

DEAR HAWK OWNERS:

THIS FIRST PORTION OF THIS NEWSLETTER IS GOING TO ALL HAWK OWNERS WE HAVE ON OUR CURRENT OWNERS' LIST. The second part is going to those who have subscribed to the Newsletter. If you wish to subscribe to the Newsletter, send \$10.00 to CGS Aviation, Inc., ~~P.O. Box 41007, Brecksville, Ohio, 44141, (216) 632-1424~~ P.O. Box 470635, Broadview Hts., Ohio 44147 216-632-1424 Fax 216-632-1207

SERVICE BULLETIN 4-20-89 (a), (b), (c)

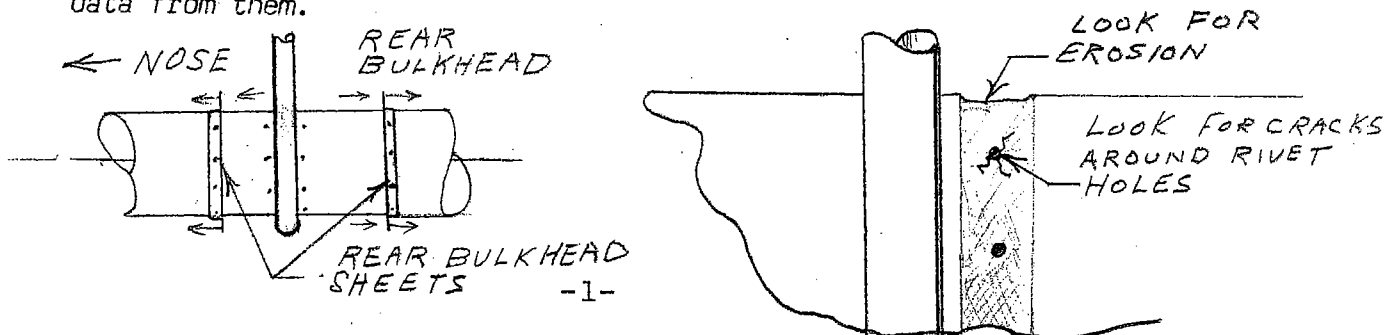
4/20/89 (a) Subject-Main Boom Fretting Corrosion

History

A CGS Hawk single seat, with approximately 400 hrs. total time, was said to have experienced a tail boom failure in flight resulting in a fatal accident. The Hawk was reported to be flying straight and level on a down wind leg at approximately 600 feet when the main boom failed at the rear bulkhead area. CGS has not seen the area of the break, and we are waiting for the boom to be sent to us for inspection and testing. However, we also have reports from that area that the Hawk in question has had numerous hard landings and numerous landing gear leg replacements. We were also told that the area of the failure had a lot of a black sooty residue around it. This would indicate loose rivets around the bulkhead collar.

Probable Cause

Black sooty residue indicates loose rivets and parts rubbing against each other. If the bulkhead rivets were loose and allowed the bulkhead to rub against the boom tube due to vibration, it is very possible that this fretting would erode away the bulkhead and/or the boom tube in the area under the bulkhead flange. The amount of rivets used in securing the bulkhead to the tube is not excessive. The normal failure mode is for the boom tube to buckle well before it breaks and flight loads can not load the boom enough to buckle it. We feel the Hawk in question had prior damage before the fatal flight and that improper preflight techniques had been used. Neither the FAA or the NTSB have investigated this accident, so we have no data from them.



Action

Inspect the area of the rear bulkhead for loose rivets or black sooty residue. If either is present, remove the rear bulkhead sheet by drilling out the rivets and slide the bulkhead sheet toward the tail. Inspect the main boom in the area that was under the bulkhead. If any erosion is present, contact CGS Aviation for a fix. If none is found, clean the area with acetone and apply PC-7 epoxy putty around the tube and re-install the bulkhead. Insert the rivets while epoxy is still wet. Wipe off any left over epoxy with acetone. Do the front sheet of the rear bulkhead also. Do not add doublers or sleeves without contacting CGS first. A wrong size doubler can cause more trouble later on.

