

SECTION 3.3.1AMATEUR BUILT AIRCRAFT REGISTERED AS
ULTRALIGHT AIRCRAFT

Amendment 1 - Issue 1

INTRODUCTION

CASR amendment, dated 1 October 1998 of Section 95.55 provides for the operation of certain Amateur Built aircraft under Para 1.5, of that Order. The intent of this amendment is to allow the operation of AUF Amateur Built Aircraft up to 544kg MTOW, (614kg Aircraft equipped for water operations) within the AUF system. The definition of an AUF 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, in accordance with the applicable recommendations of AC 21.1, AC 21.4 and FAA AC 90-89A.

Note. *All potential builders and members intending to register aircraft as an AUF Amateur Built Aircraft should obtain and peruse FAA AC 90-89A before commencement of the project and for established projects before any further progress is undertaken! Copies may be obtained from the AUF.*

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 as set out in the Section, and complies with all relevant and current A/Cs, kit manufacturers bulletins and AUF A/Ds. The following procedures detail the steps to progress an aircraft from its manufacture in accordance with CASR Part 21, to operation under the auspices of the Australian Ultralight Federation.

IMPLEMENTATION

1. Amateur Built aircraft to which this Section applies, may be manufactured in accordance with this AUF Manual. Essentially the choice of aircraft type and model, including engines, is at the discretion of the builder, within the confines of 544 kg MTOW. (614 kg aircraft equipped for water operations) / 45 kt. stall, and a maximum of two seats.
2. It is advisable to check with the AUF or the CASA to establish if a chosen kit or design has been previously approved under the provisions of the "old 101.28" requirements. If the chosen kit /design has not been previously approved by the issue of an ABAA, (Amateur Built Aircraft Acceptance) then it will be required to establish that the kit / design complies with the 51% rule under CASR part 21. Construction of the aircraft may commence at this stage. It is recommended that the AUF be advised of the commencement of

construction at this time, to minimise the possibility of problems at a later stage.

3. It is required that all receipts for materials purchased be kept on a file for the project.
4. An AUF logbook is required to be maintained for the project. The logbook will be used for the documentation of the construction of the project, detailing all work carried out by the builder, and any sub let work carried out on behalf of the builder. It is also recommended that the builder, in support of the construction logbook keep a photographic record. Where a partially completed project is obtained and no logbook is available, it will be necessary to backtrack sufficiently so that inspections may be conducted and a new logbook raised. Approval for this will be required from the AUF Technical Officer.
5. An AUF provisional registration number may be applied for at any stage of the construction of the aircraft.
6. All AUF Amateur Built Aircraft registered in accordance with this Section will bear the registration prefix of 19 followed by four digits eg. 19.1234

ISSUE OF REGISTRATION CERTIFICATE

1. Equipment required for eligibility for registration of an AUF Amateur Built aircraft.
 - a. The aircraft is required to have a fire proof data plate attached to the airframe that identifies the aircraft. (serial number and registration number)
 - b. The following flight instruments must be fitted to the aircraft, Airspeed indicator, Altimeter, Magnetic Compass, Tachometer for each engine, Oil pressure gauge where appropriate, Temperature gauge, either Coolant temperature, or Cylinder head temperature as applicable.
 - c. A seat belt of an approved type shall be fitted to each seating position. Acceptable approval standards for seat belts will be, "approved by a Motor Registry Authority for automotive use in Australia".
 - d. Placards. It is required to have each flight and engine instrument marked with the safe operating range for the aircraft in which the instrument is installed. The safe operating ranges may be contained in the aircraft log book or flight manual as appropriate. It is also required to place a placard with the statement "WARNING THIS AIRCRAFT IS NOT REQUIRED TO COMPLY WITH THE SAFETY REGULATIONS FOR STANDARD AIRCRAFT. PERSONS FLY IN THIS AIRCRAFT AT THEIR OWN RISK." In a position in the cabin of the aircraft where the wording is clearly visible to any occupant or pilot.

