THE GLIDING FEDERATION OF AUSTRALIA INC

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Manual Of Standard Procedures

AIRW-M01: MOSP 3 – *PROCEDURES* -*Mandatory*

Department: Airworthiness

UNCONTROLLED WHEN PRINTED

Revision 8

INTRODUCTION

This is the totally revised MOSP 3. Version 8 has been comprehensively rewritten and reorganised in 2015 and 2016, in particular:

a. The sections have been re-ordered.

b. Many updates have been made to incorporate the current regulations and GFA rules.

c. Additional sections have been incorporated to address issues that were missing.

d. The structure of the document has been laid out as a reference so it is easier to find and resolve questions.

This manual, MOSP 3, is a comprehensive reference manual of the GFA Airworthiness Procedures and is not designed as a handbook for easy reading: the Registered Operator's Handbook, AIRW-M02, should be read as a concise and simpler introduction to Airworthiness (AW) within GFA. The RO Handbook is a new handbook, written for this purpose and was published in April 2015.

MOSP 3 provides the rules and guidance for Registered Operators, GFA airworthiness officers and maintenance authority holders to enable us to maintain our gliders correctly. Airworthiness is carried out to documented and approved procedures to maintain standards of the fleet and so the MOSP has to address all issues clearly to provide this. By having our own rules we enable work in the way that suits us and simplifies mainstream Airworthiness. As a member of the GFA you agree to abide by these procedures: they clarify our position in the Australian Regulations and take into account our exemptions and our own rules.

Note that largely GFA has to comply with the general aviation regulations. But GFA has negotiated some exemptions and for these we can define our own system. MOSP 3 defines these rules but also tries to put this together with all the applicable regulations so Australian Gliding only has one document of primary reference.

While MOSP 3 has been written to be complete and clear on all GFA Airworthiness matters, for any uncertainty or clarification it is essential to refer to the original Australian Regulations from which it derives it's authority. All the Australian Civil Aviation Regulations 1988 (CARs) and Civil Aviation Safety Regulations 1998 (CASRs) are available on the web and must be complied with, with the exception of CAR Part 4 and 4A, from which GFA airworthiness in Australia is exempt. (Other exemptions exist for operations but Part 4 and 4A are the only exemptions at the moment for Airworthiness.)

This is not a static document: with any large and complex body of work there may be errors and omissions in this manual. In addition, better methods of performing actions may come to light. Regulations will change. All these things mean that the manual will change. To help in this process we request your feedback and comments. Updates will be performed annually, or in the interim if judged necessary. You must ensure you work with updates and latest versions which will always be up to date on the GFA website.

Although this is a book of rules we have gone beyond this and provided explanation and clarity to try to make a complex subject more understandable.

The 2015 and 2016 refresher training courses were held around the country to assist you in understanding the changes. Please spread the word. We need to implement these changes throughout Australian Gliding and request you learn and do it correctly.

Comments to returns@glidingaustralia.org are welcome.

Andrew Simpson

GFA Chairman of the Airworthiness Department

DOCUMENT CHANGE PROPOSAL

Document Title: *Manual Of Standard Procedures 3*	Tracking Details (Office use only)	
	Number:	Date Received:
Name of person submitting change proposal:		
Email Address:	Phone:	GFA Number:
Affected Section(s):		
Reason for Change:		
Source for supporting data or details that may assist the review:		
Suggested change (please add extra pages if it is substantial):		

NB: In order to take appropriate action on a change request please ensure a:

- clear description of the issue has been given;
- supporting data, if available, has be identified; and
- suggested change has been provided.

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MOSP Part 3 – Airworthiness Handbooks Index

Available from GFA website:

MANUAL / Handbook	CASA Approved	Mandatory
AIRW-M01 MOSP 3: Procedures (this manual)	To be approved	Yes
AIRW-M02 Registered Operator's Handbook		
AIRW-M03 Daily Inspector Handbook		
AIRW-M04 DI Handbook - Powered Sailplanes		
AIRW-M05 Basic Sailplane Engineering (BSE) New Version 2016/12		
AIRW-M06 Powered BSE New Version 2016/12		
AIRW-M07 Sailplane Inspectors Training Syllabus		
AIRW-M08 Airworthiness Delegation Procedures Manual (ADPM) New Version 2016	Yes	Yes
AIRW-M09 Design Approval Procedure Manual (DAPM) New Version 2016/12	Yes	Yes
AIRW-M10 Amateur Built Sailplanes		
AIRW-M11 GFA Approved Workshops Application		
AIRW-M12 Airworthiness Officers Duty Statement		
AIRW-M13 GFA Airworthiness Audit Manual		
AIRW-M14 Office Airworthiness Manual		
AIRW-M15 Schedule of Permissible Unserviceabilities New Version 2016	To be approved	Yes
AIRW-M16 Guidelines for Annual Inspections of Gliders		

These are all the Airworthiness Handbooks available to date. Some are mandatory as noted, others are for advice. Some of the manuals provide approved data for repair and maintenance, as are manufacturer manuals and engineering orders.

REVISION RECORD

Prepared by	Approved by		Version	Date
CAD	GFA Board		Version 6.0	27/03/2013
Version 6.0. Not approved by CASA.				
CAD	GFA Board		Version 7.0	22/04/2015
Major Re-organisation and update throughout.				
CAD	CAD		Version 7.1	19/06/2015
Fixed errors as marked and numbering.				
CAD	GFA Board		Version 7.2D	18/05/2016
Addressed CASA & GFA member comments.				
CAD	GFA Board		Version 7.3	19/12/2016
Addressed CASA & GFA member comments. Supersedes V7.2D and is in force. Currently with CASA for approval.				
CAD			Version 8	11/7/2017
Addressed CASA & GFA member comments.				

Manual Of Standard Procedures 3

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1. AIRWORTHINESS ADMINISTRATION

1.1 The CASA Delegation

1.1.1 The responsibility for the airworthiness and operation of all civil aircraft operating in Australia ultimately lies with the Australian Federal Government. The Civil Aviation Safety Authority (CASA) has been empowered by the federal government through the Civil Aviation Act, via Civil Aviation Regulations (CARs) 1988 and Civil Aviation Safety Regulations (CASRs) 1998. The CASRs are superseding the CARs as they are brought into effect. If there are conflicts between the regulations during this transition period then the CASRs take precedent. However, the transitional regulations (CASR Part 202.AJ) that apply to CASR Part 21, provide for the carry-over of Type Certificates (TC) and Certificate Of Airworthiness (CoA) that were accepted under the CARs; a reference to 1 October 1998 in this Manual of Standard Procedures (MOSP) indicates the effect of these Transitional Provisions.

1.1.2 Gliding Federation of Australia (GFA) operates autonomously under the CARs and CASRs but has:

a. Exemptions (CAO95.4 and 95.4.1) to operational and airworthiness regulations

b. Delegation and Authorities to perform certain functions

from CASA, the National Airworthiness Authority (NAA) under which Australian sailplanes are registered and operated.

1.1.3 All GFA members must comply with the requirements of this Manual of Standard Procedures for all sailplanes, powered sailplanes and power assisted sailplanes registered in Australia including Australian registered aircraft operating overseas. ie they must be maintained to GFA standards and signed off by GFA Inspectors.

1.1.4 In this manual the following terms are used:

a. Sailplane means a glider as defined in CAR 1988. Sailplane or glider refers to powered or non-powered sailplanes. LSA regulations refer to gliders not sailplanes. Sailplane is used to distinguish GFA registered fixed wing, high performance sailplanes from hang-gliders etc but sailplane and glider are equivalent terms in this manual.

b. Powered Sailplane is used in this manual as a generic term for all sailplanes equipped with power plants of any form. CAO 95.4 and CAO 95.4.1 define these as Powered Sailplanes.

c. Self-Launching Sailplane has an engine of sufficient power and is certified to self-launch.

d. Power-assisted Sailplanes have an engine but insufficient power or are not certified to self-launch.

e. Touring Motor Gliders (TMG) are self launching sailplanes that are designed to cruise on power for long distances and are equipped and maintained to do so.

f. Sailplanes may be registered (by GFA under the CASA system), operated and maintained as certified, experimental, or Light Sport Aircraft all under the GFA system as described below.

1.1.5 Certain GFA Officers provide functions for GFA on behalf of CASA via a series of instruments of delegation and authorisations. These instruments of delegation are renewed periodically and issued by CASA. Each GFA officer must be in possession of a valid instrument of delegation/ authorisation in order to exercise any powers or functions conferred by that CASA delegation. GFA officers must only operate within the scope and context of their delegations.

1.1.6 Collectively, these instruments (delegations, authorisations and exemptions) allow GFA to perform certain functions to administer all gliding within Australia on behalf of CASA. These instruments allow specific delegated GFA officers to perform the following tasks:

a. Issue Type Acceptance Certificates (TAC)

b. Issue (and remove) Certificates of Airworthiness (CoA)

c. Issue (and remove) Certificates of Registration (CoR)

d. Design, Implement and approve maintenance systems for the airworthiness of sailplanes operated in Australia

e. Implement training systems and issue maintenance qualifications to GFA member for the conduct of sailplane airworthiness activities

f. Implement a Design Approval (DA) process to support authorised engineers under the CASA Part 21.M regulations to enable minor modifications, repairs schemes and replacement of components.

1.2 The Role of GFA in Sailplane Airworthiness

1.2.1 GFA Airworthiness Department is responsible for all airworthiness related functions of GFA. This document prescribes the member processes and procedures required for the administration of sailplane airworthiness.

1.2.2 GFA is responsible to CASA for the following functions:

a. The issue of the CoR for sailplanes and powered sailplanes

b. Appointment of the Registered Operator

c. The issue of CoA

d. The issue of sailplane and powered sailplane airworthiness qualifications

e. The approval of airworthiness training and qualification systems

f. Surveillance activities of members of the organisation conducting airworthiness activities

g. Enforcement action where members are in breach of the regulations.

h. The recording of aircraft logbook statements.

1.2.3 The Airworthiness Delegations Procedures Manual (ADPM) given in Handbook AIRW-M08 details the administrative procedures that GFA will follow in exercising all Airworthiness delegations and authorities. The Design Approval Procedures Manual, AIRW-M09 details procedures for engineering design approvals. Registration Delegations are carried out using CASA manuals.

1.2.4 GFA issues airworthiness ratings that cover the full spectrum of airworthiness related activities on sailplanes and powered sailplanes, ranging from servicing, inspection, and modifications to major repair and life extension activities.

1.2.5 Within this approved framework, only an appropriately authorised inspector may perform airworthiness activities. Airworthiness activities are required, recommended and authorised by:

a. MOSP 3: Airworthiness requirements

b. Airworthiness Directives issued by the NAA of the state of design, CASA or GFA

c. Service Bulletins, Technical Bulletins and Technical Notices issued by the TC or STC holder for the aircraft, engine, propeller, or installed equipment

d. Servicing, Inspection and Maintenance manuals generated by the TC or STC holder

e. Damage, wear and Time between overhaul (TBO) requirements

f. Other tasks as requested by the registered owner or operator (within their level of authorisation).

1.2.6 These documents are the primary source of technical information. Normal periodic inspection and maintenance activities must be carried out according to the maintenance manuals and servicing schedules promulgated by the TC holder for that particular component unless GFA has authorised otherwise. (See Chapter 9)

1.2.7 In the absence of specific information regarding airworthiness activities for any particular task by either the TC holder or GFA, appropriate standards must be adopted.

1.2.8 It is prudent that all GFA members to be vigilant of unauthorized airworthiness activities being conducted. Many GFA members are not aware of the requirements regarding sailplane maintenance and inspection so they should be directed to these rules. If members are concerned they should advise their Airworthiness Administration Officer (AAO) or Regional Technical Officer(s) Airworthiness (RTOA).

1.2.9 GFA promotes self-help and help each other system of maintenance, mainly by volunteers. We also support professional Authorised Maintenance Organisations for those that prefer to pay for services.

1.2.10 All actions carried out by GFA will be with due regard to GFA Complaints and Discipline Manual and GFA Members Protection Policy Manual, see MOSP Part 1. This allows for an appeals process to all decisions.

1.3 GFA Airworthiness Administration

1.3.1 GFA relies on many dedicated volunteers for the administration of Airworthiness. All GFA positions at the National Level (except the Chief Technical Officer (CTO)) are recruited from Gliding Clubs through each state and exercise certain authority as required by the Instruments of Delegation. The CTO is appointed after a competitive interview process.

1.3.2 Figure 1: This organisation works well and has been in place within GFA for decades, reducing costs substantially. However, the system relies on enthusiastic, dedicated individuals to train, mentor and support each other to achieve the necessary outcomes. But some small changes were needed; spread the workload so no individual is overloaded, and ensure a clear management structure so the responsible managers ensure their sphere of responsibility is organised and gets done. Further that Audit/ Oversight is possible throughout.

1.3.3 In all instances, within the requirements of this document, airworthiness related issues are to be resolved at the local level wherever possible. Local club inspectors are to pool resources and knowledge to assist each other and work closely with the Club AAO to meet the club's needs and those of fellow club members.

1.3.4 The RTOAs are available to assist Club AAOs and local Inspectors when further advice is sought, perhaps when a third opinion is needed relating to an airworthiness matter or simply to provide direction during complex airworthiness issues.

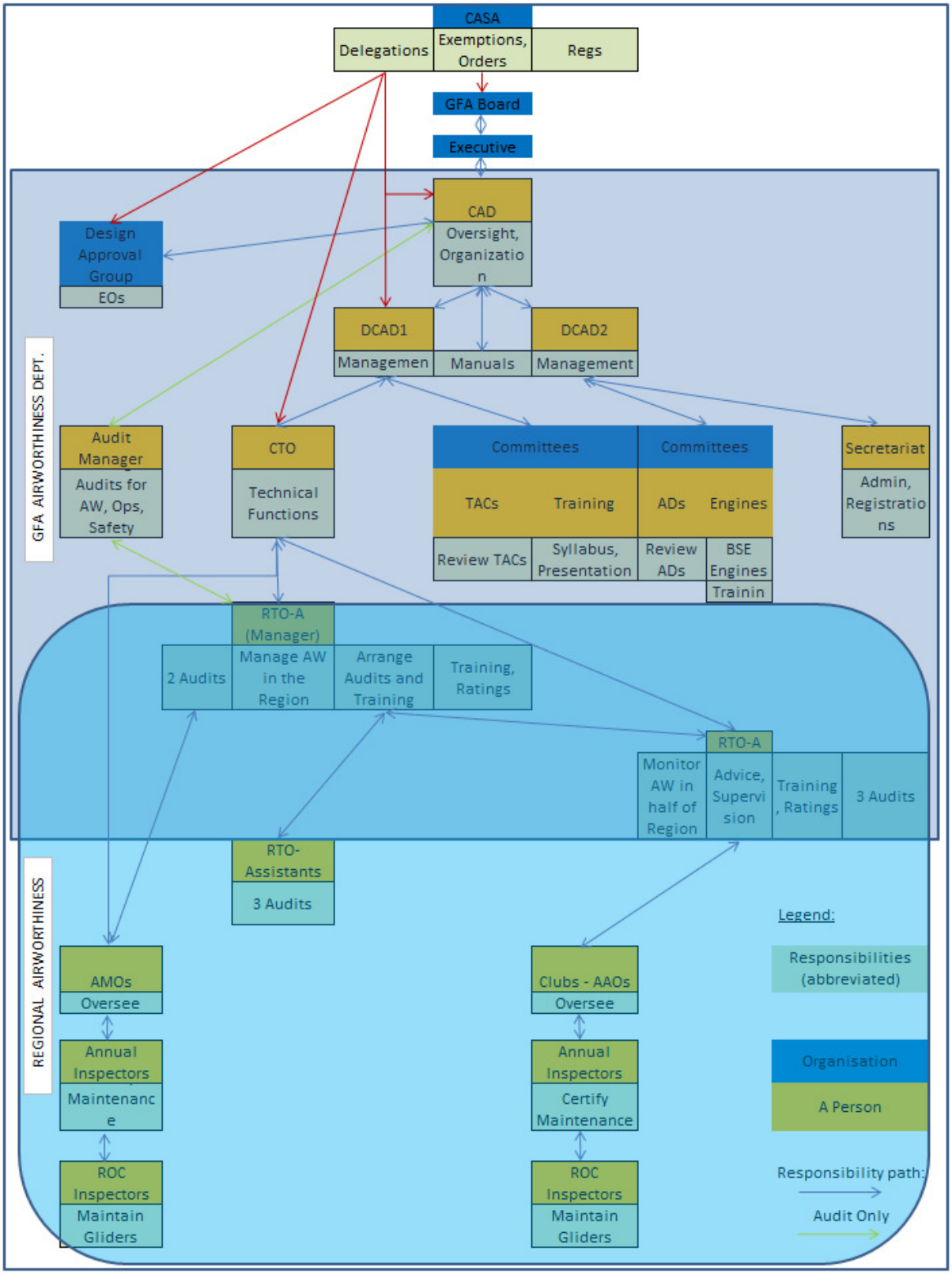


Figure 1 GFA Airworthiness Department – Responsibility Diagram

1.3.5 Each RTOA is a member of GFA Airworthiness Department. They have access to many experienced inspectors and other RTOAs and have the capacity to resolve issues at a state level. From time to time, one or two inspectors disagree with a particular outcome or determination at club level and seek RTOA clarification before releasing the aircraft back to operational status.

1.3.6 Many of GFA's Airworthiness responsibilities are delegated to the appointed RTOAs. The RTOAs oversee the activities of the endorsed annual inspectors within each gliding club and the Approved Maintenance Organisations (AMO).

1.3.7 The CTO is responsible for compliance audit of Approved Maintenance Organisations to ensure acceptable standards of workmanship and airworthiness are maintained. The CTO can delegate this to RTOAs as appropriate. Refer to Chapter 21 for detail on AMOs.

1.3.8 Where anyone obtains airworthiness information which may be useful to other GFA members they are required to forward it to their regional RTOA.

1.4 Responsibility at the National Level

1.4.1 The final accountability for airworthiness within GFA rests with GFA Board. The Board, via the Executive, delegates to the Airworthiness department the day-to-day responsibility for the airworthiness of Australian sailplanes.

1.4.2 GFA Airworthiness department comprises the following positions:

a. Chairman Airworthiness Department (CAD)

b. Deputy Chairman Airworthiness Department (DCAD)

c. Chief Technical Officer (CTO)

d. GFA Airworthiness Secretariat

e. Regional Technical Officer – Airworthiness (RTOA)

1.4.3 It is the responsibility of these officers to ensure compliance with CASA requirements and those of GFA, including MOSP 3.

1.4.4 Detailed descriptions, requirements and responsibilities of these positions can be found within GFA document AIRW-M12 Duty Statements for GFA Airworthiness Officers. This document can be found on GFA website.

1.4.5 All GFA delegated powers and responsibilities are outlined in the document “GFA Delegation Procedures Manual”; a part of MOSP 3. All GFA Officers with delegated powers and responsibilities are to comply with this manual at all times. They are not to exercise these powers until properly trained and authorized by CASA .

1.4.6 The delegations or authorisations issued by CASA are currently to individual persons not to a position within the GFA. If the person changes, the delegations and authorisations do not transfer. The individual holding the position will need training as outlined in 1.4.5 and authorizations and delegations for the task.

1.5 Chairman Airworthiness Department

1.5.1 The CAD is nominated by the RTOAs and appointed by GFA Board. The CAD is responsible to GFA Board for the operation of GFA Airworthiness Department and oversight of standards. The CAD exercises the authority delegated by the GFA Board and any that the CAD holds personally from CASA as per Item 1.4.6.

1.6 Deputy Chairman Airworthiness Department

1.6.1 The DCAD is a senior member of GFA Airworthiness Department and is responsible to the CAD for the Executive management of the department. Ideally, this position is filled by a senior RTOA or someone with significant airworthiness and management skills and experience. The DCAD is nominated by the Airworthiness department and ratified by GFA Board annually.

1.6.2 The position of DCAD is the understudy to the CAD. The DCAD is part of the succession planning for a future CAD position.

1.6.3 The DCAD exercises the authority delegated by the CAD and any that the DCAD holds personally from CASA as per Item 1.4.6.

1.7 Chief Technical Officer

1.7.1 The CTO is a staff position. The CTO is appointed by GFA Executive and is responsible to the DCAD. He is responsible for the Technical Functions of the Airworthiness Dept on a day to day basis, monitoring airworthiness, issue of ADs and the Certification of Sailplanes.

1.7.2 The CTO provides technical advice to RTO-As and members if the RTO-A cannot.

1.7.3 The CTO exercises the authority delegated by the CAD and any that the CTO holds personally from CASA as per Item 1.4.6.

1.8 Airworthiness Secretariat

1.8.1 GFA Airworthiness Secretariat are paid employees of the Federation. They are responsible to the DCAD and perform many of the administrative functions of the airworthiness department. Some members of the secretariat are responsible to CASA for registration under a CASA delegation.

1.8.2 The secretariat exercises the authority delegated by the CAD and any that the secretary holds personally from CASA as per Item 1.4.6. Their functions are defined in the GFA Administration Manual.

1.9 Regional Technical Officer Airworthiness

1.9.1 GFA Regional Associations nominate one or more RTOA who may be required to exercise some of the authority of GFA.

1.9.2 The RTOAs are responsible to the CTO and are to ensure that airworthiness practices within each Regional Association conform to the MOSP and appropriate regulations. Biennial club audits are to be arranged and reported to the CTO.

1.9.3 The RTOAs must arrange training courses in their area to assist the members being sufficiently trained and qualified in maintenance. They have authority to issue maintenance authorities and ratings based on training and experience.

1.9.4 One RTO-A is responsible for the management of the region. The Second shares the workload of half the region and otherwise has the same duties and responsibilities for his clubs and AMOs.

1.9.5 Persons holding the position of RTOA must not be involved in commercial sailplane maintenance, inspection or repair.

1.9.6 GFA Regional Association annually submit nominated RTOAs to the Airworthiness department who recommends the nominations to GFA Board for approval.

1.9.7 RTO-Assistants are Experienced Annual Inspectors to whom the RTO-As delegate Audit responsibilities. This is to share the workload. They may assist with training as well.

1.10 The Club Airworthiness Administration Officer

1.10.1 Each gliding club affiliated with GFA must appoint an AAO. Commercial Gliding Operations must also appoint an AAO. The AAO acts as the Registered Operator on behalf of the club or commercial operator.

1.10.2 Although not compulsory, the AAO should be a qualified GFA Annual Inspector.

1.10.3 The tasks and responsibilities of a club AAO include

a. To act as the club airworthiness contact for the RTOA and to coordinate surveillance audits with the RTOA

b. Coordinate all club owned aircraft life extension inspections and survey inspections with the RTOA

c. Ensure all airworthiness activities being performed on club aircraft are certified by authorised inspectors

d. To obtain Airworthiness Directives (AD) and Airworthiness Notifications (AN) from GFA and TC holder for all club sailplanes, to ensure that they are actioned appropriately

e. To liaise with club management and ensure all MOSP 3 requirements are met for club aircraft

f. To manage the airworthiness documentation for club sailplanes

g. To maintain a list of Inspectors operating within the club and to arrange training with the RTOA

h. Ensuring their contact details are listed with GFA Airworthiness secretary

i. The AAO monitors all private aircraft and assists private owners on airworthiness. The AAO is responsible to advise owners and inspectors if incorrect practices are observed and to advise the RTOA if appropriate. The AMO has authority to ask for and inspect documentation for private gliders operating on the club facilities.

j. The AAO is responsible to make sure the towplane releases are maintained.

1.11 Private Owner Responsibilities

1.11.1 The Registered Operator (RO) of a privately owned sailplane is the nominated person for receiving all relevant airworthiness information and is responsible for ensuring that all maintenance, inspections and repairs are carried out, that all work is certified by appropriately qualified inspectors, and that proper records of that work are kept. There are several responsibilities of the RO and these are outlined in Section 4.14. Most importantly, the RO is responsible for the continuing airworthiness of the aircraft, in accordance with the maintenance system specified in the aircraft's Logbook Statement (See Chapter 9).

1.11.2 A handbook; AIRW-M02 Registered Operator's Handbook, is available from the GFA website to educate Registered Operators and Inspectors in their Airworthiness Duties.

1.11.3 There are seven methods of sailplane certification (see AC 21.1) and so maintenance and repair rules. MOSP 3 defines the differences and the Registered Operator must understand which his aircraft follows and maintain it accordingly. GFA tries to operate them all to the same rules as far as possible but there are differences and the RO must manage this. They give various degrees of freedom and responsibility. They are;

a. Certified Sailplanes (most). See AC 21.2 and AC 21.3.

b. Experimental Modified Certified Sailplanes (a few). See AC 21-10.

c. Experimental Non-Compliant Production (many from non-approved countries similar to certified sailplanes). See AC 21-10.

d. Experimental Amateur-built or Kit-Builts. See AC 21-4.

e. Light Sports Aircraft (LSA Special Certificate of Airworthiness.) See AC 21-41.

f. Light Sports Aircraft (LSA Experimental Non-Compliant Production.) See AC 21-41.

g. Light Sports Aircraft (LSA Experimental Kit-built.) See AC 21-41.

1.11.4 There is a chain of responsibility for the airworthiness of certified aircraft from the designer, certification, manufacture, the National Airworthiness Authority, and finally to the RO, the Inspector, the Daily Inspector, and finally the pilot. Each is a vital link in the chain, and each is responsible by law for their part.

1.11.5 Certified Aircraft must therefore all be rigidly maintained the same or must have engineering approval of any modification. They remain Certified even if issued an Experimental Certificate and may only be modified with Engineering Approval. They do not become Experimental Aircraft. Only very minor changes to optional equipment and cosmetic changes are allowed. Most of these require approval by an inspector and recording in the logbook.

1.11.6 Experimental aircraft take a few forms dependent on the purpose of the EC. ECs come with strict requirements and limitations on the aircraft's use and operation. Experimental aircraft may not be used for commercial operations, which means that they cannot be used for club training, and may not be "placed on the line". They may only be used for strictly private operations. Therefore GFA cannot authorize all owner intentions. MOSP 3 Chapter 7 covers the requirements for Experimental Certificates and Clause 2.6 and the RO Handbook clarifies it further. See also CASR 21.191 (purposes for which an Experimental Certificate can be issued) and CAR 262AP (operating limitations for Experimental Aircraft). Because they have no approved type design, Experimental aircraft may sometimes be modified or repaired without approval under CASR Subpart 21.M or 21.E (Note not including EC issued for R&D), but major changes may invalidate the Experimental Certificate. Changes to the aircraft may alter that risk, so any changes must be referred to the person who issued the Experimental Certificate so that if necessary conditions can be altered or imposed. Any applicable ADs including those from CASA, GFA and the State-of-Design of the aircraft, engine, propeller and other equipment must be complied with.

