THE GLIDING FEDERATION OF AUSTRALIA

GFA/AD 231

ISSUE 2

AIRWORTHINESS DIRECTIVE

TYPE AFFECTED: ALL ASW 15 and ASW 15B GLIDERS

SUBJECT: Immediate/periodic inspection of the elevator actuator bellcrank and amendment to the Operations Manual.

BACKGROUND: (Issue 1)

With an ASW 15 the bellcrank actuating the elevator failed in flight. (see attached sketch). Luckily the pilot could save himself by parachute. An inspection of the bellcrank showed that an older crack most likely caused by a hard landing some years ago resulted in fatigue failure of the bellcrank.
Alexander Schleicher Technical Note 21 refers.

BACKGROUND: (Issue 2)

The method of inspection outlined in Alexander Schleicher Technical Note 21 has proven to be inadequate resulting in cracked components continuing in service (in Europe). This resulted in Airworthiness Directive No. 82 221 being issued by the German LBA, asking for replacement of the elevator actuator bellcrank.

Following an Australian survey of the type, Issue 2 of this A.D. has been raised, offering the alternative of periodic inspection, by improving the inspectability of the area, or component replacement at the operator's discretion.

ACTION REQUIRED: (1) Before next Flight

1. The elevator actuator bellcrank must be inspected for cracks. To do so the rudder has to be disconnected from the fin, as inspection is possible though holes in the fin spar located and cut in accordance with sketch sheet 3.

Through these access holes both visual and dye penetrant inspection of the crack sensitive area can be carried out.

If no cracks are found, the rudder can be rigged again to the fin and safetied.

2. If cracks are found, the bellcrank must be exchanged against a new one, i.e. a bellcrank according to drawing 151.35.1011 (showing the correction note "TM 22"dated 29/10/82). For carrying out this job the Repair Instruction "A" for the ASW 15 is to be used.

3. The Operations Manual pages 22 (ASW 15) or 27 (ASW 15B) must be exchanged against pages 22A and 27A respectively. This measure is to guarantee that this inspection of the bellcrank will be repeated with each annual inspection and after heavy impact stresses (hard landings, crashes, etc.) Copies enclosed are Issue 2.

Issued by: A P Burr — Chief Technical Officer Airworthiness

12/9/1983

For and on behalf of: GLIDING FEDERATION OF AUSTRALIA

4. On page 3 of the Flight and Operations Manual the amendment to the Operations manual as stated under the above point 3 must be certified.

5. Part 1 of the Maintenance Release and the Glider's log book must have this A.D. recorded as a "Recurring Airworthiness Directive".

(2) Every 75 landings/All heavy landings/All ground loops

The rudder is to be removed and visual/dye check inspection carried out as in (1).

Details to be entered into the log book.

(3) At each Form 2 and each Life Extension Inspection

The inspection detailed above must be carried out at each Form 2 inspection and incorporated into life extension inspection

IMPLEMENTATION:

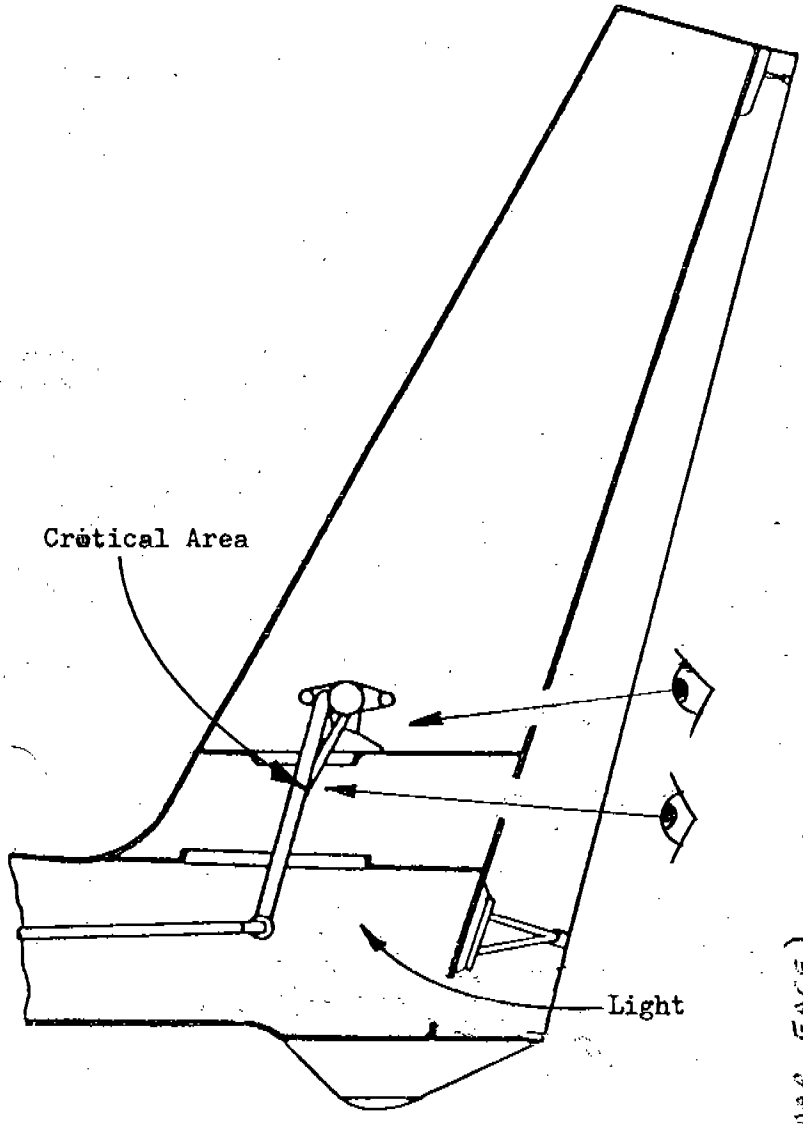
This inspection/rectification must be carried out by the holder of a DoA 1109 glider inspector certificate endorsed for C. of A. any type.