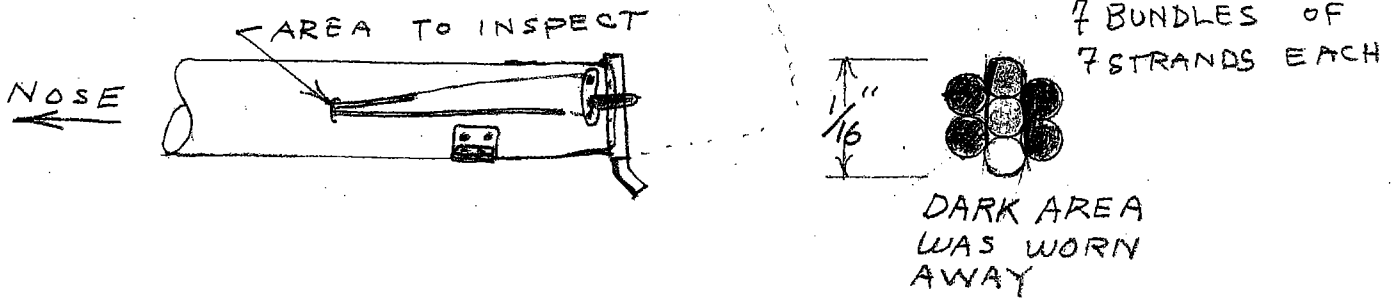
4/20/89 (b) Subject-Control Cable Erosion

History

Factory owned CGS Hawk single seat, tail dragger with 1142 hours total time. This Hawk has been inspected every 100 hours during its lifetime and was well maintained. As a factory demo ship, it had done many loops, wing overs, etc.

Probable Cause

During a demonstration flight at the Sun-N-Fun while in a near verticle bank at approximately 20' altitude and a speed of 60-80 mph, the up elevator cable broke which resulted in an immediate slip to the ground. The right wing hit first, then the nose, which was almost verticle. The plane continued on its back and came to a rest about 75'-100' from the point of impact. The pilot sustained a broken ankle and bruises. The Hawk was a total loss. However, the engine stayed in its place, the seat belt and harness did their job as did the roll cage in protecting the pilot. Many spectators were later heard to comment that had he been flying anything but a Hawk, it would have been a fatality. The pilot, who was conscious the entire time said he thought the up elevator cable broke. Inspection showed the up cable had indeed broken. Further analysis showed the location where the cable broke had been reduced in cross section by approximately 65%. That means only about 2.5 strands were left out of 7. The area of erosion was where the cable and housing exit the main tube near the tail. We had always thought that the stainless cable would saw through the nylon housing. We have recently learned from varied sources that nylon guides, micarta, and other plastics can wear down metals. Further inspection showed that the rudder cables had two frayed strands. The aileron cables showed no signs of wear.



Action

Inspect rudder and elevator cables where they exit the boom tube. You can loosen the clamps and slide the nylon housing forward to examine the cables. It may be necessary to trim off some of the housing. If you see any wear on your cables, replace them and please send the worn portion of your old cable to CGS along with the amount of time in service, and whether it is the up or down elevator or right or left rudder cable.

This information will assist us in making a better determination as to when to change cables.

If any black powder can be seen through the housing or if you have 400-500 hours time on your Hawk, replace cables.

4/20/89 (c) Subject-Cracked Gussets

History

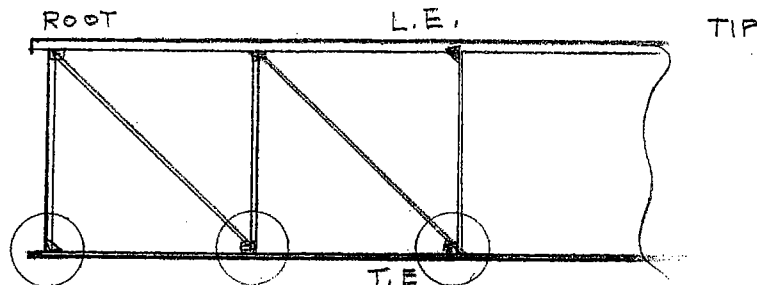
Two customers with 400 and 250 hours and a factory Hawk with 1142 hours had found cracks in wing gussets.

Cause

At this time, data is insufficient to determine a cause.

Action

Inspect gussets and if cracked, replace. See Drawing for location of suspect gussets. LET US KNOW IF YOU FIND ANY CRACKED GUSSETS.



This notice is being sent to all persons currently on file with CGS as Hawk Owners. If you have sold you Hawk, please notify CGS and send us the name and address of the person you sold your Hawk to. Without this information, we have no way of keeping the new owners informed of these types of incidents.

From: CGS Aviation, Inc.
P.O. Box 41007
Brecksville, Ohio 44141

To: