

AIRWORTHINESS DIRECTIVE

TYPE AFFECTED: Schleicher ASK 21 (S/Nos 21206-21473)

SUBJECT: Elevator control circuit component failure. Inspection of component for cracks/deformation and replacement as required in ASK 21 Technical Note No.22.

BACKGROUND: Two cases where the parallel rocker at the automatic elevator connection have been found broken have been reported. The problem is attributed to improper rigging or possibly failure to allow freedom of movement for the elevator actuating rod during road transport in a Glider Trailer. Additional details are given in ASK 21 Technical Note No 22 which is included in the body of this AD.

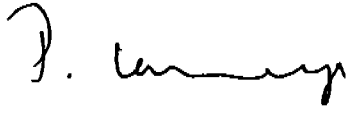
DOCUMENTATION: The ASK 21 Technical Note details the inspection and replacement requirements and forms a part of AD 377.

ACTION REQUIRED: BEFORE NEXT FLIGHT

1. Inspect subject component in accordance with ASK 21 Technical Note No.22. Any cracked, deformed or faulty component should be replaced as detailed in the referenced Tech Note. Dye Penetrant crack detection procedures may be required to establish the presence of cracks in the subject component.

SUBSEQUENT INSPECTIONS

1. The above detailed inspection must be repeated every 50 flight hours. The subject component must be withdrawn from

SIGNED: 		For and on behalf of:	
CHIEF TECHNICAL OFFICER AIRWORTHINESS		THE GLIDING FEDERATION OF AUSTRALIA	
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service by 31 December 1991 and replaced

2. This check should be repeated at each Form 2 inspection.

FLIGHT MANUAL

1. Replacement pages 36b, 37a, 37b and Amendment Record are provided and must be incorporated.

IMPLEMENTATION:

The inspection must be completed by the holder of a DA 1109 Glider Inspectors Certificate authorised for C of A Inspections any type.

All inspection and rectification actions must be recorded in the Aircraft Logbook.

WEIGHT AND BALANCE: No requirement, negligible effect.

COMPLIANCE:

The requirements of this Airworthiness Directive are mandatory. This Directive is issued pursuant to the Australian Civil aviation Regulations under the delegated authority of the Civil Aviation Authority (CEO42/90).

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Segelflugzeugbau
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3. In the Flight Manual the pages 36 b and 37 must be removed and the new pages 36 b, 37a and 37b dated 26.11.90, with the revision note "TN 22" must be inserted.

3.1. The exchange of the pages has to be entered in the "Amendments Record".

Note: For the FAA-approved US-Edition of the Flight Manual this applies equivalently to the following pages 2, 42a, 43 (previous date: Oct.16, 1987) which must be removed and the new pages 2, 42a, 43a and 43b dated "26.11.90" and the rev.no. "TN 22" must be inserted. The exchange of the pages in the Manuals must be documented on the page "Log Of Revisions".

3.2. The instructions given in the new manual pages for rigging and derigging as well as for road transport have to be carefully regarded.

Material & drawings:
Parallel rocker 99.000.4940 with modification status 1, dated 20.11.90.

Weight & Balance:
Negligible.

Notes:

1. The Action can be done by a competent person. The exchange of the manual pages can be done by the owner of the glider himself.
The accomplishment of this mod must be certified by a licensed aviation inspector in the glider's inspection documents, the log-book, and in the Flight Manual.

2. The new parallel rocker according to drawing 99.000.4940 as well as the new manual pages are available from the manufacturer or his representative in the respective country.

Poppenshausen, November 26, 1990

ALEXANDER SCHLEICHER
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i.A. *W. Juntow*
(Lutz-W. Juntow)

The German original of this Technical Note has been approved by the LBA under the date of Dec. 4, 1990 (signature: SKOV). The translation into English has been done by best knowledge and judgement; in any case of doubt the German original is controlling.

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Technical Note
No. 22Alexander Schleicher
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Subject:
Checking the parallel rocker (at the elevator actuator rod) in the fin. Exchange of this part and amendment to the Flight Manual.

Serial number applicability:
All ASK 21 serial no.s 21206 thru 21473 and earlier serial no.s which were retrofitted with an automatic elevator connection according to TN no. 11.
This TN no.22 is factory-standard as of serial no.21474.

Compliance:
Checking and - in case of damages found - exchanging the part prior to the next take-off. Otherwise the exchange has to be done until the next annual re-inspection, but not later than April 31, 1991.

Reason:
Two cases ASK 21 are reported where the parallel rocker at the automatic elevator connection broke.
Owing to improper action during rigging and/or de-rigging of the horizontal tailplane, sideways deformation or even breaking of the parallel rocker have been observed.
Another possible reason for such failure may be a foam cushion or other fixture in the glider trailer which fixes the fin from the top. If the necessary free moving of the elevator actuator rod which protrudes out of the fin, is not provided, the vibrations involved during the road transport can lead to sideways loads on the elevator actuator rod.