- e. If the aircraft is fitted with retractable landing gear, then there shall be an indicating system visible to the pilot in command to confirm the wheels up and locked, and wheels down and locked positions.
- f. Pre cover / closure inspection. It is recommended that the builder has an AUF Level Two Maintenance Authority holder inspect the structure, fittings and internal control systems of the aircraft before the structure is closed up preventing such inspection. This inspection is to be documented in the builder's logbook. The completion of this inspection does NOT guarantee the airworthiness or integrity of the aircraft, or its systems.
- g. The aircraft may now be completed to the flying capability stage.
- h. Pre-flight Final Inspection. An Approved Person nominated by the AUF or the CASA will be required to invigilate the owner's inspection of the aircraft prior to flight. This inspection will include the validation of the weight and balance calculations, general appearance and quality of construction, compliance with all current and relevant ACs, kit manufacturer's service bulletins and any AUF A/Ds. The builder is required to check off all the applicable items listed in Appendix 1 of this Section, *Checklist for Pre-flight Final Inspection*. The Authorised Person will witness the signature of the builder's Certificate of Approval for Flight, which the builder him/herself is required to sign prior to flight. The Authorised Person will also impose appropriate restrictions on the operational area the aircraft may be flown in, and a specified period of time the aircraft will be restricted to the test area in accordance with the following guidelines.
 1. Aircraft of unknown and unproven design, fitted with an engine other than a type approved as fit for the purpose, 40 hours.
 2. Aircraft of an approved design and fitted with a Type approved engine 25 hours

EXISTING AIRCRAFT

1. Any aircraft that is currently, or has been at some time registered with the AUF will be eligible for registration as an AUF Amateur Built Aircraft provided the aircraft still meets the requirements of;
 - a. The aircraft was originally built by an individual for recreational and or educational purposes and at least 51% of the construction was completed by that person.
 - b. The maximum take off weight of the aircraft does not exceed 544 kg, (614 kg Aircraft equipped for water operations) maximum stall speed 45 kts maximum two seats.

2. Any aircraft that does not comply with any particular design standard or approval, will be eligible for registration as an Amateur built Aircraft, provided that the aircraft was constructed by an individual, or group of individuals for educational and or recreational purposes and at least 51% of the construction was completed by those individual/s, and complies with the requirements as set out in para 1.b.
3. Aircraft which comply with the requirements of Para 2. above will be eligible for use for the purpose of training the owner for the issue of a pilot certificate.

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

The Inspector and the AUF should be advised when the test period has been completed. Details of any problems should be advised to the AUF: not so much as a check on the builder or the aeroplane, but as information that might be valuable to other builders or which, when incorporated into the AUF information base, and when reviewed in conjunction with other reports may reveal matters that should be passed on to builders.

Because these aircraft are built to legal requirements, ie MTOW not exceeding 544 kg and Stalling Speed in the landing configuration not to exceed 45 kts, builders are required to submit and sign their own certification of the empty weight of the aircraft (nominating aircraft equipment fitment at the time of weighing) and of the stall speed in the landing configuration.

A form titled 'Flight Test Period Finalisation Form' covering this requirement follows the attached Pre-Flight Final Inspection Form.

Note: The registration of aircraft which do not have a Finalisation Form on file will be recorded as 'Provisional' only.

PRE-FLIGHT FINAL INSPECTION
CERTIFICATE OF APPROVAL FOR FLIGHT
AUF AMATEUR BUILT AIRCRAFT

I.....of.....date.....

being the builder of(Type & Model)
Amateur Built Aircraft Serial No.....
AUF Registration 19-

do hereby certify that I have thoroughly inspected this aircraft for compliance with good airworthiness practices, quality of workmanship, and full and correct function of all control systems and equipment fitted to the aircraft in accordance with the *Pre-flight Final 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.

Builders Signature.....Date.....

Builders signature witnessed by.....
(Category 19 amateur Built Inspector)

I,.....being an AUF/CASA Approved Person
have observed the inspection of aircraft serial No.
Registration No..... conducted by.....

The aircraft is to be test flown in the area.....
.....
.....

for a period of not less than 40/25 hours (delete the inappropriate figure).

