

**GLIDING NEW ZEALAND
INCORPORATED**

ADVISORY CIRCULAR

Airworthiness Forms

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1 Introduction

- 1.1 This Advisory Circular provides guidance on the following:
The correct use of GNZ Airworthiness Forms, to assist with, and to validate the maintenance carried out on GNZ gliders and motor gliders.

2. Airworthiness Forms

Detailing the correct use of GNZ Airworthiness forms.:

1. Application and Renewal for GNZ Engineers Approval.	TECH-17.
2. Application and Renewal for GNZ IA-Glider Approval.	TECH-18.
3. Daily Inspection and Tech-log Booklet.	TECH-19.
4. Maintenance Schedule for Gliders and Powered Gliders.	TECH-22.
5. Logbook supplement, Continued Maintenance.	TECH-23.
6. GNZ Engineers experience Log.	TECH-25.
7. Foreign Registered Gliders, Annual Return.	TECH-26.
8. GNZ Annual Review of Airworthiness Schedule.	TECH-27.
9. GNZ Defect Report Form.	TECH-28.
10. Aircraft Maintenance Programme.	TECH-29.

Note that any GNZ form titled TC- is no longer valid and should be discarded.

Applicable Civil Aviation Rules, from Part 104.

Part 104.103 General Maintenance Requirements.

Details the requirements for maintenance on gliders.

Part 104.105 Maintenance Inspections.

Details the requirements for maintenance inspections and periods.

Part 104.107 Maintenance Programmes.

Details the maintenance programmes to which a glider may be maintained.

104.109 Approval of Maintenance Programme.

Details approval procedures for maintenance programmes.

104.111 Annual Review of Airworthiness.

Details the validity of the ARA.

104.113 Technical Log.

Details the requirements of an acceptable techlog.

GNZ TECH-19, DI & Techlog Booklet, meets this requirement.

104.115 Pilot maintenance.

Details the maintenance that owners may carry out on their own glider.

1. Application and Renewal for GNZ Engineers Approval. TECH-17.

This GNZ form has been rewritten. It now covers such things as Privacy Statement, and the requirement for all persons in the NZ Aviation Arena to meet the Fit and Proper Person test in accordance with Section 9 & 10 of the Civil Aviation Act 1990.

It also introduces the GNZ Course Tutor. (Engineering Training Instructors if you like, the name Course Tutor is to prevent confusion with Pilot Training Instructors)

The change to approved persons (Course Tutors) able to conduct training in various critical areas of glider maintenance is for two basic reasons.

1. Past training has proved to be below standard, particularly in the areas noted.
2. The Airworthiness Committee intends to bring it's training in line with current requirements within the GNZ. (ie. An Instructor is permitted to teach only that which they themselves have been taught and approved to teach.)

MOAP Part 3, Engineer Approvals:

5. Course Tutors.
 - 5.1 Course Tutors are senior GNZ Engineers who carry out the training of GNZ Engineers.
 - 5.2 Course Tutors will be approved to conduct training in the engineering practices they are themselves authorised to teach.
 - 5.3 GNZ Engineers wishing to be considered as a Course Tutor in a particular subject or discipline shall forward a current CV giving their experience in that particular subject, complete with detailed written syllabus and exam criteria for approval by the GNZ Airworthiness Committee. The GNZ will make a charge for assessment of an applicant's submission.
 - 5.4 A Course Tutor's approval is normally attached to their GNZ Engineer approval and is renewed at the same time subject to currency.
 - 5.5 The NAO may appoint a non-GNZ Engineer as a Course Tutor for the purpose of providing specialised engineering training.

2. Application and Renewal for GNZ IA-Glider Approval. TECH-18.

This form details the requirements for the application of an GNZ Inspection Authorisation - Glider.

3. Daily Inspection and Techlog Booklet. TECH-19.

This booklet meets the requirements of **CAR Part 104.113**.

It has provision for the recording of:

The Daily Inspection & the Duplicate Rigging Inspection.

Major Defects (which ground the glider) & Minor Faults (which do not).

Daily hours & minutes flown & number & type of launch.

Powered Glider Supplement to record engine starts, Hours & minutes.

An area to record minor surface damage.

An area to record commonly used frequencies & phone numbers.

These booklets are available from the GNZ .

4. GNZ Tech Log. Tech-19a.

Tech-19a is the GNZ approved “Techlog” portion of the complete “Daily Inspection/ Techlog Booklet, and is in accordance with CAR Part 104.113.

This form is to be printed on **BLUE** paper.

It is to be secured in the centre page of the DI book.

This will allow this page to be identified quickly and easily.

This will identify this page as being that described in CAR Part 104.113.

As many gliders fly little during each year, the DI book fills slowly.

Thus allowance is made for the previous (expired) tech-log portion of the DI book to be removed, and a current Tech-19a to be substituted by gluing into place in the centre page of the DI booklet.

