# Technical News Sheet

*Issue 2-2016* *Date: 7 December 2016*

## Airworthiness Information

**Aircraft**

**1. All Grob 109 EASA AD 2016-0228 Mandatory**
http://ad.easa.europa.eu/ad/2016-0228
Occurrences were reported of broken pivots of the tail wheel mounting bracket. Subsequent investigation attributed these events to corrosion and damage due to wear.

**2. IS-28B2 Sailplanes EASA AD 2016-0026 Mandatory**
http://ad.easa.europa.eu/ad/2016-0233
Cracks were reportedly detected, located at stringers in the rear fuselage of a number of IS-28B2 sailplanes. The subsequent investigation attributed these cracks to induction of a pre-stress during the manufacturing process of the affected parts.

**3. All ASK21 EASA AD 2016-0192 Mandatory**
http://ad.easa.europa.eu/ad/2016-0192
A temporary rudder control blockage was reported involving an ASK21 sailplane equipped with a rudder hand control system. The subsequent investigation revealed significant slack in the rudder control system.

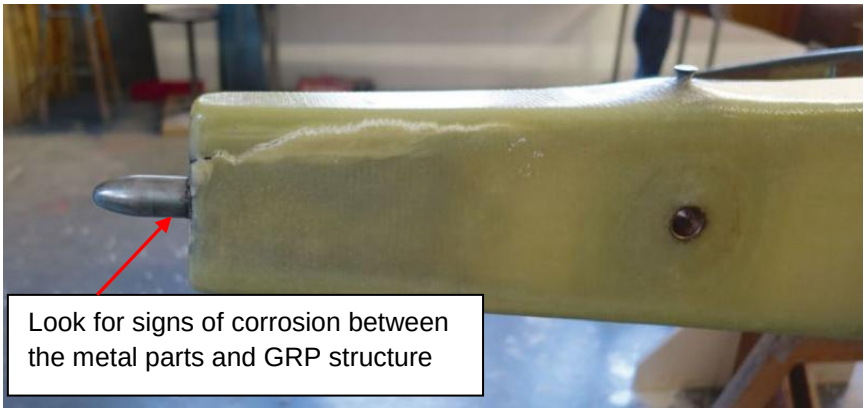
**4. Solo 2625 Engines EASA Proposed AD PAD 16-161**
http://ad.easa.europa.eu/ad/16-161 **Advisory (at present)**

Several instances have been reported of connecting rod bearing failure.

## General Information

**5. SZD 51-1 Junior Main Spar Advisory**

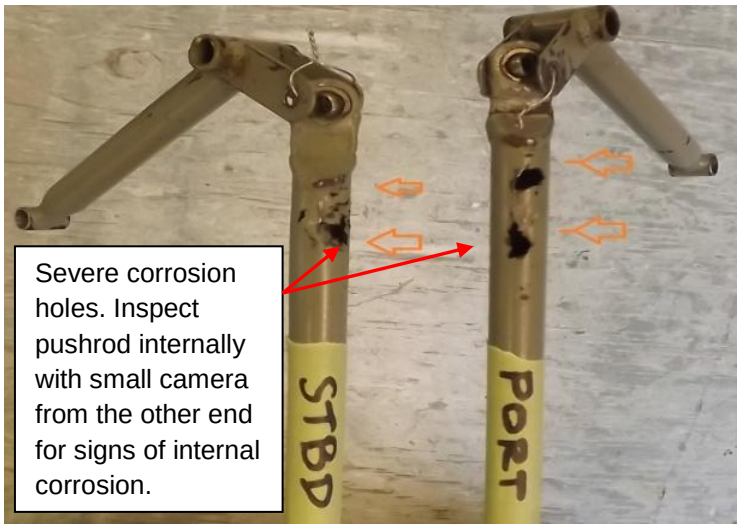
This Junior spar failed during a loop and is being investigated by the Dutch Safety Board. This is a very unusual in-flight failure and, as yet, there is no reason to suspect that it is generic to all Juniors. However, a good look at the main spar at next inspection is advised.



