 Approval of a kit for a CAO 95.10 low momentum recreational aeroplane type must be based on a demonstrated history of safe operation of that type.
- 5.2 Any person may apply to RAAus for approval of a CAO 95.10 aircraft kit.
- 5.3 For all aircraft, satisfactory history of operation of one prototype plus at least one identical version for periods of 100 flight hours each is an acceptable basis to apply for approval of the kit for the aircraft type. The applicant is responsible for providing evidence to RAAus of a history of safe operation for the type.

6 CONSIDERATIONS

- 6.1 The history of safe operation of an aircraft type already operating overseas must include an analysis of:
- (a) published flight test reports.
 - (b) incident and accident reports attributed to an aircraft related issue.
 - (c) defect reports. Significant defects are to be documented, repair schemes developed by the manufacturer and incorporated into the kit.
- 6.2 Substantiation of flying hours - flying hours to be used for substantiating a history of safe operation are to be formally documented:

- (a) when the aircraft type is of overseas origin evidence that the required number of aircraft have flown the required number of hours is also to be documented; and
- (b) the Australian agent or representative is responsible for the provision of certified statements from owners/builders overseas attesting to the number of flying hours accrued on examples of the aircraft.

6.3 Performance and handling - must be such that:

- (a) the aeroplane conforms to the requirements specified in the CASA Flight Test Guide for assessment of Amateur-Built Aircraft accepted under an ABAA, or an equivalent overseas document accepted by RAAus; and
- (b) a qualified pilot of average ability should have no difficulty in controlling the aircraft at all times.

7 APPLICANT PROCEDURE

7.1 The applicant shall arrange to present a sample of the aircraft kit for which approval is sought, to the RAAus Technical Manager, or an L4 delegated by the Technical Manager.

7.2 **Documentation Required** - an applicant seeking approval of a kit shall provide the following data to the RAAus Technical Manager:

- (a) a detailed description of the aircraft including specification of its engine(s) and propeller(s);
- (b) a statement specifying the design standard to which the aircraft model was structurally tested, and the conditions and limitations during such testing, including the applied loads report and a report of the static testing undertaken;
- (c) a report of the flight tests undertaken. These should follow the format given in the RAAus Flight Test Guide;
- (d) a statement detailing operational limitations applicable to the aircraft type, including as a minimum:
 - empty weight and maximum take-off weight; and
 - centre of gravity range and loading data; and
 - stalling speeds, maximum manoeuvre speed, never exceed speed, flap and undercarriage extension speeds (if applicable); and

- drawings showing the general arrangement of the aircraft type and its sub-assemblies, which clearly define the material specifications, dimensions, rigging details, control surface deflections, tolerances, standard parts used and finish; and
- assembly or building instructions; and
- a maintenance manual if provided by the kit manufacturer; and
- a parts list or catalogue, preferably illustrated; and
- a flight manual or pilots operating handbook if provided by the kit manufacturer; and
- the aircraft kit manufacturers name and contact details.

8 EVALUATION

- 8.1 The RAAus Technical Manager (or delegated L4) will evaluate the kit contents, data, drawings and statements for conformance with CAO 95.10.
- 8.2 If the evaluation is found to be satisfactory, the RAAus Technical Manager must issue a certificate (or the like) which indicates that the kit is approved for RAAus registrations and operation.
- 8.3 The issue of the certificate will allow kits to be produced for sale provided they precisely replicate the aircraft for which the approval was given.
- 8.4 Any changes to the kit will require contact with the Technical Manager to ascertain whether those changes are major or minor in nature. Major changes will require a fresh application for an approval certificate. Minor changes can be addressed by way of a Service Bulletin, revised plans, or updated parts list etc from the kit Manufacturer.
- 8.5 If the kit evaluation is found to be unsatisfactory due to some technical reason, (for example, the aircraft would surely exceed the max take-off weight permitted under CAO 95.10) no approval certificate can be issued, however the aircraft may still be eligible for RAAus registration and operation as a CAO 95.55 amateur-built aircraft.

SECTION 4.3

CAO 95.10 AEROPLANE – SET OF DRAWINGS OR DATA PACKAGE (PLANS)

1 INTRODUCTION

- 1.1 CAO 95.10 permits construction of a privately built single place low momentum recreational aeroplane from a set of drawings or data package.
- 1.2 No approval of a set of drawings or data package is required, however, approval of a set of drawings or data package is available from RAAus.

2 DESIGN AND CONSTRUCTION

- 2.1 RAAus sets no design criteria. Designers are free to design as they wish, and specify any materials they wish.

3 SAFETY EQUIPMENT

- 3.1 A seat belt set of commercially available automotive or aviation shoulder harness type shall be fitted that has a minimum of three points of attachment. Points of attachment should be such that a reasonable person/pilot would have confidence in them.

4 SALE OF DRAWINGS (PLANS)

- 4.1 A person may sell sets of drawings or data package for a CAO 95.10 aircraft without RAAus approval, however, RAAus may issue such an approval if a person applies.
- 4.2 Any approval by RAAus will detail what documents the approval covers, for example, the issue number (or the like) of the drawings, any building manual included, any operating instructions included, any maintenance instructions included.

5 APPROVAL OF A SET OF DRAWINGS OR DATA PACKAGE TO BE BASED ON A HISTORY OF SAFE OPERATION.

- 5.1 Approval of a set of drawings or data package for a CAO 95.10 low momentum recreational aeroplane type must be based on a demonstrated history of safe operation of that type.

- 5.2 Any person may apply to RAAus for approval of a CAO 95.10 aircraft set of drawings or data package.
- 5.3 For all aircraft, satisfactory history of operation of one prototype plus at least one identical version for periods of 100 flight hours each is an acceptable basis to apply for approval of the kit for the aircraft type. The applicant is responsible for providing evidence to RAAus of a history of safe operation for the type.

6 CONSIDERATIONS

- 6.1 The history of safe operation of an aircraft type already operating overseas must include an analysis of:
- (a) published flight test reports.
 - (b) incident and accident reports attributed to an aircraft related issue.
 - (c) defect reports. Significant defects are to be documented, repair schemes developed by the manufacturer and incorporated into the kit.
- 6.2 Substantiation of flying hours - flying hours to be used for substantiating a history of safe operation are to be formally documented:
- (a) when the aircraft type is of overseas origin evidence that the required number of aircraft have flown the required number of hours is also to be documented; and
 - (b) The Australian agent or representative is responsible for the provision of certified statements from owners/builders overseas attesting to the number of flying hours accrued on examples of the aircraft.
- 6.3 Performance and handling - must be such that:
- (a) the aeroplane conforms to the requirements specified in the CASA Flight Test Guide for assessment of Amateur-Built Aircraft accepted under an ABAA, or an equivalent overseas document accepted by RAAus; and

- (b) a qualified pilot of average ability should have no difficulty in controlling the aircraft at all times.

7 APPLICANT PROCEDURE

7.1 The applicant shall arrange to present a set of the drawings or data package for which approval is sought, to the RAAus Technical Manager, or an L4 delegated by the Technical Manager.

7.2 Documentation Required - an applicant seeking approval of a set of drawings or data package shall provide the following data to the RAAus Technical Manager:

- (a) a detailed description of the aircraft including specification of its engine(s) and propeller(s);
- (b) a statement specifying the design standard to which the aircraft model was structurally tested, and the conditions and limitations during such testing, including the applied loads report and a report of the static testing undertaken;
- (c) a report of the flight tests undertaken. These should follow the format given in the RAAus Flight Test Guide.
- (d) a statement detailing operational limitations applicable to the aircraft type, including as a minimum:
- empty weight and maximum take-off weight;
 - centre of gravity range and loading data; and
 - stalling speeds, maximum manoeuvre speed, never exceed speed, flap and undercarriage extension speeds (if applicable); and
 - drawings showing the general arrangement of the aircraft type and its sub-assemblies, which clearly define the material specifications, dimensions, rigging details, control surface deflections, tolerances, standard parts used and finish;
 - assembly or building instructions, if available.
 - a materials list, if available
 - a flight manual or pilots operating handbook, if available
 - the aircraft designers name and contact details, if available.

8 EVALUATION

- 8.1 The RAAus Technical Manager (or delegated L4) will evaluate the set of drawings or data package for conformance with CAO 95.10.
- 8.2 If the evaluation is found to be satisfactory, the RAAus Technical Manager may issue a certificate (or the like) which indicates that the set of the drawings or data package is approved.
- 8.3 The issue of an approval certificate for a set of drawings or data package has no bearing on the ability of a person to sell a set of drawings or a data package without approval.
- 8.4 In order to retain approval, any changes to an approved set of the drawings or data package will require contact with the Technical Manager to ascertain whether those changes are major or minor in nature.
Major changes will require a fresh application for an approval certificate.
Minor changes can be addressed by way of a Service Bulletin, revised plans, or updated parts list etc from the designer.
- 8.5 If the set of drawings or data package evaluation is found to be unsatisfactory due to some technical reason, (for example, the aircraft would surely exceed the max take-off weight permitted under CAO 95.10) no approval certificate can be issued, however the aircraft may be eligible for RAAus registration and operation as a CAO 95.55 amateur-built aircraft.

SECTION 5.1

AIRCRAFT REGISTRATION

New registration prefixes have been introduced: for example 23-xxxx for LSA registered aircraft. Under a Grandfather clause all aircraft registered before 01/08/2016 will not require any change to their registration prefix. Aircraft registered after 01/08/2016 will be issued with the prefixes outlined in subsection 10. If aircraft owners wish to amend their prefix in line with issue 4 they may do so by submitting TECH FORM 086.

1 INTRODUCTION

1.1 This section describes the following matters:

- Registration forms
- Registration number allocation
- New registrations
- Designed Seating Configuration
- Renewal of registration
- Transfer of registration
- Transfer from VH and other registers
- Transfer from LSA to E-LSA
- Registration markings

2 FORMS

2.1 The applicable forms for all registration matters are:

- Tech Form 004 – Aircraft Registration Application – NON LSA
- Tech Form 006 – Weight & balance report – fixed wing aircraft
- Tech Form 010 – Aircraft Registration Application - LSA
- Tech Form 009 – Weighing report – CAO 95.32 Amateur Built or E-LSA aircraft
- Tech Form 011 – Registration number allocation
- Tech Form 013 – Recreational aircraft condition report
- Tech Form 026 – Transfer of registration
- Tech Form 028 – Damage/un-airworthy aircraft acquisition

3 REGISTRATION NUMBER ALLOCATION

- 3.1 All aircraft must have a registration number allocated prior to being registered. See the current schedule of fees.
- 3.2 Aircraft registration number allocation does not in itself permit an aircraft to be flown.

4 NEW REGISTRATIONS

- 4.1 Following allocation of a registration number, all aircraft must then be registered before flight. See the current schedule of fees.
- 4.2 Registrations may be:

Conditional

- for development of new 95.10 aircraft designs seeking RAAus type acceptance; or
- for amateur-built aircraft undergoing Permit to Fly flight testing; or
- for aircraft undergoing a MARAP approval process.

Full

- for flight tested amateur built aircraft; and
- all other aircraft.

5 RECORDED OWNERSHIP

- 5.1 Where RAAus has not been advised of change of ownership of an aircraft for some reason (for example, a deceased estate situation), and a subsequent person seeks to effect a change of ownership some time later, RAAus will accept a statutory declaration outlining the circumstances of acquisition of the aircraft and begin processing the transfer of registration in accordance with paragraph 7 of this section.

6 RENEWAL OF REGISTRATION

- 6.1 Approximately six weeks before an aircraft registration expires, RAAus sends out renewal information to the registered owner. Following the date of registration expiry, if no renewal has been received by RAAus,

a letter will be issued advising that the aircraft registration has expired and the aircraft is not to be flown until the registration is renewed.

- 6.2 Regardless of para 6.1, ***it is the registered owner of the aircraft that is ultimately responsible for managing and renewing their aircraft registration.*** If no renewal has been received shortly before the expiry date, the registered owner must contact RAAus.
- 6.3 RAAus may request further information based on changes made to the aircraft, data presented, photographic confirmation of warning placards and registration markings.
- 6.4 Total hours flown and total landings are required at each registration renewal.
- 6.5 A renewal fee payment must accompany each renewal request. See the current schedule of fees.
- 6.6 For LSA or E-LSA aircraft that have a CASA Certificate of Airworthiness or Experimental Certificate issued by an Authorised Person, it is vitally important that the aircraft registration does not lapse. **Such a certificate stops being in force if the aircraft is not registered.**

7 TRANSFER OF RAAUS REGISTRATION

- 7.1 Before a new registration certificate will be issued by RAAus, **TECH FORM 026 – TRANSFER OF RAAUS REGISTRATION** must be completed and submitted for the specific aircraft, along with a Recreational Aircraft Condition Report (RACR), including photos showing registration markings on the appropriate surfaces of the aircraft.
- 7.2 **TECH FORM 013 – RECREATIONAL AIRCRAFT CONDITION REPORT** is to be completed by an unrestricted Level 2 Maintenance Authority Holder (or a LAME **by prior arrangement** with the RAAus Technical Manager) and outlines the condition of the aircraft at the time of the inspection. The form is valid for a period of thirty days. A new inspection and Tech Form 013 is required each time the aircraft is sold. Photographs showing

all registration marks on the appropriate surfaces of the aircraft must also accompany Tech Form 013. Printed photographs must be signed and dated on the back. Emailed photographs are accepted as sent.

- 7.3 RAAus will review the forms and information received. If any of the documents are not completed correctly or are missing information, correct photographs etc, the registration transfer will be delayed until such time as the outstanding items are resolved.
- 7.4 Payment must be received before a transfer of registration will be processed. See the current schedule of fees.
- 7.5 Once all the documents are found acceptable, RAAus will issue a registration certificate to the new owner.
Note: A registration certificate is not to be regarded as proof of ownership. RAAus processes transfers in good faith based upon information supplied, and this does not mean that RAAus has formed a view or endorsed any claim as to the actual ownership of any aircraft.
- 7.6 For transfer of a damaged/un-airworthy aircraft as (or to be) “unregistered”, complete **TECH FORM 028 – DAMAGED/UN-AIRWORTHY AIRCRAFT ACQUISITION**. The aircraft **cannot** be flown until such time as the aircraft is registered, inspected and processed by RAAus.

8 TRANSFER FROM VH AND OTHER REGISTERS

- 8.1 RAAus is able to register and permit operation of various aircraft that were:
- (a) built under an Amateur Built Aircraft Approval/Acceptance (ABAA); or
 - (b) built as Amateur Built - Experimental (ABE) in Australia or overseas; or
 - (c) operated as a General Aviation registered aircraft in Australia or overseas; or
 - (d) operated in another sport aircraft class or category in Australia or overseas.

- 8.2 For any aircraft to be eligible for RAAus registration/operation, they must comply with all the basic provisions of CAOs 95.10, 95.32 or 95.55: seating capacity, weight limits, number of engines etc.

8.3 REGISTERING PROCEDURES

- 8.3.1 Owners of such aircraft who wish to register and operate their aircraft with RAAus must:

- (a) De-register the aircraft with whichever organisation it is currently registered with, **and receive written confirmation.**
- (b) Remove from sight, all previous registration marks displayed on the aircraft.
- (c) Have an RAAus registration number allocated **TECH FORM 011 – REGISTRATION NUMBER ALLOCATION.**
- (d) Re-paint or otherwise install/affix the allocated registration number on to the aircraft as per paragraph 10 of this section.
- (e) Register the aircraft with RAAus.

**TECH FORM 004 – REGISTRATION APPLICATION (non LSA) or
TECH FORM 010 – REGISTRATION APPLICATION (LSA) (as applicable) or
TECH FORM 025 AMATEUR BUILT TRANSFER FORM (as applicable).**

- 8.3.2 Supply copies of:

- (a) Other organisation's de-registration advice. (If not available, a Statutory Declaration declaring that the aircraft is not currently registered anywhere would suffice.)
- (b) Previous Certificate of Airworthiness, Experimental Certificate (or other similar document) for the aircraft
- (c) Most recent Maintenance Release if previously VH registered
- (d) Supply contents page of Flight Manual or Pilot's Operating Handbook
- (e) Weight and Balance report
- (f) Supply contents page of Maintenance Schedule/Manual (by whatever name),

8.3.3 For factory built aircraft (non LSA)

- (a) Follow the procedures detailed in Section 3.2 of this manual.
 - (b) For a new or first of type in Australia, follow the First of Type procedures of Section 8.1 of this manual
- or:

8.3.4 For LSA or E-LSA aircraft:

- (a) Apply to a CASA Authorised Person for a Special Certificate of Airworthiness or an Experimental Certificate.
- (b) Forward a copy of that certificate to RAAus.

9 TRANSFER FROM LSA TO E-LSA

9.1 If a Light Sport Aircraft (LSA) transfers from operating on a Special Certificate of Airworthiness to operating on an Experimental Certificate, the aircraft must have:

- (a) The additional “E” prefix mark applied, as outlined in paragraph 10.3 of this section.
- (b) A new Experimental Certificate issued by a CASA Authorised Person.
- (c) Photographs of all new marks and a copy of the new Experimental Certificate must be sent to RAAus within 7 days of issue, for inclusion in the aircraft file. A covering letter should be included.

10 REGISTRATION MARKINGS

10.1 This section applies to all new registrations from Issue 4 of this manual. All previous registration markings prior to this remain valid under a Grandfather clause.

(A grandfather clause is a provision in which an old rule continues to apply to some existing situations, while a new rule will apply to all future cases. Those exempt from the new rule are said to have grandfathered rights or acquired rights.)

10.2 Arabic numeral registration markings must be affixed to each aircraft in the following format:

Prefix (two digits) (or <i>E</i> two digits if E-LSA)	Hyphen	Registration Number (four digits)
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The registration prefix numerals of recreational aircraft are assigned as follows:

PREFIX	TYPE	CAO CLASS
E24	NON COMPLIANT EXPERIMENTAL LSA	95.32 OR 95.55
10	AMATEUR BUILT	95.10
17	KIT BUILT EXPERIMENTAL LSA	95.32 OR 95.55
18	AMATEUR BUILT W/S & PPC	95.32
19	AMATEUR BUILT	95.55
23	LSA	95.32 OR 95.55
24	TYPE CERTIFIED	95.55
25	EARLY ULTRALIGHT AEROPLANES (1985 ERA)	95.25 (SUPERCEDED)
26	G.A. TYPE CERTIFIED	95.55
28	EARLY AMATEUR BUILT	101.28
32	FACTORY BUILT WEIGHT SHIFT OR POWERED PARACHUTE	95.32 W/S OR PPC (including LSA)
55	FACTORY BUILT AEROPLANE	101.55 (non LSA)

10.3 Required marks:

(a) In the case of a CAO 95.10 or 95.55 fixed wing aircraft

On vertical surfaces:

- Both sides of the fuselage of the aircraft, between wings and tail; or
- Both sides of the vertical tail surfaces of the aircraft – or outside surfaces in the case of multiple surfaces (eg twin fins); and
- as nearly parallel as possible to the longitudinal axis of the aircraft.

Under Wings:

- not required, however, is permissible under port wing or across the span of both wings, with top edge forward.

(b) In the case of a CAO 95.10 or CAO 95.32 weight shift controlled or powered parachute:

On vertical surfaces:

- On any location on the side of the main structure

Under sail/canopy:

- not required, however, is permissible.

(c) For all aircraft:

Characteristics of numerals required:

- Height – all equal. Minimum 150mm. If 150mm is not physically able to fit on the aircraft structure, as large as practicable. (Must have written approval from the Technical Manager.)
- Font – solid (“outline” or “hollow” not permitted)
- Colour – must contrast with background sufficiently to be easily read.
- Slanting – permitted, not greater than 20 degrees
- Shadowing – permitted.

Additional mark for aircraft operating on an Experimental Certificate (E-LSA): An “E” prefix letter ahead of the normal registration numbers.

Examples:

- E24-1234

10.4 Changing marks from “old” to “new”

Aircraft owners wishing to switch from “previously required” registration marks to “currently required” (from Issue 4 of this manual) registration marks may do so, using **TECH FORM 086**, providing photographs of all new marks are sent to RAAus office within 7 days of changing, for inclusion in the aircraft file. A covering letter should be included.

10.5 Historical replicas:

Owners of aircraft which have been built to be operated as an historical replica may apply the Technical Manager for an exemption from displaying the normal registration marks of para 10.3 above.

Exemptions will not be granted to a regular sport aircraft merely painted up to somewhat resemble an historic aircraft.

An application shall be in writing, and include photographs of the aircraft, reasons why displaying the normal registration marks of para 10.3 would be inconsistent with the aircraft's use, details of the areas in which the aircraft is to be used or displayed, plus any other supporting information.

Any exemption granted will be in writing and will include conditions upon which the aircraft is exempt from displaying the normal registration marks, such as, but not limited to:

- (a) A requirement for the aircraft's registration mark to be clearly displayed within the cabin or cockpit, or on another location on the airframe as negotiated. (for example, under the tailplane).
- (b) Locations where the aircraft may be operated without displaying the normal registration marks
- (c) Whether the exemption is transferable to a new owner with the aircraft.
- (d) Whether the exemption expires on a given date, or by other reason.



RECREATIONAL
AVIATION AUSTRALIA

SECTION 6.1

AIRCRAFT MODIFICATIONS

**WARNING: Major modifications will make all other approvals null and void.
For example CAR 262AP(5) approvals.**

1 INTRODUCTION

1.1 This section describes modification matters for the following RAAus aircraft types:

- CAO 95.10, 95.32 & 95.55 Amateur Built
- CAO 95.32 & 95.55 LSA
- CAO 95.32 & 95.55 E-LSA
- CAO 95.32 & 95.55 Factory Built (NON-LSA/E-LSA)

2 FORMS

2.1 The applicable forms for all modification matters are:

- TECH FORM 019 – MODIFICATION TO CAO 95.10, 95.32 & 95.55 AMATEUR BUILT AIRCRAFT
- TECH FORM 014 – MODIFICATION AND REPAIR APPROVAL PROCESS (MARAP) – FACTORY BUILT AIRCRAFT

3 MODIFICATIONS

3.1 Modifications are classified as **minor**, or **major**.

A **minor change** is one that has no appreciable effect on the weight, balance, structural strength, reliability, operational characteristics, or other characteristics affecting the airworthiness of an aircraft, aircraft engine or propeller.

All other changes are *major changes*.

4 MODIFICATION – Origins

4.1 Modifications (both mandatory and optional) may originate from:

- aircraft manufacturer (as a Service Bulletin or the like)

- engine or propeller manufacturer (as a Service Bulletin or the like)
- kit manufacturer (as a Service Bulletin or the like)
- plans designer (as a Service Bulletin or the like)
- RAAus (as an Airworthiness Notice or other bulletin)
- CASA (as an Airworthiness Directive or other bulletin)

4.2 Modifications can also be “**owner generated**” - meaning, a modification that has been thought of, invented, manufactured, fitted or incorporated by the owner, without being directed or advised to do so by any other person or entity. This also would include the incorporation of a modification invented by someone else for their own aircraft.

5 APPROVAL OF MODIFICATIONS

5.1 Sub-sections 8 to 11 describe the required approval processes for the various CAO aircraft classes.

- Factory or designer mandated or optional **major** modifications need not be approved. Such modifications must incorporate only the approved parts and utilise the approved instructions and procedures.
- Owner generated (Not the original builder under 51%) major modifications must be approved.
- Factory, designer, or owner generated **minor** modifications generally do not require approval, though owners may need to be prepared to justify why a modification is not considered to be a major modification.
- The builder who has constructed (51%) of an amateur-built aircraft for his or her education and recreation is required to make an entry into the airframe logbook on the completion of any minor or major modifications and notify RAAus through a submission of an updated aircraft data sheet.

6 WHO MAY PERFORM MODIFICATION WORK

6.1 Holders of an RAAus Maintenance Authority appropriate to the class of operation (private / flying training / hire) may perform modification work. See Section 11 of this Technical Manual.

6.2 Aircraft and equipment manufacturers may perform factory authorised/ mandated modification work to their aircraft & products.

7 RECORDING OF MODIFICATION WORK

7.1 Appropriate maintenance log book entries must be made detailing the work performed, who performed it, their name, signature, membership number, maintenance authority level and the date. A copy of (or specific reference to) any aircraft or equipment manufacturer's approval document must also be included.

8 MODIFICATIONS TO AMATEUR BUILT AIRCRAFT

CAO 95.10, 95.32 & 95.55 (10-, 18-, 19- & 28- prefix registrations)

8.1 The amateur builder who has constructed the major portion (51%) of an amateur-built aircraft may modify the aircraft that they have completed. All modifications must be entered into the aircraft logbook and builders are to notify RAAus through the submission of an updated aircraft data sheet.

8.2 An owner (who was not the builder) of the amateur-built aircraft may incorporate an owner generated major Modification, however, **further flight is not permitted** until an RAAus L4 is consulted and has examined the aircraft, then provided the RAAus Technical Manager with their recommendations, and the Technical Manager has supplied written approval for further flight.