1.11.7 LSA; a new simplified, economical method of aircraft certification is accepted in Australia, Light Sports Aircraft (LSA). Refer to CASA AC 21-41 and AC 21-42 for more details. Specific GFA personal are authorized by CASA to provide a Special CoA and experimental certificates (EC) for LSA gliders. The cost saving has been achieved by making the manufacturer totally responsible for all phases of development (to a standard acceptable to CASA), production, and Continuing Airworthiness. In return the National Aviation Administrations have reduced their involvement and so costs to a minimum. The GFA rules on LSA gliders are given in Sections 5.7 and 5.8 and the differences mentioned elsewhere. Essentially GFA will rule on the operation of LSA gliders the same as other Sailplanes except that the manufacturers must supply all Data, including the equivalent of Airworthiness Directives and Engineering Orders for modifications and repairs. The responsibility for the airworthiness is based on whoever the manufacturer permits and authorises to conduct any airworthiness tasks, this usually allows GFA Inspectors to carry out maintenance and repairs as for other gliders. This information is contained in the maintenance manuals issued with the aircraft and is a requirement of LSA standards that this information is included. GFA cannot provide these and cannot authorize alternative methods of maintenance or repair. Ie the Registered Operator is responsible to maintain the aircraft to these slightly different methods but the Annual Inspectors and Repairers have the same Authority (as listed in the Maintenance Manual) to certify the maintenance of LSA sailplanes to the manufacturer's directions. CASA and GFA can issue ADs for LSA gliders.

1.12 GFA Administrative Charges

1.12.1 GFA Board sets, from time to time, a range of charges for many airworthiness services applicable to all sailplanes. These charges can be varied without notice.

1.13 Inspector Supervision and Insurance

1.13.1 All GFA Inspectors and repairers, other than those mentioned in Clause 1.13.5, must fall under the supervision of a club or an AMO. They may not work independently.

1.13.2 All GFA inspectors working under a club, “Club Inspectors” are covered by GFA's Contingent Liability insurance policy when conducting sailplane airworthiness certifications. They must be working under a club as the supervising body however they are personally responsible for their work on sailplanes. This includes Inspectors offering their time and skills on a cost recovery basis during airworthiness activities on all club and privately owned GFA aircraft.

1.13.3 Club Inspectors are expected to recover expenses.

1.13.4 GFA inspectors who are engaged in airworthiness activities for profit or income are not covered by GFA insurance and should seek their own insurance cover. They must fall under the supervision of an AMO who is then the responsible body and so independent of any club supervision.

1.13.5 The holders of GFA maintenance or inspection authorities that are issued exclusively for a particular experimental sailplane may only work on their own aircraft and are responsible for themselves. They are also covered by GFA's Contingent Liability insurance policy when conducting sailplane airworthiness certifications. Refer Clause 6.5.2.1 for training.

2. AIRWORTHINESS DOCUMENTS

2.1 Certificate of Registration and Certificate of RO

2.1.1 The Certificate of Registration documents the existence of the sailplane, its registration mark, and in whose name it is registered.

2.1.2 The Registered Operator (RO) certificate, records the person or organisation responsible for the airworthiness of the sailplane. The registered operator is responsible for ensuring that all necessary maintenance is performed and documented.

2.1.3 The RO must maintain up to-date contact details in compliance with CASR 47.115, as they are the primary means of contact for all airworthiness matters relating to the sailplane.

2.1.4 The Registration Holder is responsible for the selection of the aircraft's maintenance system, which is then specified in the Logbook Statement and guides the RO on maintaining the aircraft. (See Chapter 9 and the RO Handbook for guidance)

2.1.5 The RO is responsible for ensuring all airworthiness activities being performed on the sailplane are conducted to approved standards by approved persons.

2.2 Type Certificate

2.2.1 A Type Certificate is a certification made by the responsible regulatory authority (NAA), to the effect that the type design of the aircraft, aircraft engine or propeller complies with the relevant specified design standard. For most modern sailplanes this is the European standard CS-22 (but the standard applicable to the original design remains applicable).

2.2.2 The Type Certificate is a certificate that contains basic data detailing the certification basis. Attached to the Type Certificate is a Type Certificate Data Sheet (TCDS) which contains limitations, conditions and other information related to the type certification of the aircraft, aircraft engine or propeller. It specifies the limits within which the aircraft, engine or propeller was type certificated, and usually specifies other documents such as flight and maintenance manuals, cg limits, control limits, and engine and propeller limits (if appropriate). The TCDS is the primary data reference for all aircraft of the type. The TCDS lists the Maximum Take-Off Weight MTOW and Centre of Gravity (CG) limits, manoeuvre limits and maintenance standards to be complied with.

2.2.3 The State-of-Design issues the first Type Certificate for a type. Any other states where the aircraft is to be operated (Called States-of-Registry) will "validate" the State-of-Design's type certificate. There are a number of ways of doing this, but the most common are the issue of either a Type Certificate or a Type Acceptance Certificate issued by the State-of-Registry.

2.3 Type Acceptance Certificate

2.3.1 Since October 1, 1998, Australia validates aircraft certificated by the NAA of any of the seven recognised countries or EASA as defined in CASR 21.010B by the issue of a TAC. Prior to October 1, 1998, this was not required by regulations; and TCs and CoAs in force on that date continue to be in force unless suspended or cancelled. All certified aircraft, First of Model after 1 October 1998 require a TAC.

2.3.2 TACs relate to the aircraft type and model, not individual aircraft, so only one TAC is required for each type and must list the included models. CTO can advise if one already exists, and applications for a TAC may also be made to CTO. He can have models added to the TAC.

2.3.3 The TAC is issued for all variants or models on a type certificate. However, it may exclude some of the variants for which full data is not available. These could be added later if the data is obtained.

2.4 Standard Certificate of Airworthiness

2.4.1 The Certificate of Airworthiness (CoA) certifies that at the time of issue an individual sailplane complies with the original TC or TAC, or any STC incorporated, with all Australian type requirements, meets all continuing airworthiness requirements including any requirements of the NAA, and subject to the issue of a Maintenance Release, is in a safe condition for flight.

2.4.2 The CoA does not attest to the day to day, detailed airworthiness of the sailplane. That is the purpose of the Maintenance Release (MR). The Standard CoA attests that the aircraft meets its certificated or certified Type Design. It in effect certifies that the aircraft is eligible to be “Airworthy” if correctly maintained. Thus, a valid CoA can be taken as indicating that, if operated inside the specified limits and maintained to the specified standards, the sailplane is safe to fly. The mechanism of the CoA and the MR in conjunction, satisfy the ”airworthiness” requirement for a form of consumer protection for persons flying in the aircraft. Parts 11, 21 of the CASRs detail the regulations pertaining to CoAs.

2.4.3 NOTE: The term “safe” implies a reasonably practical level of safety performance appropriate to the aviation activity, not absolute safety. Readers wishing to understand this more deeply are referred to the International Civil Aviation Organisation (ICAO) Safety Management Manual (ISBN 978-92-9249-214-4.)

2.4.4 Sailplane CoAs are issued by persons who hold the appropriate CASA delegation. Standard CoAs issued by GFA are normally valid for an indefinite period. If appropriate, GFA may place an expiry data on a CoA.

2.4.5 A CoA may be cancelled or suspended (refer Clause 5.10) as a result of major damage, or where the sailplane is found to be in an unacceptable airworthiness condition. Only GFA officers who hold the CASA delegation may suspend or cancel a CoA. A CoA will automatically be cancelled if the TC or TAC stops being in force. See CASR 21.181.

2.4.6 The CoA is automatically cancelled when a sailplane is deregistered.

2.4.7 Modification of a certified sailplane may only be done according to appropriate design approval, see Section 18 or subject to the limitations imposed by an Experimental Certificate (EC).

2.5 Export Certificate of Airworthiness and Foreign Registration

2.5.1 Export CoA are no longer required for importing an aircraft into Australia. All aircraft must be registered in Australia and go through the application process for a CoA. They may only be registered in one country at a time.

2.5.2 Sailplanes exported from Australia may be required, by the receiving country, to have an Australian Export CoA. GFA does not have a delegation to issue Export CoAs, but the CTO will assist in obtaining one.

2.5.3 Foreign registered sailplanes with a foreign CoA from any of the contracting states may be operated in Australia without further approval. Sailplanes with an Experimental Certificate (EC) require approval by CASA if their EC does not meet the requirements of ICAO Annex 8 (usually does not). Special Flight Authorisations (SFA) are issued under CAR 135A by CASA, and are required for foreign registered aircraft that do not have a CoA or acceptable EC and wish to operate in Australian airspace. Sailplanes with a Permit to Fly, which is not regarded as a CoA, require a SFA from CASA.

2.6 Experimental Certificate

2.6.1 Flying in an aircraft under an EC is entirely on the basis of voluntary acceptance of risk by the persons who elect to do so. This implies that such persons should ensure they have sufficient knowledge to understand the nature of the risk. The operating restrictions that are placed on an EC are based on an assessment of the risk; and also on minimising the hazard to other airspace users and persons on the ground. GFA promotes innovation and some member's desire to build, modify and service their own aircraft. The provision for operation under an EC is an ability that GFA maintains and arranges with CASA for GFA members.

2.6.2 An EC can be issued by a member of the GFA who holds a current instrument of appointment. ECs may only be issued for a small number of specific purposes, and these are listed on members Instrument of Appointment, and may change from time to time.

2.6.3 ECs may only be issued in accordance with CASR Part 21.191 to 21.195B. All ECs will clearly list the terms and limitations applicable to the allowed flight(s), including the period of validity of the EC. General operational limitations for all Experimental Aircraft are listed in CAR 262AP with specific operational limitations for the individual aircraft listed in the Annex to the EC.

2.6.4 A copy of the EC must be kept with the MR in the sailplane at all times and a daily inspection must not be certified without sighting the EC to ensure it has not expired and to ensure that they are aware of the operational limitations contained therein.

2.6.5 Pilots flying the sailplane are strictly limited to the terms of the EC and the limitations in CAR 262AP.

2.7 Manufacturer's Maintenance Manuals

2.7.1 An up-to-date flight manual and maintenance manual is required before an Australian TAC can be issued.

2.7.2 All approved sailplane manufacturers must nowadays provide adequate inspection and servicing information for the ongoing airworthiness of the aircraft and components that they produce. The manufacturer's manuals for some older types may not be considered adequate by themselves. GFA default maintenance procedures were originally developed to cover this situation.

2.7.3 Normal periodic inspection and maintenance activities must be carried out according to the Aircraft Maintenance Manuals (AMM) unless GFA has authorised a concession (See Chapter 9). Maintenance may only be carried out by appropriately authorised GFA inspectors.

2.7.4 The AMM is the primary source of maintenance information. ADs and other published reference material may supplement the manual as applicable.

2.7.5 It is the responsibility of the RO to ensure that the most current Aircraft Maintenance Manual and the current Aircraft Operators Manual are used during all Airworthiness (and Operational) activities. These documents are regularly updated by the manufacturers and must be checked for currency at each annual inspection.

2.8 Logbook Statement

2.8.1 The Logbook Statement defines the aircraft's maintenance system, as selected by the Registration Holder from the available options and accepted by GFA. It takes the form of a page inserted in the logbook at the start of the maintenance log. See Chapter 9 for details.

2.9 Schedule of Permissible Unserviceabilities

2.9.1 From time to time, certain aircraft unserviceabilities are encountered that do not alter the safety or operation of the aircraft. Should the unserviceabilities remain, the safety and operation of the sailplane must not be compromised.

2.9.2 GFA has exemptions to CAR 37 which rules on Permissible Unserviceabilities (PUs). Therefore GFA has developed their own system of PUs which is intended to suit gliding, be much simpler, but provide the same intended function; to allow sailplanes to take off with sensible and safe defects. Otherwise regulation does not allow take-off with other inoperable equipment even if you think they are safe.

2.9.3 In the past GFA has operated with a system allowing flight with minor defects (Clause 19.5.6) which are recorded in the maintenance release and do not affect safe flight. This is still in effect and allows flight with minor defects considered safe by the Daily Inspector. Refer MOSP 3, AIRW-M03 DI Handbook. The PUs are beyond this allowing certain equipment that is not required for safe execution of the planned flight to be inoperative or deactivated.

2.9.4 PUs are to legally enable operation with sensibly unserviceable equipment.

2.9.5 The Handbook AIRW-M15 Permissible Unserviceabilities provides a schedule of PUs allowed in GFA sailplanes at the time of take-off for the listed flight conditions. Ie they are not always allowed but are permissible if the flight is intended to not require these items. The list also specifies whether the equipment is allowed to remain functional.

2.9.6 Only defects listed in the Schedule of Permissible Unserviceabilities are allowed to remain when a new Maintenance Release is issued. All other defects must be repaired.

2.9.7 For sailplanes all optional equipment, correctly installed as per the MOSP, such as a flight computer, may be unserviceable. Optional equipment do not require a PU is entered in the Maintenance Release.

2.9.8 Required PUs must be listed in the Maintenance Release Minor Defects Part 2 and it is the pilots responsibility and decision whether to operate as such and to remain within the limits of the Permitted Unserviceability Clause.

2.9.9 The CAD may modify the Schedule of Permissible Unserviceabilities to allow other conditions.

2.10 Noise Certificates

2.10.1 Under the Air Navigation (Aircraft Noise) Regulations most aircraft including some sailplanes require a Noise Certificate issued by Airservices Australia.. At the moment sailplanes are not exempt but GFA have received agreement that only sailplanes that self-launch have to comply. Refer to http://www.airservicesaustralia.com/services/aircraft-noise-certification/ for further details.

2.10.2 All civil aircraft operating in Australia are required to comply with the Air Navigation (Aircraft Noise) Regulations regardless of size, purpose, or ownership. Aircraft operators need to complete and submit the Aircraft Noise Assessment form in order to:

a. add an aircraft to the Australian Civil Register

b. operate an already noise assessed aircraft that has been modified which may affect its noise characteristics

c. operate a foreign registered aircraft in Australia.

2.10.3 If your aircraft has a foreign approved Noise Certificate this may be easily obtained, online, and submitted for approval.

2.10.4 The Registered Operator must confirm that the aircraft's Noise Certificate has been issued by Airservices Australia if the sailplane is a powered self-launch type.

2.10.5 Jet powered sailplanes will need an exemption or are automatically compliant if they do not self-launch.

2.10.6 Noise Certificates are not transferable to a new owner. A new owner must re-apply.

3. SAILPLANE CERTIFICATION

3.1 Design Requirements

3.1.1 All sailplanes, with the exception of experimental aircraft, must comply with recognised design standards. CASR Part 22 prescribes the regulations currently pertaining to sailplanes and powered sailplanes. Most modern sailplanes and powered sailplanes are designed in accordance with EASA CS 22. A copy of the current version can be obtained from the EASA website via the following link:

3.1.2 The transitional provisions of CASR 202AJ have the effect that sailplanes that were accepted in Australia prior to CASR Part 22, may be designed in accordance with earlier standards; and this acceptance continues to be in force.

3.1.3 For aircraft designed and approved under other standards and certain authorities such as the FAA the procedures are similar.

3.1.4 For aircraft designed and built to non-approved standards and under non-approved authorities the process gets more difficult but it is usually possible to issue them an Experimental Certificate. An alternative is to certify them in Australia but this becomes extremely expensive and onerous.

3.1.5 GFA can issue Experimental Certificates, (only for specific purposes), for amateur built sailplanes entering service in Australia.

3.1.6 GFA can accept Light Sport Aircraft (LSA) designed and approved gliders for use in Australia. Refer to Section 5.7.

3.2 Type Acceptance

3.2.1 A First of Type (FOT) factory-built sailplane being imported into Australia after 1 October 1998 and requiring an Australian Standard CoA must be issued a Type Acceptance Certificate (TAC). In the case of a FOM, the model may need to be added to a previously existing TAC.

3.2.2 The FOT/FOM are also subject to an initial CoA survey by GFA qualified and approved members. A GFA Form 300 CoA/ EC Application & Survey Checklist will be completed and submitted to GFA secretariat with the application for CoA issue. The full procedure is detailed in the ADPM.

3.2.3 Any sailplane or powered sailplane imported into Australia and holding a TC from a NAA listed below (at Clause 3.2.5) can be issued a TAC based on the fact that it has been issued a TC by a recognised country.

3.2.4 GFA will automatically accept the TC and associated TCDS and raise a TAC referencing the TC and TCDS once the requirements of CASR 21.029A are met.

3.2.5 CASR 21.029A allows GFA under CASA delegation to issue Australian TAC for aircraft types that has a current TC issued to it by one or more of the seven recognised overseas authorities as listed in CASR 21.010B:

a. The Federal Aviation Authority (FAA) of the United States of America (USA)

b. Transport Canada (Civil Aviation)

c. The Direction Generale de l'Aviation Civile (DGAC) of France

d. The Civil Aviation Authority of New Zealand

e. The Civil Aviation Authority of the United Kingdom (CAA UK)

f. The Rijks Luchtvaart Dienst (RLD) of the Kingdom of the Netherlands

g. The Luftfahrt-Bundesamt (LBA) of the Federal Republic of Germany.

3.2.6 The RO of any imported sailplane or powered sailplane that is certificated in a country whose NAA is not listed above as having automatic acceptance may apply to CASA for type certification.

3.2.7 GFA issues TACs for all sailplanes and powered sailplanes imported since 1 October 1998. The TAC will be effective until cancellation. Certificates of Type Approval (GFA CTA) and GFA issued Type Certificates (GFA TC) issued under prior regulations remain valid.

3.2.8 Where there is no longer a Type Certificate Holder who is responsible for the ongoing airworthiness of the sailplane or powered sailplane type, but the sailplane or powered sailplane is Type Certified to acceptable requirements, CASA may allow the type to remain in service, if deemed safe and airworthy, on condition that the sailplane is issued an annual Maintenance Release (MR), is subject to surveys as per Chapter 14 and any other requirements as specified by CASA. If an airworthiness issue arises which would require TC Holder support, GFA will issue an AD which either grounds the type, or provides a fix.

4. CERTIFICATE OF REGISTRATION PROCEDURES

4.1 General

4.1.1 GFA administers the registration of sailplanes in accordance with CASR Part 47 on behalf of CASA via an instrument of delegation. These functions include the registration of sailplanes and the maintenance of a portion of the Australian Aircraft Register set aside for sailplanes. Members apply through the Secretariat and using information provided on GFA and CASA websites.

4.1.2 Detailed information and the CASA forms specific to the registration of sailplanes can be found on the CASA website at the following link:

4.1.3 http://www.casa.gov.au/scripts/nc.dll?WCMS:STANDARD::pc=PC_90239

4.2 Sailplane Importation

4.2.1 GFA should be advised in advance that a sailplane is to be imported. It is the responsibility of the importer to ensure that all the relevant documentation is available and that all GFA and CASA requirements are met to enable the sailplane to be certified for use in Australia.

4.2.2 Detailed guidelines for the importation of sailplanes and their trailers into Australia are available from GFA office. The information contained in the guidelines is (to the best knowledge of GFA) correct and accurate at the date of its publication (a copy can be obtained from GFA website).

4.3 Initial Registration

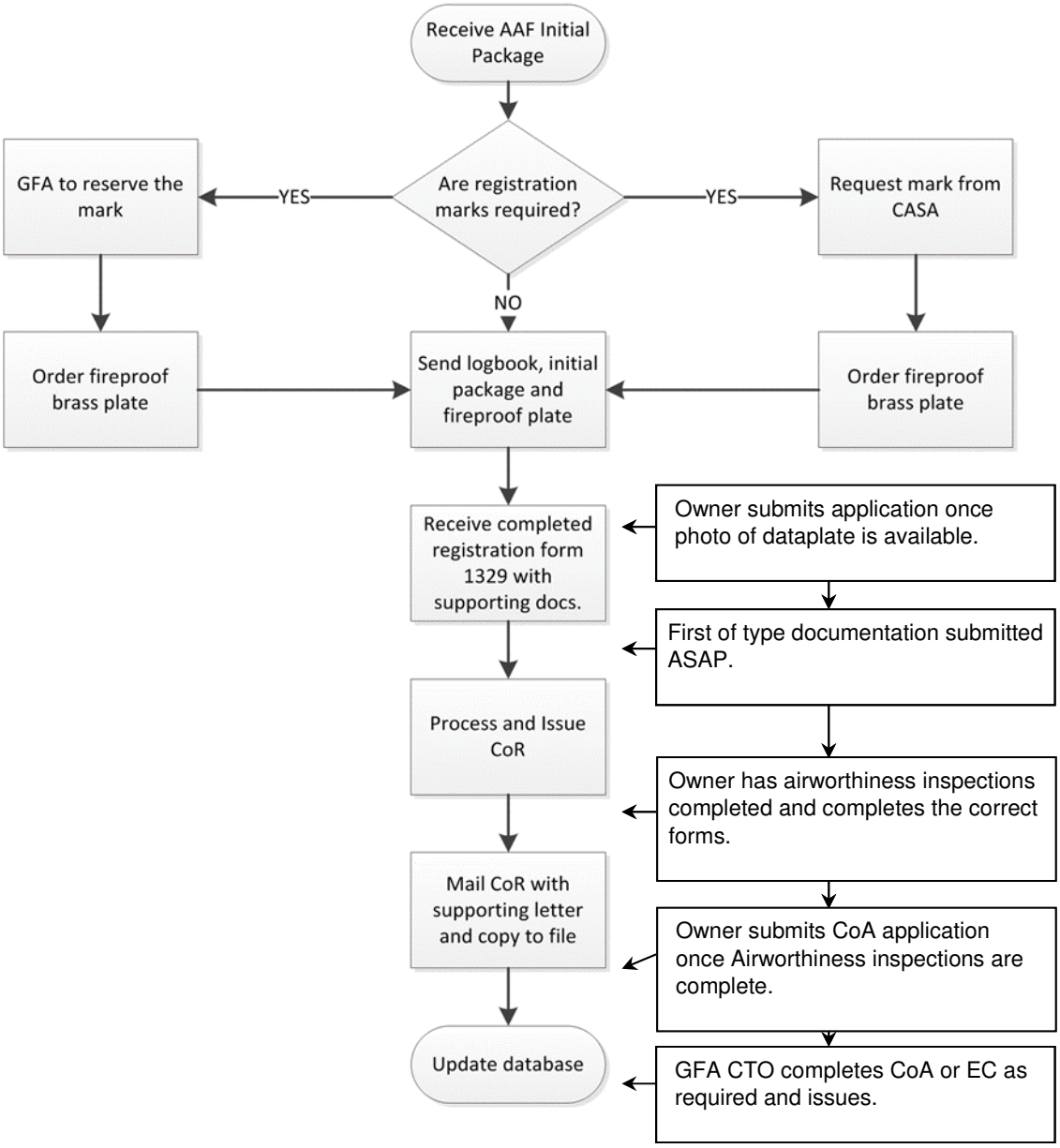
4.3.1 Before any sailplane can be entered onto the Australian register, proof that it is not registered in any other country must be provided. Until the sailplane is registered in Australia it cannot be issued with a CoA or an EC. It may be issued with a Special Flight Permit (SFP) without being registered, but SFPs are only available for a small range of specific purposes.

4.3.2 In the case of newly manufactured sailplanes, the foreign manufacturer normally provides a document stating that the aircraft is not registered in any other state. In the case of second hand sailplanes this will have to be obtained by the importer from the Airworthiness Authority of the country where it ~~is~~ was previously registered.

4.3.3 It is essential to make sure the second-hand sailplane will arrive in Australia with a Certificate of De-registration or similar approved.

4.3.4 If the sailplane is ex-military a similar document from the military authority selling the sailplane must be obtained.

4.3.5 GFA Form 1329 must be completed and submitted to GFA office for initial registration procedures to commence.



AAF = Airworthiness Administration Fee

Figure 2 GFA CoR Administrative Process and Parallel Submissions by the Owner for the CoR

4.3.6 The Registration and Certificate of Airworthiness are two independent processes as shown above. The First of Type or First of Variant is an extra process required early in the process for first models to be issued with a Type Acceptance Certificate. Refer to Chapter 5 for details on these airworthiness procedures.

4.4 Transfer of Ownership

4.4.1 The CASA Transfer of ownership Form 1327 should be used by both the seller (former owner) and the buyer (new owner) to transfer the ownership of a currently registered sailplane in accordance with CASR 47.110. If the aircraft is not currently VH registered and the owner is applying for an initial registration, CASA Form 1329 (Registration Application – CASA.) should be used.

4.4.2 GFA is to be notified of a change of ownership within 14 days

4.5 Appointment or Cancellation of Registered Operator

4.5.1 CASA Form 1332 should be used by the Registration Holder of a registered aircraft when nominating or cancelling the appointment of a registered operator under CASR 47.100. A nomination must also be signed and accepted by the nominated registered operator.

4.6 Change of Aircraft Details

4.6.1 CASA Form 1330 should be used by the CoR holder to notify GFA under CASR 47.115 of a change in sailplane details or a change in personal details for the holder or the registered operator.

4.6.2 If notifying GFA of an appointment of a new RO or about a change of ownership (rather than just a change to a name or address), CASA Form 1332 (Appointment / Cancellation of Registered Operator under CASR Part 47–GFA) or CASA Form 1327 (Transfer of Ownership–GFA) must be used.

4.7 Cancellation of Aircraft Registration

4.7.1 CASA form 1326 should be used by the CoR holder of a sailplane when applying for the cancellation of the registration under CASR 47.130.

4.8 Sailplane Register

4.8.1 All sailplanes operated in Australia by GFA members must be registered in the Australian Aircraft Register. A copy of the register is maintained by GFA Secretariat. Each sailplane which is entered into the Australian Aircraft Register will be allocated an individual File Number used only for that sailplane.

4.8.2 This file number is referred to as the Aircraft G number. It remains allocated to the aircraft, regardless of changes to registration marks, changes of ownership or exportation. This G number is unique to that aircraft and will not change.

4.9 Registration Marks

4.9.1 The CASA allocates blocks of three letter registration marks for use on sailplanes to GFA.

4.9.2 Marks to be applied according to GFA AN 84.

4.10 Competition Marks

4.10.1 A competition mark comprising two characters may be placed on the fin and rudder of a sailplane. Competition marks must be numeric or alpha numeric to avoid confusion with the registration mark. GFA AN 84 provides guidelines and contains an application form which must be submitted to GFA for approval.

4.11 The Aircraft Registration Process

4.11.1 CASA Advisory Circular (AC) 47-01 provides guidance for the registration of aircraft and related matters. However this AC is written for non-sailplanes and the information is presented in this section of MOSP to suit sailplanes.

4.11.2 The document can be found via the following link:

4.11.3 http://www.casa.gov.au/wcmswr/_assets/main/rules/1998casr/047/047c01.pdf

4.12 Reservation of Registration Marks

4.12.1 When a person intends to register a sailplane they may apply to have one of the registration marks which have been allocated to GFA, provided it has not already been allocated to another aircraft. GFA will reserve marks for a maximum period of 12 months, and it is the responsibility of the person who has reserved the marks to renew the reservation.

4.12.2 CASA has other registration marks available and any person who wishes to use these marks should contact CASA and request they be allocated to GFA, they may then reserve them through GFA.

4.13 Change of Registration Marks

4.13.1 If the Registration Holder wishes to change the registration marks of a sailplane the following procedure should be followed:

a. Reserve a new registration mark.

b. Apply to GFA Secretariat via a written (email to returns@glidingaustralia.org) request to change the registration marks. Send into GFA secretariat together with the CoR, the CoA, the Registration Plate and the appropriate fees.

c. The CoA and the CoR will then be reissued with the new marks. The old CoR and CoA will be cancelled and the new certificates issued as per the ADPM.

d. GFA Airworthiness department will then update the aircraft file accordingly

e. Have the MR altered to reflect the new marks by the same inspector who completed the last Annual Inspection.

f. Remove the old registration marks from the aircraft and apply the new marks in accordance with GFA AN 84.

g. Install a new Registration Plate.

h. Complete a Logbook entry stating that the registration marks have been changed and quoting the old and new marks.

