0 General

0.1 Manual amendments

No.	Page	Description	Date
0.1	all	Combination of the initial Maintenance Manuals of the Variants LS6, LS6-a, LS6-b, LS6-c, LS8-c18, LS6-18w, new standardized format	May 2011
0.2	0-11, 1-7, 1-9up to 1-12, 1-16, 1-17, 1-19, 1-20, 2-1, 2-2, 2-18, 2-20, 2-22, 2-24, 2-26, 2-28, 3-1 up to 3-6, 4-1, 4-3, 4-6, 4-7, 4-14, 4-24, 4-26, 5-1, 5-3, 5-5, 5-6, 6-1, 7-3, 7-4, 8-1, 9-1 up to 9-4, 10-2, 10-3, 11-1 up to 11-3, 12-1, 13-1, 14-2 up to 14-9	Miscellaneous changes to the contents of the latest amendments of the initial maintenance manuals	May 2011

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0.2 List of effective pages

section	page	issued	replaced	replaced	replaced
0	0-1	May 2011			
	0-2	"			
	0-3	"			
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	0-8	"			
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	0-10	"			
	0-11	"			
1	1-1	May 2011			
	1-2	"			
	1-3	"			
	1-4	"			
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	1-6	"			
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5	5-1	May 2011			
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6	6-1	May 2011			

0.2 List of effective pages (continued)

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	9-3	"			
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	10-3	"			
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	11-2	"			
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13	13-1	May 2011			
14	14-1	May 2011			
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	14-4	"			
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	14-6	"			
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	14-8	"			
	14-9	"			

0.3 Table of Contents

Section Content……..page

0.4 Airworthiness Limitations

0.4.1 Repairs

Repair or replace damaged parts prior to next flight. Follow the instructions of section 11 of this manual for repairs of the airframe. Major repairs must be accomplished at an approved repair station or by an approved mechanic rated for composite aircraft structure work in accordance with DG repair methods.

Use only genuine spare parts.

For all aircraft under EASA regulations the following applies: According to part 21, subsection M to accomplish major repairs an approved repair instruction is required, see also TN DG-G-01 “Approved repair methods according to EU Commission Regulation 1702/2003 part 21, subpart M”

0.4.2 Life time of the airframe

The maximum allowable operating time for the Variants LS6, LS6-a, LS6-b, LS6-c, LS8-c18, LS6-18w is 12000 flight hours. Therefore according to section 3.3 of this manual, special inspections have to be executed at 3000 h, 6000 h, 9000 h and every 1000 hours thereafter.

0.4.3 Life time of equipment and components

a) The **fabric straps of the safety harness** have to be exchanged after 12 years.

b) **Other components**:
All other components like tow hooks, wheels, gas struts, control system parts, bolts, pins etc. have no life time limitation, but should be replaced when worn, damaged or disqualified by excessive corrosion.

0.4.4 Service time, maintenance documents of equipment and components

Follow the instructions of the respective manufacturer:

a) Operating Manual for Safety Tow Hooks
Series: Europa G 72 or Europa G 73 or Europa G 88 Safety Tow Hook, latest approved version
And if installed:
Operating Manual for Nose Tow Hooks Series: E72 or E75 or E 85 Nose Tow Hook, latest approved version

b) Safety harness: instructions of the manufacturer.

c) Minimum instrumentation: instructions of the manufacturer.

1 Description of systems

1.1 Wings

Wing span variable for the following variants:
LS6-c: Wing span variable by exchanging 15 m tips for 17.5 m tips.
LS6-c18: Wing span variable by exchanging 15 m tips for 18m tips with winglets. (No 15 m winglets!).
LS6-18w: Wing span variable by exchanging 15 m tips or 15 m winglets for 18 m tips with winglets.

1.2 Aileron and wing flap controls

Note: The sketches for the control systems in the wings are to be found in section 1.5.

1.2.1 Aileron and wing flap controls LS6, LS6-a, LS6-b

Activation via pushrods, with ball and swivel joints in fuselage and LS-securing sleeves at wings side. Mix control mechanism for aileron and flap deflections inside fuselage.

Flaperons are divided in 2 parts per wing.

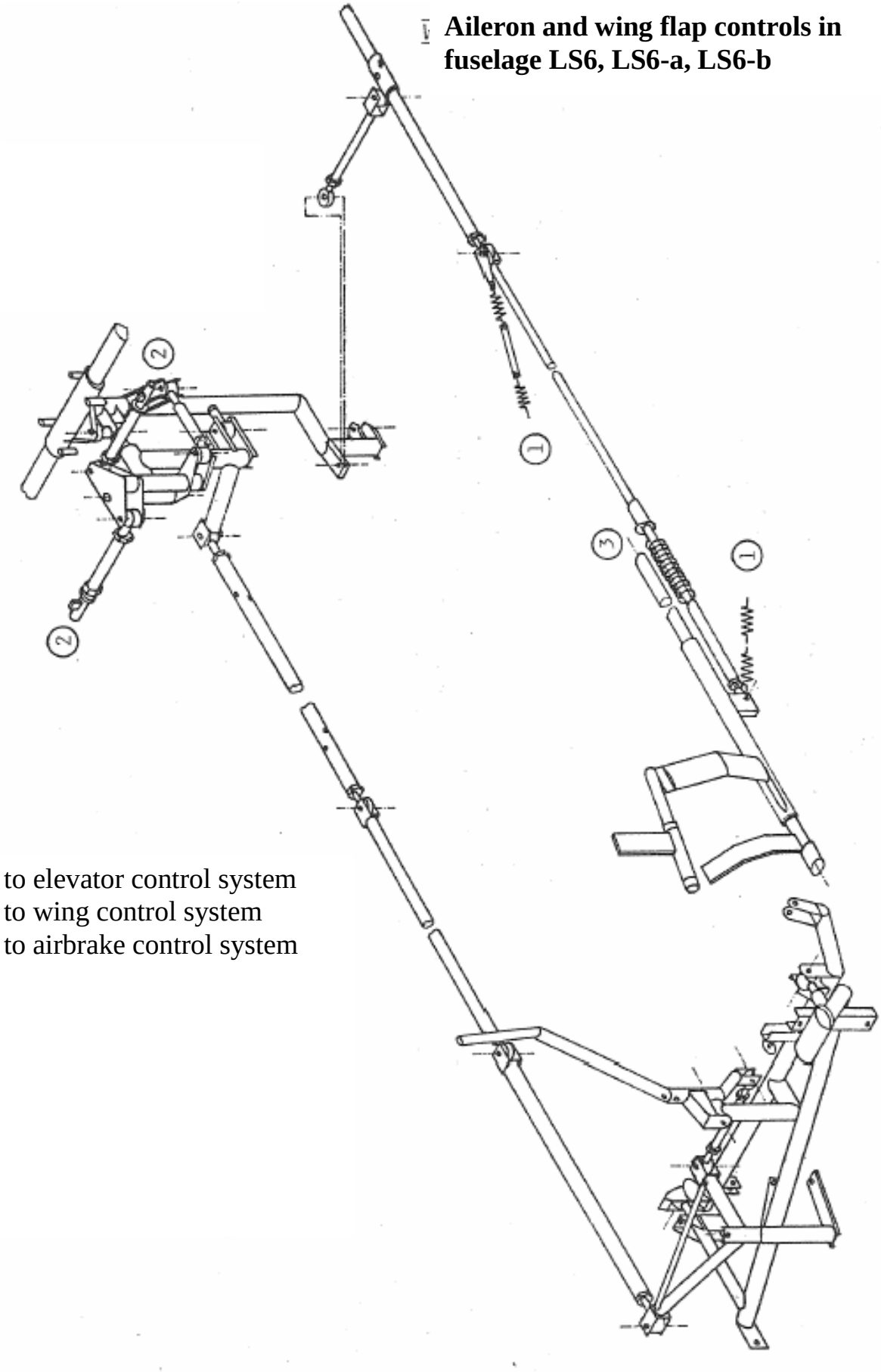
LS6, LS6-a only: Hydraulic damper against flutter

a) fix installation according to TN6010, drawing 3BR90
b) controlled by the wing flap control according to TN6011, drawing 3BR92. The damper is engaged with flap settings -5° and 0°. With positive flap settings the damper is disengaged.

