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UNIVAIR®

ERCOUPE SERVICE BULLETIN NO. 35

AILERON PUSHROD AND INBOARD AILERON INSPECTION

Engineering Aspects of this Service Bulletin are FAA Approved

DATE: August 25, 2014, Revision A

SUBJECT: Inspection of Aileron Pushrod Tube, Ercoupe p/n F52034 and 914078-001, for Evidence of Internal Corrosion.

Inspection of Inboard Aileron at Pushrod Attach Point for Evidence of Internal Corrosion.

MODELS AFFECTED: All Ercoupe 415-C, 415-CD, 415-D, 415-E and 415-G
All Forney F-1, F-1A (p/n F52034)
All Alon A-2, A-2A aircraft (p/n A52436-1)
All Mooney M-10 aircraft (p/n 914078-001)

COMPLIANCE: Initial inspection required within the next 12 calendar months or next annual inspection, whichever occurs first. Recurrent inspections every five years or whenever additional corrosion is suspected, whichever comes first.

Univair Aircraft Corporation Considers Compliance with this Service Bulletin Mandatory.

Revision	Date	Page	Description
NC	3.25.2013	-	Initial Release
A	8.25.2014	3	Alternate Oil Specification

PERSONNEL: **IMPORTANT:** All work and inspections required by this Service Bulletin are to be performed by a properly rated and equipped certified mechanic or repair station with experience in the work, use of equipment, inspections, and repairs listed.

STATEMENT OF DIFFICULTY:

There have been several field reports of internal corrosion found on Ercoupe aileron pushrod tubes, p/n F52034, p/n A52436-1, and 914078-001. This is the short pushrod from the bellcrank to the aileron. This internal corrosion was detected at the low side of the aft end of the pushrod where moisture may collect. Typically, the extent of this corrosion has only been found by removing paint from the tube.

Undetected corrosion in the aileron pushrod tube may lead to failure of the tube, loss of control of the aileron and possible loss of control of the aircraft.

Additionally, there have been field reports of dissimilar metal corrosion and failed rivets occurring at the steel 415-16013 Aileron Control Horn Assembly and aluminum aileron skin. Structural failure in this area may lead to loss of control of the aileron and possible loss of control of the aircraft.

PROCEDURE:

Personnel conducting the inspection should be familiar with FAA Advisory Circular (AC) 43-4A, Corrosion Control for Aircraft. The advisory circular is an extensive handbook, dealing with the sources of corrosion particular to aircraft structures, as well as steps the aircraft maintenance technician can take in the course of maintaining aircraft that have been attacked by corrosion.

The following procedure is used to inspect the Ercoupe aileron pushrod tube, p/n F52034, p/n A52436-1, or 914078-001:

1. Remove trim strip between center section and outer wing panel.
2. Disconnect aileron pushrod tube from aileron and bellcrank.
3. Remove rod-end bearings from each end of tube. Note pushrod length (hole to hole distance) to assist in reassembly.
4. Inspect entire length of tube for any signs of corrosion.
5. Remove paint from pushrod tube.

6. Inspect for any signs of internal corrosion and rust, paying particular attention to the lower side of the aft end of the tube. Tap pushrod on its end on a bench and look for any rust particles exiting open end of tube.
7. If any corrosion or rust is found, replace the aileron pushrod tube with a new or used serviceable unit.
8. Prime and paint pushrod tube per paint manufacturer's directions. Internally oil tube with Val-Oil, or any alternate preservative conforming to Federal Specification TT-S-176D or MIL-C-16173E Grade IV.
9. Service rod-end bearings per Ercoupe Memorandum No. 46, Relubrication of Sealed Bearings. Insure that 415-52032 wooden plug is installed in the end of each rod-end bearing. See Figure 1 at the end of this bulletin.
10. Install rod-end bearings in pushrod tube in accordance with existing data. See Figure 1 of this Service Bulletin.

NOTE: The 415-16013 Aileron Control Horn Assembly is not used on Mooney M-10 aircraft. These aircraft use all aluminum parts at the pushrod attach point on the inboard end of the aileron. Therefore, Steps 11 through 17 do not apply to the Mooney M-10 aircraft.

However, Ercoupe Service Bulletin 35 still requires the inspection of the control horn area and upper and lower aileron skins for any signs of corrosion and/or fatigue on Mooney M-10 aircraft. See FAA Advisory Circular AC43-4A for guidelines concerning corrosion control.