The modification must be described by the aircraft owner on Tech Form 019 and must include such things as:

- (a) plans, drawings, photographs of the modification; **and**
- (b) the reasons for the modification; **and**
- (c) describe how the modification may affect matters defined as a major modification; **or**
- (d) describe why the modification will not affect the safety of the aircraft; **or**
- (e) describe how the modification will enhance the safety of the aircraft.
- (f) a copy of the maintenance log book entry detailing all known matters regarding the modification

- 8.3 The L4 shall then examine the aircraft and will recommend to the Technical Manager
- (a) that the modification is acceptable with no further test flying; **or**
 - (b) that the modification is acceptable, with more ground testing or test flying.

8.4 If the L4 finds the modification unacceptable on the grounds of the safety of the aircraft, the Technical Manager will be notified.

8.5 Approval or refusal to approve modifications will be in writing from the Technical Manager.

8.6 FORMS

TECH FORM 019 – OWNER GENERATED MODIFICATION to CAO 95.10, 95.32 & 95.55 Amateur Built Aircraft shall be used for applying for modification approval.

9 MODIFICATIONS TO FACTORY BUILT WEIGHT SHIFT CONTROLLED AEROPLANES AND POWERED PARACHUTES CAO 95.32 (LSA)

MODIFICATIONS TO FACTORY BUILT RECREATIONAL AEROPLANES CAO 95.55 (LSA)

9.1 Only changes approved by the manufacturer are permissible, in accordance with any procedures or requirements advised by them. In respect to any changes to an LSA, after such changes it must still meet the definition of an LSA as defined in Regulations.

9.2 For a Light Sport Aircraft to remain operating on a Special Certificate of Airworthiness for hire and/or flight training, or private operations, owner generated major or minor modifications are **not** permitted by CASA regulations under any circumstances.

9.3 Modifications of any kind that have not been approved by the aircraft manufacturer will be no longer LSA compliant.

Further flight on the Special Certificate of Airworthiness is not permitted by CASA regulations and an Experimental Certificate must be obtained.

The aircraft then becomes an Experimental LSA (E-LSA).

9.4 Procedure:

The owner **must**:

- (a) Surrender their Special Certificate of Airworthiness to CASA or a CASA Authorised Person; **and**
- (b) Apply to CASA or a CASA Authorised Person for an Experimental Certificate, advising of the modification made or proposed to be made. (CASA or the CASA Authorised Person may charge a fee) ;**and**
- (c) affix a prominent “EXPERIMENTAL” placard as detailed in Section 9.1 of this manual; **and**
- (d) affix the passenger warning placard required by CAR 262AP(9); **and**
- (e) affix the “E” prefix letter to the aircraft registration markings; **and then**
- (f) only use the aircraft in private operations; **and**
- (g) if requiring to fly over the built-up area of a city or town, apply to an Authorised Person for such permission under CAR 262AP(5).

10 MODIFICATIONS TO WEIGHT SHIFT CONTROLLED AEROPLANES AND POWERED PARACHUTES CAO 95.32 (E-LSA)

MODIFICATIONS TO AIRCRAFT CAO 95.55 (E-LSA)

10.1 Existing Experimental Light Sport Aircraft (E-LSA) operating on an Experimental Certificate which are to have owner generated major modifications made, must advise CASA or a CASA Authorised Person with the view to obtain a new Experimental Certificate.

The owner **must**:

- (a) Notify CASA or a CASA Authorised Person (preferably the original person who issued the Experimental Certificate); and
- (b) Advise the nature of the modifications or proposed modifications; and
- (c) Apply for a revised Experimental Certificate and Annex of operating conditions and limitations. Additional test flying may be one of the revised operating conditions. The CASA Authorised Person may charge a fee.

SECTION 6.2

MODIFICATION AND REPAIR APPROVAL PROCESS (MARAP)

MODIFICATIONS TO FACTORY BUILT / TYPE CERTIFIED OR APPROVED WEIGHT SHIFT CONTROLLED AEROPLANES AND POWERED PARACHUTES CAO 95.32 (NON-LSA / E-LSA)

MODIFICATIONS TO FACTORY BUILT / TYPE CERTIFIED OR APPROVED AIRCRAFT CAO 95.55 (NON-LSA / E-LSA)

1. INTRODUCTION

- 1.1 The Modification and Repair Approval Process (MARAP) is for the consideration and possible approval of modifications or repairs to a non LSA/E-LSA factory built aircraft, for which a type certificate, a certificate of type approval, or an equivalent document has been issued by CASA, another national airworthiness authority (**NAA**) or a competent issuing authority. The proposed modifications or repairs are not:
- manufacturer approved; or
 - supported by Supplemental Type Certificate; or
 - supported by a CASR engineering review process.
- 1.2 The Modification and Repair Approval Process may be used in circumstances where there is no other means of approving:
- an engine model and type change
 - a propeller type change
 - an airframe change
 - an equipment change
 - a repair scheme
- (This list is not exhaustive)
- 1.3 While a CASR 21.M authorised person may not approve a modification under their design approval due to the certification basis of the aircraft,

RAAus acknowledges that such a person has the necessary knowledge, experience and qualifications to assess proposed modifications or repairs for these aircraft and make a determination as to the suitability of the proposal.

PROCESS

- 1.4 The RAAus member (applicant) is to:
- (a) Complete RAAus **TECH FORM 014 – APPLICATION FOR MODIFICATION OR REPAIR, FACTORY BUILT AIRCRAFT (NON LSA/E-LSA)** and provide any relevant supporting information. *(Note: further information may be requested by the Technical Manager or Subpart 21.M Approved Person after application has been received)*
 - (b) A Recreational Aircraft Condition Report (RACR) must be supplied with Tech Form 014 indicating the current status of the aircraft **prior** to any modifications or repairs being carried out.
- 1.5 The RAAus Technical Manager will:
- (a) Review the application.
 - (b) Seek advice from an appropriate CASA Subpart 21.M Authorised Person (or persons) as to the suitability or applicability of the proposed modification or repair.
 - (c) The Technical Manager or the Subpart 21.M Authorised Person (or persons) may then request additional information be supplied by the applicant to enable adequate assessment of the modification or repair.
 - (d) After the assessment and after consultation with the CEO of RAAus, the Technical Manager may:
 - (e) Issue an approval; or
 - (f) Refuse to issue an approval. Any refusal will be in writing and will explain the reasons for refusal. (RAAus will not approve

any modification without the support and acceptance of an appropriate CASA Subpart 21.M Authorised Person.)

1.6 The CASA Subpart 21.M Authorised Person assessment process:

- (a) They will review the proposal against the relevant standards and follow all processes as outlined in the CASA approved procedures for assessing modifications or repairs. The exception being that all references to CASA in their manual should be read as referring to RAAus for the purposes of this process.
- (b) The CASA Subpart 21.M Authorised Person is not required to formally approve the modification themselves. The intent is for them to provide a review of the information supplied by the applicant and offer a recommendation as to whether the proposed modifications appear sound. They are not expected to redesign the modification or repair – it will be assessed on the information provided by the applicant and will be assessed as acceptable, or not.
- (c) Once the CASA 21.M Authorised Person has assessed the design they will provide the RAAus Technical Manager with a written recommendation as to whether the modification or repair should be accepted.

1.7 Once the information is received, assessed and approved in accordance with the procedures as outlined in paragraph 1.6 of this section, an Experimental Certificate may be required. This must be sought from a CASA Authorised Person. The Experimental Certificate will assist the Technical Manager and CASA Subpart 21.M Authorised Person(s) with validation of the proposed modification or repair. The maximum duration of the Experimental Certificate will not exceed 12 months. The Experimental Certificate will provide any specific operational and maintenance requirements for the duration of the EC, such as, but not limited to:

- (a) The specific conditions operationally permitted for the aircraft;
and

- (b) If the aircraft is restricted to single seat operations; and
- (c) If the aircraft is restricted to location of operations (not over closely settled areas); and
- (d) If the aircraft is restricted from operations in CTA; and
- (e) If there are any additional maintenance requirements.

FURTHER ASSESSMENT AND APPROVAL PROCESS IF INITIAL APPLICATION REFUSED.

- 1.8 If RAAus does not approve a proposed modification, the aircraft owner will be advised of this, including an explanation of why, and the owner may freely choose to engage the professional services of a Subpart 21.M Authorised Person for assistance with a revised proposal. The applicant may then re-apply and submit any revised proposal for assessment.

FORMS

TECH FORM 014 – MODIFICATION AND REPAIR APPROVAL REQUEST is the form to be used by the member/applicant and forwarded with any supporting documentation to the RAAus Technical Manager for consideration.

2. UPON COMPLETION OF TESTING

- 2.1 Upon satisfactory completion of flight testing in accordance with the Experimental Certificate conditions issued, the aircraft owner must:
- (a) advise the Technical Manager in writing that the required flight testing has been satisfactorily completed; and
 - (b) supply copies of flight testing records or reports (if any), together with a copy of logbook entry regarding the modification or repair; and
 - (c) request finalisation of the MARAP process for the aircraft.

- 2.2 When received, reviewed and found to have met the objectives of the MARAP (para 1.2 of this section), the Technical Manager will issue a MARAP Certificate formally accepting the modification or repair, and the aircraft may resume normal ongoing operations. The modifications will determine if any additional conditions are required or not. The MARAP Certificate will form part of the aircraft's records, and must be kept with the aircraft logbook. For significant engine or propeller changes, a copy of the MARAP Certificate must also be retained within the aircraft's Flight Manual or Pilot Operating Handbook, along with any revised or additional operating instructions.
- 2.3 The Experimental Certificate issued for the flight testing will need to be surrendered (if it has not already naturally expired by date) to the CASA Authorised Person who issued the certificate, together with a covering letter detailing the reason for the return of the certificate, (completion of flight testing and finalisation of this process) and as a courtesy, advice about the flight testing undertaken. The Authorised Person will advise CASA of the cessation of the Experimental Certificate.

3. SUBSEQUENT AIRCRAFT

- 3.1 Owners of other identical aircraft wishing to incorporate a modification or repair already approved, will be able to obtain the MARAP Certificate from RAAus and then incorporate that modification or repair to their own aircraft. A fee may be payable. See the RAAus Schedule of Fees. Flight testing may not be required, however a post modification test flight(s) may be required to verify any operational changes at the Technical Managers discretion.
- 3.2 RAAus will make known all available MARAP Certificates approved under the MARAP process, so that members may consider incorporating such modifications or repairs.

SECTION 7.1

AIRCRAFT REPAIRS

1 INTRODUCTION

1.1 This section describes the following matters:

- Repairs to CAO 95.10, 95.32 & 95.55 amateur built aircraft
- Repairs to CAO 95.32 & 95.55 factory built aircraft (non-LSA)
- Repairs to CAO 95.32 & 95.55 aircraft (LSA)
- Repairs to CAO 95.32 & 95.55 aircraft (E-LSA)

2 GENERAL

2.1 The repair of aeronautical structures or systems requires specialist advice for what to do and good workmanship practices to complete the repair. Specialist advice may be available from the manufacturer or from a qualified and experienced professional (for example, L2, L4, a CASA approved welder).

2.3 The extent of repairs may be defined in manufacturer's or designer's repair manuals. However, where this is not the case and the repair is designed to return the structure or system to its originally specified state, **FAA AC 43.13-1B Acceptable Methods, Techniques and Practices – Aircraft Inspection and Repair** can be used (except for LSA) as authoritative repair method reference.

2.4 Where the repair does not return the structure or system to its originally specified state, then this **may** be classified as a modification. Refer to Section 6.1 of this manual.

3. MAJOR REPAIR CLASSIFICATION

3.1 A major repair is usually considered a repair that might appreciably affect mass, balance, structural strength, performance, power-plant operation, flight characteristics, or other qualities affecting airworthiness. A repair in this category normally requires some form of engineering analysis or assessment. The applicant should evaluate

the technical merit of a repair design proposal, and establish a clear understanding of the intended or consequential effect on the affected product. For example, it may not be appropriate to approve a repair that is purposely designed to be much stronger than the structure being repaired because the effect may be an undesirable change in the original structural load distribution. These practises are to be completed by a competent L2.

Airframe

Repairs to the following parts of an airframe and repairs of the following types, involving the strengthening, reinforcing, splicing, and manufacturing of primary structural members or their replacement, when replacement is by fabrication such as riveting or welding, are major airframe repairs. *(this list is not exhaustive)*

- Box beams
- Monocoque or semi-monocoque wings or control surfaces
- Wing stringers or chord members
- Spars
- Spar flanges
- Members of truss-type beams
- Thin sheet webs of beams
- Keel and chine members of boat hulls or floats
- Corrugated sheet compression members which act as flange material of wings or tail surfaces
- Wing main ribs and compression members
- Wing or tail surface brace struts
- Engine mounts
- Fuselage longerons
- Members of the side truss, horizontal truss, or bulkheads
- Main seat support braces and brackets
- Landing gear brace struts
- Axles and wheel rims
- Parts of the control system such as control columns, pedals, shafts, brackets, or horns
- Repairs involving the substitution of material
- The repair of damaged areas in metal or plywood stressed covering exceeding six inches in any direction

- The repair of portions of skin sheets by making additional seams
- The splicing of skin sheets
- The repair of three or more adjacent wing or control surface ribs or the leading edge of wings and control surfaces, between such adjacent ribs
- Repair of fabric covering involving an area greater than that required to repair two adjacent ribs
- Replacement of fabric on fabric covered parts such as wings, fuselages, stabilizers, and control surfaces
- Repairing of integral fuel tanks and oil tanks

Power plant

Repairs of the following parts of an engine and repairs of the following types, are major power plant repairs: *(this list is not exhaustive)*

- Separation or disassembly of a crankcase or crankshaft of a reciprocating engine equipped with an integral supercharger.
- Separation or disassembly of a crankcase or crankshaft of a reciprocating engine equipped with other than spur-type propeller reduction gearing.
- Special repairs to structural engine parts by welding, plating, metalizing, or other methods.

Propeller

Repairs of the following types are major propeller repairs: *(this list is not exhaustive)*

- Repairing or machining of steel hubs.
- Shortening of blades.
- Replacement of outer laminations on fixed pitch wood propellers.
- Repairing elongated bolt holes in the hub of fixed pitch wood propellers.
- Inlay work on wood blades.
- Repairs to composite blades.
- Replacement of tip fabric.

- Replacement of plastic covering.
- Repair of propeller governors.
- Overhaul of controllable pitch propellers.
- Repairs to deep dents, cuts, scars, nicks, etc., and straightening of aluminium blades.
- The repair or replacement of internal elements of blades.

4. REPAIRS TO AMATEUR BUILT AIRCRAFT (Excluding E-LSA) CAO 95.10, 95.32 & 95.55

- 4.1 Repairs to privately operated amateur built aircraft may be conducted by the holder of a Level One Maintenance Authority (or higher), using firstly, the kit manufacturer or designer's repair procedures, or secondarily, in accordance with repair methods and techniques detailed in **FAA AC 43.13-1B Acceptable Methods, Techniques and Practices – Aircraft Inspection and Repair**.
- 4.2 Appropriate maintenance log book entries must be made detailing the work performed, who performed it, their name, signature, membership number, maintenance authority level and the date. A copy of (or specific reference to) any aircraft or equipment manufacturer's approval document must also be included.
- 4.3 Any repairs which affect the weight and balance of the aircraft (see note 1 below) require a new weight and balance calculation to be carried out and entered into the aircraft log book. Weight and balance is to be conducted by the holder of a Level One Maintenance Authority (or higher) using the procedures detailed in Section 10 of this manual. Alternatively, a CASA Approved WCO may be engaged.

Note 1:

- (a) If the empty weight has changed by more than 0.5% of the MTOW or 10 kg, whichever is the greater; or
- (b) If the empty weight CG has changed by more than 2% of the maximum permissible centre of gravity range or 5 mm, whichever is the greater;

5. REPAIRS TO FACTORY BUILT AIRCRAFT (NON LSA) CAO 95.32 & CAO 95.55

- 5.1 Repairs to privately operated aircraft may be conducted by the holder of a Level One Maintenance Authority (or higher), using firstly, the kit manufacturer or designer's repair procedures, or secondarily, in accordance with repair methods and techniques detailed in FAA AC43.13-1B.
- 5.2 Repairs to aircraft used for hire and/or flying training must be undertaken by a person holding an RAAus Level Two Maintenance Authority, using firstly, the aircraft manufacturer or designer's repair procedures, or secondarily, in accordance with repair methods and techniques detailed in FAA AC43.13-1B.
- 5.3 Appropriate maintenance log book entries must be made detailing the work performed, who performed it, their name, signature, membership number, maintenance authority level and the date. A copy of (or specific reference to) any aircraft or equipment manufacturer's approval document must also be included.
- 5.4 Any repairs to RAAus aircraft which may affect the weight and balance of the aircraft (*see note 1 below*) requires a new weight and balance calculation to be carried out and entered into the aircraft log book. Weight and balance is to be conducted by the holder of a Level One Maintenance Authority for aircraft used privately, or the holder of a Level Two Maintenance Authority for aircraft used for hire or flying training. In both cases, use the procedures detailed in Section 10 of this manual. Alternatively, a CASA Approved WCO may be engaged.

Note 1:

- (a) If the empty weight has changed by more than 0.5% of the MTOW or 10 kg, whichever is the greater; or
- (b) If the empty weight CG has changed by more than 2% of the maximum permissible centre of gravity range or 5 mm, whichever is the greater;

5.5 Any repairs to be performed outside of manufacturer or designer's approvals must be done in accordance with the **MODIFICATION AND REPAIR APPROVAL PROCESS (MARAP)** described in Section 6.1 sub-para 11 of this manual.

6. REPAIRS TO LIGHT SPORT AIRCRAFT (LSA) CAO 95.32 & 95.55

6.1 For a Light Sport Aircraft to remain operating on a Special Certificate of Airworthiness, all repairs must be in accordance with the manufacturer's approved repair procedures.

6.2 Repairs to privately operated aircraft may be conducted only by persons stipulated by the manufacturer.

6.3 Repairs to aircraft used for hire and/or flying training may be conducted only by persons stipulated by the manufacturer.

6.4 Appropriate maintenance log book entries must be made detailing the work performed, who performed it, their name, signature, membership number, maintenance authority level and the date. A copy of (or specific reference to) the aircraft manufacturer's approval document must also be included.

6.5 Any repairs to Light Sport Aircraft which may affect the weight and balance of the aircraft will form part of the aircraft manufacturer's repair instructions. If so required, a new weight and balance calculation to be carried out and entered into the aircraft log book. Weight and balance is to be conducted by the holder of a Level One Maintenance Authority or higher, for aircraft used privately, or the holder of a Level Two Maintenance Authority for aircraft used for hire or flying training, using the procedures detailed in Section 10 of this manual. Alternatively, a CASA Approved WCO may be engaged. In all cases, the manufacturer's weight and balance specifications must be maintained.

6.6 Any repairs **not approved** by the aircraft manufacturer will render the Special Certificate of Airworthiness not valid. If those repairs are to be

conducted, an Experimental Certificate must be sought from a CASA Approved Person before further flight is conducted. The aircraft can no longer be used for flight training or hire.

7. REPAIRS TO EXPERIMENTAL LIGHT SPORT AIRCRAFT (E-LSA) CAO 95.32 & 95.55

- 7.1 All repairs should be in accordance with the aircraft manufacturer's approved repair procedures.
- 7.2 Repairs to privately operated aircraft may be conducted only by persons stipulated by the manufacturer.
- 7.3 Appropriate maintenance log book entries must be made detailing the work performed, who performed it, their name, signature, membership number, maintenance authority level and the date. A copy of (or specific reference to) any aircraft or equipment manufacturer's approval document must also be included.
- 7.4 Any repairs to an Experimental Light Sport Aircraft which may affect the weight and balance of the aircraft require a new weight and balance calculation to be carried out and entered into the aircraft log book. Weight and balance is to be conducted by the holder of a Level One Maintenance Authority, or higher, using the procedures detailed in Section 10 of this manual. Alternatively, a CASA Approved WCO may be engaged. In all cases, the manufacturer's weight and balance specifications must be maintained.
- 7.5 Where the repair does not return the structure or system to its originally specified state, the aircraft will be deemed to have been modified. The aircraft owner **must** now contact CASA or an Authorised Person to discuss the need for a revised Experimental Certificate before further flights are undertaken. If no revised certificate is required to be issued by CASA or an Authorised Person, a written copy of that notification from CASA or the Authorised Person must be stored with or entered into the aircraft logbook.



RECREATIONAL
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SECTION 8.1

FIRST OF TYPE ACCEPTANCE

CAO 95.55 FACTORY BUILT AIRCRAFT (non-LSA)

1 INTRODUCTION

- 1.1 CAO 95.55 also permits aircraft of the following type:
- factory built; which
 - has a Type Certificate or equivalent document issued by CASA or another National Airworthiness Authority (NAA) from overseas; and
 - has a Production Certificate or equivalent document permitting the manufacture of aeroplanes, issued by CASA or another National Airworthiness Authority (NAA) from overseas; and
 - meets the maximum weight, minimum useful load, stall speed and other specifications detailed in the CAO.

2 TYPE ACCEPTANCE

2.1 EXISTING ACCEPTED AIRCRAFT:

RAAus has numerous aircraft flying and can readily advise if a particular type and model has already been accepted. If so accepted, no assessment is required and the aircraft may proceed directly to FULL registration.

2.2 FIRST OF TYPE (in Australia) AIRCRAFT:

RAAus must be satisfied that all aspects within CAO 95.55 are met for any new aircraft types coming on to the RAAus register.

Applications for “first of type acceptance” by RAAus can be made by individuals, aircraft import agents, or the aircraft manufacturer. It is highly recommended that the application is made and the proposed aircraft is found to be acceptable, or not, before bringing any new aircraft into the country.

RAAus shall accept no liability for any aircraft brought in to Australia and subsequently found to be not compliant with the provisions of CAO 95.55.

3 APPLICATION FORM

3.1 TECH FORM 081 – APPLICATION FOR FIRST OF TYPE ACCEPTANCE

must be lodged with the Technical Manager.

4 CRITERIA TO BE MET

- 4.1 The following documents comprise the main part of the application:
- Type Certificate (or equivalent document, associated TCDS and any other supporting documentation) issued by CASA, another National Airworthiness Authority (NAA) or a competent issuing authority is to be supplied. This document states that the aircraft complies with a certain design standard. It is signed and issued by a delegate of the NAA of the country of origin.
 - Production Certificate (or equivalent document) issued by CASA or another National Airworthiness Authority (NAA) is to be supplied. This document states conditions under which the aircraft may be manufactured and offered for sale. This ensures that the aeroplane as manufactured will meet the performance and durability specified for the design.
 - Continuing support information. This document describes the ongoing support from the aircraft manufacturer, Australian representative (if any), factory website for service bulletins etc.
 - Payload / minimum useful load calculation as described in the CAO.

5 ASSESSMENT

- 5.1 The Technical Manager shall review the application for first of type acceptance.
- If the application and attached documentation does support First of Type acceptance by RAAus, the Technical Manager will arrange inspection of the first of type aircraft to ensure that it complies with the TC and TCDS, then issue such an acceptance in writing.
- If the application and attached documentation does not support First of Type acceptance by RAAus, the Technical Manager will either; seek further evidence if it is believed to be a resolvable matter, or; advise the applicant that the aircraft does not meet the required criteria for First of Type acceptance by RAAus, and the reasons thereof.

6 FEES

- 6.1 See the current schedule of fees for First of Type Assessment.

7 ACCEPTED TYPES

- 7.1 Aircraft issued with an RAAus Certificate of Type Acceptance (Tech Form 082) will be added to the RAAus list of accepted types and made available to members upon request.

SECTION 9.1**COCKPIT WARNING PLACARDS/LABELS**

- 1.1 Cockpit warning placard/label(s) must be affixed to each aircraft. They must be of sufficient size and displayed inside the aircraft in a way that is conspicuous to and can be easily read by each occupant while seated in the aircraft.
- 1.2 Various versions of the required cockpit warning placard/labels are available from RAAus, or they may be made up by other means.
- 1.3 **CAO 95.10 AIRCRAFT**

WARNING
THIS AIRCRAFT HAS BEEN CONSTRUCTED UNDER
THE PROVISIONS OF CAO 95.10.
THE CIVIL AVIATION SAFETY AUTHORITY (CASA) AND
RECREATIONAL AVIATION AUSTRALIA (RAAus)
DO NOT GUARANTEE THE AIRWORTHINESS OF THIS AIRCRAFT.
PILOTS OPERATE THIS AIRCRAFT AT THEIR OWN RISK.

- 1.4 **CAO 95.32 and CAO 95.55 AIRCRAFT (non-LSA and Amateur built)**

WARNING
THIS AIRCRAFT IS NOT REQUIRED TO COMPLY WITH THE SAFETY
REGULATIONS FOR STANDARD AIRCRAFT.
PERSONS FLY THIS AIRCRAFT AT THEIR OWN RISK.

Additionally:

A weight limit placard must be affixed to each aircraft.

