follow clauses 6. to 9., except that the main pin must now be secured by means of an anti-clockwise turn.

11a) Only at this stage the wingtip-extension with winglet may be exchanged for the detachable short wingtip, if this is intended. Using an Allen wrench, move the safety pin back in order to do the assembly. Watch that the aileron is correctly aligned! After the assembly the safety pin is again pushed forwards to lock.

12. First connect the aileron and airbrake control linkages in the airbrake boxes and secure, only then connect the six control linkages in the fuselage which are accessible when the access hole cover is removed.

All quick-release connectors are secured by safety elements such as spring clips (Fig. 4.1) against unintentional release. However it is more convenient the use of the so-called Wedekind safety sleeves (Fig. 4.2). Only at the flap control connection at the wing-to-wing joint, a fixed spring clip is used because of the limited space secures. For these kind of locking note the following: During assembly of the quick-release connectors, the alu safety sleeve is pushed back until the wedge may be pushed in entirely, or the spring is removed from the check hole of the wedge. After the careful assembly of the quick-release connectors, check that the spring-loaded safety sleeve secures the wedge again completely. At the wing-to-wing flap control connections insert the spring clip into the check hole.

All quick-release connectors must be tested by trying to pull the socket ends of the push rods off the ball heads, applying a force of not less than 5 daN (10 lb), and it must be checked that the safety elements are in their correct position. Flap control connections can be checked in landing flap setting (Flap L) through the airbrake box.

Fig. 4.1

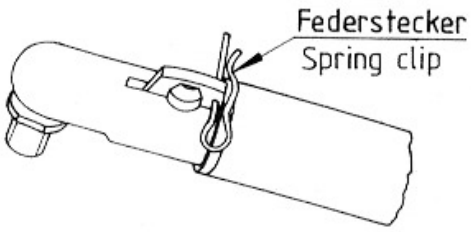
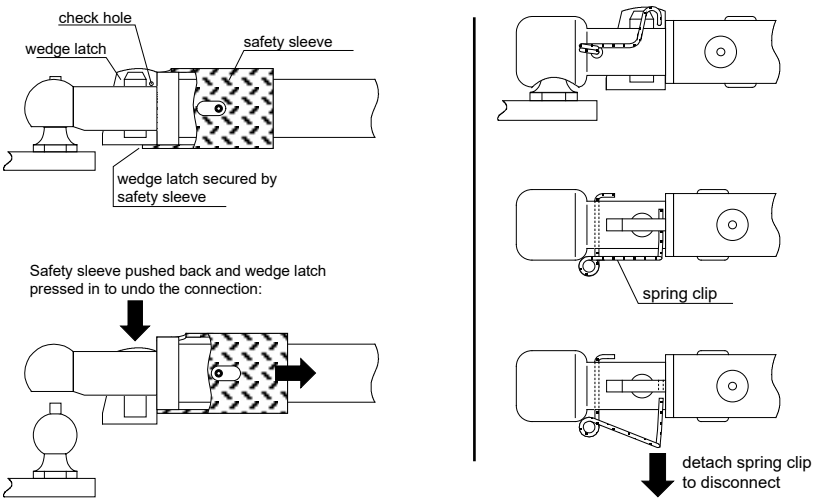


Fig. 4.2



13. After cleaning and lightly lubricating the elevator studs and sockets, the tail plane is pushed on to the fin from the front. Each half-elevator must be guided into the elevator connections. The elastic lip seal covering the elevator gap must be placed on top of the elevator control tongue. Now push the tail plane home until the hexagon socket head bolt (Allen screw) at the leading edge will engage its thread. The bolt must be fully and firmly tightened; it is secured either by a spring-loaded pin which must extend over the bolt head, or by means of a spring ball catch, whose ball must engage in the grooves on the side of the bolt head

14. A considerable performance improvement can be achieved with little effort by taping all gaps between wing junctions with plastic self-adhesive tape (on the non-moving parts only). In addition, the fuselage access whole cover and the fin-tail plane junction should be taped up. The canopy rim must not be taped over,

For measuring the control surface deflections at the wing, the wingtip-extension with winglet must first be exchanged for the detachable short wing tip.

Maximum Permissible Control Surface Play

The maximum permissible tolerance of control surface play may be measured from the same measuring points used for measuring control surface deflections. The cockpit controls should be immobilized for this purpose.

