

COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF TRANSPORT

AIRWORTHINESS DIRECTIVE GLIDERS:

GFA/AD/155 GROB 10
Grob TM 103-6

TYPES AFFECTED: Twin Astir Serial Nos. 3000 to 3255 inclusive
Twin Astir Trainer Serial No. 3001-T-1 to 3254-T-31 inclusive

REASON:

Modification to avoid possibility of accidental loosening of fastening screws on the airbrake levers.

ACCOMPLISHMENT:

- (a) Carry out measure No. 1 before next flight.
- (b) Observe measure No. 2 until measure No. 3 is implemented.
- (c) Carry out measure No. 3 before 15th September, 1979

INSTRUCTIONS: Carry out modification as per instructions and drawings contained in TM 103-6 appended hereto and forming part of this A.D. composed of 7 pages in all.

MATERIAL:

2 sheet metal locks No. 103-4220.14
6 Hexagonal nuts M6 IN 9348

Obtainable from Laminar Pty. Ltd. 6 Margitich St. Croydon Park S.A. 5008

WEIGHT & BALANCE No influence

COMPLIANCE:

The requirements of this A.D. are mandatory and the modification must be carried out by not later than 15th September, 1979 by the holder of a D.O.T. 1109 authorised for approved mods on the type. The work done must be entered in the aircraft log book. This Directive is issued pursuant to Air Navigation Regulations under the delegated authority of the Secretary, Department of Transport.

Douglas Lyon

DOUGLAS LYON
CHIEF TECHNICAL OFFICER AIRWORTHINESS
GLIDING FEDERATION OF AUSTRALIA

Date of issue: 3rd August, 1979

B. GROB
FLUGZEUGBAU

Technical information TM 103-6

TWIN ASTIR
TWIN ASTIR
TRAINER

Instructions:

The main controls are located in the middle of the fuselage, behind the spars. The inner shaft of the control unit carries the aileron levers (upper and lower) each of these connected with a conic pin. The outer shaft of the control unit carries the air brake levers at the top and at the bottom, each of these levers being fixed with three hexagonal screws (M 6). The technical information concerns these six fastening screws. If necessary, operating the controls of the air brakes will help you identify the levers. Further information is given in the instructions for repair and on the attached pictures.

1. a) Before next start, check the tight seat of each of the 3 fastening screws at the upper and at the lower airbrake lever. The upper lever is easily accessible after lifting the boot cover. The lower lever is located under the fuselage structure behind the seat-back of the rear seat. At this point, it is recommended to use a pocket lamp and a mirror.
- b) In case one or more of the screws has got loose or has turned out for a few threads, it has to be tightened again. Use no force, so as not to damage the threads in the aluminium shaft.
2. Repeat measure N° 1 daily before the first flight, till measure N° 3 is carried out.
3. a) The main control unit at the centre of the fuselage has to be dismantled.
- b) Lock sheets to be inserted under the 6 fastening screws. Carrying out the repairs in all details according to repair instruction to TM 103-6 is mandatory.

Material:

2 Sheet metal locks Nr. 103-4220.14
6 Hexagonal nuts M6 LN 9348

Obtainable from Laminar P/L
6 Margitich Street
Croydon Park S.A. 5008

Weight and Balance: No influence

Burkhart Grob

Flugzeugbau GmbH & Co. KG

München, den 12. 6. 1979

LBA certified

gez. i. A. Dipl. Ing. H. Wilser

B. GROB
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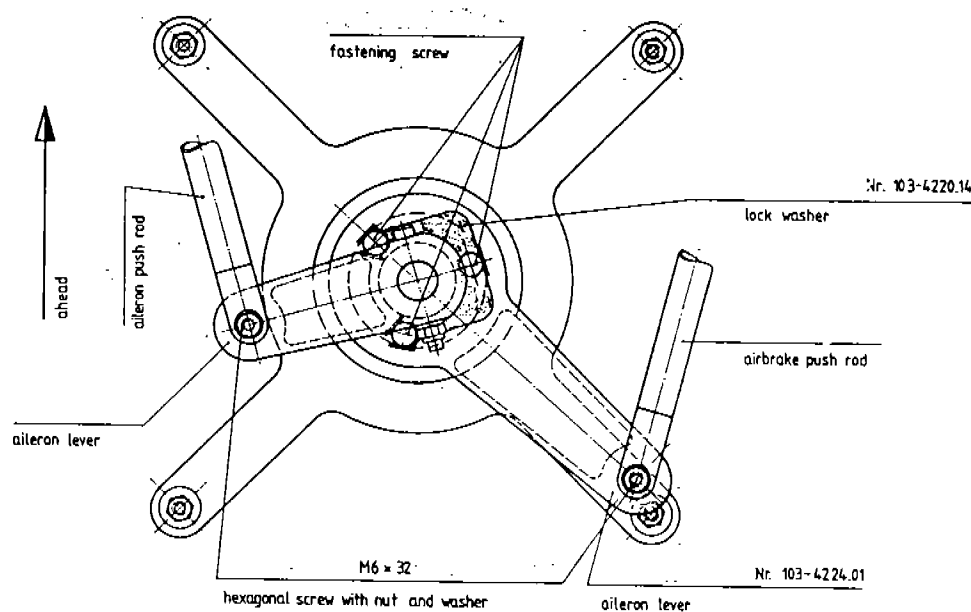
Repair instruction to
Technical information TM 103-6

