



THE GLIDING FEDERATION OF AUSTRALIA

AD 417

(ISSUE 1)

AIRWORTHINESS DIRECTIVE

- TYPE AFFECTED:** All Gliders fitted with TOP add on engines.
- SUBJECT:** Inspection for cracks in the engine frame and replacement of the connecting rod bearing cages and needles.
- DOCUMENTATION:** Fischer and Entwicklungen service bulletins 5004/4 and 5004/5 which form part of this AD.
- ACTION REQUIRED:**
1. Before next flight or engine start all TOP engine frames must be inspected and modified in accordance with Service Bulletin 5004/4.
 2. Before next flight or engine start all TOP engines up to serial number 76 except serial numbers 1, 11, 14, 19, 43 and 71 must have the connecting rod bearing cages and needles replaced.
- WEIGHT AND BALANCE:** Not affected.
- IMPLEMENTATION:** Inspection and modification of the engine frame must be performed by the holder of a Glider Inspectors Certificate rated "Form 2 inspections TOP".
- Replacement of the connecting rod bearing cages and needles must be performed by Fischer and Entwicklungen or their authorised Australian agent.
- COMPLIANCE:** The requirements of this Airworthiness Directive are mandatory. This Directive is issued pursuant to the Australian Civil aviation Regulations under the delegated authority of the Civil Aviation Authority.

SIGNED:

For and on behalf of:

SENIOR TECHNICAL OFFICER AIRWORTHINESS

**THE GLIDING FEDERATION
OF AUSTRALIA**

AD 417

ISSUE: 1

3 March, 1993

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Fischer+Entwicklungen
GmbH & Co. KG
Sonnenring 38 D-8300 Alldorf
Tel. 0871/32099 FAX 32948

Technische Mitteilung
(Service Bulletin)
5004/4

EB Nr.
I-EC 39

Subject: Cracks at the frame of the TOP-engine pod

Affected equipment:

TOP, Kiwi TOP, ASW 24 TOP

TC-No.: 5004

Urgency:

immediately, before next flight or starting the engine

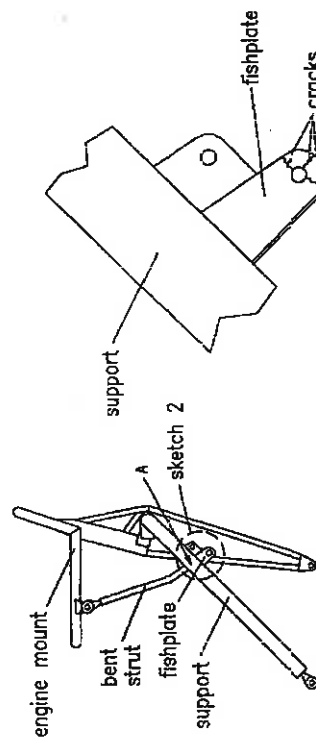
Reason:

Some fishplates at the support of the TOP-engine pod showed cracks, which could cause the failure of these fishplates. In this case engine and propeller would not be guided correctly.

Action:

Inspection of the cracks, preventive actions and repairing the cracks has to be done according to the added supplement of this Service Bulletin.

Mass and center of gravity: not affected



Sketch 1 engine mount-frame

Sketch 2 position of the cracks

Preventive Actions and Elimination of the Cracks at the TOP-engine pod

Before carrying out the following actions the TOP has to be extended. If the fuselage is not available, the TOP can be extended electrically by connecting 12 V DC to pin M and N of the connector between TOP and fuselage. When pin M is connected to plus and N to minus, the TOP moves upwards. Pin N connected to plus and M to minus moves it downwards. When the final position is reached, the power has to be interrupted immediately! Contact with other pins has to be avoided, otherwise the ignition system could be damaged.

Action 1 Crash Inspection

The fishplate at the support (A-shaped part of the frame) must not show any cracks. For inspection clean the fishplates with a dry rag and look for cracks (see sketches 1 and 2). Cracks have to be repaired according to Action 3. If there are not any, only Action 2 is necessary.

