Technical News Sheet

Issue 5-2014	Date: 8/12/2014

Airworthiness Information

1 K8 Glue Failure Found on DI AD72-7/3 (Mandatory)
BGA 043/07/2004/issue1

http://www.alexander-schleicher.de/tm/allgTM/Hoehenruder%20K-Typen_E.pdf
http://old.gliding.co.uk/bgainfo/technical/inspections/043-07-2004-issue-1.pdf

This applies to all parts of Schleicher wooden gliders.

Figure 1 End Rib and D Box glue failed

See image (figure 1) of the remains of a K8 elevator. This elevator came off in the hands of the person doing the DI check.

Not only had the end rib come adrift but a lot of the D box bonding had also failed.

The glider had previously been recovered and overhauled to a high standard one year before, when the full BGA wood inspection was done. It had a new annual shortly before this DI.

Apart from having no drain holes in the fabric, the elevator visually looked in very good condition after the end rib came off. When you put the rib back in the D box it was a perfect fit with virtually no gaps. There was little sign of staining from moisture/fungus and the wood is in reasonable condition. Only the glue had failed. If this had happened in flight the results are obvious.

There are a number of lessons to learn here:

1a Kaurit (pink) glue does not last forever. The rest of this glider was built at the same time with the same batch of glue. If one part has failed, unless there is a good reason for the failure (moisture in brake box perhaps), then all the glue is suspect. This glider needs a **VERY** thorough check and, even if is satisfactory, its longevity might be very limited.

1b Do not rely only on visual inspection; it did not work in this case. The inspection advice in the AD might not always find this problem. **Apply significant sideways force to the end rib, span-wise away from the spar** at every annual.

1c The rib inspection under **BGA 043/07/2004/issue1** is annual**.** It is becoming clear that the **BGA 042/07/2004/issue3** inspection every 5 years needs reviewing (BGA Technical Committee will be doing this) as it would appear the incidence of glue problems in 45+ year old Schleicher gliders is increasing.

1d Put split pins in the outer elevator hinges. This way the elevator cannot move sideways if the glue fails in flight and become disengaged.

1e Glue failure is a big deal. When failure is found, report it to the CTO. If you are not confidant the glue is as strong as it should be, ask yourself: “Would I be happy to jump in that glider and go and do lots of aerobatics, like the flight manual says I can?”

If the answer is anything other than an emphatic yes. Then answer has to be no.

If you repair the single part that has failed, the longevity of the rest of the glider has to be questioned. As an inspector your job is to ensure high quality.

You must not worry about the hardship that your decisions might cause an owner or club (remember your human factors training). As these aging aircraft inspections increase, we will find more glue failures. If any of you ever have a doubt then contact your RTO. If they cannot help, contact me for more support.

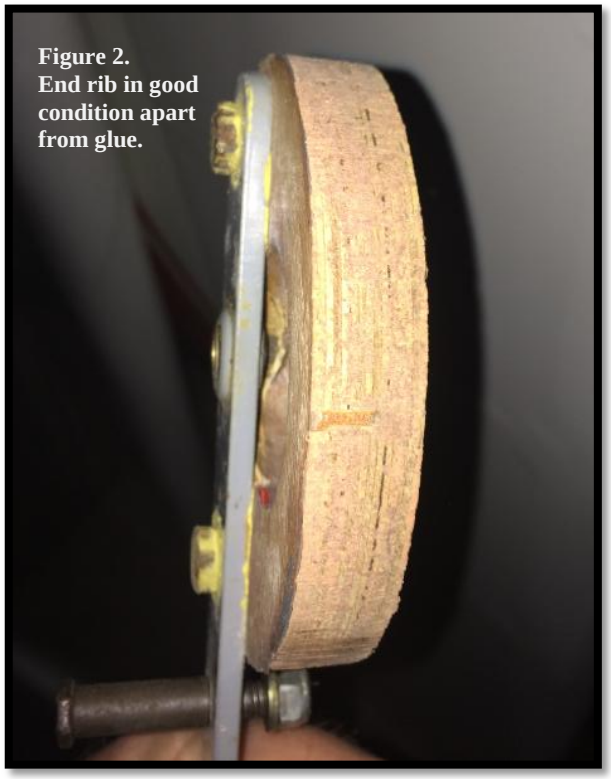

Figure 2.
End rib in good condition apart from glue.