This allows the previous history of daily hours, launches, pilot signatures, etc. to remain available for perusal by pilots and engineers.

With this in mind, the DI booklet may remain in use until such time as it becomes obvious that the available space will be filled before the next Annual Inspection. At this time the DI/Techlog booklet in total should be replaced.

The replaced book should be held with the gliders maintenance records.

5. Maintenance Schedule for Gliders and Powered Gliders. TECH-22.

GNZ Maintenance Schedule, (Form TECH-22) For Gliders and Powered Gliders.
(Issue10. dated 09/04).

This GNZ form has been upgraded to reflect the changes in Airworthiness policies, Civil Aviation Rules, and in reference to the Annual Inspection.

Please note the Issue No. & Date.

This Schedule can be split up and used as described in the notes enclosed, therefore it is not necessary to photocopy the whole document each time, only the applicable pages.

It is the owners responsibility to ensure that their Glider or Powered Glider is maintained to the appropriate standard.

(ie. Supplemental Inspection, Annual Inspection, and Annual Review of Airworthiness.)

TECH-22 11 Pages in total.

Guideline notes.

Validity periods of Release to Service.

A Glider or Powered Glider subject to a Supplemental Inspection,
(see MOAP, Part 3. for definition.) Maximum of 6 months.

A Glider or Powered Glider **NOT** subject to a Supplemental Inspection.
Maximum of 12 months.

(Remember the validity periods noted are maximum periods, the certifying Engineer may require that inspections be at more frequent intervals.)

Definition of Operations requiring a Supplemental Inspection.

(MOAP, Part 3)

*The **Supplemental Inspection** is applicable to all two seater gliders used for flight training, all Club single seat gliders, and all gliders used for hire and reward.*

The defining criteria is, is this glider flown by a number of different pilots, of different skill levels, and of different training regimes, and/or is the glider logging over 100 hours per year.

Thus it is applicable to privately owned gliders which are hired out on a commercial basis.

*It is **not** applicable to privately owned single or two seat gliders flown by the owners, unless exceeding 100 hours per year.*

In the case where the flying is being done by the owners, the Supplemental Inspection area may be struck out, indicating that it is not applicable.

It is up to the GNZ Engineer certifying the Annual Inspection to determine this.

TECH-22 Maintenance Schedule for Gliders and Powered Gliders.

Page 1.

Job Number....

This is to be a unique number or combination of letters and numbers to identify the job within your own records, and in the aircraft logbook, for future reference.

It should be a logical sequence reference.

Date... This is the date in which the job was **started**.

Aircraft Registration... Add the last two letters.

To identify, at least in the short term, the particular aircraft being worked on.

Flight Manual Ref. AIR

Add the CAA four letter reference from the front of the F/M.

This is important if you have a need to check on the Flight Manual amendments with CAA.

Manufacturer... }

Model.....} All from the front of the logbook.

Serial Number..}

To positively identify which airframe the work was carried out on.

Aircraft can and sometimes do change registration letters when there is a change of ownership.

Is the glider subject to a Supplemental Inspection? **Yes** or **No**.

This will have an influence on the extent of the inspection carried out, and on the date of the following Inspection.

For instance, if this is a Supplemental Inspection on a training glider, TECH-22, Section 1 only, will be used during the inspection.

If it is to be an Annual Inspection, TECH-22, sections 1 & 2 will be required. (See definition in MOAP, Part 3.)

Total time in service, .. From the logbook.

Total flights..... From the logbook.

Expiry dates of the Airworthiness Certificate, and Annual Inspection...

From the logbook.

Initial on the right side to indicate that the job has been satisfactorily completed.

Para. 1.3.

When checking A/D's against the Modification Log (pink pages) of the logbook, the following should be checked for applicability..

Gliders general.. (DCA/Glider/1b to ?.)

Gliders particular to type.. (DCA/ ? / ?)

Electrical..... (DCA/Elec/16. may be applicable to gliders.

Instruments..(DCA/Inst/ ?)

Emergency...(DCA/Emy / ?)

Radio.....(DCA/Rad / ?)

Brakes.....(DCA/Brake / ?)

Seats.....(DCA/Seat/ ?)

And don't forget to check on reissued or upgraded A/Ds.

The Manufacturers Maintenance Manual must be consulted for specific maintenance required. If work has been carried out in accordance with a Manufactures Service or Maintenance Manual, make reference to this Manual in Para. 1.4 .

Section 2. Page 5.

The Annual Inspection Section gives references to where the procedures and requirements may be found for each inspection or check.

The person carrying out the inspection should initial or tick, on the right to indicate that the action referred to in that particular instruction, has been carried out and satisfactorily completed.

Writing the letters N/A, opposite the arrow indicates that this particular item is **Not Applicable** to this inspection.

Please note that it is now a requirement for all gliders to be weighed and C of G, and max./min. cockpit loadings to be determined and placarded.

