



AIRWORTHINESS ADVICE NOTICE

TYPE AFFECTED: Twin Astir, G103 Twin II & Acro, G103 Twin III & Acro, G103Twin III SL

SUBJECT: Miscellaneous airworthiness information.

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

Copies of service bulletins may be obtained from the GFA Secretariat.

MAINTENANCE NOTES: 1. Loose control column grip. A pilot suffered PIO just after takeoff on aerotow. The grip was pulled upwards and came off the control column. This caused momentary loss of control and a minor impact with the ground. Check at both daily and annual inspections.

2. Hinge roll pin removal. The most common method of removing the ailerons and elevators is by use of a hammer and pin punch. This type of impact can be quite damaging to the hinge and its attachment to the main structure. The following sketches have been offered by one of our inspectors as an alternative tool for roll pin removal, which does the job quite well and may prevent delamination of hinge attachments. (See GFA AD 213.)

The main problem is that the holes in the pins are individually drilled and are at all sorts of angles, hence the curved arch of the tool and the bolt in the trunnion so that the individual roll pin angle can be duplicated by the tool.

A secondary problem is that not all the hinge pins are the same length so that the tool-must cater for differing spans of hinge. The feet of the tool must slip and hold under the different sized ends of the pins. One foot of the tool (the foot in the handle) has to be loose so that it can be inserted below the end of the hinge pin first and then the main body of the tool presented to it, the foot then being secured to the body by a pin (a bent nail in the prototype). It

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is fiddly as the aileron/elevator also has to be held at the correct angle so that the roll pin being removed does not pierce the control surface shell. Once the roll pin is moving it slides out very easily.

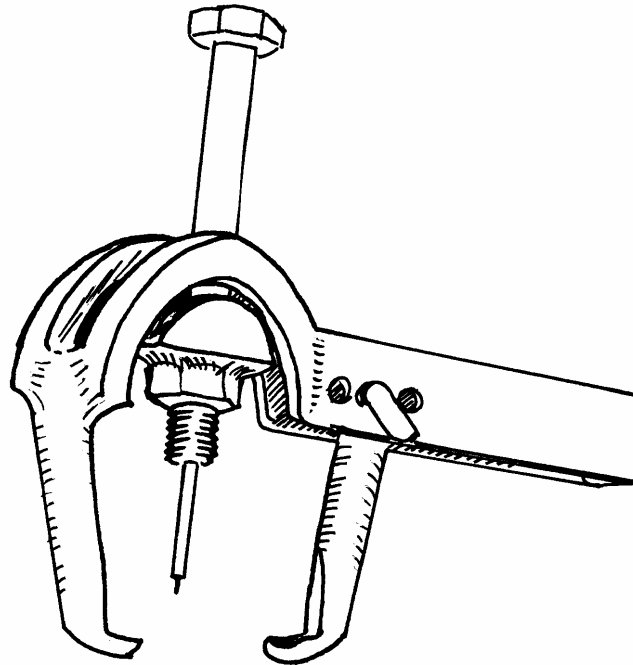


FIGURE 1 HINGE PIN REMOVER

The tool has to span differing hinge lengths of 30 mm, 35 mm and 42 mm. The holes in the main body assembly are drilled to suit these spans.

The feet are chiselled out at the 'instep' to suit the diameters of the hinge pin ends otherwise they will slip off when the bolt is being wound down and damage the aircraft finish. For Roll Pin insertion use another bolt in the tool with a flat ground end.

