

Service Letter: 442

Date: February 16, 2017

Title: Inspection of Aileron Hinge Rib and Support

Models: 8KCAB serial numbers 1116-2012 to 1120-2012, 1122-2012 and up
8KCAB any serial number equipped with 4-2142 exposed balance ailerons

Description: Service instructions do not specifically reference inspection of the aileron hinge rib or support. This service letter adds an inspection procedure and interval for these components. This service letter was prompted by a report of a cracked hinge support and cracked hinge ribs. The failure resulted in partial loss of control with the aileron binding against the cove.

The inspection procedures described herein are not intended to be a substitute for a properly performed 100 hour / annual inspection. Refer to Advisory Circular (AC) 43.13-1B: Acceptable Methods, Techniques, and Practices: Aircraft Inspection and Repair.

Inspection: Inspect aileron hinge ribs and aileron hinge support for cracks or other damage within the next 10 hours and at every 100-hour or annual inspection.

1. Remove left and right wing tips.
2. Remove fabric from the wing tip ribs as shown in figure 1 (use a soldering iron to open a 1.0 inch diameter hole directly aft of the rear spar, use a razor blade to open all other holes).

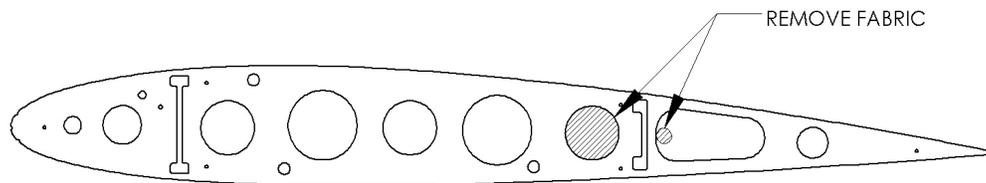


Figure 1, Wing Tip Fabric

3. Open access holes on the bottom of the wing at stations 77.5 and 119.0 as measured from the wing butt rib (2 locations per wing). The access holes are shown in figure 2. Opening the access holes is optional provided an equivalent inspection can be conducted (i.e. borescope).
4. Remove inspection covers located on the bottom of at wing station 114.0. Inspection cover location is shown in figure 2.

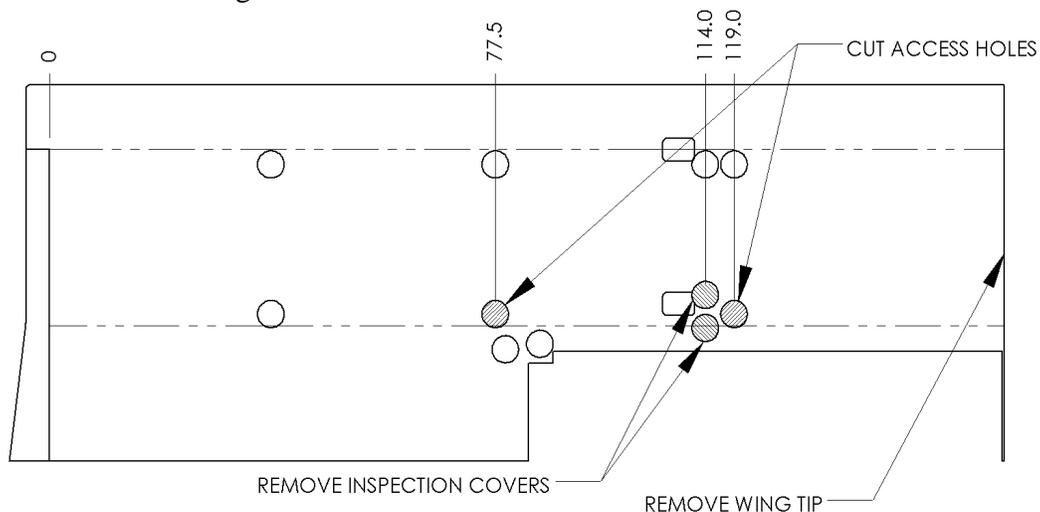


Figure 2, Wing Inspection Locations

5. Visually inspect hinge rib and rear spar gusset for cracks as shown in figure 3 (3 locations per wing). The cracks originate at the rear spar relief and propagate diagonally toward the rib lightening hole. The cracks may also originate from rivet locations. Using a mirror inspect the opposite side of the hinge rib and gusset for cracks.

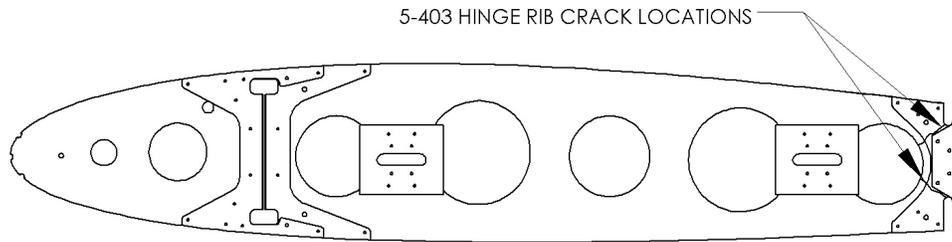


Figure 3, Hinge Rib Crack Locations

6. Visually inspect ribs adjacent the hinge ribs for attachment at the rear spar and cracks. The cracks may develop directly above or below the rear spar.
7. Visually inspect hinge support for cracks as shown in figure 4 (2 locations per wing). The cracks may originate from the upper or lower edge of the support and propagate along the bend line. Inspection should also include the bolt locations at the rear spar. Use a mirror to inspect opposite side of the hinge supports. Inspection of the opposite side of the middle hinge support is difficult but possible by locating the mirror above and immediately outboard of the support.

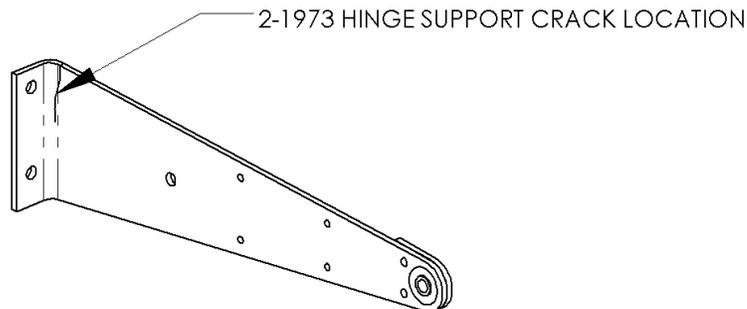


Figure 4, Hinge Support Hinge Locations

8. If no structural problems are found. Reinstall left and right wing tips and install 3-639 covers where access holes were opened or covers were removed. Record satisfactory inspection to SL 442 in the aircraft logbook. If access holes in step 3 are not opened also record the method used inspection.
9. American Champion requests a brief report of the initial inspection. Please include the following information via email to aca-engineering@tds.net or via phone 262-534-6315:

Serial number: 1160-2015

Total time: 71 hours

Description of damage: None

Brief description of the airplanes primary use: (i.e. personal, tailwheel training, aerobatic training, light aerobatics, competition aerobatics)