The maximum take-off weight specified must be **the lesser of** either;

- (a) the aircraft certified max weight, **or**
- (b) the max weight for the aircraft type as specified within CAOs 95.10, 95.32 or 95.55

WARNING
THIS AIRCRAFT IS LIMITED TO A MAXIMUM TAKE-OFF WEIGHT OF
_____ KG

- 1.5 **CAO 95.32 and CAO 95.55 LSA AIRCRAFT**
Excluding Non-compliant (no longer compliant) LSA Aircraft and kit-built LSA Aircraft Ref: CAR 262APA(2)

**THIS AIRCRAFT WAS MANUFACTURED IN ACCORDANCE WITH
LIGHT SPORT AIRCRAFT AIRWORTHINESS STANDARDS
AND DOES NOT CONFORM TO STANDARD CATEGORY
AIRWORTHINESS REQUIREMENTS**

- 1.6 **CAO 95.32 and CAO 95.55 E-LSA AIRCRAFT**
Non-compliant (no longer compliant) LSA Aircraft and kit-built LSA Aircraft Ref: CAR 262AP (9)

**WARNING
PERSONS FLY IN THIS AIRCRAFT AT THEIR OWN RISK.
THIS AIRCRAFT IS NOT OPERATED TO THE SAME SAFETY
STANDARDS AS A NORMAL COMMERCIAL PASSENGER FLIGHT.
CASA DOES NOT SET AIRWORTHINESS STANDARDS FOR
EXPERIMENTAL AIRCRAFT**

Additionally:

A placard bearing the word **EXPERIMENTAL** must be affixed to each E-LSA aircraft.

EXPERIMENTAL

The placard must be written in capital letters not less than 50mm high but not more than 150mm high.

The placard must be:

- on the outside of the aircraft near each entrance to the cabin or cockpit; **or**
- in the case of an aircraft that is entered by opening the canopy - on the outside of each side of the aircraft, immediately below the cockpit coaming; **or**
- inside the cockpit, in a position where it will alert the pilot and passenger; **and**
- visible to pilot and passenger as the aircraft is entered.

SECTION 10.1

WEIGHT AND BALANCE – CAO 95.10 or 95.55 FIXED WING AIRCRAFT

All members who wish to complete weight and balance reports for RAAus registered aircraft will have until 01/02/2017 to complete the online weight and balance education package before this requirement is enforced. Under a Grandfather clause, members can continue to weigh their aircraft and have it verified by an L2 until 01/02/2017.

1 INTRODUCTION

- 1.1 A comprehensive weight and balance report is required:
- (a) for new registrations of **all** fixed wing aircraft; and
 - (b) after major modifications are made which may affect the weight or balance of the aircraft; and
 - (c) after additional significant equipment or furnishings are added to or removed from the aircraft; and
 - (d) after major repairs have been carried out to the aircraft which may affect the weight or balance of the aircraft.
 - (e) For any aircraft that, for whatever reason, does not have a weight and balance report to date.
- 1.2 RAAus can accept weight and balance reports of the following origins:
- (a) A weight and balance report which was supplied with your unmodified production Light Sport Aircraft (LSA) or Factory Built CAO 95.55 Aircraft. This does not include kit built E-LSA aircraft.
- Or, following actual weighing of the aircraft:
- (b) A professional weight and balance report prepared by the holder of a CASA Weight Control Authority, which incorporates the data obtained for your own aircraft.
 - (c) A weight and balance report prepared by an RAAus L2 or L4 who are qualified weighers as per paragraph 4.1 below, which incorporates the data obtained for your aircraft.

- (d) A form or chart supplied by your aircraft manufacturer or kit/plans supplier/designer which incorporates the data that you have personally obtained for your own aircraft.
- (e) A form, chart or spreadsheet used by any recognised worldwide NAA or Sport Aircraft administering body or association of a NAA, which incorporates the data that you have personally obtained for your own aircraft.
- (f) A form, chart or spreadsheet prepared by yourself from information contained in a recognised aviation publication such as **FAA AC43.13-1B - Chapter 10, or The Sportplane Builder - Chapter 13** (an EAA book by Tony Bingelis), which incorporates the data that you have personally obtained for your own aircraft.
- (g) RAAus has a generic chart available on the RAAus website which may be suitable for your aircraft.

2 DEFINITIONS

Weight control within *CAO 100.7 Administration and procedure — weight control of Aircraft* means:

- the determination of the empty weight and empty weight centre of gravity position of an aircraft
- the development and approval of loading data
- the keeping of a record of weight alterations
- the overall supervision of these activities

CG means the centre of gravity position of an aircraft.

empty weight means the weight of an aircraft including all items of fixed equipment and other equipment which is mandatory for all operations, fixed ballast, unusable fuel and total quantities of oil, engine coolant and hydraulic fluid but excluding all other items of disposable load.

load data sheet means a document prepared in respect of an individual aircraft to provide weight and centre of gravity information for use in the loading system.

loading system means a system for ensuring that an aircraft is loaded within approved weight and centre of gravity limits at all times during flight.

max T.O.W. means the maximum take-off weight of an aircraft.

removable equipment means items of equipment which are carried on some or all operations of an aircraft but which are not included in its empty weight.

3 For Production LSA or Factory Built Aircraft:

- 3.1 As a Weight and Balance Report is supplied with the required paperwork/manuals etc, no further verification or validation is required, provided no modifications have taken place.

4 For AMATEUR-BUILT and E-LSA AIRCRAFT:

- 4.1 Builders of amateur built and E-LSA aircraft may themselves weigh their aircraft and prepare the required weight and balance reports, after becoming a “Qualified Weigher” from successful completion of the **RAAus Weight & Balance** online education package.
- 4.2 Alternatively, builders may elect to engage the services of a CASA Weight Control Authority, or an RAAus L2 or L4, who are qualified weighers as per paragraph 4.1, for weighing their aircraft and preparation of the required weight and balance reports.
- 4.3 Regardless of who does the weighing and prepares the reports, owners and pilots of aircraft must have a sound understanding of the weight control provisions and more so, the limitations for their aircraft.

4.4 PRACTICAL ASPECTS

- Two (or more) consecutive weighings are required (roll the aircraft on and off the scales each time) to achieve reliable stable readings from the scales.
- Use **valid** data – i.e. the specifications included on your aircraft plans: Datum, forward CG limit, aft CG limit, loading, and so on.
- Use a valid or proven chart/report, from either your aircraft plans, kit supplier, or another recognised authoritative source.

- Have someone who is familiar with your aircraft type check over your work and your calculations.

4.5 Scales deemed suitable by RAAus for the weighing of aircraft are:

- (a) Race car scales
- (b) Bathroom scales (if capable of taking the weight of the aircraft)
- (c) Farm scales
- (d) Other weighing equipment deemed suitable for the task.

Any non-calibrated scales used should first have some basic checks performed to ensure accuracy. (eg: 20 litres of water = 20kg)

5 FORMS

5.1 **TECH FORM 006 WEIGHT & BALANCE REPORT – FIXED WING AIRCRAFT** must be supplied with all new aircraft registration applications, and where aircraft have been modified or repaired and a re-weigh has become necessary.

6 VERIFICATION

6.1 The Technical Manager may require for any aircraft at any point in time, to have its empty weight verified, at the aircraft's normal location, or otherwise as agreed. This may be required where doubt exists as to the accuracy of a declared weight, or as part of a random survey of aircraft. RAAus will bear the cost of any such verification. Aircraft owners will be afforded due notice and should work with the Technical Manager to arrange a suitable time and place.

The Technical Manager will liaise with a suitable person to conduct the weighing activity.

SECTION 10.2

WEIGHING – CAO 95.32 WEIGHT SHIFT CONTROLLED AEROPLANES AND POWERED PARACHUTES

All members who wish to complete weight and balance reports for RAAus registered aircraft will have until 01/02/2017 to complete the online weight and balance education package before this requirement is enforced. Under a Grandfather clause, members can continue to weigh their aircraft and have it verified by an L2 until 01/02/2017.

1 INTRODUCTION

1.1 A weighing report, certificate or statement is required:

- (a) for new registrations of all weight shift controlled aeroplanes and powered parachutes; and
- (b) after major modifications are made which may affect the weight of the aircraft; and
- (c) after additional significant equipment or furnishings are added to or removed from the aircraft; and
- (d) after major repairs have been carried out to the aircraft which may affect the weight of the aircraft.
- (e) For any aircraft that, for whatever reason, does not have a weight and balance report to date.

1.2 RAAus can accept a weighing report, certificate, or statement of the following origins:

- (a) A weight report, certificate, or statement which was supplied with your Production Light Sport Aircraft (LSA) or Factory Built CAO 95.32 Aircraft. This does not include kit built E-LSA aircraft.
- (b) A professional weighing report, certificate, or statement prepared by the holder of a CASA Weight Control Authority, or an RAAus L2 or L4, which incorporates the data obtained for your own aircraft.
- (c) A statement by yourself, declaring the empty weight of the aircraft.

- 1.3 Scales deemed suitable by RAAus for the weighing of aircraft are:
- (a) Race car scales
 - (b) Bathroom scales (if capable of taking the weight of the aircraft)
 - (c) Farm scales
 - (d) Other weighing equipment deemed suitable for the task.
 - (e) A block and tackle suspension with a calibrated load cell suitable for the expected weight range of the aircraft;

Any non-calibrated scales used should first have some basic checks performed to ensure accuracy. (eg: 20 litres of water = 20kg)

2 For Production LSA or Factory Built Aircraft

- 2.1 As a weighing report, certificate, or statement is supplied with the required paperwork/manuals etc, no further verification or validation is required, provided no modifications have taken place.

3 For AMATEUR-BUILT and E-LSA AIRCRAFT

- 3.1 Builders of amateur built and E-LSA aircraft may themselves weigh their aircraft and prepare the required weight and balance reports, after becoming a “Qualified Weigher” from successful completion of the **RAAus Weight & Balance** online education package.
- 3.2 Alternatively, builders may elect to engage the services of a CASA Weight Control Authority, or L2 or L4 who have become a “Qualified Weigher” from successful completion of the **RAAus Weight & Balance** online education package.
- 3.3 Regardless of who does the weighing and prepares the reports, owners and pilots of aircraft must have a sound understanding of the weight control provisions and more so, the limitations for their aircraft.
- 3.3 **TECH FORM 009 AIRCRAFT WEIGHING REPORT – CAO 95.32 AMATEUR BUILT OR E-LSA AIRCRAFT** should assist you assemble all the required items prior to sending new registration paperwork to RAAus office.

3.4 PRACTICAL ASPECTS

- It is not recommended that you weigh an aircraft using only one scale.
- Two (or more) consecutive weighings are required (roll the aircraft on and off the scales each time) to achieve reliable stable readings from the scales.
- Use **valid** data – i.e. the specifications included on your aircraft plans: Datum, forward CG limit, aft CG limit, loading, and so on.
- Use a valid or proven chart/report, from either your aircraft plans, kit supplier, or another recognised authoritative source.
- Have someone who is familiar with your aircraft type check over your work and your calculations.

4 VERIFICATION

- 4.1 The Technical Manager may require for any aircraft at any point in time, to have its empty weight verified, at the aircraft's normal location, or otherwise as agreed. This may be required where doubt exists as to the accuracy of a declared weight, or as part of a random survey of aircraft. RAAus will bear the cost of any such verification. Aircraft owners will be afforded due notice and should work with the Technical Manager to arrange a suitable time and place. The Technical Manager will liaise with a suitable person to conduct the weighing activity.



RECREATIONAL
AVIATION AUSTRALIA

SECTION 11.1

MAINTENANCE POLICY

Under a grandfather clause all members who are maintaining their own RAAus registered aircraft have until 01/02/2017 to complete the L1 maintenance authority assessment. After 01/02/2017 members who have not completed the L1 assessment cannot continue to sign for maintenance performed on their own aircraft. (Does not apply for members completing line maintenance only)

1 INTRODUCTION

- 1.1 RAAus is responsible for specifying the maintenance requirements for aircraft registered with RAAus. This section details the extent of maintenance that can be conducted by owners, pilots, and other persons on recreational aircraft operated in accordance with CAO's 95.10, 95.32 and 95.55.
- 1.2 Maintenance includes all of those actions which are carried out on a recreational aircraft to ensure the aircraft is fit for flight and includes inspection, adjustment, repair and the incorporation of modifications. Maintenance **excludes** the design or redesign of modifications. The pilot-in-command of a recreational aircraft must ensure that the aircraft is fit for flight, currently registered and correctly maintained before each flight.

2 ELEMENTS OF MAINTENANCE

- 2.1 Elements of maintenance are:
 - (a) what to do
 - (b) when to do it
 - (c) how to do it
 - (d) who can do it
- 2.2 What maintenance to conduct and when to do it is contained in the manufacturer's product support manuals. Where this is not the case, the inspection schedules in CASA Schedule 5 should be used as a guide for privately operated aircraft. Reference may also be made to CAAP 42B-1.
- 2.3 Maintenance of aircraft used for hire and/or flying training must be conducted in accordance with the manufacturer's requirements. Where there is no manufacturers requirements, then the aircraft must be maintained in accordance with a System of Maintenance or Maintenance

Schedule approved by an NAA for the aircraft. All such maintenance must be undertaken by suitably trained, experienced and accredited persons holding an RAAus Level 2 Maintenance Authority.

- 2.4 This section defines maintenance responsibilities for owner/operated recreational aircraft and aircraft used for hire and/or flight training. The method by which suitable persons are accredited to RAAus to conduct maintenance is also contained in this RAAus Technical Manual.

3 MAINTENANCE POLICY

3.1 Owner Operated Aircraft

- 3.1.1 Maintenance of owner operated aircraft is the sole responsibility of the owner. An appropriate maintenance schedule **must** exist for the aircraft. The selection of appropriate maintenance schedules and the qualifications and experience of persons to complete the maintenance is the responsibility of the owner. The maintenance schedule should be that provided by the aircraft/kit/engine/component manufacturers. When an aircraft does not already have an available maintenance schedule, the maintenance schedule in CASA Schedule 5 shall be used. Reference may also be made to CAAP 42B-1.

- 3.1.2 Having completed any maintenance on an aircraft, the owner is to immediately detail the actions carried out in the aircraft maintenance log book in accordance with Section 12.5 of this manual.

- 3.1.3 After an owner-operated aircraft has been rebuilt after major damage or wear, engine strip and rebuild or any maintenance activity which could affect flight safety, that aircraft must be flown on a solo check flight. Successful completion of this check flight is to be recorded in the aircraft log book and signed for by the pilot who conducted the check flight before any other operation of the aircraft or a passenger is carried in the aircraft.

3.2 Competence to carry out work

- 3.2.1 An individual that has completed the mandatory RAAus L1 or higher training process and has the appropriate qualifications and experience to carry out maintenance on an aircraft or aeronautical product may carry out the maintenance in accordance with the manufacturer's schedule to ensure the continuing airworthiness of the aircraft.

- 3.2.2 Maintenance authority holders are responsible for ensuring they are familiar with, and are able to satisfactorily comply with any manufacturer's instructions regarding the maintenance before undertaking any of the tasks identified.
- 3.2.3 It is highly recommended that all owner-pilots should undertake training and work under supervision of an L2 until they are confident that they have the knowledge to maintain their aircraft in an airworthy condition. Where any doubt exists, the owner should consult an RAAus Level 2 or a LAME for advice. Engine or airframe approved maintenance training courses may also be undertaken and accepted at the discretion of the RAAus Technical Manager.
- 3.2.4 The Technical Manager may request copies of aircraft and maintainers logbooks for the purposes of assessing the standard of compliance with all required manufacturers requirements. If the standard of compliance is deemed inadequate or inappropriate, corrective action or guidance may be undertaken.
- 3.3 Aircraft used for Flying Training or Hire**
- 3.3.1 Factory produced aircraft may be offered for flying training or for hire. Such factory built aircraft are to be wholly maintained by a Level 2 Maintenance Authority holder. Daily inspections may be completed by the pilot-in-command. Maintenance on the engine, propeller (including associated controls) or flight controls must be checked by an independent person and duly signed in the aircraft log book. At the completion of any maintenance on a recreational aircraft, details of the work carried out must be immediately entered into the aircraft log book, the entry signed by the Level 2 Maintenance Authority holder who is to include their name in block letters, RAAus number and the date of the entry.
- 3.3.2 If any maintenance is carried out on primary flight control systems involving disconnection, adjustment or modification, a duplicate inspection of primary flight control systems or items is mandatory before the aircraft is used for flight training or hire. Successful completion of this dual inspection is to be recorded in the aircraft maintenance log book and signed for by the individuals who conducted the inspection. This inspection may be carried out by an RAAus L1, L2, L3, L4, or RAAus Pilot Certificate holder. Any person unable to comply with this duplicate inspection due to the non-availability of an independent person to inspect, contact the Technical Manager for advice.

- 3.3.3 If an aircraft that is eligible to be used for flight training has been previously maintained at any time by an L1, that aircraft may not be used for flying training or hire until a Level 2 Maintenance Authority holder has inspected the aircraft and is satisfied that the aircraft complies with the original certification, is correctly maintained, is in an airworthy condition, meets continuing airworthiness requirements (i.e. all ANs, SBs etc have been completed, time life components are in date etc.) and they record that inspection in the aircraft log book.
- 3.3.4 A Maintenance Controller may be nominated and advised to RAAus via **Tech Form 003 - Nomination of Maintenance Controller**. This person is responsible for ensuring that all required maintenance on aircraft used for flight training has been carried out by an L2 maintenance authority holder. The person nominated may be
- (a) the organisation's regular L2 (whether directly attached to the flight training organisation or not) or;
 - (b) a member of staff of the flight training organisation, or;
 - (c) the owner of the aircraft.

3.4 **Aircraft Owned by more than One Person**

- 3.4.1 Where more than one person within a company or a group who own a recreational aircraft that is not used for hire and reward, one of the persons must be appointed by the owners to be responsible for and to ensure that all required maintenance on that aircraft is carried out.
- 3.4.2 The person so nominated is to be listed in the aircraft log book. That person is to list all maintenance carried out on the aircraft in the aircraft log book and after that entry is to place their name and signature indicating that all of the stated maintenance has been conducted in accordance with the requirements of the manufacturer requirements and RAAus Technical Manual, in addition to all ADs, ANs, SBs and advisories.

4 **CRITICAL MAINTENANCE**

- 4.1 RAAus defect and incident reports indicate that engine controls, engine accessories, propellers and flight controls deserve special maintenance attention. These components and systems must all be secured by positive safety devices and must be checked by an independent person after maintenance and duly signed for in the aircraft log book. This inspection may be carried out by an RAAus L1, L2, L3, L4, or RAAus Pilot Certificate holder.

5 MAINTENANCE TASKS AND AUTHORITIES REQUIRED

This table is not exhaustive and is subordinate in all manner to subsection 3 of this section of the RAAus Technical Manual. An aircraft owner may engage a Level 2 or Level 4 to advise, check, or carry out any maintenance of their aircraft.

NOTE: Any maintenance task on a LSA must be conducted by a person nominated by the manufacturer within the maintenance manuals for the aircraft.

MAINTENANCE TASK	MAINTENANCE AUTHORITY REQUIRED		
	PRIVATE OPERATIONS AMATEUR BUILT	PRIVATE OPERATIONS FACTORY BUILT	HIRE &/OR FLYING TRAINING
Pre-flight Final Inspection (FORM 007)	Builder with L4 observing	Not Applicable	Not Applicable
Daily Inspection	Pilot	Pilot	Pilot (not student) or Instructor
Pre-flight inspection (“walk-around”)	Pilot	Pilot	Pilot or Instructor (including students under supervision)
Line Maintenance	Pilot or L1, L2, L4	Pilot or L1, L2, L4	L2, L4
Scheduled Maintenance	L1, L2, L4	L1, L2, L4	L2 or L4
Periodic Inspection	L1, L2, L4	L1, L2, L4	L2 or L4
Repairs	L1, L2, L4	L1, L2, L4	L2 or L4
Modifications	Refer to Section 6.1 of Technical Manual	Refer to Section 6.1 of Technical Manual	Refer to Section 6.1 of Technical Manual
RAAus or manufacturer Airworthiness Notices	L1, L2, L4	L1, L2, L4	L2, L4
Heavy landing inspection	L1, L2, L4	L1, L2, L4	L2, L4
Component overhaul	L1, L2, L4	L1, L2, L4	L2, L4
Component replacement	L1, L2, L4	L1, L2, L4	L2, L4
Welded repairs	L1, L2, L4	CASA Welding Authority holders	CASA Welding Authority holders
Weight and Balance activities	Qualified L1, L2, L4 or CASA WCO	Qualified L1, L2 or CASA WCO	Qualified L2 or CASA WCO

SECTION 11.2

ACCREDITATION OF PERSONS TO PERFORM & RECORD MAINTENANCE

1 INTRODUCTION

- 1.1 Aircraft operated in accordance with CAO's 95.10, 95.32 and 95.55 are exempt from certain Civil Aviation Regulations listed in those orders. RAAus has responsibility for accrediting suitably qualified and experienced individuals to perform & record maintenance on recreational aircraft.
- 1.2 Any maintenance task on an LSA aircraft must be conducted by a person nominated within the maintenance manuals for the aircraft by the manufacturer.

2 RAAus MAINTENANCE AUTHORITIES

- 2.1 Five levels of RAAus Maintenance Authority exist. To exercise any of these privileges, current membership of RAAus must be retained.

Line Maintenance (LM): Pilot Certificate holders. Perform and record basic maintenance tasks listed in Section 12.7 of this manual (similar to the CASA Schedule 8 pilot permitted items). Pilots are reminded that they need to be competent to carry out the tasks.

Level One (L1): Pilot Certificate holders. Perform and record maintenance activities carried out only on their own aircraft which are not used for hire and/or flying training. Completion of a Level 1 training course is required.

Level Two (L2): L2 privileges may be issued as RESTRICTED (in terms of the work they can perform) or UNRESTRICTED. Refer to para 3.3 for entry requirements. Perform and record maintenance activities on privately owned and operated aircraft, and aircraft used for hire and/or flying training.

Level Three (L3): Appointed from within L2 or L4 available persons, for a specific timeframe, to assist the Technical Manager with a specific

task, survey, study, or other administrative matter. No delegation of Technical Manager responsibilities will occur to appointed L3's.

Level Four (L4) ABI (Amateur-Built inspector): Persons holding Level 2 accreditation, **and** a LAME Licence or holding an appointment via CASA Instrument. Perform and record maintenance activities on privately owned and operated aircraft, and aircraft used for hire and/or flying training. Observe Pre-Flight Final Inspections for Amateur Built aircraft. The Technical Manager may make a determination for persons who do not fulfil the requirements. The Technical Manager will submit an application to CASA for consideration. CASA will make the final decision on whether to issue the applicant with an ABI Approval.

3 ISSUE AND RETENTION OF MAINTENANCE AUTHORITIES

3.1 LINE MAINTENANCE (LM) Authority

3.1.1 All Pilot Certificate (excluding students) holders are automatically issued Line Maintenance Authority.

3.2 LEVEL ONE (L1) Maintenance Authority

3.2.1 Pilot Certificate holders (non-student) may be issued with an L1 Maintenance Authority following successful completion of the RAAus training and assessment available through the L1 Maintainer Training and Assessment Site within the RAAus website. Membership lapses in excess of 2 years will require re-validation of the maintenance authority by undertaking the course again.

See Section 11.3 of this manual for more information.

3.2.2 Evidence of completion of a HGFA Engine & Airframe course (as applicable for weight shift aircraft) is acceptable to RAAus for Level 1 accreditation. Other forms of evidence may be considered on a case by case basis, by the Technical Manager.

3.3 LEVEL TWO (L2) Maintenance Authority

3.3.1 L2 may be applied for via **TECH FORM 015 – L2 APPLICATION** and may be issued on the basis of qualifications and experience of the applicant. L2 privileges are valid for two years and are subject to renewal via **TECH FORM 012 – LEVEL 2 re-appointment**. In order to renew these privileges, an L2 must conduct at least two annual or 100 hourly inspections within two years. This may be considered for variation on a case-by-case basis, upon application to the Technical Manager.

A LAME is issued with a perpetual L2, subject to continued validity of the LAME Licence. No L2 renewal is required.

3.3.2 **RESTRICTED Level Two** - holders are restricted to perform certain types of maintenance only. Restrictions are recorded in the RAAus database and are advised to the L2 in the L2 appointment document.

These restrictions may include, but are not limited to:

- (a) line maintenance only
- (b) specific types of aircraft only
- (c) specific types of construction only
- (d) specific engines only

3.3.3 All L2 must maintain a log of aircraft maintenance and other aircraft technical work undertaken. Such a log is to state:

- (a) the registration number of the aircraft on which work was completed; and
- (b) a description of the work completed; and
- (c) the date work was completed;

The **L2 Maintainers Diary** excel spreadsheet available through the RAAus website satisfies this requirement.

3.3.4 The Technical Manager may at any time request copies of logbooks or maintenance records in order to conduct a desktop audit.

3.3.5 Level 2 maintenance accreditation categories:

LM	Allows line maintenance as defined in Section 12.7
SM	Allows scheduled maintenance plus Recreational Aircraft Condition Reports on specified aircraft types.
SMR	Allows scheduled maintenance, Recreational Aircraft Condition Reports and minor repairs on specified aircraft types.
UL	Allows unlimited maintenance, repair and Recreational Aircraft Condition Reports on specified aircraft types.

Aircraft types:

W	Wood and fabric
RT	Rag and tube
M	Metal
C	Composite
AT	All aircraft types
	Individual type(s) as specified (e.g. JABIRU, TECNAM etc.)

Systems:

E	Engine
A	Airframe
AV	Avionics/Electrics
FP/GAIFP	Propellers. Fixed Pitch, ground adjustable-inflight adjustable

For example, a Level 2 approved to carry out scheduled maintenance on metal and composite airframes, but not engines, would be accredited **L2, SM, M, C, A**.