Freigabe MPL

Ausgabe
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Freigabe MPL
R. Damer

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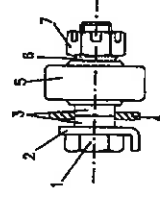
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Fischer+Entwicklungen Entwicklungs-AG Sonnenring 38 D-8300 Alldorf Tel. 0871/32099 FAX 32948	Technische Mitteilung (Service Bulletin) Supplement of 5004/4	EB Nr. I-EC 39
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Action 2 Preventive Action

The bent struts must not be pressed against the support at position A (see sketch 1). The rod ends of the bent strut make it possible to turn the strut slightly, while the distance between support and strut changes. When the strut is turned away distance must be at least 0,3 mm. The lower fixing screws of the bent struts have to be 22 mm long (M6x22).

Otherwise these screws, by which the struts are fastened to the support, must be detached and replaced by new screws and brass collars according to sketch 3. Never open the counter nuts of the rod ends, adjusting a rotated rod end would be very difficult.



Sketch 3

- 1 screw IN 9037, M6x22
- 2 fishplate
- 3 2 brass collars ϕ 8x1, 2,3 long
- 4 plate for springs
- 5 rod end
- 6 brass collar ϕ 8x1, 1,0 long
- 7 castellated nut IN 9484, M6 plus split pin DIN 94, 1,6x16, ZN or stainless steel

Action 3 Repairing the cracks

For welding the fishplates the support has to be removed. For that the following steps have to be done in the mentioned order:

- Extend TOP (see above)
- Fix the engine with ropes, so that the frame cannot collapse when the support is removed.
- Unscrew the small struts at the end fixed to the tanks. Doing that note the number and order of the used brass collars, because they are proportioned individually. After that the tanks can be tilt a little bit backwards. Detaching the fuel lines is not necessary.
- Detach wiring, Bowden cables and fuel lines from the support.

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- Unscrew the safety cable from the support and note the order of the washers.
- Detach the bent strut from the support.
- Remove the 3 screws by which the support is fixed to the hull and at the upper end.

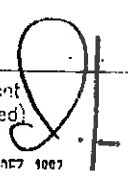
The cracks have to be TIG-welded by a licenced TIG-welder. The material of the fishplate is 1.7734.4. A welding certificate is necessary. The areas, where the fishplate is in contact with the brass collars or the screw heads, have to be filed plane. Areas with damaged surface protection must be primed and painted with fuel resistant varnish. The mounting of the repaired support takes place in the reverse order of removing it. Hereat the bent strut must be mounted as described in Action 2. The distance 0,3 mm has to be checked.

All necessary small articles are available at
 F+E, Sonnenring 38, 8300 Landshtut.

CAUTION:

While moving down the TOP the first time, check carefully (move slowly, in short steps or by hand), whether everything is fixed and positioned correctly. Are all removed screws and nuts secured?

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Fischer+Entwicklungen GmbH & Co. KG Sonnenring 38 D-8300 Altdorf Tel. 0871/32099 FAX 32948	Technische Mitteilung (Service Bulletin) 5004/5	EB Nr. I-EC 39	
Subject: Exchange of connecting-rod bearing cages and needles Affected equipment: TOP, Kiwi TOP, ASW 24 TOP all to TOP.No.76 but not 71,43,19,14,11,1. TC No.: 5004 all series Urgency: immediately, before next flight or starting the engine Reason: In some cases damages of the connecting-rod bearings occurred. This could result in sudden loss of power and subsequent complete stop of the engine. Action: The bearing cages and needles of the connecting-rod bearings have to be replaced by the new type FAG 26-2778. This action must only be carried out by Fischer + Entwicklungen (F+E) Sonnenring 38 D-8300 Landslut-Altdorf Tel. 0871 - 32099. or any other company authorized by F+E. All new engines will be equipped with the new type bearing cages and needles. Mass and center of gravity: not affected			
Freigabe MPL <i>R. Baur</i> Datum 3.12.92	Ausgabe (Edition) vom 3.12.92	LBA-geprüft (LBA approved)  11 057 1007	Blatt-Nr. (Page-No.) 1 von 1 (of) 1