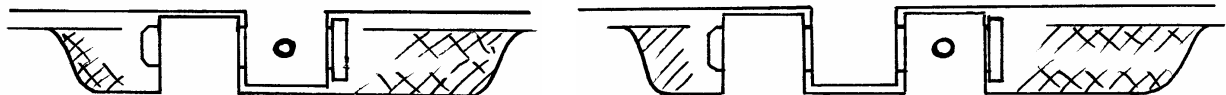


FIGURE 2. TYPICAL HINGE CONFIGURATIONS

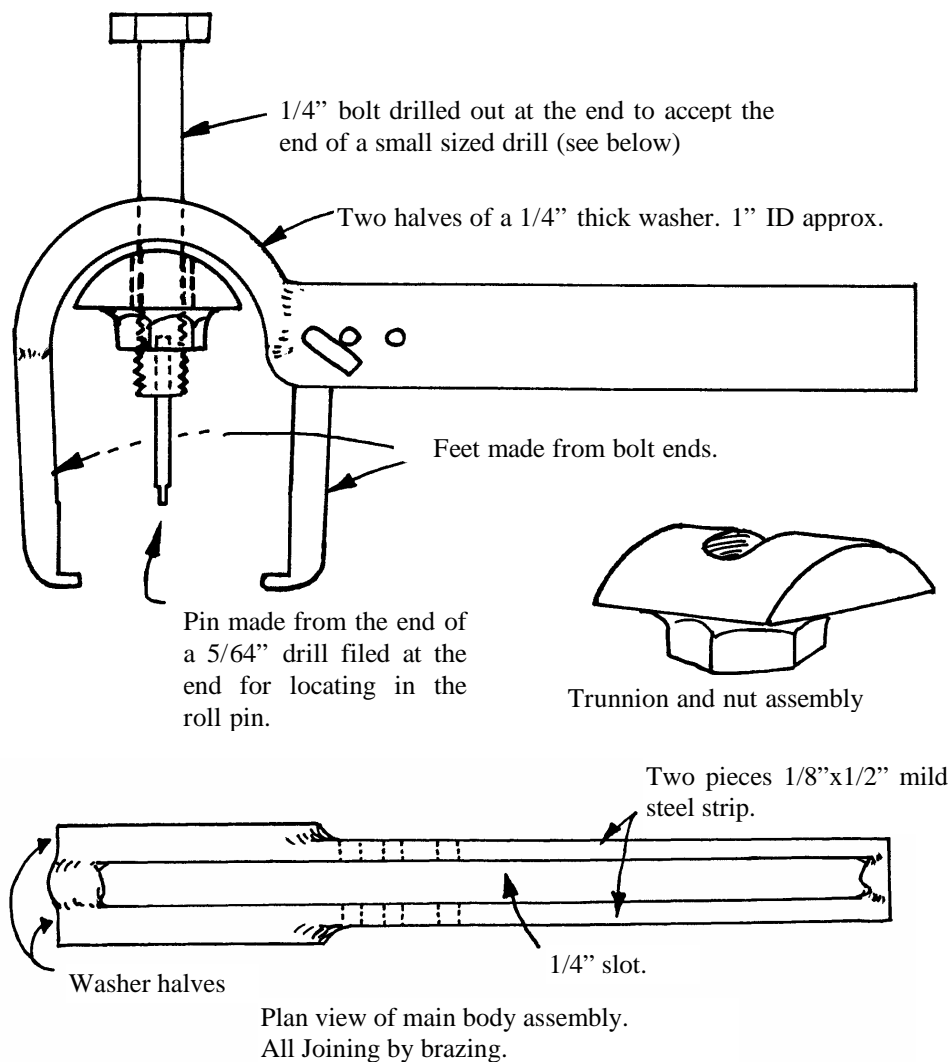


FIGURE 3 REMOVAL/INSERTION TOOL

3. Possible jamming of the elevator. This will apply to all Twin Astirs subject to elevator horn replacement to AD 260.

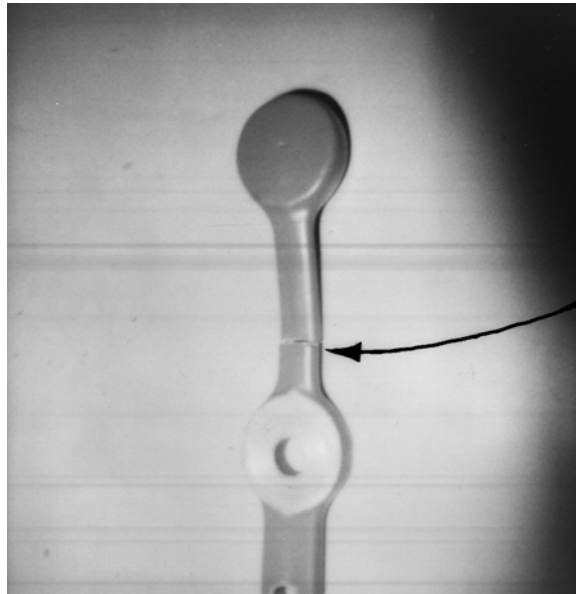
One case found of small foreign-object (possibly a left-over from the horn modification) protruding from one of the lower surface drain holes. The object caught on the fixed tailplane skin, this restricted elevator movement.

In this case the object was a teardrop shaped piece of gel coat.

To prevent this happening, the fixed tailplane skin can be trimmed back such that the two drain holes never pass over the edge of the skin.

4. Twin Astir Trim Lever Failure. The Twin Astir trim lever is cast aluminium with a plastic covering.

In one case a pin hole in the plastic allowed sweat to contact the aluminium which caused a corrosion spot which then propagated as a crack and the lever failed.