TWIN ASTIR
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Instructions to insert the sheet metal locks below the fastening screws of the air brake levers, located in the main control unit at the centre of the fuselage.

1. Dismantle plane and erect fuselage. Remove rear canopy.
2. Remove head-rest, lift up the boot cover and fix it against the fuselage with cello-tape. Remove rear seat or push seat-back forward.
3. Remove aileron push-rod (fuselage, right) and air brake push-rod (fuselage, left) from the lower levers of the control unit. The rods are located under the fuselage structure behind the seat. The connecting of the rods consist of hexagonal screws (M6x32), washers and nuts; for freeing, use 2 fork keys, 10 mm width. After dismantling, screws, washers and nuts should be replaced into their forks and slightly screwed so that they don't get lost or mingled.
4. At this stage, the main control unit, also called "spider" has to be removed. (see Pict. 1).

The four legs of the "spider" are fixed on the fuselage structure with 4 hexagonal screws (M6x40, SW 10 mm). When loosening, hold back the nuts from underneath the fuselage structure. The "spider" can now be removed from above. If necessary, slightly turn the levers at the bottom part so that they fit into the gap of the fuselage structure. Here again, plug screws, washers and nuts into the four legs so that they don't get lost. While carrying out the repair, the four little push rods remain connected with the upper levers.



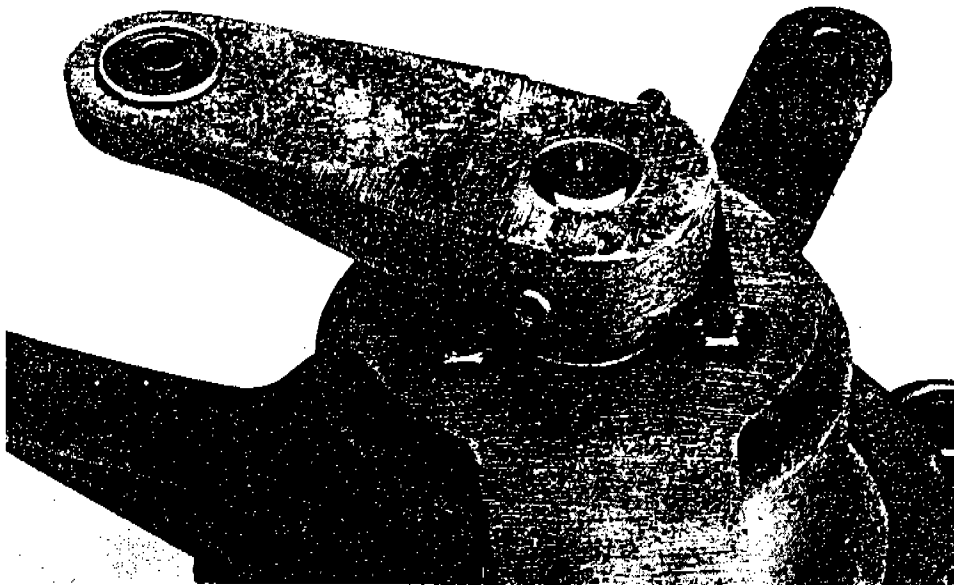
Picture 1:

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5. The lock sheet N° 103-4220.14 has now to be fixed to the lower air brake lever (Pict. 1 and 2). Loosen the screws (M6, SW 10 mm) on this end for about 2 turns. Insert the lock washer under the fastening screws as on pict. 1 and 2, then put on the screws again. Proceed carefully so that the thread in the aluminium shaft will not be damaged. The 5 lugs of the lock washer have now to be bent upwards as shown on pict. 1 and 2. Adequate tools are a screwdriver and a small hammer. Now adjust the lugs fast against the sides of the heads of the hexagonal screws.



Picture 2:

Lower airbrake lever shown with sheet metal lock, 2 fastening screws with 2 lugs bent upwards.