## *Ageing GRP Glider Issues*

The following reports involve problems affecting mainly old GRP gliders caused by unventilated trailers, damp hangars or outdoor parking (including under covers). This results in high humidity, leading to damp that gets into every crevice. These crevices then expand when the moisture freezes during winter. The damage and corrosion caused has, in some cases, gone unchecked for many years due to inaccessibility. However, with the availability of very cheap (less than £10) 7mm cameras with built-in LED lights, there are few reasons not to find these ageing problems during annual inspections.

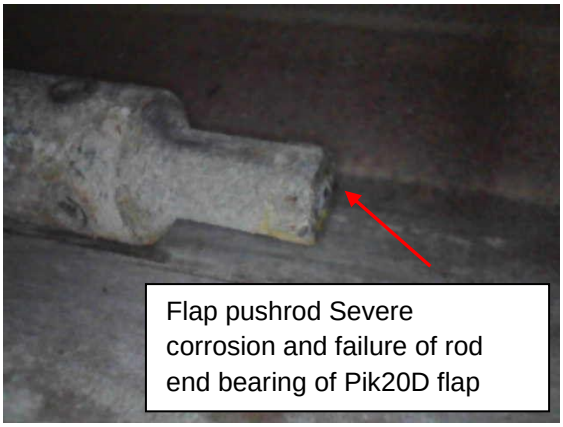
### 6. Libelle (and possibly other types) Advisory




Severe corrosion holes. Inspect pushrod internally with small camera from the other end for signs of internal corrosion.

The picture shows holes in the pushrods caused by severe internal corrosion in the airbrake paddle pushrods in the airbrake box. The corrosion holes are on the lower surface of the pushrod against the lower surface of the brake box, so are very hard to spot. The other end of the pushrod has an 8mm threaded rod that can be removed to allow internal inspection of the pushrod with a 7mm camera. The water could have got into the check hole of the 8mm rod end, when the brake box was filled with water (left out in the rain?). Report any findings to the CTO.

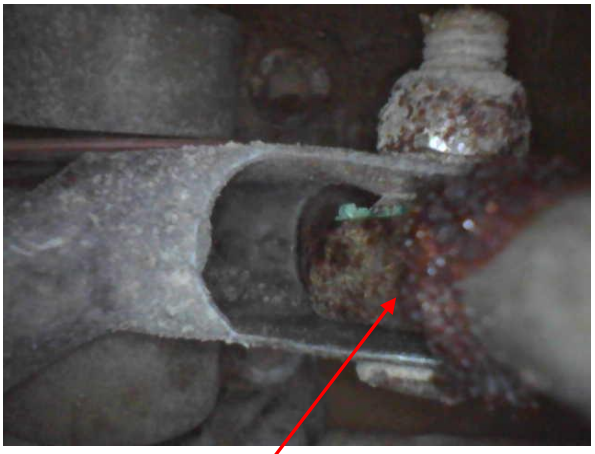
### 7. Pik20 Wing Pushrods and Bearings (all variants) Advisory

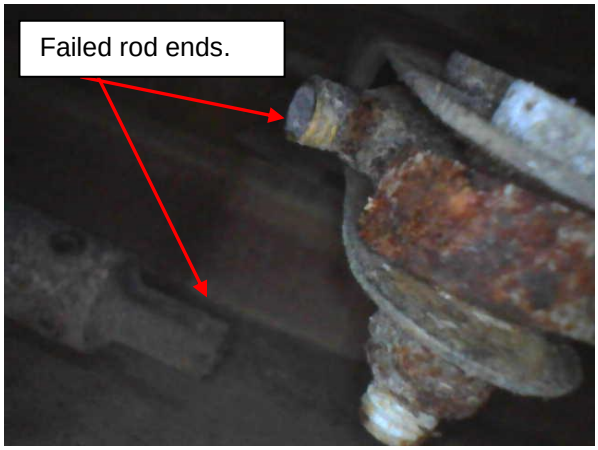


Flap pushrod Severe corrosion and failure of rod end bearing of Pik20D flap

This was found when the flaps were reported as being a bit stiff.

At the next annual, we advise you to look inside the wing and fuselage with a camera. Report any problems to the CTO. The trailer was fairly damp and unventilated. When we checked a Pik 20E from a ventilated trailer at the same site it did not have this problem.






