



AIRWORTHINESS DIRECTIVE

TYPES AFFECTED: Glaser Dirks DG-300 (Elan), serial numbers 3 E 1 to 3 E 264 inclusive

SUBJECT: Stiffening of the Airbrake system supports in the wing root rib area

BACKGROUND: The manufacturer has issued Technical Note TN 359/14 (which forms part of this Airworthiness Directive) following DG-300 (Elan) gliders being found overseas with delamination or lack of original bonding between the wing shell and the ribs supporting the Airbrake drive torque tubes at each wing root. Any freedom or loss of stiffness in those supports can reduce the over center load locking the Airbrakes in. One or both Airbrakes may then prematurely extend during loads generated by high speed flight or when responding to "G" forces.

ACTION REQUIRED: (1) BEFORE NEXT FLIGHT.

An inspection of the wing root Airbrake pivot area in accordance with TN 359/14 is to be carried out.

(A) If no defects are found the glider is to be placarded:

* Vne LIMITED TO 108 knots I.A.S

* NO AEROBATICS ALLOWED

(B) If defects are found the glider is to be removed from service until the modification detailed in TN359/14 is incorporated.

(2) AT OR BEFORE THE NEXT FORM INSPECTION

The stiffening of the wing root ribs around the Airbrake pivots, detailed in TN 359/14 is to be incorporated following which the Flight Limitations Placard can be removed from the cockpit.

WEIGHT/BALANCE: No change

DOCUMENTATION: Glaser Dirks TN 359/14 forms part of this Airworthiness Directive including drawing no DG 3F37.

IMPLEMENTATION: ACTION (1)

The inspection of the root rib and Airbrake system must be carried out by a G.F.A. Inspector rated "C of A" on any type of construction material. The inspection to be recorded by log book entry.

Issued by:

Chief Technical Officer,
Airworthiness

14.4.1989

For and on behalf of:

GLIDING FEDERATION OF AUSTRALIA

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ACTION (2)

The reinforcement of the Airbrake pivot shaft supports must be carried out by the holder of a G.F.A. Inspectors certificate endorsed for "G.R.P. Major Repairs" The repair to be certified by log book entry.

COMPLIANCE:

The requirements of this Airworthiness Directive are mandatory. This Directive is issued pursuant to the Civil Aviation Regulations under the delegated authority of the Civil Aviation Authority

Subject: Airbrake - locking - system at wing root

Concerning: DG-300 (Elan) serial no. 3 E 1 to 3 E 264

**Accomplish-
ment:** measure 1 prior to next take-off
measure 2 before next annual inspection, but
not later than Dec. 31. 1989

Reason: During inspection there was found at some DG-300
(Elan), that the bulkheads 3 FE 11 and 3 FE 12 next
to the wing-root have loosened due to insufficient
glue-connection with the wing shell.
So the over-center-lock of the airbrakes may be
not reliable and at speeds faster than 200 km/h
(108 kts) and simultaneous accelerations the air-
brakes may extend self-reliant and antisymmetric.

Measure 1: At the rigged glider, the locking-force of the
airbrakes has to be measured at the handle in
the cockpit with a spring-balance and adjusted if
necessary. The force should be higher than 15 daN
(see maintenance manual page 9 pt. 1.5.2).
After derigging, the airbrake of each wing has
to be locked and to be unlocked at the automatical
control-connection at the wing-root by using a
plumbing-pliers. Therefore protect the connection
by wrapping cloth around.
Check, if the wing-root shows deformations and if
the control-system shows movement in spanwise
direction.
If both is not the case, the glider may be used
with the following restrictions until measure 2 has
been executed:

a) never exceeding speed VNE is limited to
200 km/h (108 kts).

b) no aerobatics are allowed.

The data-placard has to be modified by the enclosed
sticker. On the covering glass of the ASI a red
mark (tape) has to be attached at 200 km/h (108 kts)

Measure 2: Repair or reinforce bulkheads 3 FE 11 and 3 FE 12
according to drawing 3 F 37, repair instructions
and to the DG-300 repair manual.

Necessary materials:

Measure 1: placard for restrictions (enclosed)

Measure 2: Drawing 3 F 37 (enclosed)
Repair-instructions (enclosed)

Polyester resin and hardener

Epoxy-resin and hardener GE 162 / C 260

or MGS 160 / H 160 A

or MGS 285 / H 286

Rohacell 51, Divynicell 60 or ply-wood 5 mm thick
fibre glass fabric Interglas 92140


Note: Measure 1 may be executed by the owners himself

Measure 2 has to be executed by an authorized
repair shop.


The measures are to be entered in the aircraft-log
referring to TN 359/14.

Author

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09.01.1989



Dipl.-Ing. (FH) Alwin Güntert

Type-certification inspector


Dipl.-Ing. Wilhelm Dirks

LBA approved:

The German original of
TN has been approved by the
LBA under the date of **14. Feb. 1989**
and is signed

by 
The translation into Eng-
lish has been done by best
knowledge and judgement.
In any case of doubt the
German original is
authoritative.

INSTRUCTIONS FOR REPAIR .

1. Unlock airbrakes.
2. Continue work according to drawing 3 F 37 as follows:
 - work cut-out Z into wing root
 - unscrew 3 F 26/2 from wing-root and dismount PVC-hose
 - grind wing root according to drawing
 - build rib 1,2,3 by using the drawing as model
 - grind 3 FE 11 and 3 FE 12 and inner fabric of wing shells in the repair area
 - adapt rib 1,2,3 into wing by sanding the contour
 - fix rib 1 and 2 with some polyester resin at correct position (only at 2-3 small spots)
 - pre laminate fabric X (5 x 92140 米)
 - apply some resin, thickened with cottonflocks, into the corners of repair area and add fabric X.
 - fix rib 3 with some polyester resin in the wing-root
 - close the root with fabric Y (5 x 92140 米)
 - after hardening open the holes for 3 F 26/2 again, pull the hose out and fix it to 3 F 26/2. Reinstall 3 F 26/2 back to the root
3. Temper the repaired area for 18 hours with 54°C. The airbrakes have to be unlocked.
4. Rig the glider and check the locking-force of the airbrakes. If necessary, adjust the lock (see maintenance manual page 9 pt. 1.5.2).