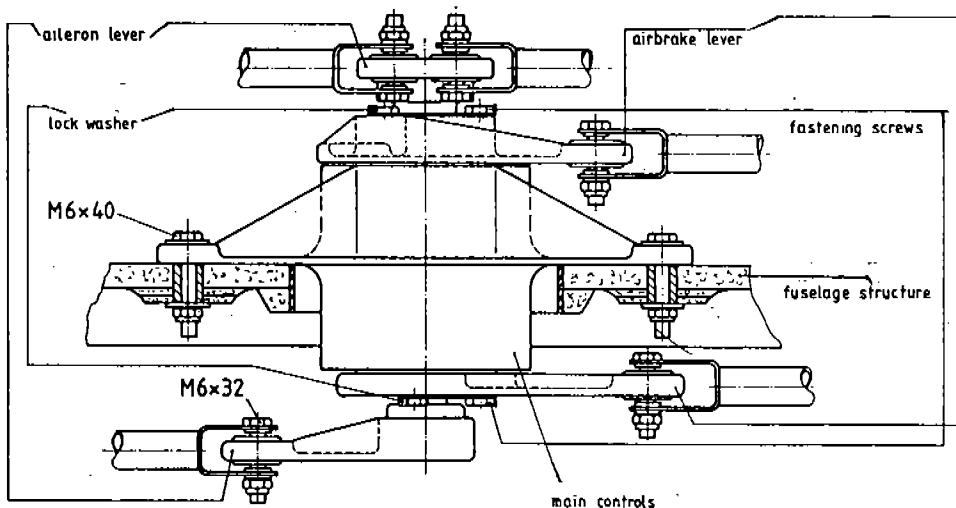
6. Now fix the second lock sheet to the upper aileron lever (Nr. 103-4221.01) as shown on Pict. 3 and 4. To insert part easily, bend the plate in a spiral. It is advisable to use a small hammer. Otherwise, proceed as in section 5.
7. Now, make sure that there is no touch between airbrake and aileron lever, moving the spider. If necessary, shorten or bend the lugs a little.
8. Refit the spider. Insert both lower levers without the rods through the gap in the fuselage structure, the four legs in place again; Insert the hexagonal screws (M6 x 40) and a washer from above, use a new nut with washer. Underneath put screw on. (Pict. 5)

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9. Connect the rods again with the main control unit. The aileron rod on the right fuselage side to the shorter lower lever. The air brake rod on the left fuselage side to the longer lever above (Pict. 1 and 5). Insert the hexagonal screws into the forks and put on the screws with washer and new nut.
10. After the repair, make sure again that all concerned parts and screws are properly fixed; check also that the aileron and air brake levers and pushrods move freely around the spider.
11. Assemble the plane, refit seat and canopy, connect all controls. Check the controls once again carefully, especially that the deflection is functional and even, left and right. After normally performing the repair, no trimming of the controls is necessary.

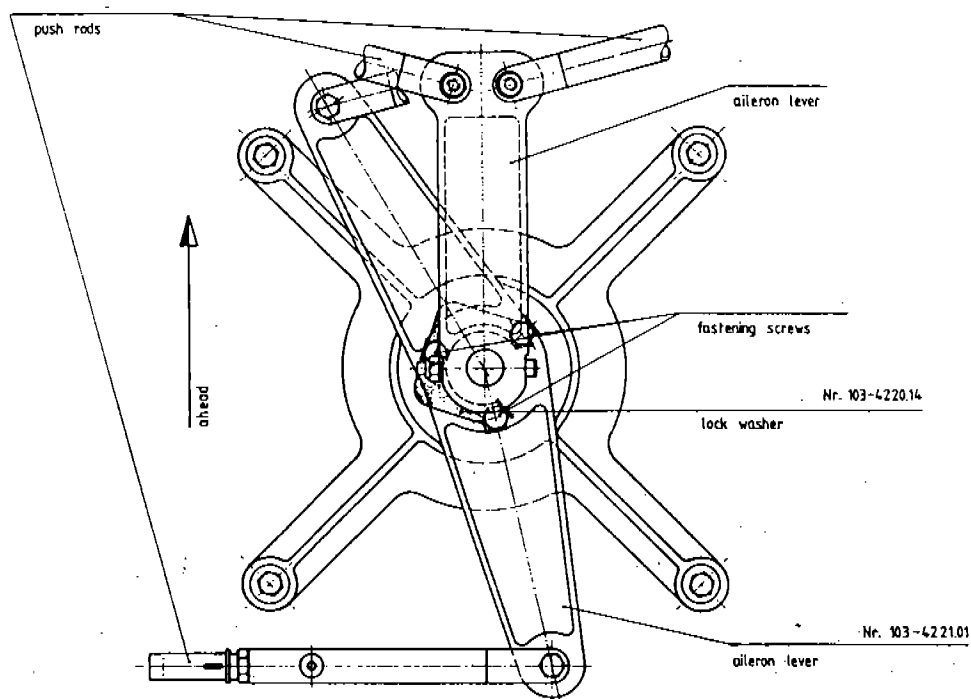


Picture 5:

