

Subject: Installation, removal and replacement of equipment

Affected: All sailplanes build by Glasflügel

Typ : H301 Libelle
Model : H 301 B
H 301 Werknr. 1
Standard Libelle
Standard Libelle 201 B
Standard Libelle 203

Typ : Glasflügel 604

Typ : BS 1

Typ : Kestrel

Typ : Club Libelle 205
Model : Hornet
Hornet-C

Typ : Mosquito
Model : Mosquito B
Glasflügel 304

Urgency: None

Reason: „Instruction for Installation, removal and replacement of equipment“ provided.

Action: When equipment is installed, removed or replaced, it is allowed to proceed according the „Instruction for Installation, removal and exchange of equipment for Glasflügel sailplanes“.

Glasfaser-Flugzeug-Service GmbH
Hansjörg Streifeneder
Hofener Weg 61
72582 Grabenstetten

**Gen. technical note
Nr. 4-2013**

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CG and mass:

After installation, removal or replacement of equipment a new weight and balance has to be done.

Note:

The installation of transponders are described in a separate technical note.

The proper accomplishment of the actions is to be released by authorized staff and must be entered in the sailplane log book.

Grabenstetten, 12.01.2013

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H. Streifeneder
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Glasfaser-Flugzeug-Service
Hansjörg Streifeneder

EASA-approved:

The technical content of the TN has been approved
by the EASA under the date of ...04.03.2013.....
Approval number.....10043889.....

The translation into English has been done by best knowledge
and judgement.

With the following instructions, equipment may be installed, removed or replaced in all Glasflügel sailplanes.

This applies for equipment which is listed in the „Flight and Service Manual“, as well as for equipment which is not listed there.

General:

- It must be ensured that the equipment in itself or in the kind of its operation or in its effect upon the operation of the sailplane does not constitute a hazard to safe operation. This includes, that the installation or operation of all installed electrical equipment does not impair in particular the function of the minimum equipment, the function of the ELT and the function of the ATC equipment.
- It must be ensured that the equipment is safely fixed under all operating conditions and that it does not impair the operation of the sailplane. Furthermore the equipment must not endanger the occupants in the event of a crash.
- The total mass of the equipped instrument panel must not exceed 10 kg.
- The electrical equipment must comply with the specifications given in the Flight- and Service Manual.
- The installation instructions of the manufacturer of the equipment must be observed and followed.
- When the equipment is changed, the equipment list must be updated and in general a new weight and balance report must be issued.
- Any change of equipment must be accomplished, inspected and documented in compliance with applicable national regulations.
- The attachment of the equipment must be designed in such a way that the following accelerations can be tolerated without a defect (see also CS 22.561 or JAR 22.561).
 - upward 4,5 g
 - downward 4,5 g
 - sideward 3,0 g
 - forward 9,0 g
- Technical documentation or documentation for operation of installed equipment from its manufacturer or, where applicable, the supplier, should be filed in the maintenance records or operating documentation respectively of the sailplane.
- Equipment which is part of the minimum equipment or which needs a certification may only be installed if a document is provided by the manufacturer or supplier which states the proper inspection for compliance with the applicable specification of the individual equipment part (within EASA responsibility e.g. EASA Form One.) This document must be filed in the maintenance records of the sailplane.
- For all other equipment (e.g. electronic-variometer, final glide computer, flight data logger, navigation computer, Flarm , additional, antennas, batteries, cameras, additional pressure probes, bug wipers etc.), for that such a document is not available, it must be assured, that at least, the replacement of such equipment is documented in the equipment list, the weight report and the documentation (i.e. log-books) as applicable by requirements of state of registry.
EASA accepts the equipment in brackets as not liable to certification but the installation of this equipment must be certified. TN 4-2013 as well as the instruction of installation are generally approved for that kind of installation and substitute a individual approval.

<p>Glasfaser-Flugzeug-Service GmbH Hansjörg Streifeneder Hofener Weg 61 72582 Grabenstetten</p>	<p>Instruction for installation, removal and replacement of equipment in Glasflügel sailplanes, Annex to TN4-2013</p>	<p>Page: 02 of 02</p>
<ul style="list-style-type: none"> • If additional equipment shall be installed not at the instrument panel, but for example at the canopy frame, it must be looked at that the equipment by itself or by the wiring does not hinder the emergency escape or the canopy jettisoning. • Installation of equipment on the outside of the aircraft will be not covered by this technical note 		
<p><u>Parts of the minimum equipment</u> Altimeters, airspeed indicator and compass should be certified as TSO, JTSO, ETSO or similar for the corresponding purpose and the following is taken into account:</p>		
<p>Airspeed indicator: The measuring range of the airspeed indicator must cover at least 1.05 V_{NE}. The scale must be marked according the „Flight and Service Manual“. The pressure ports must not be changed.</p>		
<p>Altimeter: The pressure ports must not be changed</p>		
<p>Compass: After compensating its deviation in horizontal flight must not be more than +/-10° in any heading. With radio transmitting +/-15° are acceptable. If a deviation of more than +/-5° is determined, a deviation table must be completed.</p>		
<p>Further instrument and equipment which is listed as minimum equipment in the „Flight and Service Manual“ must not be replaced by other instruments and equipment which is not listed there.</p>		
<p>Wiring and connecting</p> <ul style="list-style-type: none"> - sufficient cross section of the cables (shielded) - separate wiring from antenna cable - avoid interfering between wiring and the controls - the wiring must not hinder the canopy jettisoning - Fuses have to be near to the instrument and adequate - Energy balance has to be observed 		
<p><u>ATC equipment (e.g. radio, transponder, etc.):</u> ATC equipment may be installed, if it is TSO, JTSO or ETSO certified The installation instruction of the manufacturer of the equipment must be considered. The installation of the transponder has to be done in accordance with the technical note from Glasfaser Flugzeug Service GmbH.</p>		
<p><u>Emergency Location Transmitters (ELT) :</u> Emergency location transmitters should be installed in an area endangered as little as possible in a crash, e.g. in the area of the central steel tube frame or above of it. The antenna should be installed near the instrument and should be shielded as little as possible (e.g. by a carbon fibre fuselage shell). The cable to the antenna should be installed so that it is endangered as little as possible in a crash.</p>		