3.4 LEVEL THREE (L3) Maintenance Authority

3.4.1 The Technical Manager may appoint a member as L3, from suitable Level 2 or Level 4 available persons. The appointment will be for a specified purpose and for a specified timeframe, unless surrendered by the holder or otherwise cancelled by the Technical Manager.

3.4.2 The duties of an L3 are to perform tasks as and when directed by the Technical Manager, which may include reviews of L1, L2 and L4 Maintenance Authority holders, or providing other assistance to the Technical Manager.

3.5 **LEVEL FOUR (L4) Maintenance Authority**

3.5.1 Level Four Maintenance Authority may be applied for by any existing L2 via **TECH FORM 016 - L4 APPLICATION**

3.5.2 L4 appointment is perpetual, (subject to retaining a CASA LAME licence, or nominated by CASA Instrument) unless surrendered by the holder or cancelled by the Technical Manager. The basic requirements to be considered for the issue of a L4 (ABI) authorisation are: The applicant must be the holder of a current LAME Licence endorsed with appropriate categories, or hold an appointment via CASA Instrument; and the applicant must be the holder of a current unrestricted RAAus L2 Maintenance Authorisation.

3.5.3 The Technical Manager may make a determination for persons who do not fulfil the above requirements. This application must be based on a specific local need where the services of other L4 (ABI) are not available within a reasonable distance. On receipt of a positive response from the Board, the Technical Manager will submit this application to CASA for consideration. CASA will make the final decision on whether to issue the applicant with an ABI Approval in the form of an instrument that will name the individual.

4 MAINTENANCE AUTHORITY RESTRICTION, SUSPENSION, CANCELLATION, NON ISSUE.

4.1 The RAAus Technical Manager may decide to restrict, suspend or cancel any Maintenance Authority, or not issue an authority, based on the information provided in an application, or found during any investigation into poor maintenance related practices, breaches of the Technical Manual, or breaches of CASA Regulations. Appeals may be heard in accordance with the RAAus disciplinary and complaints handling process.

SECTION 11.3

CRITERIA FOR ASSESSMENT FOR LEVEL ONE (L1) MAINTENANCE AUTHORITY

1 INTRODUCTION

- 1.1 To qualify for a Level 1 (L1) Maintenance Authority, members must successfully complete the RAAus assessment available through the L1 Maintainer Training and Assessment Site within the RAAus website, or via an alternately arranged paper based assessment.
- 1.2 A training package is available, consisting of a self-paced course utilising a range of resources, which include: a study guide, an FAA Publication providing maintainers with guidance on how to complete various maintenance and inspection tasks, a link to the CASA airworthiness directives (ADs) webpage and a links to other relevant resources. Annex A within this section, describes the basic elements of the training package.
- 1.3 Upon successful completion of the assessment, results advice will be sent to the member and will have the L1 qualification added to their Pilot Certificate at the next renewal. In the interim, the results advice may be used as evidence of having satisfactorily completed the course.
- 1.4 Persons completing this training package are expected to:
 - Complete the Study Guide
 - Review the guidance material provided
 - Complete the on-line assessment (50 multi-choice questions, 80% pass mark, 3 hours 30 minute time limit)
 - Provide feedback on the training and assessment package

2 RECORD OF EXPERIENCE

- 2.1 It is suggested that L1's maintain a separate record of their maintenance experience, listing aircraft type(s) and work performed. This may be useful in the event that an L1 wishes to apply for an L2 maintenance authority at a later date, or, to assist with any competency based audits that the Technical Manager may request.

ANNEX A - Level1 Maintenance Syllabus of competencies

Element 1: Paperwork requirements		
Code: PW	Competent	Not competent
1.1 Assessment of paperwork required		
• Understanding of maintenance rules	C	NC
• Appropriate entries into logbooks outlining work completed.	C	NC
• Completion of worksheets related to the task undertaken	C	NC
• Work carried out IAW manufacturer schedule or appropriate equivalent	C	NC
• Work carried out with regard to Type Certified, LSA or Amateur Built categories	C	NC
• Defect reporting requirements	C	NC
• Confirm maintenance cycle due	C	NC
• Confirm outstanding or recurring AD's/SB's	C	NC
Element 2: Undercarriage		
Code: UC		
2.1 Landing gear assessment		
• Removal or installation of landing gear tyres	C	NC
• Repair of pneumatic tubes of landing gear tyres	C	NC
• Servicing of landing gear wheel bearings	C	NC
• Servicing of brake systems	C	NC
• Servicing of undercarriage structure including tail wheels	C	NC

Element 3: Engine compartment**Code: EN**

3.1 Engine compartment

• Replacement, cleaning or setting of gaps of spark plugs	C	NC
• Replacement of batteries	C	NC
• Changing oil filters or air filters	C	NC
• Changing or replenishment of engine oil or fuel	C	NC
• Completion of manufacturer ANs, SBs	C	NC
• Work carried out IAW manufacturer schedule or appropriate equivalent	C	NC
• Understanding of maintenance rules	C	NC
• Appropriate entries into logbooks outlining work completed.	C	NC
• Completion of worksheets related to the task undertaken	C	NC

Element 4: Line maintenance**Code: LM**

4.1 Line maintenance

• Replacement of defective safety wiring or spilt pins	C	NC
• Replacement of side windows	C	NC
• Replacement of seats	C	NC
• Repairs to upholstery or decorative furnishings inside the cockpit	C	NC
• Replacement of seat belts or harnesses	C	NC
• Replacement or repair of signs and markings	C	NC
• Replacement of bulbs, reflectors, glasses, lenses and lights	C	NC
• Lubrication of components	C	NC
• Replenishment of hydraulic fluid	C	NC
• Application of preservative or protective materials	C	NC

Element 5: Glider tow hooks		
Code: GT		
5.1 Glider tow hooks		
• Removal or replacement of glider tow hooks	C	NC
Element 6: Flight control system		
Code: FC		
6.1 Flight control inspection		
• Carrying out an inspection of a flight control system that has been assembled, adjusted, repaired, modified or replaced	C	NC
Element 7: Airframe		
Code: AF		
7.1		
• Inspect IAW manufacturer’s instructions	C	NC
• Hazard identification		
• Reporting of discrepancies via the OMS		
Element 8: Propeller		
Code: PR		
8.1		
• Inspect IAW with manufacturer’s instructions	C	NC
• Tracking and fitment		
• Balancing		
• Replacement and repair		
Element 9: Timber Structures		
Code: TS		
9.1		
• Inspect IAW with manufacturer’s instructions	C	NC
• Inspect timber structures IAW FAA AC43.13-1b Chapter 1 Section 3		

Element 10: Composite Structures

Code: CS

10.1

- | | | |
|---|---|----|
| <ul style="list-style-type: none"> • Inspect composite structures IAW manufacturer’s instructions
<i>(FAA AC43.13-1b has no fibreglass and plastics inspection section)</i> • Repairs methods | C | NC |
|---|---|----|

Element 11: Fabric Covering

Code: FC

11.1

- | | | |
|---|---|----|
| <ul style="list-style-type: none"> • Inspect fabric covering IAW manufacturer’s specifications • Inspect fabric covering IAW FAA AC43.13-1b Chapter 2 Section 3 • Inspection using a Bettsometer instrument • Hazard identification • Safety equipment | C | NC |
|---|---|----|

SECTION 11.4

CRITERIA FOR ASSESSMENT FOR LEVEL TWO (L2) MAINTENANCE AUTHORITY

1 INTRODUCTION

- 1.1 L2s are the RAAus equivalent of Licensed Aircraft Maintenance Engineers and accept a high degree of responsibility for the maintenance and serviceability of RAAus aircraft;
- 1.2 Technical maintenance is a combination of manual dexterity, knowledge pertinent to the application of that skill, the manufacturer's data, access to, and the appropriate use of tools and knowledge of the appropriate legislation;
- 1.3 RAAus assesses applicants for this authority and determines if a person has the experience and skills necessary to qualify.
- 1.4 To acknowledge the wealth of technical skills held by RAAus members, prior learning and experience can be considered.
- 1.5 The Technical Manager's determination may be challenged in writing by a submission to the CEO within 28 days of the decision being communicated to the applicant.
- 1.6 A final decision from the CEO will be communicated within 28 days to the applicant.

2 THE PROCESS

- 2.1 To apply for a Level Two Maintenance Authority a person must:
 - (a) be an RAAus member;
 - (b) apply using **TECH FORM 015 – LEVEL TWO MAINTENANCE AUTHORITY APPLICATION**
 - (c) detail formal technical training and qualifications in the technical trades, or recognition of prior experience.

- (d) attach copies of relevant trade certificates, or other associated documentation for the consideration of Recognition of Prior Learning.
 - (e) detail experience in all relevant trades; or other experience; and
 - (f) where qualifications have only marginal relevance to aviation maintenance a connection should, if possible be established.
 - (g) provide two peer recommendations.
 - (h) recognition of suitable prior learning or experience, as assessed by the Technical Manager.
- 2.2 Experience of work conducted on RAAus registered aircraft or like aircraft is preferred.
- 2.3 List in detail all work performed on RAAus (or like) aircraft, noting the nature of the work done and the aircraft types involved. More, rather than less detail should be included and the work conducted should be substantiated, if possible.
- 2.4 To assist RAAus in assessing an applicant, the written recommendation of two peers is required. The peers must recommend to RAAus that the applicant has the experience and qualifications to be granted an L2 Authority; and
- 2.5 The recommendation may be from;
- (a) two current unrestricted L2 holders that have held their approval for at least one year; or
 - (b) one unrestricted L2 holder that has held their approval for at least one year, and a LAME.

3 RESTRICTED Level 2 APPROVAL

- 3.1 An L2 Maintenance Authority may be **unlimited** or may be **restricted** to permitting the applicant to work on, for example:

- specific components, (eg electrical, engines)
- specific types of aircraft,
- line maintenance

The application form allows an applicant to specify if they wish to have the authority restricted to specific aircraft types or specific components;

- 3.2 This restriction is generally imposed when the assessment of an L2 applicant indicates that the person does not have enough maintenance experience on recreational aircraft and would require supervision for more complex tasks, or if the applicant chooses to be restricted to certain maintenance activities.
- 3.3 Restricted Level 2 approval holders may conduct maintenance beyond the limitations imposed upon them subject to:
- supervision by an unrestricted Level 2; or
 - supervision by a Level 3 or Level 4; and
 - the work is countersigned by the supervisor; and
 - a log of experience is kept, **countersigned by the supervisor**, if the Restricted Level 2 wishes to apply later for unrestricted authority.
- 3.4 Restricted Level 2 authority holders may apply to the Technical Manager to have their restrictions lifted, along with submission of their log of experience.

SECTION 11.5

APPOINTMENT OF LEVEL THREE (L3) MAINTENANCE AUTHORITY

1 INTRODUCTION

- 1.1 Level 3 Maintenance Authority holders may be appointed by the Technical Manager for purposes described in Section 11.2 of this manual. No specific criteria for appointment is included in this section, as tasks will vary from time to time.

2 THE PROCESS

- 2.1 Upon identification of a particular need, the Technical Manager may call for expressions of interest to become L3. The notification will outline the task and any mandatory or desirable skills or experience. Any decision to appoint, or not to appoint, rests with the Technical Manager.
- 2.2 The Technical Manager may also directly appoint an L3 based upon personal knowledge, or reliable recommendation.
- 2.3 The proposed L3 member must of course agree to be appointed.

3 APPOINTMENT

- 3.1 L3 appointments will be written, and detail the task, timeframe of appointment, and other such information as the task dictates.
- 3.2 The Technical Manager may, by written notification, cancel or extend an L3 appointment.

SECTION 11.6

CRITERIA FOR ASSESSMENT FOR LEVEL FOUR (L4) AMATEUR BUILT INSPECTOR

1 INTRODUCTION

Members who are a CASA LAME (or equivalent acceptable to RAAus) may apply for a Level 4 Amateur Built Inspector (ABI) Authorisation. The applicant for a L4 Authorisation must hold a Level 2 Maintenance Authorisation prior to making the application, or co-incident with it.

If there is a need for a L4 ABI in a particular area, but none is available, application can be made by a RAAus member who is an experienced L2. Before an application in this instance can be assessed, the applicant must show a definite need - i.e. there are no L4s within a reasonable distance. They must show full justification (including all appropriate documentation) and references from local RAAus member(s) holding a position of authority (i.e. President or CFI of a Recreational aircraft flying club) as to why they should be considered. In such a case, the applicant may be recommended by RAAus, but is approved by CASA.

An L4 ABI is not permitted to observe/participate in a Pre-Flight Final Inspection (Tech Form 007) on any aircraft that they have a financial interest in, regardless of how minor that interest is, as this may be considered a real or a perceived conflict of interest.

2 THE PROCESS

2.1 To apply for a Level Four Maintenance Authority a person must:

- (a) be an RAAus member;
- (b) apply using **TECH FORM 016 – LEVEL FOUR MAINTENANCE AUTHORITY APPLICATION**

2.2 The Technical Manager will review the application and advise the applicant of the outcome.

SECTION 12.1

DAILY and PRE-FLIGHT INSPECTIONS

1 DAILY AND PRE-FLIGHT INSPECTIONS

- 1.1 A daily inspection must be carried out and recorded prior to the first flight of each day. Pilots should also record hours, landings and oil uptake and any other details as required by the aircrafts system of maintenance. The daily flight record forms part of the aircrafts maintenance history and may aid in identifying maintenance concerns. For subsequent flights, the pilot in command must carry out a pre-flight inspection or carry out another daily inspection should it be deemed necessary.

TECH FORM 121 Daily Flight Record (available on the RAAus website) presents a simple means of recording the above information however members may use another format as long as the required information is recorded.

- 1.2 The pilot in command must ensure before flight that the aircraft to be operated is currently registered with RAAus and is considered airworthy.
- 1.3 The following inspection procedures provide an example of the items to be inspected as a minimum. If a manufacturer's daily and/or pre-flight inspection checklists exists, then they are to be used. If those checklists do not exist, make your own from the schedule in this section.
- 1.4 In the following **DAILY INSPECTION Checklist** cross out items not applying to **your** aircraft and insert additional items required to be checked in **your** aircraft.

2 OWNER AND PILOT RESPONSIBILITIES

- 2.1 The pilot in command is responsible for the daily inspection; and
- 2.2 Before each flight, complete whatever inspection is called for by the manufacturer, RAAus, or that the pilot in command considers necessary beyond those.

2.3 Daily and pre-flight inspections may be carried out on RAAus aircraft by:

- Pilot Certificate holders **or**
- Student pilots under the supervision of an Instructor. The Instructor remains responsible and is the person accountable for daily inspections.

DAILY INSPECTION CHECKLIST

(If no manufacturer's checklist is provided)

This is a generic inspection for a 3 Axis aircraft. Trike and PPC operators must make their own if no manufacturers checklist is provided.

Approaching the aircraft – check undercarriage and tyres for integrity;

Internal checks:

- Master switch - off
- Ignition switches – off
- Throttle – closed
- Stall warning horn (if fitted and capable of testing)
- Rudder pedal system integrity
- Elevator, aileron, rudder controls – check for full, free and correct movement
- Trim controls – run through full range and set to neutral
- Check operation of flaps (if applicable)
- Check seats, seat belts and attachment points
- Ensure load is secure
- Look for and remove any foreign objects
- Registration current
- Cockpit Warning notice(s) in place.
- Instrument checks: fuel gauges, altimeter to airport elev or QNH, compass etc.

General:

- Tubes - Check for bends, dents, scratches, etc.
- Wires - Check wire ends for bolt and/or other fastener security
- Check for twisted or jammed swages or securing mechanism
- Check cables are free of kinks, frays, abrasions, broken strands etc.

- Check cables are free of sagging but not so tight that they 'twang' when plucked

Note: Whether you conduct the inspection clockwise or anticlockwise is an individual choice. The important matter is that the checks must be conducted in a systematic manner.

Fuel system (this may be conducted as a separate check or as part of the walk around)

- Check venting system clear
- Fuel caps secure
- Fuel drain check for water or debris
- Fuel line for secure clamps
- Check security and integrity of tanks
- Check fuel level and correct fuel type (sufficient for flight)

Right Wing:

- Wing attachment points and bolts
- Fabric integrity
- Lift/compression struts
- Check each compression strut for dents or distortion
- Rigging cables and attachment points
- Wing tip/nav light
- Fabric ties, attachments and compression struts along trailing edge
- Attachment points for struts
- Aileron (& flap if appropriate) connections and hinges
- Mass balances (if fitted)
- Rigging cables and attachment points along trailing edge
- Surface of wing – damage, ice

Left Wing:

- Wing attachment points and bolts
- Fabric integrity
- Lift/compression struts
- Check each compression strut for dents or distortion
- Rigging cables and attachment points
- Wing tip/nav light

- Fabric ties, attachments and compression struts along trailing edge
- Attachment points for struts
- Aileron (& flap if appropriate) connections and hinges
- Mass balances (if fitted)
- Rigging cables and attachment points along trailing edge
- Surface of wing – damage, ice

King Post (Vertical tube(s) positioned above the wing providing support for wire braced wings):

- Security of attachment/s
- All cables for condition and attachment points

Undercarriage:

- Correct inflation of tyres
- Attachment points, oleo struts, bungee cords
- Wheel rim and tyre condition
- Brakes and pads - check for fluid leaks

Flying and Landing Wires:

- Check for cable condition and attachment points.

Windscreen:

- Secure and clean

Emergency Parachute System (BRS) (if fitted)

- Inspect as per manufacturer's instructions. Check expiry or repack date.

Engine:

- Ignition off
- Engine controls and operation
- Air filters clean and secure
- Loose bolts/ nuts
- Integrity of electrical connections
- Integrity of spark plug caps
- Loose or damaged parts

- Throttle cable seated properly
- Coolant system
- Integrity of exhaust system
- Top of carburettor tight – rubber mount secure
- Fuel leaks
- Sediment in fuel filter
- Oil levels, no oil leaks.
- Reduction gear secure - no oil leaks
- Reduction V-belt drive - check for wear, proper tracking and correct tension

Propeller:

- Cracks, chips or nicks
- Propeller firmly attached
- Spinner- nil cracks-secure
- In-flight adjustable propeller actuation (if possible to check with engine off)

Tail Surfaces:

- Tail booms and braces
- Control systems rods and cables
- Horizontal stabiliser and attachment points
- Elevator hinges and linkages
- Fin and attachment points
- Rudder hinges and linkages
- Tubing for dents or distortions.
- Cables for fraying, loose thimbles or kinks.
- Rigging cables for tension
- mass balances
- trim devices

PRE-FLIGHT INSPECTION SCHEDULE

For the second and subsequent flight on the same day after a daily inspection has been conducted, the pre-flight inspection may be an abbreviated form of the daily inspection.

The pilot in command must check all items, which may have altered following the daily inspection.

SECTION 12.2

INSPECTION AFTER RE-ASSEMBLY

1 APPLICABILITY

- 1.1 This section applies to all aircraft that have been re-assembled after:
- (a) purchase from new (including LSA and factory built)
 - (b) road or other transport
 - (c) a period of disassembly

Note: (b) and (c) do not apply to aircraft that normally and routinely have some degree of assembly prior to daily flying.

2 PRIVATELY OPERATED AIRCRAFT

- 2.1 Disassembly of an aircraft must be performed by a Level 1 or higher Maintenance Authority holder to ensure no damage occurs.
- 2.2 The Disassembly is to be recorded in an aircraft log book.
- 2.3 Re-assembly of an aircraft must be performed by a Level 1 or higher Maintenance Authority holder.
- 2.4 An independent post assembly inspection should be conducted to ensure that all assemblies and associated systems have been correctly fitted, connected and routed. The independent inspection is to be conducted by a Level 1 or higher Maintenance Authority holder.
- 2.5 An independent duplicate inspection of flight controls **must** be conducted by a Level 1 or higher Maintenance Authority holder.
- 2.6 The re-assembly must be recorded in an aircraft log book.
- 2.7 The independent duplicate inspection of flight controls must be recorded in the aircraft log book, detailing who conducted that inspection.

3 AIRCRAFT USED FOR HIRE AND/OR FLYING TRAINING

- 3.1 Disassembly of an aeroplane to be operated for hire and/or flying training must be performed by, **or under the direct supervision of**, an unrestricted L2 or higher Maintenance Authority holder, or a CFI, to ensure no damage occurs.
- 3.2 The disassembly is to be recorded in the aircraft log book.
- 3.3 Re-assembly of an aeroplane to be operated for hire and/or flying training must be performed by, **or under the direct supervision of**, an L2 or higher Maintenance Authority holder, to ensure that all assemblies and associated systems have been correctly fitted, connected and routed;
- 3.4 The applicable manufacturer's re-assembly instructions are to be followed.
- 3.5 A duplicate inspection of flight controls is required and may be performed by a Level 1 or higher Maintenance Authority holder.
- 3.6 The re-assembly is to be recorded in the aircraft log book.
- 3.7 The independent duplicate inspection of flight controls must be recorded in the aircraft log book, detailing who conducted that inspection.

SECTION 12.3

INSPECTION AFTER A HEAVY LANDING, ABNORMAL FLIGHT LOAD, OR LIGHTNING STRIKE

1 INTRODUCTION

- 1.1 Following a heavy landing or abnormal in-flight loading, or a lightning strike, it is not possible to detail every inspection procedure to be used because of the wide variation in aircraft structure and the loads exerted on those structures. Manufacturer's manuals and inspection requirements should be used if available. Should any doubt exist regarding serviceability, the structure / component must be disassembled and inspected for damage.
- 1.2 Inspections may be carried out by Maintenance Authority holders appropriate to the aircraft type and use.

2 ALIGNMENT AND GEOMETRY CHECKS

- 2.1 In instances where the airframe has sustained unusually high loading, either in flight or during landing, structural distortion may have occurred. Usually there will be visual evidence of structural distortion such as skin wrinkling, cracking of paint at the joints of structural members or loose rivets;
- 2.2 When there is no visual evidence of structural distortion an alignment and geometry checks should be carried out.
- 2.3 If the aircraft has been damaged by impact with an object, misalignment and distortion of the structure may have occurred in areas remote from the initial impact point in addition to the damage which may be clearly visible at the impact point.
- 2.4 The control and structural integrity of an aircraft is dependent on the correct alignment of its separate components, not only in themselves but in their relationship to one another.

- 2.5 Misalignment may result in the imposition of stresses of such magnitude that a premature structural failure could occur and accordingly, it is essential that alignment is checked. These alignment checks are in addition to the normal inspection of all airframe components for structural integrity and engine security.
- 2.6 Where a manufacturer's schedule exists for a heavy landing inspection, that schedule is to be followed. Where such a schedule is not available, the following inspection schedule must be used.
- 2.7 The heavy landing inspection or excessive in-flight loading inspection is to be recorded in the aircraft maintenance log book along with the name, signature, date and RAAus membership number of the person inspecting.

HEAVY LANDING, ABNORMAL FLIGHT LOAD OR LIGHTNING STRIKE INSPECTION

Useful reference:

CASA CAAP 42L-1(n) Inspection of aircraft after abnormal flight loads, heavy landing or lightning strike.

Page 1 of 2

REPORT THE EVENT

- **SUBMIT AN OCCURRENCE REPORT AT
OMS.RAA.ASN.AU**

MAINTENANCE LOG BOOK

- Record the event, in detail
- If obviously damaged or suspected damage, **ground** the aircraft immediately and placard as such

UNDERCARRIAGE

- Shock absorbing mechanisms particularly the attachment points
- Wheel assemblies for cracks, deformation or tyre damage
- Any retraction mechanisms for correct operation
- Oleo strut

UNDERCARRIAGE ATTACHMENTS

- End fittings for cracking, distortion or damage.
- Bolt or rivet shearing
- Structure in the vicinity of attachments for distortion or cracking

WINGS

- Rigid wing covering for wrinkling, buckling, loose or sheared fasteners
- Wing to fuselage fillets for buckling or distortion
- Wing attachments for distortion, cracking or sheared fasteners
- Internal structural damage
- Binding controls or control systems
- Lift and jury struts for bowing
- All external strut attachment fittings and adjacent structure for integrity
- All bracing wires for correct tension end fitting attachment and thickness
- All bolts and pins for bending, shearing and hole elongation.

ENGINE MOUNTING

- Mount assembly for distortion or cracking
- Mount attachments for damage and distortion in adjacent structure
- Firewall for wrinkles and loose or sheared fasteners
- Engine shock mounting assemblies for completeness and integrity

**HEAVY LANDING, ABNORMAL FLIGHT LOAD OR LIGHTNING
STRIKE INSPECTION****Page 2 of 2****FUSELAGE**

- Rigid skin for wrinkles, cracking, distortion or loose fasteners

- All structural elements for bowing, buckling, cracking and end connections
- All doors and other openings for distortion and correct fit
- Interior for damage, security of equipment and for any signs of a leaking battery

EMPENNAGE (TAIL SURFACES)

- Rigid skins for wrinkles, cracking, distortion, loose rivets or sheared rivets
- Empennage attachments and surrounding structure for distortion, cracking, distortion bent bolts or pins, sheared bolts, loose rivets or sheared rivets

CONTROL SYSTEMS

- Control surface hinges for freedom of movement or damage
- Mass balance weights for attachment
- Full and free operation of all control surfaces and systems
- Any increase in backlash or static friction
- All engine controls for freedom, integrity and durability.

