EASA Safety Information Bulletin

SIB No.: **2011-11**
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Subject: **A reliable approach to rigging a sailplane**

Ref. Publication: UK Air Accidents Investigation Branch (AAIB) Bulletin No: 5/2011.

Applicability: SZD-24C "Foka", SZD-24-4A "Foka 4", SZD-32A "Foka 5" and SZD-36A "Cobra 15" sailplanes, all serial numbers, and all sailplanes with a wing attachment rigging mechanism that has no direct means to determine that the bevel bolts are fully engaged in the lug stack during rigging.

Description: Following an accident of a SZD-24-4A "Foka 4" sailplane at Bicester Airfield, Oxfordshire on 8 August 2010, the AAIB investigation results revealed that this was due to inadequate rigging of a wing main fitting mechanism. Improper rigging of this kind, especially when using an unapproved tool which enables the user to apply much more force than by hand, could lead to damage of the wing main fitting mechanism. In turn, this may lead to only partial connection of the left and right wing spars. In addition, no direct method exists to detect whether a lower bevel bolt, joining the lower spar lugs, is fully expanded.

The Bulletin No: 5/2011 issued by the UK Air Accidents Investigation Branch (AAIB) recommends EASA (recommendation 2011-003) to require *"that the Type Certificate holder of the Foka 4 introduce a means of determining that the lower bevel bolt is fully engaged in the lower lug stack during rigging"* and (recommendation 2011-004) to "*require that the Type Certificate holders of aircraft with a similar wing attachment philosophy to the Foka 4 ensure that there is a means of determining that both the bevel bolts are fully engaged in the lug stack during rigging*".

As an interim measure (further mandatory actions may follow), this EASA SIB recommends to all affected sailplanes owners and operators involved in the sailplane wing rigging to act in accordance with the following instructions when rigging the affected sailplanes:

- Before rigging a sailplane:
  - To read the rigging instructions in the Aircraft Flight Manual (AFM) and/or Aircraft Maintenance Manual

(AMM) and carry out practice rigging under supervision of someone who is familiar with the sailplane,
- To inspect visually the main wing fitting mechanism condition (bevel bolts, screw, guiding plates, spar lugs), and
- To determine the number of screw half-turns required to fully expand the bevel bolts from its fully retracted position.

- During the wing main fitting mechanism rigging:
  - To make sure that lugs are accurately aligned;
  - To use only an original and appropriate tool[1] to screw; any other tools which enable increasing the screwing force should not be used;
  - To immediately stop turning the screw if extra force is required to expand the bevel bolts before they are fully expanded, and establish the reason;
  - To confirm that the bevel bolts are fully expanded prior to flight.

In addition, EASA informs SZD-24C "Foka", SZD-24-4A "Foka 4", SZD-32A "Foka 5" and SZD-36A "Cobra 15" sailplane owners and operators that:

- Expanding the bevel bolts into improperly aligned lugs, or with a mechanical failure of the device, may give false indications of successful rigging. Up to the point of complete connection, the operation of the bevel bolts expanding device should be smooth and relatively easy. If, it cannot be operated by hand, something has gone wrong and the reason has to be established before continuing with the rigging.
- The number of screw half-turns given in the rigging description of the AFM and of the AMM is applicable when the parts are new, correctly assembled and if the bevel bolts are not fully retracted to enable connecting (or disconnecting) the left wing to the right one. If the bevel bolts are fully retracted before the rigging, some additional screw half-turns will be required. Also, if the bevel bolts and holes in the lugs are worn or renovated by grinding or reaming, some additional screw half-turns will be also required to ensure that the bolts are fully expanded. Therefore, the number of turns quoted in the AFM should be considered as a minimum for guidance and the exact number of turns required will differ for each aircraft. Anyone rigging such a glider should be aware of the number of turns required for that specific aircraft.

[1] T-wrench" hand operated tool for the SZD-24C "Foka", SZD-24-4A "Foka 4", SZD-32A "Foka 5" and SZD-36A "Cobra 15" sailplanes.

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