4.13.2 Until the certificates are received and all the above items are completed the sailplane cannot be flown, as its registration status is unclear.

4.14 Registered Operator

4.14.1 The RO is responsible under CASR Part 47 for ensuring that all required maintenance on the sailplane is completed by appropriately qualified persons (see Section 9.3 of CASA AC 47-01) and to approved standards.

4.14.2 The responsibilities of the RO includes:

a. Ensuring that all airworthiness activities are conducted by authorised and qualified individuals to approved standards

b. Ensuring that all maintenance records and servicing history is retained for the aircraft

c. Ensuring that annual inspections, periodic and non-periodic maintenance are completed at the appropriate time in service or due date

d. Ensuring all mandatory maintenance as specified by the Aircraft documentation, including foreign data such as the Type Certificate and sailplane manuals is completed

e. Ensuring all applicable ADs are obtained and applied. This includes GFA, CASA, and the Type Certificate Holder's National Aviation Authority ADs for the sailplane and all its certified equipment

f. Completing any other tasks for which the RO is identified as being responsible elsewhere in this Manual.

4.14.3 Refer to the Registered Operator Handbook, MOSP Part 3, for information, guidance and further details.

4.15 Loss or Damage to the CoR

4.15.1 If the CoR is lost, stolen, destroyed or damaged so that particulars are no longer legible, the Registration Holder must notify GFA Secretariat in writing of the circumstances of the loss, theft, destruction or damage within 14 days.

4.15.2 If the CoR is damaged, the damaged certificate must accompany the notice. A statutory declaration from the Authorized representative of the Registration Holder is required to state the reason for replacement. For a club the authorized representative must be an officer of the club.

4.15.3 GFA will submit the application for replacement to CASA. (GFA do not have the authority to replace CoR.)

4.16 Display of Registration Marks

4.16.1 Full registration marks must be displayed in accordance with the requirements of CASR Part 45 on the exterior of the sailplane. GFA has certain exemption as detailed in GFA AN 84. Registration mark must be sized and applied in accordance with the guidelines given in GFA AN 84.

4.16.2 The CASA document AC45-01 provides further details of the requirements specified in CASR 45 and can be found via the following link:

5. CERTIFICATE OF AIRWORTHINESS PROCEDURES

5.1 CoA General

5.1.1 The Airworthiness Delegations Procedures Manual (ADPM), AIRW-M08, details the procedures, instructions and information required. GFA will operate as per this Handbook.

5.1.2 The CoA is issued to confirm that at the time of issue the aircraft conforms to the applicable type design, that maintenance and alterations have been performed in accordance with the applicable regulations and the sailplane or powered sailplane is in a safe condition for flight. After 1 October 1998, an initial issue of a standard CoA may only be made to an aircraft of a type for which an Australian TC or TAC has been issued. This does not apply to renewal of a CoA that was in force prior to on 1 October 1998.

5.1.3 For non-type certified sailplanes or powered sailplanes, an EC, refer Chapter 6, is issued if an eligible person applies for an EC as set out in AC21.10, for a purpose for which GFA holds a delegation, but there will be limitations placed on the attached annex to ensure the safety of people and other airspace users. Another route is LSA gliders, refer sections 5.7 and 5.8.

5.1.4 ICAO, Article 31, states every aircraft engaged in International navigation shall be provided with a CoA issued or rendered valid by the state in which it is registered. The requirements for a CoA are stated in ICAO Annex 8, Part II, Chapter 3.

5.1.5 Australia is a contracting state of ICAO; this responsibility is set out in the Civil Aviation Act 1988.

5.1.6 For the issue of a CoA for a sailplane or powered sailplane, the following is required:

a. Type Certificate

b. Type Certificate Data Sheet

c. Australian issued Type Acceptance Certificate (TAC), for aircraft models first registered in Australia after 1 October 1998. For aircraft types for which an Australian CoA was in force on 1 October 1998, an Australian TAC is not required.

5.1.7 For a CoA to be issued all applicable Airworthiness Directives are to be completed and certified as completed in the aircraft logbook.

5.1.8 The CAD or his delegate will nominate a GFA Approved Maintenance Organisation or GFA inspector to carry out the initial inspection for a First of Type or First of Model for the issue of a CoA. GFA requires a selection of forms to be completed as contained in the initial package.

5.1.9 The RO is to ensure that all work is completed as detailed above and submitted to GFA office for processing and that all work required has been entered in the aircraft's logbook by an appropriately qualified and designated GFA airworthiness inspector.

5.1.10 A GFA Form 2c Annual Maintenance Return is issued and a copy accompanies the supporting paperwork for the issue of the initial CoA or Experimental Certificate.

5.1.11 All sailplanes and powered sailplanes which meet the standards and qualify for a Standard CoA in accordance with ICAO Annex 8, and which hold an Australian TC or a TC of a recognised country may be issued a CoA in one of the following categories:

a. Normal

b. Utility

c. Aerobatic

5.1.12 If there is no Australian TC or TAC or prior CoA, an EC may be issued by GFA for a period of time as detailed in AC21-10 or AC21-4 detailing one or more of the listed prescribed purposes. Refer Chapter 6.

5.1.13 An EC can be issued for those sailplanes which do not conform to a type.

5.1.14 A time frame for the issue of a CoA will generally be five to ten working days from receipt of completed documentation and all appropriate fees and charges have been received.

5.1.15 Before CoA issue, the sailplane or powered sailplane must hold an Australian CoR. The ICAO requirements are that an aircraft may only be registered in one country and that country issues the CoA.

5.1.16 Documents attesting to the airworthiness of an Australian aircraft are:

a. Type Certificate/ Type Certificate Data Sheet (TC/TCDS)

b. Type Acceptance Certificate (TAC) (For aircraft first registered after 1 October 1998)

c. Maintenance Release (MR)

d. Aircraft logbook

Explanation: There was a system of "Certificate of Type Acceptance" issued ito CAO 101.26 dated 22 Dec 1981. This no longer exists, therefore all TAC or similar prior to 1 October 1998 are no longer required. But all CoA issued prior to this date remain in force and all subsequent aircraft of the same model may be issued with a CoA. All new First of Model after the date must have a TAC to obtain a CoA. GFA can arrange TAC and CoA in both cases.

5.1.17 Renewal of CoA; must be done with GFA prior to expiry. Renewable CoA are unusual.

5.1.18 Replacement of lost or damaged CoA is required. Apply to GFA.

5.2 Certificate of Airworthiness Processing

5.2.1 For sailplanes or powered sailplanes GFA recommends that the initial package should be purchased from GFA office and the aircraft registered as soon as possible. This will allow sufficient time and planning so as to perform maintenance requirements and fireproof registration plate procurement.

5.2.2 If requiring a competition mark, an application according to GFA AN 84 and the Sporting Rules must be completed and submitted for approval to GFA. Competition marks must not cause confusion with the aircraft's registration mark.

5.2.3 The Annual Inspector completes the Form 2 and/or survey documentation and carries out the authentication as required on behalf of GFA. For FOT or FOM GFA requires the inspection for the issue of a CoA at a GFA AMO or by an Authorised person. A list of AMOs can be found on GFA website.

5.2.4 For first CoA in Australia ROs shall complete the GFA Form 300 CoA/ EC Application & Survey Checklist with the other supporting documentation. Note: The authentication must be carried out by the inspector performing the CoA/EC inspection. All components and serial numbers must be checked against the aircraft's Data Plate and Logbook. This includes the wings, fuselage, tailplane and possibly the flight controls. The engine and engine components including the propeller must also be checked and recorded on GFA Form 300.

5.2.5 The inspector must confirm that:

a. All GFA ADs, general and specific and ADs issued by CASA or the state of design (NAA) must be complied with.

b. GFA Form 300 must be completed and returned for inclusion in the aircraft file. GFA CoA checklist is available from the GFA website.

5.2.6 The processing officer may request digital photographs of the aircraft.

5.3 Conformance with Type Design

5.3.1 GFA will refer to the TC/TCDS or TAC to establish the airworthiness standard for the sailplane or powered sailplane and the details of the type design.

5.3.2 For LSA Special CoA applications please see section 5.7 and check list.

5.4 First of Type and First of Model Inspections

5.4.1 The GFA Form 300 CoA/ EC Application & Survey Checklist must be completed by the RO and checked and certified by an authorised person or GFA Approved Maintenance Organisation.

5.4.2 The inspector must:

a. Confirm details of the aircraft and Registered Operator are correct.

b. View the logbook and review modification status including incorporated STC

c. View the logbook for major repairs and certifications

d. Where possible inspect the standard of any repairs

e. Identify un-authorised modifications not listed in the logbook

f. List and report defects (Service Difficulty Reports) on the GFA website SOAR system

g. List all modifications approved and not approved which have non-conformance with the Type Design for evaluation

h. Ascertain and list in the aircrafts logbook all lifed components

i. Complete Weight And Balance (W&B)

j. Assess Flight Manual, supplements and aircraft placards against the maintenance manual

k. Setup the logbook statement with the RO and approval by CTO as per Chapter 9.

l. Carry out the Annual inspection

m. Carry out any survey inspections deemed necessary by the CAD, CTO or DCAD

n. Carry out a compass swing, check the instruments comply with CAO 20.18 and GFA MOSP 3 Chapter 8.

o. Ensure minimum equipment is present.

5.4.3 The compass will be a southern hemisphere compass or the compass card will be re-balanced, where applicable. A compass swing must be carried out.

5.4.4 The above compass swing results will be included on the GFA Form 300 CoA Application & Survey Checklist .

5.4.5 Supplemental Type Certificates and modifications carried out in accordance with engineering orders issued by the NAA of a recognized state will be automatically accepted by GFA.

5.4.6 Reference can be made to CASR 1998 and associated AC. These ACs are:

a. AC21-1(CoA Overview),

b. AC21-2 (CoA)

c. AC21-3 (Special CoA overview)

d. AC21-4 (Amateur-Built Experimental Aircraft — Certification)

e. AC21-9 (SFP)

f. AC21-10 (ECs)

g. AC21-41 (LSA)

h. AC21-42 (LSA manufacturing)

5.5 CoA Issue when Aircraft is Overseas

5.5.1 A CoA may be issued for a sailplane or powered sailplane when the aircraft is physically outside Australia. GFA reserves the right not to issue a CoA when the aircraft is outside Australia. The applicant must apply in writing to GFA requesting the issue of a CoA providing:

a. The reasons and justification.

b. Details of the location of the aircraft.

c. Aircraft type or model.

d. Details of GFA airworthiness engineer or maintenance organisation performing the maintenance for the CoA issue

5.5.2 GFA may state conditions and requirements in regard to the maintenance which assures the airworthiness of the sailplane or powered sailplane before the CoA issue. The costs involved in the above process will be met by the applicant and/or the aircraft's RH. No action may be initiated by the RH until receiving written notification of approval from GFA.

5.5.3 Additional Registration Marks are required if flying outside Australian Territory – refer CASR Part 45 and GFA AN 84.

5.5.4 Permission from all foreign states is required if intending to operate in another countries airspace on an Experimental Certificate.

5.6 Export CoA

5.6.1 An export CoA is a Certificate of Type Conformance, and must incorporate all requirements of the country to which the sailplane is being exported.

5.6.2 Applications for an Export CoA must be submitted to CASA prior to shipping the aircraft.

5.7 LSA Special CoA Procedures

5.7.1 LSA gliders or powered gliders that have a maximum take-off weight (MTOW) of no more than 600kg. The Regulations apply to both production built and kit built gliders. The LSA manufacturer certifies they have been designed and manufactured to approved standards. These standards also include provisions for acceptance testing and continued airworthiness. Operating guidelines are in CASA AC21-41 and AC21-42, they are different to Standard Certified gliders, mainly in that the manufacturer is responsible and must provide all support and approvals as discussed throughout this MOSP. However, they are otherwise maintained the same, if the Maintenance Manual permits this, by any GFA Inspector.

5.7.2 Production LSA are eligible for issue of a Special CoA-LSA which allows operation of such in accordance with CASR 262APA

5.7.3 Kit built aircraft are eligible for the issue of an LSA Experimental Certificate limited to private operations. Legislation for LSA can be found in CASR sub part 21H. Operating rules are in CAR 262APA and for experimental LSA in CAR 262AP, AC21-41 and AC21-42 also apply.

5.7.4 A Special CoA-LSA may only be issued by a GFA officer holding an Instrument of Appointment (IoA) for this purpose or CASA.

5.7.5 The Special CoA-LSA checklist is available on GFA website for the RH/RO to ensure all required documents supporting the application are submitted.

5.8 Special LSA CoA for Production Aircraft

5.8.1 These are sailplanes or powered sailplanes that have been manufactured solely by the manufacturer and delivered to the owner in a fly away condition.

5.8.2 Prior to the issue of a Special CoA-LSA, GFA will:

a. Obtain from the applicant the manufacturer's Statement of Compliance CASA Form 681 (in accordance with CASR 21.186(2))

b. Confirm the manufacturer has certified compliance with the requirements of a "qualified manufacturer" as specified in CASR 21.186(2)(b)

c. Confirm the applicant has copies of the documents listed in CASR 21.186(1)(b)(ii)

d. Delegate a GFA inspector to inspect the aircraft and ensure it is in airworthy condition

e. Confirm the aircraft complies with all safety directions issued by the manufacturer, this includes all ADs applicable including ADs "General" and "Equipment" including the engine, propeller, oxygen system, etc.

f. Confirm any modifications or repairs to the aircraft have been approved by the manufacturer. An aircraft that incorporates modifications/repairs not approved by the manufacturer is not eligible for a Special CoA-LSA under CASR 21.186

g. For used sailplanes and powered sailplanes, confirm that all maintenance has been carried out in accordance with all manufacturer's requirements and that they have been properly certified under Australian Regulations; or in the case of an imported sailplane, in accordance with the requirements of the exporting country

h. For imported aircraft, verify the written information required by CASR 21.186 (1)(b)(iii) has been provided, CASA Form 681.

i. Confirm the warning placard specified in CAR 262APA(2) has been fixed to the sailplane or powered sailplane.

5.8.3 Once GFA is satisfied the aircraft complies with the requirements for issue of the Special CoA-LSA the certificate can be issued.

5.8.4 The annexure to a Special CoA-LSA shall be issued with the following statement:

> This Special Certificate of Airworthiness shall remain in force provided:
>
> Only modifications and repairs approved by the manufacturer are incorporated on this aircraft;
>
> The aircraft complies with all safety directions issued by the manufacturer;
>
> The aircraft has been maintained in accordance with the manufacturer's requirements and the continued continuing airworthiness functions are continued by the manufacturer or person appointed by CASA under CAR 262APA(7).

5.8.5 If the LSA aircraft no longer complies with one or more of the above conditions, the CoA stops being in force (CASR 21,181 (4)(c). It is permissible, however, for the registration holder of the non-compliant aircraft to apply for an Experimental Certificate.

5.8.6 If the Special CoA-LSA is subject to any conditions, such conditions shall be listed on the annexure.

5.9 Duration of a CoA

5.9.1 NOTE: In this context, *CoA* does not include an experimental certificate.

5.9.2 Subject to Clause 5.9.4, a CoA continues in force:

a. if a period is specified in the certificate — until the end of the period or until it is cancelled, whichever occurs first; or

b. in any other case — until it is cancelled.

5.9.3 The holder of a CoA must, on request by a CASA authorised person, make it available for inspection by GFA or the authorised person.

5.9.4 A CoA for a sailplane stops being in force if:

a. the sailplane ceases to be registered in Australia; or

b. any type certificate or type acceptance certificate for the type of sailplane concerned stops being in force; or

c. in the case of a CoA issued for an LSA sailplane, a modification is made to the sailplane and the modification:

i. is not authorised by the manufacturer; or

ii. if the manufacturer was no longer existing at the time of the modification or could not have authorised the modification at that time and no suitable persons or organisations have taken over the continuing airworthiness functions for the aircraft; and such suitable persons or organisations have not approved the modification

iii. does not comply with the LSA standards.

5.9.5 A CoA is deemed to be suspended whilst a sailplane is operating under an Experimental Certificate.

5.10 CoA Cancellation or Suspension

5.10.1 GFA CTO, DCAD, or CAD may suspend or cancel a certificate of airworthiness for an Australian sailplane, by written notice given to its holder, if they hold a CASA authorisation to do so and if:

a. any maintenance carried out on the sailplane is not carried out in accordance with approved data, or

b. GFA CTO, DCAD, CAD or the RTOA otherwise considers that it is necessary to do so in the interests of aviation safety. Grounds for suspension include:

i. Major non-conformance with the certification basis against which the CoA was issued

ii. Major defects on the aircraft that could result in the safety of the aircraft being in doubt

iii. The aircraft documentation is not at the correct status or falsified

iv. In any other circumstance that cannot be corrected by normal procedures.

5.10.2 A notice under Clause 5.10.1 must set out:

a. the grounds for the suspension or cancellation; and

b. in the case of a suspension — when the suspension stops having effect.

5.10.3 A CoA is not in force during any period of suspension, but, if the certificate was issued for a specified period, the period of suspension counts as part of the period for which the certificate was issued.

5.10.4 When a sailplane for which a CoA exists is modified in such a manner that an EC is required for any purpose that does not require a finite limit to the duration of the EC, the CoA must be surrendered by the RO to GFA CTO, DCAD, CAD or an RTOA within fourteen days of the issue of the EC.

5.10.5 A CoA may be re-instated by GFA CTO, DCAD, or CAD (if they hold a CASA authorisation to do so) when GFA CTO, DCAD, or CAD is satisfied that the conditions that resulted in suspension no longer exist.

5.11 Flight Manual

5.11.1 Whether a flight manual is required is determined by what the manufacturer was required to supply in accordance with the airworthiness standards when the aircraft was delivered. This can be determined by reference to the manufacturer, the Type Certificate holder, the authorised distributor, or in most cases the TCDS for the aircraft.

5.11.2 LSA will have a Flight manual or Pilot's Operating Handbook as it is a requirement of the LSA standards. LSA do not have a TCDS because they don't have a TC.

5.12 RO/RH Responsibilities

5.12.1 The RO/RH has the responsibility to ensure that all required information in the form of an AFM, placards, or other documents, is provided in the aircraft for the pilot and operating crew and the data:

a. Is approved by the manufacturer and the relevant NAA or by the Authority

b. Is applicable to the particular serial number aircraft

c. Contains the limitations and conditions for safe operation

d. Includes in the folder containing the AFM, any required supplement to reflect the actual configuration of the aircraft

e. The RO/RH is required to keep the AFM current.

5.12.2 The RO/RH also has the responsibility to ensure that all required maintenance information, in the form of the current aircraft logbook, manufacturer's maintenance manuals and, service bulletins or other maintenance documents, are provided to the glider inspector who will be performing the annual inspection or other maintenance on the aircraft. The RO/RH is required to keep the aircraft logbook current.

6. EXPERIMENTAL CERTIFICATE PROCEDURES

6.1 Conditions for EC Issue

6.1.1 An Experimental Certificate (EC) may be issued by GFA or CASA for a period of time as detailed in AC21-10 or AC 21-4 and regulation CASR 21.195B, detailing one or more of the listed prescribed purposes. The EC annex will list the operational conditions, which can include condition for flight and maintenance, which are usually more limiting than for a certified aircraft. This EC must be attached to the sailplane's Maintenance Release so it is available to the pilot for reference.

6.1.2 The Airworthiness Delegations Procedures Manual (ADPM), AIRW-M08, details the procedures, instructions and information required. GFA will operate as per this Handbook.

6.1.3 GFA may only issue an EC for the purposes specified in the CASA Delegation Instruments. These are limited. CASA may be able to issue an EC for other purposes but they are also restricted by regulations. Some purposes are by election of the Registered Operator, others are the only way to register say a homebuilt or a sailplane from an unapproved country.

6.1.4 Refer to the ADPM and the regulations, CASR 21.191 for more details.

6.1.5 Note that Type Certified sailplanes can be issued with an EC for specific purposes such as research and development. It is important to note whilst a type certified aircraft is operating on an EC, the Standard CoA is suspended and the aircraft must be operated in accordance with the limitations contained in the EC.

6.2 DURATION OF EXPERIMENTAL CERTIFICATES

6.2.1 The duration of ECs is limited by regulation. Refer to the ADPM.

6.3 Operating Limitations

6.3.1 Operating limitations may be imposed. Any condition or operating limitation annexed to the EC will be in writing and clearly listed in the Annex. These conditions will be listed considering GFA's CASA authority and may be imposed only in the interests of safety.

6.3.2 The word EXPERIMENTAL must be displayed on the aircraft near each entrance to the cockpit, or in the cockpit as appropriate, in letters not less than 5cm or more than 15 cm in height (CASR 45.125). The letters should be block capitals of a style that is conspicuous and legible, and easy to read by each person entering the aircraft.

6.3.3 For multi-seat aircraft, a warning placard (in accordance with CAR 262AP) must be displayed in the cockpit at a location in full view of the passenger.

6.3.4 Permission from all foreign states is required if intending to operate in another country's airspace on an Experimental Certificate.

6.4 Cancellation or Suspension of Experimental Certificates

6.4.1 As specified in CASR 21.195 B an EC for an aircraft stops being in force if the aircraft ceases to be registered in Australia.

6.4.2 GFA authorised persons are to follow the Section 5.10 guidance material detailed in paragraphs (b), (c) and (d) relating to the cancellation or suspension of a CoA, when cancelling or suspending an EC.

6.4.3 NOTE: Modifications and repairs to experimental aircraft are not required to be carried out in accordance with approved data (general exemption for Limited Category and Experimental aircraft in Current CASA instrument CASA EX51/15); however the risk analysis upon which the conditions of the EC were based may need to be reviewed in the light of any such modifications or repairs. The conditions may be issued separate to the EC but must be attached. (Note a Type Certified aircraft operating on an EC for CASR 21, purpose 191 (a) or (b) is not an experimental aircraft as discussed in Clause 0.)

6.4.4 The holder of the EC must surrender the EC when requested on cancellation/suspension.

6.5 Maintenance of Experimental sailplanes.

6.5.1 For Amateur or kit built sailplanes:

6.5.2 Note: The following provisions are made in recognition of the liability issues that may arise when a GFA maintenance authority holder performs maintenance or inspection functions on an amateur-built or kit built experimental sailplane.

6.5.2.1 For the original owner/builder:

f. The owner/builder may apply for a maintenance authority specific to that aircraft to carry out maintenance on the aircraft, if the owner/builder is the primary builder of the aircraft. GFA requires they attend a Basic Sailplane Engineering course (refer to AIRW-M07 Sailplane Inspectors Training Syllabus). Thereafter, the owner/builder is fully responsible for the maintenance and may carry out that maintenance as prescribed by this MOSP. All owner/builders performing maintenance are advised to make themselves fully aware of their legal responsibility under the aviation legislation and this MOSP 3. Guidance as to the maintenance required for experimental aircraft that are not based on a certificated type, may be developed from documents such as GFA BSE, FAA AC 43.13-1A “Acceptable Methods, Techniques, and Practices — Aircraft Inspection and Repair” and the UK CAA Civil Aircraft Inspection Procedures (CAIPs).

6.5.2.2 For subsequent owners:

a. If an experimental amateur-built aircraft is sold, the new owner cannot certify for the maintenance unless he holds appropriate GFA maintenance authorities. All maintenance must be certified by a GFA maintenance authority holder, or the holder of an appropriately endorsed maintenance authority.

b. Amateur-built aircraft constructed outside Australia and purchased by Australian citizens once registered are maintained the same as Clause 6.5.2.2 a.

6.5.3 In the case of an experimental aircraft based on a certificated type, maintenance on parts of the aircraft that are not affected by experimental modifications may only be carried out to the certified aircraft approved data and all maintenance must be certified for by the owner/builder.

6.5.4 Noise certification as per Clause 2.10 is required.

6.5.5 General and Type Specific ADs from GFA or CASA are mandatory as well as ADs from the NAA of the State of Design. Refer Section 15.

7. SPECIAL FLIGHT PERMITS

7.1 Special Flight Permits

7.1.1 Refer AC21-9 and the ADPM. An aircraft must be deemed safe for flight. Applications for SFP will be assessed on application and will be issued by GFA usually with conditions. These conditions may be the route to fly, flight not over a built up area, the configuration of the aircraft, eg gear extended or speed requirement.

7.1.2 SFPs can be issued to an unregistered aircraft in accordance with CASR 21.197(3).

7.1.3 Typical purposes of a Special Flight Permit are ferry flights of a damaged aircraft for repair or a ferry flight for maintenance. A valid maintenance release for the duration of the flight is not required. It may permit flight with outstanding ADs in place, if approved by CASA. A GFA inspector may be required to inspect the sailplane or powered sailplane before flight to ascertain the flight and aircraft is safe for the flight for which the SFP is issued.

7.1.4 Considerations also will be the equipment fitted for the flight, ADs completed and certified, oxygen requirements (refer CAO 20.4) and any other maintenance requirements required. An annex to the Special Flight Permit shall be completed with conditions as stated above.

7.1.5 Only the CAD, DCAD, CTO or RTO-A, with a valid delegation, may issue a Special Flight Permit.

7.1.6 The Airworthiness Delegations Procedures Manual (ADPM), AIRW-M08, details the procedures, instructions and information required. GFA will operate as per this Handbook.

7.1.7 Explanation; Special Flight Permits are no longer issued for test flying of modified aircraft. This requires an Experimental Certificate.

8. SAILPLANE MINIMUM EQUIPMENT AND PLACARDING

8.1 Minimum Equipment

8.1.1 Each sailplane must have certain minimum equipment, and that equipment must meet appropriate standards. The minimum equipment for all Australian registered sailplanes, except LSA, is:

a. One Air Speed Indicator (ASI). The instrument must be able to indicate at least 5% above the manufacturer's Maximum Allowable Speed in Smooth Air (VNE). The ASI must be in full view of the pilot in command

b. One altimeter, and with its QNH sub-scale calibrated in Hectopascals (same as millibars)

c. Magnetic compass

d. A time piece (This requirement may be met by a pilot wearing a watch)

e. One aviation four or five point harness for each pilot

f. An adequate canopy jettison system or a Ballistic Recovery System, for any operations for which the wearing of a parachute is mandatory

g. A Clear View panel, operable with a gloved hand, on any side of the cockpit adjacent to each pilot, to allow vision at 45 degrees to the line of flight in the case of canopy fogging.

h. For LSA the minimum equipment is specified by the manufacturer and only the manufacturer may authorise other equipment.

i. The placards must be in the same units as the instruments. However, in Australia we strongly recommend Knots and feet altitude for consistency and familiarity. It is hard and results in errors to communicate to other aircraft when converting from metres altitude to feet and so a feet altimeter should be installed, but is not a legal requirement.

j. GFA rule; training sailplanes are installed with knot ASI and feet altimeter.