11. Cut one 1.56 diameter hole in lower aileron skin aft of the 415-16013 Aileron Control Horn Assembly per drawing 415-16001 INSP as found in Ercoupe Service Kit SK-83.
12. Locate and drill the three #17 (.173) holes using the 415-22001-101 round inspection plate as a guide per drawing 415-16001 INSP.
13. Using the 415-16001-101 doubler as a template, locate and drill seventeen #30 (.129) holes per drawing 415-16001 INSP. Insert 415-16001-101 doubler through the inspection hole and secure with seventeen MS20470AD4 rivets.
14. Apply corrosion protection to the newly exposed edge of the round cutout to prevent corrosion per AC43.13-1B, Chapter 6, Section 3, "Corrosion Protection Measures for Basic Materials".
15. Inspect the aileron pushrod attach area on the inboard end of the aileron for any evidence of corrosion, fatigue, bubbling paint, and/or deformed rivets. Attention should be given to the area where the 415-16013 steel aileron

control horn assembly attaches to the aluminum lower aileron skin. Inspect this area both internally and externally.

See FAA Advisory Circular AC43.13-1B for guidelines concerning dissimilar metal corrosion.

16. If corrosion is found, repair and/or replace parts with new or used serviceable units. Replacement parts are available for purchase from Univair.
17. When inspection is complete, install 294667 clipnuts and secure the 415-22001-101 round inspection plate with three MS35206-230 screws.

The following steps apply to all model aircraft as listed on page one of this service bulletin:

18. Install aileron pushrod tube p/n F52034, A52436-1 or 914078-001 between bellcrank and aileron control horn assembly.
19. After reinstalling the pushrod tubes, rig ailerons in accordance with Ercoupe, Forney, Alon, or Mooney M-10 Service Manuals, depending on the specific model of aircraft. Refer to Ercoupe Service Memoranda 56, Revision A and 57, Revision A for assistance in aileron rigging.
20. When proper control surface rigging has been established, reinstall trim strip between center section and outer wing panel.
21. Make appropriate logbook entry stating that Ercoupe Service Bulletin 35 has been complied with.

CONTINUED MAINTENANCE:

Visually inspect aileron pushrod tubes for signs of any possible corrosion during each annual inspection. Visually inspect inboard end of each aileron for signs of any possible corrosion. This includes, but is not limited to bubbling paint, distorted skin, and/or deformed or missing rivets.

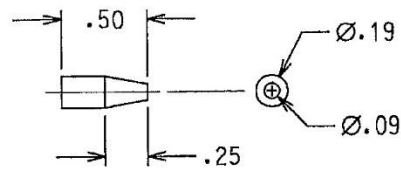
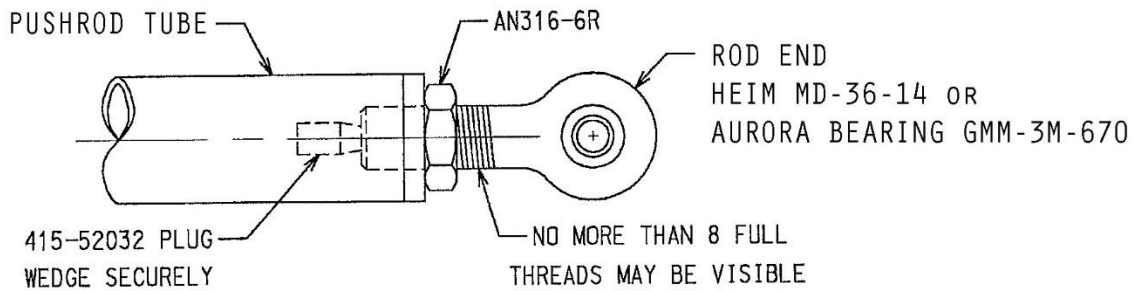
Verify the security of the MS35206-230 machine screws and 294667 clipnuts every 100 hours or during annual inspection, whichever occurs first.

INFORMATION AND PARTS AVAILABILITY:

Contact Univair Aircraft Corporation for availability of replacement aileron pushrods, aileron control horn assemblies and other parts associated with this flight control system.

Ercoupe Service Kit SK-83 contains the necessary inspection plate, doubler, rivets, screws, and clipnuts required to comply with this service bulletin. SK-83 contains no corrosion protection measures as specified in Step 14, above.

Copies of Aircraft Flight Manuals, Owners Manuals, Service Manuals, Service Memos, and/or Service Bulletins mentioned for aircraft models listed in Ercoupe Service Bulletin No. 35 are available from Univair Aircraft Corporation.



415-52032
FABRICATE FROM DOWEL

FIGURE 1