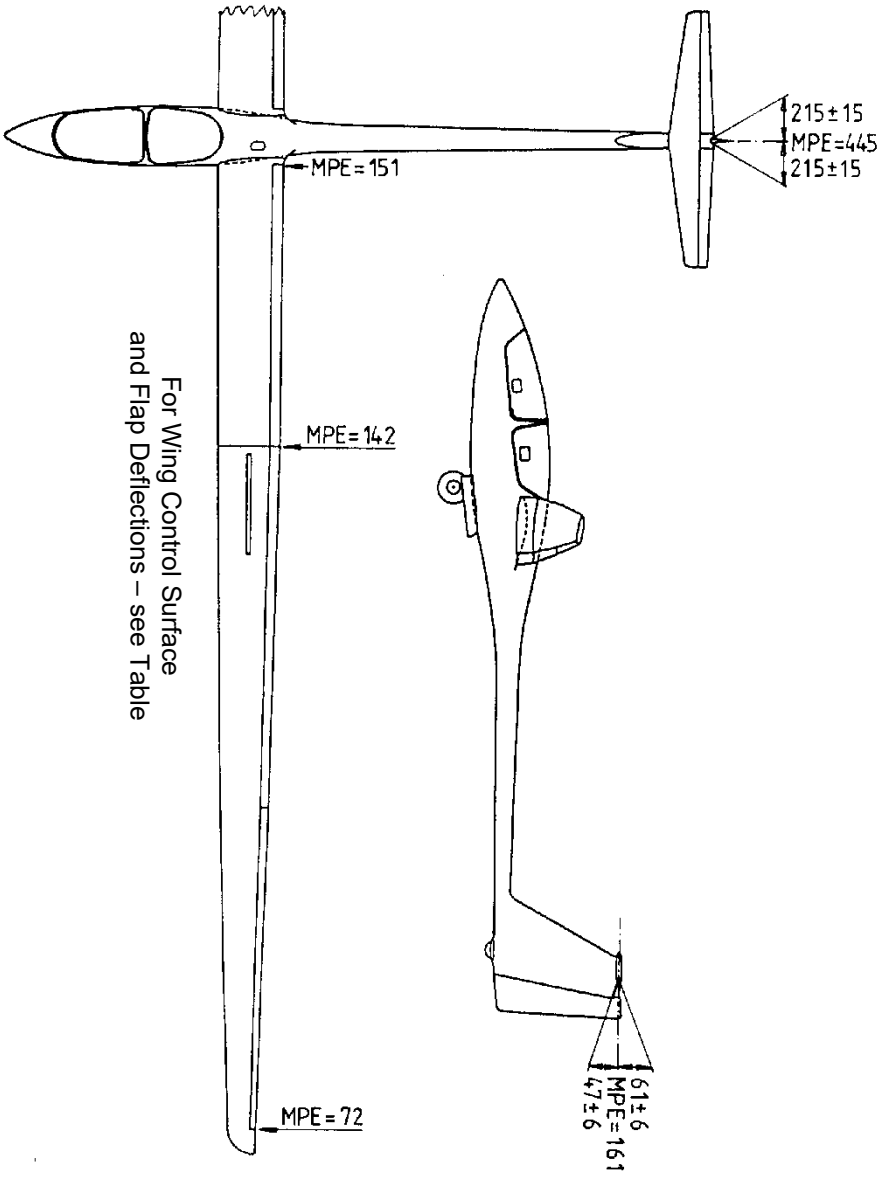
	MPE		Max. permissible play	
	mm	(in)	mm	(in)
Rudder	445	(17.5)	5.0	(0.20)
Elevator	161	(6.34)	3.0	(0.12)
Aileron	72	(2.83)	1.5	(0.06)
Center section flap	142	(5.60)	2.5	(0.10)
Flap	151	(5.94)	2.5	(0.10)

The aileron connection to the wingtip extension must be without any play!

Note: The margin to these limit values should be sufficiently large to rule out the possibility of them being exceeded until the next annual inspection.

During prolonged exposure to extremely dry climates, the plywood bulkheads in the fuselage may shrink and create play.
If the aircraft remains in this climate, this play must be eliminated by retightening the screws.

