

SUBJECT : Main fitting L 4 of the all-flying tailplane

EFFECTIVITY : DG-100 Elan from serial no. E 13 on
and all DG-100 and DG-100 ELAN where during
a repair executed 1979 or later the fitting
L 4 has been replaced.

ACCOMPLISHMENT : Instruction 1: Prior to the next flight
Instruction 2 until Sept. 30. 1989
Instruction 3 until Dec. 31. 1989

REASON : On one DG-100 ELAN the main fitting L 4 of
the all-flying tailplane failed under violent
forces. Thereby it was detected,
that the welding was not done completely
over the whole wall thickness of the part.

INSTRUCTIONS : 1a) Limitation of the max. speed to 150km/h.
Aerobatics prohibited.
Therefore glue the placard (see
enclosure 1.) next to the data placard
in the cockpit and glue a red line at
150 km/h on the cover glass of the ASI
(e.g. with red tape).

1b) Lift and pull down the tip of the all-
flying tailplane (aircraft rigged) with
ca. 150 N (33 lbs.) (see enclosure 2.).
If damage is detected no more flying is
allowed.

2) Inspection of the fitting L 4 for
correct welding (see enclosure 3.).
If the welding is o.k. instruction 1 may
be cancelled.
If a failure in the welding is detected
the fitting must be repaired according
to instruction 3. Until the execution of
instruction 3 further operation of the
aircraft is prohibited.

3) Repair the fitting L 4 according to
enclosure 4.
After succesful repair the instruction 1
may be cancelled.

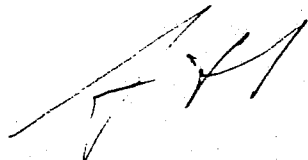
MATERIAL : Enclosure to TN 301/15
Welding wire 1.7734.2 for instruction 3.

REMARKS : Instructions No. 2 and 3 are to be executed
by the manufacturer or by a licensed work
shop and to be inspected and entered in the
aircraft logs by a licensed inspector.

Bruchsal 4, date 07.07.89



Author: W. Dirks



Type certification inspector:

LBA - approved:

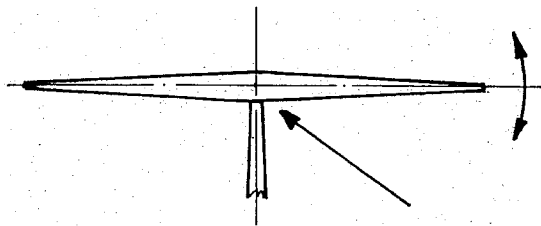
The German original of this TN has been approved by the LBA under the date of 13.07.89 and is signed by Mr. Schmaljohann. The translation into English has been done by best knowledge and judgement. In any case of doubt the German original is authoritative.

1. Cut out this placard and stick it next to the dataplacard in the cockpit.

**Max. speed limited to 150 km/h (81 kts)
Aerobatics prohibited
Execute the bending check of the allflying
Tailplane prior to each flight**

TM 301/15

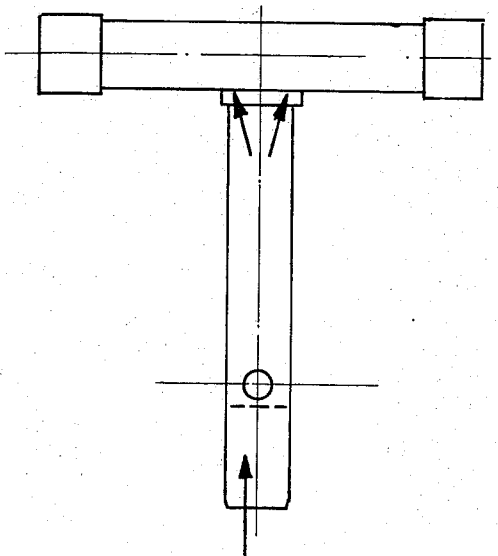
2. Check prior to each flight



± 15 daN (33 lbs.)

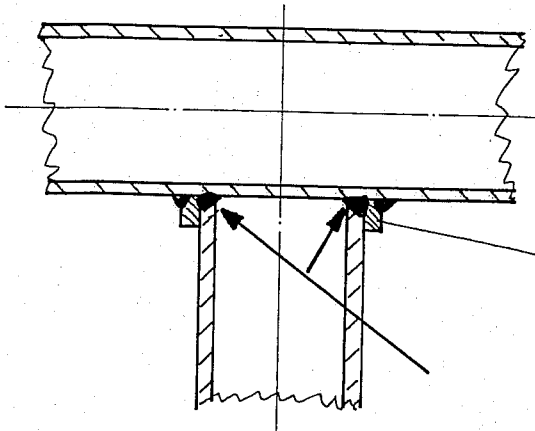
no permanent deformation is allowed

3. Inspection of the welding



Inspect the welding in the edges inside the tube by means of an Endoscope or an other suitable method.

If a plastic plug is glued into the tube, the plug is to be removed and to be glued into the tube after the inspection and repair by use of metal adhesive.