To save on photo copying, it is acceptable to remove or leave out those pages not used, providing that the previous page is notated at the bottom to the effect that "Page(s) (?) (?) removed as being Not Applicable to this Inspection". (And initial).

(eg. If you were carrying out a Supplemental inspection on a club glider, you would use pages 1, 2, 3 & 4 only. thus on the bottom of page 4 you would note that "Pages 6 through 12 deleted as not applicable to this inspection."

Section 3. Page 8, 9, 10.

This for specific inspections after abnormal flight loads, heavy landings, severe ground loops, & gear up landings.

Section 1, Appendix A.

Power plant.

When running engines, certain items should be recorded for future reference.

Cylinder compressions if checked.

Max static and idle revs.

Mag drop.

Fuel and oil pressures.

Cylinder and oil temps.

Documentation.

Manufactures Flight Manual...

Give date issued, and revision number, (if any). this can be found on the page for revisions in the manual, and refers to revisions to the manual issued from time to time by the manufacturer.

NZ Flight Manual..

Quote the AIR number, and latest amendment number from the amendment list page. This refers to amendments to the NZ portion of the Flight Manual, issued by CAA.

Both the above are to check that the aircraft has the current, correct flight Manual, c/w the latest revision and amendments.

Providing the glider carries the correct placards for Speeds and Weights, it is not required to carry the Flight Manual in the glider. (However it must be available to the pilot to consult prior to flight.)

The following forms **must** be carried in the Glider.

CAA 2100 Airworthiness Certificate.

CAA 2129, Radio Station Approval.

This form shows the radios, transponders, ELT's, etc, which are approved to be fitted to this aircraft.

CAA 2173 Weight and Balance.

GNZ DI/Techlog book.

These forms must be current and carried in the Glider.

Name and address of owner.

To update GNZ records, and to know where to send pertinent information if required.

Other items now changed under the new policies are..

A Certificate of Airworthiness is now an **Airworthiness Certificate**.

The post C of A (or Airworthiness Certificate) functional check flight is not a "test flight", and is only required if the certifying engineer asks for it to be carried out.

If it is required by the certifying Engineer, a "Functional Check Flight" may be carried out by any Instructor or Senior pilot holding an unrestricted endorsement for that type of Glider or Powered Glider. He/she is not required to hold a "test pilot's approval" for this. See the MOAP for requirements.

The "Test pilot's Rating will still be required for things like Mods, or testing of "amateur built" gliders. In such cases, a Test pilot rating/approval will be issued by the National Operations Officer, in consultation with the National Airworthiness Officer, and on recommendation from the Regional Operations Officer.

See the MOAP for requirements.

Reweighting. A reweigh of a Glider or Powered Glider is required after Major Repair or after resurfacing, (Painting) and at each ten year interval.

The aircraft's Weight and Balance must be reviewed and noted as being current by the certifying Engineer at each Annual Inspection. (Form MOT/CAA 2173 in the Gliders Flight Manual.)

Radio, Altimeter and Transponder systems are now maintained on a 24 month cycle. (See CAR Part 43.59, & 43.61) (Appendix B & D.)

ASI maintained "On Condition"..

On Condition Maintenance is a preventive process in which an item is monitored either continuously or at specified periods. The item's performance is compared to an appropriate standard in order to determine if it can continue in service.

Transponders must be maintained in accordance with Part 43.63, (Appendix E.)

Note. When carrying out Airworthiness Directive DCA/Glider/1B, take particular note of, not just the cables, but also the condition of the "S" tubes. We have now had three reported cases of these tubes being completely worn through by the cables. All aircraft involved were Grob Twin 103's, used for training.

Your glider should now have a GNZ form TECH-29, Aircraft Maintenance Program, detailing that the aircraft shall be inspected in accordance with the following schedules.

Daily Inspection or Pre-flight:	GNZ Daily Inspection Book.
Supplemental Inspection;	GNZ Tech-22, Section 1.
Annual Inspections:	GNZ Tech-22, Sections 1 & 2. (latest issue.) And/or Manufacturers Maintenance Manual.
Abnormal Occurrence:	GNZ TECH-22, Section 3.

Components shall be overhauled/retired from service at the periods recommended by the manufacturer unless:

- (a) Otherwise prescribed in NZ Civil Aviation Rules, or
- (b) Specifically referenced in GNZ Manual of Approved Procedures.

Inspection to be carried out prior to release to service, and issue of Techlog, is; GNZ TECH-22, Section 1 & 2.

If your Maintenance Program details are a little different, do not worry. CAA no longer issue form 1451, and now leave it up to the GNZ to determine the maintenance schedule for gliders through TECH-22, latest issue.

Simply have your GNZ Engineer use the current GNZ TECH-22 (as supplied), and all will be well.

GNZ Airworthiness Committee
RJH.