Note: the damper is not shown in the sketch on the next apge.

LS6-b only: in the LS6-b instead of this damper a dynamic mass balance (mass damper) is installed in the wingside flaperon control system.

Aileron and wing flap controls in fuselage LS6, LS6-a, LS6-b



① to elevator control system
② to wing control system
③ to airbrake control system

1.2.2 Aileron and wing flap controls LS6-c, LS6-c18, LS6-18w

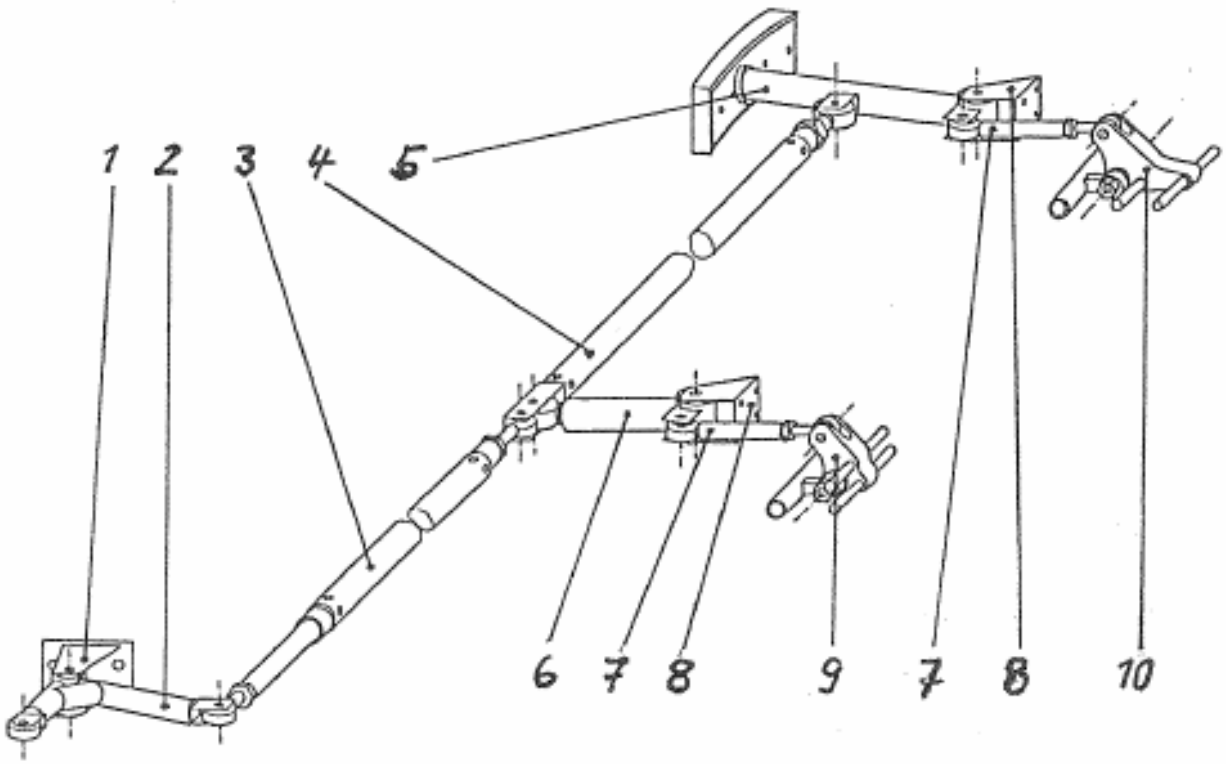
Aileron control system activated via pushrods guided in longitudinal motion ball bearings. Connection of system by automatic coupling during rigging.

Flaperons are divided in 2 parts per wing, with 17.5 m or with 18 m tips in three parts.

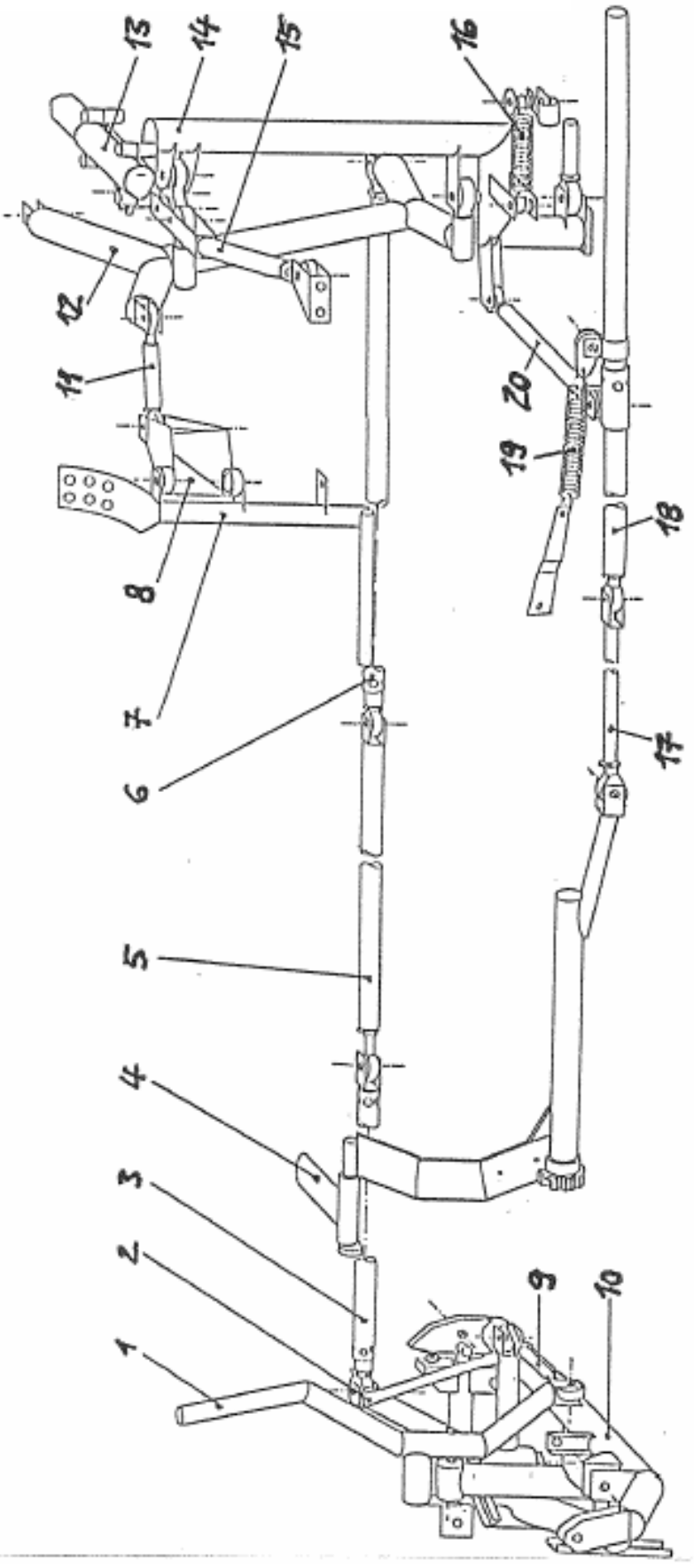
A dynamic mass balance (mass damper) is installed in the wingside flaperon control system.