8.1.2 The installed electrical system must have:

a. a two position master switch

b. each instrument or power bus must be able to be switched off independently

c. a fuse or circuit breaker for each item of electrical equipment

d. a fuse or circuit breaker for each battery on a separate circuit, located as close as possible to the battery and preferably on it. Starter motor battery excluded.

e. If multiple batteries are installed a separate battery selector switch is required

f. Rotary switches are acceptable however they must have an OFF position and each battery must be selectable independently.

8.1.3 All toggle switches must be installed so that moving the switch up turns the equipment on.

8.1.4 All equipment specified in the original TC documentation and the Flight and Maintenance manuals must be included.

8.2 Minimum Equipment for Powered Sailplanes

8.2.1 In the case of powered sailplane, the above items must be supplemented with:

a. An engine tachometer

b. A carbon monoxide detector for engine installations fixed into the fuselage

c. A cylinder head temperature or water temperature gauge. (Not required if the powered sailplane type was originally Type Approved without, but strongly recommended)

d. An oil pressure and temperature gauge if applicable

e. A fuel contents gauge or dip stick

f. Static earthing point for re-fuelling purposes.

g. For LSA the minimum equipment is specified by the manufacturer and only he may authorize other equipment.

8.3 Minimum Cockpit Placarding

8.3.1 For LSA gliders refer to the manufacturer's manuals and Clause 5.7 and 5.8 for required placarding as these may override the following.

8.3.2 GFA policy is that the flight manual need not be carried in the aircraft; therefore there must be a minimum level of cockpit placarding to ensure that operating limits are available to the pilot. All cockpit controls, except the control column and rudder pedals, must be labelled with their function and their sense of operation. The placards required and their locations are generally found in the sailplane flight manual.

8.3.3 For flapped aircraft, the flap settings must be visible to the pilot.

8.3.4 An airspeed limitation placard must be displayed in full view of the pilot in command. The placard must display the following Indicated Airspeed in the units of the Airspeed Indicator (ASI):

a. The never exceed speed (Vne)

b. The maximum rough air speed (Vra)

c. The maximum manoeuvring speed (Va)

d. The maximum aero tow speed

e. The maximum airspeed positive flap extended

f. The maximum winch/auto tow speed if approved winch/auto tow launching.

8.3.5 It is permissible to have no colour coding of the ASI unless the Flight and Maintenance Manuals specify colour coding for the ASI; then the ASI must be colour coded in accordance with those manuals.

8.3.6 Where a colour coded ASI is not required by the Flight or Maintenance Manuals and is fitted it must comply with the following convention:

a. Velocity Never Exceed (Vne) is shown by a radial red line

b. The upper caution range a yellow arc extending from rough-air speed Vra to Vne

c. For the normal operating range, a green arc with the lower limit at Vs at maximum weight with wing-flaps neutral and landing gear retracted and the upper limit at the rough-air speed Vra

d. For the wing-flap operating range, a white arc with the lower limit at the stall speed Vso for maximum weight, landing configuration and the upper limit at the allowable wing-flaps extended speed Vfe

e. The best rate-of-climb speed V_Y must be displayed by a blue "I" radial line (for powered sailplanes only).

8.3.7 A pilot and baggage weight limitation placard showing the maximum and minimum pilot weights in kilograms for each seat, including removable ballast requirements, must be displayed. Multiple placards can be used to detail specific pilots or conditions.

8.3.8 For two seat sailplanes a placard showing the maximum and minimum pilot weights for the rear seat for a range of pilot weights on the front seat is highly recommended. A sample placard is shown below:

VH-XXX NORMAL CATEGORY		
Front Kg	**Rear Min**	**Rear Max**
45	95	110
50	75	110
55	60	110
60	40	110
65	20	110
70	0	110
75	0	110
80	0	110
85	0	105
90	0	100
95	0	95
100	0	90
105	0	85
110	0	80
Minimum Solo 70 kg Maximum Solo 110 kg Max Fuse Load 190 kg		

8.3.9 Water ballast limitations placarding must be displayed showing:

a. Maximum wing ballast permitted

b. Maximum permitted fin ballast (if fitted)

c. Maximum All Up Weight of aircraft.

8.3.10 The Canopy Jettison system operating placards must be displayed.

8.3.11 Where oxygen systems are installed, a VNE reducing altitude placard is required

8.3.12 A weak link placard for aero tow and winch/auto tow must be displayed for sailplanes with a tow release.

8.3.13 A placard stating “Cloud Flying Prohibited”

8.3.14 If a sailplane is approved for winch launching however the belly hook is disconnected, a placard stating ‘No Winch Launching’ is required.

8.4 Powered Sailplane Placarding

8.4.1 Powered sailplanes which are capable of self-launching must have a placard which shows ground roll to lift off (short dry grass) and total distance to clear 50 feet under standard sea level conditions extrapolated to 5000 ft above sea level and 30 degrees Celsius, ambient temperature.

8.4.2 Powered sailplanes must operate under CAO 95.4, or CAO 95.4.1 for charter operations, which detail the exemptions from provisions of the CARs covering sailplanes, powered sailplanes and power-assisted sailplanes as well as exemption from provisions of the CARs for sailplanes engaged in charter operations.

8.4.3 Copies of these regulations can be found on the CASA or GFA Websites.

8.4.4 All powered sailplanes must also have a placard stating ‘NO SMOKING’

8.4.5 Powered sailplanes operated under CAO 95.4 must carry engraved placards in the cockpit in full view from every control seat. These placards must bear the following words:

THIS POWERED SAILPLANE MUST BE OPERATED IN ACCORDANCE WITH THE PROVISIONS OF CAO 95.4 AND THE GFA OPERATIONAL REGULATIONS

8.4.6 Powered sailplanes which have not been certified as capable of self-launching (power assisted sailplanes) must carry engraved placards in the cockpit in full view from every control seat. These placards must bear the following words:

THIS POWER ASSISTED SAILPLANE MUST BE OPERATED IN ACCORDANCE WITH THE PROVISIONS OF CAO 95.4 AND THE GFA OPERATIONAL REGULATIONS.

8.5 POWERED SAILPLANE PLACARDING WHEN OPERATED UNDER CAO 95.4.1

8.5.1 Powered sailplanes operated under CAO 95.4.1 (Charter Operations) must ensure that it has engraved placards bearing the following words in the cockpit in full view of, and legible from, each seat:

> THIS POWERED SAILPLANE MUST BE OPERATED IN ACCORDANCE WITH THE PROVISIONS OF CIVIL AVIATION ORDER 95.4 AND 95.4.1

8.5.2 Powered sailplanes which have not been certified as capable of self-launching (power assisted sailplanes) must ensure that it has engraved placards bearing the following words in the cockpit in full view of, and legible from, each seat:

> THIS POWER ASSISTED SAILPLANE MUST BE OPERATED IN ACCORDANCE WITH THE PROVISIONS OF CIVIL AVIATION ORDER 95.4 AND 95.4.1
>
> TAKE-OFFS USING ONLY INSTALLED ENGINE POWER ARE PROHIBITED.

8.5.3

8.6 Cockpit Control Identification

8.6.1 Sailplanes controls shall have the following colour coding in accordance with EASA CS 22.780:

a.	Tow Release	Yellow
b.	Dive Brake Control	Blue
c.	Longitudinal Trimmer	Green
d.	Canopy normal opening handle	White or white with a red ring or band*
e.	Canopy jettison handle	Red

***Note:** only required if multiple handles are used for normal canopy opening and jettison.

8.6.2 Other controls must be clearly marked but may not be yellow, blue, green or red except where other emergency handles are also coloured red (Fire suppressant systems, NOAH systems etc).

9. SAILPLANE MAINTENANCE POLICY

9.1 Background

9.1.1 Like any man made structure, aircraft deteriorate over time due to a range of factors such as the operating environment, operating conditions, storage (hangar or trailer), airfield conditions, launch method, and pilot skills. Hence, aircraft maintenance systems are intended to serve several purposes, primarily:

a. To maintain the aircraft in an airworthy condition through preventative maintenance

b. To detect deterioration in time to prevent airworthiness problems

c. To provide data on which to base life extension decision.

9.1.2 Maintenance systems are based on experience and engineering judgement, and depend on a number of assumptions which may, or may not, be accurate. An example of such an assumption is the ratio of aero-tow launches to winch launches and the amount of aerobatics. Winch launches place different, and generally higher loads, on critical parts of the aircraft structure. Another assumption is the average flight time. The expected life of a type is another assumption, and it is unlikely that designers ever expected that their designs would still be in regular use 40 or more years after production finished.

9.1.3 As a result, maintenance systems need to change to keep pace with the ageing of the aircraft that they are intended to support. It is most unlikely that a maintenance system published in 1965 to support an early generation FRP sailplane is still adequate 45 years later. In particular, moving parts in locations where they cannot be readily inspected (ie, sealed inside the wing) were never intended to last for 45 years without inspection. That is why TC holders/manufacturers publish Life Extension Inspections, and maintain and develop them on the basis of feedback from operators.

9.1.4 Maintenance systems are also evolving in response to more stringent requirements, requiring more comprehensive maintenance data from the manufacturer. The original GFA airworthiness system was developed in an era when manufacturers largely ignored the issue of supplying maintenance data for their products. The awareness of issues such as structural fatigue has been slowly (since 1947) percolating down from large Transport aircraft, through General Aviation aircraft, and has now reached sailplanes in general, whereas in the past it did so only in the form of isolated ADs that affected particular types; and for these reasons, the traditional GFA maintenance system also must evolve. In the past, the exemption for gliders in CAO 95.4 from Part 4 & 4A of the CARs had the effect that the manufacturer's maintenance instructions could largely be regarded as advisory material (except as listed in Clause 9.6), to supplement the alternative methods set out in GFA MOSP and GFA ADs. However, when the manufacturer's instructions include such matters as component retirement lives or inspection or modification procedures that are essential in order to achieve the expected component lives, this is no longer the case. The maintenance requirements for a particular aircraft can also be affected by its modification status; for example, it's component retirement lives or inspection procedures can be altered by modifications.

9.1.5 CAO 100.5 "General requirements in respect of maintenance of Australian aircraft" is a comprehensive part of General Aviation requirements. However, GFA holds exemption to it as we are exempt to CAR 1988 Parts 4 and 4A. This means we must define our own system of maintenance and MOSP 3 does this and replaces all parts of CAO 100.5. There are parts that we do the same and parts that we can do differently to suit sailplanes and simplify our system.

9.1.6 Within the GFA rules, as derived from Australian Regulations, there is flexibility to allow variation of the Maintenance System for each glider. The following sections clarify the rules around this. Some aspects are mandatory, some may be changed. The Registration Holder may elect an alternative system of maintenance in accordance with Clause 9.7.

9.2 Maintenance Systems

9.2.1 Maintenance systems contain information which can be broadly divided into three categories:

a. What maintenance has to be done

b. When that maintenance has to be done (often referred to as the Maintenance Schedule)

c. How that maintenance is to be done (disassembly/assembly instructions, lubrication requirements, inspection methodology to be used, etc.)

9.2.2 **C**hanges to a maintenance system can affect all three of these. An inspection can be added, an existing inspection can be made more (or less) frequent, an NDI inspection substituted for a visual inspection, or lubrication requirements added or changed. For these reasons it is important that Registered Operators be in possession of the latest maintenance documentation for their aircraft.

9.2.3 These factors mean that the maintenance system is no longer automatic; there is no longer a "one size fits all" situation. It also provides the RH some flexibility and is allowed for recreational aircraft but not commercial aircraft by Australian Regulations. The maintenance system needs to be tailored to suit the aircraft type; and may need to be amended for a specific aircraft as a consequence of modifications. For these reasons, the maintenance system for each registered sailplane must be specified in the aircraft logbook; fortunately there is an established way to do this, which is the use of a "Logbook Statement", which takes the form of a brief (usually one page) insertion at the front of the logbook. (See the RO Handbook for further information.)

9.2.4 The clubs may also elect a Logbook Statement for their sailplanes as they are not commercial operators.

9.3 GFA (default) maintenance system

9.3.1 GFA Form 1 and Form 2 Procedures: For all Australian sailplanes, the basis of the maintenance system are GFA daily (Form 1) and Annual (Form 2) Inspections. Maintenance falls into two categories, namely scheduled maintenance, and unscheduled maintenance. Periodic inspections play a major part in discovering any matters that need attention, and are the principal means by which the necessity for unscheduled maintenance is monitored under GFA system. Therefore, GFA Form 1 and Form 2 procedures are mandatory as a minimum for all GFA aircraft unless they have an approved variation, see Section 9.7. These also contain some basic scheduled maintenance items that can be conveniently done in the course of the inspection.

9.3.2 An inspection is required for high use sailplanes every 250 hours. This inspection is to be listed in the MR for the next 250 hr period, and completed before the next day of flying. If the sailplane is within an estimated 50 hours of the annual inspection then the inspector may sign it out to the annual. It is not a complete Form 2 but is to be performed by an Annual Inspector. The inspection requires the inspector consider the special wear and lubrication needs of the sailplane having performed 250 hours and perform such inspection and lubrication to sign off the MR maintenance item. Re-rigging by a daily inspector within the period counts towards this. Wing and tailplane mounting pin wear prevention lubrication of components is the primary objective of this 250 hour inspection. (eg. If a glider had been re-rigged at 200hrs then the inspector could just sign it out from that hour if he believes it requires nothing more.)

9.3.3 GFA periodic survey procedures: The second part of GFA default maintenance system is the periodic survey procedures which the GFA specifies - see Chapter 14. These procedures may vary according to the glider form of construction and also for specific glider types. In general, these procedures are a combination of inspection at a greater depth than the Form 2 inspection, combined with specific routine maintenance items, based on experience and the manufacturer's data. The RO may apply to use these procedures in lieu of such routine inspection and scheduled maintenance procedures specified in the manufacturer's manuals if not mandated as described in Section 9.6 or mandated by an Airworthiness Directive. Alternatively, the RO may opt to follow the Manufacturer's Maintenance Manual.

9.4 Manufacturer's Maintenance Manual

9.4.1 Manufacturer's maintenance requirements are published in the type manual set. Sometimes these can be in a separate Maintenance Manual, but are often in a section of the type's Flight Manual. The Type Certificate (TC) holder/ manufacturer maintains and updates these manuals as feedback from operators accumulates. That is why defect reporting is such a critical function of Registered Operators and sailplane inspectors; this is the feedback that TC holders rely on to keep their types safe. As a result of feedback from operators and maintainers, TC holders change their maintenance programs by:

a. Amending their maintenance program

b. Issuing Technical Notes, Service Bulletins, or similar documents

9.4.2 Requirements published in manufacturer's manuals may be mandatory. Refer to Section 9.6.

9.4.3 While Technical Notes, Service Bulletins, etc, are not normally mandatory, Registered Operators are advised to consider all such documentation issued by the manufacturer/TC holder. The Registration Holder may elect an alternative system of maintenance in accordance with Clause 9.7 and may elect to perform TNs, SBs etc. He must record his decision for the history in the Logbook Statement.

9.4.4 If GFA, CASA or the NAA of the State-of-Design believe that compliance with a Technical Note, Service Bulletin, or similar document should be mandatory, an AD will be issued. Compliance is then mandatory. (See Chapter 15).

9.5 Annual Inspections

9.5.1 All Australian sailplanes are to be inspected to a minimum standard of GFA Form 2 and Section 9.6 annually unless the CAD, DCAD or CTO have approved a variation.

9.5.2 Clarification: Historically the inspection checklist was called the 'GFA Form 2' and included a portion returned to the GFA named the 'Inspection Report Form 2c'. In future, while retaining the 'GFA Form 2' name, the return portion will be renamed to the 'Annual Maintenance Return, GFA Form 2c', returned annually to provide data and confirm the aircraft has been issued a Maintenance Release. The additional engine inspection list and return is called the GFA Form 2 Appendix A. The RO is responsible for the filing of those records. A separate backup is strongly advised as loss in a fire or incident losses important data.

9.5.3 Refer Section 11.3 for details on the Annual Inspection.

9.5.4 Many older sailplanes, regardless of origin, have very few, if any, maintenance requirements in their manual set. It was for this reason that GFA established the annual inspection schedule specified in GFA Form 2. Form 2 specifies what maintenance is required, and when it must be done (annually, 12 months from the date of the last Form 2 inspection). Form 2 does not specify HOW maintenance is to be done. All work must be performed in accordance with (in priority order):

a. Airworthiness Directives issued by CASA, the State-of-Design, or GFA

b. Manufacturer's Maintenance Manual instructions as to how the maintenance is to be performed. Refer Section 9.6

c. Standard industry and GFA practice (ie, in accordance with GFA publication Basic Sailplane Engineering).

9.5.5 Unfortunately, the combination of Manufacturer's Maintenance Program and GFA Form 2 can result in over-maintaining an aircraft. Over-maintaining can result in increased wear and tear, accidental damage, maintainer complacency, and increased risk. Where a Registered Operator believes that their aircraft is being over maintained, they may apply to the CTO for a variation to their aircraft's maintenance program, see below.

9.5.6 If the sailplane has a mandatory maintenance schedule then this schedule cannot be varied by GFA. In this case perform the schedule at the hours or times specified and annually submit the Annual Maintenance Return, GFA Form 2c, to certify the aircraft is airworthy and include the required data and defect reports.

9.5.7 If the manufacturer's maintenance schedule is not mandatory then the RO may elect which schedule to follow. LSA gliders have to follow the manufacturer's schedule.

9.6 Airworthiness Limitation Section and Certification Maintenance Requirements

9.6.1 The above terms describe respectively, a section of the manufacturer's maintenance manual which may specify mandatory lifed component limits; or a part of the Type Certificate Data Sheet (TCDS) or Supplemental Type Certificate Data Sheet which may specify mandatory maintenance that must be done or complied with in addition to alternative methods of maintenance such as the GFA Form 2 Annual Inspection schedule.

9.6.2 If the Maintenance Manual contains an Airworthiness Limitation Section (ALS) or the TCDS contains Certification Maintenance Requirements (CMR), but only as approved by the NAA, then these are both mandatory and cannot be varied for Australian aircraft. This applies to all type certified components such as the airframe, engine, and propeller. ie if they have a TCDS that specifies mandatory or required compliance or have a NAA approved ALS in their manuals, this maintenance is mandatory unless superseded by approved data, e.g. an STC life extension.

9.6.3 Other than these the maintenance manual is not mandatory but is good advice that should be followed in all cases but can be varied by Section 9.7.

9.6.4 Only National Aviation Authorities approved CMR and ALS are mandatory to Private operation sailplanes. Manufacturers may say other items are required but these are not mandatory.

9.6.5 LSA gliders have to follow the manufacturer's schedule.

9.7 Variation of Maintenance Requirements - Logbook Statements

9.7.1 CAD, DCAD and CTO may approve variations to maintenance systems except for CMRs and ALS. Approval is done to assist ROs in getting this complex subject right. Applications are to be made, in writing, to CTO, and must:

a. Specify what aircraft, by type, registration mark and serial number the application is for (the application may address multiple aircraft, but only one type)

b. Specify what variation is requested

c. Provide details of alternate maintenance actions proposed (if any)

d. Justify that variation in terms of safety.

e. The Registration Holder applies for and authorises the Logbook Statement.

f. The CTO will check compliance with mandatory maintenance and advise the applicant accordingly.

9.7.2 Proposals must provide at least an equivalent level of safety to the requirements against which the variation is sought.

9.7.3 Applications may ask for variations in:

a. What maintenance is to be carried out (for example, removing or changing an inspection)

b. When that work is to be done (for example, changing the periodicity of an inspection)

c. How that works is to be done (for example, substituting one lubricant for another, more suitable product).

9.7.4 If approved, the changed maintenance system becomes the maintenance system for the aircraft for which it was approved. The aircraft's Logbook Statement must be amended or re-issued to reflect any changes to the maintenance system and for records purposes the old Logbook Statements are to be kept affixed in the Logbook.

9.7.5 If an approval is granted GFA may use the approval as the basis for an approval covering all aircraft of that type in Australia.

9.7.6 The sailplane must then be maintained in accordance with the Logbook Statement (LS). A new LS may be issued but the old LS must remain affixed in the logbook for the history.

9.7.7 When the sailplane is sold the new Registration Holder must certify acceptance of the previous Logbook Statement or arrange a replacement.

9.7.8 This allows the RH to specify for example that he will maintain his propeller on a "remove and inspect every 6 years and manufacturer overhaul on an hours basis of say 400 hours or 12 years" rather than the manufacturer's schedule of "overhaul every 6 years". Refer Clause 13.1013.6.8 for GFA Maxima.

9.8 Operating Engines "On Condition"

9.8.1 If the Mandatory conditions as discussed in Section 9.6 limit the engine hours or calendar life then the engine may not be operated on condition.

9.8.2 The CAD or CTO is authorized to approve "Operation on Condition" if the engine meets the guidelines specified in AIRW-F002 Appendix A.

9.8.3 An annual approval request is to be submitted to the CTO. He will use the past Appendix A records to verify a stable condition and advise the Engine Inspector. If suitable he will approve Operation on Condition until signs suggest the engine should be overhauled. The CTO is involved to provide the inspector advice and assist him in making good decisions.

9.8.4 The Registered Operator is advised that there are additional risks in operating beyond the specified life and care is to be taken to monitor the engine for changes, eg oil uplifts increasing excessively or making metal.

9.9 Use of Approved Maintenance Data

9.9.1 Approved Maintenance Data for a sailplane, component or material consists of the requirements, specifications and instructions that are defined in CAR 1988 Regulation 2A and as follows. Note that LSA aircraft must generally get all data from the manufacturer.

9.9.2 The order of precedence of approved data is as follows, first to last:

a. Data approved by CASA for the purpose (such approvals may be general or specific)

b. An Engineering Order approved by a CASR 21.009/CASR 21.M Authorised Person or equivalent LSA document to modify a specific aircraft. Or an approved repair scheme. (Not applicable to Experimental aircraft.)

c. The approved implementation instructions for a Supplemental Type Certificate modification and Data approved by the holder of the Supplemental Type Certificate (Not applicable to LSA aircraft or experimental aircraft that are not based on a certificated aircraft.)

d. Data approved by a CASA authorized person under CAR 1988 Regulation 2A, a National Aviation Authority of a recognised foreign country or EASA if clearly relevant. If there is any uncertainty the CTO is to be asked and decide the relevance of the document.

e. An AD on a particular aspect of a sailplane. If it states it overrides an EO or STC then it takes precedence. (LSA aircraft have Service Directions from the manufacturer as

well as CASA or GFA general ADs.)

f. Data approved by the holder of the Type Certificate (normally, but not always, the manufacturer). This is normally in the type's maintenance manual, repair manual, or other manufacturers documentation such as Service Letters, Technical Notes, Service Bulletins, Approved Repair Schedules, etc (Not applicable to LSA aircraft or experimental aircraft that are not based on a certificated aircraft.)

g. Data approved by the manufacturer of an LSA aircraft or a person appointed by CASA under CAR262APA.

h. Data approved by the component manufacturer. Where the manuals do not cover an aspect of the sailplane the procedures in Basic Sailplane Engineering should be followed.

i. Other approved manuals of standard repair listed below.

9.9.3 If inspectors are unsure then the RTOA should be contacted.

9.9.4 All certificated and LSA aircraft work is to be performed in accordance with manufacturers approved maintenance data. See the following chapters for further details.

9.9.5 Sailplanes for which an experimental certificate is in force are exempt from some maintenance and modification requirements. . (Ref CASA EX 43/17 or the latest version in force). However, as far as possible previously certificated aircraft are to be maintained to Approved Maintenance Data. The Registered Operator is to clearly define what and why Approved Maintenance Data was not used. If this may influence the conditions of the Experimental Certificate this is to be reported to the issuing person.

9.9.6 The use and source of Approved Maintenance Data is to be recorded in the work records and logbook certification.

10. SAILPLANE INSPECTORS AND AUTHORISED PERSONS

10.1 Overview

10.1.1 Appropriately trained and assessed GFA members may be issued with a Maintenance Authority (MA) which allows them to certify that inspections, maintenance, repairs and other airworthiness activities within their ratings and competency, have been correctly completed. MA Holders must self regulate and only work within their own competency. Self development by research, study and working with others is recommended.

10.1.2 A Maintenance Authority records an individual's ratings against the Field of Expertise, as illustrated below: Note that this differs from the format of form CA 1109 which remains valid. (This section is for airframe only; engine aspects are discussed separately).

TYPE OF FUNCTION	Field of Expertise				
	Wood	Sheet metal	FRP (Composite)	Steel tube	Fabric
REPLACEMENT OF COMPONENTS					
ANNUAL INSPECTIONS					
DAILY INSPECTION EXAMINER					
MINOR REPAIRS					
MAJOR REPAIRS					
LIFE EXTENSION AND SURVEY					
WEIGHT & BALANCE: BASIC					
WEIGHT & BALANCE: ADVANCED					
REFINISHING					

10.1.3 NOTE 1: Normal ratings may be qualified by conditions added to the authority.

10.1.4 NOTE 2: To decide whether a modification or repair is “minor” or “major”, refer to Clause 18.3.5

10.1.5 NOTE 3: Any non-standard repair constitutes a modification. So the classification “Minor modifications” also includes minor non-standard repairs.

10.1.6 NOTE 4: Daily Inspection authority is issued in the form of a pilot’s log-book endorsement, so it does not appear in this matrix. The DI training and rating is generic. For complex types and those requiring specific expertise the inspector must obtain additional training. The initial SI authority may be limited to make this clear and if so this must be extended by another DI examiner.

10.1.7 Only authorising officers (CAD, DCAD, CTO, and RTOAs) can issue Maintenance Authorities other than Daily Inspector authorisations. They must update the GFA records within 24 hours and notify the person. Daily Inspector authorisations will only be issued by DI Examiners and Annual Inspectors, on approval, by Logbook endorsement.

10.1.8 Either the CAD, DCAD or CTO may approve an authorised person to conduct specific airworthiness activities that they would otherwise be insufficiently authorised to perform. In each case, written approval must be provided by the issuing authority. The Authorised Person in each case will be notified in writing of the following:

a. The scope of their authority

b. The duration of their authority

c. Any limitations and special requirements.

10.1.9 To certify any airworthiness work or inspection that has been conducted, the inspector must be a financial member of GFA. Associate membership is adequate for this purpose.

10.1.10 The person who issues Maintenance Authority ratings as detailed below will forward full details of the rating to GFA Secretariat for recording in the Inspector Register.

10.2 Maintenance Authority Ratings and Authorisations

10.2.1 An Authorised Person (AP) may be authorised to perform or supervise the inspection and/or physical work of repairs and modifications, as shown in the matrix in Clause 10.1.2. An AP may also be granted a Powered Sailplane Rating (Inspection, Servicing or Overhaul). See Section 10.17 for more detail.

10.2.2 The process of attaining airworthiness ratings and prerequisites for each are shown below in Figure 3. At the discretion of the CAD, CTO, DCAD or RTOA this process may be modified for certain individuals if specific circumstances or skills are present that warrant special consideration.

10.2.3 All Maintenance Authority Ratings are registered in GFA central database. This is the authoritative record but paper Maintenance Authorities will still be valid.