These levels of corrosion are totally unacceptable. Note that it requires up to 8 holes per wing to remove all pushrods

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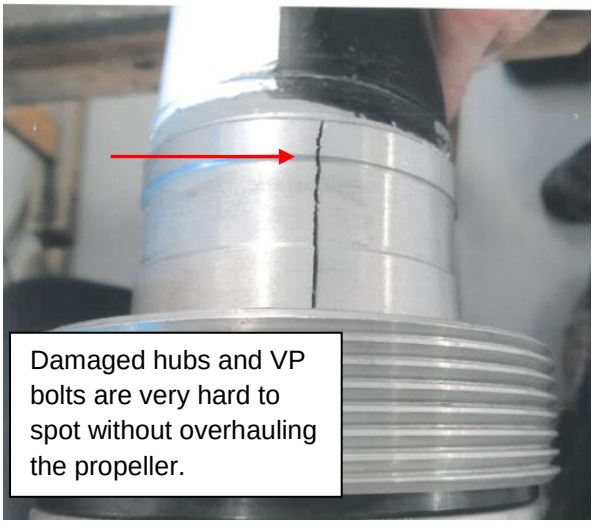
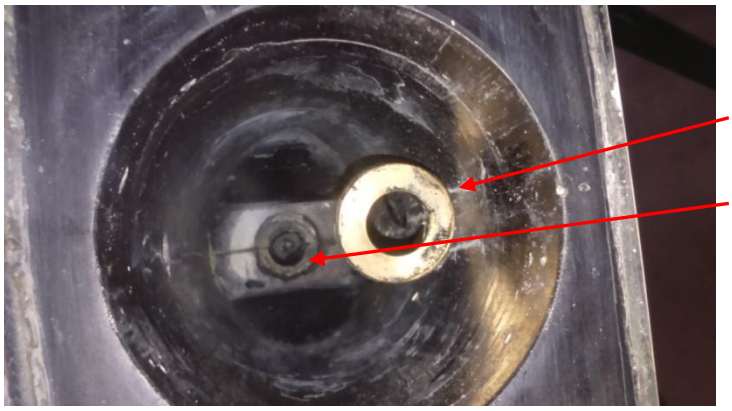
**8. Grob 109 (and other types with wooden propellers in metal hubs) Advisory**




Cracked prop hub, caused by expanding wooden/composite blade. This prop was less than 5 years old when damage found due to small expansion cracks in prop blade.

If you ever consider extending the 6 year prop life by declaring a deviation (EASA terminology for “on condition” when using a SDMP, see item 14) be aware that, if the aircraft is stored outside under covers or in humid environments, this hidden damage is far more likely.

## 9. Duo Discus Issues Found on 6000 Hour Inspection — Advisory



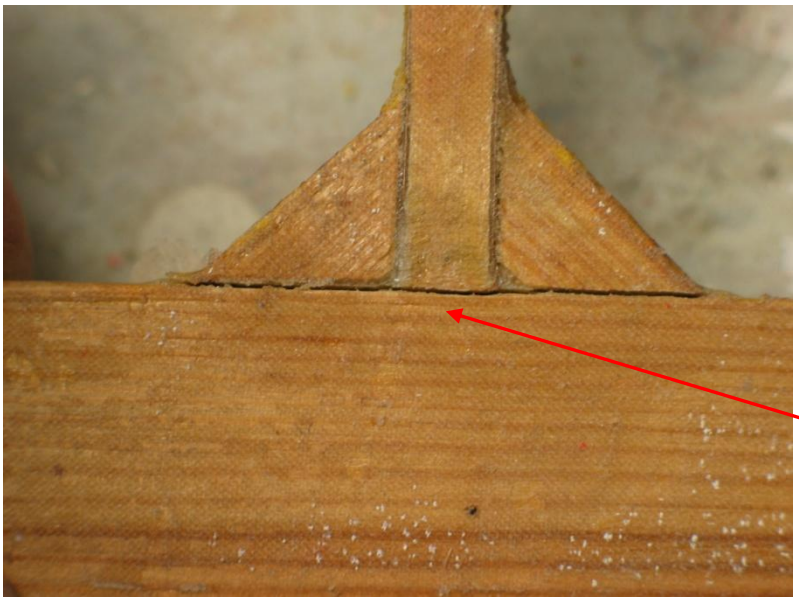
Loose wing tip spigot bush in wing (in this picture it is totally detached) This results in the tip being a very loose fit. (check play every rig?)