Aileron and wing flap controls in wings LS6-c, LS6-c18, LS6-18w

No	Drawing	Denomination
1	4F3-76	root rib bracket
2	3F3-103	root rib aileron drive
3	3F3-102	inner aileron pushrod
4	4F3-101	outer aileron pushrod
5	3F3-105	outer aileron drive lever
6	4F3-99	inner aileron drive lever
7	4R10-21	aileron drive rod
8	4F3-107	aileron drive bracket
9	4Q1-33	inner aileron drive
10	4Q1-30	outer aileron drive



Aileron and wing flap controls in fuselage LS6-c, LS6-c18, LS6-18w



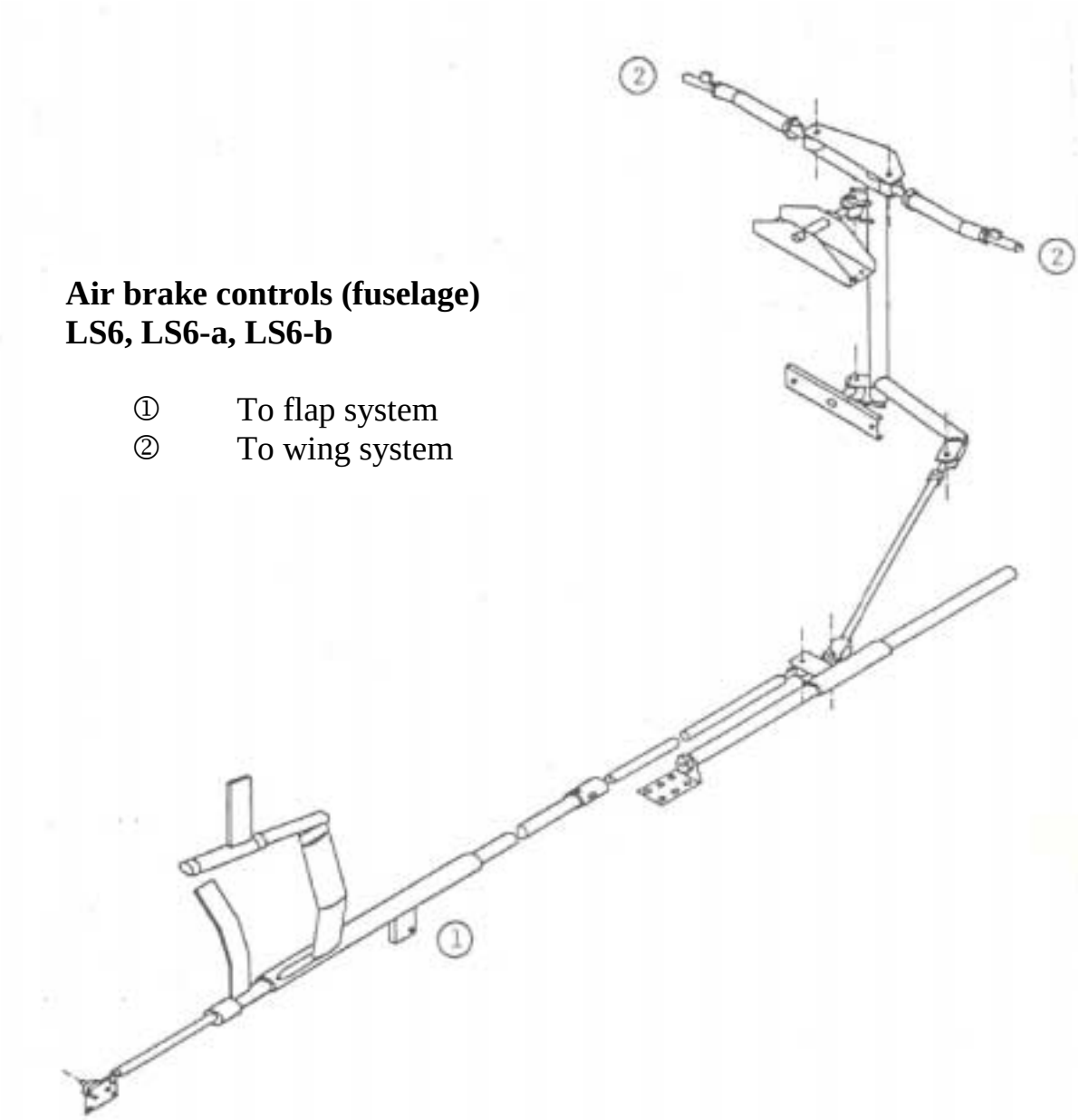
No	Drawing	Denomination
1	3R3-49	control stick
2	3R10-72	forward fuselage aileron lever
3	4R10-73	forward aileron pushrod
4	1R10-133	flap lever
5	4R10-74	middle aileron pushrod
6	4R10-118	rear aileron pushrod
7	3R10-135	automatic connector bearing
8	3R10-116	aileron connector
9	4F3-37	stick aileron pushrod
10	1R3-65	control stick support
11	4R10-49	parallelogram pushrod
12	1R10-123	aileron mixer
13	3R10-125	flap mixer bearing
14	1R10-126	flap mixer
15	3R10-129	flap mixer rod
16	4R14-4	flap-elevator trim spring
17	4R10-131	forward flap pushrod
18	4R10-130	rear flap pushrod
19	4R10-139	flap trim spring
20	4R10-77	flap mixer drive rod

1.3 Air brake controls

1.3.1 Air brake controls LS6, LS6-a, LS6-b

Activation via pushrods, with ball and swivel joints in fuselage and LS-securing sleeves wingside.
Double storey airbrakes with spring loaded caps.

Note: The sketches for the control systems in the wings are to be found in section 1.5.



Air brake controls (fuselage)
LS6, LS6-a, LS6-b

① To flap system
② To wing system

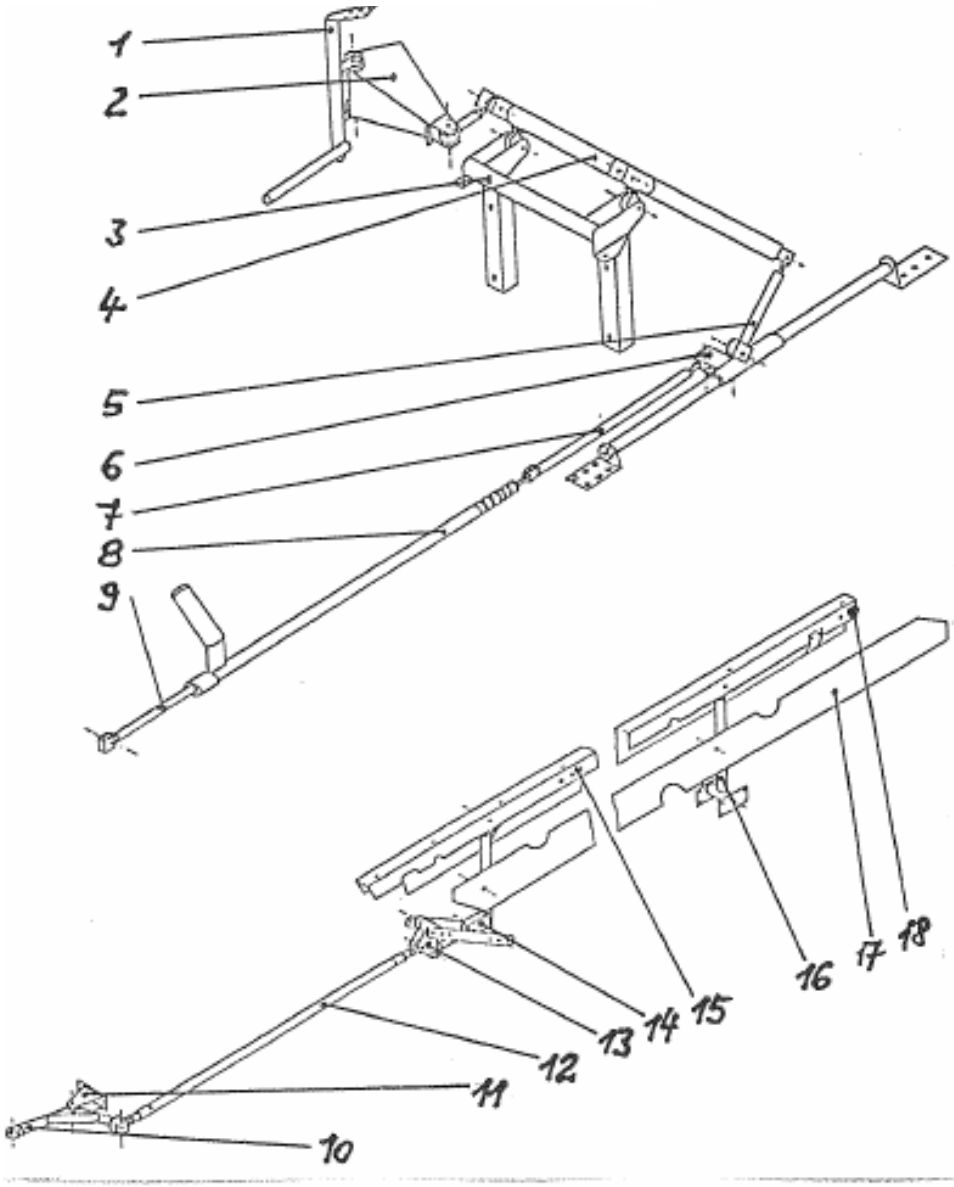
1.3.2 Air brake controls LS6-c, LS6-c18, LS6-18w

