

Gliding Australia Training Manual

Pilot Guide



Unit 42

Daily Inspection, Pilot Maintenance Limits,
DI Certificate

Unit 42 - Daily Inspection, Pilot Maintenance Limits, DI Certificate

WHAT THIS UNIT IS ABOUT

To develop the skills and knowledge required for assessment and examination by an authorised Daily Inspector (DI) Examiner:

- To perform a daily inspection on a glider;
- Including elements of pilot maintenance within approved limits, and;
- Correctly complete the DI Certificate.

WHAT ARE THE PRE-REQUISITES FOR THIS UNIT?

- GPC 25 Threat and Error Management;
- GPC 24 Human Factors and Pilot Limitations;
- GPC 3 Pre-flight Preparation

COMPLEMENTARY UNITS

- There are no complementary units

KEY MESSAGES

- Human factors matter. Self-discipline and avoidance of interruptions and distractions are critical to correct daily inspections. If interrupted, start again.
- Use the checklist in the Daily Inspection Schedule in the Maintenance Release.
- Know the glider. Check the type-specific manuals. Seek advice from others with experience of inspecting that glider type.
- Beware of airworthiness problems and risks associated with poor ground handling.
- Pilot safety depends upon Airmanship, Airworthiness discipline and Standards.
- Near enough is NOT good enough, she'll be right is NOT right. Cavalier attitudes towards airworthiness and maintenance may have serious safety consequences.
- A signed Daily Inspection by a qualified inspector certifying an airworthy glider is a prerequisite for flight. No exceptions.
- A signed Daily Inspection certifying an Independent Control Check after disconnection and reconnection of controls is mandatory. No exceptions.
- Look at the glider from a distance first, and flight control functionality, checking major airworthiness defects before examining the detail.

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PILOT GUIDE FOR THIS UNIT

The DI training

- All solo pilots should aspire to qualifying for a Daily Inspection (DI) Certificate. Once you are flying solo having DI certificate provides more independence as you no longer need to wait for someone else to do this task.
- There are various levels of qualification related to aircraft inspection, which includes the pre-flight walk around inspection, Daily Inspection (DI) and the Annual Inspection (Form 2). The DI certificate authorises you to inspect and approve the glider for flight on any one day, and record this in the Maintenance Release.
- The DI Certificate also approves you to conduct a number of basic maintenance activities on the glider.

Training to qualify for a DI Certificate

- You will be asked to assist your instructor with daily inspection on your training glider. There is a lot to learn so you should carefully observe the DI on a number of occasions. You will then be invited to assist with the DI, under the supervision of the instructor.
- Your club will offer opportunities to participate in a range of activities:
 - 'Ground school' sessions on airworthiness documents and references, rigging and control connections, common defects and errors, relevant accidents and occurrences.
 - 'Ground school' sessions on human errors and biases, human factors, threat and error management, in the context of both daily inspection and pilot maintenance.
 - Supervised participation in pilot maintenance, defect repairs, annual inspections, glider de-rigging and rigging evolutions and post-rigging checks.
- Once you have gained experience you can receive Airworthiness education, training and examination from an authorised Daily Inspection Examiner.

Pilot Maintenance Training

- It is essential that solo pilots and Daily Inspectors understand the limits of allowed pilot maintenance. These are defined in the DI Handbook (and MoSP Part 3 Airworthiness and CASA regulations).
- Daily Inspectors may carry out and certify the following maintenance:
 - Inflate tyres (under inflation must be rectified before flight);
 - Change main wheels, tyres, tubes and brake shoe plates by exchange with serviceable item(s) or replacement of parts, including fitting axle nut split pins & brake shoe bolt lock-wiring (in the case of a hydraulic disc brake slave cylinder) under supervision from a Form 2 inspector.
 - Adjust cable actuated wheel brakes for better braking;
 - Change nose- and tail-wheels, tyres and tubes;
 - Secure removable ballast;
 - Clean out the fuselage and other components;
 - Replace simple gap tape – fixed surface to fixed surface, e.g. fuselage to wing junction;

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- Polish canopies using appropriate materials and processes;
- Remove or replace instruments (other than the ASI and altimeter) where this does not affect the pitot-static system, e.g. TE driven variometer; g meter, navigation display;
- Install and remove/replace batteries;
- Perform Independent Daily Inspections after re-rigging gliders;
- Lubrication as appropriate;
- Change or amend placards under instruction
- Change worn skid shoes and plates.
- It is self-evident that students must be supervised in carrying out these activities, by instructors, airworthiness officers and Form 2 inspectors as appropriate, until they are deemed competent in these tasks and hold a Daily Inspection rating.
- The principle here is: If you are not sure what you are doing, then do not undertake the matter on your own. Rather take the initiative and find competent assistance so that you have appropriate supervision while conducting the task, or that the other person carries out the task while you observe, assist them and learn from them.

THREAT AND ERROR MANAGEMENT

- Human Error may drive many non-airworthy conditions, including:
 - Flight with disconnected, obstructed or incorrectly adjusted controls;
 - Flight with mis-rigged pins and safety devices;
 - Flight with major defects not cleared;
 - Flight with Daily Inspection not completed and signed;
 - Flight with electrical, avionics, fuel, engine management and ancillary systems not correctly configured or functional.
- Pilots may rush inspections and checks may be less thorough. They may also be inclined to downplay the significance of a minor defect. Self-discipline is critical to safety outcomes.

THINGS YOU MIGHT HAVE DIFFICULTY WITH

COMMON PROBLEMS	
Problem	Solution
<ul style="list-style-type: none"> ● Not knowing what “correct” looks like for the glider you are flying 	Study the Aircraft Flight Manual Seek guidance from a qualified DI Inspector/Examiner
<ul style="list-style-type: none"> ● Distraction by other people 	Ask others not to interfere until you have finished the DI.

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HOW DO YOU DEMONSTRATE COMPETENCE?

- Describe the key elements of the GFA Glider Airworthiness System.
- Conduct Daily Inspections under direct supervision of Instructors and DI Examiners.
- Describe the implications of entries made, or missing, in the Sailplane Maintenance Release and Daily Inspection Record;
- Describe the airworthiness implications of defects, disconnections, obstructions, incorrect functionality, incorrect adjustments discovered during DIs that require judgement of potential non-airworthy conditions.
- Conduct allowed pilot maintenance actions on minor defects under supervision
- Recognise non-airworthy conditions.
- Complete a Daily Inspector Examination.

RESOURCES & REFERENCES

- Aircraft Flight Manual
- You should study the GFA “Daily Inspectors Handbook” available on the GFA web page under MOSP 3 under Documents.

http://doc.glidingaustralia.org/index.php?option=com_docman&view=download&alias=1185-air-d0010-di-handbook&category_slug=di-handbook-sailplanes&Itemid=101