

LAA/AWA/19/03
5th February 2019

Auster AOP.9 & Auster E-3 Aircraft

Inspection of Rivets Securing the Aileron Operating Rod-End Fittings

During the development of the AOP.9, the specification of the rivets used to attach the operating rod-end fittings to two of the operating rods in the aileron control system was changed. Though no specific history concerning the change is available, we think that it was made to increase the strength of the joint between the rod-end fitting and the push-pull rod itself.

The original blind rivets were of a type which recent events have shown may be prone to stress corrosion cracking (SCC). SCC is a materials failure mode that is very difficult to detect visually as cracks can form within the material itself. If left unchecked SCC will lead ultimately to the failure of an affected component. The aircraft's manufacturer changed the rivet type initially used to a pinned Chobert rivet which is a type of rivet not widely used in GA aircraft these days.

It has come to light that one AOP.9 operating in the LAA fleet was fitted with the lower strength rivets. Metallurgical examination of these rivets after an in-service failure revealed that they were exhibiting signs of serious SCC. Failure of the rivets would lead to an end fitting separating from the operating rod, loss of control over one aileron and the potential of a jam in the aileron circuit.

LAA Engineering has just revised and reissued an Airworthiness Information Leaflet (AIL) (LAA/MOD/920/001 Issue 2) requiring owners of Auster AOP.9 aircraft to inspect the riveted connection between the rod-end fitting to the aileron operating rod; under the terms of the initial AIL (Issue 1), aircraft were only able to be released to service if they are fitted with pinned Chobert rivets.

As further information from the AOP.9 owners and LAA Inspectors has been received and assessed, LAA Engineering has been able to revise the instructions in the AIL, this revision (to Issue 2) allows owners to carry on flying their aircraft with the original rivets subject to the riveted assembly being in good condition as determined by an inspection by an LAA Inspector pending the development of a long-term solution to tackle the potential of SCC in the earlier type rivet.

A copy of the (LAA/MOD/920/001 Issue 2) can be downloaded [HERE](#).

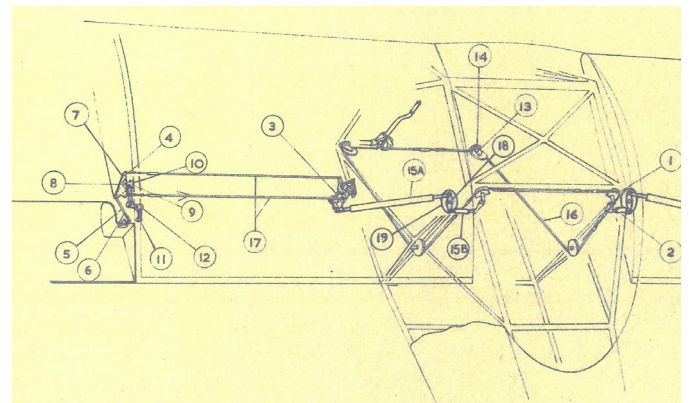


Fig. 1 The drawing above shows the port side aileron operating circuit (the view is from above and slightly behind the wing): the operating rod to be checked is item 5 in the drawing with the Chobert rivets listed as item 6.

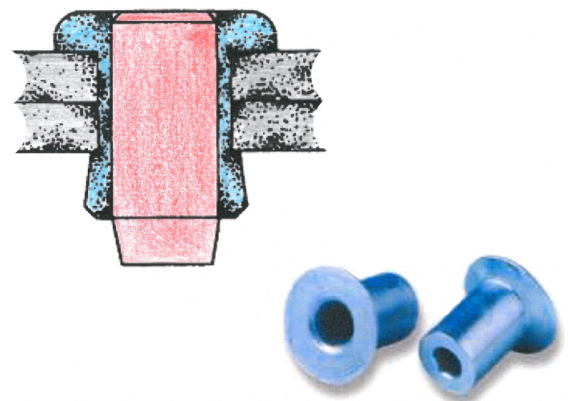


Fig. 2 The sketch above shows a cross section of a Chobert rivet in place securing two separate pieces of material; note that the rivet is shaded blue (as are the unformed rivets shown below right), the sealing pin, essential in the rivets used in the AOP.9 aileron operating rod, is shaded red.