

1986 Shadow (CFM aircraft #K19) TTAF = 720 hrs approx

- Boom was resting on the alloy gusset (F178) that ties the two rear hanger tubes together. *[see Photo 1]*
- Tail end of the boom could be moved up and down about 45mm without lifting the fuselage.
- Tip of prop blade was nearly touching the underside of wing.
- A 25mm long groove has been worn into the underside of the boom by the alloy gusset. *[see Photo 2]*



Photo 1 View of rear hanger attachment, with boom resting on alloy gusset.



Photo 2 Groove across underside of boom (25mm long x 0.6mm deep) worn by the rear hanger gusset

Worn rear hanger-to-boom attachment (above rear bulkhead inside wing centre section)

The very long 1/4" steel thru-stud (F111) was jammed inside the alloy spacer (F144). It was cut off to remove.

There was slight wear (0.5mm) in the attachment holes at upper end of the rear hanger tubes (F142).

The alloy spacer tube (F144) inside the boom was too short to span the gap between hanger tubes (by at least 3 mm). This alloy spacer was very worn at both ends. [see Photo 3 + Photo 4]



Photo 3 Rear hanger thru-stud, showing worn starboard end of under-length alloy spacer (compare with new full-length spacer at top)

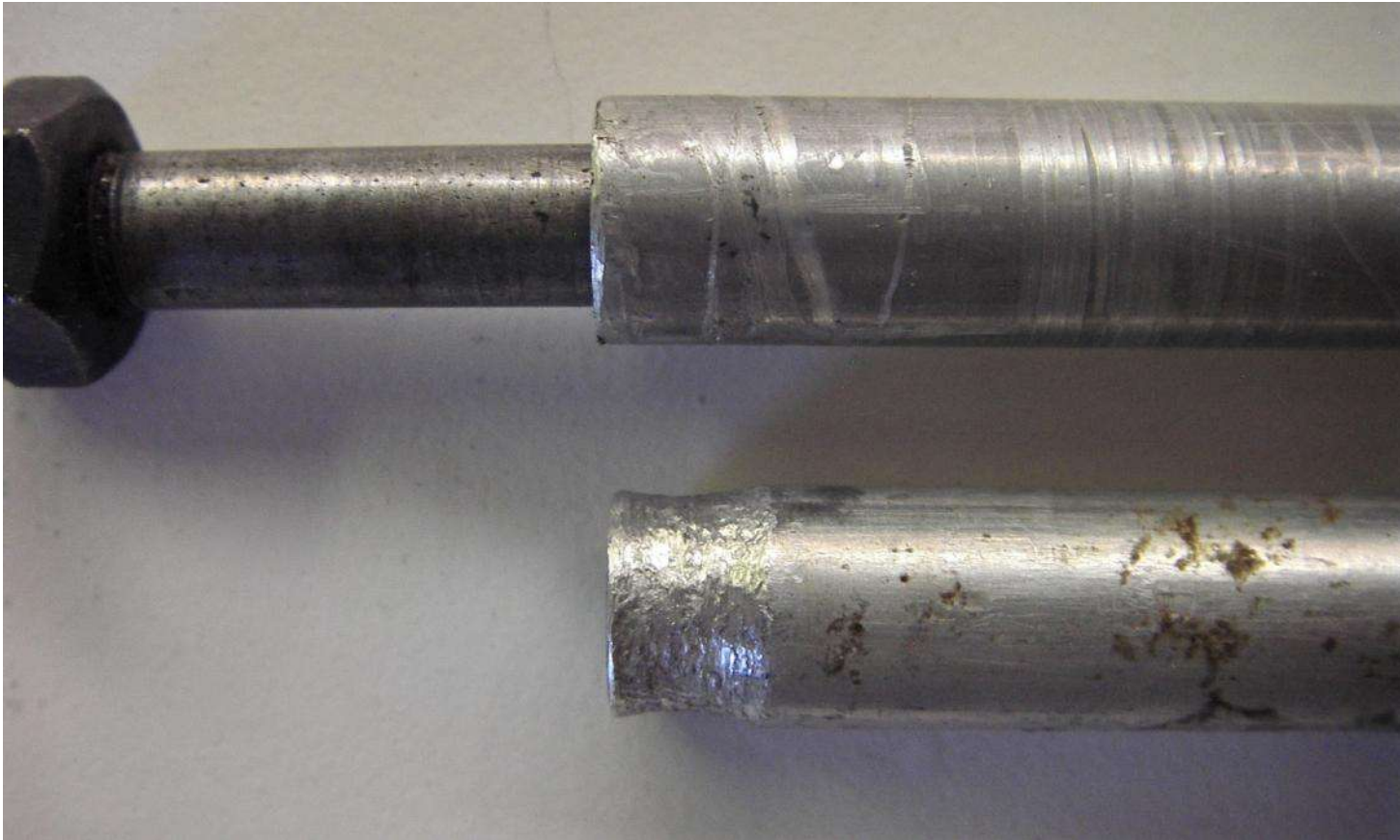


Photo 4 Rear hanger thru-stud, showing worn port end of alloy spacer (compare with new spacer at top)

The attachment holes in the boom wall and alloy backing plates (F217) were very worn. [see *Photo 5 + Photo 6*] Both sides had very ovalised holes with about 5mm slop.