Air brake control system activated via pushrods guided in longitudinal motion ball bearings. Connection of system by automatic coupling during rigging.

Over centre lock in wings

Double storey airbrakes with spring loaded covers.
Friction brake in airbrake box against vibrations during airbrake extension.

Airbrake controls



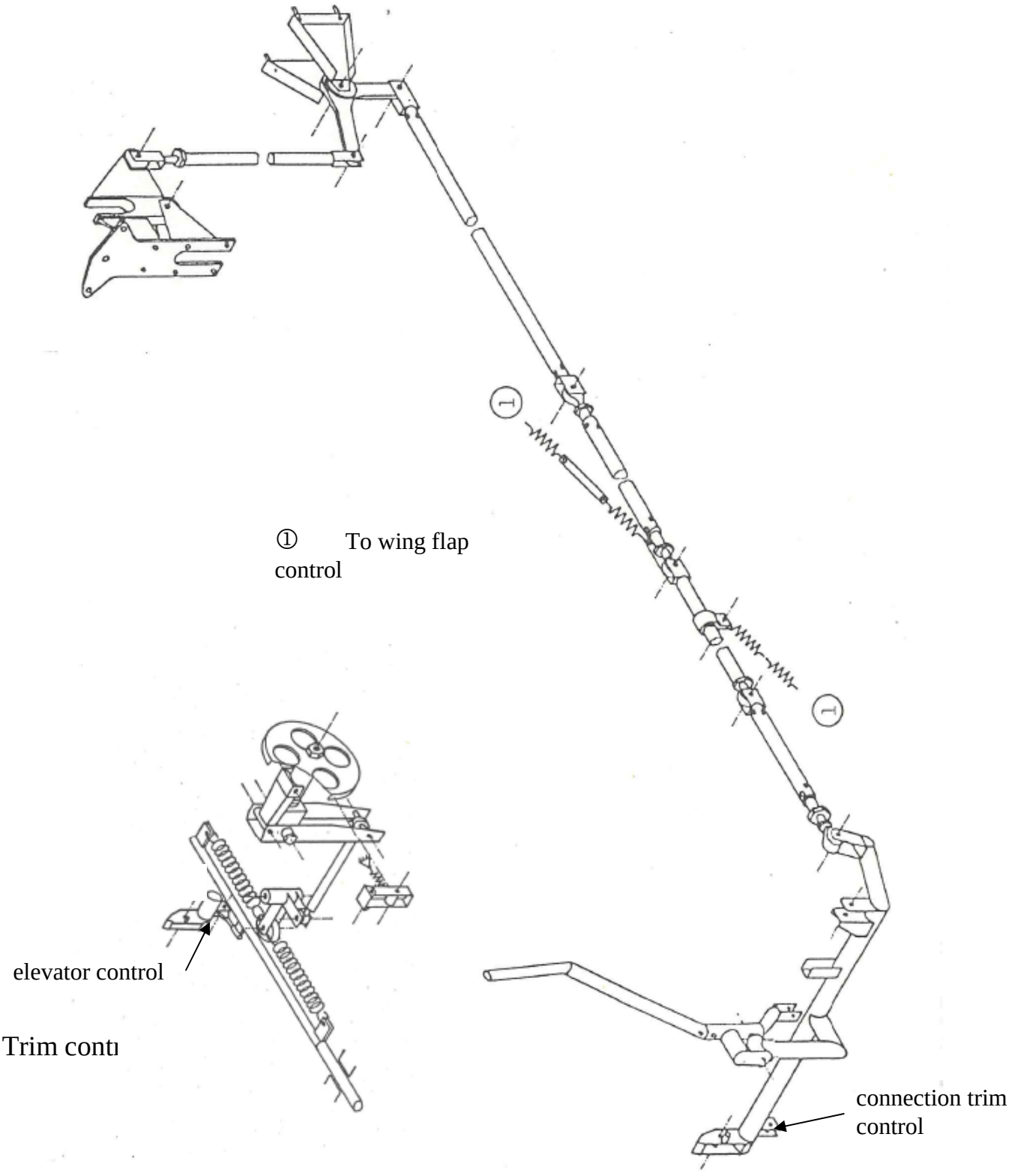
No	Drawing	Denom.
Fuselage		
1	3R10-135	automatic connector bearing
2	3R6-44	air brake connector
3	3R6-54	air brake drive bracket
4	3R6-50	air brake drive
5	4R10-77	intermed. rod
6	4R6-47	sliding member
7	4R6-59	air brake rod
8	3R6-58	air brake lever
9	4R6-31	lever guide tube
Wing		
10	3F4-71	root rib drive
11	4F3-76	root rib bracket
12	4F4-63	wing pushrod
13	4F4-53	locking lever
14	3F4-51	inner lever
15	3F4-60	upper blade
16	3F4-52	outer lever
17	3F4-54	lower blade
18		friction brake