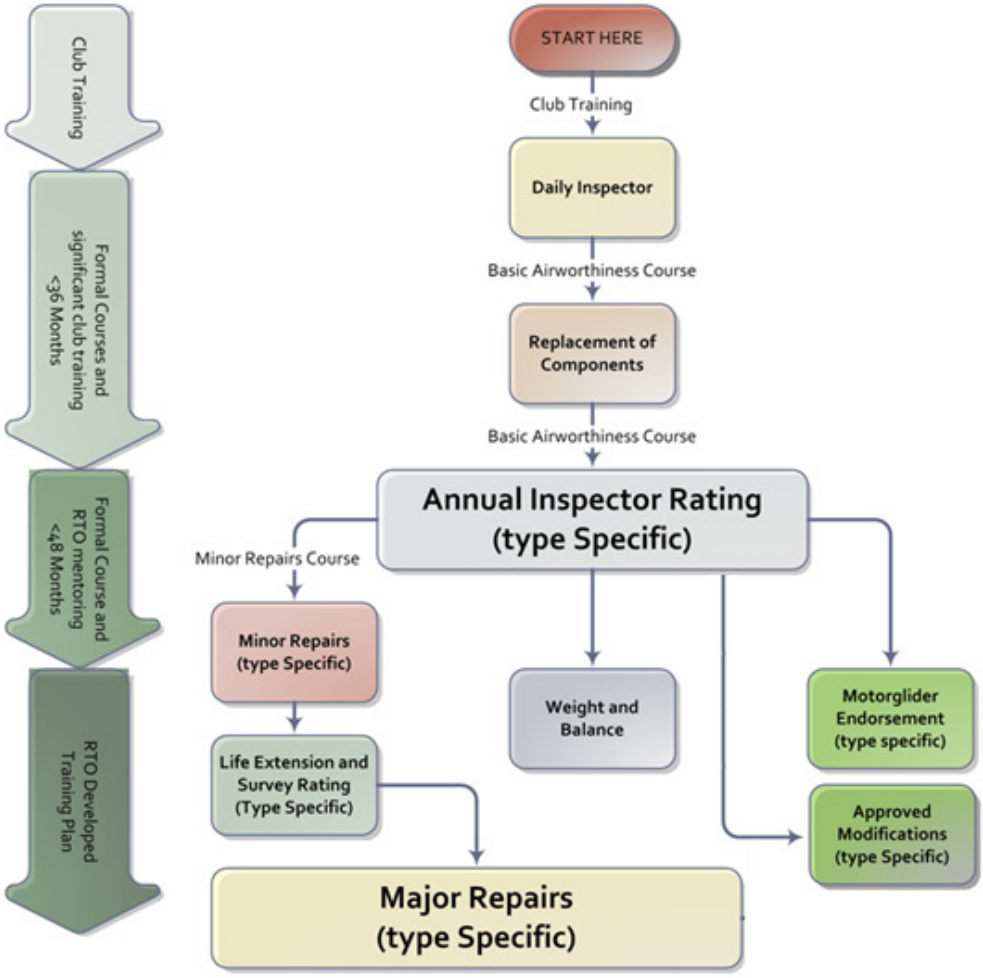


Figure 3 GFA airworthiness rating progression

10.3 Gaining Airworthiness Qualifications

10.3.1 GFA shall take into account relevant prior learning. The CAD, CTO, DCAD or RTOA may assess prior qualifications and issue GFA ratings based on a reasonable assessment.

10.3.2 GFA Airworthiness Department periodically runs Basic Sailplane Engineering (BSE) courses throughout the country. These cover the syllabus defined in AIRW-M07 Sailplane Inspectors Training Syllabus and the procedures in BSE. Attendance at these courses is the primary method for gaining further airworthiness ratings.

10.3.3 BSE courses promote a national teaching standard and help to maintain national airworthiness standards.

10.3.4 The BSE courses are conducted with the assistance of the Regional Associations to meet the demands of the gliding population. All inspectors wishing to conduct training at a BSE course should register their interest with their state RTOA. These state lists are collated periodically and the planning for the next course is determined by this data.

10.3.5 Each BSE course has minimum attendance requirements to justify the expense of running the courses. These requirements are set by each BSE course coordinator.

10.3.6 The following courses are routinely offered:

a. Replacement of Components

b. Annual Inspector

c. Standard Repairs Minor (Type specific)

d. Fabric repairs

e. Powered Sailplane Inspection and Maintenance.

f. Weight and Balance Courses.

10.3.7 Other courses are available if sufficient demand is present.

10.3.8 The study material (BSE etc) is available for purchase through GFA secretariat and is usually available for download from the GFA website for free. This will be specified and should be obtained in advance of any course activity to allow course preparation and pre-course study.

10.3.9 The regional associations are strongly encouraged to support BSE events both financially and from a resource perspective. Each BSE event may be financially sponsored by GFA Airworthiness Department or Regional Association.

10.3.10 At the conclusion of a BSE course candidates must pass a National Exam and practical evaluation to be eligible for the issue of any subsequent ratings. This exam is reviewed annually by GFA Airworthiness Department in accordance with the AIRW-M07 Sailplane Inspectors Training Syllabus. Ratings are issued by the RTO-A based on the evaluation results which are to be recorded in the GFA records by the RTO-A or GFA staff on the RTO-As authority.

10.4 Mentoring

10.4.1 Mentoring is an important part of GFA Airworthiness education program. Mentoring is used to supplement the training of an inspector outside formal BSE airworthiness courses. Course coordinators and RTOAs may supplement training after an airworthiness course to consolidate learning objectives at their discretion.

10.4.2 In extenuating circumstances, there is provision for the granting of airworthiness ratings without the attendance at a training event. Inspectors may be trained to a certain level of competence and authorised accordingly under the Mentoring system. The RTOA must be adequately convinced of the extenuating circumstances (life commitments preclude attendance at a weeklong course) prior to the commencement of any mentoring activity. In all cases:

a. The RTOA for the members home club will supervise the mentoring process

b. The study material (BSE etc) is available for purchase through GFA secretariat. This will be specified and should be purchased

c. The RTOA will nominate the mentor and specify all requirements

d. A comprehensive Schedule of Experience (SOE) is required to be completed and signed by your mentor throughout the mentoring process and made available to the issuing authority at the completion of training

e. The mentoring process should be no shorter than 12 months in duration or the equivalent of 3 supervised Annual Inspections

f. The BSE Exam must be successfully completed and passed for the candidate to be eligible for any rating.

10.5 Licensed Aircraft Maintenance Engineers

10.5.1 CASA Licensed Aircraft Maintenance Engineers (LAMEs) are not automatically authorised by GFA to conduct and certify sailplane inspection and repair work. Each case must be considered individually and the applicant's overall experience and background assessed.

10.5.2 There are sufficient differences between General Aviation and gliding to warrant attendance by a LAME at a minimum of at least one GFA Inspector school or a program of supervised work endorsed and monitored by an RTOA.

10.5.3 In all instances, GFA membership is required for any GFA ratings to be granted and exercised. Associate membership is satisfactory for non-flying members to conduct airworthiness activities.

10.6 Airframe Maintenance Authority Classification

10.6.1 Airworthiness ratings are issued by Field of Expertise.

a. FRP, Metal, Wood, and Steel Tube authorize you to work on sailplane components of the specified type. For aircraft of two types of construction eg FRP and Metal Tube then you must have ratings for both types.

b. Fabric expertise ratings authorize work on fabric components on any aircraft type. Inspector ratings allow inspections and certification of fabric components. “Minor Repairs, Fabric” authorizes you to certify small patches in non-critical areas within your competence and training. This may be extended with competence. “Major Repairs, Fabric” authorizes all fabric work. A structure independent inspection and certification is still required.

10.6.2 A maintenance authority may be granted for any or all of the following ratings subject to the above fields of expertise:

10.7 Daily Inspector

10.7.1 Daily Inspectors are permitted to rig sailplanes, perform Daily Inspections, inspect sailplanes after rigging and perform Independent Inspections following maintenance or rigging. A logbook endorsement for each field of expertise is required and Motorglider types as listed below. The conduct of Daily Inspections and the training syllabus are outlined in GFA Daily Inspectors handbook available online from GFA website. With this rating you may perform the following maintenance:

a. Inflate Tyres

b. Change tyres and tubes

c. Secure removable ballast

d. Replace simple gap tapes (not on control surfaces)

e. Polish canopies

f. Remove or replace instruments other than the ASI and Altimeter, where this does not affect the pitot-static system

g. Remove or replace plug-in batteries

h. Routine lubrication in accordance with the aircraft manufacturer’s instructions or other approved data that does not require any disassembly

i. A daily inspector may rig sailplanes but an independent inspection is required as per Section 11.2.

10.7.2 Additional training is required for a Powered Sailplane Endorsement to cover the following activities. Examination requires a DI Examiner or Annual Inspector himself rated for the power-sailplane type and study of the handbook; AIRW-M04 DI Handbook - Powered Sailplanes. With this rating you may:

a. Replacement of bulbs, reflectors, glasses, lenses or lights.

b. Replacement, cleaning, or setting gaps of spark plugs.

c. Service and replacement of batteries.

d. Changing oil filters or air filters.

e. Changing or replenishing engine oil or fuel.

f. Lubrication not requiring disassembly or requiring only the removal of non-structural parts, or of cover plates, cowlings and fairings.

g. Replenishment of hydraulic fluid.

h. Application of preservative or protective materials, but only if no disassembly of the primary structure or operating system of the aircraft is involved.

i. Removal or replacement of glider tow hooks on tow planes or motorgliders.

10.7.3 The minimum age for a Daily Inspector authorisation is 15 years old.

10.8 Replacement of Components Inspectors

10.8.1 Component and sub-assembly replacement can only be certified by authorized inspectors. To obtain a sailplane Inspectors Certificate of endorsement for Replacement of Components, the applicant must successfully complete a GFA sponsored Basic Airworthiness Course.

10.8.2 It is a requirement that all ROC candidates sit and pass the BSE exam. All exam results will be recorded by GFA to justify the rating. The candidate will be mentored to explain the errors.

10.8.3 There are strict limitations imposed upon the Replacement of Components Inspectors.

10.8.4 Persons endorsed for Replacement of Components may carry out all aspects of sailplane inspection with the following limitations:

a. Where an ASI or Altimeter is replaced the connections of that instrument to the pitot-static systems must be checked by an Annual Inspector

b. If a control surface is removed and replaced then the Independent Inspection must be performed by an Annual Inspector

c. If a Flight Control Circuit is broken and reassembled (other than normal rigging and de-rigging) then the Independent Inspection must be performed by an Annual Inspector

d. They may not certify Annual Inspections

e. They may not certify Airworthiness Surveys

f. They may not certify Dye Penetrant Inspection

g. They may not certify control surfaces balance and mass

h. They may not certify weight and balance

i. They may not certify repairs.

10.8.5 Component Replacement Inspectors are responsible for the quality of the work performed and components used. They shall certify all work completed by signing a logbook entry which details the work. Where that work has been the subject of Independent Inspection, the other Inspectors involved must also certify by logbook entry.

10.9 Annual Inspectors

10.9.1 To be considered for an Annual Inspector rating the applicant should first hold a Replacement of Components rating unless the candidate has adequate previous qualifications or experience (such as LAME, see Section 10.5). He / She must then undertake additional training via a GFA BSE course to demonstrate competence and compliance with all the relevant administrative procedures. The Annual Inspectors training syllabus is given in AIRW-M07 Sailplane Inspectors Training Syllabus.

10.9.2 It is a requirement that all Annual Inspector candidates sit and pass the BSE exam. All exam results will be recorded by GFA to justify the rating. The candidate will be mentored to explain the errors.

10.9.3 It is possible for GFA members to be trained and achieve a suitable level of competence under a mentoring process in accordance with Section 10.4. Similarly foreign qualified members can be assessed by the RTOA and awarded a GFA airworthiness rating. All ratings require knowledge of GFA administrative system before award.

10.9.4 The Annual Inspector authorisation allows a person to certify periodic maintenance and issue a Maintenance Releases for the type rating held.

10.9.5 Persons endorsed for Annual Inspections may carry out all aspects of sailplane inspection with the following limitations:

a. They may not certify Airworthiness Surveys

b. They may not certify Weight and Balance

c. They may not certify non-standard repairs or modifications

d. They may not certify for specialised non-destructive inspection procedures (e.g. Fluorescent dye crack detection) unless their authority is endorsed for this, Section 10.10.

10.9.6 All work must be performed in accordance with manufacturer's requirements and Basic Sailplane Engineering or other relevant approved data.

10.9.7 Only those holding a Daily Inspector Examiner or Annual Inspector maintenance authority may examine DI candidates.

10.9.8 The Annual Inspector is responsible for the quality of the work performed and components used. Annual Inspectors will certify all work was completed by signing a logbook entry which details the work or aspects of the work by signing an item on a checklist.

10.9.9 Activities that are allowed as a result of attaining an Annual Inspector rating and are similar on various types, such as replacing primary flight instruments and removing control surfaces are allowed across the various types. For example, an Inspector is rated for FRP Annual Inspections; however, the club's K13 (metal tube and fabric glider) has a new pushrod to be fitted in the aileron circuit as a result of the previous annual inspection. This work can be done as long as the appropriate logbook entries and certification is made.

10.9.10 Annual Inspectors (AI) may work on and certify powered-sailplane airframe maintenance and inspection. However they may only work on engines if they have an appropriate engine rating. Two inspectors could therefore work on and certify the different parts. The airframe inspector certifies the logbook certification and is ultimately responsible and must make sure all aspects were performed by a qualified inspector.

10.9.11 An AI working on a powered-sailplane must however respect his limitations with the increased complexity and variations in wiring and instrumentation. This may require the engine rated inspectors input. So also are such special areas as fireproofing, or the engine compartment, retract mechanism, etc.

10.10 Non-Destructive Inspection

10.10.1 Specialist training by an approved expert in the method of testing is required to achieve a rating in particular disciplines of inspection.

10.10.2 An annual inspector authority may be endorsed to allow the inspector to perform NDI testing such as Fluoro-Dye Penetrant inspection. Skill and experience is required to achieve a high degree of confidence in finding or disproving cracking. Your RTOA can assist in arranging training.

10.11 Survey Inspectors

10.11.1 A survey rating may be granted to an Annual Inspector that has extensive experience on type. It is an advanced rating that is designed to carry out infrequent deep level maintenance, often for life extensions, that is usually beyond the scope of the Annual Inspection. This often results in accessing bearings and components that are inaccessible without cutting holes in skins and fuselage structures.

10.11.2 For this reason, this rating is closely coupled with the minor repairs rating specific to that type.

10.12 Weight and Balance Authorisations

10.12.1 A Weight and Balance (W&B) authorisation is required to certify weight and balance inspections and generate operational data limits for the aircraft. These inspections are required as a result of changes to the mass of the aircraft either through repairs or changes to the aircraft's equipment. Weight and Balance evaluations may be physically conducted or calculated from previous (accurate) data.

10.12.2 AIRW–D012 details the GFA Weight and Balance authorisation process, including minimum training requirements and members authorised to issue weight and balance authorisations. Note AIRW–D012 requires approval by CASA.

10.12.3 Aircraft are to be reweighed after all refinishing activities, major repairs or significant change in aircraft equipment.

10.12.4 The mandatory prerequisite for a Weight and Balance authorisation is Annual Inspector. A strong confidence and ability in physics and aeronautical engineering is required to be eligible for a weight and balance authorisation.

10.12.5 Weight and Balance is a vital and complex subject. Authorisations are only issued to competent and experienced inspectors. Significant training based on the BSE chapter and practical is required often resulting in multiple weight and balance inspections under supervision being required. Candidates are first issued a Basic rating and once they show understanding in complex situations (tail ballast, fuel, multi-seat) they may be issued an Advanced rating.

10.12.6 Practice and currency is important with weight and balance and inspectors should be careful of being certain with their work.

10.12.7 Placards are becoming very complex for modern gliders and motorgliders. Inspectors with a W&B: Basic rating is to engage a W&B: Advanced rated person to check and approve complex placards.

10.12.8 Complex aircraft require a W&B: Advanced rating for W&B changes. Work within your abilities and rating. A W&B:Basic rating is limited to simple gliders with no more than one of two pilots, fuel, baggage, ballast tanks or ballast weights.

10.13 Refinishing Authorisation

10.13.1 The term “Refinishing” does not apply to the making good of the finish in accordance with either the manufacturer’s instructions or standard aeronautical practice, as may be required in the course of a repair or modification. The authority to make good the finish in a local area affected by a repair or modification in order to protect the structure is implicit in any authority for repair or modification.

10.13.2 Other than as allowed by the above, refinishing of composite aircraft components requires a Refinishing rating to supervise and certify approval. The skill can be easily learnt however the risks are high and it must be correctly done for safety and longevity. Refinishing of other than composite airframe components also requires knowledge of risks and correct methods. Ratings are given to persons demonstrating sufficient understanding and should be limited to a particular project dependent on knowledge.

10.13.3 Refinishing of any control surfaces requires a check to confirm that the surface mass-balance is within the permissible limits. Reconnecting controls requires an Annual Inspector Authorisation and a competent inspector must certify the control mass-balance is correct.

10.13.4 Refinishing, removing or adding significant mass from the aircraft’s external surface, requires the aircraft to be re-weighed and its empty centre of gravity re-established. Re-weigh requires a Weight and Balance Authorisation.

10.13.5 To obtain a refinishing rating you must understand Section 18.4. It may be issued independent of other ratings as long as the limitations are understood.

10.14 Repair Authorisations

10.14.1 Authorisation to certify repairs will be made according to construction type and according to whether the repair is considered major or minor.

10.15 Standard Repairs (Minor)

10.15.1 An Annual Inspector may be granted the rating of Standard Repairs (Minor) after the successful completion of a GFA sponsored Minor Repair course. The pre-requisites for consideration of a Standard Repairs (Minor) rating are:

a. Annual Inspector rating for type

b. Considerable Annual Inspector experience on type.

10.15.2 Ratings may be issued to foreign or equivalent trained and qualified persons. Such as ratings issued by recognised aviation bodies such as CASA.

10.15.3 The training involves extensive theory and practical exercises and often involves the conduct of a number of supervised repairs prior to the issue of the rating. There are strict limitations imposed upon the Standard Repairs (Minor) rating. Specifically, they may not:

a. Certify repairs on any flight control surface or support structure

b. Certify any structural repairs

c. Certify any modifications, unless expressly permitted to do so by AD or EO

d. Exceed the size and scope limitations of a Minor Repair (Clause 18.3)

e. Certify weight and balance.

10.15.4 They must record details of the repair in the logbook certification and refer to a more detailed filed report if required.

10.16 Standard Repairs (Major)

10.16.1 Standard Repairs (Major) authorisations are generally reserved for those individuals that conduct sailplane repair work on a semi-full time basis. The knowledge required and skills needed are extensive and take many years to attain. Considerable training and experience is required to be eligible for the granting of this rating.

10.16.2 For the issue of any Major Repair rating, the CTO, DCAD or RTOA will make a recommendation to the CAD who will determine suitability of the candidate. The CAD may generate a training system tailored for each candidate to build upon perceived knowledge shortfalls or gaps in knowledge and/or skills.

10.16.3 Major repairs may be carried out by skilled persons under supervision of a Major Repair rated inspector.

10.16.4 As major repairs are largely a matter of experience candidates must record a comprehensive Schedule of Experience (SOE) which details the work performed and their level of responsibility for the repair under supervision. The supervisor must sign off each item.

10.16.5 Major Repairers must work within their experience and competence and are responsible to limit themselves as their competence grows. They must develop themselves by study and practice.

10.16.6 For the airworthiness documentation requirements they must maintain detailed records of their work.

10.17 Powered Sailplane Authorisations

10.17.1 Persons who have undergone training and demonstrated sufficient skill to their RTOA approved mentor may receive an endorsement to their Maintenance Authority for a single class of powered sailplane or combinations of available types.

10.17.2 Airframe ratings may be exercised on sailplanes or motorgliders but not beyond the inspector's ratings or competency. Airframe ratings but no engine rating authorizes airframe maintenance but not the engine components of a motorglider (and vice versa).

10.17.3 Appropriately experienced inspectors are granted authorities in one or more of the following classes and abbreviated to the category codes:

a. Four Stroke Engines = Eng4S

b. Two Stroke Engines = Eng2S

c. Radial Engines = EngRad

d. Rotary Engines = EngRotary

e. Electric Motor = ElecMot

f. Turbine = JetTur

g. Fixed Pitch Propellers = Prop

h. Variable Pitch Propellers = Prop(VP)

i. Folding Propellers = PropFold

j. Propulsion System Retraction Mechanisms = PropulsionSystemRetractionMechanism

k. Magnetos = Magnetos.

10.17.4 The authority is limited to the following Airworthiness rating codes at the discretion of the authorising officer, and in this priority order, (first to highest):

a. Routine Inspections approval (annual and manufacturer's periodic inspections) = RI

b. Replacement of component approval = ROC

c. Top End inspection and overhaul approval = MinOhaul

d. Unrestricted engine inspection and overhaul approval = MajOhaul

10.17.5 By combining the category code with the airworthiness rating code, the MA listing is interpreted e.g. Eng2SRI or Eng4SMajOhaul. Limitations to certain types of engine or propeller may be imposed. ROC is a higher rating than RI and allows you to remove and replace components such as magnetos or propellers.

10.17.6 Persons who will be assessed as powered sailplane inspectors will generally be Annual Inspectors for normal sailplanes, or will have appropriate other experience, and will also have experience and training in the type of engine for which the rating is sought.

10.17.7 Propeller ratings extend only to inspection, removal and replace, and minor repair or adjustment allowed in the propeller manuals. This could be extended with experience and training but requires a removal of limitations by the RTOA or CTO.

10.17.8 Training and work is to be performed in accordance with the latest version of “AIRW-M06 BSE Engines and Systems” and the manufacturer’s documentation.

10.18 Daily Inspector Examiner

10.18.1 Daily Inspectors are a very important part of the airworthiness system. They are the person that must find major problems each day and prevent an unsafe sailplane flying. And they certify it safe for the day for all pilots. As such the DI standard needs to be high and therefore the DI Examiners must ensure this standard. Therefore only people who will instil this high standard can achieve an examiner rating and only they may issue a DI rating. Instructors are authorized to train but not examine Daily Inspectors.

10.18.2 Eligible persons who wish to become DI Examiners should obtain a recommendation from their Club Airworthiness Administration Officer and an assessment will be made by a RTOA, CTO, DCAD, or CAD. The assessor will issue a Daily Inspector Examiner rating for Airframe and motor glider Types for which they have demonstrated competence. Annual Inspectors are trained as DI Examiners and have an automatic DI Examiner rating.

10.19 CASA Approved Repair Workshops

10.19.1 CASA approved organizations may perform the overhaul and repair of sailplane components within the scope of their CASA authorisation.

10.19.2 When an approved CASA workshop is involved in the repair or overhaul of sailplane components, the repairs and repair schemes shall be in accordance with the manufacturer's instructions or other approved data.

10.19.3 On completion, the part is certified as repaired in the same way as the manufacturer by means of a release note or certificate of conformance. The certificate must clearly identify the item and the standard to which the item was inspected, repaired, or serviced. After the item has been fitted to the sailplane, the certificate must be placed either in the logbook or in the maintenance file for the sailplane.

10.19.4 The reassembly of the sailplane is then certified by a GFA Inspector. It should be pointed out that GFA Inspector is not taking responsibility for the repair only the correct reinstallation of the repaired component. The responsibility for the quality of the repair rests with the approved organisation.

10.20 Authorisation Suspension and Cancellation

10.20.1 A member may have their Maintenance Authority or a rating suspended or cancelled due to one or more of the following reasons:

a. The Inspector has failed to exercise a sufficient degree of responsibility

b. The Inspector has shown poor judgment

c. The Inspector has been found to exhibit poor airworthiness knowledge or standards

10.20.2 When an Inspector is found to be in contradiction of the rules and procedures outlined in this document or has satisfied any of the above breaches, the CTO, DCAD or RTOA may recommend to the CAD that their airworthiness ratings be suspended or cancelled.

10.20.3 The CAD may suspend an airworthiness rating for repeat offenders that have been warned and counselled previously in accordance with GFA Complaints and Discipline Procedures found in MOSP Part 1.

10.20.4 The CAD will exercise objective decisions when determining the length of suspension and the nature of the suspension (partial suspension of ratings or complete suspension). The severity and nature of the breach will determine the suspension duration. In all instances of suspension, further training and mentoring is expected to occur prior to the expiry of the suspension period.

10.20.5 When serious breaches are discovered, the CAD has the option to cancel the Inspector's Airworthiness ratings. Whenever a certificate or authorisation is cancelled the following procedure must be followed:

a. The Certificate or authorisation is initially suspended for 28 days. The inspector will receive written notification of the nature of the breach and will have the opportunity to respond.

b. The inspector is encouraged to show cause as to why the suspension should not be extended to cancellation. Should the Inspector not contest the cancellation the Certificate or authority is cancelled automatically at the end of the 28 day suspension period.

c. The Inspector may contest the cancellation in accordance with GFA Complaints and Discipline Procedures. Until the matter is resolved all airworthiness ratings remain suspended.

10.20.6 The CAD, DCAD or CTO may suspend or cancel the CoA of any aircraft implicated by the suspension or cancellation of an Inspectors Authorisations if there are sufficient safety concerns. Act in accordance with the GFA ADPM. The suspension will remain extant until such time as further inspections of the aircraft are conducted to render the aircraft airworthy again.

10.21 Sailplane Inspector Syllabus and Theory Exam

10.21.1 The sailplane inspector training syllabus is given in Manual AIRW-M07. All inspector candidates are to be trained to this syllabus whether it is in a course or by mentoring and self-study.

10.21.2 GFA Airworthiness Department will set the national GFA Basic Sailplane Engineering Inspector Theory exam according to the syllabus and will review it annually.

10.22 Revalidation of Maintenance Authorities

10.22.1 Maintenance Authorities (MA) must be revalidated every six (6) years. If not revalidated they are automatically suspended until revalidated and the authority may not be used. The cycle is from receipt of the most recent authority or revalidation.

10.22.2 The objective is to revalidate all of a person's ratings at once: if they fail to qualify for one or more of their ratings then a limitation suspending some of the ratings may be applied, allowing the remaining valid ratings to be used.

10.22.3 All Maintenance Authorities that were issued before 30/10/2010 must be revalidated by 30/12/2016 to start the cycle.

10.22.4 All revalidations are issued by the RTOA responsible for the members club or Approved Maintenance Organisation. He will request a return from the AAO on the club's inspector's currency, competency, and standards prior to an audit and may ask to audit inspectors work at an audit. If there are concerns he will not revalidate a rating and will advise the member how to correct the issue if the member wants to. We expect many inactive inspectors will allow the ratings to lapse. These will remain in the system and can be revalidated at any time.

10.22.5 The objective is to ensure inspectors perform some update training and remain current ie they need to be active. The requirements are:

a. All inspectors must attend a one day refresher training in airworthiness in the two years prior to revalidation. This will be focussed on updates to how the system works and changes in regulations. This may be waived by the RTOA on application for very active inspectors who are known to be up-to-date.

b. All Inspectors are responsible to be aware of their currency and seek guidance if they are uncertain in any activity.

10.22.6 If not in compliance with Clause 10.22.5 the RTOA may extend the revalidation by one year, once, unless he considers there is a safety case.

10.22.7 If a member holding a sailplane Inspectors Certificate allows his or her GFA financial membership to lapse for any continuous period exceeding six (6) months and then renews that membership any previous Maintenance Authorities must be revalidated.