Fig. 3.0.-1 Control Surface Deflections



4. Information on Service Life Limitations and Operating Hours

4.1 Inspection Program to Extend Service Life

Introduction

Fatigue tests on CFRP wings and CFRP wing spars have shown, that a service life expectancy of 12000 hours may be achieved for these components without problems. However, as this test program did not examine an entire aircraft made of CFRP and GRP, this service life span of 12000 hours can be achieved only if the long-term airworthiness of each individual aircraft is demonstrated in a special multi-stage inspection program (over and above the mandatory annual C of A inspections).

Time Limits

1st Stage:

When the aircraft has reached a service time of 3000, 6000 and 9000 hours respectively, an inspection must be carried out in accordance with a particular inspection program laid down by Messrs. Schleicher, from whom a copy of this program must be obtained. If the results of this inspection are positive, or if any defects discovered have been correctly repaired, the service life of the aircraft is increased after its 9000 hours inspection by another 1000 hours, i.e. to a total of 10,000 hours.

2nd Stage:

When a service time of 10,000 flying hours has been reached the above inspection program must be repeated. If the results are positive, or any defects

found have been satisfactorily repaired, the service life may be increased to a total of 11,000 flying hours. The same procedure is applied again when the aircraft has reached 12,000 hours, provided the results are again positive, or any defects discovered are satisfactorily repaired.

For a possible extension of service life beyond 12,000 hours, detailed requirements will be established in due course.

Inspection Program

The appropriate inspection program must be obtained from Messrs. Schleicher.

The inspections may be carried out only by the manufacturer, or by an appropriately licensed aircraft repairer.
The results of the inspections must be listed in an inspection report in which each item must be annotated with a comprehensive comment, as laid down.
If the inspection is not carried out by the manufacturer, but by a licensed aircraft maintenance organisation, a copy of the filled inspection report must be forwarded to Messrs. SCHLEICHER for the purpose of evaluation.
Messrs. SCHLEICHER will issue an acknowledgement of receipt and send it back to the aircraft owner.
Only then the inspector must certify the increase of the service life in the logbook and in the aircraft inspection records.

The need for annual Certificate of Airworthiness inspections and over-hauls is not affected by this rule (for German registered aircraft § 27 (1) Luft¬GerPO* applies).
*LuftGerPO = Aircraft Examination Rules

4.2 Special Servicing Procedures and Equipment Subject to Service Life Limitations

Special Servicing Procedures

At regular intervals of 5 years, the EPDM (Du Pont Ethylene-Propylene-Rubber) sealing rings of the water ballast valves must be checked and replaced if required.

At regular intervals of 6 years the brake line hose of the hydraulic wheel brake must be replaced. Should this hose be found to be in good condition, it need not be replaced, on condition that its condition is checked at least every 100 flying hours.

After 3000 operating hours, the rudder control cables and tow release coupling cables must be replaced!

Equipment Subject To Service Life Limitations

Tow Release Hook

The TOST tow release hook, fitted as standard equipment have a limited service life and must be returned for inspection and servicing at regular time intervals. Their service life begins when they are fitted in the aircraft.

Specification of service life limitations will be found in the TOST operating manuals for the tow release couplings.

Instruments

The flight monitoring instruments are not normally subject to service life limitations. As a general rule, the manufacturer's instructions should be complied with.

Oxygen Installation

For oxygen systems fitted, the relevant section of the appertaining Authorized Release Certificate states the overhaul time limit. Over and beyond this, the oxygen bottles must be re-inspected by a technical inspection institute every five years in accordance with pressure vessel regulations.

7. The condition of all bearings, guides, fittings, and swivel joints in the control linkages must be examined, even where access is difficult. Check the accessible areas of the rudder control cables and the tow release hook cables. At the rudder cables especially the areas which get bent with the mostly used pedal adjustments, at the end of the S-shaped cable guide tubes of the pedals.

   Note: The rudder control cable within the S-shaped pedal guide tubes can be tested completely by loosening the front cable attachment and shifting the pedals.

   Where control cables and tow release hook cables are guided in Tecalan tubes, the cables are not subject to unusual loads. So here no remarkable wear will come up (contrary to the above-described areas) and no particular check is required during the annual C. of A. inspection.

   When checking tow release hook cables, special attention must be paid to corrosion; this could be induced on the exposed areas e.g. by hand perspiration and in the transparent Tecalan tubes by possible moisture.

   Notes for inspection of control cables and tow release hook cables are given in the manual "AIRCRAFT INSPECTION AND REPAIR" FAA AC 43.13-1A, chapter 4, point 198.