RECOMMENDATION:

If a new bellcrank is installed as mentioned under point 2 of the section "Action required", it is recommended to install simultaneously the stronger plywood stiffeners of the ASW 15B.

COMMUNICATION: Details of any defects found should be conveyed to the GFA CTO/A to allow the manufacturer to be advised.

COMPLIANCE: The requirements of this Airworthiness Directive are mandatory. This A.D. is issued pursuant to Air Navigation Regulations under the delegated authority from the Secretary of the Department of Aviation.



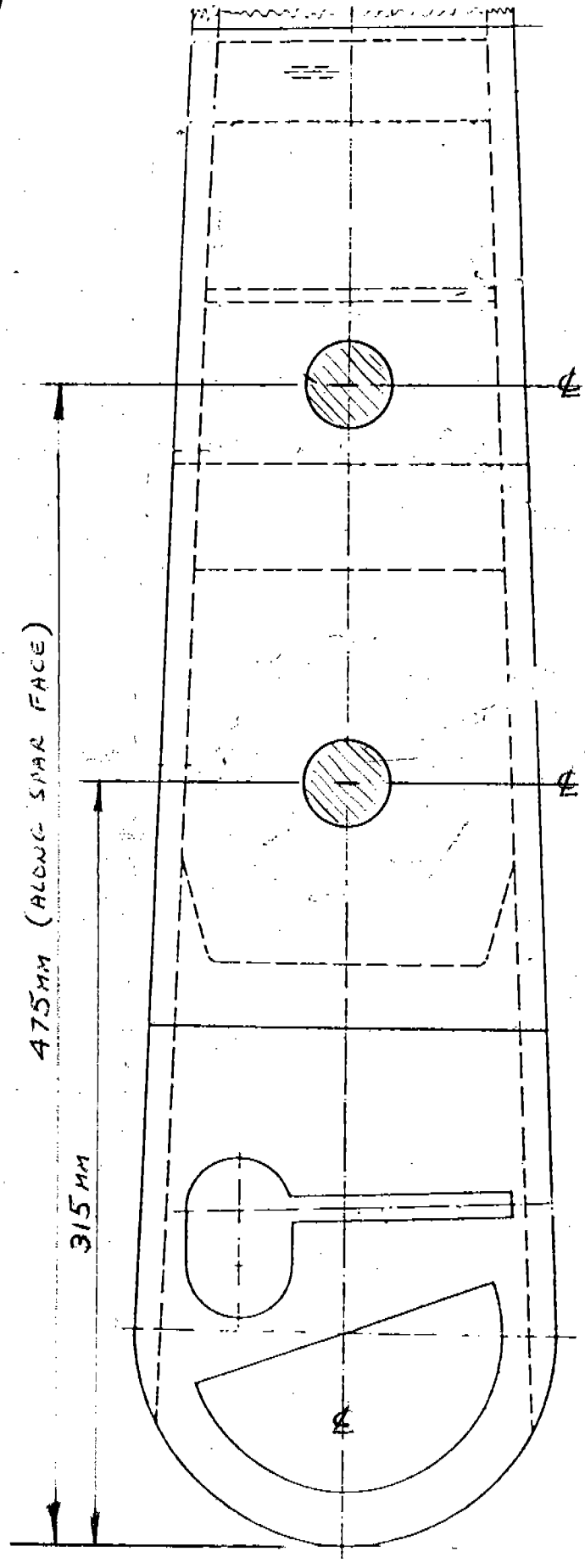
(1) Cut 2 -35mm dia holes through fin spar web on centres shown. (Check dimensions first to ensure the area is clear of other structure).

(2) Visual and dye penetrant inspection can then be carried out.

(3) If necessary, the holes can be increased in dia to a max of 60mm without reinforcing the cut-out.

(4) Cover the holes with Contact or similar.

(5) Critical area is the lowest point of the weld, with cracks in the weld or in the long arm starting at the weld.



FIN SPAR

The play is removed by putting thin metal washers between fuselage wingroot pins and their metal fitting in the fuselage. The pins are pushed out of the fitting tube by feeding a steel rod through the hole of the opposite pin and blowing the pin out with a hammer. The pin should be replaced after the installation of the washer with some blows of a 1 lb. hammer.

If the fitting is to wide the pin can be either safetied by 4 mm (1/6 inch) bolts and nuts or by treating the wide end of the pin slightly with a tool in a leath as it is used for making rough handles on metal rods.

2.9 Appendix

*During every annual inspection as well as after hard landings, crashes etc. the elevator actuator bellcrank inside the fin has to be inspected according to AD 231 Issue 2

The play is removed by putting thin metal washers between fuselage wingroot pins and their metal fitting in the fuselage. The pins are pushed out of the fitting tube by feeding a steel rod through the hole of the opposite pin and blowing the pin out with a hammer. The pin should be replaced after the installation of the washer with some blows of a 1 lb. hammer.

If the fitting is to wide the pin can be either safetied by 4 mm (1/6 inch) bolts and nuts or by treating the wide end of the pin slightly with a tool in a leath as it is used for making rough handles on metal rods.

On major repairs of the control surfaces one risks that they become heavier and that the Center of Gravity of the control surfaces moves back.
This can lead to flutter. It is therefore recommended to make a light weight repair and to ask the manufacturer for tolerances.

2.9 Appendix

*During every annual inspection as well as after hard landings, crashes etc. the elevator actuator bellcrank inside the fin has to be inspected according to AD 231 Issue 2

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