



SERVICE BULLETIN SB/EUR/08 ISSUE 1

Factory Built Eurostar Aircraft, Aileron Rose Joint

1st June 2012

Classification: - Recommended

Background

The bottom of each control column is attached to a rose joint which is screwed to a pushrod which operates the aileron. The left stick is connected to the left aileron and vice versa.

Photo 1 shows an assembled rose joint, which consists of an eye piece 1, with a thread for screwing into the pushrod, an intermediate ring 2 and a central spherical insert 3 which can swivel for alignment. The intermediate ring 2 is swaged both sides to hold it into the eye piece.

Nature of Defect

During the build of an aircraft it was found that on one rose joint the intermediate ring 2 was not swaged in place on one side, allowing it to easily slide out of the eye. Photo 2 shows the intermediate ring which slid out of the eye, with the spherical insert inside it.

Rose joints are used in various places in the control systems but in most of the installations there is no potential for an unswaged intermediate ring to disconnect from the eye. The only joint that this could partially happen to is at the bottom of each of the control columns.

Airworthiness Implications

Referring to Photo 3, which shows the bottom of the right hand (starboard) stick, it can be seen that a bolt with castellated nut holds 2 rose joints to the bottom of the control stick. The left hand rose joint, next to the castellated nut, is not affected by this bulletin. The rose joint on the right hand side (being held by a thumb and forefinger) is affected. The central spherical insert and the intermediate ring are secured by the bolt, but if the eye is not correctly swaged, it could be possible for it to slide off the intermediate ring (in a right hand direction on the photo, towards the front of the aircraft).

There is no washer behind the bolt head to prevent this, as a washer would restrict the movement necessary for alignment. The eye cannot, however, become completely detached as it comes into contact with the housing before it can clear the bolt head, but if it did slide this far considerable play would exist with the possibility of aileron flutter and some difficulties in precise roll control.

Aircraft Affected

All factory built EV-97 Eurostar aircraft manufactured prior to the date of this bulletin.

Inspection Required

A one off check of the eye end attached to the aileron rod at the bottom of each of the control columns is required.

Referring to Photo 3.

- 1) Visually check that the intermediate ring is central in the eye piece as in Photo 1 (ie it has not moved out in either direction as in Photo 2). If it has moved the complete joint must be replaced. If it has not moved, or if you are unsure, continue with the following check.

- 2) Grasp the rod end firmly with a thumb and forefinger as shown in Photo 3, and try to move the rose joint forwards and backwards (ie to the right and left in the photo.) While doing this wiggle the rose joint to make sure it is not sticking. It should be possible to apply a force of about 5 kg fore and aft with finger pressure. Repeat several times to be sure there is no movement.
- 3) If the rose joint moves as shown in Photo 2, then the rose joint must be replaced with a new one.
- 4) Repeat the test on the other side.

Rectification Action

If a faulty rose joint is found, then contact Cosmik Aviation for a replacement, and for fitting instructions.

If a replacement rose joint is fitted, have a qualified person check the work, then enter the details in the aircraft logbook, referring SERVICE BULLETIN SB/EUR/08 ISSUE 1.

If no fault is found, make a logbook entry that the Service Bulletin has been complied with and no fault found. Mark the affected rose joints on both sides with a dab of red paint (nail varnish is ideal) for future indication that the check has been carried out.

