



GFA AIRWORTHINESS DIRECTIVE

- TYPE AFFECTED:** GROB ASTIR CS. Type Cert 306. Ser No's 1001 up to 1536
- SUBJECT:** Horizontal stabilizer: Inspection & replacement of spherical head mounting bolt and collar bolts.
- Issue 1 of this AD called for annual inspection of the above part. Issue 2 now calls for periodic replacement in addition to the annual inspection. Issue 3 is identical to issue 2 except that the wording of ACTION REQUIRED has been altered to remove confusion, and to correct the GROB web address. It affects Page 1 only.
- BACKGROUND:** An incident occurred where the spherical mounting bolt at the forward edge of the tailplane was found to be broken after landing. The subsequent investigation confirmed a fatigue failure caused by alternating asymmetrical stresses on the stabilizer. Further examples of fatigue failure of this bolt have been found.
- DOCUMENTATION:** EASA has issued AD 2006-0150R1 and GROB has issued MSB306-38/2, which should be read in conjunction with the original MSB306-38. Both MSBs are attached & form part of this AD. GROB has also issued Flight Manual Rev.9 (Nov 2005) which can be downloaded from their website at: http://www.grob-aerospace.net/fileadmin/service_bulletins/ASTIRCSRev9Fullbook Copies may also be obtained from the GFA Secretariat on request.
- ACTION REQUIRED:**
1. In accordance with the Service Bulletins, carry out inspection, measurement and/or replacement of components. The Inspections / Replacements must be recorded in the aircraft logbook. Regardless of the inspection results the bolts must be replaced every 10 (ten) years or 1000 landings, whichever comes first.
 2. Obtain a copy of the Flight Manual. Revision 9, (Nov 2005)
- WEIGHT AND BALANCE:** Nil effect.
- IMPLEMENTATION:** As soon as practicable, but not later than 30th November 2006.
- COMPLIANCE:** The requirements of this GFA Airworthiness Directive are mandatory. This Directive is issued pursuant to the Rules and Regulations of the Gliding Federation of Australia.

SIGNED:

John G. Viner
SENIOR TECHNICAL OFFICER AIRWORTHINESS



For and on behalf of:

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OF AUSTRALIA



GROB Luft- und Raumfahrt
Lettenbachstrasse 9
D-86874 Tussenhausen-Mattsies
MSB306-38/2 supersedes MSB306-38/1 dated 28 November 2005

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SERVICE BULLETIN MSB306-38/2

I. TECHNICAL DETAILS

1.1 Category:

Mandatory

1.2 Airplanes affected:

Type Certificate - No. 306: ASTIR CS, Serial – No. 1001 - 1536

1.3 Time of Compliance:

Not later than September 30th 2006

1.4 Subject:

ATA-Code: Inspection of the elevator attachment

1.5 Reason:

Service Bulletin MSB 306-38 required inspection and - if necessary – exchange of the spherical bolt of the elevator attachment.

During inspection of an ASTIR CS a broken spherical attachment bolt of the elevator attachment was found. Apart from the generally poor condition of the elevator attachment, again a long term fatigue fracture was noted, although previous compliance with MSB 306-38 was certified.

As a precautionary measure, to preclude the possibility that any hidden damage may remain undetected, MSB 306-38/1 imposes the exchange of the spherical attachment bolt and the collar bolts on the T-plate with a new bolts in accordance with MSB306-38 not later than September 30th 2006. Additionally, all spherical bolts and collar bolts must be replaced every 10 years or 1000 landings, whichever comes first.

MSB 306-38/2 contains the extension of the compliance time (see also para. "1.3 Time of Compliance") due to the delayed availability of required spare parts.

1.6 Concurrent documents:

MSB306-38

ASTIR CS



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1.7 Approval Note:

The technical information contained in this document has been approved under the authority of EASA Design Organisation Approval No. EASA.21J.030.

1.8 Accomplishment/ Instructions:

- 1.8.1 Any spherical bolt – unless exchanged in compliance with MSB 306-38 – must be replaced with a new bolt not later than September 30th 2006. The exchange is to be documented in the aircraft history record.
- 1.8.2 All collar bolts on the T-plate must be replaced with new bolts not later than September 30th 2006. (torque with 13Nm). The exchange is to be documented in the aircraft history record.
- 1.8.3 Incorporate Revision 9, dated 28. Nov. 05 into the Flight / Maintenance Manual ASTIR CS.

Note: In addition to measuring the ball diameter "D" and installation depth "A", also determine gap width "S" and advise when ordering a new bolt.

1.9 Repetitive Actions:

- 1.9.1 The inspection of the horizontal stabilizer attachment must be repeated during each annual inspection. The spherical bolt 103-3500.21 must be removed from the elevator for the inspection. (also refer to Flight / Maintenance Manual, Revision 9).
- 1.9.2 Every 10 years / 1000 landings, whichever comes first, the spherical bolt 102-3500.21 and collar bolts 102-2142.46 need to be replaced with new bolts. The change is to be documented in the aircraft history record.