MAINTENANCE LOG BOOK

- Record the inspection and the results, in detail
- If damaged, **ground the aircraft immediately** and placard as such
- Update the lodged **Accident, Occurrence or Defect Report**, notifying your findings to the RAAus Technical Manager.

RECTIFICATION WORK

- Arrange for repair/replacement of damage parts.
- Call in expert assistance if required
- Record repairs/replacements in the maintenance log book
- Conduct a thorough inspection of entire aircraft following the rectification work.

TEST FLIGHT

- Conduct a **solo** test flight
- Record the results in aircraft maintenance log book

SECTION 12.4

INSTRUMENT & TRANSPONDER CHECKS

1 AIRCRAFT OPERATING IN CONTROLLED AIRSPACE (CTA) – CLASS C, D, E,

- 1.1 Aircraft that are currently legally permitted to fly in Controlled Airspace (CTA) as detailed in provisions of CAO 95.10, 95.32 or 95.55, **must** have their instruments maintained in accordance with the provisions of CAO 100.5. The checks are only available through a LAME with specialised calibrated equipment and appropriate licence ratings.
- 1.2 Compass “swinging” is not mandatory, however, CASA AWB 34-008 provides good advice. A compass deviation card should be fitted following any compass checking.
- 1.3 Compliance with the required checks must be noted in the aircraft log book.

2 AIRCRAFT OPERATING ONLY OUTSIDE CONTROLLED AIRSPACE (OCTA) – CLASS G

- 2.1 Altimeters must be checked every 2 years against a currently certified altimeter (a LAMEs test equipment) or other appropriate test equipment (e.g. a water manometer and scale, or GPS) and must not deviate by more than +/- 100 feet, up to the maximum normally expected operating altitude of the aircraft.
- 2.2 Airspeed indicators must be checked every 2 years against a manometer or against a GPS using test runs in opposite directions; and airspeed indications shall not vary by +/- 5kts; and
- 2.3 Aircraft with more than one ASI must not have variations between the instruments of more than +/- 5kts.
- 2.4 Pitot and static systems must be checked for leaks every 2 years using a device capable of holding pressure for a minimum of 2 minutes without loss of pressure.

- 2.5 Compass “swinging” is not mandatory, however, CASA AWB 34-008 provides good advice. A compass deviation card should be fitted following any compass checking.
- 2.6 Fuel gauge calibration/checking must be performed every 2 years.
- 2.7 Compliance with the required checks must be noted in the aircraft log book, signed and dated.

3 TRANSPONDERS

- 3.1 All transponders must be maintained in accordance with CAO 100.5. Mode S transponders require an ICAO 24 bit aircraft address allocated by the CASA Aircraft Register at aircraftregister@casa.gov.au. The request must include the registration number, manufacturer, model and serial number of the aircraft and the name of the registration holder. The code will be provided in a return email.

4 DISTRESS BEACONS (EPIRB, ELT or PLB)

- 4.1 All 406MHz Distress Beacons (EPIRB, ELT or PLB) must be registered with the Australian Maritime Safety Authority (AMSA). Registration lasts two years. See <http://beacons.amsa.gov.au/>. Batteries should be checked to be within date (ie: not expired).

Note 1: Old distress beacons on 121.5 MHz can no longer be detected via satellite and are no longer suitable for use.

Note 2: Single seat aircraft do not require an ELT/PLB to be carried.

Note 3: Flights within 50nm of departure aerodrome do not require an ELT/PLB to be carried.

Note 4: In accordance with RAAus safety culture it is recommended that all aircraft carry a ELT/PLB.

Note 5: See CAR 252A for further information.

SECTION 12.5

AIRCRAFT MAINTENANCE LOG BOOK AND OTHER MAINTENANCE RECORDS

1 LOG BOOKS

- 1.1 An **Aircraft Maintenance Log Book** is available from RAAus and is to be used to record all maintenance performed. Alternatively, other commercially available or home-grown aircraft logbooks may be used.
- 1.2 The log book should contain:
- (a) Aircraft Identification and Specifications page.
 - (b) Maintenance Record pages.
 - (c) Modification and Components Record.
 - (d) Summary of Empty Weight Changes.
 - (e) Airworthiness Directive/Notices pages.
- 1.3 The following information must be entered as soon as possible after the event:
- (a) The maintenance carried out and the standard it complies with, for example "... carried out in accordance with the Evektor Sportstar maintenance manual."
 - (b) The date the maintenance was conducted
 - (c) The airframe/engine hours at which time the maintenance was conducted
 - (d) Parts used
 - (e) Modifications made
 - (f) Components changed
 - (g) Special inspections, Service Bulletins, Airworthiness Notices, and the results of those inspections.

2 ENTRIES

- 2.1 All entries in any aircraft log book are to include:
- (a) the date the work was completed; and

- (b) a list of all work completed; and
 - (c) the name of the person who completed the work (in block letters), their Maintenance Authority Level and their signature
- See page 12.5-8 for further guidance.

3 LOSS OF AIRCRAFT MAINTENANCE LOGBOOK(S)

- 3.1 Circumstances may arise where a logbook is lost or destroyed. In such a case, the aircraft owner must:
- (a) notify the Technical Manager as soon as it is known that the logbook has been lost or destroyed, and
 - (b) Prepare a new log book clearly marked “*REPLACEMENT*”, and
 - (c) Inside the cover (or in another location near the front of the logbook) detail the circumstances leading to the raising of the replacement book (ie loss or destruction of the original), and
 - (d) Complete all known and discoverable details regarding the aircraft’s history. Details might be found in other records or receipts retained, work performed by an RAAus L2, the RAAus aircraft file etc. Where insufficient can be found, a Statutory Declaration may be useful, attesting to the current maintenance status of the aircraft recalled and that the current and continuing airworthiness requirements are up to date and being met.

4 AIRCRAFT SALE

- 4.1 If the aircraft is sold the log book forms part of that sale and must be provided to the new owner.
- 4.2 In the event that the engine or propeller is removed and sold, engine or propeller logbooks (if existing separately) or full copies of the aircraft log book are to be supplied.

5 OTHER MAINTENANCE RECORDS

- 5.1 If any other document is available regarding a particular maintenance matter, (such as a repair certificate or release note, a certificate of

compliance for aircraft instrument or transponder checks, etc) that document must form part of the maintenance records and is to be retained with the maintenance log book. The document should be affixed to the relevant page of the log book concerning the maintenance matter.

5.2 The RAAus **Daily Flight Record** also forms part of the maintenance records and must be retained.

5.3 L2 and L4 Maintenance Authority holders must keep their maintenance logbooks and all paperwork actioned, for a period of at least 5 years. Originals of documents (eg pre-flight inspections) should be kept, and only copies need to be sent to RAAus office as required.

6 LOG BOOK STATEMENTS FOR AMATEUR BUILT AIRCRAFT

6.1 Certain statements should be made when you commence filling out a brand new Log Book. These are primarily to “introduce” this new aircraft to the world, to explain briefly on how it came to be, what it’s fitted with, to outline what has been done to it in preparation for its new working life as an aircraft, and to specify what standards or specifications it shall be maintained to.

Some basic suggestions (in no particular order) are shown on the following pages. You could copy and cut out these blocks from this document, fill them out and paste them into your logbook.

Introductory statement:

“I hereby certify that the Amateur Built aircraft registered number _____ identified as a _____ with serial number _____, has been manufactured in accordance with good aeronautical practices and complies with the drawings, instructions and specifications supplied as kit number/plans set number _____”

Construction commenced / / and was completed on / /

Builder Name _____

Signed _____ RAAus _____ Date / /

Chosen Maintenance Program:

Each aircraft must have a maintenance program identified.

Airworthiness Notice, Service Bulletin, Service Letter etc Compliances:

List all the specific items identified as applicable to your aircraft and complied with thus far.

Engine Fitment:

Engine installation carried out in accordance with the relevant construction manuals, drawings and using good aeronautical practices.

MAKE _____ MODEL _____

SERIAL No _____ NEW MANUFACTURED DATE / /

T.S.N _____ If Part Life: T.S.O _____

Signed _____ Date / /

Inspection of cable operated control systems carried out for correct installation, full and free travel, correct sense and the locking of all systems.

Initial Inspection by _____

Signed _____ RAAus _____ Date / /

Independent Inspection by _____

Signed _____ RAAus _____ Date / /

Propeller Fitment:

Propeller installation carried out using the prescribed manuals, drawings and using good aeronautical practices, IAW with _____

MAKE _____ MODEL _____

SERIAL No _____ MFG DATE / /

T .S.N. _____ If Part Life -T.S.O. _____

Signed _____ RAAus _____ Date / /

Instrument Fitment:

Compass calibration carried out IAW AWB 34-008

at _____ on / /

Results:

030	060	090	120	150	180	210	240	270	300	330	360

Signed _____ RAAus _____ Date / /

Harnesses:

Safety Harnesses fitted in accordance with the appropriate aircraft construction manual, drawings and good aeronautical practices.

Make _____ Model _____

Serial no: _____

Signed _____ RAAus _____ Date / /

Weight and Balance:

Aircraft weight and balance carried out IAW Technical manual Section 10.

The full reports are located in _____

Signed _____ RAAus _____ Date / /

Fuel System:

Fuel quantity calibrations. One chart required for each tank.

Name of this tank: _____

Total capacity of this tank, including unusable fuel is _____ litres.

Quantity of unusable fuel in this tank when the gauge reads ZERO or EMPTY is _____ litres.

Major graduations on gauge								
Measured quantity of useable fuel (litres)								

Signed _____ RAAus _____ Date / /

Electrical System:

Electrical system installation carried out in accordance with the appropriate aircraft construction manuals, drawings, FAA AC 43-13-1B chapter 11 and good aeronautical practices.

A copy of the aircraft circuit diagram is located in:

Signed _____ RAAus _____ Date / /

Flight Controls Inspection:

Flight control systems (pitch, roll, yaw) inspection carried out to ensure construction has been carried out in accordance with the appropriate construction manuals, drawings and good aeronautical practices.

Results:

(for all deflections, note whether in degrees, inches or mm)

PORT AILERON	UP	DOWN
STBD AILERON	UP	DOWN
PORT FLAP	UP	DOWN
STBD FLAP	UP	DOWN
PORT ELEVATOR	UP	DOWN
STBD ELEVATOR	UP	DOWN
RUDDER	LEFT	RIGHT

Add additional sections for any flight control trims available.

Inspection of control systems carried out for correct installation, full and free travel, correct sense and the locking of all systems.

Initial Inspection by _____

Signed _____ RAAus _____ Date / /

Independent Inspection by _____

Signed _____ RAAus _____ Date / /

Some examples of the wording of Log Book entries:

Making logbook entries does not need to be complicated. Here are some basic rules for success:

Logbook entries should:

- Describe what was done and why (no need to skimp on detail either)
“Worn spark plugs replaced following rough running.”
- Describe any significant parts fitted (by number)
“8 new correctly gapped NGK D9EA spark plugs fitted.”
- Describe the Maintenance Data used (by name, section, chapter etc.)
“IAW Section 66 of Jabiru Maintenance Manual 2200 engine”
- Include your name, the date, your signature, your RAAus number:
IVA FASTPLAIN 4/5/2015. Iva Fastplain RAAus 654321.
- Describe by what authority you have done this work:
“RAAus Level 1 Maintainer.”

General advice is to:

- Include too much information rather than not enough.
- Specify precisely what you have done, the TTIS of the aircraft or component on the day you performed the work.
- Specify to what Service Manual or bulletin (etc) your work is addressing.
- Specify when any time-lifed components require replacing.
- Specify on the daily flight record (Tech Form 121) when the next inspection or service is due to be performed.

A well written and thoroughly detailed record of maintenance is required and will save you from ever wondering when it was that you last performed a required inspection or service.

Remember, you the owner (unless a Maintenance Controller has been appointed for a flying school aircraft) are legally responsible for the record keeping and scheduled maintenance of your aircraft, regardless of whether you do the work yourself or you have a RAAus accredited L2 do it.

SECTION 12.6

PISTON ENGINE CONTINUING AIRWORTHINESS REQUIREMENTS

1. INTRODUCTION

- 1.1 The following is the minimum required by RAAus to show that an adequate and reasonable inspection has been carried out in order to track the performance of an engine.
- 1.2 Although RAAus recommends that the engine manufacturers' overhaul schedules be followed, "On Condition" operations may be an option, unless the manufacturer specifically excludes it.

2 DEFINITIONS – FOR THE PURPOSES OF THIS SECTION

Airworthy - an aircraft engine, including its component parts, is generally defined as Airworthy when it:

- (a) remains as originally manufactured, or incorporates factory approved modifications; and/or
- (b) is overhauled at the manufacturer's specified times; and
- (c) is overhauled IAW the manufacturer's specifications; and
- (d) remains in a condition for safe operation

"On-condition" maintenance means an inspection/functional check that determines an item's performance and may result in the removal of an item before it fails in service. **It is not a philosophy of fit until failure or fit and forget.**

"On-condition" is not available for LSA unless the manufacturer states otherwise.

3 APPLICABILITY

- 3.1 Piston engines and those components necessary for the operation of the engine installed in aeroplanes and maintained in accordance with the manufacturers schedules or an alternate schedule approved by RAAus.

- 3.2 This section is not applicable to compression-ignition (diesel) piston engines using fuels other than Avgas or Mogas, or electric battery powered motors.

4 REQUIREMENTS FOR ALL AIRCRAFT

- 4.1 To ensure the continuing airworthiness of the engine, and those components necessary for the operation of the engine:
- (a) the requirements of normal servicing, in accordance with the manufacturers schedule; is to be undertaken; and
 - (b) the requirements in Annex A & B for four stroke engines must be followed; or
 - (c) the requirements in Annex C for two stroke engines must be followed; and
 - (d) operating the engine “on condition” is permitted, unless the manufacturer specifically excludes it.

5 REQUIREMENTS FOR AIRCRAFT USED FOR HIRE AND/OR FLYING TRAINING

- 5.1 Maintenance on aircraft identified in this Subsection must conducted by conducted an appropriately accredited RAAus L2.

5.2 Moving an aircraft from “Privately Operated” to “For Hire and/or Flying Training”:

Any Factory Built 95.32 or 95.55 Aircraft which has been operating privately with an “on condition” engine, must have that engine overhauled or replaced prior to that aircraft being used for hire and/or flying training. The replacement engine must be either:

- (a) A factory new engine
- (b) A factory (or factory accredited over-hauler) overhauled engine and has a completed RACR (Recreational Aircraft Condition Report) inspection done by an RAAus L2.

6 RECORD OF CONDITION

**TECH FORM 023 – 4 STROKE PISTON ENGINE CONDITION REPORT or
TECH FORM 024 – 2 STROKE PISTON ENGINE CONDITION REPORT**
is to be completed for all engines completing this process, and affixed
into the aircraft maintenance log book.

ANNEX A - Four-Stroke Piston Engine Condition Check

1 REQUIREMENT 1 – AT EACH PERIODIC INSPECTION:

- 1.1 Carry out an engine performance run to determine the engine performance;
- 1.2 For turbocharged / supercharged engines, the output parameters shall be adjusted in accordance with manufacturer's data;
- 1.3 Record engine and aircraft details and parameters achieved during the engine run on **TECH FORM 023 – 4 STROKE PISTON ENGINE CONDITION REPORT**
- 1.4 All completed forms shall become part of the engine maintenance record.
- 1.5 For the purposes of this subsection:
 - (a) where possible, maximum RPM is to be attained with the aircraft stationary; or
 - (b) where the aircraft manufacturer details in approved maintenance data that maximum RPM can only be achieved during take-off or climb, or the aircraft type does not permit maximum RPM to be safely obtained whilst the aircraft is stationary, an entry on the aircraft Maintenance Record sheet by the pilot in command of the maximum RPM during the last flight prior to the periodic engine inspection is acceptable data.
- 1.6 Engine run parameters to be recorded include:
 - (a) Take-off power shall be:

- for a fixed pitch propeller aircraft - static RPM.
 - for a constant speed propeller, normally aspirated engine aircraft, take-off power shall be maximum RPM at a manifold pressure, not less than 2" of static manifold pressure, or at full fine pitch for variable pitch propellers.
 - for a turbocharged/supercharged engine aircraft, take-off power shall be maximum RPM at the manifold pressure, or pitch setting as detailed in the aircraft flight manual.
- (b) With the engine at operating temperature:
- oil pressure at idle and at take-off power;
 - oil temperature at idle and at take-off power;
 - cylinder head or exhaust gas temperature, if fitted, at take-off power;
 - fuel pressure/flow at take-off power if fitted;
 - ambient temperature and location altitude.

2 REQUIREMENT 2 - AT INTERVALS NOT EXCEEDING 100 HOURS;

2.1 Carry out a cylinder leak check in accordance with:

- (a) The procedure(s) published by the engine manufacturer; or
- (b) In accordance with Annex B – Four Stroke Piston Engine Cylinder Leak Check, where data from the engine manufacturer is not available; and

Record the results of each cylinder leak check and / or inspection on
TECH FORM 023 – 4 STROKE PISTON ENGINE CONDITION REPORT

3 REQUIREMENT 3 - AT INTERVALS AS PUBLISHED BY THE ENGINE MANUFACTURER:

3.1 Oil change

3.1.1 Replace the engine oil and engine oil filter.

3.2 Engine oil filter, visible oil pressure indicators and screen inspection - At each oil change and oil filter replacement, if applicable:

- 3.2.1 All engine oil and engine oil filter replacements, including those carried out in the period between the aircraft periodic inspections, shall include inspecting the engine oil pressure filter, oil pressure screen, if fitted; and
- 3.2.2 If applicable, inspecting the oil suction screen, for evidence of metallic particles, shavings or flakes; and
- 3.2.3 If metallic particles or shavings are discovered, take corrective action, where necessary.

3.3 Engine oil uplifts - At each oil addition and at each aircraft periodic inspection:

- 3.3.1 Record all oil uplifts; and
- 3.3.2 Review oil usage records and take corrective actions, where necessary.
- 3.3.3 For the purposes of Subsection 3.3.1 Oil uplifts are oil that is added to the engine between servicing; and
- 3.3.4 The amount of oil added is to be recorded on Tech Form 121 Daily Flight Record.

4 REQUIREMENT 4 – REVIEW DATA

- 4.1 In order to assess the engine condition, review all data recorded in requirements 1, 2 and 3 of this Annex; and
- 4.2 Engines that fail the condition check required by this Annex, (such as, but not limited to: poor leakdown result, poor compression, poor performance, rough running) are to be repaired or overhauled prior to further use.
- 4.3 Only airworthy engines are to be placed in service.

Annex B - Four-Stroke Piston Engine Cylinder Leak Check

1 INTRODUCTION

- 1.1 To effectively monitor the continuing airworthiness of a piston engine in service, certain maintenance actions should be carried out to establish the condition of the engine;
- 1.2 Those maintenance actions should not only establish the condition of the engine at the time of the maintenance, but also establish a level of trend monitoring;
- 1.3 The trends can then be used to plan maintenance in a pro-active manner, rather than in a reactive manner;
- 1.4 A prime factor in piston engine trend monitoring is the cylinder leak check. A cylinder leak check should be carried out at specified intervals to establish and monitor the condition of the engine cylinders; and
- 1.5 The procedure should not only establish the rate of cylinder leakage but also the source of the leakage. For example, whilst a level of dynamic leakage past the piston rings may be acceptable, any static leakage past a valve seat or from the head to barrel joint renders that cylinder unserviceable; and
- 1.6 The cylinder leak check, using the differential pressure test method, should be carried out:
 - (a) For aircraft used only in private operations – by the owner (holding a Level 1 Maintenance Authority) or a Level 2 Maintenance Authority holder.
 - (b) For aircraft used for hire or flying training - by a Level 2 Maintenance Authority holder.

2 LEAK RATES ACCEPTABLE

- 2.1 Static leaks are not permitted from the cylinder barrel, cylinder barrel to head joint, cylinder head, or the inlet and exhaust valve to seat seals.

- 2.2 Differential leak rates of less than 25% are acceptable. (that is; better than 60/80)
- 2.3 A differential leak rate of more than 25% (that is; less than 60/80) will require maintenance action. The maintenance required is:
- (a) Better than 50/80: The engine may continue in service subject to recording the results of the cylinder leak check in the maintenance log book and listing as maintenance required; and
 - (i) oil consumption shall be monitored in accordance with approved maintenance data at intervals not to exceed 50 hours time in service; and
 - (ii) a cylinder leak check shall be carried out at intervals not to exceed 50 hours' time in service until rectification of the excessive differential leak rate is carried out.
 - (b) A differential leak rate of less than 50/80 requires rectification before further flight is permitted.

ANNEX C - Two-Stroke Piston Engine Condition Check

1 REQUIREMENT 1 – AT EACH PERIODIC INSPECTION

- 1.1 Carry out an engine performance run to determine the engine performance;
- 1.2 Record engine and aircraft details and parameters achieved during the engine run on **TECH FORM 024 – 2 STROKE PISTON ENGINE CONDITION REPORT**
- 1.3 All completed forms shall become part of the engine maintenance record.
- 1.4 For the purposes of this subsection:
- (a) where possible, maximum RPM is to be attained with the aircraft stationary; or
 - (b) where the aircraft manufacturer details in approved maintenance data that maximum RPM can only be achieved

during take-off or climb, or the aircraft type does not permit maximum RPM to be safely obtained whilst the aircraft is stationary, an entry on the aircraft maintenance release by the pilot in command of the maximum RPM during the last flight prior to the periodic engine inspection is acceptable data.

1.5.1 Engine run parameters to be recorded include:

Take-off power shall be:

- for a fixed pitch propeller aircraft - static RPM.

1.6 With the engine at operating temperature:

- cylinder head or exhaust gas temperature at take-off power;
- fuel pressure/flow (where fitted) at take-off power;
- ambient temperature and location altitude.

2 REQUIREMENT 2 – REVIEW DATA

2.1 In order to assess the engine condition, review all data recorded in Requirement 1 of this Annex; and

2.2 Engines that fail the condition check required by this Annex, following defect rectifications in accordance with the manufacturers' recommendations, are to be overhauled; and

2.3 Only airworthy engines are to be placed in service.

SECTION 12.7

LINE MAINTENANCE (definition)

Provided it does not alter or require a change or disassembly of the primary structure of the aircraft, Line maintenance is defined as:

- Removal or installation of landing gear tyres
- Repair of pneumatic tubes of landing gear tyres
- Servicing of landing gear wheel bearings
- Replacement of defective safety wiring or split pins
- Replacement of side windows
- Replacement of seats
- Repairs to upholstery or decorative furnishings inside the cockpit
- Replacement of seat belts or harnesses
- Replacement or repair of signs and markings
- Replacement of bulbs, reflectors, glasses, lenses and lights
- Replacement, cleaning, or setting gaps of, spark plugs
- Replacement of batteries
- Changing oil filters or air filters
- Changing or replenishing engine oil or fuel
- Lubrication of components
- Replenishment of hydraulic fluid
- Application of preservative or protective materials
- Removal or replacement of glider tow hooks
- Carrying out a duplicate inspection of a flight control system that has been assembled, adjusted, repaired, modified or replaced
- Carrying out a daily inspection on an aircraft

(These items taken from CASA Schedule 8 – Pilot Permitted Maintenance)

SECTION 12.8

PERIODIC INSPECTIONS

1 INTRODUCTION

- 1.1 Privately operated aircraft require a comprehensive periodic inspection each year (regardless of hours flown), by the holder of an appropriate RAAus maintenance authority. This is also commonly known as the Annual Inspection.
- 1.2 Aircraft operated for hire and/or flying training require a comprehensive periodic inspection each year, or each 100 hours – whichever occurs first, by the holder of an appropriate L2 maintenance authority.

2 MAINTENANCE SCHEDULE (by whatever name)

- 2.1 All aircraft must be maintained to the manufacturer's maintenance schedule which specifies all of the required maintenance items to be checked, replaced, repaired etc.
- 2.2 Some manufacturer's schedules may make no mention of an annual inspection. The Annual or 100 hourly periodic inspection detailed above, **must be completed** if the maintenance schedule makes no mention of such an inspection.
- 2.3 For other than aircraft used for flying training or hire, if no manufacturer's schedule (or other approved Schedule; CASA Schedule 5 for example) is available, one should be obtained or prepared. Acceptable schedules can either be based on, or developed from:
 - CAAP 42B-1(n) CASA MAINTENANCE SCHEDULE
 - Appendix 1 of FAA AC 90-89A AMATEUR-BUILT AIRCRAFT AND ULTRALIGHT FLIGHT TESTING HANDBOOK
 - Aircraft TYPE groups may also have a suitable schedule available.
- 2.4 Maintenance schedules must contain instructions for the maintenance of airframe, engine, propeller and fitted equipment.

3 RECORD KEEPING

- 3.1 Upon completion of the periodic inspection, a logbook entry shall be made which records the inspection event, who performed it, their signature, their maintenance authority level, and the date. The entry should also include a comprehensive description of any significant works carried out, repairs made, parts replaced etc.

