

AIRWORTHINESS ALERT 2024-1

Duo Discus Tailplane Mount / Elevator Drive Pin Failure - Inspection

OVERVIEW

A defect report has been received detailing a failed tailplane mount / elevator drive pin on a Duo Discus sailplane. The sailplane had logged 5919 hours with 2119 landings. The sailplanes Schempp-Hirth manufacturers life inspection survey was being planned and due at 6000 hours.

The failure was discovered whilst performing the Daily Inspection prior to flight. The tailplane exhibiting excess lateral play.



Figure 1: The affected sailplane on the daily inspection showed excessive tailplane lateral play. The pin fracture occurred at the attachment bolt.

INVESTIGATION / RECTIFICATION

The port pin failed at the attachment bolt. Both pins on this aircraft are being replaced and will be sent for examination. The tailplane assembly will be inspected in depth for any further damage.

The tailplane mount and elevator drive are common on most modern Schempp-Hirth types, the tailplane being attached at the rear spar by the elevator drive pins, the front fitting then locking the stabiliser in place. Each bushing in the elevator cross tube for the elevator pin is adjustable to enable a satisfactory sliding fit. It is reported that the adjustment was regularly carried out at rigging by syndicate owners, the fit varying from sliding to firm.

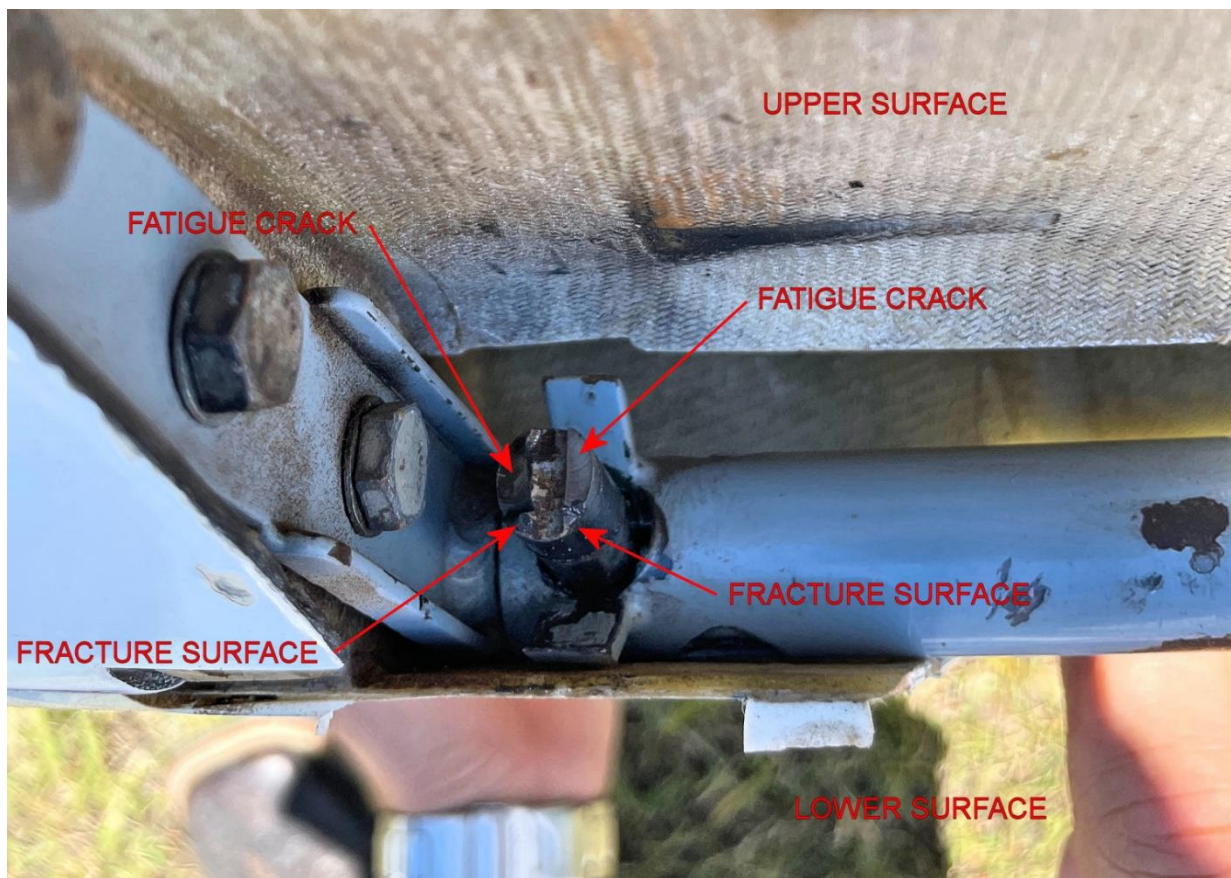


Figure 2: Initial analysis of the fracture

The initial analysis at this time suggests fatigue originated at upper surface of bolt hole on port elevator pin. Cracks grew downwards to about 80% depth before final fracture. The cracks have distinct beach marks showing crack growth stages.

RECOMMENDATION / ACTION

This AWA is issued to raise awareness of the potential failure in types using this tailplane mount / elevator drive system until further investigation is completed.

It is **HIGHLY RECOMMENDED** that if the elevator pins have not been recently replaced:

- a. Before Next Flight: The tailplane be removed and the elevator pins be visually inspected by looking down the bore of the elevator drive



- b. At Next Annual Inspection: The elevator pins are removed and NDT inspection carried out using dye penetrant or magnetic particle techniques.

The manufacturer has been notified. Further advice regarding pin life and inspection will be forthcoming once the investigation is completed.

REPORTING

Notify the EMA by submitting a defect report if you have information relating to any similar or related occurrence.

A handwritten signature in black ink, appearing to be "Dennis Stacey".

Dennis Stacey
GFA EMA
11/04/2024