1.4 Elevator Controls and Trim-System:

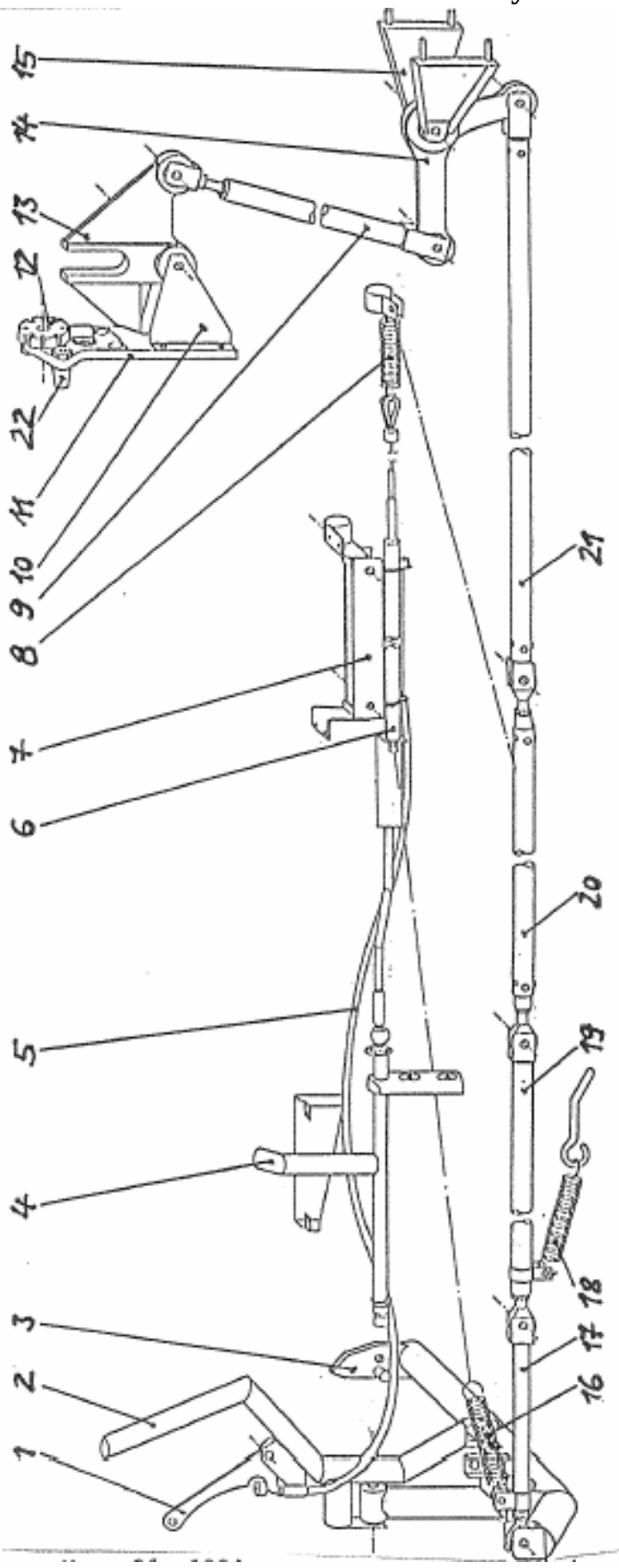
Elevator system activated via pushrods guided in longitudinal motion ball bearings. Automatic coupling during assembly of horizontal tail unit.

100% mass balance in vertical tail fin pushrod.

1.4.1 Elevator Controls LS6, LS6-a, LS6-b



1.4.2 Elevator Controls and Trim-System LS6-c, LS6-c18, LS6-18w



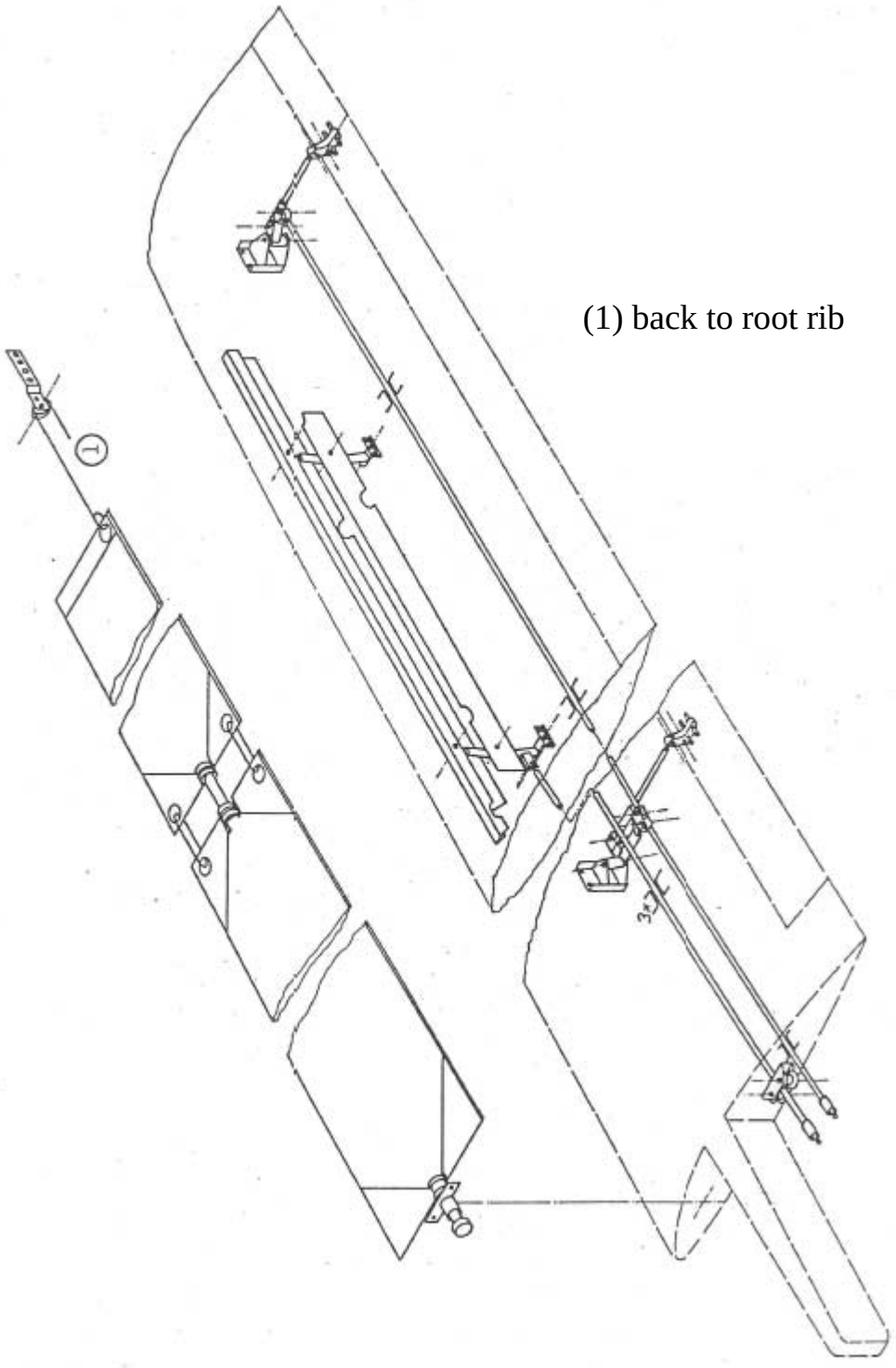
No	Drawing	Denom.
1	4R9-24	trim locking lever
2	3R3-49	control stick
3	1R3-65	control stick support
4	4R9-80	trim lever
5		trim bowden cable
6	4R9-76	trim rod
7	3R9-75	trim locking housing
8		rear trim spring
9	4R3-79	vertical taiul fin elevator pushrod
10	4R3-62	elevator connector bracket
11	4R4-6	rear horizontal tail bracket
12	4R4-8	horizontal tail securing nut
13	3R3-63	elevator automatic connector
14	4R3-7	elevator lever
15	4R3-40	elevator lever bracket
16		forward trim spring
17	4R3-66	forward elevator pushrod
18		elevator spring
19	4R10-74	elevator pushrod 2
20	4R3-76	elevator pushrod 3
21	4R3-69	rear elevator pushrod
22	4R4-4	rear horizontal tail tapered bolt

1.5 Water Ballast System

1.5.1 Wing Water Ballast System LS6, LS6-a:

Approx. 70 Liter (18.5 US gallons) per wing in two tanks (part no. for both tanks 3F5-28) connected via a check valve. Valves / loading and dumping port on lower side of fuselage behind landing gear box.

In the sketch the wing control systems for sections 1.2.1 and 1.3.1 are shown in addition.