General Inspection Guidance: (based on a simple two-stroke aircraft -

**(CASA Schedule 5 may suit more complex types with a four-stroke engine.
Reference may also be made to CAAP 42B-1.)**

Control cables and pushrods

Inspect all control cables and their end fittings as follows:

- (a) Check all push rods for bends, dents, scratches;
- (b) Check control wire and rod ends and bolts and/or other fastener for security;
- (c) Check for twisted or jammed thimbles;
- (d) Check cables are free of kinks, frays, abrasions, broken strands; and
- (e) Cables are free of sagging, but not so tight that they 'twang' when plucked.

Engine power

Spark plugs should be the type recommended by the manufacturer of the engine.

Care should be taken adjusting a carburettor; it is a specialised job and can have a large effect on the power being developed. Altitude will invariably affect the power available and may affect carburettor operation.

Wooden fixed pitch propellers

Because of the nature of the material from which they are made, wooden propellers are relatively easily damaged by stones and other hard objects;

Wooden propellers may also be affected by climatic conditions. Bolt torque checks must be conducted at various times throughout the year due to changes in temperature, humidity etc.

Wooden propellers should be inspected frequently for breaks in the surface finish for scores, nicks, cracks, delamination, and security of the leading edge sheath.

Minor defects in the surface finish of wooden propellers may be repaired by touching-up with varnish or paint as appropriate, but any damage to the wood, other than very minor damage, must be assessed in accordance with approved repair schemes and the propeller repaired or returned to the manufacturer as appropriate.

Periodic Propeller Maintenance

The intervals at which a propeller must be removed for inspection are specified in the approved Maintenance Schedule;

With the propeller removed from the aircraft the blades and boss should be inspected for the sort of damage described in Subsection 3 above, paying particular attention to those areas which are not visible when the propeller is installed; and

The following inspections should be carried out:

- (a) bolt holes should be examined for ovality, rough edges, and cracks radiating into the boss;
- (b) boss faces should be examined for crushing and other damage where they have been in contact with the hub flanges, particularly at the circumference of the flanges;
- (c) The centre bore should be examined for cracks and delamination of the plies;
- (d) The mounting hub should be examined for corrosion, cracks, correct fit on the crankshaft and the attachment bolts and nuts for condition and correct torque;
- (e) Where mounting cones are fitted, these should be checked for corrosion, and for picking-up of the surface; and

Correct fit between the hub and cones may be checked using engineers' blue, an 80% contact normally being required.

Propeller Installation

Before installing a propeller the propeller shaft and threads should be checked for damage;

The fit of the hub on the shaft should be checked using engineers' blue and any high spots should be removed with a fine oil stone;

Boss and hub flange faces should be checked for cleanliness to ensure that maximum friction will be obtained;

When assembling the hub to the shaft it is recommended that an anti-seize compound should be applied to the threads, and engine oil to the shaft; and

Where cones are fitted, these should be clean and dry.

If the engine is likely to be started by hand swinging, the propeller should be mounted in a convenient position in relation to aircraft height and engine compression unless the relevant manufacturer has issued instructions to the contrary.

The attachment bolts should be tightened evenly and in the correct sequence, to the specified torque.

After installation, the track of the propeller must be checked;

This check is normally measured on a trestle or platform vertically below the boss; and

When the propeller is rotated the blades should track, as a guide, within 3 mm of each other.

After engine runs to check the reference rev/min, the propeller attachment bolts and the hub retaining nut should be checked for tightness, and relocked; and

Unless there is manufacturing advice to the contrary, the bolts should also be checked for correct tension after each of the first six flights following installation or reinstallation.

TUBING: Installation and Removal

When removing tubing do not bend or force tubes; and

When installing, do not distort tubing from its original shape.

Inspection of Tubing

Inspect tubing for cracks, damage from abrasion, elongated holes or distortion in tube surface;

Never attempt to repair tubing, always replace with new part;

Inspect tubing for corrosion inside and outside. If surface corrosion is present it must be:

- (a) carefully removed with abrasive; or
- (b) the component replaced with a new part.

Any corrosion which exceeds the manufacturer's limits or reduces the tube wall thickness at any point by greater than 10% of the wall thickness renders the tube unserviceable; and

The affected tube must be replaced and the unserviceable tube destroyed.

Bolts: Installation and Removal

Proceed as follows:

- (a) After tightening all bolts should have at least 1 thread showing;
- (b) All self-locking nuts should not be installed more than twice;
- (c) If grip length is too long washers may be added; and
- (d) No more than 3 washers should be used;
- (e) A washer should always be installed under the nut; and
- (f) Be sure not to over-torque bolts when installing.

Check assembly instructions for correct bolt placement.

Check bolts for worn shanks, bad threads or corrosion.

Wing covers: Installation and Removal

When installing and removing the cover make sure there are no sharp edges or burrs that will tear the sail; and

See the manufacturer's Assembly and Parts Manual for complete instructions.

Check for tears in the sail cloth or any loose or unravelled seams:

Check all inspection zippers to see if they function smoothly and close completely; and

Inspect Velcro strips for attachment, wear or frayed edges.

Sail may be repaired by reference to a professional engineer who will specify the loads such coverings are to contain; and

A suitably qualified sail maker is to be given the engineering requirements in order to effect suitable repairs.

Regardless, the owner-operator is ultimately responsible for the safety of the aircraft and is to conduct whatever tests are necessary to ensure that the repairs are suitable for the application intended.

Keep the sail clean and free of oil and dirt by washing the sail with soap and water; and

Keep the sail covered when not in use.

Aircraft with Dacron skins, such as, but not limited to, CAO 95.32 weight shift aircraft, must be tested in accordance with the manufacturer's schedules; and

A Bettsometer or similar tester may be used to test sail strengths to the rated limits. (Care should be taken and the fabric specifications allowed for)

WARNING: CONTINUED EXPOSURE TO SUN DRAMATICALLY SHORTENS THE LIFE OF WING AND TAIL COVERS - possibly to as little as six months.

Bracing wires and cables

All wires are to be checked for broken strands, wear and rust;

All swages are to have any plastic sheathing removed and be inspected for corrosion;

All securing mechanisms are to be checked for security and safety;

Cotter pins and securing pins are to be checked for wear and replaced as necessary.

SECTION 13.1

DEFECT REPORTING AND AIRWORTHINESS NOTICES

1 INTRODUCTION

- 1.1 Defects develop in aircraft and these need to be corrected to ensure continued safe operation;
- 1.2 Repair of the defective item, even to new standards, may not prevent recurrence of the defect;
- 1.3 Advice of defects found and action taken can assist fellow recreational pilots; and
- 1.4 This section will:
 - (a) define a defect;
 - (b) seek reports on defects found; and
 - (c) describe Airworthiness Notices and outline the administrative procedures that relate to defects and Airworthiness Notices.

2 DEFINITIONS

- 2.1 A Defect is any fault in the design, function or qualitative characteristic of an item fitted to an aircraft which differs from the specification, the drawing or recognised standard of good workmanship for that item other than that classified as fair wear and tear within manufacturer's limits; and
- 2.2 When a defect is found or where a maintenance schedule or flight manual is considered to be deficient, then a defect report is to be prepared.
- 2.3 An Airworthiness Notice is a notice issued by the Technical Manager to RAAus aircraft owners / operators and other interested persons, advising them of a known defect or deficiency and rectification action.

3 WHEN TO SUBMIT DEFECT REPORTS

- 3.1 All items fitted to or associated with an RAAus aircraft operation that exhibit faults which meet the definition in Subsection 2 are to have defect reports prepared;
- 3.2 Any member can submit a defect report, which should be submitted to RAAus through the Occurrence Management System via oms.raa.asn.au

4 CONTENT OF DEFECT REPORTS

- 4.1 Recreational aircraft Defect Reports are raised to help other members identify the fault found and to repair it to reduce the chance of recurrence; and
- 4.2 The following information is included in the report:
- (a) Aircraft registration, type, model and serial number to which the defective item was fitted. The location of the item on the aircraft is to be specified;
 - (b) Name and description of the defective item;
 - (c) Description of the defect (include sketches and photographs);
 - (d) History of use of the item including age, hours operated, conditions of use and of storage;
 - (e) Item's manufacturer;
 - (f) What corrective action was taken; and
 - (g) Any recommended inspection, replacement or repair actions for other operators.

5 DEFECT REPORT AND AIRWORTHINESS NOTICE ADMINISTRATIVE PROCEDURES

- 5.1 Once the defect report is submitted through the Occurrence Management System the originator will be sent a confirmation of receipt advice.
- 5.2 Defect reports will be given a reference number for the originators record and all reports will be reviewed by the RAAus Technical Manager.

- 5.3 Every defect report will be reviewed by the RAAus Technical Manager and one or more of the following actions may be taken:
- (a) A summary of the defect and its outcome are made available on the RAAus website via the following link <https://www.raa.asn.au/safety/accident-and-defect-summaries/>
 - (b) An Airworthiness Notice will be prepared. Samples are available on the RAAus website www.raa.asn.au under Safety – Technical – Airworthiness. Due to the wide nature of possible subjects, individual Airworthiness Notice format may vary but will generally follow the format of Topic – Background Discussion – Action Required. Airworthiness Notices may be published in “Sport Pilot” magazine. Depending on the significance of the defect, copies of Airworthiness Notices may also be forwarded by the Technical Manager to all RAAus registered owners of the aircraft type by mail or via email.
 - (c) For other than LSA aircraft, the rectification action specified in the Airworthiness Notice is to be undertaken or arranged to be undertaken by aircraft owners within the period specified in the Notice.
 - (d) For LSA Aircraft, as no modifications can be made without Manufacturer’s approval, RAAus will issue the Airworthiness Notice as an advisory to members, and RAAus will also alert the aircraft manufacturer about the defect found, and request they investigate.
 - (e) Aircraft/Component manufacturers may be advised of the defect or deficiency and requested to undertake rectification action and advise all known owners of the affected aircraft or component.



RECREATIONAL
AVIATION AUSTRALIA

SECTION 14.1

SPECIAL FLIGHT PERMITS

1 PURPOSE

- 1.1 A CASA Special Flight Permit can be issued for an aircraft that needs to be flown to a base where repairs, alternations or maintenance is to be performed, but for some reason is not at that time permitted to – for example, the aircraft has not had an annual inspection conducted, or the aircraft is subject to an immediate airworthiness notice or directive which cannot be rectified at its current location.
- 1.2 Special Flight Permits can only be issued by a person so authorised by CASA. The RAAus Technical Manager may have the required CASA authorisation, or, the CASA website lists other industry authorised persons. Fees may apply.

Search the CASA website for **Airworthiness delegates and authorised persons search** then look at the CASR 21.200 delegates.

- 1.3 The permit may be issued provided the aircraft can reasonably be expected to be capable of safe flight for the intended purpose. The permit will have operational conditions and limitations imposed, and are normally for one flight only.

2 PROCEDURE

- 2.1 Make initial contact with your chosen Authorised Person to discuss your need for a Special Flight Permit. Ask about their fees payable. Discuss whether a “window of opportunity” needs to be included, to allow for weather delays.
- 2.2 CASA Form 725 is the correct application form to complete and supply to your chosen Authorised Person. Expect that the Authorised Person will require various information to be supplied in order that they may fully consider your application.

3 FLIGHT

- 3.1 Only when the Special Flight Permit is received can the aircraft be flown to the nominated base for repairs, alteration or maintenance. All operational conditions and limitations must be strictly adhered to for the flight.



RECREATIONAL
AVIATION AUSTRALIA

NOTICE OF INTENTION TO BUILD AMATEUR BUILT AIRCRAFT

1. Builders:

(A) Principal builder: *(The principal builder is the person who either intends to build the majority of the aircraft or supervise a group of builders.)*

Membership Number			
Name			
Address			
Email			
Phone numbers	H	B	M

(b) Other builders (if any):

Membership number			
Name			
Address			
Email			
Phone numbers	H	B	M

Membership number			
Name			
Address			
Email			
Phone numbers	H	B	M

(c) Address at which building will take place:

Address	
---------	--

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

2. Aircraft particulars

Aircraft type/model	
Designer's name	
Fixed Wing, Weight Shift or Powered Parachute	
Floating Hull, Amphibian or floatplane	
Kit or plans or other?	
Kit or plan Serial Number	
Kit or plan RAAus approval number (if any)	
Prototype? <i>(approval required)</i> <i>(first design of this model in Australia or an aircraft of your own design)</i> <i>Describe the design.</i> <i>Include drawings.</i>	
Number of seats	
Powerplant - make & model (if known)	
Propeller - make & model (if known)	
Main construction materials	
RAAus registration number allocated (if any)	

3. Avionics to be installed (if known):

Radio	Make		Model	
Transponder	Make		Model	
Electrical System				
Lights				
Other				

4. Design changes:

Do you intend to deviate from the design of the kit or plans?	
Details	

5. Proposed timetable:

When do you intend to commence?	
When do you estimate completion?	
Will you seek the services of a design engineer or organisation?	
If so, who?	
Will you seek advice and/or inspections from RAAus L2 or L4, LAME, SAAA Technical Counsellor or other experienced builders? (detail)	YES NO
Do you wish to contact RAAus to discuss the project?	YES NO

Notes: A CAO 95.10 kit or plans must be of approved type. See the RAAus Technical Manual Section 3.3.1 & 3.4.1 for details. All future correspondence will be with the Principal Builder only. Please notify RAAus if any of these details change.

Declaration:

I (we) hereby notify RAAus of my (our) intention to construct an amateur-built aircraft as detailed above, and in accordance with all applicable RAAus Technical Manual provisions.

Signature:

Date: / /

(principal builder)

AMATEUR BUILT AIRCRAFT STAGE INSPECTION

Refer to Section 3.1 of the RAAus Technical Manual

Inspection Number	First	Second	Third
-------------------	-------	--------	-------

Complete as much of this form as possible

1. Principal Builder: *(The Principal Builder is the person who either built the majority of the aircraft or supervised the other builders.)*

Membership Number			
Name			
Address			
Email			
Phone numbers	H	B	M

2. Aircraft particulars

Registration Number	
Aircraft type/model	
Kit or plans and Serial Number	
Number of seats	
Powerplant - make & model	
Propeller - make & model	
Main construction materials	

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

3. Describe what major components are being inspected today:

Details

4. Construction manual and plans:

Details

5. Builders logbook and photographs:

Details

6. Design changes being incorporated (if any):

Details

7. Guidance sought from others (eg. other builders, LAMES, SAAA TC etc):

Details

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

8. "Type" group member (eg. internet aircraft type group)

Details

9. "Major Portion" requirement will be met

Details

10. Discussions, suggestions, advice etc:

Details

11. Next Inspection suggested time:

Details

12. Stage Inspector:

Name _____

Signature _____ Date / /

RAAus Level _____

A copy of this form must be sent to RAAus by the Stage Inspector.

This form must be presented to the RAAus L4 observing the Pre-flight Final Inspection

NOMINATION OF MAINTENANCE CONTROLLER

Refer to Section 11.1 of the RAAus Technical Manual

Flight Training School:

--

Aircraft covered by this nomination:

REGISTRATION	MAKE	MODEL

Person nominated as Maintenance Controller:

Name
RAAus Membership Number
Address
Phone numbers
Email

AIRCRAFT REGISTRATION APPLICATION (non LSA)

(for Light Sport Aircraft use Tech Form 010)

Registration by RAAus does not itself permit the aircraft to be flown.

The aircraft may not be flown until a Permit to Fly has been issued by the RAAus Technical Manager.

1. Owner details: (if joint owners - the primary contact person)

Name			
Address			
Membership Number			
Phone numbers	H	B	M
Email			
Signature			

2. Additional owner's details (if any)

Name			
Address			
Membership Number			
Phone numbers	H	B	M
Email			
Signature			

1. Aircraft details:

Make	Model
Serial Number	Previous registration number (if any)
Kit built?	Plans built?
Own design and build?	Other
95.32 wing model	95.32 wing serial number
Total airframe hours	Number of seats
Landings	Manufactured Date
Engine manufacturer	Engine model
Engine serial number	Engine power (HP/KW)
Displacement (cc/ci)	Stroke (2 / 4)
Prop manufacturer	Prop serial number
Prop model	
Prop Dia (cm/in) X Pitch (cm/in)	Prop number of blades
Reduction drive type	Reduction drive ratio
Aircraft stall speed (in landing configuration)	kts
Aircraft empty weight kg	Aircraft max take-off weight kg
BRS make/model	BRS serial number

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

3. Declaration

1. I request registration for the aircraft described above and acknowledge that this does not yet authorise my aircraft for flight.
2. Has this aircraft previously been registered? Yes / No
If yes, the aircraft was previously registered by: (Organisation)
_____ as (Rego No.) _____
3. I enclose the registration fee for assignment of this registration.
4. I undertake not to fly the aircraft until it has received a Permit To Fly.

Signed _____

Printed Name _____ Date / /

4. Fee

I enclose the RAAus Transfer & Registration fee of \$ _____ as per the current RAAus schedule of fees.

Payment method: Visa MasterCard Cheque/Money Order
(made payable to Recreational Aviation Australia Inc.)

Card number:	
Cardholder's name:	
Expiry: /	CCV:
Signature:	Date:

RAAus Admin:

Documents Required:

Manufacturer's Statement of Compliance or Type Certificate (if applicable) - Included

Manufacturer's Weight and Balance Data - Included

Manufacturer's Flight Test Report - Included

Images of RHS and LHS Registration Markings - Included

Images of Warning and MTOW Placards - Included

Deregistration Certificate (if applicable) - Included

Contents page of Pilots Operating Handbook and Maintenance Manual

Copy of current Maintenance Release (if transferred from VH)

Previous Certificate Of Airworthiness (if transferred from VH)

Admin use:

Certificate of Approval received: No Yes Date: / /

Owner notified: Date: / /

WEIGHT AND BALANCE REPORT FIXED WING AIRCRAFT (AMATEUR-BUILT & E-LSA)

Refer to Section 10.1 of RAAus Technical Manual

1.1 Aircraft Details

Registration number	Aircraft make
Model	Serial number

1.2 Owner's statement

"I have personally weighed the aircraft described and have personally prepared the weight and balance report attached."

or:

"I have had the aircraft weighed by the holder of a CASA Weight Control Authority and the weight and balance report is attached."

or:

"I have had the aircraft weighed by an RAAus L2 and the weight and balance report is attached."

(strike out that which is not applicable)

Name: _____ Membership No. _____

Signature: _____ Date: / /

1.3 Attachments

Attach all associated Weight and Balance report and photos to this form.

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

Checklist for review by Technical Manager:

Aircraft (<i>built from kit, plans or own design</i>)	
Scales used: Type Number of scales used Latest calibration check - date Latest calibration check - method	
Source of the weight and balance form, chart, or spreadsheet used	
Origin of weight and balance limitations (<i>i.e. who set them?</i>)	
List of basic equipment installed in the aircraft at the time of weighing	
Place the aircraft was weighed	
Date the aircraft was weighed	
Name of assistant(s)	
Empty weight (<i>actual, not 'book' figure</i>)	
Maximum take-off weight	
Empty weight CG position	
Aircraft Datum	
Forward CG limit	
Aft CG limit	
Pilot moment arm	
Passenger moment arm	
Fuel moment arm - Main tank(s)	
Fuel moment arm - Aux tank(s)	
Baggage moment arm	
Calculation check for basic errors by: (<i>person</i>)	

PRE-FLIGHT FINAL INSPECTION AMATEUR BUILT AIRCRAFT

Review this form **before** you call the L4 Amateur Built Inspector.

It is the builder's responsibility to provide **this** inspection checklist and ensure all matters pertaining to the aircraft construction and preparation have been completed.

- Aircraft is complete.** No outstanding or remaining jobs. All equipment and furnishings are installed.
- Registration Markings.** The aircraft has the required registration markings affixed as per Section 5.1 of Technical manual. Supply image of LHS and RHS registration to RAAus.
- Warning Placards/labels.** The aircraft has the required placards/labels affixed as per Section 9.1 of Technical manual. Supply image of Warning Placard and MTOW placard to RAAus.
- Builder's Construction Log Book.** The builder's construction log book and verification of stage inspections conducted must be in a respectable format and available. Photographs or various construction stages are available.
- Weight and Balance report (or weighing report for 95.32).** A workable document giving weight and balance details is required. See Section 10 of the RAAus Technical Manual. Supply copy of report to RAAus.
- Basic Fuel Calibration.** A basic fuel calibration is to have been carried out. Detail will depend on your system. Fuel bowser accuracies are acceptable.
- Aircraft Maintenance Log Book.** Appropriately prepared for the aeroplane. (Log book available from RAAus Office)
- RAAus Membership.** The nominated test pilot **must** be a current member of RAAus and hold a valid RAAus Pilot's Certificate.

PRE-FLIGHT FINAL INSPECTION AMATEUR BUILT AIRCRAFT

All inspections to be conducted as listed or appropriate to equipment fitted.

Aircraft Identification:

Owner _____ Engine make _____
 Aircraft Type _____ Engine model _____
 Serial number _____ Engine serial number _____
 Registration number _____ Engine total time _____
 Airframe total time _____ Propeller make _____
 Propeller serial number _____
 Propeller total time _____

S = Satisfactory **U** = Unsatisfactory **N/A** = Not Applicable
 (correct any unsatisfactory items prior to signing off this form)

L2 / L4

S

U

PAPERWORK

Weight and Balance Report		
Airservices Permission to operate without a noise certificate		
Flight Manual or Pilot's Operating Handbook (or draft to be completed)		
Maintenance Manual(s)		
Flight Test Schedule (eg RAAus, FAA AC90-89A, etc)		
RAAus Aircraft Log Book		
RAAus Airworthiness Notices addressed and signed off in Aircraft Log Book		
Manufacturer's Service Bulletins addressed and signed off in Aircraft Log Book		

Comments:

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAUS WEBSITE WWW.RAA.ASN.AU

<p>S = Satisfactory U = Unsatisfactory N/A = Not Applicable (correct any unsatisfactory items prior to signing off this form)</p>	L2 / L4	
	S	U
FUSELAGE		
Remove Inspection Plates and Panels		
Inspect Bulkheads and Stringers for Popped Rivets and Cracked Skin		
Inspect for Delaminated Skin/Voids (Coin Test)		
Inspect the Security of all Internal Lines		
Inspect Windows/canopy for Cracks and Fit		
Inspect Door or Canopy Latching Mechanism		
Inspect Fire Wall for Distortion and cracks		
Check Control Stick/Yoke for "Full, Free and Correct" movement		
Check Flap Control Operation		
Check Cable and Pulleys for Attachment and Operation		
Ensure the Cockpit Instruments are Properly Marked		
Inspect Instruments, Lines for Security		
Inspect Cockpit Fresh Air Vents/Heater Vents for Operation and Security where fitted		
Inspect Seats, Seat Belts/Shoulder Harness for Security and Attachment		
Corrosion		
Check Ballistic Chute Installation per Manufacturer		
Ballistic chute warning placards on airframe		
Amateur Built Placard Installed		
Fireproof Aircraft Identification Plates Installed		
Comments:		

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<p>S = Satisfactory U = Unsatisfactory N/A = Not Applicable (correct any unsatisfactory items prior to signing off this form)</p>	L2 / L4	
	S	U
LANDING GEAR		
Inspect Struts/Torque Links for Attachment		
Inspect Struts for Proper Extension		
Inspect for Hydraulic Leaks		
Check all Bushings for Wear/Free Play		
Check Lubrication		
Inspect Wheels for Alignment		
Wheel Tyres for Cracks and Serviceability		
Wheel Bearings for Lubrication		
Inspect for Corrosion		
Inspect Nose Gear for Cracks and Travel		
Inspect Tail Wheel for Cracks and Travel		
Perform Gear Retraction Test/CK Indicator Lights		
Emergency Gear Extension System		
Check Tyre Pressure		
Brake Lining within Limits		
Brake Discs for Cracks, Wear and Deformity		
Brake Hydraulic Lines for Leaks and Security		
Comments:		

S = Satisfactory U = Unsatisfactory N/A = Not Applicable (correct any unsatisfactory items prior to signing off this form)	L2 / L4	
	S	U
WINGS		
Remove Inspection Plates/Fairings		
General Inspection of Exterior/Interior Wing		
Flight Controls Balance Weights for Security		
Flight Controls Proper Attachment (No Slop)		
Flight Control Hinges/Rod End Bearings Serviceability		
Flight Controls Properly Rigged/Proper Tension		
Inspect all Control Stops for Security		
Trim Control Surface/Hinges/Rod End Bearing Service		
Skin Panels Delaminate/Voids (Coin Test)		
Popped Rivets/Cracked/Deformed Skin		
Fabric/Rib Stitching/Tape Condition		
Lubrication		
Wing Attach Points		
Flying/Landing Wires/Struts for Security		
Corrosion		
Flight Control Bolts/Pins for Safety and Condition		
Wing/Strut/Cable attachments and Hardware for Safety and Condition		
Comments:		

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<p>S = Satisfactory U = Unsatisfactory N/A = Not Applicable (correct any unsatisfactory items prior to signing off this form)</p>	L2 / L4	
	S	U
EMPENNAGE / CANARD		
Remove Inspection Plates and Fairings		
Inspect Canard attach Points for Security		
Inspect Vertical Fin attach points		
Inspect Elevator/Stabiliser attach points		
Inspect Hinges/Trim Tabs/Rod Ends for attachment and Free Play (slop)		
Inspect Empennage/Canard Skin for Damage/Corrosion		
Inspect all Control Cables, Hinge and Pulleys		
Inspect all Control Stops		
Check all attachment Points and Controls for Safety Condition		
Comments:		
FUEL SYSTEM		
Corrosion		
Fuel Lines for Chafing/Leaks/Security/Condition		
Sump all Fuel Tanks for Water or Debris		
Fuel Caps for Security		
Fuel Placard		
Fuel Valve/Cross Feed/ for Operation and Security		
Clean Fuel Filters & Gascolator, Flush System		
Inspect Fuel Tank Vent System		
Comments:		

<p>S = Satisfactory U = Unsatisfactory N/A = Not Applicable (correct any unsatisfactory items prior to signing off this form)</p>	L2 / L4	
	S	U
PROPELLER		
Check Spinner and Back Plate for Cracks		
Inspect for Cracks/Stones Damage/Nicks		
Check for Delamination (Wood/Composite Blades)		
Check Prop Bolts Torque/Safety Wire		
Check for Oil Leaks (Crankcase Nose Seal)		
Grease Leaks (Constant Speed Prop)		
Check Propeller Governor for Leaks and Operation		
Check Prop Track		
Check Prop Balance (Wood Prop – at engine run up test)		
Comments:		
ELECTRICAL		
Spares Fuses Available		
Battery Serviced and Free from Corrosion		
Battery Box Free from Corrosion		
Check Anti Collision Light for Operation		
Inspect all Antenna Mounts and Wiring for Security		
Check all Grounding Wires (Engine to Airframe, Wing to Aileron/Flap etc)		
Inspect Radios/Leads/Wires for attachment and Security		
Inspect Circuit Breaker/Fuses Panels for Condition		
Comments:		

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S = Satisfactory U = Unsatisfactory N/A = Not Applicable (correct any unsatisfactory items prior to signing off this form)	L2 / L4	
	S	U
OPERATIONAL INSPECTION		
Check Carb Boots on 2 Cycle engine for Cracks		
Check Safeties on Exhaust Springs		
Ensure Spark Plug Caps are Safetied on Inverted Engines		
Visual Inspection of the Engine/Propeller		
All Inspection Panels and Fairings secure		
Proper Fuel in Tanks		
Brake System Check		
Engine Start Procedures – engine to be run at full power for 3 min continuously		
Oil Pressure/Oil Temperature within Limits		
Vacuum Gauge Check		
Magneto Check/Hot Mag Check		
Idle RPM/Mixture Check		
Static RPM Check		
Electrical System Check		
Cycle In-Flight adjustable props through entire range		
Cool Down Period/Engine Shut Down		
Perform Oil, Hydraulic and Fuel Leak Check		
Comments:		

CERTIFICATION OF INSPECTION

OWNER:

I _____ Membership number _____

of _____

being the builder of _____ (type & model)

RAAus registration no _____ Serial No _____

hereby certify that I have thoroughly inspected this aircraft for compliance with good airworthiness practices, quality of workmanship, and full, free and correct function of all control systems and equipment fitted to the aircraft in accordance with the **TECH FORM 007** checklist and found the aircraft to be satisfactory. There are no unsatisfactory items to be cleared before flight.