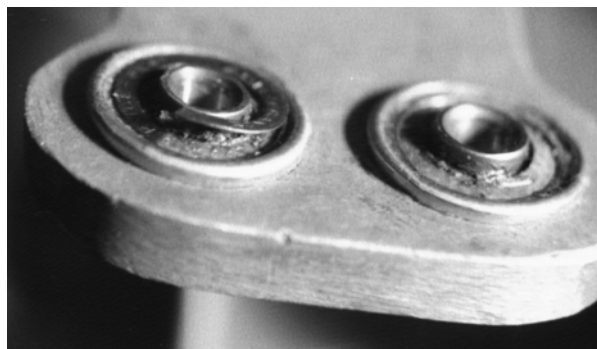


Crack and failure
from pin hole in
plastic

FIGURE 4 FAILED TRIM LEVER

5. Restriction of aileron control. During an Annual Inspection the metal seals on a number of control system bearings were prised out, apparently for the purposes of lubrication. These bearings are lubricated for life and require no routine lubrication. If a bearing seems to require lubrication it is faulty and should be replaced.

In the particular case someone tried to reinstall the seals and the end of the seal popped up and jammed the aileron circuit.



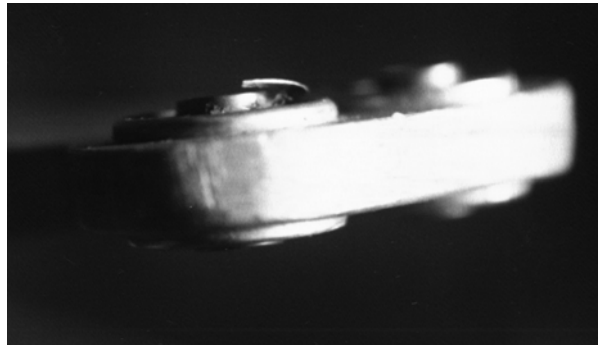


FIGURE 5 THE DISPLACED BEARING SEAL

6. Cracking of Dive Brake Arms. Two cases have been reported of cracking of the dive brake arms. These should be checked at each annual inspection especially where the arm contacts the stop. (see GFA AD 411.)