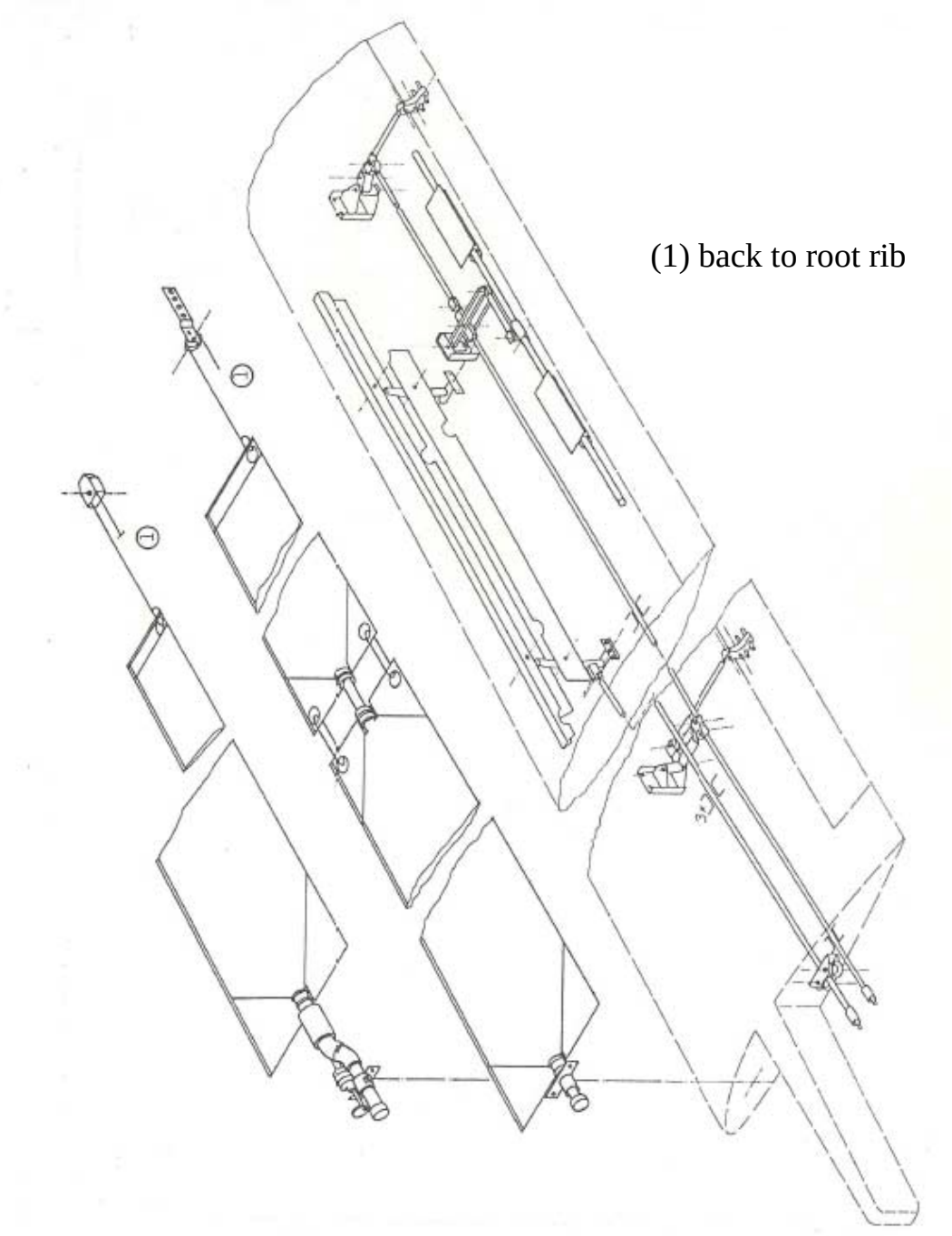
1.5.2 Wing Water Ballast System LS6-b:

maximum capacity per wing

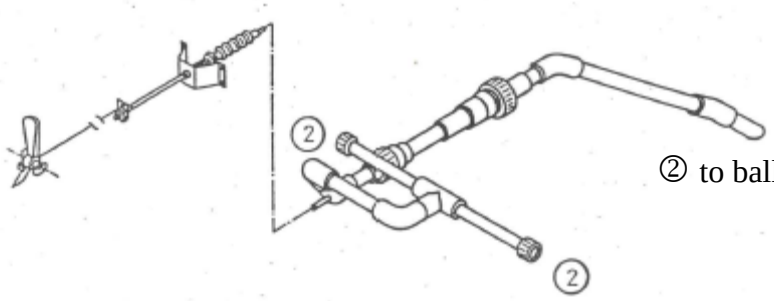
a) Approx. 80 litres (21.13 US gallons) in one tank 1F5-34 per wing, Valves at wing root, loading and dumping port on lower side of wings near root or

b) Approx. 75 Liter (19.8 US gallons) per wing in two tanks (part no. for both tanks 3F5-28) connected via a check valve. Valves / loading and dumping port on lower side of fuselage behind LG box.

In the sketch the wing control systems for sections 1.2.1 and 1.3.1 are shown in addition.



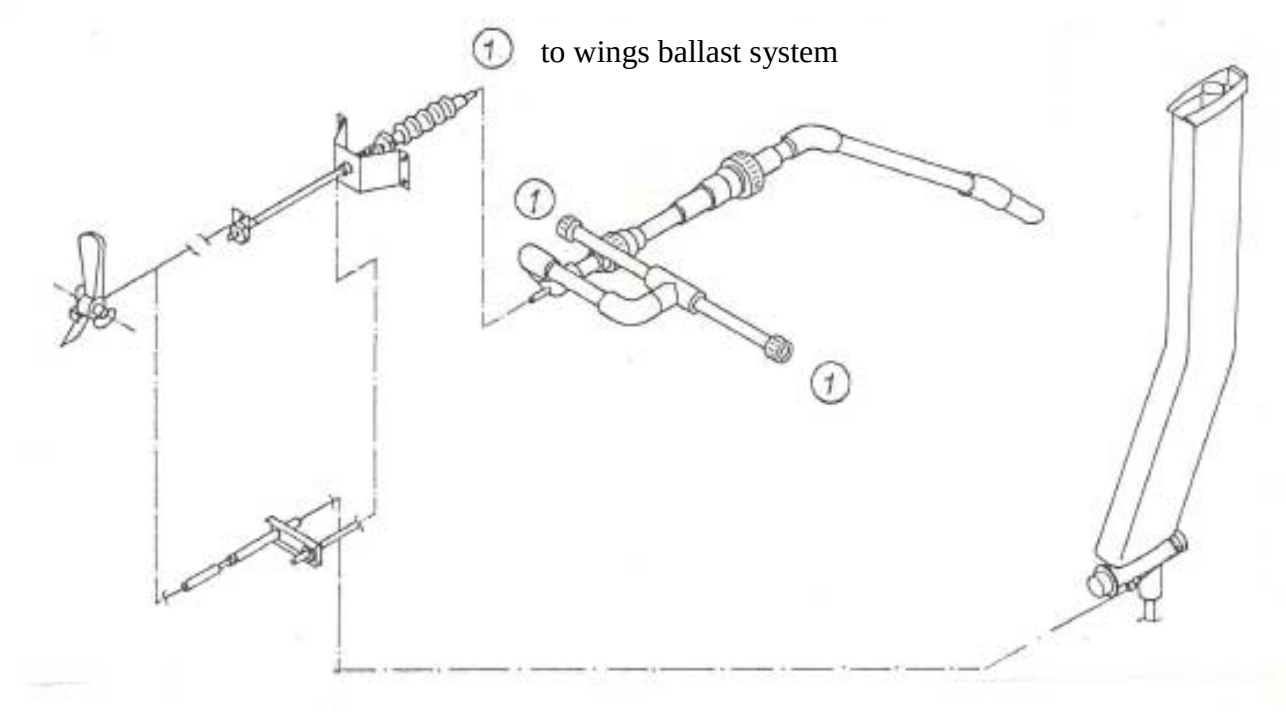
1.5.3 Waterballast fuselage LS6



Note: The variant LS6 may be converted to variant LS6-a by retrofitting a fin ballast tank according to TB6005

1.5.4 Waterballast fuselage LS6-a, LS6-b

A 5.5 litre (1.45 US gallon) fin tank for for compensation of the nose down moment of the wing ballast is available. Maximum compensation 80 %.