Thank you for your cooperation


Nigel Beale

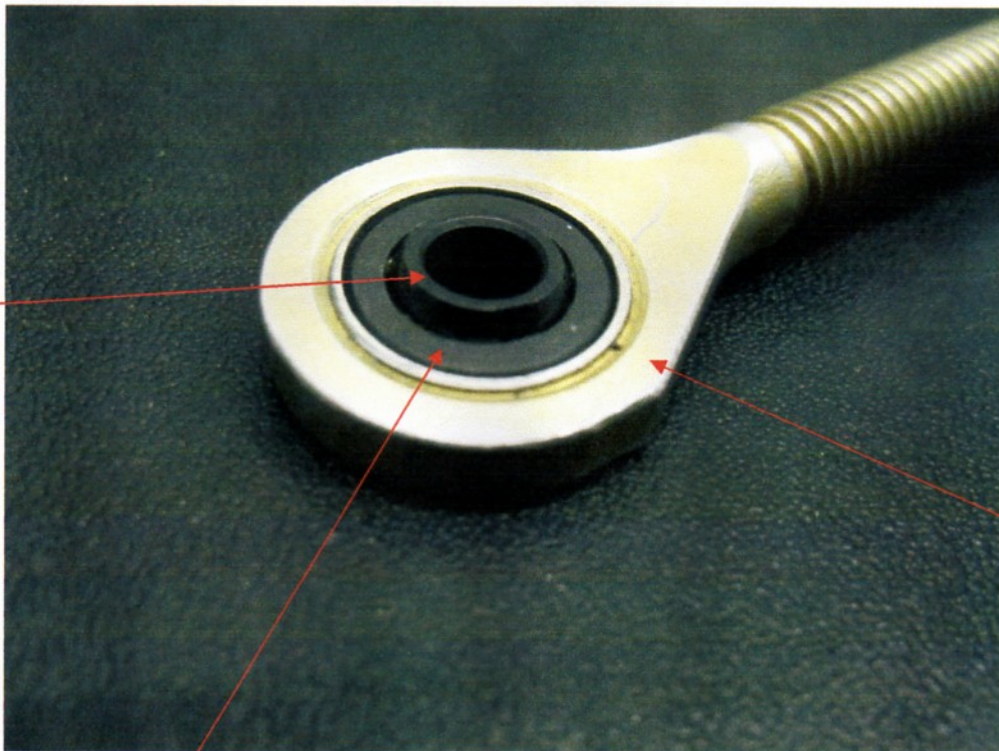


Photo 1



Photo 2

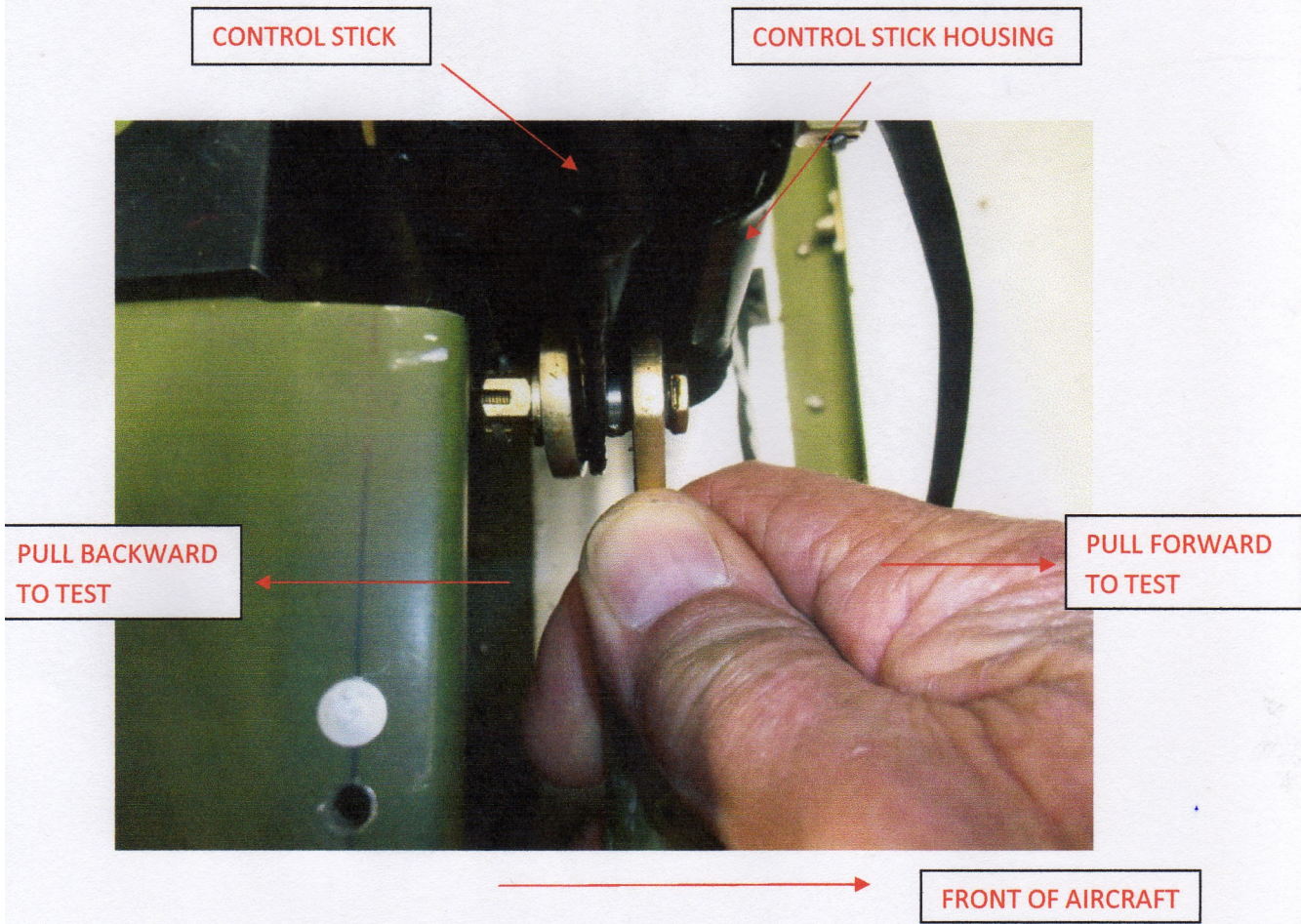


Photo 3 – Right hand side (starboard) shown