

Item: Installation of TSO certified Mode-S Transponders and antennas for transponders into aircrafts with GFRP-fuselage within the fuselage behind the gear

Reference: All sailplanes manufactured by Glasflügel company

Type : H301 Libelle Type Certificate LBA 251
Model : H 301 B
 H 301 s/n 1
 Standard Libelle
 Standard Libelle 201 B
 Standard Libelle 203

Type : Glasflügel 604 Type Certificate LBA 281

Type BS 1 Type Certificate LBA 238

Type : Kestrel Type Certificate LBA 276

Type : Club Libelle 205 Type Certificate LBA 304
Model : Hornet
 Hornet-C

Type : Mosquito Type Certificate LBA 318
Model : Mosquito B
 Glasflügel 304

Urgency: None, if required by the client only

Classification: Minor change

Reason: Aircrafts being operated in German airspace must be equipped with the corresponding equipment, following FSAV (Regulation about the flight safety equipment).

For operations in international airspace other national regulations have to be followed.

Measures:

Installation of TSO certified transponders in the instrument panel. The antenna has to be fixed in the fuselage keel area behind the gear box. The exact position for each type and Model has to be taken from the newest issue of the „Arbeitsanweisung zum Einbau Transponder-antenne“ (Work guide for the installation of transponder antennas) of GFS company.

The following components can be used:

Transponder : TSO certified mode-S transponder

Antennas: Spike antenna 1030-1090 Fa. Becker
GAV 101 Fa. Garrecht
AV-22 Fa. R.A.Miller
CI-101 Fa. Comant
BD 1 Fa. Dolba
or similar antennas

Antenna cable: Aircell 5 oder Aircell 7

Further suitable antennas and antenna cables might be listed in the „Work guide for the installation of transponder antennas“ .

Material and drawings:

Installation kits with antenna, cable, plugs, fixing mounts and hardware as well as the „Work guide for the installation of transponder antennas“ in its newest issue are available on request from:

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Mass and center of gravity:

Additional weight has to be taken into consideration either by calculation or by a new weight and balance measurement.

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Advice and comments:	<p>The transponder has to be fixed or installed in accordance with the certification rule CS 22.561 into the instrument panel. The maximum total mass of all instruments must not exceed 10kg, the amount which was approved and certified. An additional mechanical support of the instrument is not required due to their installation above the existing cushion wall.</p> <p>Before installation it is necessary to check, whether the power supply system in the sailplane can cope with the additional device (it's recommended that power should last at least 5 hours). To document this it's required to set-up a power balance including all electrical/electronic equipment in the sailplane. If there is any doubt a more powerful power supply should be installed.</p> <p>Every device has to be fused separately.</p> <p>Transponders must transmit a definite minimal rf-power but for higher values they can differ quite substantially. The use of maximum cable length and the change of the transponder device or type may cause a too low rf-power transmission at the installed antenna.</p> <p>Also the manufacturers of transponders require different maximum power attenuation by the antenna cable. The range varies between 1,5 to 3 dB. The choice of cable and length as well as the place of the installation is listed in the „Work guide for the installation of transponder antennas .</p> <p>As there can not be found any scientific proof of health issues in regard of the place of the installation of antennas, the GFS company can not take or offer any liability for health issues, restrictions or influences caused by the installation and operation of the transponder–antenna system, used completely or in parts only.</p> <p>A twice shielded cable (e.g. Aircell 7) lowers the electro-magnetical loads and influence on the crew.</p>	

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Advice and comments:	<p>After installation a functional test by a certified aircraft inspector with the relevant entitlement is mandatory and has to be documented in a form according to the applicable national law (e.g. LBA Form 22 for Germany).</p> <p>All structural measures have to be checked by a certified aircraft inspector with the relevant entitlement according to the rules for minor changes and have to be documented in the flight log book of the aircraft, the flight and maintenance handbook of the aircraft and its inspection documents and signed there by the inspector.</p>	
Grabenstetten, 31.01.2008 Issued:..... Hansjörg Streifeneder	<u>Issued by EASA the:</u> 11.03.2008 <u>with certification number :</u> EASA.A.C.09193	