

AIRWORTHINESS ADVICE NOTICE

TYPE AFFECTED: DG-1000

SUBJECT: Miscellaneous airworthiness information.

BACKGROUND: This AN records airworthiness information which is useful to know.

MODIFICATIONS: Copies of Service Bulletins may be obtained from Type Certificate Holders website.

1. **FRONT SEAT HEADREST ADJUSTMENT:** DG-Flugzeugbau has issued Technical Note No. 413-01 which approves modification of the front seat headrest permitting increased longitudinal adjustment to accommodate parachutes of different thicknesses.

DEFECTS:

1. **CANOPY LOCKING PIN AND ASSEMBLY:** (Previously AWA 2017-1/2) DG-500 and early production DG-1000 aircraft to serial number 10-144 could experience rear canopy locking mechanism failure which could prevent exit. The rear locking pins can unscrew and disconnect rendering the rear canopy locked closed. It is recommended at annual inspection to open the front and rear canopies and wipe clean each locking pin and apply a right hand tightening rotational force to the pins with fingers only. If the pin rotates, the canopy lock mechanism requires repair. Note that the rod is locked by nut and Loctite. Take care and ensure that the locking is not broken by carrying out the test. Current production from S/N 10-144 onwards have been changed to a welded unit preventing the pin working loose due to vibration.

2. **RUDDER TRAVEL RESTRICTION:** (Previously AWA2017-3) Some DG-1000 types can get restricted rudder travel when the front rudder pedals are locked in the full forward position, the rudder pedal, depending on the individual aircraft, may contact either the top and/or bottom of the fuselage. Tall pilots therefore may not get full rudder deflection required to effect spin recovery.

SIGNED:



CHIEF TECHNICAL OFFICER

For and on behalf of:

**THE GLIDING FEDERATION
OF AUSTRALIA**

This situation may be exacerbated by cable stretch. Be aware that if replacing rudder cables and using the old cables for length reference to make allowance for cable stretch.

3. TAILPLANE MOVEMENT / FREE PLAY: (Previously AWA 2018-1/2) Tailplane mounting pins are known to become loose permitting tailplane free play, as much as 10mm freeplay at the tip. The type certificate holder has issued DG Service Information document No. 101-18 which gives specific tightening instructions for the forward horizontal tailplane connection. Where free play is detected, tighten the forward connection IAW DG Service Information document No.101-18.

For the rear connections, DG recommend when torqueing using a spanner on the fitting to prevent rotation and galling. DG states that 20 Nm torque is appropriate. Nut replacement is recommended. Ensure the pin has bottomed out and is not sitting proud. This can be confirmed by sight or feeler gauge.

4. UNDERCARRIAGE CONTROL KNOB NOT REMAINING IN LOCKED POSITION: (Previously AWA 2018-3) The DG 500 and DG1000 are subject to the undercarriage control knob not remaining rotationally locked. The control push rod is subject to spring forces which 'breaks' the torque on the jam nut / lock washer combination permitting the rod to rotate on the end fitting threads.

Access is gained through the left rear seat control cover. Loctite stud locker high strength is recommended to supplement the lock washer and hold the fitting in correct orientation.