8. All controls including the airbrakes must be checked for satisfactory operation, and a new measurement of their deflections is required. Check the control surfaces play by means of the data in Section 3 of the Maintenance Manual.

9. If any control linkage does not move freely over the whole range of its movement, investigate and remedy the cause.

10. The condition of the main landing gear and tail wheel including tires and brake linings must be checked.

11. Examine the pitot and static ports at the fuselage for blockages and leaks.

12. Check condition and proper function - and, if appropriate, approved service life limit / TBO - of all instruments, and VHF transceiver.

13. The condition and proper function of the tow release hook coupling(s) should be checked. The release actuating cables must have free movement and just some play when the tow release is closed and locked, so that they are not under any tension.

14. The canopy jettison releases must be operated and examined for corrosion etc., if necessary, rectify and in any case freshly lubricate!

15. The water ballast bags and valves must be checked for leaks and proper operation (see Section 2.6).

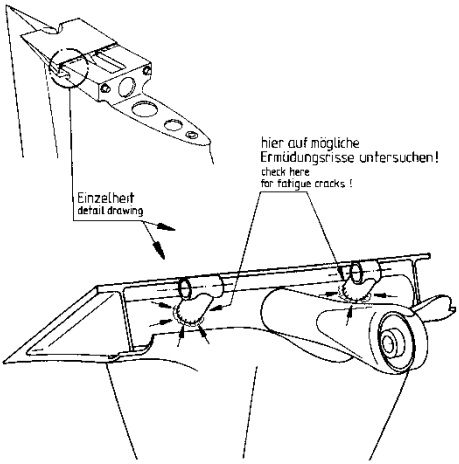
16. Compare equipment and instrumentation with the aircraft’s equipment list.

17. After repairs or changes to the equipment, the empty mass and C.G. position have to be redetermined by calculation or weighing and recorded in the Mass and Balance Form.

18. Check all control surface and flap gaps for correct sealing. It is important that the proper sealing of the gap under the elastic fairing strip is ensured by the Teflon tape. This is especially important at the lower wing surface and the top surface of the tailplane. Air flow through the flap or control surface gap can initiate flutter!

19. The elastic fairing strip at the upper and lower wing surface gaps and at the horizontal tailplane top surface must have a good, lightly tensioned seating on the surfaces of controls and flaps. Raised strip edges impair performance. Further details on points 18 and 19 are given in the Appendix of this manual, in Maintenance Instruction A.

20. See the drawing below for checking the elevator engaging actuator for fatigue cracks at the marked locations. If it is guaranteed - e.g. by means of a small angular mirror - that the welding joint around the tube can be checked all around meticulously, then the engaging actuator need not be dismantled.
    The trailer used with this aircraft must be checked according to the criteria described in the Flight Manual Section 8 and where necessary must be modified.



21. The L'Hotellier quick-release connectors must be checked in accordance with the current maintenance instructions issued by L'Hotellier. Information on the latest version can be found in LTA No. 93-001 in the currently valid edition. This maintenance instructions must be included in section 12 (maintenance instructions) of the maintenance manual.

7.1 Special Inspection Procedures

After Hard Landings

1. Check landing gear mountings at front main bulkhead!
2. Check landing gear trailing arm, as well as drag strut, H and Z struts for distortion!
3. Are the rubber buffers in the L/G spring system still serviceable?
4. Examine spar fork and tongue for white areas!
5. Inspect wing mounting drag pins on fuselage!
6. Check drag spar cross tubes and bulkheads in the fuselage!

After Groundloops

1. Inspect the tail boom at the fuselage-to-fin junction and the horizontal tailplane mountings at the fin!
2. Check wing mounting drag pins on fuselage!
3. Inspect drag spar cross tubes and bulkheads in fuselage.
4. Examine horizontal partition in fuselage (between front and rear main bulkhead).

After Flying with Water Ballast

After de-rigging the aircraft, briefly raise the outboard ends of the wings and check whether water originating from the ballast bags accumulates behind the root ribs.
If water is found there, the water bags and the valves should be checked for leaks. Seeping or leaking valves must be overhauled in accordance with Section 2.6 without fail.
Do not forget to dry the wings out!
Picket the aircraft with valves open!

Trial Filling of Water Bags

During the annual C of A inspection, a test filling of the ballast bags should be carried out. During this test, special attention should be paid to water seepage from the bags and to dripping valves.

Fig. 8.0-1 Lubrication Chart