2 Non-Approved Strap Overhauls AD 2013-0020R4 (Mandatory)

There is a possibility that some of these affected straps may have made it into some gliders, motorgliders, or tugs in the UK

http://ad.easa.europa.eu/ad/2013-0020R4

3 SZD51 Junior: Cracked Rudder Cable End Reported by Barry Kerby. SB007/94 and BGA TNS 08/94 (Advisory)

This relates to a steel cable end that cracked while it was well within the 1500 hour and 12 year life.

The Maintenance Manual requires a 22lb tension check (section 3.2) every 100 hours.

Make sure the tension is not too high (too much strain on fittings) or too low (flutter risk).

Juniors require 50 hour and other checks as per section 15.11 of the manual. Please make sure the rudder cable checks are done very diligently.

Figure 3
Swaged rudder cable end failed

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4 ASK21 Airbrake Handle Snapped Off (Advisory)

This could affect any well-used ASK21. Check for cracks and wear regularly

Figure 5
External wear from contact with GRP side

Figure 6

Figure 7
Note corrosion

5 SZD 50-3 Puchacz Gearbox In-Flight Failure BGA 016/04/2001 iss2 (Advisory)

Failures of this type have happened a number of times in the UK. The latest example was a 30 year old Puchacz that had flown just over 3000 hours and 8100 flights. **BGA 016/04/2001 iss2** in the BGA Compendium calls for replacement if a defect is found at annual.

There are no SZD service bulletins that recommend inspection or replacement of these gears despite all the failures. The old-style white gear, can be changed for the better-designed gear from SZD. This could also apply to some of the other SZD designs.

Some inspectors have told me they do not want to cut holes in Puchacz wings; you do not need to. You can get access to the gearbox through the root rib foam insert panels.

6 SF25C: Rotten Wood in Trailing Edge Caused by Drain Holes on Wrong Side of Ribs

The drain holes were not at the lowest point. So, after 20 years of service, the wood was rotten at top and bottom.

All the other rotten panels had the drain hole on at the highest point with no drain hole at the lowest point.

Figure 8
SF25C Trailing edge top and bottom surfaces rotten

7 Incorrectly assembled/overhauled straps of all types (Advisory)
Reported by Stuart Hoy

In the event of an accident, the buckle (Figure 9) would have let the R strap slip. A number of reports of similar incorrectly routed straps have been reported.

Straps that have been overhauled, have also been found with fittings stitched in the wrong way round (with Form 1s).

Do not assume that strap overhaul companies do not make mistakes.

Figure 9
Wrong wayround buckle.

Engines

8 T61F Magneto Overhaul Issue (Advisory)

Some Slingsby T61F Bendix magnetos have a grounding spring incorporated into the points (figure 10).

If the magneto has a screw-in “P” lead (goes in where the red/black plastic screw in plug in the casing is) with an extension to open the grounding connection when screwed in, then no further action is required.

If the magneto has the direct wire connection to the points, the grounding spring is redundant and it must be bent well clear of the magneto casing to prevent inadvertent grounding and loss of power.

It is recommended that this spring is checked at every annual inspection or if the magneto is overhauled or points replaced. The purpose of the grounding spring is to ground the magneto whenever the “P” lead is removed thus preventing a LIVE magneto.

In the second picture (figure 11) the plug is not used, so the spring serves no purpose; bend it well away from the casing. Do not remove the spring as the chance of damaging the points is very high.