Figure 1: Undercarriage push rod in left rear cockpit

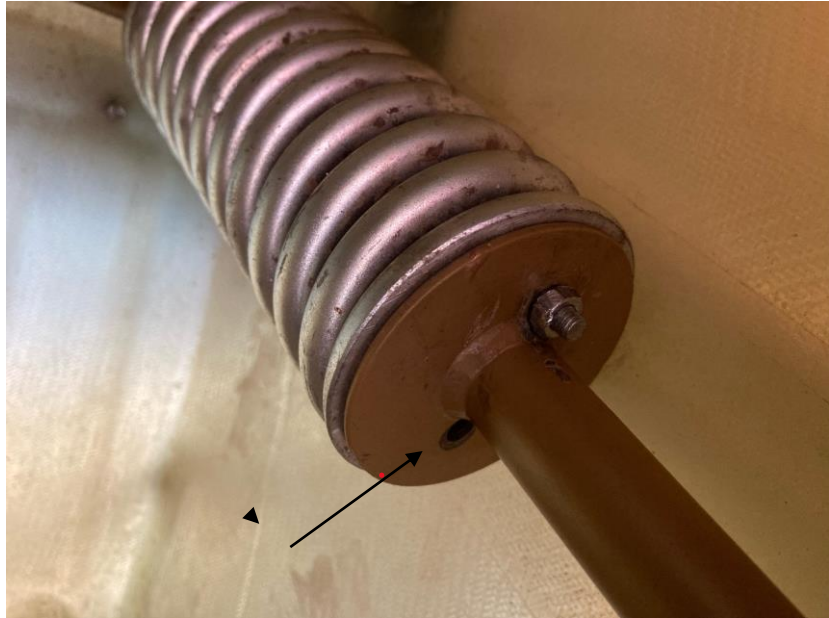


Figure 2: Undercarriage push rod in centre fuselage. Elevator trim shockcords are on right hand side

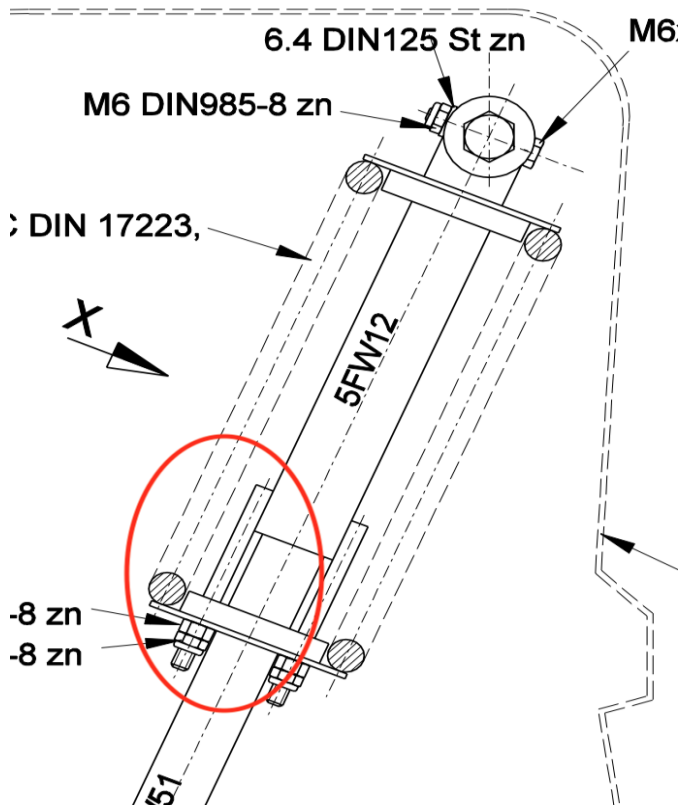
5. SHOCKCORDS: The DG-500 and DG-1000 variants use shock cords to apply added trim tension and apply tension to tow release cables when not under load. See example in Figure 2 above. The trim control will lose effectiveness if tension is lost, or the release cable could snag or foul if not kept under tension. The release knob hanging down is an indicator that the shock cord is losing effectiveness.

All shock cords used on these types will need replacement with time. They should be checked for effectiveness at each annual inspection. The trim mechanism is located beside the main wheel well. The release cables under the rear seat instrument binnacle.

6. The DG-1000S has three undercarriage options, two are retractable and one non-retractable. All three have a sprung undercarriage. These spring units are known to suffer failure of the bottom aligning bolts. The spring unit can be repaired by a CASA approved licensed welder. This notice is to make pilots and maintainers aware of the potential failure point.



Welded alignment bolt failed, one alignment bolt with nut remaining.



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MAINTENANCE TIPS: 1. **CANOPY JETTISON SYSTEM:** The DG-1000S Flight Manual section 4.3/B.2.b and section 7.14 refer to canopy jettison. Section 4.3/B.2.b lists at a minimum a 3 month functional check requirement. The GFA system of maintenance only requires canopy jettison to be performed at the annual inspection. Two defect reports have been received detailing both the front and rear canopies ‘hanging up’ when testing for jettison. Deformed canopy seal and excess rubber adjacent to the rear hinge was preventing a clean jettison. The seal excess sticking out of the gutter also pre-loads the canopy locking system making the canopy harder to open and close. Trimming the seal rectifies the situation.

It is recommended that the jettison system be tested regularly as per the manufacturer’s recommendation and the maintenance release endorsed in part one accordingly. Alternatively, regularly inspect the canopy seals for excess sticking out.