1.10 Mass (Weight) and CG:

Not affected



II. PLANNING INFORMATION

2.1 Material & Availability:

| Qty. | Name | Part No. | Remarks |
|------|----------------|------------------|-------------------------|
| 1 | Spherical bolt | 102-3500.21 | Advise "D" \pm 0.1 mm |
| 1 | Nut | 102-3510.21 | |
| 1 | Toothed washer | DIN 6797-10,5phr | |
| 2 | Retaining pin | 102-2142.46 | |
| 2 | Nut, hexagon | LN9348 - M8 | |

Order from:

Fiberglas-Technik
 Rudolf Lindner GmbH & Co. KG
 Alpenweg 11
 88487 Walpertshofen

Tel.: +49-7353-2243
www.LTB-Lindner.com

Fax: +49-7353-3096
 E-mail: H.Lindner@t-online.de

2.2 Special Tools:

- magnifying glass x 20
- torque wrench

Note: When ordering a new spherical bolt P/N 102-3500.21 the ball diameter must be advised to within \pm 0.1 mm! Also determine gap width "S" and advise. Replaced bolts must be returned to GROB-WERKE, referencing aircraft serial number.

2.3 Labour:

Approx. 1 hour

2.4 Reference documents:

MSB 306-38

2.5 Credit:

N/A

ASTIR CS



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III. REMARKS

- 3.1 The correct execution of the instructions may be performed by a competent person or approved aviation workshop and has to be certified in the logbook by an authorised inspector.
- 3.2 If you have sold your aircraft in the meantime, would you kindly pass this information on to the new owner and forward his address and aircraft S/N to us.
- 3.3 For questions and assistance please contact:

| | |
|-------------------|--|
| Michael Reinhold, | Product Support, |
| Tel.: | +49 (08268) 998 105 |
| Fax: | +49 (08268) 998 200 |
| e-mail: | productsupport@grob-aerospace.de |



GROB Luft- und Raumfahrt
Lettenbachstrasse 9
D-86874 Tussenhausen-Mattsies

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SERVICE BULLETIN NO. MSB306-38

I. TECHNICAL DETAILS

1.1 Category:

MANDATORY

1.2 Airplanes affected:

TCDS-No. 306 (FAA TC No. G33EU):
ASTIR CS S/N 1001 - 1536

1.3 Time of Compliance:

Not later than 30 April 2004

1.4 Subject:

ATA-Code: ---

Inspection of the vertical stabilizer attachment

1.5 Reason:

An incident was reported, where the spherical locking bolt of the horizontal stabilizer attachment was broken after landing. The investigation has proved a fatigue crack caused by alternating stress on to the stabilizer with unsymmetrical loads. This fatigue failure could have been caused by various external influences. To prevent further incidents the inspection of the front and rear vertical stabilizer attachment and especially an inspection of the spherical bolt P/N 102-3500.21 is mandatory.

1.6 Concurrent documents:

None

1.7 Approval Note:

The technical information contained in this document has been approved under the authority of JAA Design Organization Approval No. LBA.JA.014.

ASTIR CS



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Lettenbachstrasse 9
D-86874 Tussenhausen-Mattsies

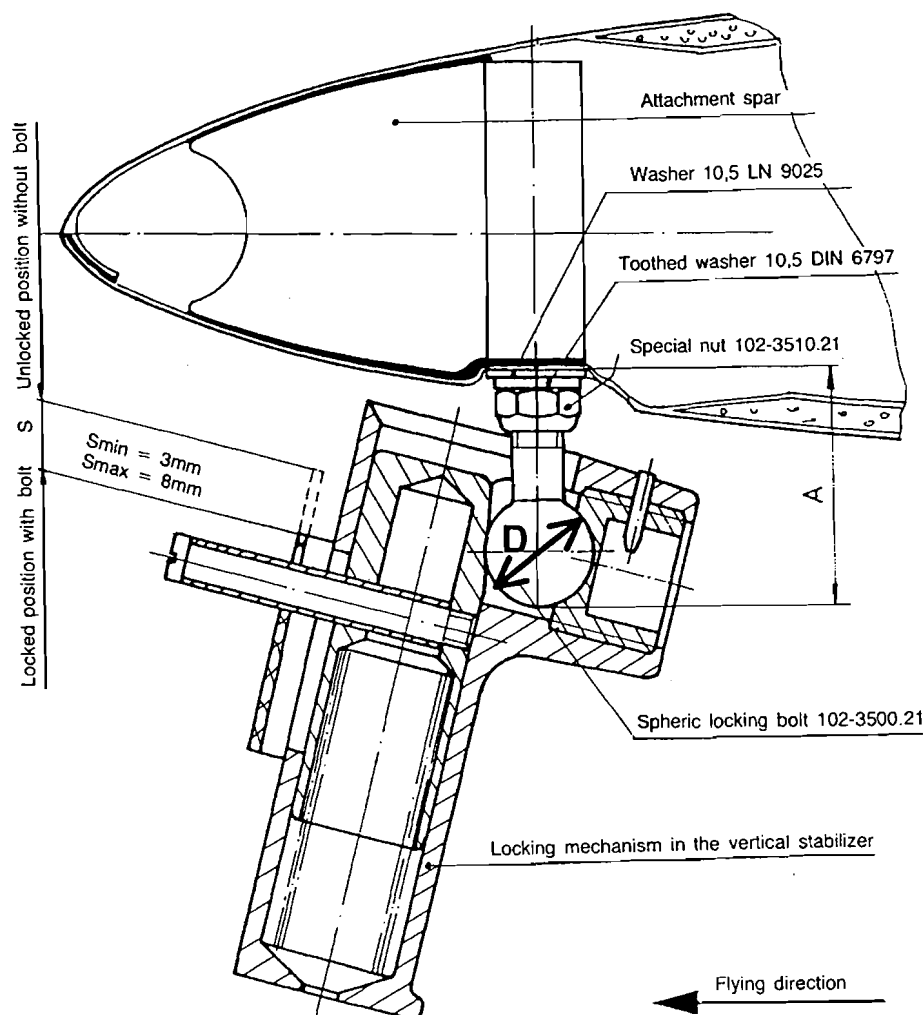
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1.8 Accomplishment/ Instructions