The bush should be a tight fit in here.

Note that excessive play can be caused by a worn bush rather than a detached bush. In all instances contact the agent for a repair scheme.

Broken aileron hinge - only found when Mylar removed.

## 10. SZD30 Pirat Elevator Trailing Edge Glue Joint Broken/Failed — Advisory



This is not a type renowned for glue joint issues.

End grain gluing of wood does not give great adhesion qualities, making end grain joints more susceptible to flexing damage.

## 11. LS/DG and Nimbus Undercarriage Collapses (and possibly others) Advisory

These are rubber LS4 undercarriage mounts. They have a limited life. No perishing or bulging allowed. When buying new mounts, inspect carefully before fitting them, as they have often sat on a shelf for many years and are unacceptably perished.

The cause is often lack of maintenance. Legacy (and some new) LS and DG gliders have undercarriage mounting rubbers, rubber suspension discs (in the metal legs), and gas struts fitted. All these items perish and have a finite life. In the late 1980s, when I worked at the LS factory, when we did an annual on an LS1, 3 or 4, all the undercarriage mounting rubbers and gas struts would be changed every 6 years. The maintenance manual did not call for this, but it was factory policy to avoid unnecessary problems. The maintenance manual often states to check these things but does not actually tell you how check the condition. Trying to put the wheel down when there is insufficient clearance to the ground can do a lot of damage to perished mounting rubbers, often leading to a collapse.

At every annual, check the rubber for any signs of bulging or perishing (always change the lot if any are perished), check that the gas strut still has the correct force, and that the suspension forks are not seized solid. Also check that the undercarriage over-centre locks are all correctly adjusted.

## 12. Schempp-Hirth Undercarriage Issues (that should be found on annuals) Advisory

It is also quite common to find the undercarriage lever up/down detent guide (usually made of nylon or fibre) in the cockpit of Schempp-Hirth gliders to be very worn. This makes them more prone to jumping out on bumpy ground and collapsing (usually when being towed backwards).

There are springs in some of the metal U/C legs that seize solid due to corrosion and the retaining bolts for the springs may be broken. Also, we have found numerous over-centre locks where only one leg is correctly adjusted on one undercarriage leg rather than both. At annual, these items are often caked in mud and require servicing (stripping, cleaning, checking and lubricating during reassembly) rather than just inspection.

## 13. Wheel Brake Torque Links (Hydraulic or Drum Brakes) Advisory

Any play at all in the torque link (which transfers all the wheel brake loads from the wheel hub to the undercarriage) leads to rapid failure of the stud. This subsequent failure allows the entire hub to rotate; this collapses the undercarriage and pulls the wheel brake cable out of the stick which, in turn, pulls the stick fully forward!

**14. Self-Declared Maintenance Programmes (SDMP) Advisory**

Any aircraft currently maintained on the LAMP programme (only tugs and most motor gliders) will need to be on an SDMP by 30/9/17. Any aircraft imported after 1/10/16 will also need to be on an SDMP before the CAA will process them. We are developing an AMP document to give thorough advice; this will be published in January. For gliders in the GMP, no change will be required until Part-M Light is implemented in the UK - not before 2018.

If you need (or want) to change to the SDMP, then contact me for the latest information as we intend that everybody will use the same form of declarations and deviations MIP (Minimum Inspection Programme).

**15. K6 Wing Root Glue Failure Advisory**

This root rib plywood unpeeled easily once an unbonded edge was found. However, prior to this, the wing was passing its glue inspection. This emphasised the need to put some stress on glue joints and not rely totally on visual inspections. There will be a separate update about glue failure in the coming weeks. Terry Mitchell has made a YouTube video of him discovering glue failure in a K8 which can be found at https://youtu.be/JPCj_yY58WU.

Root rib ply peeled cleanly off.

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, amdt 2016/01
State of Design Airworthiness Directives: review date 07/12/16

For reference:

FAA Summary of Airworthiness Directives: bi-weekly listing 2016-04
EASA Airworthiness Directives: review date 07/12/2016
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 (no longer valid after 20/09/2017)
BGA GMP: Issue 1, amendment 2

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