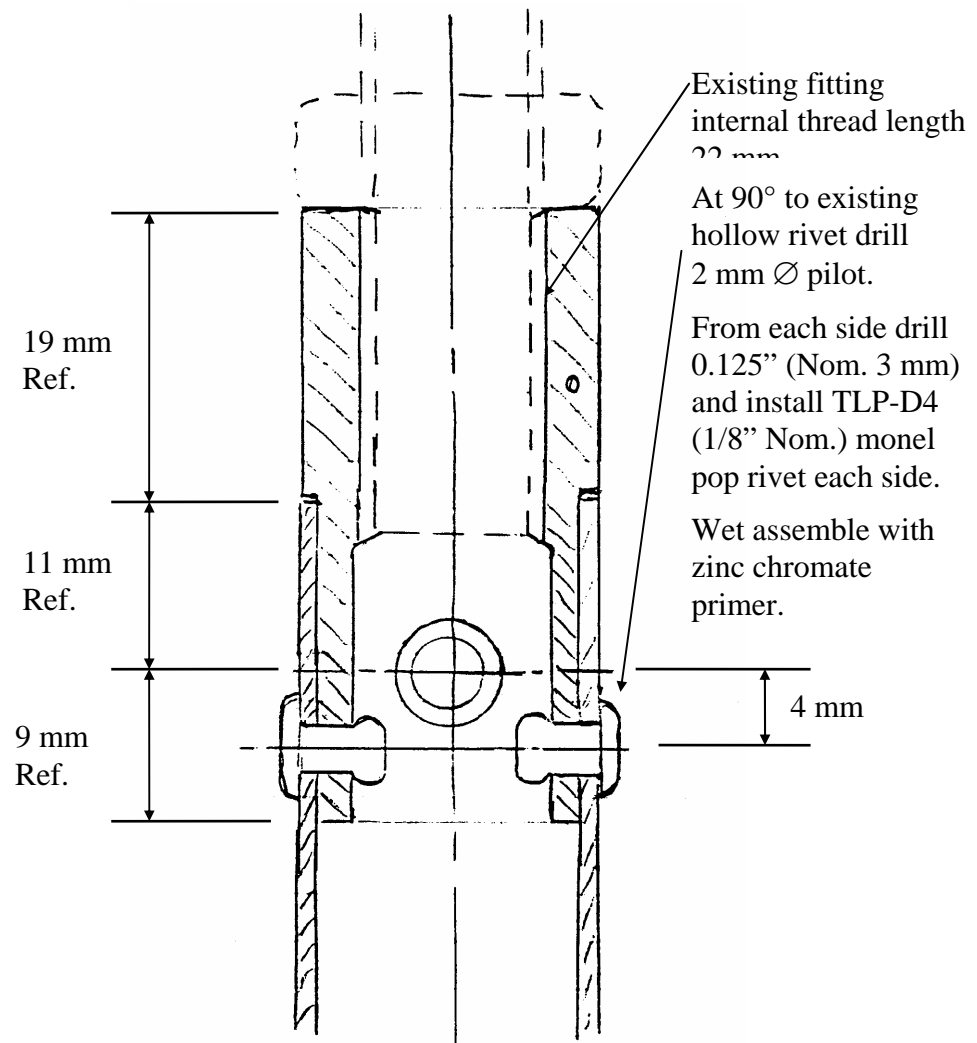
7. Aileron Mass Balance Attachment. Cracks have been reported in the aileron mass balance attachment brackets. These brackets reinforce the leading edge which holds the mass balance.

This damage may be caused by ground loops, wings dropping on the ground etc and should be checked for at each annual inspection.

If cracks are found inspectors are reminded that the weight and balance of the control surface must be checked after the repairs are made.

8. Loose elevator pushrod ends. A number of cases have been reported of loose elevator pushrod ends. The original design only used one tubular rivet to secure this part and so to remove slop a design involving the installation of two monel pop rivets has been developed by G. Sunderland.

Note: This repair scheme was developed for an Astir CS and if any difficulties are encountered then the CTOA should be contacted so that any necessary variations which may be required are recorded in this AN.

**FIGURE 6 LOOSE ROD END REPAIR SCHEME****APPROVED MODIFICATIONS:**

1. Grob Service Bulletin TM 315-57 describes the optional installation of Wedekind safety sleeves on the L'Hotellier couplings of Twin Astirs (not G103 Twin II).
2. Grob Service Bulletin TM 315-50 describes the optional installation of a disc brake on Twin Astirs between serial number 3000 and 3139.
3. Grob Service Bulletin TM 315-25 describes the optional use of foreplane "whiskers" to allow spin training in the G103 Twin II.
4. Grob Service Bulletin 315-35/2 allows the removal of the belly release on the G103 Twin II provided a "dummy" release is installed to allow the system to operate correctly.