The starboard backing plate was only 1mm thick, while the port backing plate was 2mm thick.



Photo 5 Starboard side of boom at rear hanger attachment, showing at least 5.0mm ovalised wear (note under-length alloy spacer tube and 1mm thick backing plate)



Photo 6 Port side of boom at rear hanger attachment, showing at least 4.5mm ovalised wear (in 2mm thick port backing plate)

Worn front hanger-to-boom attachment (above front bulkhead inside wing LE)

The mounting holes in the front alloy hanger brackets (F153) were worn. [see Photo 7]
The port side had very ovalised holes with 1.5mm slop.

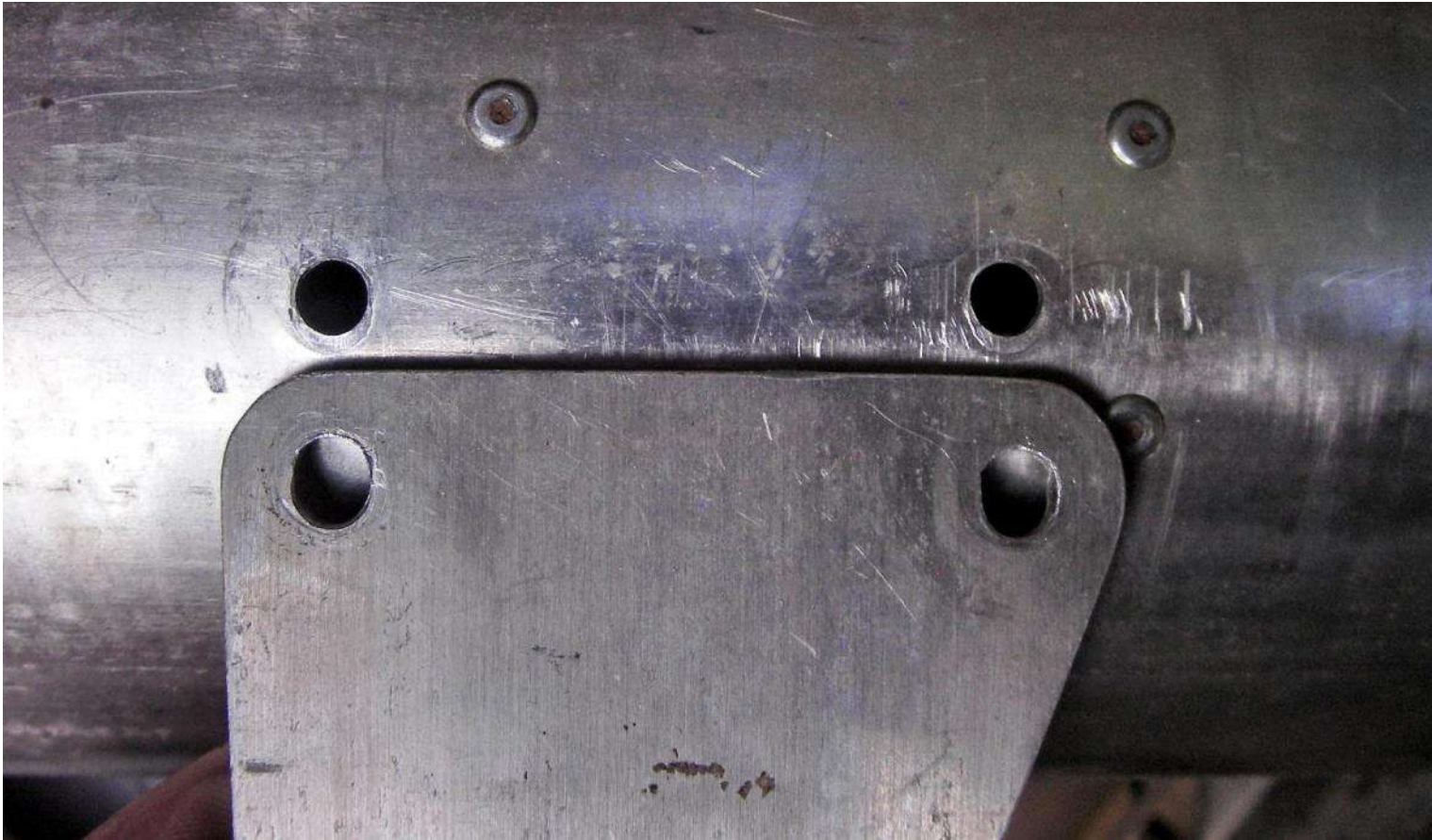


Photo 7 Front hanger bracket (port side), showing at least 1.5mm ovalised wear in mounting holes