10.22.8 The RTOA may set terms under which the Maintenance Authority is revalidated. This may include attendance at a formal GFA sanctioned airworthiness course. It is the responsibility of any member who allows their membership to lapse for less than six (6) months to ensure that they are aware of any procedures or requirements which may have changed while they were not a financial member.

10.22.9 GFA Refresher Course. A system is being developed with the objective of providing useful competency updates and advancement. To date this has focussed on updating to this version of MOSP 3. In future this will be extended to pertinent subjects at that time and as identified and structured by the CTO.

11. AIRWORTHINESS INSPECTIONS

11.1 Daily Inspection

11.1.1 All sailplanes must receive a daily inspection in accordance with the procedures in GFA Daily Inspector's Handbook (AIRW-M03) which is available from GFA website.

11.1.2 A sailplane daily inspection can only be performed by persons who are authorised as a Daily Inspector for that particular construction category or, in the case of powered sailplanes, for that particular class.

11.1.3 When the daily inspection is completed the Inspector certifies so in the daily inspection Record (GFA Form 1) which is in the same booklet as the MR. The Date and time the certification is made must be present.

11.1.4 The Daily Inspector Handbook is the prime source of reference material used for the training of sailplane Daily Inspectors. A copy can be downloaded from GFA website.

11.2 Independent Inspections

11.2.1 An independent inspection is required each time:

a. A control (flight or engine) circuit is disconnected and reconnected

b. Powered sailplane fuel system is reconnected.

Note: These are serious safety risks that are significantly reduced by having a second person inspect and confirm. The Daily Inspectors Handbook provides guidance as to the specific requirements.

11.2.2 The minimum qualification for performing Independent Inspections is a Daily Inspector authorisation

11.2.3 An independent inspection is required each time the aircraft is rigged. Two certifications must be made in the MR prior to flight, including after an annual inspection.

11.2.4 Pilots of sailplanes with fully automatic connections on rigging may elect to do without an independent inspection.

11.3 Annual Inspections

11.3.1 Refer to Section 9.5 for GFA Policy on annual maintenance.

11.3.2 A sailplane or powered sailplane must not be flown unless an annual inspection has been certified within the last 12 months by a GFA Inspector rated as an Annual Inspector for the appropriate construction type or, in the case of powered sailplanes for the particular type of engine or propeller.

11.3.3 GFA Form 2 Annual Inspection is the primary mechanism by which sailplane airworthiness is maintained. "AIRW-M16 Guidelines for Annual Inspections of Gliders" available from GFA website provides comprehensive guidance for the conduct of Annual Inspections inclusive of the legal requirements pertaining to documentation. However, there may be differences, according to whether the aircraft's logbook statement specifies the manufacturer's maintenance manual or GFA ongoing airworthiness survey requirements as the second part of the maintenance system. If the Logbook Statement specifies the Manufacturer's maintenance system in lieu of or as well as GFA default system, and a conflict between the Form 2 requirement and the manufacturer's requirement exists, the manufacturer's requirement takes precedence over the Form 2 requirement. An 'Annual Maintenance Return, GFA Form 2c is required in all cases, for GFA's records and audit purposes – but its content may be varied if that is necessary to comply with the manufacturer's maintenance manual.

11.3.4 A fee is levied by GFA for the Annual Inspection package to assist funding of the GFA ongoing maintenance system.

11.3.5 Part of the annual inspection process is the issuing of a new Maintenance Release (MR) for the sailplane. The MR is provided as part of the Annual Inspection package produced by GFA. A MR is not valid for more than 12 months.

11.3.6 As each Annual Inspection kit is sold, the numbers on the MR are noted and allocated to a particular aircraft. Therefore MRs are not transferable from one sailplane to the next.

11.3.7 When issuing a MR the following clauses must be noted:

a. The date of issue of the MR is the date the inspector signs the MR before the evaluation flight.

b. The date of expiry is a maximum of 1 day less than 12 months from the date of issue of the MR. An inspector may issue the MR for a lesser period. See MR document information in Section 19.3 for more clarity.

c. The inspector must ensure that all scheduled maintenance required prior to the next annual inspection is entered in Part 1 of the new MR.

11.3.8 Only Schedule of Permissible Unserviceabilities listed in Handbook AIRW-M15 may be left uncleared after an Annual Inspection. If the defect is not found on the List of Permissible Unserviceabilities, the defect must be rectified prior to the issuing of the maintenance release. The permissible defects are to be listed in the minor defects section of the MR.

11.3.9 In all instances, any operational safety requirements have primacy over the Permissible Unserviceabilities Schedule.

11.3.10 The Total Time in Service, number of landings, engine and propeller hours must be carried forward to the new maintenance release.

11.3.11 In extenuating circumstances, the CAD, CTO, DCAD or an RTOA at their discretion may extend the specified period for an annual inspection by up to four weeks. However, before doing so, the maintenance history of the sailplane must be reviewed to show the following.

11.3.12 A sailplane with a history of significant defects or failures will not be eligible for an extension.

11.3.13 Should a MR be extended, a letter of authorisation will be issued for attachment to the MR. Additional requirements may be placed on the extension at the discretion of the authorising person. Such as:

a. No Charter flying

b. No Instructional Flying

c. No aerobatics

11.3.14 All extensions granted are to be reported to the CTO. Repeated Annual extensions will not be given.

11.3.15 The following persons/organisation issue MRs in accordance with the procedures listed:

a. Gliding Clubs - Each gliding club is the Issuing Authority for MRs issued for sailplanes owned or operated by the club. GFA Inspector, completing the annual inspection does that work as a servant of the club. The inspector certifies the MR and the club issues the MR.

b. Private Owners - Where a Registered Operator contracts with a GFA Annual Inspector, (working privately and not associated with an Approved Maintenance Organisation) to complete an annual inspection, the Inspector certifies the MR and the Registered Operator issues the MR.

c. Approved Organisations - Where a GFA Approved Organisation contracts to complete an Annual Inspection, the Organisation is the Issuing Authority for the MR. GFA Inspector completing the work certifies the MR as an employee of the Organisation.

11.4 Periodic Inspections

11.4.1 Some sailplanes, especially powered sailplanes, are subject to periodic inspections as well as the daily and annual inspections listed above. The most common inspections are 25, 50, 100 hour inspections required by the Manufacturer or by an AD. These inspections must be certified by Logbook and Maintenance Release entry.

11.4.2 The inspector certifying these periodic inspections must be authorised to perform the inspection as per Chapter 10 of this document.

11.4.3 These schedules may be changed to other sensible schedules by Logbook Statement as per Clause 9.7.

11.5 Airworthiness Surveys

11.5.1 All sailplanes are subject to Airworthiness Surveys and Life Extension Inspections in accordance with the procedures in Chapter 14.

11.6 Weight and Balance

11.6.1 The effects of any changes to the weight and balance of the aircraft and its control surfaces must be considered. Refer to Chapter 20.

11.6.2 If required, re-weighing must be carried out by persons rated “Weight and Balance".

11.7 Special Inspections

11.7.1 The following special inspections are to be carried out as required:

a. Heavy Landing: If a sailplane is involved in a heavy landing or ground loop, the sailplane must be inspected for hidden damage by an Annual Inspector

b. All Airworthiness Directives, whether issued by CASA, State-of-Design or GFA, are mandatory and remain in force for the life of the aircraft until such time as the AD is withdrawn or cancelled by the NAA issuing authority

11.7.2 Inspections resulting from AWAs, SBs or TNs are not mandatory but highly recommended.

11.7.3 Special inspections of individual sailplanes can be ordered by the CAD, DCAD, CTO or RTOA, Chapter 16, when the airworthiness of the aircraft is questioned. The Special Inspection may require:

a. The removal of surface finish to inspect previous repairs or laminate substrate

b. Access holes to be made to inspect internal components

c. A weight and balance Inspection

d. Any other action as deemed necessary by the requesting Inspector.

e. Any costs incurred to facilitate the special inspection are born by the RO.

12. SERVICE DIFFICULTY REPORTING SYSTEM (SDR)

12.1 SDR Reporting

12.1.1 Defect reporting is a vital part of GFA airworthiness system. All major defects which are found on a sailplane, which are not caused by accidental damage or by fair wear and tear, must be reported as below. GFA will report those considered Major Defects to CASA and the TC holder and this will satisfy the reporting requirements of regulation CAR 1988 Part 4B.

12.1.2 We call the whole system Service Difficulty Reporting (SDR) (The reason for the name change is that we want you to report malfunctions, failures or defects. This should include failures of the system even if this does not result in a failure or defect.)

12.1.3 Minor SDRs may be reported at the discretion of the inspector involved if it may be useful data or prompts to others.

12.1.4 SDRs are an important feedback mechanism between the owner or operator of a sailplane and the manufacturer. These reports allow in-service problems or issues to be fed back to the manufacturer for investigation and possible rectification.

12.2 GFA SDR System

12.2.1 GFA encourages all sailplane SDRs are reported to GFA where they can be collated and trends identified. If sufficient or significant problems are noted with a specific sailplane, GFA will contact the manufacturer and provide them with the details. Major Defects will be reported to CASA on behalf of the member.

12.2.2 The preferred method of reporting service difficulties to the GFA is via the online system called SOAR (Safety, Operations and Airworthiness Reporting) which is accessed via the GFA website. As an alternative, the Maintenance Release paper form may be mailed to GFA office or an email sent to returns@glidingaustralia.org. Additional data may be requested by the investigating officer and must be provided.

12.2.3 The SOAR system has been made simple and quick to enter reports. Fill in what you can and consider relevant. If it is not sufficient GFA will ask for more details and these must be provided. In this way minor SDRs can be reported simply and quickly, but provide all details of relevance for significant events. You may update your report in stages.

12.2.4 The system or form will prompt you to enter required information. Enter only what is relevant and leave the rest blank.

12.2.5 Marking Criticality 'High' will send the report to the CTO the next business day. If the matter is more critical, phone the CTO as well as submitting the SDR.

12.2.6 Australian factory representatives play an important role in defect reporting follow up. All factory agents and representatives must keep their contact details up-to-date with the secretariat.

12.3 GFA to Report to CASA and TC Holder

12.3.1 GFA must report serious defects to CASA and the TC Holder. Major service difficulties will be reported as required by CASA.

12.3.2 Less critical issues will not be reported to CASA or the TC holder initially. However, if sufficient or significant problems are noted with a specific sailplane, GFA will contact the manufacturer and CASA to provide them with the details.

12.3.3 The CTO is responsible to respond to SDRs marked ‘High Criticality’ the following business day and to assign reports for action by a manager. He is to check the reports are completed and take appropriate action on behalf of GFA.

12.3.4 The CAD will audit the reports monthly to ensure the correct action is being taken and reports are being completed. He will organise that resources are assigned to manage and analyse reports.

13. SPECIFIC MAINTENANCE REQUIREMENTS

13.1 Requirements Currently in General ADs

13.1.1 Currently these ADs are active. In future versions of BSE and MOSP they will be incorporated into these documents and then cancelled.

13.1.2 GFA AD 34 & 117, Hemp Cored Cables.

13.1.3 GFA AD 165, Pressure Test of ballast tanks.

13.1.4 GFA AD 177 &178, Maintenance Requirements for L'Hotellier Couplings.

13.1.5 GFA AD 277 & 293, Maintenance Requirements for Cable Releases.

13.1.6 GFA AD 278, Structural Inspection following Finish Removal.

13.1.7 GFA AD 343, Slick Magnetos. This AD has been cancelled as it is not required. All CASA ADs are mandatory for gliders, as are EASA and FAA ADs from 1 October 2009. Search for AD/ELECT on the CASA website for applicable ADs. GFA Annual Inspectors rated for Magnetos may service magnetos.

13.1.8 GFA AD 347, Teledyne Continental Magnetos. This AD has been cancelled as it is not required. All CASA ADs are mandatory for gliders, as are EASA and FAA ADs from 1 October 2009. Search for AD/ELECT on the CASA website for applicable ADs. GFA Annual Inspectors rated for Magnetos may service magnetos.

13.1.9 GFA AD 348, Maintenance Requirements for Oxygen Systems.

13.1.10 GFA AD 364, Modification of Gadringer FB19 Harness Buckle.

13.1.11 GFA AD 396, Operational Safety Aspects of the Top Engine.

13.1.12 GFA AD 448, Mass Balancing of Controls. This GFA AD has been cancelled as it should have been completed and is covered by GFA AD 278 for the long term.

13.1.13 GFA AD 486, CASA ADs for Rotax 912 Engine. This GFA AD has been cancelled as it is not required. All CASA ADs and CAO are mandatory for gliders, as are EASA ADs from 1 October 2009. Search for AD/Rotax on the CASA website will provide a listing of all CASA and some applicable EASA ADs for all Rotax engines.

13.2 Safety Harnesses

13.2.1 Safety harnesses may be rewebbed only by a CASA approved workshop using approved materials and methods. Webbing must be replaced with new certified webbing of the same rating or higher. Approved fittings must be used.

13.2.2 The width of standard CASA approved webbing and the long stitch patterns don't always work with sailplane harnesses. Some rewebbers have their own Engineering Orders to authorize acceptable repair methods. Approvals are required.

13.2.3 The webbing used in glider harnesses often has a life of 10 or 12 years from installation or as specified by the manufacturer of the aircraft or harness – this life is mandatory. Active use of gliders is a harsh environment for harnesses and they may wear earlier and require more frequent replacement or rewebbing. Ensure lifed limits are met, worn webbing is replaced and a 10 year limit is strongly recommended.

13.2.4 Beyond 10 years the inspector is to certify annually in the logbook that the harnesses and buckles have been checked IAW BSE and are being extended on-condition for 12 months. Refer to BSE for guidance on acceptable webbing condition and operation before you approve further use.

13.2.5 The buckle must be inspected and replaced if worn such that it may be unsafe. Return to an authorized repairer if in doubt. Particularly rotary buckles do wear and can release or jam.

13.3 Compass Swinging

13.3.1 Sailplanes (non-powered) have limited use of a compass for navigation. Whereas powered sailplanes particularly Touring Motorgliders need a compass as much as any other aircraft. As such sailplanes may have a simple compass but any sailplane that may use it for navigation or navigation backup must have a standard aviation swingable compass and maintained similar to CASA AWB 34-008 but according to the following rules.

13.3.2 Each installed compass in a Touring Motorglider must have a calibration check when the following events occur:

a. Prior to the issue of a Certificate of Airworthiness (CoA).

b. At least every 24 months unless the approved maintenance programme prescribes a lesser period.

c. Additional events requiring a compass swing occur as listed in AWB 34-008. Simply whenever the accuracy of the compass is questionable.

13.3.3 The approved maintenance programme for non-touring sailplanes is a check at annual inspection that any installed compass reads within 10 degrees of true direction. A full compass swing is not required.

13.3.4 Check the compass is serviceable; liquid is full and not leaking, there are no excessive bubbles, sediment or discolouration, pivot friction does not result in more than 2º of error.

13.3.5 The following is required when performing a compass swing in a sailplane:

a. Ensure normal equipment is present. Check that nearby equipment such as the joystick does not influence the compass visibly. Check the running engine, and avionics on/ off does not influence the compass. Swing the compass with the engine running and avionics in cruise mode and if they influence the compass, then fix the problem. Magnetic interferences that occur occasionally and for short periods may be ignored.

b. During compass calibration the aircraft should be positioned by aligning the fore and aft axis of the aircraft with the cardinal points and 30º magnetic headings (also known as a 12 point compass swing) and should be no more than 5º from the required headings. The magnetic heading of the aircraft should be established by means of a landing compass or similar instrument, or by alignment with a marked compass site or known headings.

c. Compasses should be compensated when the result of the compass calibration exceeds 5º.

d. The results of each compass swing should be entered in the Aircraft Logbook and certified by the Annual Inspector.

e. A compass correction card must be attached in legible form showing:

i. The magnetic heading and compass reading necessary to achieve the magnetic heading at the cardinal and intermediate 30º headings or

ii. If the deviation under any condition of operation is less than one degree, the card may be endorsed ‘Error<1º’ in lieu of the corrected headings.

iii. The date on which it was swung.

13.4 Non Destructive Inspection

13.4.1 Non Destructive Inspection (NDI) is required from time to time according to AD action or general component investigation. Each AD requiring NDI will specify the type of inspection required and the frequency of inspection.

13.4.2 Red Dye Penetrant testing MUST NOT be used. Annual Inspectors are permitted to perform NDI by Fluorescent Dye Penetrant providing they have been trained and authorized as per Section 10.10.

13.4.3 The importance of confidence and experience in this testing is emphasised and inspection at authorised expert facilities is recommended.

13.4.4 All other forms of NDI must be done by a CASA authorised NDI organisation. The inspection report must be referenced in the logbook and filed.

13.5 Welding of Aircraft Structures

13.5.1 The quality of welding can be controlled in two ways:

a. By controlling the weld; or

b. by controlling the welder.

13.5.2 In the Australian regulations, the latter method is required for all repair or modification to aircraft structure and structural components that is performed under approved data, because there are usually insufficient data to justify any other approach. In the case of non-structural components (e.g. fuel tanks) each component is required to pass a pressure test, and this can be used to satisfy the weld quality, rather than an aviation welding authority.

13.5.3 In the case of experimental aircraft, the former method may be used; in cases where there is sufficient knowledge of the structural margins, the welding may be justified by limit load proof test, provided that can be done without exceeding 80% of the yield strength of the weld or the parent metal.

13.5.4 All welding of certificated or LSA certified aircraft structures must be performed by persons authorised for that type of welding by CASA. A release note must be obtained and glued in the Logbook. Experimental aircraft intended to return to certified will require authorized and logged welding.

13.6 Instrumentation Testing

13.6.1 Instrument testing and calibration is to be performed according to BSE. The BSE covers the required testing and calibration of Altimeters, Air Speed Indicators, and fuel gauges and takes into account the requirements of CAO 100.5 but simplified to suit the operating characteristics of sailplanes. This testing and calibration must be certified by Annual Inspectors trained and competent in the test. Test equipment will be available to borrow from regional RTO-A/ equipment officers. This additional testing and calibration must be done or a PU issued from the next Annual Inspection.

13.6.2 The pitot-static system must be tested and corrected for leaks in accordance with BSE at each Annual Inspection and whenever the pitot-static system is disturbed.

13.6.3 All equipment on the Minimum Equipment List as listed in Chapter 8.1 & 8.2 are to be tested and calibrated in accordance with BSE every two years. This may be staggered so each is tested biennially for the annual inspection. They must have current calibration or can be operated under a permissible unserviceability if the PU exists.

13.6.4 All other instruments are optional equipment and need not be functional or calibrated. If not functional GFA recommends they are placarded to avoid confusion if pilots other than the registered operator may fly them.

13.6.5 Transponders are to be calibrated every two years in accordance with CASA CAO 100.5, Appendix 1, Clause 14. If this is not possible the instrument must be marked and operated under a Permissible Unserviceability and controlled terminal airspace must not be entered except with permission. (GFA elected to use CAO 100.5 for transponders to avoid confusion and sailplanes cannot be different.) Transponders are not to be turned on if they are not in calibration iaw CAO 100.5. (By order of CASA, 2017.)

13.6.6 Check integration of instruments at annual inspection that all Altimeters and transponder indicate height to within 125ft of the primary altimeter reading at 1013mbar sub-scale setting. If this is not possible the instrument must be marked and operated under a Permissible Unserviceability.

13.6.7 GFA equipment for the testing or calibration of gliders are to be calibrated at suitable periods as specified in their procedures. For instance, Release testers, altimeter testers and scales. If an error in compliance is found all testing carried out using the equipment up to the prior calibration is suspect and is to be rechecked. The Region equipment control officer is responsible to ensure they are calibrated and records are kept of the gliders on which they were used. A simple list is sufficient, completed on the use of the equipment. He must also notify all affected glider inspectors on finding equipment was non-complaint.

13.6.8 Compressed Gas Cylinders are to conform to and be tested IAW CASA CAO 100.5, Appendix 1, Section 15. This requires inspection and testing of high pressure cylinders at intervals not exceeding every 3 or 5 years after manufacture dependent on cylinder type. (GFA elected to use CAO 100.5 for cylinders to avoid confusion.)

13.7 Propellers

13.7.1 Requirement: Overhaul:

13.7.2 Propellers, and components as listed in the propeller manufacturer's parts catalogue, shall be overhauled by an approved organisation using the manufacturer's overhaul procedures, or other approved data.

13.7.3 Compliance: Overhaul:

13.7.4 The propeller shall be overhauled in accordance with:

a. The propeller manufacturer's published TBO; or

b. The CASA TBO period as listed in Appendix 1 of CASA AD/PROP/1 AMDT 2.

13.7.5 DI, Annual Inspection, and repair may only be performed by DI inspectors, Annual Inspectors and maintenance persons who are GFA endorsed/ rated to perform the inspection/ work on the prop type and CASA propeller AMOs.

13.7.6 At daily inspection the propeller hubs and blades, including their surface finish, must be checked for movement, breaks, scores, nicks, cracks, delamination, corrosion, and the security of the leading edge sheath, to assure they are safe. Also the retraction and feathering systems are to be checked.

13.7.7 Note Where approved maintenance data for a specific propeller system is not available, the inspection, maintenance and field repair methods contained in FAA AC 20-37E, or subsequent revisions, should be used.

13.7.8 At least annually, after the first flight after propeller fitment, and after significant average ambient humidity for wooden propellers, and after extended idle periods:

c. all propeller attachment bolts and hub retaining nuts must be checked to ensure they have the appropriate torque. Use correct techniques as per MMM and BSE Engines as they vary for types.

d. the propeller track must be checked to ensure that the blades are rotating in the same plane of rotation.

13.8 Emergency Exits

13.8.1 In sailplanes the canopy is almost universally the emergency exit. The canopy or the emergency exit must be maintained to the manufacturer's requirements or as elected in the Logbook Statement with a minimum of the following.

13.8.2 At daily inspection check the canopy mechanisms are visually correct for hinges, release mechanisms, and that they appear they can be ejected if required.

13.8.3 At least annually and after repairs the eject mechanism is to be tested. Take care to protect the canopy from damage. Check and correct any attachments to canopies do not restrict the canopy jettison mechanism and must breakaway when the canopy is jettisoned in flight. Even a thin wire in the wrong place can delay, or prevent, canopy separation. Hand breakable safety systems as per guidance in BSE are allowed if they will not prevent the ejection system working.

13.9 Ballistic Recovery Systems

13.9.1 BRS are to be maintained according to the manufacturer's data.

13.10 GFA Maximum Maintenance Schedule

13.10.1 This schedule is new and has been added to clarify, guide and limit the Registration Holder (RH) in the selection of revised maintenance schedules if he deviates from the manufacturer's schedule. The RH of recreational, non-commercial, non-LSA, sailplanes may elect to maintain components of their sailplane to a lesser schedule than the manufacturer specifies. Eg airframe, engine, prop. However, he accepts this may risk damage or failure but if done sensibly can save high costs of excessive maintenance. Eg an engine that has done 20 hours in 4 years may require a manufacturer recommended overhaul. However, it may be sensible to replace aging rubbers. And it would not be sensible to extend the recommended 4 years to say 20 years of no maintenance. But the RH could elect to Operate on Condition with additional inspection requirements and partial overhauls until an overhaul is required. He must take into account his equipment, usage, risk appetite, knowledge and inspection capabilities.

13.10.2 To provide sensible maxima GFA RHs may not elect to exceed the schedule hours and years in the GFA Maximum Maintenance Schedule published on the website. If GFA sees a need to change these it will be revised and RHs will be notified and must revise their Logbook Statement.

14. GLIDER STRUCTURAL LIFE – AIRWORTHINESS SURVEYS AND LIFE EXTENSION INSPECTIONS

14.1 Background

14.1.1 (Explanation; this Section replaces GFA AD 337 which has now been cancelled.)

14.1.2 No aircraft has an unlimited life. Structural fatigue, corrosion, design faults and normal wear and tear take a toll on the aircraft, particularly on its structure and mechanical systems. This is why manufacturers provide a maintenance program for their aircraft. However, the maintenance program for a new design is usually based on experience and engineering judgement and it is unlikely that a maintenance program designed for a new type designed in Europe is still appropriate 30 years (or more) later in tropical/ dusty/ hot Australia. Apart from climate effects, usage, loading and even launch methods can adversely affect the airworthiness of a design.

14.1.3 It is for this reason that aircraft need to be periodically inspected in much greater depth than the usual maintenance program and Annual Inspection. For modern types, the information gleaned from these inspections is used:

a. To extend the life of the type (this is where the data used to justify life extensions comes from)

b. To amend and develop the routine maintenance program contained in the type's maintenance manual

c. To amend and develop the design standards against which gliders are designed.

14.1.4 All Australian gliders whether there is an active Type Certificate holder or not, are subject to Airworthiness Surveys or Life Extension Inspections.

14.1.5 Some gliders may have a published service life, defined by the manufacturer and/or airworthiness authority as a total number of hours or occasionally a year limit, to be flown before being retired from service. These gliders may be of aluminium-alloy or FRP construction. Regardless of any surveys or inspections carried out, this life cannot be exceeded other than by the mechanism of a supplemental type certificate (STC). STCs may be arranged outside GFA. Also, the general airframe survey and inspection requirements in no way exempt the operator from carrying out inspection and servicing of individual components which have a defined service life, hours between inspection and/or servicing requirement.

14.1.6 For FRP gliders, each type is different and no assumptions can be made with respect to whether an aircraft has a published service life or not. The reference document is the type's AD schedule, available from GFA website, which indicates whether the aircraft has a service life and, if so, what inspection intervals are required. If no manufacturer's inspection schedule has been published, the aircraft will need a survey when it becomes 30 years old. If in doubt about into which category a glider falls, contact the RTOA or CTO.

14.1.7 Some gliders may have been rebuilt using components from two or more airframes. In these cases the component with the longest period in service or greater number of hours in service shall determine the life and survey requirements of the entire glider.

14.1.8 For a glider approaching the survey date, the following procedure should be adhered to for all categories:

a. The Registered Operator should contact the RTOA well in advance. The RTOA will need to see the aircraft's logbook and all other airworthiness documentation, and then make a preliminary inspection of the aircraft. Unless the Registered Operator holds "Survey" qualifications, the RTOA will assist in locating an appropriately qualified person to supervise the survey. However, this is a good time to get an independent

inspection of the aircraft.

b. The surveying inspector supervises the survey and carries out any special inspections required by the RTOA or the published life extension program. They must hold a Survey rating of the expertise required. Others may assist.

c. The surveying inspector prepares a survey report including all repairs and any defects that may have relevance to other aircraft. A logbook entry shall be made, noting the date and flying time at which the inspection was carried out. This entry shall be certified by the surveying inspector.

d. The survey report, a current weight and balance report and copy of the current completed Form 2c return are forwarded to GFA Secretariat for inclusion in the aircraft's file.

e. A new Maintenance Release is issued.

14.2 Inspection and Survey Timing

14.2.1 For the purposes of survey and life extension programs, Australian gliders are divided into five separate categories, each with their own requirements for survey or inspection. These are:

Category 1. Aircraft constructed primarily of wood, metal alloy, or a mixture of the two (such as aircraft with a steel tube fuselage structure and wood and fabric wings and tail surfaces). These aircraft must be surveyed 20 years from their date of manufacture, and thereafter at intervals of 10 years from the completion date of the previous survey. (eg ES60, ASK-13 and Blanik). Recommendation to contact VINTAGE GLIDERS AUSTRALIA via the GFA.