Note: Instead of a 5.5 liter fin tank a 4 liter (1.06 US gallons) tank with integrated battery receptacle may be installed according to TB6020.

Warning: It is not permitted to use the fin tank to compensate the mass of heavy pilots.

1.5.5 Water Ballast System LS6-c, LS6c18, LS6-18w:

LS6-c: One tank per wing, maximum capacity per wing 75 litres (19.8 US gal.), optionally 50 litre tanks (13.2 US gal.) are available. Valves at wing root.

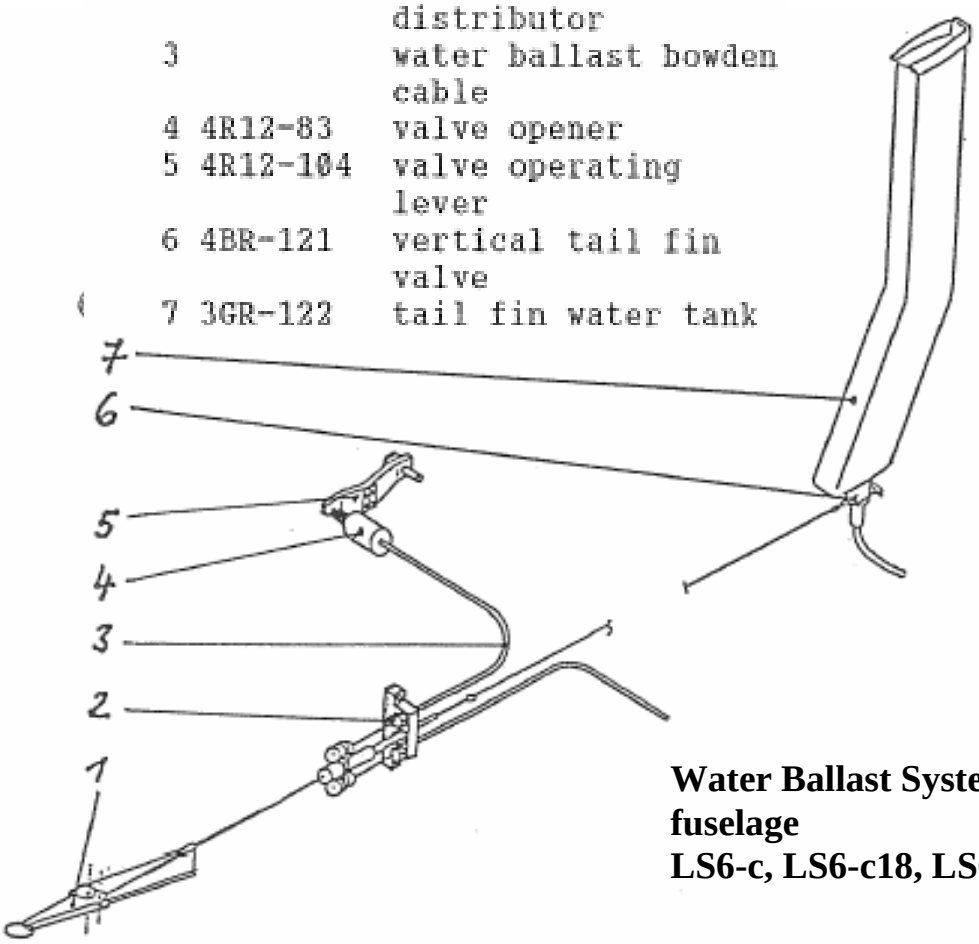
LS6-c18: One tank per wing, maximum capacity per wing 52 litres (13.7 US gal.). Valves at wing root.

LS6-18w: One double tank per wing, maximum capacity per wing 75 litres (19.8 US gal.), double valve at wing root.

Loading and dumping orifice on under side of wings near root. Automatic connection during rigging.

In the vertical tail fin either battery receptacle or ballast tank allowing to compensate C.G. movement due to wing water ballast or mass of heavy pilots, maximum capacity 5.5 litres (1.45 US gal.). When the tail fin tank is combined with a battery receptacle, the maximum capacity is 4.1 litres (1.08 US gal.). Maximun possible compensation has been cared for in tables.

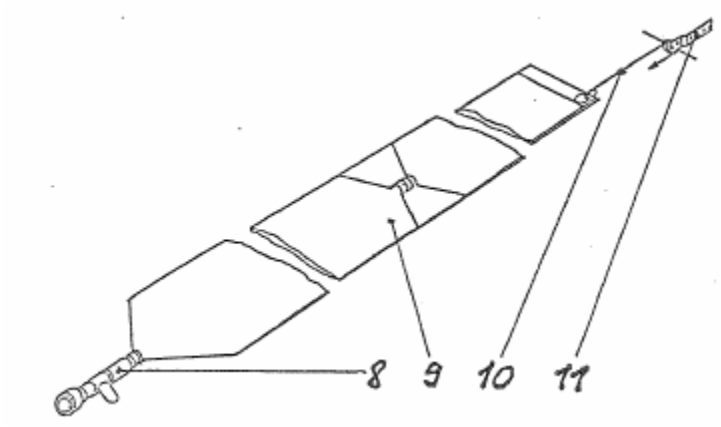
No	Drawing	Denomination
1	4R12-101	water ballast lever
2	1BR-116	water ballast drive distributor
3		water ballast bowden cable
4	4R12-83	valve opener
5	4R12-104	valve operating lever
6	4BR-121	vertical tail fin valve
7	3GR-122	tail fin water tank



Water Ballast System fuselage
LS6-c, LS6-c18, LS6-18w

Water Ballast System wing LS6-18w

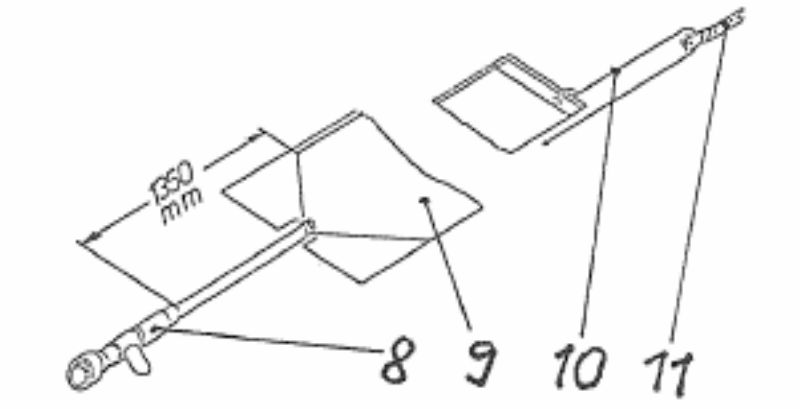
8	1BF-114	wing water ballast valve
9	1F5-97	water ballast bag 75 kg [165 lbs]
10		nylon cord
11	4BF-120	guide pulley



Water Ballast System wing LS6-c:
9 1F5-35 water ballast bag 75 kg (165 lbs)

LS6-c18:
9 1F5-104 water ballast bag 52 kg (115 lbs)

