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KIT BUILT EV-97 EUROSTAR AIRCRAFT
SERVICE BULLETIN SB-EV-97-09
POSSIBLE CORROSION OF PITCH TRIM CABLES

Classification – Recommended

Aircraft affected

All kit built EV-97 teamEurostar UK aircraft.

Nature of defect

There has been one case of an upper pitch trim control cable breaking. The cause of the breakage has been determined to be corrosion of the inner cable. It is probable that water ingress due to the position the elevator control was locked in during storage and/or poor lubrication was the cause. The aircraft concerned had approximately 900 hours flight time and had been stored outside uncovered for 3 1/2 years with the controls "locked" using the seatbelts and the elevator in the full up position. The cable had corroded and failed at a point approximately six inches in from the outer termination on the upper elevator skin, this would have been the low point where any water would have collected.

Airworthiness implications

A normal pre flight inspection should cover this area although the cable is not visible once it has entered the termination on the tailplane. A loss of cable tension possibly accompanied by a lag in trimmer response during flight would be noticed before failure of the cable. Failure of the cable in flight would result in reduced or loss of trim control. We suspect this problem may only affect aircraft stored outside uncovered over long periods.

Inspection

It is impossible to inspect the inner cable without disconnecting and removing it; the only places it can be inspected are where it exits the outer cable terminations on the tailplane upper and lower surfaces and at the trim control lever (requires removal of the flap lever cover) Checking for correct tension of the trim control cables, smooth operation of the trim system and correct lubrication should give an indication of cable condition. Any signs of cable damage or corrosion will require the cable to be replaced.

Maintenance and outside storage

Correct maintenance and lubrication of the trim system can help to prevent water ingress into the trim cables and it is recommended to use waterproof grease around the terminations where the inner cable exits. Section 9.7.3 and 9.8 of the maintenance manual covers inspection and lubrication of the trim cables.

It is also recommended that on aircraft stored outside that the elevator is not locked in the up position but at the neutral or even slightly down position so as not to encourage water ingress.

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