Category 2. Aircraft constructed of fibre reinforced plastic (FRP) for which there is no manufacturer's life extension program (FRP includes glass, carbon or Kevlar fibres or any combination). These aircraft must be surveyed 30 years from their date of manufacture, and thereafter at intervals of 10 years from the completion date of the previous survey. (eg PIK-20)

Category 3. Aircraft constructed of fibre reinforced plastic (FRP) for which the manufacturer has published a life extension program (FRP includes glass, carbon or Kevlar fibres or any combination). These aircraft must be inspected in accordance with the manufacturer's published life extension program, including repeat inspections at the Total Time in Service or the years since construction. (Most FRP gliders)

Category 4. Aircraft which have been found by the manufacturer/TC Holder or GFA to present special airworthiness problems. These aircraft must be inspected and re-inspected in accordance with the manufacturer/TC or STC Holder's or GFA's instructions (eg Foka 5, IS-28B2)

Category 5. Aircraft with no logbook history, or imported without an Export CoA, or specifically identified by the CTO. Inspections for these aircraft will be determined by the CTO and a Maintenance Direction issued to the Registered Operator (See Chapter 16).

14.2.2 On the life extension falling due the current Maintenance Release (MR) expires. At the previous Annual Inspection it must not be signed out beyond this time or date. The RO should plan the inspection early and sensibly do it at the time of the previous annual. If not then he may obtain a new MR from GFA if the glider has a current MR and it will be issued for the balance of the previous Annual Inspection.

14.3 Extension of Time

14.3.1 In extenuating circumstances, the CAD, CTO, DCAD or an RTOA at their discretion may extend the specified period for an Airworthiness Survey or Life Extension inspection by up to three months and 50 hours from when the inspection falls due. However, before doing so:

a. The maintenance history of the sailplane must be reviewed. A sailplane with a history of significant defects or failures or with outstanding ADs will not be eligible for an extension.

b. If the Life Limit is specified in a CMR under the TCDS or an ALS (refer 9.6) or in an AD then an extension must not be given. Otherwise (usually the case) an extension may be given.

14.3.2 Where an extension to a life extension period is approved, the subsequent period will be reduced by the same amount in order to bring the subsequent inspection back to its original cycle time.

14.3.3 The extension of life must be issued in writing (or email). It must be recorded in the Maintenance Release to sign of the Major Defect entered and in the Logbook (certification pages and life extension).

14.4 Aircraft Subject to Surveys

14.4.1 The purpose of an airworthiness survey is to verify that those parts of the structure and systems which are not normally examined during a Form 2 inspection are still airworthy, and to ensure that no unapproved repairs, modifications, materials or parts are present in the aircraft. By ensuring that the aircraft is in good condition at each Form 2 inspection, a survey should add only a small amount of time to the inspection, provided there are no hidden defects found.

14.5 Gliders with a Manufacturer's Life Extension Program

14.5.1 For aircraft for which there is a Manufacturer's Life Extension Inspection Program, the Registered Operator must ensure that the current version of the inspection schedule laid down in the manufacturer's program is complied with. It is important to use the latest version of the program, as manufacturers amend programs in the light of feedback from the field. As the time for the life-extension inspection approaches, contact the manufacturer/TC holder for the latest version of the program. Also if required the report must be returned to the TC or STC holder, see Clause 14.7.5.

14.6 Powered Sailplanes - Additional Requirements

14.6.1 In addition to the airframe inspection, the following systems must be inspected in accordance with the manufacturer's inspection procedures:

a. Engine and engine controls

b. Exhaust

c. Propeller and propeller controls

d. Retract and reduction systems

e. Fuel system

f. Engine-related electrical system

g. Engine-related instrumentation.

14.6.2 Particular attention must be paid to the effects of fuel, oil, heat and vibration on the airframe. The effects of fuel contamination on tanks, fuel lines, seals and carburettors must also be carefully checked and any manufacturer's service bulletins on this subject adhered to.

14.6.3 Additional information on Ageing Aircraft can be obtained from the CASA website, as this is a common aircraft issue.

14.6.4 An inspector with a Routine Inspection engine rating must assist with this part of the survey but the Survey Inspector is overall responsible.

14.7 Implementation

14.7.1 Any costs associated with this inspection incurred by the inspecting RTOA or their delegate is to be repaid by the aircraft owner or operator. The RTOA and the person requesting the inspection are to discuss and agree on tentative costs prior to the inspection.

14.7.2 The RTOA will appoint a suitably rated survey inspector and will agree a survey schedule in accordance with the above guidance.

14.7.3 Surveys and Life Extension Inspections must be carried out by persons rated "Survey" on the applicable type, or by persons authorised by their RTOA. Any work carried out as a result of the inspection (e.g., repairs) must be carried out by appropriately authorized persons and certified in the logbook in accordance with normal GFA procedures. Approved data must be used for all repairs.

14.7.4 The RTOA is to supervise the inspection and review the report and approve it.

14.7.5 Copies of the inspection report are to be provided to the Registered Operator, the RTOA and CTO for inclusion in the aircraft's file. GFA will forward these to the manufacturer for his records and action.

14.7.6 Compliance with Survey and Life Extension Inspection requirements is mandatory. This applies to manufacturer’s Service Bulletins as well as ADs.

14.7.7 Survey or life extension programs require a current weight and balance. Provided there have been no significant changes (refer Clause 20.2.3) to the weight and balance characteristics since the last re-weigh, a weight and balance report no older than 4 years is considered current. This concession does not apply to a situation where significant structural reinforcement or major refinishing has occurred since the last re-weigh.

14.7.8

15. AIRWORTHINESS DIRECTIVES

15.1 CASA and State-Of-Design ADs

15.1.1 Airworthiness Directives (ADs) are issued by either CASA, GFA or the National Airworthiness Authority (NAA) of the State of Design, to address unsafe conditions on aircraft and aeronautical equipment. On 01 October 2009 Australian law changed to make any AD issued by the State of Design of an aircraft or certified component an Australian AD, without CASA having to re-issue the document as a CASA AD. Hence, CASA ADs, GFA ADs and those issued after 01 October 2009 by the State of Design are legal instruments, and compliance is mandatory under Australian law. (See CASR Part 39 – Airworthiness Directives)

15.1.2 Together with the safety standards imposed through type certification and other airworthiness certification requirements, ADs provide an additional and indispensable level of regulation to ensure that aircraft and aeronautical products remain airworthy at all times.

15.1.3 Unanticipated problems arising during service, such as design deficiencies, material wear, fatigue, corrosion, and deterioration, which may pose substantial hazards to the continued airworthiness of aircraft and aeronautical products, can be prevented through the prompt issue of ADs.

15.2 GFA Issued ADs

15.2.1 While GFA will rely on CASA and State of Design ADs to ensure the safety of Australian gliders, from time to time an airworthiness concern may arise for which CASA or the State-of-Design have not yet initiated AD action. In that event, if it believes it appropriate, GFA may issue a GFA AD requiring action to address the safety concern. Action in accordance with all GFA issued ADs, including those issued prior to 1st October 2009, is mandatory.

15.2.2 GFA issued ADs are known as GFA ADs to distinguish them from CASA and State of Design ADs.

15.2.3 GFA may Cancel or Suspend GFA ADs in which case they will be marked as such on the latest version and in the Registers. At this stage some aircraft may have complied and some may not. There will then usually be an alternative directive possibly in MOSP 3 or as a foreign mandatory AD. GFA will refer to these and these then become mandatory and replace the AD. If an AD is cancelled or suspended then it is no longer mandatory but remains as approved data for the sailplane to which it was applied.

15.3 Exclusions and Alternate Means of Compliance

15.3.1 Compliance with all relevant CASA and State-of-Design ADs issued after 01 October 2009 is mandatory, unless an Alternate Means of Compliance (AMOC) is approved by CASA, or CASA grants an Exclusion from the operation of the AD (GFA does not have a delegation to approve AMOCs or Exclusions against CASA and State-of-Design ADs).

15.3.2 CASR 39.004 and Advisory Circular AC39-1(4) provide information on AMOCs and Exclusions.

15.3.3 Compliance with GFA ADs is mandatory unless an AMOC or Exclusion has been issued by CAD, CTO or CASA.

15.4 Responsibility of the Registered Operator

15.4.1 The Registered Operator is responsible to monitor all Australian, State of Design and GFA ADs applicable to their aircraft and aeronautical products, and to comply with them.

15.5 Airworthiness Directive Schedule

15.5.1 Sailplane inspectors are responsible to ensure that GFA (General and Specific), CASA ADs and State of Design ADs that are applicable to a particular sailplane and equipment are complied with and recorded in the sailplane logbook. They must ensure they get the updates when released. Hereafter these are generically referred to as 'relevant ADs'.

15.5.2 GFA AD Schedules and the GFA ADs can be found on GFA website. (Each Form 2 kit contains the General AD Schedule as well as the Specific AD Schedule for the particular type.) It is the Annual Inspector's responsibility to use the latest schedules on the website to ensure that they use up-to-date copies of all relevant ADs.

15.5.3 GFA will maintain links to State of Design or manufacturer websites to assist inspectors in obtaining ADs and Service Bulletins. These will be on GFA AD schedule webpage. If an inspector finds a new source GFA is to be advised and it will be added to the links.

15.5.4 Where the Registered Operator has an Exclusion or AMOC against an AD, a copy of the approval is to be included in the aircraft's logbook. All conditions and limitations on the approval are to be complied with, and if necessary entries made in the logbook and/or maintenance release.

15.5.5 ADs are distributed to the Registered Operator of affected sailplanes when GFA becomes aware of them. But Registered Operators are responsible to find all applicable ADs for their aircraft. There are simply too many sources and variations of sailplanes and equipment for GFA to find them all.

15.6 Applicability of ADs to experimental aircraft

15.6.1 "General" ADs are applicable to experimental aircraft, unless an exclusion is granted.

15.6.2 State of Design, CASA, and GFA ADs or manufacturer Safety Directions (LSA only) are mandatory to experimental aircraft that are derived from certificated or LSA manufactured types, unless an exclusion is granted.

15.6.3 ADs may be issued by CASA or by GFA for experimental aircraft, and are applicable unless an exclusion is granted.

15.6.4 An exclusion to an AD will normally be granted only if it can be demonstrated that an "alternative means of compliance" exists – i.e. that whatever issue the AD is intended to address, has been covered in a way that provides an equivalent level of safety.

16. MAINTENANCE DIRECTIONS

16.1.1 From time to time it may be necessary for GFA to require a glider owner or operator to perform specific maintenance on their aircraft. In this case, a Maintenance Direction may be issued to the Registered Operator of the glider concerned requiring that the necessary work be performed before the aircraft can be flown.

16.1.2 A Maintenance Direction must:

a. Be in writing

b. Specify the aircraft affected by Registration Mark

c. Specify the airworthiness issue which has resulted in the Maintenance Direction

d. Specify what is required before the aircraft can again be flown

e. Be signed by the CAD and either DCAD, CTO or the RTOA

f. Be served on the Registered Operator.

16.1.3 A Maintenance Direction may:

a. Require specific maintenance to be performed

b. Require that specific inspections be performed

c. Require the Registered Operator to report when the Maintenance Direction has been complied with, and the results of any inspections (if applicable)

d. Direct that the aircraft is to remain grounded pending further direction, in which case a date by which that further direction will be provided must be specified.

16.1.4 Once the Maintenance Direction has been served on the Registered Operator, the aircraft is grounded until the Maintenance Direction has been complied with unless the direction specifies otherwise. If the aircraft is transferred to a new Registered Operator while a Maintenance Direction is applicable, the new Registered Operator must be made aware and a copy of the Maintenance Direction provided to the new Registered Operator.

16.1.5 Compliance with Maintenance Directions is compulsory.

17. AIRWORTHINESS ADVISORY MATERIAL

17.1 ANs

17.1.1 An Airworthiness Notification (AN) is used to distribute information which does not warrant mandatory action, but has relevance to maintaining a high standard of airworthiness.

17.1.2 ANs also provide owners and operators with information about approved modifications, repairs, defects found etc.

17.2 AWA

17.2.1 GFA may issue Airworthiness Alerts (AWAs) when a problem which could have significant airworthiness implications comes to their attention, usually as a result of a defect report, and where insufficient information exists to allow a full analysis of the problem.

17.2.2 In addition, an AWA may be used to collect statistical information about airworthiness problems, or to provide early advice to Registered Operators of problems that are under investigation and for which further action may be pending.

17.2.3 The AWA does not have the legal status of an AD, and compliance is not mandatory (but highly advisable).

17.3 Basic Sailplane Engineering

17.3.1 Basic Sailplane Engineering (BSE) is a series of manuals that are part of the MOSP Part 3 published by GFA which provides training, guidance and approved practices for inspecting and servicing sailplanes. These manuals include airframe inspection, engine inspection and servicing and information regarding standard repairs. Visit GFA website for the current list of BSE publications available.

17.3.2 The procedures listed in these manuals reflect standard aeronautical practice and the accumulated airworthiness experience gained by GFA over the years. All inspectors engaged in airworthiness work must ensure that they have the latest version of this manual available. It provides the approved procedures and data for inspecting and repairing sailplanes where the sailplanes manuals are lacking on the subject.

18. MODIFICATIONS AND REPAIRS

18.1 Approval of Modifications and Repairs

18.1.1 When an aircraft type is certificated, its "type design" is defined. This is the design which the regulatory authority (NAA of the State of Design) has certificated as complying with the appropriate design standard. Both the design standard and the type design are documented on the aircraft's Type Certificate. A valid Type Certificate is a prerequisite for the issue of a standard CoA. For gliders, the vast majority have JAR 22 or CS 22 as their design standard, although there are many older aircraft which were certificated against other, older, standards.

18.1.2 An aircraft having a TC or a TAC requires the design of all modifications - and a non-standard repair usually constitutes a modification – must be approved by an appropriate authority. To this end, all modifications and repairs to Australian Gliders (other than experimental gliders as addressed by Clause 18.1.5) must be made in accordance with Approved Data. Approved Data means drawings, specifications, calculations, test reports and other information necessary to show that the repaired or modified aircraft continues to comply with its certification basis. For LSA aircraft this means manufacturer's directions.

18.1.3 If a proposed modification to an aircraft is such that the modified aircraft will vary significantly from its original type design (i.e. a "major modification"), and if it is desired that the aircraft's CoA continues to be in force, the configuration change may require a Supplemental Type Certificate (STC), and in Australia can only be issued by CASA. Foreign STCs from recognised countries are automatically accepted in Australia. Examples of when an STC may be required include, but are not limited to:

a. Installation of a power plant on a glider not certificated with an engine

b. Change of engine or propeller type

c. Significant change to the airframe such as a change in wing span.

18.1.4 Approved maintenance data which includes authority for and how to perform modifications or repair is defined in Clause 9.9.

18.1.5 Various rules exist for approval of data and work on Experimental Aircraft. They are not all the same and you must work to the aircraft's Experimental Certificate restrictions. As far as possible previously certified aircraft are to be maintained to Approved Maintenance Data.

18.2 Sailplane Repairs

18.2.1 Most glider repairs are performed by "reverse engineering" and restoring a structure to its original state by applying standard repair practices. This applies to FRP, metal tube, and wooden structures. This is acceptable practice if the original design is reinstated exactly and includes the materials used originally. It is necessary to look at the manufacturer's repair data, to ensure that the area concerned is not one in which repairs are prohibited or "repair by replacement" only (for example, items that are critical for fatigue life). This is increasingly the case where a life-extension program has been justified by crack-propagation analysis; such areas are not amenable to reverse-engineering, unless the reverse-engineering is used to completely replace the critical structure or where a highly stressed component such as a spar cannot be repaired to the same strength.

18.2.2 The following documents contain standard repair practices and are approved data for the purposes of glider repair:

a. Ursula Hänle's Petit Plastic Plane Patch Primer.

b. BGA Standard Repairs to Gliders (wood only)

c. SZD Sailplane Overhaul Manual (wooden construction)

d. AC 43.13 - 1B Acceptable methods, techniques and practices - Aircraft Inspection and Repair. Approved by GFA except for Wood and metal tube repairs.

e. "How to cover an aircraft using the Polyfiber System", Procedure Manual No. 1 STC SA 1008 WE

f. Ceconite Procedure Manual 101 June 2008 revision

g. "The Hard Stuff" An introduction to the Inspection and Repair of Composite Gliders, Severn Valley Sailplanes

h. All manufacturer's repair manuals are approved data for repairs on that type.

18.2.3 Any changes in weight and balance as the result of a repair are to be carefully recorded. If the accumulative change in mass or balance since the last reweigh is significant (refer Clause 20.2.3), then a weight and balance rated inspector is to analyse the details, change the placards and certify the change in the logbook.

18.2.4 Any changes from the original materials (including resins and or cloth) are to be supported by approved data. This may be a standard change approval that is referenced. Standard materials listed in BSE as approved materials are approved.

18.2.5 All repairs, regardless of complexity or nature are to be carried out by approved inspectors and certified in the aircraft logbook or Maintenance Release for Daily Inspector permitted repairs. Details of all materials and the methods used are to be entered in the logbook or permanently attached printout, and the approved data used is to be referenced. Each Inspector rating allows an increasing level of repair as defined in Chapter 10.

18.2.6 In all instances, repairs to certificated or LSA certified aircraft, and to those portions of previously-certificated aircraft that are not affected by an experimental modification are to be carried out to Approved Data or to Approved Repair Schedules. In some instances where approved data is not available, it may be necessary to contact the Manufacturer to get a repair schedule or;

18.2.7 Approved data may be obtained for certificated aircraft from a GFA CASR 21.009/CASR 21M/ authorised person or a CASR 21J Organisation. For LSA aircraft only the manufacturer may provide data.

18.3 Major and Minor Repairs

18.3.1 Minor repairs are limited to repairs to non-structural parts of a glider. Repairs to any flight control or its support structure are regarded as major.

18.3.2 In general, modifications are not minor repairs. However, occasionally a GFA AD may allow a modification to be certified by an inspector holding a Minor Repair Authorisation. In addition, a CASR 21.009/21.M authorised person may define a modification as minor, thus allowing it to be certified by the holder of a minor repair authorisation.

18.3.3 Any modification producing a significant effect on weight and balance is a Major Repair. (Refer Clause 20.2.3)

18.3.4 To decide whether a modification or repair is "minor" or "major", the following criteria apply:

a. Is there a significant effect on weight and balance (see Clause 20.2.3)?

b. Is there any appreciable effect on structural strength?

c. Is there any appreciable effect on reliability (including fatigue life)?

d. Is there any appreciable effect on operational characteristics?

e. Is there any effect on the operating limitations approved by the Certificating Authority?

f. Does the modification introduce or affect functions where the failure condition is hazardous or catastrophic?

18.3.5 If the answer to all of the questions under Clause 18.3.4 is "No", the modification or repair is minor. All other modifications or repairs are major. More specific guidelines for repairs are given in sections 10.14 to 10.16.

18.4 Refinishing Requirements – FRP sailplanes

Explanation: This section supplements GFA AD 278. If you have complied with GFA AD 278 at the time of refinish you would have complied with this section.

18.4.1 Removal of the finish to expose the substrate in an FRP sailplane is a high risk activity that has caused major damage and weakening in the past. Therefore whenever the substrate is exposed extra care and second inspections are required. A minor repair rated inspector may perform a localized minor repair without second inspection. A major repair rated inspector may perform a localized major repair without second inspection. All other exposures are to be second inspected and certified.

18.4.2 There are several requirements that must be complied with when refinishing or partly refinishing a sailplane. These are summarized below:

a. Any non-authorised people helping with the refinish process must be supervised adequately by the authorised inspector

b. Only manufacturers or GFA approved products must be used in the refinish process. The paint system as specified must be applied, that is primers, surface finishers, and top coat work as one and are all required to provide adhesion, sunlight and moisture protection to the substrate.

c. Prior to the start of any refinish activities; the RTOA must be notified of the intent to refinish, the scope of the work to be conducted and by whom.

18.4.3 In every instance, sailplanes must have the substrate inspected by the RTOA or their delegate at the completion of the old surface finish removal, before any repairs or finish is applied. Very experienced refinishers may obtain CTO authority to self inspect. The inspector is to inspect the repairs prior to finish application. They will inspect for:

a. Adequate material removal

b. Substrate integrity, porosity and cracking

c. UV and moisture damage

d. Any damage caused by old surface finish removal process

e. For FRP sailplanes these requirements are outlined in GFA AD 278 and BSE.

18.4.4 Any application of surface finish must be done in accordance with Approved Data and be certified by an inspector authorised for Refinishing FRP. Changing the finish of a sailplane from the design type of say Gelcoat to another type, ie say 2K paint, is considered a minor modification and must be carried out to approved data. You must certify to approved data specifying the change of materials and procedure. This can be the manufacturer's approval, or a standard GFA approved paint scheme.

18.4.5 If FRP sailplanes are found to have propagating cracks in the surface finish that require inspection for potential substrate damage, this is to be carried out by an inspector authorised for Refinishing FRP.

18.4.6 The application of gelcoat or paint by Inspectors holding the rating of Minor Repairs FRP is allowable when:

a. as a result of stone chips and minor cosmetic imperfections in small localized areas

that do not extend into the FRP laminate

b. a result of repairs conducted under the scope of a Minor Repair FRP.

18.5 Refinishing requirements – other sailplanes

18.5.1 Paint stripping and treatment of corrosion of stressed-skin metal and wooden structures is also a high risk activity, and must be done in accordance with approved procedures.

18.5.2 Refinishing of other than composite airframe components, whilst not constituting a modification, is in general a process for which approved data are required.

18.5.3 A thorough structural inspection of the structure or the metal skin is required as it is the only chance you will get for the next few decades. To be certified by an Annual Inspector in the logbook.

18.6 Modifications

18.6.1 Modifications are defined as changes to the approved design of a type certificated aircraft, engine or propeller that:

a. Alters the design baseline of the sailplane or systems on-board

b. Changes any structural or load bearing component of the sailplane

c. Affects the aerodynamic characteristics of the sailplane. For example, installation or removal of “winglets”, changed dimensions of control surfaces, wings or fuselage or installation of turbulator tape in positions not approved by the manufacturer

d. Alteration or modification of the wing profile

e. Affects the structural integrity of the sailplane. For example, cutting into load bearing members (e.g., wing spars, D-noses or monocoque fuselages)

f. Significantly affects the Weight and Balance of the sailplane, refer Clause 20.2.3. For example, addition of fin water ballast tanks or the fitting of a brass tail wheel.

g. Significantly affects the Moment of Inertia of the aircraft about any of its principal axes of inertia (this is mainly an issue for spin recovery)

18.6.2 Further details on modifications are contained in GFA Design Approval Procedures Manual (DAPM). A copy of this document can be obtained from GFA website. The Registered Operators are required to familiarize themselves with the DAPM before considering any modifications to a sailplane.

18.6.3 All modifications to a sailplane, other than an experimental sailplane (see 18.6.5), but including all certified and LSA sailplanes, must be to approved data (Which can be from an AD, the sailplane manufacturer, or for non-LSA a CASR Part 21.009, or sub Part 21.M Authorised Person), (Unless exempted under Section 18.7 below). Where test flying forms part of the modification approval, the sailplane's CoA is deemed to be suspended, requiring an Experimental Certificate to be issued by the CTO or other delegated person, accompanied by a flight test schedule where necessary.

18.6.4 All previous modifications approved by CAR 35 and CAR 36 authorised persons remain in effect.

18.6.5 For an aircraft with an in-force EC the RO must inform the issuer of the EC when an experimental aircraft is modified so that the associated risk can be assessed, and, if necessary, the EC re-issued with amended conditions. (Refer to CASA EX43/17 or the latest in-force version for the details of what may or may not be done under an EC. What may be done varies with the purpose of the EC and the limitations of the EC.)

18.6.6 The person who approves the modification **(refer 18.6.3)** may determine the level of authority required to perform and certify the modification.

18.7 Minor Changes Not Requiring Approval

18.7.1 Some modifications and repairs are very minor, and do not pose any threat to the ongoing airworthiness of the aircraft. Where approved data is not available the following modifications do not require approval , but must be signed off in the aircraft's logbook by an Annual Inspector:

a. Installation of new or updated instruments and radios. Any weight change to the instrument panel must still fall within the manufacturers limits.

b. Wiring changes (including fuses and switches) to support a new or changed instrument or radio. All instruments require a separate switch and fuse. Wiring must be of the correct rating and type. Basic Sailplane Engineering provides guidance and is to be followed at all times. FAA AC 43.13 Section 11 is also approved data for this purpose.

c. Installation of blanking plates to fill holes left by removal or replacement of instruments.

d. Small repairs or replacement of the instrument panel front face for cosmetic purposes or to restore structure weakened by material removal resulting from the successive installation of various instruments.

e. Small cameras inside the cockpit of similar weight and size of a "GoPro." When installing the camera consideration needs to be taken to ensure no head strike, vision impairment or interference with flight controls exist.

f. Replacement or refurbishment of cabin upholstery, NOT including changes to the seat pan. Ensure changes do not impede control function, entry and egress. Only fire resistant materials to be used. Energy absorbing foam to be used for cushions.

g. Changes to switches on joysticks as long as they impose no restriction or structural change to the stick.

h. Installation of undercarriage warning systems as long as they impose no restriction or risk to jamming of controls, and are protected by a fuse or circuit breaker of no more

than 1 Amp.

i. Installation of portable Oxygen systems comprising parts designed for the purpose, and rated for oxygen use, provided that provision for installation AND RESTRAINT of the oxygen bottle are either part of the aircraft's original configuration, or approved by an Annual Inspector. The oxygen regulator MUST be mounted directly to the oxygen cylinder with no high pressure plumbing involved. The installation of any other system, including ex-military systems, requires approval. The guidance in Basic Sailplane Engineering is to be followed at all times. (NO OXYGEN LEAKS ARE ALLOWED at any time; all joins are to be checked with soapy water under full pressure. Standard oxygen handling practices are critical – OXYGEN IS DANGEROUS and an oxygen fire in the cockpit is unlikely to be survivable; nearly everything will burn in an oxygen rich environment, including steel and pilots!)

j. FAA AC 43.13-1B or the latest version is a highly relevant reference in regard to oxygen system installations and is approved data.

k. Installation of small cameras according to GFA AIRW-D024, Guidance on Mounting Cameras on Sailplanes and Powered Sailplanes, v1.2 or latest version.

18.7.2 All other minor modifications where approved data is not available require approval in accordance with the GFA DAPM and will require a CASR 21.009/21.M engineering order.

18.7.3 When mounting equipment such as GPSs, cameras, or video cameras on existing mounts, or installing "temporary" mounts such as suction cup mounts and "RAM" mounts in the cockpit, crashworthiness and loose object hazards must be seriously considered and secondary damage to the glider avoided. Head strike is a critical factor in crashworthiness and needs to be addressed carefully. No solid object may be mounted in a position where the occupant's head is likely to strike it during turbulence or an impact. Any such installation must not restrict the pilot's vision.