I fully understand and accept that I and no other person or organisation is responsible for the Airworthiness of this aircraft.

I acknowledge that the aircraft must not be flown until such time as the Technical Manager has issued a Permit to Test Fly the aircraft.

Builder's Signature _____ Date / /

**THE AIRCRAFT MUST NOT BE FLOWN UNTIL
A PERMIT TO TEST FLY THE AIRCRAFT IS
ISSUED BY THE RAAus TECHNICAL MANAGER**

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

RECOMMENDATION FOR TEST FLYING

**To RAAus Technical Manager
From RAAus Level 4 for Amateur Built Aircraft:**

I _____ being an RAAus L4 have personally observed the Pre-Flight Final Inspection being conducted by the owner and witnessed their signature at the Certification of Inspection within Tech Form 007.

I recommend the aircraft be test flown in the area within 25nm (or other _____) radius of _____ (include map if required) for a period of not less than _____ 25,40, (or other, not less than 25) hours.

Additional matters advised are: _____

Recommended Test Pilot _____ Phone No. _____

Recommended Test Pilot _____ Phone No. _____

RAAus L4 Amateur Built Inspector.

Signed _____

Name _____ Date / /

Membership Number _____

ALL PAGES OF TECH FORM 007 MUST BE FORWARDED

APPLICATION FOR PERMIT TO FLY - ONGOING

FLIGHT TEST PERIOD FINALISATION - RAAus AMATEUR BUILT AIRCRAFT

Aircraft registration number: _____ Serial number: _____

Aircraft type: _____ Model: _____

Builder: _____ Membership No: _____

Date flight test schedule completed: / /

Assigned flight test hours: _____ Hours flown to date: _____

Demonstrated stall speed in landing configuration: _____ at _____ Kg

- Attach details of significant problems or defects encountered.
- Attach details of action taken to correct problems or defects.
- Attach a minimum of six completed Flight Test Schedule cards/pages used, or the complete schedule
- Attach a copy of Daily Maintenance Record
- Attach a copy of Log Book certification:

"I certify that the prescribed flight test schedule and hours have been completed and the aircraft is controllable throughout its range of speeds and throughout all maneuvers to be executed, has no hazardous operating characteristics or design features, and is safe for operation"

Signature: _____

Membership Number: _____ Date: / /

**NO PASSENGER IS TO BE FLOWN UNTIL SUCH TIME AS THE
TECHNICAL MANAGER HAS ISSUED THE PERMIT TO FLY - ONGOING.**

WEIGHING REPORT

CAO 95.32 AMATEUR BUILT or E-LSA AIRCRAFT

1.1 Section 10.2 of the RAAus Technical Manual specifies the requirements regarding aircraft weighing and associated matters. This checklist will assist you to assemble all the required items prior to forwarding paperwork to RAAus Office.

1.2 Aircraft details

Registration Number	Aircraft Make
Model	Serial Number

1.3 Each weighing report submitted must also include the following information:

The type of scales used were:	
A list of the basic equipment installed in the aircraft at the time of weighing	
Photographs of the weighing taking place. One photograph must clearly show the aircraft in question. Other photographs to show the scale readings.	Attach
Photograph of a placard/label on the structure of the airframe which declares the maximum take-off weight.	Attach

1.4 Owner's statement:

"I have personally weighed RAAus aircraft registered _____ and I declare the empty weight of the aircraft is _____ kg and the maximum take-off weight of the aircraft is to be _____ kg."	
Name: _____	Membership No. _____
Signature: _____	Date: / /

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAUS WEBSITE WWW.RAA.ASN.AU

AIRCRAFT REGISTRATION APPLICATION CAO 95.32 & CAO 95.55 LIGHT SPORT AIRCRAFT (LSA & E-LSA)

Registration by RAAus **does not itself** permit the aircraft to be flown.

The aircraft may not be flown until a Special Flight Permit (factory test flying) or a Special Certificate of Airworthiness or an Experimental Certificate has been issued by a CASA Authorised Person.

1. Owner details: (if joint owners – the primary contact person)

Name
Address
Membership number
Phone number
Email
Signature

2. Additional Owner's Details (if any):

Name
Address
Membership number
Phone number
Email
Signature

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

Aircraft details:

Make	Model		
Serial number	Previous registration number (if any)		
95.32 wing model	95.32 wing serial number		
Total airframe hours	Number of seats		
Engine manufacturer	Engine model		
Engine serial number	Engine power	hp/kw	
Displacement	(cc/ci)	Stroke (2 / 4)	
Engine total time	Propeller total time		
Propeller manufacturer	Propeller serial number		
Propeller Diameter	(cm/in) X Pitch	(cm/in)	Propeller number of blades
Reduction drive type	Reduction drive ratio		
Aircraft stall speed (in landing configuration)	kts		
Aircraft empty weight	kg	Aircraft Max Take-Off Weight	kg
BRS make: model:	BRS serial number		
BRS pack date			

LSA / E-LSA DETAILS:

Production (factory) built? <input type="checkbox"/> YES <input type="checkbox"/> NO	Non compliant Production LSA? <input type="checkbox"/> YES <input type="checkbox"/> NO (Experimental)
Kit built? (Experimental) <input type="checkbox"/> YES <input type="checkbox"/> NO	
Statement of Compliance? (CASA FORM 681)	<input type="checkbox"/> YES <input type="checkbox"/> NO
NO FLIGHT is to take place until a RAAus Registration Certificate is issued and a Special Certificate of Airworthiness or an Experimental Certificate is issued by a CASA Authorised Person.	

3. Declaration

1. Has this aircraft previously been registered? Yes / No
If yes, the aircraft was previously registered by: (Organisation) _____
as (Rego No.) _____
2. I enclose the registration fee for assignment of this registration.
3. I understand that if no Statement of Compliance (CASA Form 681) has accompanied this application, the aircraft cannot be fully registered by RAAus. My payment will be withheld until receipt of the Statement of Compliance upon which full registration will be issued.
4. I undertake not to fly the aircraft until it has received a Special Flight Permit or Special Certificate of Airworthiness or an Experimental Certificate issued by a CASA Authorised Person.

Signed _____

Printed Name _____ Date / /

Note: Any LSA aircraft transferring from another registration (eg "VH") will require a new Special Certificate of Airworthiness or Experimental Certificate showing the RAAus registration numbers before flight.

4. Fee

I enclose the RAAus Transfer & Registration fee of \$_____ as per the current RAAus schedule of fees.

Payment method: Visa MasterCard Cheque/Money Order
(made payable to Recreational Aviation Australia Inc.)

Card number:	
Cardholder's name:	
Expiry: /	CCV:
Signature:	Date:

RAAus Admin:

Documents Required:

- | | | | |
|--|--------------------------|--|--------------------------|
| Manufacturers Statement of Compliance | <input type="checkbox"/> | Images of RHS and LHS registration markings | <input type="checkbox"/> |
| Manufacturers Weight and Balance Data | <input type="checkbox"/> | Images of Warning and MTOW placards | <input type="checkbox"/> |
| Manufacturers flight test report | <input type="checkbox"/> | Deregistration Certificate (if applicable) | <input type="checkbox"/> |
| Copy of current Maintenance Release (if transferred from VH) | <input type="checkbox"/> | Previous Certificate Of Airworthiness (if transferred from VH) | <input type="checkbox"/> |
| Special Certificate of Airworthiness | <input type="checkbox"/> | | |

Admin use:

SFP/SCofA/EXP Certificate received: No Yes Date: / /

Owner notified: Date: / /

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

REGISTRATION NUMBER ALLOCATION ALL AIRCRAFT

1. Aircraft Details

Make	Model	Serial Number
<input type="checkbox"/> 3 Axis	<input type="checkbox"/> Trike	<input type="checkbox"/> Powered Parachute
<input type="checkbox"/> Factory Built	<input type="checkbox"/> LSA <input type="checkbox"/> E-LSA	<input type="checkbox"/> Amateur Built
MTOW	Number of seats	Specific Registration mark requested (if applicable):
Previously registered?	Registration number	

2. Owner details

Name	
Address	
Membership Number	Phone number
Email	
Signature	Date

3. Fee

I enclose the Aircraft Mark Reservation fee of \$_____ (see current schedule of fees)

Payment method: Visa MasterCard Cheque/Money Order
(made payable to Recreational Aviation Australia Inc.)

Card number:	
Cardholder's name:	
Expiry: /	CCV:
Signature:	Date:

LEVEL TWO MAINTENANCE AUTHORITY RE-APPOINTMENT APPLICATION

1. Personal Details

Membership Number _____

Name (in full) _____

Date of Birth _____

Postal Address _____

Suburb _____ State _____ Postcode _____

Phone numbers H _____ B _____ M _____

Email _____

2. Restrictions

2.2 Are you seeking unrestricted approval? YES NO

2.3 If seeking lifting of restrictions, specify details:

2.4 Indicate which types of aircraft you will be performing maintenance on:

private aircraft

hire or flying school aircraft

glider towing aircraft

2.5 Provide details of any further qualifications gained since last renewal or appointment

3. Details of two verifiable Annual or 100 Hourly inspections performed for members over the last two years

One:

Registration

Aircraft type

Owner

Date / /

Two:

Registration

Aircraft type

Owner

Date / /

RECREATIONAL AIRCRAFT CONDITION REPORT ALL AIRCRAFT

Date	Registration number
-------------	----------------------------

This Recreational Aircraft Condition Report (RACR) is to be completed by an unrestricted RAAus Level 2/4 Maintenance Authority holder, (or a LAME or other suitable person **if pre-arranged with the Technical Manager**) for transfer of Registration of an aircraft to a new owner. The condition inspection may be performed for the seller or the buyer.

The Level 2 / 4 inspector (or LAME) should not have any ownership or pecuniary interests in the aircraft.

The Level 2 / 4 inspector (or LAME) does **not** assume responsibility for the airworthiness or otherwise of this aircraft. Airworthiness of the aircraft rests solely with the owner.

Aircraft type	Model	Serial number
----------------------	--------------	----------------------

1. Log Book Inspection

Total hours flown by aircraft at the time of the inspection	
Total landings by aircraft at the time of the inspection	
Identify any modifications physically made to the aircraft and compare them to those listed in the Log Book	
Note any major repairs made to the aircraft.	
Comment on the completeness of the aircraft's Flight Manual or Pilot's Operating Handbook. Highlight any deficiencies	
Update the Log Book as appropriate.	

2. Aircraft Inspection:

In addition to the inspection schedule below the person inspecting this aircraft should also be conversant with the Periodic and Heavy Landing Inspection schedules in the RAAus Technical Manual and complete those inspections if relevant or necessary. Inspect condition and operation of the following:

Item	Inspected	
	Pass	Fail
Registration numbers on appropriate surfaces.		
Fuselage frame coverings for strength, wear and damage.		
All wing and tail surfaces for tears, abrasions and UV damage.		
All control surfaces for bearing wear and tear.		
All exposed lock nuts, fasteners and clevis pins.		
All bracing and control wires and swages. King-post/struts.		
All main spar tubes and fuselage for roundness.		
All tube to tube attachment points for wear and bolt hole ovality.		
Landing gear attachment points.		
Landing gear for deformation, wear and bearing condition.		
Wheels, tyres and tread depth.		
Visibility through the windscreen and security of attachment.		
Instrument panel for security and protrusions.		
Cockpit for padding around structure close to pilot's head.		
Cockpit for sharp or loose objects.		
BRS Parachute attachment and clearance [if fitted].		
BRS Parachute packing expiry date [if fitted].		
BRS Parachute warning placards on airframe		
Seat belt and anchorage points.		
Seat belt release mechanism under load of at least 20 kg		
All control linkages for wear and smooth operation - no freeplay.		
Rudder, aileron and elevator end stops.		
Identify and inspect repairs and that repairs are recorded in the Log Book		
Comment on any unacceptable aeronautical practices present		
Comments		

3. Power Plant and Propeller

Engine

Make	Model	Serial number
Actual engine hours (from log book) since last complete overhaul		
Total engine hours		

Inspect condition and operation of the following:

Item	Inspected	
	Pass	Fail
All engine to airframe attachment points.		
Throttle cable security with attention to both ends.		
Throttle cable.		
Throttle stops at the engine and the throttle lever.		
All elements of the cooling system specific to the type.		
All ignition components and positive security of spark plug connections		
Ignition kill switch and leads for corrosion, repeated correct operation and security.		
Starter mechanisms for integrity and operation		
Fuel filter type and condition		
Carburettor manifold and complete fuel system for air or fuel leaks.		
Fuel pump and line attachment security.		
Fuel tank and attachment points.		
Fuel contents indicating system.		
Fuel lines and primer bulb.		
Engine instruments and sensors.		
Exhaust: Cracks, holes and welds. Movement in all flexible joints, spring effectiveness and integrity. Spring safety wiring, exhaust spacing from flammable objects		
Exhaust clearance from engine frame or other components		
Reduction drive: Belt condition, tension and bearing serviceability. Gearbox oil level, oil leaks, mounting security.		
Propeller: Drive line bearings and tracking, propeller nicks, cracks and delamination. Hub mounting bolts for correct torque and security.		

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

	Pass	Fail
Engine Run (function, not performance)		
Engine starts and runs normally		
No unusual noises coming from the engine		
Smoothness of running, acceleration, no tendency to misfire or run erratically		
Fuel, coolant, induction & ignition and exhaust system integrity and function		
Instruments function correctly		
Propeller (and reduction system if fitted) function		
Identify and inspect repairs and that repairs are recorded in the Log Book		
Note wear and comment on any unacceptable aeronautical practices present		
Comments:		

4. General Condition of Aircraft:

Comment here on the general condition of the aircraft. For example, was the aircraft complete, fully rigged and did it appear to be in a flyable condition. If not what was the state of the aircraft.

If possible a flight demonstration should be performed by the owner, or a pilot nominated by the owner, in the presence of the inspector. The experience of the pilot should be taken into account when assessing comments as to the handling of the aircraft.

The pilot should conduct a normal full power take-off at maximum takeoff weight, climb to 1000' AGL, reduce throttle to cruise power, perform a left and a right 360 degree turn with at least 30 degrees angle of bank and carry out 2 or 3 circuits and landings.

On this or a subsequent flight, not necessarily in the view of the inspector, the pilot should climb the aircraft to a safe height and perform a number of straight stalls.

Pilot name	RAAus number
Experience on type	Date of flight
Flight conditions	

Comments on flight observed by inspector and from pilot on general handling and stall characteristics:

Inspector:
Pilot:

Declaration by Pilot:

The aircraft is controllable throughout its normal range of speeds and throughout all the manoeuvre to be executed and has no hazardous operating characteristics or design features.

Signature	Date	/	/
-----------	------	---	---

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

5. Any Other Comments:

Consider the aircraft as a whole and make any other comment about any part or the whole of the aircraft which would reasonably be of interest to a prospective new owner.

--

6. Photographs:

Attach recent photographs of the aircraft to this report showing all registration markings and placards/ labels as per Sections 5 and 9 of the Technical Manual on aircraft. Printed photographs must be signed and dated on the back. Emailed photographs are accepted as sent.

7. Review by Level 2 (or LAME)

I, the undersigned, being an RAAus Level Two Maintenance Authority Holder, have examined the aircraft and logbooks to which this RACR refers and certify that the information in this RACR and the Aircraft Data Sheet is complete, accurate and correct to the best of my knowledge.

This certification does not infer that I consider the aircraft to be airworthy or otherwise.

Signature	
Name	RAAus Number
Date	Location

If Condition Report inspection was performed by a LAME, give details of the **pre-arrangement permission** from RAAus Technical Manager:

--

8. RAAus Receipt Action:

Date of receipt in RAAus Office	
Checked for completeness and acceptability	
Signature	Name

APPLICATION FOR MODIFICATION OR REPAIR via MODIFICATION AND REPAIR APPROVAL PROCESS (MARAP) FACTORY BUILT AIRCRAFT (NON LSA/E-LSA)

Owner	Membership Number
Aircraft Identification	Aircraft Type
Serial Number	Total hours
The details of the proposed modification/repair are: _____ _____ (attach separately if insufficient space)	
List and supply any additional information to support proposal: (for example, engineering drawings, known and proven history of similar modifications / repairs), Note: additional information may be required after initial assessment of the application. _____ _____ (attach separately if insufficient space)	
I have attached the completed RACR (Recreational Aircraft Condition Report - Tech Form 013) signed by an RAAus L2 or approved person. <input type="checkbox"/> Yes <input type="checkbox"/> No	
or: I have attached evidence of an Annual Inspection having been performed on the aircraft within the last 14 days. <input type="checkbox"/> Yes <input type="checkbox"/> No	
or: If neither of the above is possible, I have received written confirmation from the Technical Manager that other information advising the current state of the aircraft will be accepted. <input type="checkbox"/> Yes <input type="checkbox"/> No	
I have attached plans, drawings, photographs (if any) <input type="checkbox"/> Yes <input type="checkbox"/> No	
I have supporting documentation such as independent engineering advice or history of safe operation from elsewhere (if any) <input type="checkbox"/> Yes <input type="checkbox"/> No	
When and if approved, all flights that are conducted must be IAW the Flight Test Program listed in the Annex to the Experimental Certificate issued by CASA or an Authorised Person.	
I fully understand and accept that I am responsible for the continual Airworthiness of this aircraft.	
Owner's Signature _____ Date / /	

LEVEL TWO MAINTENANCE AUTHORITY APPLICATION

1. Personal Details

Membership Number _____

Name (in full) _____

Date of Birth _____

Postal Address _____

Suburb _____ State _____ Postcode _____

Phone numbers H _____ B _____ M _____

Email _____

2. Reasons for Requiring L2 Maintenance Authority

2.1 Reasons and justification for requiring L2 Maintenance Authority

2.2 Are you seeking unrestricted approval? YES NO

2.3 If seeking restricted approval, specify details:

- 2.4 Indicate which types of aircraft you will be performing maintenance on:
- private aircraft
 - hire or flying school aircraft
 - glider towing aircraft

2.5 Provide detail of proposed involvement plus expected types and numbers of aircraft involved:

3 Formal Technical Training

3.1 Institution(s) Attended:

3.2 Highest Trade Level Attained:

3.3 Indentured Apprenticeship – give detail

3.4 Disciplines (trades) for which qualified:

3.5 What Accreditation has been awarded for the formal training (copies of certificates to be included):

3.6 Periods of Employment during training – give detail:

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

4 Recognition of prior learning or experience

4.1 Details for consideration:

5 Aeronautical Experience

5.1 Highest CASA (or other airworthiness authority) qualification held, and periods:

5.2 Aeronautical Equipment Types worked on:

5.3 Level of Repairs undertaken on Equipment:

5.4 RAAus aircraft on which maintenance has been conducted:

5.5 RAAus aircraft re-design projects undertaken:

5.5 RAAus aircraft components or equipment manufactured (type & numbers):

6 Experience

6.1 Employment History

6.2 Equipment worked on during the periods shown in Subsection 5.1

6.3 Level(s) achieved while in employment:

6.4 Supervisory Responsibilities held (and periods):

7 Workshop Facilities

7.1 Location of Workshop

7.2 Workshop Floor Space:

7.3 Workshop Machinery:

7.4 Date Established:

7.5 CASA Accreditations (if any):

RECOMMENDATIONS FOR ISSUE OF LEVEL TWO MAINTENANCE AUTHORITY

1 Applicant:

Name: _____ Membership number: _____

2 Recommendations:

Recommendations are required from two current L2 holders or one L2 holder and one LAME.

3 First Referee:

I, the undersigned, have known the above applicant for a period of _____ years and I am familiar with the applicant's technical training, work background and expertise in maintaining recreational aircraft or other aircraft. I believe the applicant has demonstrated a satisfactory standard in the maintenance of recreational aircraft and is fully aware of the responsibility and professionalism required by an L2.

Name: _____ Signature: _____

Company: _____ Contact Number: _____

Position: _____ LAME or L2 Authority Number: _____

4 Second Referee:

I, the undersigned, have known the above applicant for a period of _____ years and I am familiar with the applicant's technical training, work background and expertise in maintaining recreational aircraft or other aircraft. I believe the applicant has demonstrated a satisfactory standard in the maintenance of recreational aircraft and is fully aware of the responsibility and professionalism required by an L2.

Name: _____ Signature: _____

Company: _____ Contact Number: _____

Position: _____ LAME or L2 Authority Number: _____

LEVEL FOUR MAINTENANCE AUTHORITY APPLICATION

1. Personal Details

Membership Number _____

Name (in full) _____

Date of Birth _____

Postal Address _____

Suburb _____ State _____ Postcode _____

Phone numbers H _____ B _____ M _____

Email _____

2. Questionnaire:

Q1	Do you have a current RAAus L2 Maintenance Authorisation? <input type="checkbox"/> YES – go to Q2 <input type="checkbox"/> NO - Complete a TECH FORM 015 L2 Maintenance Authority Application and send it with this (Tech Form 016) application.
Q2	Are there any restrictions on your L2 Maintenance Authorisation? <input type="checkbox"/> YES – go to Q3 <input type="checkbox"/> NO – go to Q2a
Q2a	Have you held your L2 for 2 years or more? <input type="checkbox"/> YES <input type="checkbox"/> NO – Complete an application for re-assessment of your L2 TECH FORM 012 and send with THIS application
Q3	Do you have a current LAME Licence? <input type="checkbox"/> YES – go to Q6 <input type="checkbox"/> NO – go to Q4
Q4	Have you previously held a LAME Licence? <input type="checkbox"/> YES – Go to Q5 <input type="checkbox"/> NO - Go to Q7
Q5	Date of expiry: <hr/> Reason for expiry:
Q6	LAME Licence No. <hr/> Endorsements

Q7	Reasons and justification for requiring L4 ABI Maintenance Authority in your area.
----	--

If not a LAME:

Note: *Non-LAMES may be recommended by RAAus, but will ultimately be appointed in writing by CASA.*

Q7a	Reasons why you should be considered for an exemption against the normal L4 criteria:
-----	---

Q7b	Reasons why the services of another L4 (ABI) cannot be utilised in your area:
-----	---

Q7c	List your technical experience with amateur built aircraft construction and test:
-----	---

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

3. Terms and Conditions:

1. An accredited RAAus L2 or L4 Amateur Built Inspector is responsible for the observance of a Pre-Flight Final Inspection (TECH FORM 007) on newly constructed (and including largely re-constructed) amateur built RAAus aircraft.
2. An accredited Inspector is entitled to charge the aircraft owner for his time to complete the inspection.
3. An accredited Inspector is not required to take responsibility for the airworthiness of the subject aircraft. Aircraft Airworthiness rests solely with the aircraft owner.
4. An accredited Inspector has the authority to recommend appropriate test hours for the subject aircraft to complete, for the issue of full registration. These test hours shall never be less than those specified on Tech Form 007.
5. These conditions could be subject to change from time to time as directed by the Civil Aviation Safety Authority or Recreational Aviation Australia Inc.