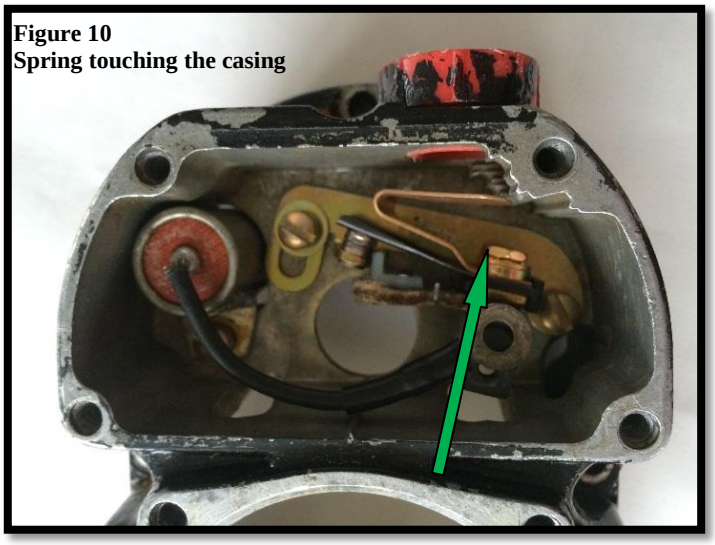

Figure 10
Spring touching the casing

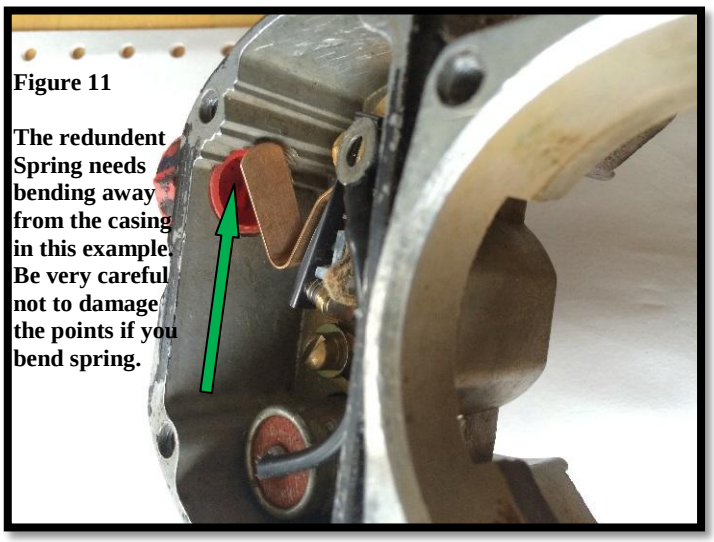

Figure 11

The redundent Spring needs bending away from the casing in this example. Be very careful not to damage the points if you bend spring.

9 ASW 28E AD No.: 2014-0264 Mandatory

Power Plant – Engine Mounts – Inspection / Replacement
http://ad.easa.europa.eu/blob/easa_ad_2014_0264.pdf/AD_2014-0264_1

10 Fuel Regulations Change. **(Advisory)**
CAA aviation fuel requirements and guidance advice. Small relaxation of car fuel in non-commercial aircraft.
http://www.caa.co.uk/default.aspx?catid=1407&pageid=16578

11 Most Robin Aircraft AD 2014-0245 (Mandatory)
This AD supersedes DGAC France AD 2001-132 dated 4 April 2001 and EASA AD 2014-0185 dated 6 August 2014. Carburettor issues again.
http://ad.easa.europa.eu/ad/2014-0245

12 Most Robin Aircraft AD 2014-0225 (Mandatory)
This AD supersedes DGAC France AD 2001-036 dated 24 January 2001. Carburettor issues again.
http://ad.easa.europa.eu/ad/2014-0225

13 Rotax-Powered Motorgliders SB-912-065 and SB-914-046 (Advisory)
Carb Float inspection
http://www.flyrotax.com/portaldata/5/dokus/d05799.pdf

14 Rotax-Powered Motorgliders SB-912-066 and SB-914-047 (Advisory)
Cylinder head temperature measurement
http://www.flyrotax.com/portaldata/5/dokus/d05838.pdf

15 ASK21Mi, ASH25Mi and ASH31Mi TN9/30/3 (Advisory)
Engine control box issues
http://www.alexander-schleicher.de/tm/21/219_TM09_MSBAE50R006.pdf

General Information

16 Buying Approved Plywood for EASA Gliders.
GL1 certified birchply is no longer imported into the UK. It is still made and certified in Finland. Scheibe and Schleicher in very recent emails both insist that only GL1 is used on their aircraft.

Schleicher recommend you buy the wood from www.plandienst.de
Scheibe Aircraft sell plywood directly http://www.scheibe-aircraft.de/
Krane LTB in Germany http://www.ltb-krane.de/

The shipping cost can be more than the wood. I suggest you coordinate with other inspectors/repairers and buy more than one sheet at a time.

Compliance Statement:
All mandatory inspections and modifications have been included up to the following:
CAA CAP 455 Airworthiness Notices, Withdrawn. See CAP 562 and CAP 747.
CAA CAP 747 Mandatory Requirements for Aircraft, issue: 3 amendment: 2014/2
State of Design Airworthiness Directives review date: 9/12/14

For reference:
FAA Summary of Airworthiness Directives. Bi-weekly listing 24
EASA Airworthiness Directives review date: 8/12/14
EASA Airworthiness Directives Bi-weekly issue: 25
CAA CAP 476 Mandatory Aircraft Modifications and Inspections Summary issue: 287

Maintenance Programme:
CAA/LAMS/A/1999. Issue 2, amendment 0
CAA/LAMP/A/2007, Issue 1, amendment 2/2008
BGA GMP, Issue 1, amendment 2

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