

TECHNICAL INSTRUCTION NO. 67

ISSUE NO.2

RUDDER ACTUATOR, INTRODUCTION OF IMPROVED BEARINGS

KESTREL MODIFICATION NO. 26

INTRODUCTION:-

This modification reduces the rate of wear on the rudder actuator bearings. It may be incorporated on all marks of Slingsby T.59 Kestrel Gliders. The maximum allowable free play at the rudder trailing edge is $\frac{3}{8}$ " total.


COMPLIANCE:-

This modification is optional providing the free play at the trailing edge is less than $\frac{3}{8}$ " total. This modification should be incorporated when the free play approaches this value.


PROCEDURE:-

1. Remove the rudder from the aircraft.
2. Disconnect the rudder pushrod from the rudder actuator at the point where it passes through the rear spar of the fin.
3. By undoing and removing the long bolt attaching the actuator to the lower rudder hinge - remove the actuator from the aircraft.
4. Remove the two bolts which hold the two parts of the actuator together.
5. Check the diameter of these bolts. They will be 6mm diameter for an aircraft with a German fitting and $\frac{1}{4}$ " diameter for an aircraft with an English fitting. Before proceeding ensure that the modification kit supplied is for the correct type of fitting; see Parts List at the end of this Instruction.
6. Modifications to existing parts.


German Fitting

- a) Remove the four existing bushes from the circular portion of the  shaped bracket and line ream these four holes to $10\text{mm}^{+.03}_{-.00}$. Press fit new bushes, Part No. T59A-03-14 into the bracket as shown on Drawing No. T59A-03-11.

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- b) Line ream the two short tubes at the end of the  shaped bracket to $.25^{+.001}_{-.000}$.
- c) Ream out the hole in the lower rudder attachment hinge on the fin rear spar to $.25^{+.0005}_{-.000}$.

English Fitting

- a) Remove the four existing bushes from the circular portion of the  shaped bracket and line ream these four holes to $.408^{+.001}_{-.000}$. Press fit new bushes, Part No. T59A-03-13, into the bracket as shown on Drawing No. T59A-03-12.

7. The following parts are made redundant by the modification:-

German Fitting

- i) Short 6mm bolts - 2 off with distance tubes if fitted.
- ii) Shouldered distance tubes - 2 off.
- iii) Attachment bolt joining fitting to fuselage.
- iv) Nuts and split pins from above.

English Fitting

- i) Short $\frac{1}{4}$ " bolts - 2 off with distance tubes.
- ii) Split pins.

8. The two brackets can now be re-assembled as shown on Drawing No. T59A-03-11 for a modified German fitting and T59A-03-12 for a modified English fitting.
9. Fit the actuator to the aircraft and reconnect the rudder pushrod. Check the control for freedom of movement and refit the rudder.
10. Check the rudder movement, this should be 25° to either side from neutral. (160mm straight dimension).

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PARTS REQUIRED:-

To modify a German Fitting

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|----|------------------------|-------|
| 1. | Drawing No. T59A-03-11 | |
| 2. | Bush 59A-03-14 | 4 off |
| 3. | Bush 59A-45-431 | 2 off |
| 4. | Bolt 59A-45-444 | 2 off |
| 5. | Bolt 3A-111/23E | 1 off |
| 6. | Nut 2A 110/ES | 3 off |
| 7. | Split Pins SP90/C6 | 3 off |
| 8. | Thin Washer SP126/E | 1 off |

To modify an English Fitting

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|----|-----------------------|-------|
| 1. | Drawing No. 59A-03-12 | |
| 2. | Bush 59A-03-13 | 4 off |
| 3. | Bolt 59A-45-444 | 2 off |
| 4. | Split Pins SP90/C6 | 3 off |

A kit of parts may be obtained from Slingsby Sailplanes,
Kirkbymoorside, York, YO6 6EZ, England.

RS/MS
18.9.74.

RS/MS/PMC
30.9.74.