4. Applicant indicates acceptance of these conditions:

Print Name: _____

Signature: _____

Date: / /

OWNER GENERATED MODIFICATION TO CAO 95.10, 95.32 & 95.55 AMATEUR BUILT AIRCRAFT

Owner _____ **Membership Number** _____

Aircraft Registration _____ **Aircraft type** _____

Serial Number _____ **Total hours** _____

I include with this form plans, drawings, and photographs etc of the modification.

The reasons for the modification are: _____

How the modification may affect matters defined as a major modification: _____

Why the modification will not affect the safety of the aircraft: _____

_____ OR
How the modification will enhance the safety of the aircraft: _____

Details of Weight and Balance changes including verifications: _____

I enclose a copy of the maintenance log book entry detailing all known matters regarding the modification.

I hereby certify that I have modified this aircraft from its original configuration, using good airworthiness practices and quality of workmanship. There are no unsatisfactory items to be cleared before flight.

I acknowledge that no flight of the modified aircraft is to take place until such time as an RAAus L2 has examined the aircraft, passed their recommendation on to the RAAus Technical Manager and I have received the Technical Manager's authorization to fly the aircraft.

I fully understand and accept that I and no other person or organisation is responsible for the Airworthiness of this aircraft.

Owner's Signature _____ Date / /

L2 or L4 MODIFICATION REPORT CAO 95.10, 95.32 & 95.55 AMATEUR BUILT AIRCRAFT

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

Owner	Membership Number
Aircraft Registration	Aircraft type
Serial Number	Total hours

RAAus Level 2 or 4 recommendation:

I have personally examined the aircraft and have found the modifications to be sound and the aircraft appears airworthy. I recommend to the RAAus Technical Manager the following:

The aircraft requires no further test flying OR;

The aircraft requires further test flying for a suggested hours/flights, to be test flown in the area with pilot only on board, and must not to be flown over a closely settled area.

Other recommendations: _____

Signed _____ RAAus L2 / L4

Name _____ Date: / /

Membership Number _____

RAAus Technical Manager decision:

Modification accepted with no further flight testing required.

Modification accepted with further flight testing as detailed

Applicant notified by letter or by email

Signed _____ Technical Manager

Name _____ Date: / /

4 STROKE PISTON ENGINE CONDITION REPORT

Aircraft

Make	Model	Registration Number
------	-------	---------------------

Engine

Make	Model	Serial Number
------	-------	---------------

Engine time

Since new	Since o/haul
-----------	--------------

TBO

Manufacturer	Top o/haul
--------------	------------

Performance Run

Air Temp	Airport Altitude	Manifold Pressure
----------	------------------	-------------------

RPM

Max static RPM	MP at max RPM
----------------	---------------

Fuel

Pressure	Flow
----------	------

Oil Pressure

At idle	At max RPM
---------	------------

Oil

Temp	Consumption
------	-------------

Cylinder compression

cyl 1	cyl 2	cyl 3	cyl 4	cyl 5	cyl 6	cyl 7	cyl 8	cyl 9

Cylinder leak rates

cyl 1	cyl 2	cyl 3	cyl 4	cyl 5	cyl 6	cyl 7	cyl 8	cyl 9
80	80	80	80	80	80	80	80	80

Oil filter - cut open and inspected for contamination

Results:

Certification - I hereby certify that the engine described has been inspected with the correct maintenance data and as at the date of this certification, the engine is airworthy.

Signed	Name	RAAus Number	Date
--------	------	--------------	------

THIS FORM IS TO BE AFFIXED TO THE AIRCRAFT MAINTENANCE LOG BOOK

2 STROKE PISTON ENGINE CONDITION REPORT

Aircraft

Make	Model	Registration Number
------	-------	---------------------

Engine

Make	Model	Serial Number
------	-------	---------------

Engine time

Since new	Since o/haul
-----------	--------------

TBO

Manufacturer	Top o/haul
--------------	------------

Performance Run

Air Temp	Airport Altitude
----------	------------------

RPM

Max static RPM

Cylinder compression

cyl 1	cyl 2	cyl 3	cyl 4

Certification - I hereby certify that the engine described has been inspected with the correct maintenance data and as at the date of this certification, the engine is airworthy.

Signed	Name	RAAus Number	Date
--------	------	--------------	------

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**CAO 95.32, CAO 95.55 AMATEUR BUILT CATEGORY
TRANSFERS FROM OTHER REGISTERS OR
CAO 95.10 REGISTRATION APPLICATION**

DETAILS OF AIRCRAFT ORIGIN			
Aircraft Type and Model		Number of seats	
Plans, Kit, or Scratch Built			
Aircraft Builder, Kit Manufacturer			
Builders address			
		Postcode	
OWNER'S DETAILS			
Owner's Name		Member Number	
Owner's Address			
		Postcode	
Owner's Phone	H	M	
Maintenance Officer's Name <i>(if Owner, insert 'Owner')</i>		Member Number	
Maintenance Officer's Address			
		Postcode	
Maintenance Officer's Phone	H	M	
AIRCRAFT DETAILS			
Airframe Serial Number		Previous Registration Number (if applicable)	
Aircraft Type and Model			
BRS Make		BRS Model	
Stall Speed Vs0		Kt	
Aircraft Empty Weight		Kg	Aircraft MTOW Kg
Date of Construction	/ /	Date of Purchase	/ /

AIRCRAFT REGISTERED UNDER THIS CATEGORY MUST NOT BE FLOWN UNTIL THE AIRCRAFT HAS BEEN ISSUED WITH A PERMIT TO FLY, OR AN SC of A IF ELSA IS ISSUED.

Owner's Signature	Date
-------------------	------

TRANSFER OF RAAUS REGISTRATION

This form is to be completed and forwarded to RAAus within 7 days of the sale/transfer

Aircraft details:

Reg. Number	Make	Model	Serial Number
-------------	------	-------	---------------

Seller details:

Name	
Address	
Membership Number	
Phone Number	Email

Statement of sale/disposal:

I advise that I no longer own the aircraft described on this form effective / / and state that to the best of my knowledge the total airframe hours and the hours flown by the aircraft are as detailed. The status of the aircraft when sold was:

- airworthy and flyable **OR** not airworthy/unflyable
 I have supplied the Aircraft Maintenance Log Book to the new owner
 Tech Form 013 RACR has been supplied with the aircraft **OR** the buyer will arrange

Signature	Date
-----------	------

Aircraft details:

Total Hours	Total Landings	Hours flown last 12 months
Engine Make	Model	Serial Number
Power hp/kw	Stroke 2/4	Displacement cc/ci
Propeller Make	Propeller Model	Propeller Serial Number
Propeller diameter/pitch	Blades	Ratio :1
		Reduction type
BRS Make and Model		BRS Serial Number
BRS inspection or pack date		
Empty Weight kg	Max Take-off Weight kg	

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

**Buyer details: (if joint owners, the primary contact person)
(if more than one owner, attach additional details)**

Name	
Address	
Phone number	Email
Membership number	Signature

Statement of purchase/acquisition

I advise that I now own the aircraft described on this form and I request RAAus transfer the aircraft registration to me.

I acknowledge that I as owner am fully responsible for the airworthiness of this aircraft.

Tech Form 013 RACR:

is included with this form; or is not available, as the aircraft is not airworthy or unflyable at present, and I acknowledge that the aircraft may not be flown again until Tech Form 013 RACR is correctly filed with RAAus.

Signature	Date
-----------	------

Transfer & Registration Fee:

I enclose the Transfer & Registration fee of \$_____ (see current schedule of fees)

Payment method: Visa MasterCard Cheque/Money Order
(made payable to Recreational Aviation Australia Inc.)

Card number:	
Cardholder's name:	
Expiry: /	CCV:
Signature:	Date:

Buyer Final Checklist:

<input type="checkbox"/> Tech Form 013 RACR
<input type="checkbox"/> Recent photographs as per Section 5 of Technical Manual

DAMAGED/UNAIRWORTHY AIRCRAFT ACQUISITION (Ownership transfer notification)

This form is to be completed by the buyer and forwarded to RAAus within 7 days
of the purchase/transfer

1. Aircraft:

Reg no. (or past reg number)	Make	Model	Serial Number
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2. Seller details:

Statement of sale:

I wish to advise RAAus that the aircraft has been sold in the following condition (describe):

By signing this document, I relinquish my ownership rights.

Name

Signature

Date

Address

Membership number

Phone number

Email

3. Buyer details: (if joint owners, the primary contact person)

Statement of Purchase:

I have purchased the above mentioned aircraft, however due to the condition and/or repairs required, I wish to request change of ownership into my name **without registration**.

- I have included photographs and an overview of the aircraft's current state.
- I acknowledge that I cannot fly the aircraft until such time as the aircraft is registered, inspected and processed by RAAus.

Name

Signature

Date

Address

Membership number

Phone number

Email

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAUS WEBSITE WWW.RAA.ASN.AU

4. Aircraft details (if known):

Registration number		Make	
Model		Serial number	
Total hours		Hours flown last 12 months	
Total landings			
Engine make	Engine model	Engine serial number	
Engine total time			
Power	hp/kw	Stroke	Displacement cc/ci
		<input type="checkbox"/> 2 <input type="checkbox"/> 4	
Propeller make		Propeller serial number	
Propeller model		Propeller time total	
Propeller diameter/pitch	Blades	Ratio :1	Reduction type
BRS make/model		BRS serial number	
BRS inspection or pack date		BRS disarmed	
Aircraft Stall Speed in landing configuration		kt	
Empty Weight	kg	Max Take-off Weight	kg
Date of construction			

NOTE: PHOTOGRAPHS MUST BE INCLUDED

APPLICATION FOR PERMIT TO FLY - TEST FLYING AMATEUR BUILT AIRCRAFT (CAO 95.32, 95.55)

1. Applicant details:

Name	Membership Number		
Address			
Email			
Phone numbers	H	B	M

2. Aircraft particulars:

Aircraft type/model	Registration number
Kit or plans and serial number	Number of seats
Powerplant - make and model	
Propeller - make and model	
Main construction materials	
Flight test schedule to be used	

3. Test pilot details

Name	Membership number
------	-------------------

Name	Membership number
------	-------------------

4. Airfield details

Airfield name
Designator (eg YBDG)
State
If not a recognised airfield, supply details

5. Fee

I enclose the RAAus Transfer & Registration fee of \$ _____ as per the current RAAus schedule of fees.

Payment method: Visa MasterCard Cheque/Money Order
(made payable to Recreational Aviation Australia Inc.)

Card number:	
Cardholder's name:	
Expiry: /	CCV:
Signature:	Date:



RECREATIONAL AVIATION AUSTRALIA

PERMIT TO FLY - TEST FLYING AMATEUR BUILT AIRCRAFT

1. Registration	2. Aircraft Type: Model: Serial Number:
3. Permit issue date:	4. Permit expiry date
5. This Permit to Fly is issued in respect of the above aircraft which is considered to be airworthy when manufactured, maintained and operated in accordance with RAAus Inc. Operations and Technical Manuals and any prescribed conditions set out as an Annex to this permit.	
6. Issued by:	Technical Manager - RAAus Inc.
7. Signature of issuer	
8. Subject to suspension or cancellation by RAAus, this certificate shall remain in force until the earlier of: the expiry date listed above, or the aircraft ceases to be registered.	

ANNEX TO PERMIT TO FLY - TEST FLYING AMATEUR BUILT AIRCRAFT

Flight of the aircraft for which this permit is issued is subject to the following conditions:
1. All flights are to be conducted under the day Visual Flight Rules (VFR).
2. The aircraft must not be flown over a closely settled area.
3. Flight Test area is within _____ nm of _____ airfield.
4. The minimum Flight Test hours to be flown:
5. No passengers or other flight crew are permitted.
6. Aircraft is to be flight tested in accordance with the flight test schedule nominated as:
7. Aircraft is to be maintained and operated in accordance with the aircraft and engine operating manuals, instructions and limitations at all times.
8. Aircraft may be flown by the following nominated pilots: (a) (b)
9. Other conditions (as listed):
10. This permit must be carried on board the aircraft at all times.



**PERMIT TO FLY - ONGOING
AMATEUR BUILT AIRCRAFT**

**ANNEX TO PERMIT TO FLY - ONGOING
AMATEUR BUILT AIRCRAFT**

1. Registration	2. Aircraft Type: Model: Serial Number:
3. Permit issue date:	4. Permit expiry date
5. This Permit to Fly is issued in respect of the above aircraft which is considered to be airworthy when manufactured, maintained and operated in accordance with RAAus Inc. Operations and Technical Manuals and any prescribed conditions set out as an Annex to this permit.	
6. Issued by: Technical Manager - RAAus Inc.	
7. Signature of issuer	
8. Subject to suspension or cancellation by RAAus, this certificate shall remain in force until the earlier of: the expiry date listed above, or the aircraft ceases to be registered.	

Flight of the aircraft for which this permit is issued is subject to the following conditions:
1. All flights are to be conducted under the day Visual Flight Rules (VFR). 2. The aircraft must not be flown over a closely settled area. <i>(Unless CAR 262API(5) approval is given here by Technical Manager if holding appropriate CASA Authorisation, or, by separate letter from an independent CASA Authorised Person.)</i>
3. Aircraft is to be maintained and operated in accordance with the aircraft and engine operating manuals, instructions and limitations at all times.
4. Other conditions (as listed):
5. This permit must be carried on board the aircraft at all times.



**PERMIT TO FLY -
FACTORY BUILT TYPE CERTIFIED
(or accepted) AIRCRAFT**

<p>1. Registration</p>	<p>2. Aircraft Type: Model: Serial Number:</p>
<p>3. Permit issue date:</p>	<p>4. Permit expiry date</p>
<p>5. This Permit to Fly is issued in respect of the above aircraft which is considered to be airworthy when maintained and operated in accordance with all airframe and engine manufacturer instructions, and all airworthiness notices, service bulletins and the like.</p>	
<p>6. Issued by:</p> <p align="center">Technical Manager - RAAus Inc.</p>	
<p>7. Signature of issuer</p>	

**ANNEX TO PERMIT TO FLY -
FACTORY BUILT TYPE CERTIFIED
(or accepted) AIRCRAFT**

<p>Flight of the aircraft for which this permit is issued is subject to the following conditions:</p>	<p>1. All flights are to be conducted under the day Visual Flight Rules (VFR).</p>
<p>2. Aircraft is to be operated in accordance with the aircraft and engine operating manuals, instructions and limitations at all times.</p>	<p>3. Aircraft is to be maintained and operated in accordance with the aircraft and engine maintenance manuals and instructions at all times.</p>
<p>4. This permit must be carried on board the aircraft at all times.</p>	<p>5. Subject to suspension or cancellation by RAAus, this permit shall remain in force until the earlier of: the expiry date listed above, or the aircraft ceases to be registered.</p>

APPLICATION FOR FIRST OF TYPE ACCEPTANCE CAO 95.55 FACTORY BUILT AIRCRAFT (non-LSA)

1. Applicant details:

Membership number		
Name		
Address		
Email		
Phone numbers	H/B	M

2. Aircraft particulars:

Aircraft type	
Model designation	
Manufacturer's name	
Country of manufacture	
Floating hull, amphibian or floatplane?	
Number of seats	
Powerplant - make and model	
Propeller - make and model	
Main construction materials	
Maximum take-off weight	

3. Avionics installed:

Radio	Make	Model
Transponder	Make	Model
Instrumentation description		
Lights		
Other		

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAUS WEBSITE WWW.RAA.ASN.AU

ITEM	DETAILS	ACCEPTED (Tech Mgr)	REJECTED (Tech Mgr)
Type Certificate or equivalent document (attach)			
TC Issuer (NAA or other competent issuing authority)			
Production Certificate or equivalent document (attach)			
PC Issuer (NAA)			
Continuing support information (attach)			
Australian representative (if any)			
Factory website for service bulletins etc			
Payload / minimum useful load calculation as per sub-paragraph 1.2(f) (iv) of CAO 95.55 (attach details)			

First of Type assessment by Technical Manager:

Application and attached documentation does support RAAus Type Acceptance		<input type="checkbox"/> YES <input type="checkbox"/> NO
Application requires further evidence as detailed:		<input type="checkbox"/> YES <input type="checkbox"/> NO
Application and attached documentation does not support RAAus Type Acceptance for the reasons detailed:		<input type="checkbox"/> YES <input type="checkbox"/> NO
Approval given in writing, and type added to the RAAus accepted types list. Certificate No.	Tech Manager:	Date:
Further evidence requested in writing.	Tech Manager:	Date:
Rejection given in writing.	Tech Manager:	Date:

CAO 95.10 VERIFICATION OF AIRCRAFT WEIGHT

AIRCRAFT IDENTIFICATION

Aircraft Type	RAAus Registration Number (if applicable)
Model	Serial Number (if applicable)

Aircraft Owner

Name	RAAus Member Number (if applicable)	
Address		
City/Suburb	State	Postcode

WEIGHING DETAILS

Specified Empty Weight (see note 1)	Total Wing Area (see note 6)
Nominated Fuel Capacity (see note 3)	Payload Allowance (see note 4)
Method of weighing	
I accept responsibility for the measuring process used and verify that the information contained in this form is, to the best of my ability, true and accurate.	
Qualified Weigher Signature	
Member Number	Date

1. The Specified Empty Weight is that figure calculated from the weighing of the aircraft as described.
2. For the purposes of this weight verification ALL pilots are deemed to weigh 90kg.
3. If the Nominated Fuel Capacity is less than the physical capacity of the fuel tank(s), then the nominated fuel capacity and level must be marked on the fuel tank. The Nominated Fuel Capacity must not be less than 15 litres. This capacity must also be marked on the means of checking the fuel level, e.g. sight gauges or dipsticks. The tank may additionally be marked for the fuel allowed for the weight of the pilot who usually flies the aircraft.
4. Payload Allowance comprises the weight of the items formerly known as optional extras, i.e. those items not required for flight (parachute, radio, brakes etc), and discretionary items such as maps, supplies, luggage, spare fuel etc. If these optional extras are to be included in the empty weight, and no discretionary items will be carried, then the Payload Allowance is NIL. If not, the weight of these items must be included in the Payload Allowance.
5. The wing area should be measured, calculated and recorded on the form.
6. To comply with the requirements of CAO 95.10, the aircraft must have a Maximum Take Off Weight (MTOW) of 300kg or less, and a wing loading at MTOW of not more than 30kg per square metre. To calculate the MTOW for a specific wing area, the formula is Wing Area x 30kg = MTOW
Example: If the wing area is 9.5m²: 9.5 x 30 = 285kg - This particular aircraft is limited to a MTOW of 285kg.

Office use only

MTOW CALCULATION

EMPTY WEIGHT	
NOMINATED FUEL WEIGHT (Litres x 0.72)	
PAYLOAD	
PILOT WEIGHT	
TOTAL	

AIRCRAFT DATA SHEET

REGISTRATION NUMBER

This Data Sheet provides basic information about an Amateur Built Aircraft that is registerable under the RAAus system. A Data Sheet must be completed for these aircraft before registration by RAAus can be finalised. The Data Sheet stays with the aircraft file and must be amended each time major changes are made to the configuration, performance or characteristics of the aircraft.

WARNING

**This aircraft is not required to comply with the safety regulations for standard aircraft
PERSONS FLY IN THIS AIRCRAFT AT THEIR OWN RISK**

AIRCRAFT TYPE

Aircraft Type	Model
Serial Number	Number of seats

AIRCRAFT BUILDER

Name	Contact Number	Fax
Email		
Address		
Postcode		

AIRCRAFT DESIGNER (If aircraft designed by the builder put "as above")

Name	Contact Number	Fax
Email		
Address		
Postcode		

AIRCRAFT DETAILS

Date of construction	Date of first flight	
Wing Span _____ Mtr/Ft	Wing Area _____ Mtr/Ft	A/C Length _____ Mtr/Ft
Wing Chord _____ Mtr/Ft	Root Chord _____ Mtr/Ft	Tip Chord _____ Mtr/Ft
(Include wing root and tip chords if chord not constant)		
Maximum Take Off Weight _____ KG/LB	Weighed Empty Weight _____ KG/LB	
Specify how weight was measured:		
		Date of last weighing / /
List equipment fitted to aircraft and included in empty weight:		

AIRCRAFT DETAILS (Continued)

Forward and Aft centre of gravity limits

FWD	AFT
Specify in inches/mm from datum and position of datum. State how or from where CG limits are obtained.	

Maximum and minimum airspeeds

Maximum (Never Exceed) Airspeed	KTS/MPH (specify which)
Stall Speed (Landing Configuration)	KTS/MPH (specify which)
Specify how these airspeeds are determined	

Control System

Three Axis/Weight Shift/Mixed	Describe Briefly

Fuel System

Type of fuel	Number of fuel tanks	Total fuel capacity	Ltr
Capacity of each tank (if more than one)	{1} Ltr	{2} Ltr	{3} Ltr

Seat Belts and Equipment

List equipment fitted to aircraft including seat belts, showing type and manufacturer, radio, transponder, etc.

Colour

Colour of aircraft fuselage	Wings	Tail
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ENGINE DETAILS

Engine Manufacturer	Model	
Engine Serial Number		
Number of Engines		
Two or Four Stroke	Capacity in CC	Rated Horsepower

PROPELLER DETAILS

Type	Model	Pitch and Diameter	x
Number of blades	Reduction Drive Type	Reduction Ratio	

Propeller Manufacturer

Name	Phone	Fax
Address		

AIRCRAFT CONSTRUCTION DETAILS

Where was aircraft built (State/Territory/City)	
Was aircraft:	
(1) Designed by the builder and constructed from components	Yes <input type="checkbox"/> or No <input type="checkbox"/> OR
(2) Constructed from a commercially manufactured Kit (*)	Yes <input type="checkbox"/> or No <input type="checkbox"/> OR
(3) Constructed from a purchased set of drawings or plans (*)	Yes <input type="checkbox"/> or No <input type="checkbox"/> OR
(4) Other (specify)	
(*) If constructed from a Kit or Drawings specify name of kit or drawings supplier	

Materials used in construction

(1) Fuselage Frame and Covering
(2) Wing Frame and Covering
(3) Other parts, unless similar to the above

STRUCTURAL AND FLIGHT TESTS

<p>Have any structural tests been conducted on this aircraft type? If so, please provide details of what, where, when and by whom the tests were conducted.</p> <p style="text-align: right;">(Use separate sheet if necessary)</p>
<p>Have any formal flight tests been conducted on this aircraft type? If so, please provide details of what, where, when and by whom the tests were conducted.</p> <p style="text-align: right;">(Use separate sheet if necessary)</p>

MAINTENANCE DETAILS

Please specify name of person or organisation who is to maintain the aircraft:		
Name	Phone	Fax
Email		
Address		

PLEASE NOTE THESE FORMS ARE FOR REFERENCE ONLY. A4 FORMS CAN BE PRINTED FROM THE RAAus WEBSITE WWW.RAA.ASN.AU

PHOTOGRAPHS

Please attach the following **RECENT PHOTOGRAPHS** showing:

- Aircraft from FRONT and SIDE
- AIRCRAFT REGISTRATION NUMBERS ON WING AND FUSELAGE/TAIL
- COCKPIT SHOWING INSTRUMENT PANEL including MTOW AND WARNING PLACARDS
- Please annotate photographs with the aircraft registration number and the date on which they were taken.

NAME AND ADDRESS OF THE PERSON COMPLETING THIS FORM

Name

Address

Phone H

M

Fax

Email

Signature

Date

NOTES:

1. The information provided above, **EXCEPT THE NAME AND ADDRESS OF THE CURRENT OWNER** may be made available to RAAus members who request details of the aircraft.
2. Any questions concerning the completion of this form should be addressed to RAAus (Attention: Technical Manager) at E: members@raa.asn.au, P: 02 6280 4700, F: 02 6280 4775 or Recreational Aviation Australia Inc, PO Box 1265 FYSHWICK ACT 2609.

REGISTRATION NUMBER CHANGE

New registration prefixes have been introduced: for example 23-xxxx for LSA registered aircraft. Under a Grandfather clause all aircraft registered before 01/06/2016 will not require any change to their registration prefix. Aircraft registered after 01/06/2016 will be issued with the prefixes outlined in subsection 10.

If aircraft owners wish to amend their prefix in line with issue 4 they may do so by submitting this form.

1. Aircraft Details

Current Registration Number	Make
	Model
Proposed Registration Number	Serial Number

2. Owner Details

Name	Membership Number
Address	
Phone H	M
Email	
Signature	Date

3. Fee

I enclose the RAAus Transfer & Registration fee of \$ _____ as per the current RAAus schedule of fees.

Payment method: Visa MasterCard Cheque/Money Order
(made payable to Recreational Aviation Australia Inc.)

Card number:	
Cardholder's name:	
Expiry: /	CCV:
Signature:	Date:

4. Photographs

Enclose photographs of the changed registration marks (all) on the aircraft

END OF DOCUMENT



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