18.7.4 Anything mounted behind the pilot must be restrained against the crash loads specified in the type's certification basis. Note that a 2kg portable battery could be like a 30kg weight falling on your head during an accident – don't put weights behind your head – it is not crashworthy!

18.7.5 Any attachments to canopies must not restrict the canopy jettison mechanism and must breakaway when the canopy is jettisoned in flight. Even a thin wire in the wrong place can delay, or prevent, canopy separation.

18.7.6 When any modification is made to an aircraft, all changes to the aircraft's weight and balance are to be documented and recorded in the logbook, even if insignificant (refer Clause 20.2.3).

18.7.7 If the cumulative changes due to one or more modifications is more than given in Clause 20.2.3, then a weight and balance rated inspector is to analyse the details, change the placards and certify the change in the logbook.

18.7.8 In all cases, the effect of the change on the magnetic compass must be checked. If necessary, a compass swing will be required.

18.7.9 All changes must be certified by an annual inspector and listed on the next Annual Maintenance Return, GFA Form 2c, to GFA.

18.8 Substitution of Materials and Parts

18.8.1 Substitution of material and parts of aircraft are considered modifications (or repairs) and must be treated accordingly.

18.8.2 No critical components may be changed or sourced except from certified sources or with an engineering order or with approved data and instructions given in BSE.

18.8.3 Sailplane manufacturers use many automotive industry sourced components. If exactly the same component from the same manufacturer can be obtained these components may be used where structural strength or reliability is not critical.

18.8.4 FASTENERS. Fasteners in aircraft structure or control systems must NOT be substituted other than in accordance with approved data. Unfortunately, there is no single reference that provides the necessary information to simplify this; it is generally necessary to identify the original fastener specification and then refer to that specification in order to determine an acceptable replacement. Substitution in accordance with an engineering order or with approved data and instructions given in BSE.

18.8.5 Commercial grade hardware obtainable in Australia are very variable in quality in terms of dimensions, strength and durability, and in the case of bearings the lubrication. Hence, commercial grade hardware may only be used if the exact substitution in accordance with BSE is obtained.

18.8.6 Stainless steel hardware is not to be used for structural applications unless approved. It is of lower strength and more fatigue susceptible than mild steel.

18.8.7 The components must be obtained from a specialist supplier who will supply a letter of conformance listing the component specifications, ie confirms the source and specification of the part. This must be filed and referenced in the repair certification in the logbook.

18.9 Replacement of Batteries

18.9.1 Sealed Lead Acid (SLA) Batteries may be replaced with a good quality like item.

18.9.2 Batteries with a different cell chemistry (eg any Lithium type) are not to be substituted for SLA batteries without engineering approval for use in the sailplane. The manufacturer approval or a CASR 21.009/21M engineering order is required for the specific batteries.

18.9.3 The dimensions of the replacement battery must fit the box or rack correctly (for crash resistance). If the weight is increased the battery box and support structure must be upgraded to withstand the increased loads and may require a CASR 21.009/21M engineering order.

18.9.4 For starter motor batteries the battery must be the same capacity and cold crank amp rating as required and listed in the AFM/AMM.

18.9.5 The sailplane weight and balance is to be corrected as per Clause 18.7.6 by a weight and balance inspector.

18.10 Replacement of Tyres

18.10.1 When replacing a sailplane tyre, any equivalent tyre may be substituted.

18.10.2 Care must be exercised that the tyre fits correctly.

18.11 Damage to Foreign Aircraft

18.11.1 GFA repair authorisations may not be used to conduct repairs to, or modification of, foreign registered sailplanes. These aircraft must be repaired or modified under the rules of their State-of-Registry. Currently, no other country recognises GFA issued qualifications and authorisations.

18.11.2 Owners and operators of foreign registered sailplanes who approach a GFA authorised inspector or workshop for these services must be referred to the aviation safety regulator of the State-of-Registry. If the owner or operator is able to produce written authority from their regulator allowing a GFA authorised entity to certify for maintenance, modification or repair, GFA is to be contacted for approval BEFORE work is commenced so that issues such as liability and insurance may be considered.

19. MAINTENANCE CERTIFICATION

19.1 Aircraft Logbook

19.1.1 The Registered Operator is responsible for the existence and upkeep of suitable Logbooks for each sailplane in order to record:

a. Identify the sailplanes maintenance program and approved variations in the Logbook Statement, see Chapter 2.8 and 9.2.

b. Total time in service and number of landings made by the sailplane and engine and propeller time for powered sailplanes

c. Annual inspections, repairs and routine maintenance

d. The results of life extension surveys

e. Engine changes, propeller changes and component changes specifying the dates, time in service and changes of lifed components

f. Recording compliance with ADs

g. A record of modifications incorporated

h. A summary of any changes to the Weight and Balance

i. A history of components that are life limited.

19.1.2 Logbook entries must be certified by persons authorised for each category of work, and signed by them as being responsible for that work. In addition to their signatures, Inspectors must include their GFA membership number and the date the work was completed. A declaration must be made that all activities were conducted in accordance with GFA MOSP 3 requirements.

19.1.3 If the inspector is certifying an approved modification, or work requiring an EO, the details of the EO or Approved Modification must be recorded in the logbook.

19.1.4 The Registered Operator must ensure logbooks are up-to-date at least annually prior to the Annual Inspection or:

a. When certifying inspections or periodic maintenance

b. When certifying compliance to ADs

c. When any repairs are certified.

19.1.5 Loose leaf entries must be glued into the relevant section of the Logbook. A certification statement must also be made within the logbook in case the inserted sheet becomes detached.

19.1.6 The preferred Logbook is the Sailplane and Powered Sailplane Logbook available from GFA Secretariat.

19.1.7 It is recommended that all ROs generate a Logbook supplement to hold extra documentation that is not appropriate for logbook entry. Such items will include component release notes, wiring diagrams of the sailplane; photos of repair work etc. This information assists future inspectors to determine sailplane maintenance and repair history.

19.2 Logbook Instructions

19.2.1 All entries in the logbook are to be legible and made by pen in blue or black ink only. This allows photo-copying of logbook entries as other colours do not reproduce.

19.2.2 No logbook entry is to be obliterated or erased by any means.

19.2.3 The use of correction fluid is not permitted.

19.2.4 An incorrect entry shall be identified by a single strike through the error and shall be signed and dated by the person making the correction. Their GFA number must be recorded with their signature.

19.2.5 Incorrect entries shall only be corrected by a person who is authorised to certify for the type of maintenance the incorrect entry relates too.

19.2.6 Loose leaf attachments are permitted in the aircraft and engine sections of the logbook for entries such as major repairs, modifications and engine or propeller overhaul. Computer generated entries are permitted.

19.2.7 Such attachments shall bear the aircraft registration marks or the engine serial number as applicable, and will become a permanent part of that section of the logbook.

19.2.8 Each loose leaf entry must be securely attached to a logbook page which also includes a written certified endorsement in the logbook stating:

a. an entry is attached

b. the type of maintenance carried out

c. the name of the organisation performing the maintenance

d. the date the work was certified.

19.2.9 All airworthiness activities that require logbook entry for validity are called a certification. In all instances certifications must provide the following information:

a. the date the work being certified was completed

b. time-in-service of the aircraft at the time the work was performed

c. details of the work performed including reference to any factory repair schedules, EOs, MOSP 3 etc

d. the signature of the certifying inspector

e. GFA member number of the certifying Inspector.

19.3 Maintenance Release

19.3.1 The MR (Form AIRW F001) communicates to the pilot the airworthiness status of the sailplane. GFA will not accept airworthiness or operational responsibility for sailplanes that do not have a GFA Maintenance Release (MR).

19.3.2 The MR is divided into 3 parts and also includes the Daily Inspection Record. All parts must be updated daily whenever the sailplane is flown.

19.3.3 All entries are to be in blue or black ink biro pen. White out correction fluid is not permitted in any section of a MR.

19.3.4 Any errors in the MR must be crossed out with a single line with the correction immediately adjacent and the error to be initialled by the authorised person performing the entry.

19.3.5 All expired maintenance releases must be retained by the RO and kept for future consultation. These expired maintenance releases provide a documentary auditable trail of aircraft history, defects and clearances

19.4 Maintenance Release - Part 1

19.4.1 Part 1 identifies the sailplane and records the MR date of issue, date of expiry and that the evaluation flight has been completed. The prime purpose is to record the scheduled maintenance which must be performed while the MR is in force.

19.4.2 MR expiry is a duration of no longer than 12 months from when it was issued, unless extended, see Clause 11.3.11. For example: MR issued on 23 May 2011 then the MR would expire on the 22 May 2012.

19.4.3 The MR ceases to be in force when maintenance activity has started for re-issuance of MR and maintenance to be performed falls due and has not been certified as completed by an appropriately rated inspector.

19.4.4 When an inspector completes an item of recurring maintenance required on the MR, it is that inspector's responsibility to endorse the MR to show when that maintenance is due to be repeated.

19.5 Maintenance Release - Part 2

19.5.1 Where PART 1 controls the overall maintenance from one annual inspection to the next, Part 2 controls the sailplane from one pilot to the next, with provision to record Major Defects which prevent further flight, and Minor Defects that do not represent an inflight safety hazard but need to be inspected for further deterioration at each Daily Inspection.

19.5.2 Major Defects are faults which develop in a sailplane which are hazardous to flight or safety of the pilot or members of the public. Once there is an un-cleared Major Defect entry in the MR the MR ceases to be in force and the sailplane cannot be flown.

19.5.3 If the daily inspector is unsure whether a defect is major or minor, the defect should be recorded as a major defect, it is better to ground a safe Sailplane than to allow an unsafe sailplane to fly. The defect can only be cleared by an inspector rated for Annual Inspections; he/she must investigate the defect and determine a course of action. If required the defect must be repaired otherwise the inspector may declare the Sailplane safe and certify the release to operational status.

19.5.4 If any member of GFA finds or suspects a fault with a sailplane which may be critical to flight safety or which they are unsure of, an entry should be made in the Major Defects section of Part 2.

19.5.5 A Major Defect can only be cleared by a GFA Inspector who has the authority to clear the defect entry in the MR.

19.5.6 Defects categorized as Minor are faults in a sailplane that are not hazardous to flight, but need to be inspected at each daily inspection for further deterioration. (Permissible Unserviceabilities (Section 2.9) are usually of equipment whereas minor defects are for example minor cracks in gelcoat or canopies and non-structural.)

19.5.7 As well as bringing the defect to the attention of each daily inspector, recording minor defects also provides the next Annual Inspector with a record of known problems.

19.5.8 An Annual Inspector may elect to transfer an item to Part 1 of the MR to limit the amount of flying the sailplane does with the defect by imposing further inspections as necessary. Minor defect recording is "good housekeeping" and is to be encouraged.

19.5.9 When issuing a new MR all minor defects must be cleared whereas Permissible Unserviceabilities can remain.

19.6 Maintenance Release - Part 3

19.6.1 The hours flown and number of landings made must be entered daily whenever the sailplane is flown. The total time in service must be readily available at all times to allow the airworthiness status of the sailplane to be known.

19.6.2 MRs issued to Powered sailplanes has an additional insert (coloured blue) for recording engine hours and propeller hours. Engine hours must be entered daily.

19.6.3 Clubs and Operators with their own flight recording system may apply to GFA for exemption to Part 3 in terms of AN150.

19.7 Daily Inspection Record (GFA AIRW F001)

19.7.1 The daily inspection record is in the same booklet as the MR. Whenever a daily inspection is performed, the inspector should use the Daily Inspection Schedule as a guide plus any specific items in the Flight Manual to perform the daily inspection.

19.7.2 The Daily Inspection record must be certified prior to flight each day with the date and time the authorisation is made and GFA number of the authorised Inspector and their signature.

19.8 Requirement to Produce Documentation on Request by a GFA Officer

19.8.1 On request by a CASA official, CAD, DCAD, CTO, RTOA or AAO, the registered operator of a sailplane, including clubs and commercial operators, are required to produce Logbooks, Maintenance Releases, Release Certificates and any other maintenance documentation.

19.8.2 All maintenance documentation must be kept for at least one year after the operating life of the sailplane, ie deregistration, or removal of the component. This includes all maintenance releases and certifications of maintenance.

19.8.3 All records are to go with the sailplane when sold.

20. WEIGHT AND BALANCE

20.1 Background

20.1.1 The weight and balance of an aircraft is a critical factor in the airworthiness of the aircraft, on a par with the aircraft's structural integrity. While weight and balance can have an effect on a sailplane's performance, unauthorised changes can have a major effect on the aircraft's:

a. stability,

b. controllability,

c. structural integrity, and

d. ability to recover from an in-flight upset (such as a spin).

20.1.2 As weight and balance can be affected by various factors, the accuracy of weight and balance placards, and compliance with those placards, are critical to the airworthiness of an aircraft.

20.2 Ensuring Correct Weight and Balance

20.2.1 A sailplane must have its weight and balance status confirmed:

a. Every time there is a change to the sailplane which significantly changes its weight and balance, refer Clause 20.2.3.

b. When performing a survey or life extension, see Chapter 14, a full re-weigh may be required.

20.2.2 Clause 21.2.1 (a) may be done either by reweighing the sailplane or by calculation. Certification of a sailplane's weight and balance status may only be performed by Inspectors rated for Weight and Balance. The aircraft's logbook is to be updated with the new weight and balance data following reweighing or recalculation.

20.2.3 A significant change in weight and balance is defined as:

a. the empty weight has changed by more than 0.5% of the Maximum Take Off Weight; or

b. the empty weight centre of gravity position has changed by more than 2% of the maximum permissible centre of gravity range;

20.2.4 All weight and balance work must be done in accordance with the procedures detailed in BSE, Weight and Balance section, which is available from GFA website and specified in the Maintenance Manual.

20.2.5 The weighing equipment used to weigh the aircraft and/or components must have a accuracy ± 0.5% of the applied load or able to measure with an accuracy of ±0.1 kg in the range 20 to 100 kg and ±1 kg above 100 kg. A more accurate scale is required for lighter loads to achieve the accuracy of 0.5%.

20.2.6 If a light load such as the tailwheel weight is required then less accuracy introduces errors. A more accurate scale or a change in weighing scheme is required to eliminate errors by making the two weights more equal.

20.2.7 Scales must be checked and re-calibrated to Australian Standards in accordance with the National Instrument Test Procedure NITP 6.1-6.4 at no more than 12 month intervals. They are to be tested over the full range of all operating ranges and are to have an error no greater than 1 unit of measure or are to be clearly placarded with their error ranges on the readout. If they are found deficient, the equipment officer is to have a list of weighings performed and will arrange all doubtful weighings are checked and corrected.

20.2.8 Weight and Balance training and the conduct of weighing the aeroplane must be approved by CASA in accordance with CAO 100.7. Previously this was not required but approval is being sought. GFA will continue as per existing procedures during 2017 as agreed with CASA.

21. APPROVED MAINTENANCE ORGANISATIONS

21.1 Background

21.1.1 In order to ensure compliance with CASRs and good engineering practices, GFA authorises commercial entities for the maintenance and repair of sailplanes and powered sailplanes. These approved commercial entities are called Approved Maintenance Organisations (AMOs).

21.1.2 An AMO may only maintain sailplanes, sailplane components or sailplane materials for which it is approved when all necessary facilities, tools, equipment, aircraft materials, approved technical data and certifying employees are available.

21.1.3 This section outlines the requirements for the application; accreditation and revalidation of GFA AMOs.

21.2 Application

21.2.1 The application for AMO status may be processed and authorised by the CAD, DCAD or CTO. They are hereunder referred to as the issuing authority.

21.2.2 For a commercial entity to apply for and gain accreditation as an AMO the following steps must be completed:

a. Take appropriate steps to comply with the requirements outlined in this document

b. Apply to GFA for AMO status and pay GFA administration fee

c. Coordinate with the issuing authority a suitable inspection time for a surveillance audit of the workshop premises and infrastructure, this inspection may be delegated to an RTOA or another nominated person

d. The issuing authority may promulgate a Request for Corrective Action (RCA) should discrepancies against GFA requirements be discovered

e. Upon a successful surveillance audit inspection, the Certificate of AMO may be authorised.

21.2.3 Each AMO is authorised via the Certificate to conduct prescribed work. Should the nature of this prescribed work change the issuing authority (or the position incumbent) must be made aware of the changes in writing within 14 days.

21.3 AMO Revalidation

21.3.1 The AMO accreditation is valid for a period of 12 months.

21.3.2 At the completion of the 12 month period, the AMO must supply GFA airworthiness department a renewal application to revalidate the AMO status.

21.3.3 The issuing authority (or their delegate) has the option to conduct a surveillance audit at the time the renewal application is made. Usually the audit will be biennially in accordance with Chapter 22. The CTO or CAD may extend this to 3 years when the AMO management is considered stable. For efficiency the auditor may take into account CASA and other audits but should check for GFA specifics, eg GFA procedures, GFA ADs, GFA Logbooks.

21.4 AMO Requirements

21.4.1 Premises and Facilities Requirements:

a. A workshop of sufficient size and design to accommodate the nature of work being conducted.

b. Lighting needs to be of such a standard that the quality of work is not impaired.

c. Ventilation, as necessary, should be provided to ensure that the health and ability of the employees to carry out maintenance is not impaired and that contamination of the aircraft, components and aircraft materials do not occur.

d. To prevent contamination, the premises need to be kept in a clean and tidy condition. This should include the provision of suitable floors and may require dust locks, air-conditioning or extractor fans commensurate with the level of cleanliness required for that particular activity.

e. Dedicated refrigeration facilities to prevent degradation of epoxies and other chemical compounds that are heat sensitive if composite repairs are conducted.

f. Either a climate controlled room or accurate temperature and humidity instruments if composite work is conducted.

g. All remote workshop locations are to be detailed and included in the scope of the application and subject to surveillance inspections.

h. Dedicated parts storage areas for aircraft components, replacement parts and consumables are required to prevent contamination. Parts must be labelled to ensure serviceability is clearly tracked.

21.4.2 Documentation Requirements:

a. Each AMO must document the following processes in a Maintenance and Repair Procedures manual:

i. Work sheet documentation requirements for each job

ii. Work sheet retention and archiving process

iii. Quality control and final inspection procedures

iv. Process for procuring replacement parts and ensuring all parts and components are fit for purpose

v. Staff training requirements for un-qualified staff conducting work.

b. A separate work sheet is required for each job that is conducted within the workshop. This work sheet is a record of all work being conducted on the sailplane including:

i. Aircraft details and time in service the work was conducted

ii. Person conducting the work

iii. The nature and scope of the job

iv. Verification that the latest Manufacturers Maintenance Manual, TCDS, Approved Data has been checked for accuracy and currency

v. Replacement parts installed and consumables used

vi. What systems have been repaired or disconnected

vii. Defects or issues of note

viii. Have applicable ADs been adhered to.

21.5 Staff Qualifications

21.5.1 AMOs must ensure that only suitably qualified and authorised Inspectors are performing the work being conducted and certified.

21.5.2 AMOs must retain records of training activities to ensure staff are adequately prepared for the work being conducted. This is required for any employee that is not qualified in his or her own right to conduct and certify the work.

21.5.3 AMO staff and particularly the Chief Engineer must stay up to date and must attend refresher training and be current on GFA procedures. See 10.22.

21.6 AMO Accreditation

21.6.1 An AMOs accreditation is automatically suspended when:

a. The business entity changes workshop location or address

b. The nominated Chief Engineer is no longer employed by the organisation

c. When the Chief Engineer or the AMO holder is subject to any action outlined in Section 10.20 of this document

d. The AMO permanently ceases to engage in any or all of the activities for which the AMO was granted

e. The AMO holder is unable, for any reason, to carry out the activities for which the AMO was granted. For example, the AMO holder no longer has the necessary facilities etc.

22. AIRWORTHINESS AUDITS

22.1 Surveillance Audits

22.1.1 Refer to MOSP Part 1 for the overall GFA audit or Oversight procedures. This section covers Airworthiness only.

22.1.2 All gliding clubs, commercial gliding operations and private owners are subject to regular Airworthiness Surveillance Audits. These audits are a requirement imposed by CASA and are conducted on behalf of the CAD. The CTO manages the Audit process to ensure the audits are done, reported and RCAs followed up. These audits will normally be conducted on a club basis; ie, a selection of club and private aircraft owned by club members will be audited as part of one process.

22.1.3 These audits are intended to provide feedback to the club or commercial operation as to the airworthiness standards being implemented within the operation. They should be viewed as an opportunity for feedback and are not considered as an assessment where a pass or fail mark is determined.

22.1.4 During a surveillance audit the following items are inspected:

a. Availability of aircraft Flight and Maintenance Manuals to club members

b. Accuracy and completeness of Maintenance manuals

c. Logbook and MR

d. General aircraft condition

e. Sailplane placards

f. Modifications

g. Workshop facilities.

h. Inspector availability

i. Daily Inspector sign offs, standards and understanding

22.1.5 In most situations the audit will be performed by the state RTOA or a delegate of the CAD. Club Audits are to be conducted at a frequency of no less than every 24 months.The RTO-A or the CTO may grant an extension of up to 3 months. AMO Audits will be performed in accordance with Chapter 21.

22.1.6 An audit may be conducted at the discretion of the CAD or DCAD outside of the normal schedule.

22.1.7 Prior notice of 28 days minimum will be given to the club or operation that a scheduled Surveillance Audit is planned. This notice will be given by the person conducting the audit and will be promulgated through the club secretary or club president and the Manager of the AMO. An unscheduled audit may be conducted at the discretion of the CAD.

22.1.8 The club or organisation shall make all reasonable efforts to comply with the audit request and is to provide access to all aircraft and related documentation owned and operated by the club or operation.

22.1.9 In the case of privately owned aircraft, a selection of sailplanes may be requested at the discretion of the auditor prior to the audit being conducted. The club is to liaise with aircraft owners and make all reasonable efforts to have representatives of each aircraft available during the audit. We need to know the standard of private aircraft as well as the club's.

22.1.10 At the completion of the audit, a report will be raised by the auditor and forwarded to the CTO for review. The auditor may present the club or organisation with a Request for Corrective Action (RCA) that they must comply with. The RTOA may conduct a follow up visit or audit at some time in the future to check on compliance.

22.2 Audits of Airworthiness Inspectors

22.2.1 The RTOA has the authority to audit Inspectors work and methods of operation. The Inspector is to comply with reasonable requests.

22.2.2 Normally this will happen as part of the Surveillance Audits described above.

23. AIRWORTHINESS REQUIREMENTS ASSOCIATED WITH LAUNCHING

23.1 Releases

23.1.1 Only the approved release type for the sailplane is to be used.

23.1.2 Releases are to be maintained as specified by the sailplane manufacturer and GFA as specified in BSE, GFA AD 277, and GFA AD 293.

23.1.3 Only approved parts are to be used in release repairs.

23.1.4 Only approved equipment is to be used for testing. The equipment is to be calibrated every two years by the Regional Association.

23.2 Weak Links

23.2.1 All sailplanes, as part of their certification have weak link strengths specified by their designers and are written into their certified type data, normally in the Type Certificate Data Sheet (TCDS), making weak links a legal requirement for operations.

23.2.2 Because the majority of sailplanes imported into Australia come from Europe and are placarded to European weak link requirements, which are also contained in their TCDS and manuals, the European standard for weak links has been adopted as the Australian Standard.

23.2.3 Launch cable Weak Links (see GFA MOSP Part 2 Operations) must be used in all forms of sailplane launch methods (except self-launching) to ensure that the sailplane structure is not overloaded during launch.

23.2.4 The reliability of the launch cable release mechanisms depends on the use of the correct rings on the tow cable. The only acceptable tow rings for GFA operations are specified in GFA AN 75 and BSE.

23.2.5 GFA AN 75 and BSE, which can be downloaded from GFA website, detail all aspects of Weak Link application and placarding.

23.3 Towplane Releases

23.3.1 Towplane releases are to be operated and maintained according to CAO 100.5.

23.3.2 Tow pilots are authorized as detailed in CAAP 42ZC, Schedule 8 to remove and replace glider tow hooks.

23.3.3 Towplane releases must be maintained as per GFA standard procedures and by Annual Inspectors. They must be properly maintained and GFA has the correct training and equipment to do this. This should and must satisfy CAO 100.5.

23.3.4 The Club Airworthiness Administration Officer is responsible to make sure the towplane releases are maintained.

24. GLOSSARY OF TERMS USED IN THIS MANUAL

24.1 Definitions

AD	Airworthiness Directive. All ie CASA, GFA, Foreign. The GFA will add the issuing authority as a prefix to AD, ie GFA AD, CASA AD, EASA AD etc for specific ADs.
AAF	Airworthiness Administration Fee
AAO	Airworthiness Administration Officer
AC	Advisory Circular
ADPM	Airworthiness Delegations Procedures Manual
AI	Annual Inspector
ALS	Airworthiness Limitation Section
AMM	Aircraft Maintenance Manuals
AMO	Approved Maintenance Organisation
AMOC	Alternate Means of Compliance
AN	Airworthiness Notification
AP	Authorised Person
ASI	Air Speed Indicator
AWA	Airworthiness Alerts
BSE	Basic Sailplane Engineering
CoA	Certificate Of Airworthiness
CoR	Certificates of Registration
CAA UK	Civil Aviation Authority of the United Kingdom
CAD	Chairman GFA Airworthiness Department
CAIPs	UK CAA Civil Aircraft Inspection Procedures
CAR	Civil Aviation Regulations
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulations
CG	Centre of Gravity
CMR	Certification Maintenance Requirements
CTO	Chief Technical Officer
DA	Design Approval

DAPM	Design Approval Procedure Manual
DCAD	Deputy Chairman Airworthiness Department
DGAC	Direction Generale de l'Aviation Civile
EASA	European Aviation Safety Agency
EC	Experimental Certificate
FAA	Federal Aviation Administration
FOT	First of Type
Form 2	A commonly used colloquialism in GFA for an Annual Inspection. It is actually just the form or checklist used to record the work done.
FRP	Fibre Reinforced Plastic
GFA	Gliding Federation of Australia
ICAO	International Civil Aviation Organisation
IoA	Instrument of Appointment
LAME	Licensed Aircraft Maintenance Engineer
LBA	Luftfahrt-Bundesamt
LSA	Light Sport Aircraft
MA	Maintenance Authority
MOSP	Manual of Standard Procedures
MMM	Manufacturers Maintenance Manual for the aircraft and or the component
MR	Maintenance Release
MTOW	Maximum Take-Off Weight
NAA	National Airworthiness Authority
NDI	Non Destructive Inspections
PU	Permissible Unserviceability
RCA	Request for Corrective Action
RLD	Rijks Luchtvaart Dienst
RO	Registered Operator
RTOA	Regional Technical Officer Airworthiness
SDR	Service Difficulty Reporting System
SDR	Service Difficulty Reporting
SFP	Special Flight Permit
SLA	Sealed Lead Acid

SOAR	Safety, Operations and Airworthiness Reporting
SOE	Schedule of Experience
STC	Supplemental Type Certificates
TAC	Type Acceptance Certificates
TC	Type Certificate
TCDS	Type Certificate Data Sheet
USA	United States of America
Va	Maximum manoeuvring speed
Vne	Never exceed speed
VP	Variable Pitch Propeller
Vra	Maximum rough air speed
W&B	Weight and Balance