Action:
1. Derig the horizontal tailplane and carefully check the parallel rocker for deformation and/or cracks (see Maintenance Manual page 11a; for the US-Edition "Instructions for Continued Airworthiness" see Page 9).
If the parallel rocker is o.k., the glider may continue in service until the next annual reinspection comes up, but no longer than April 31, 1991, at the latest. This does not mean that the "Daily Inspections" according to chapter IV.2 point 4. of the Flight Manual is no more effective!

2. If any damages are found on the parallel rocker, it has to be replaced by the new and stronger part prior to the next take-off.

2.1. For the exchange of the parallel rocker a hole 11 mm in diameter has to be drilled into the fin at the side of the bolthead in order to remove the M6 bolt. The hole needs not to be closed; only the edge of the drilled hole must be preserved afterwards.

8. The tailplane is fitted onto the fin from the front (see Fig. V.2-1 and V.2-2). Now the Allan bolt at the leading edge is screwed in; this should be screwed in tightly until the spring-loaded safety pin snaps out over the screw head as far as the socket.

9. Connect the elevator and safety with a spring clip!

Note, if your glider uses an automatic elevator connection: after cleaning and lightly greasing the plug-in elevator connections, the tailplane is fitted onto the fin from the front; both elevator panels must be fitted into their connectors simultaneously. Then the tailplane is pushed back until the Allan bolt at the leading edge can be screwed in; this should be screwed in tightly until the spring-loaded safety pin snaps out over the screw head as far as the socket.

10. Carry out a pre-flight check referring to the Check List.

11. The control circuits must be subjected to an operational test.

12. Check condition and function of the wheel brake; check the tire pressure.
See also Section IV.2 Daily Inspections.

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Depending on the position of the sun and the intensity of the radiation, the burning-glass effect of the canopies can cause a slow fire in the area of the instrument panel or the headrest respectively.

Therefore, if you have to store the glider outside, it is absolutely necessary always to close the canopies and to cover them with a white cloth.

V.4 ROAD TRANSPORT

The design of a glider trailer is another subject and cannot be discussed in all details here. Of course, a closed trailer is preferable. But also an open trailer may serve the purpose, the latter is generally simpler and lighter. It is important that all components are well fixed and have a large support surface.

Structural components survey drawing which can be used for the building of a trailer, can be obtained from ALEXANDER SCHLEICHER.

WARNING: In no case must the elevator actuator fitting be loaded. This fitting trades out of the upper end of the fin. Not even soft foam cushions are allowed.

For the construction of the trailer for road transport the full freedone from any load must be carefully regarded.

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V.2 DE-RIGGING

De-rigging is carried out in the reverse sequence to that of rigging. It must be taken care that the rear wing attachment pins have to be removed prior to the main pins.

WARNING: For derigging the horizontal tail from the fin it has to be regarded that only the method according to Fig. V.2-2 is used.

Fig. V.2-1
WRONG: Twist movement

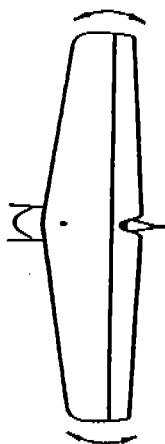
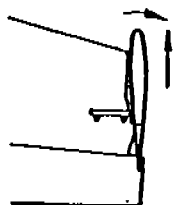


Fig. V.2-2
RIGHT: Pitch movement



V.3 PARKING

When parking the glider, the canopies have to be closed.

When an ASK 21 is parked on an airfield in the sunshine (this must also be observed during the waiting time until take-off when the pilots are already on board) the canopies must not be left open for some time.

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I.1 Amendments Record

No.	Title	PAGE	Date, signature
1	Weak link in towrope (TN no.6)	12	15.04.83 <i>maidy</i>
2	Weak link in towrope (TN no.8)	12	16.05.83 <i>maidy</i>
3	Automatic elevator connection (TN no. 11)	36a, 36b Check- list/1	20.12.83 <i>maidy</i>
4	Modification of the flight manual (TN no. 13)	10 b	23.02.84 <i>maidy</i>
5	Amendment to the Flight Manual (TN no. 13 a)	10 c	24.08.84 <i>maidy</i>
6	New canopy locking system (TN no. 15)	16a 17a 18a 19a	24.08.84
7	Change/supplement to the Flight Manual (TN No. 20)	Check- list/1 21, 36a, 36b, 37	03.11.87 <i>maidy</i>
8	TN Nr. 21, new production series tow release couplings for aerotow and winch launch	annex	17.08.90 <i>maidy</i>
9	Checking and exchange of the parallel rocker at the elevator actuator rod, TN No. 22	36b, 37a, 37b	26.11.90 <i>maidy</i>

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