AIRWORTHINESS ALERT

LAA/AWA/13/05
1st October 2013

Pioneer Aircraft

Servo-Driven Trim Operating Rods

A recent incident involving a Pioneer 200 Microlight aircraft, where severe elevator vibration created handling difficulties during an otherwise normal take-off, was found to have been caused by the failure of the rod linking the servo to the trim tab.

Subsequent examination of the broken part has led to the belief that it is likely that this rod had been overstressed during its initial forming and had partially failed during manufacture; the part finally completely failing after approximately 100 hrs. in service.

The stainless steel trim rod that failed was coupled to a Ray Allen Servo and, to afford correct alignment between the servo and the tab, was bent in two places (see Fig. 1.) … a practice cautioned against by Ray Allen in their installation instructions because of the potential for a serious reduction in the pushrod's strength.

One exacerbating factor was that the Pioneer trim operating rod was manufactured from threaded bar where the root of the thread was acting as a stress

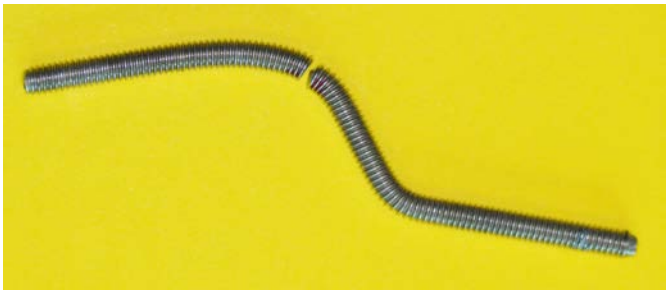

Fig. 1. This picture shows the broken actuator rod removed from the incident aircraft.

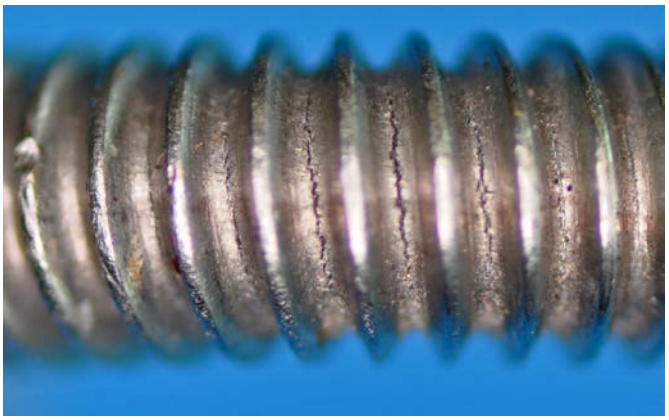

Fig. 2. Cracks are clearly visible in this close-up in the area of the bend.

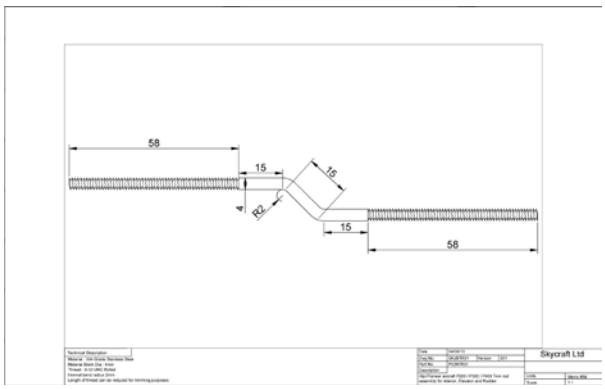

Fig. 3. Skycraft Drawing SKJBTR01

Because of design similarity between the trim operating rods on all Pioneer aircraft, Airworthiness Information Leaflets (AIL) have been issued requiring all the trim rods to be changed to parts manufactured from un-threaded bar.

Copies of the AIL can be downloaded for the Pioneer 200 HERE, for the Pioneer 300 HERE, for the Pioneer 300 Hawk HERE and the Pioneer 400 HERE.

Pioneer's UK agent 'Skycraft' have produced a Trim Rod Replacement Kit which should be available mid-October 2013. The parts are manufactured to an LAA approved drawing (No. SKJBTR01) which can be downloaded HERE.