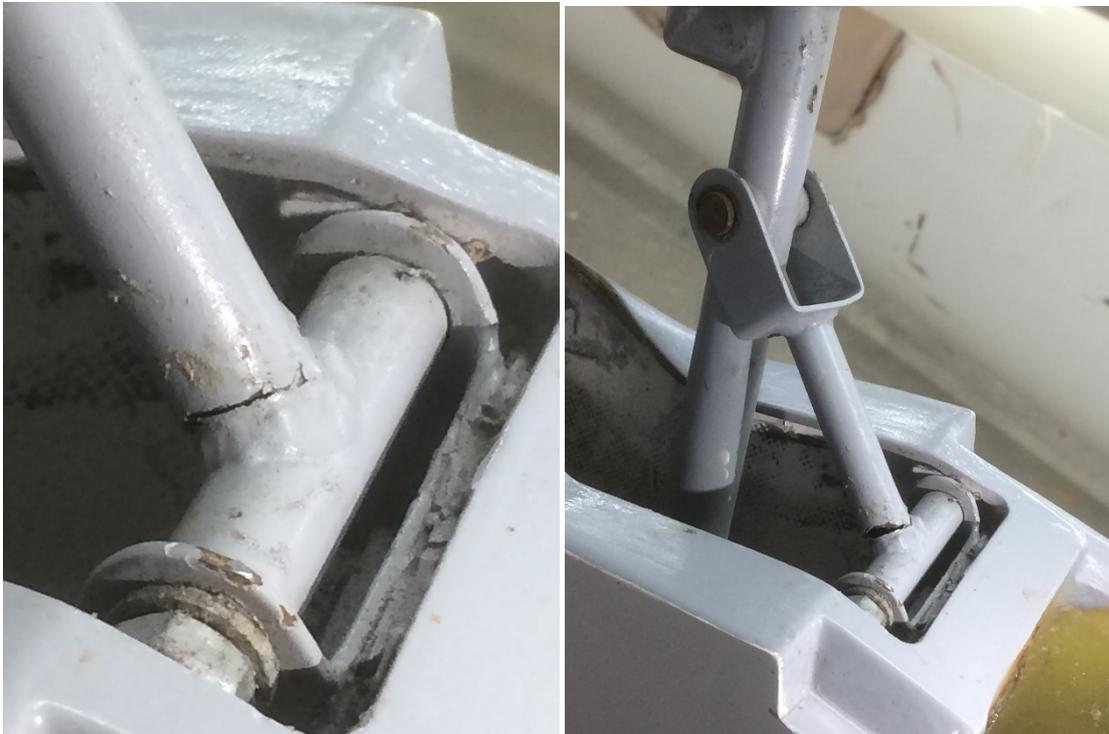


Cracks found in Schleicher ASK21 elevator drive rocker

Description

During the early stages of the annual inspection a hairline crack was observed in the elevator drive rocker that sits on the top side of the vertical stabilizer. This rocker guides the top of the vertical elevator drive pushrod, and keeps the elevator drive arm roller firmly seated in the top of the drive pushrod.

The fracture was along the outer edge of the weld connecting the arm of the rocker to the pipe that houses that attachment bolt of the rocker. Just over 1/3 of its diameter was cracked, and the application of a small sideways pressure resulted in complete failure of the rocker arm. Small amounts of corrosion were visible in the initial crack, suggesting a fatigue crack slowly progressing over time.



Hairline crack in rocker arm (left), and failed rocker arm (right) after application of small force.

Aircraft data

- Schleicher ASK-21, built 1988.
- Total time in service 5992 hours.
- Aircraft normally kept rigged in hangar, derigged only for maintenance once a year.
- Elevator drive in vertical tail has no recorded significant maintenance, other than TM22 and regular lubrication.

TM22

TC-holder Alexander-Schleicher Segelflugzeugbau GmbH. issued [TM22](#) on November 26, 1990. This details the inspection of the rocker arm for cracks, and mandatory replacement before the next annual inspection or before April 31st, 1991. It also covers flight manual pages exchange.

Inspection of other ASK-21s in the same fleet showed that a different design of rocker arm was fitted. The rocker arm was wider, with an oval shape better suited to withstand sideways pressure. The ASK-21 affected by the fracture, was flying with an older design part. Its maintenance records show that TM22 was carried out by the previous owner of the aircraft. The TM was signed off, but no specific mention was made if the affected part was replaced as the TM requires (terminating action). Further information supplied by the tc-holder (drawing 99.000.4940 Rev. 1) reveals the part installed in the affected aircraft is not the part required to be installed by TM22, but the original design. It is no longer possible to establish if TM22 was not fully carried out (i.e. part not replaced) by the previous owner, or if the affected part was installed by accident in a later stage during maintenance with the previous owner.

The TM also explicitly states that any trailer used to house an ASK-21 for transport is not allowed to have padding in the 'chimney' of the trailer, as this causes sideways loading of the affected part. The trailer of the aircraft in question is not fitted standard with padding, but upon inspection was found to have a small cushion jammed in there. This was removed. However, the extremely low yearly mileage the trailer does with an ASK-21 (estimated less than 100 km average a year) would make this only a minor contributing factor to the cracking.



Modified wider design rocker arm as fitted after TM22.

Action taken by the owner

- TM22 has been carried out in full. The affected part was replaced by the correct part.
- A full survey of all historical AD's, LTA's and TM's was undertaken for this aircraft. No other oversights were found.
- All pilots have been reminded of the need not to put any cushions in the 'chimney' of the trailer to secure the fuselage during road transport.