1.8.1 Check front and rear attachment of the stabilizer for noticable play before de-rigging the horizontal stabilizer. Therefore move the stabilizer at the tips carefully to all directions.

- if no play is noticed, perform further action according to para 1.8.2
- if play is noticed in the front attachment
 - the spherical bolt must be replaced (see para 1.8.2). Determine the ball diameter. During order advise the measured diameter "D" + 0.1 mm.
- if play is noticed in the rear attachment
 - the retaining pins 102-2142.46 must be replaced (refer to Flight Manual ASTIR CS Chapter "Maintenance")
 - is further play noticable after replacement of the bolts, the bearings in the stabilizer spar web must be replaced (refer to Flight Manual ASTIR CS Chapter "Maintenance")

1.8.2 Inspect and replace the spherical locking bolt as follows:



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- remove horizontal stabilizer according to the Flight Manual and lay down in a proper device
- determine and note the exact installation depth "A"

NOTE: The exact determination is very important for the re-installation not to change the stabilizer angle of incident.

- loosen the hexagon nut P/N 102-3510.21 (14 mm wrench) and remove spherical bolt using a screw driver
- inspect the thread of the bolt (especially in the area nut/ socket) for cracks or damage (using magnifying glass x20 or dye penetrant testing)
- if a crack or any indication for crack starting is found, the bolt must be replaced immediately

NOTE: During order of a new spherical bolt P/N 102-3500.21 the exact diameter "D" must be advised with tolerance $\pm 0.1\text{mm}$.

- install the inspected or new spherical bolt, thereby pay attention for the correct installation depth
- tighten hexagon nut P/N 102-3510.21 with torque 20 Nm (tolerance +4, -2) holding the bolt using a screw driver
- install horizontal stabilizer
- check and adjust if necessary the stabilizer angle of incident according to the Flight Manual

1.8.3 Incorporate Revision 8 dated 12.02.2004 into the Flight and Operating Manual.

1.9 Repetitive Actions

The inspection of the horizontal stabilizer attachment must be repeated during each annual inspection (refer also to Flight Manual, Revision 8).

Caution: Pay attention during maintenance, repair, pre-flight inspection and transport that the spherical bolt is not subject to loads, which can cause a fatigue damage !

1.10 Mass (Weight) and CG:

not affected



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II. PLANNING INFORMATION

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| Qty. | Name | Part No. | Remarks |
|------|----------------|------------------|-------------------------|
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| 1 | Nut | 102-3510.21 | |
| 1 | Toothed washer | DIN 6797-10,5phr | |
| 2 | Retaining pin | 102-2142.46 | |
| 2 | Nut, hexagon | LN9348 - M8 | |

From **Fiberglas-Technik**
Rudolf Lindner GmbH & Co. KG
Alpenweg 11

88487 Walpertshofen

Tel.: +49-7353-2243
www.LTB-Lindner.com

Fax: +49-7353-3096
E-mail: H.Lindner@t-online.de

| |
|--|
| NOTE: During order of a new spherical bolt P/N 102-3500.21 the ball diameter must be advised within ± 0.1 mm ! Replaced bolts must be returned to GROB-WERKE. ! |
|--|

2.2 Special Tools:

- magnifying glass x 20
- torque wrench

2.3 Labour:

approx. 1 hour

2.4 Reference documents:

N/A

2.6 Credit:

N/A



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- 3.3 For questions and assistance please contact:

Rudi Vodermeier , Head of Product Support,
phone: +49 8268 998139
fax: +49 8268 998200
e-mail: productsupport@grob-aerospace.de

Approved by EASA under Approval

No.....on.....(date)