Signed.....Approved Person.
19 Category Amateur Built Inspector

Name (print)..... CAT19 ABI No.....

Appendix 1 – Checklist for Pre Flight Final Inspection

Aircraft Identification: Owner _____ Type/SN. _____ Reg Number _____ A/F Total Time _____ General:	Engine Model /SN. _____ Propeller Model/SN _____ Engine Total Time _____ Propeller Total Time _____				
S = Satisfactory – U = Unsatisfactory (Correct all unsatisfactory items prior to flight)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">Builder</th> </tr> <tr> <th style="width: 50%; text-align: center;">S</th> <th style="width: 50%; text-align: center;">U</th> </tr> </table>	Builder		S	U
Builder					
S	U				
Registration/Airworthiness/Operation Limitations					
Aircraft Identification Plates Installed					
Amateur Built Placard Installed					
Weight and Balance/Equipment List					
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					

**Appendix 1 – Checklist for Pre Flight Final Inspection
 (Continued)**

	Builder	
	S	U
S = Satisfactory – U = Unsatisfactory (Correct all unsatisfactory items prior to flight)		
Corrosion		
Comments		
Flight Control Bolts/Pins for Safety and Condition		
Wing/Strut/Cable attachments and Hardware for Safety and 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/Gasolator/Flush System		
Inspect Fuel Tank Vent System		
Comments		
Landing Gear		
Inspect Struts/Torque Links for Attachment		
Inspect Struts for Proper Extension		

**Appendix 1 – Checklist for Pre Flight Final Inspection
(Continued)**

S = Satisfactory – U = Unsatisfactory (Correct all unsatisfactory items prior to flight)	Builder	
	S	U
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 Retraction System		
Check Tyre Pressure		
Brake Lining within Limits		
Brake Discs for Cracks, Wear and Deformity		
Brake Hydraulic Lines for Leaks and Security		
Comments		
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		
Comments		

**Appendix 1 – Checklist for Pre Flight Final Inspection
(Continued)**

S = Satisfactory – U = Unsatisfactory (Correct all unsatisfactory items prior to flight)	Builder	
	S	U
Check Control Stick/Yoke for Freedom of 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		
Comments		
Empennage/Canard		
Remove Inspection Plates and Fairings		
Inspect Canard attach Points for Security		
Inspect Vertical Finn 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:		

**Appendix 1 – Checklist for Pre Flight Final Inspection
(Continued)**

	Builder	
	S	U
S = Satisfactory – U = Unsatisfactory (Correct all unsatisfactory items prior to flight)		
Check Carb Boots on 2 Cycle engine for Cracks		
Check Safeties on Exhaust Springs		
Ensure Spark Plug Caps are Safe tied on Inverted Engines		
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))		
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:		

**Appendix 1 – Checklist for Pre Flight Final Inspection
(Continued)**

S = Satisfactory – U = Unsatisfactory (Correct all unsatisfactory items prior to flight)	Builder	
	S	U
Operational Inspection:		
Visual Inspection of the Engine/Propeller		
All Inspection Panels and Fairings secure		
Brake System Check		
Proper Fuel in Tanks		
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		
Cool Down Period/Engine Shut Down		
Perform Oil, Hydraulic and Fuel Leak Check		
Paperwork:		
Airworthiness Directives		
Record Findings and Sign Off Inspection and Maintenance in Aircraft Log Books		
Comments:		

**All Inspections to be conducted as listed and as appropriate to
Equipment Fitted**

AUF AMATEUR BUILT AIRCRAFT FLIGHT TEST PERIOD FINALISATION FORM

Aircraft Registration Number:

Inspector Name and Phone Number:

Aircraft Type and Model:

Builder:

Date of First Flight:

Date Test Period Completed:

Hours Flown to Date:

Details of Significant Problems:

CERTIFICATION

I hereby certify that the aircraft identified above has

A weighed Empty Weight of:.....

On (Date of Weighing):.....

Fitted with (Removable Equipment or Components installed at weighing):.....

.....

.....

A Stall Speed In Landing Configuration:.....

Signature:.....

Name (Print):.....

Date:.....