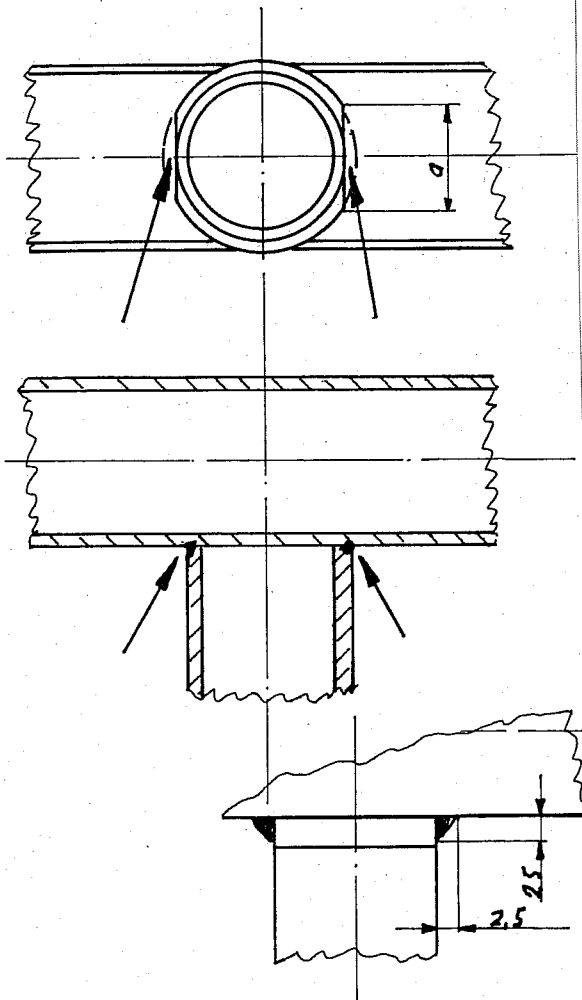


stop ring

This welding must be visible inside the tube.

4. Repair of the fitting L 4

The repair may be executed without removing the fitting from the tailplane.



- file off part of the stopring each side
- weld the fitting in the region "a". Therefore cover the structure of the tailplane with sheetmetal parts to protect it against heat.
- check again see 3. if the welding is correct and visible from the inside of the tube.
- the missing part of the stop ring must not be replaced.
- preserve the inside of the tube with a suitable protecting agent for hollow spaces.

Thickness of welding 2,5 mm (0.1 in.)

Welding method for 4 b):
Method WIG (Wolfram Inert Gas)
TIG (Tungsten Inert Gas)
Welding wire 1.7734.2

Issue: Juli 1989

W. Dirks

Author: W. Dirks

Type certification inspector: *AA*

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CONCERNING: TECHNICAL NOTE TN 301/15

Dear DG-100 owner!

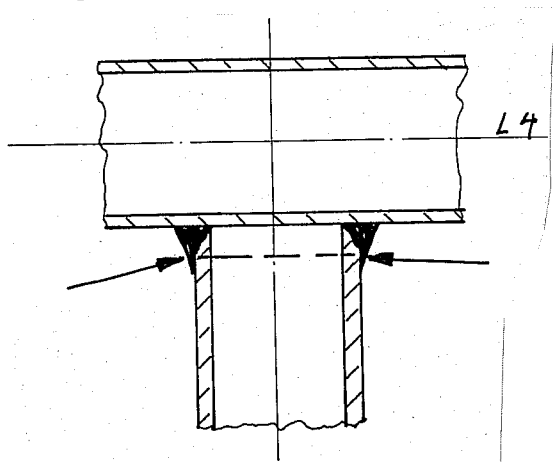
The execution of TN 301/15 brought up some problems.

1. Some DG-100 owners have executed the TN on their DG-100 although their glider was not concerned by the TN.

To explain: It is not necessary to see the welding at the inside of the tube, if the fitting L4 is made following the correct procedure. This is the case with those fittings not concerned by the TN.

On those gliders which are concerned by the TN the inspection with the endoscope is a check to be on the safe side and to avoid that too many fittings must be reinforced.

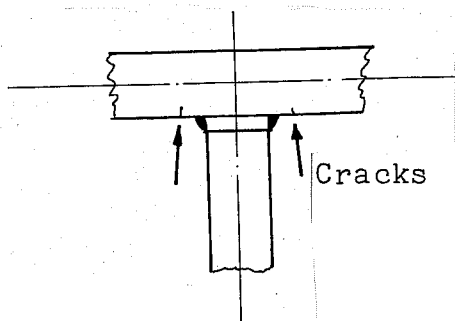
2. When making the welding at the fitting L4 it is possible, that the weld extends into the region where the fitting will project into its counterpart in the fin. So rigging the tailplane will be impossible.



In this case it is necessary to file off the excess welding carefully without filing away any material from the tube itself.

So it is necessary to inspect the tube after the filing carefully. If material has been taken away from the tube the fitting L4 must be replaced!

3. There have been difficulties when welding the fitting.

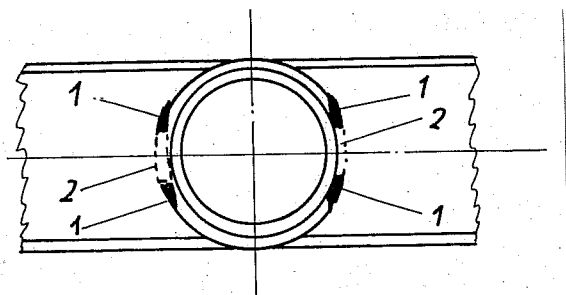


On one DG-100 after the welding cracks appeared next to the weld. The reason for the cracks is too fast cooling down of the weld. To avoid this any cooling of the weld is prohibited. In contrary the hot weld must be covered to achieve a slow cooling down. To avoid overheating of the ball-bearings in the fitting L4 proceed as follows:

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Do not execute the complete welding at once, but

weld first areas 1,
let cool down slowly,
then weld areas 2,
let cool down slowly again.



To achieve a slow cooling down, the weld should be covered by an asbestos blanket.

4. For the reasons of 3. all welded fittings have to be inspected for cracks.

Fittings with cracks have to be replaced.

5. In some countries the correct welding wire 1.7734.2 was not available.

If your airframe mechanic has problems to get the correct wire you may order the wire through the Glaser-Dirks factory.

Bruchsal 4, Nov. 21. 1989

Wilhelm Dirks

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