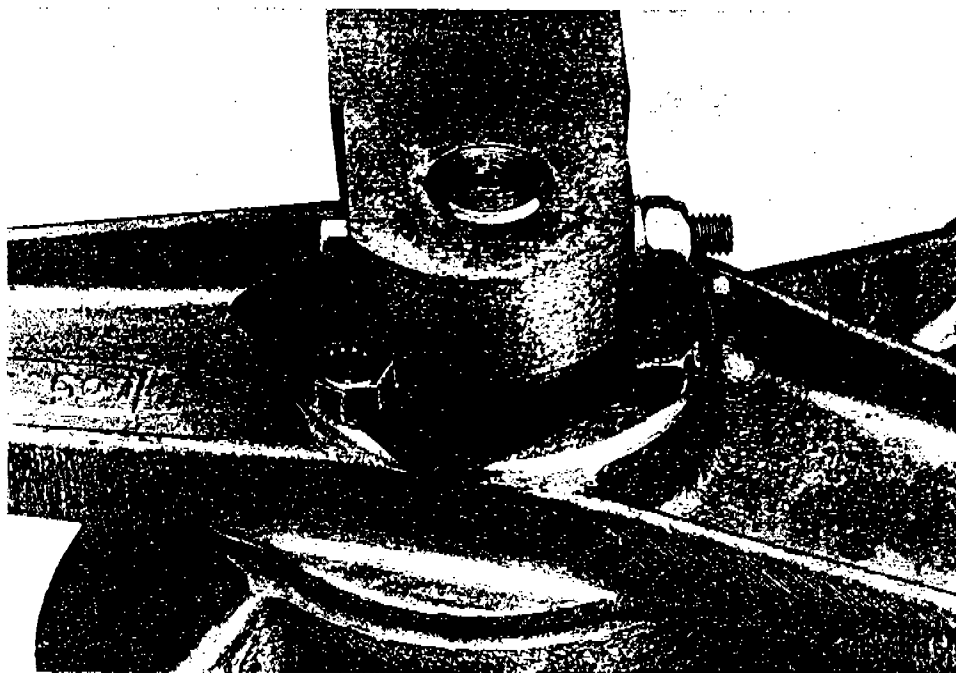
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Picture 3:



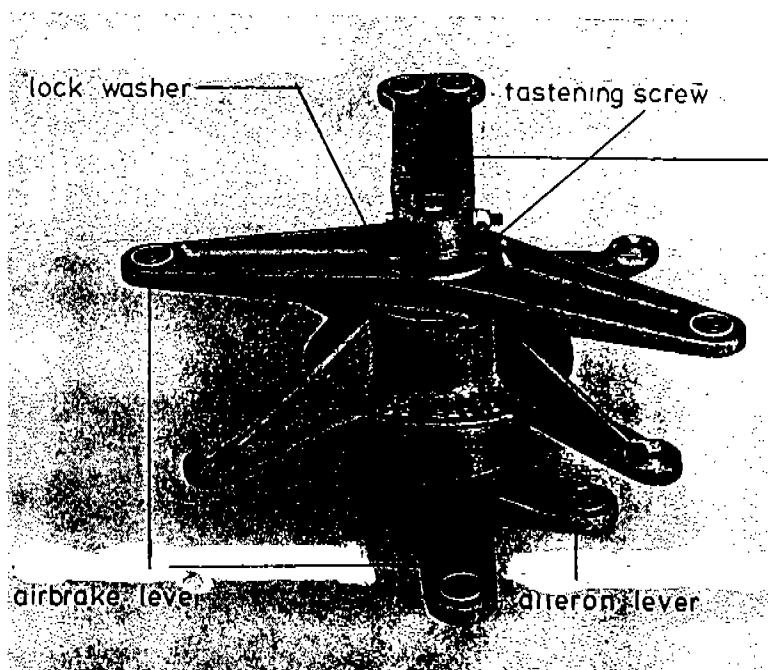
Picture 4:

Upper air brake lever with sheet metal lock. Also seen here: 1 screw with 1 lug bent upwards, 1 screw with 2 lugs bent upwards.

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Picture 6

View of the main control unit (upper lever shown without push-rods).

Material:

2 Sheet metal locks N° 103-4220.14
6 Nuts M6 LN 9348.

Recommended tools:

- 2 Fork Keys (SW 10 mm)
- 1 medium-size Screwdriver
- 1 small Hammer
- 1 electric torch

München, 21. 6. 1979
Western Germany

gez.: i. A. Dipl. Ing. H. Wilser