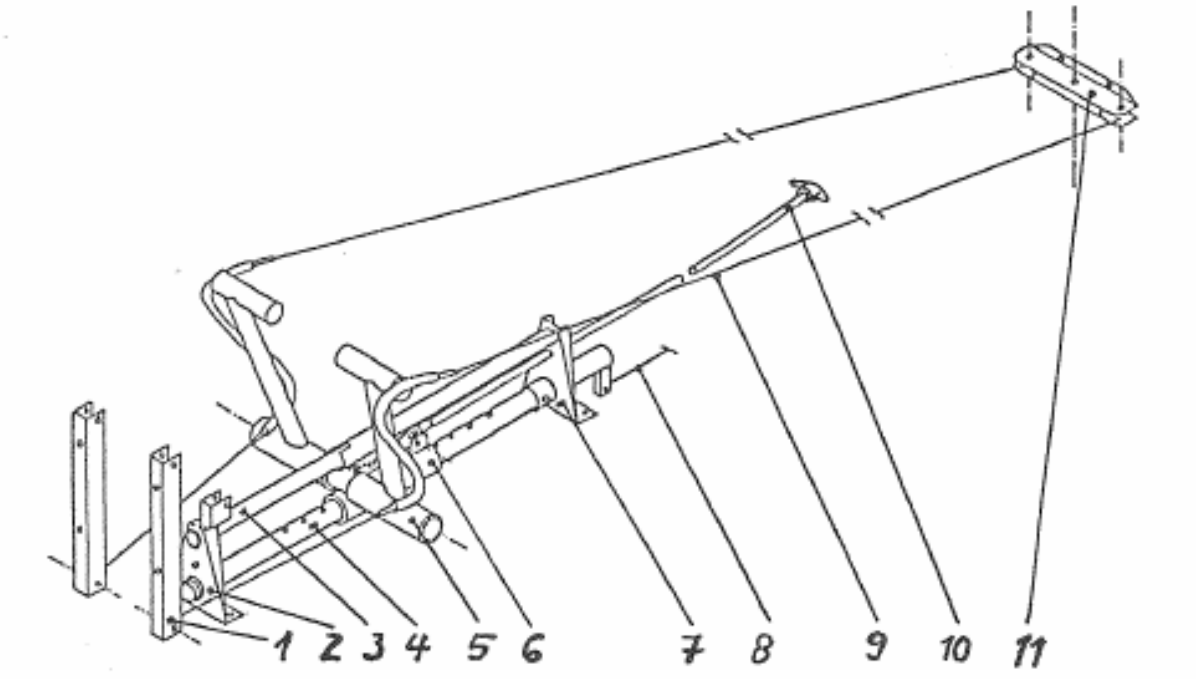
8	1BF-111	wing water ballast valve
9	water ballast bag	
10		nylon cord
11	4BF-120	guide pulley



1.6 Rudder control system

Rudder s activated via steel cables guided in polyamide tubing, no closed control circuit. 100% mass balance at rudder.

No	Drawing	Denomination
1	4R8-67	canopy opener bracket
2	3R14-14	forward pedal guide bracket
3	4R14-18	upper pedal guide tube
4	4R14-19	lower pedal guide tube
5	1R14-21	rudder pedal
6	3R14-16	pedal support
7	3R14-15	rear pedal guide bracket
8		wheel brake cable
9		rudder cable
10	4R14-31	pedal adjustment cable
11	4S1-10	rudder drive bracket

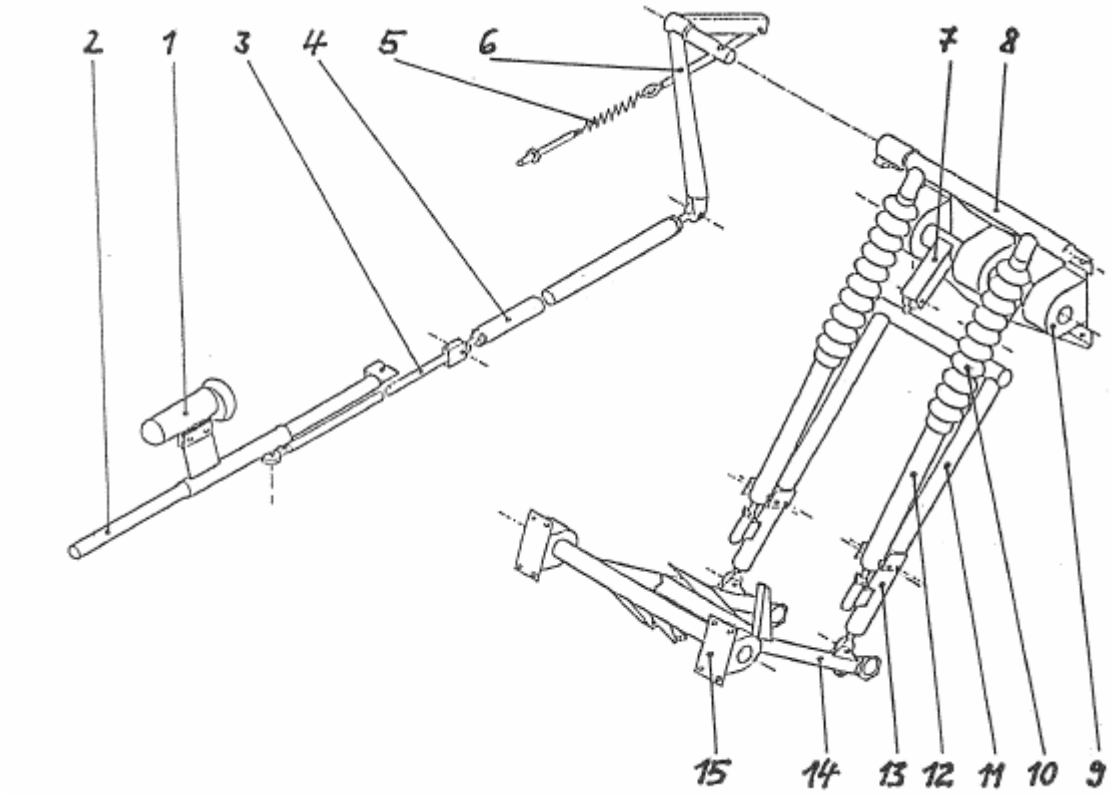


1.7 Landing gear

Retractable spring mounted landing gear, housed in a closed box, right hand operation.

Tail skid including front cable deflector or tail wheel optional.

No	Drawing	Denomination
1	4R2-87	gear handle
2	4R2-89	gear handle guide tube
3	4R2-90	forward landing gear drive rod
4	4R2-112	rear landing gear drive rod
5	4R2-49	compensating spring
6	1R2-84	outer drive
7	3R2-83	swinging arm
8	3R2-75	inner drive
9		rubber torsion element
10		rubber bellow
11	3R2-74	upper folding strut
12	4R2-73	inner drive sliding tube
13	4R2-72	lower folding strut
14	1R2-1	landing gear fork
15		fork rubber bearing



1.8 Wheel Brake

Feet operated; activated by Bowden cable from rudder pedals.

1.9 Cockpit

Double fiberglass shell. Controls for flaps, airbrakes and tow release on left cockpit frame (operating C.G. hook and optional nose hook), for pedal adjustment on seat, for ventilation on instrument panel cover, for landing gear and water ballast valve on right side of cockpit, for canopy opening on both sides. When operating right canopy lever over full possible travel, the forward canopy mounts are disengaged (emergency canopy release).
LS6, LS6-a, LS6-b: Left side trim wheel in front of air brake lever. Right hand backrest inclination adjustment, possible inflight.
LS6-c, LS6-c18, LS6-18w: Longitudinal trim and trim position indicator located on left cockpit side, trim locking lever at control stick. Backrest inclination adjustment in baggage compartment, possible on ground only.

1.10 Canopy

One piece front hinged canopy with instrument panel cover fixed to canopy.

In case of an emergency exit, a spring loaded latch (**LS-latch (Röger hook) for canopy emergency release**) at the rear canopy edge acts as a temporary hinge for clean separation of the canopy from the fuselage **(optional TN6025, standard equipment with LS6-c18 and LS6-18w)**.

1.11 Instrument panel

Panel lifting together with canopy allowing unobstructed entry and exit. Depending on version, allows for installation of up to 10 instruments including radio. Maximum mass of all instrument panel installations 6,7 kg (14,8 lbs).

1.12 Baggage compartment

Baggage compartment behind pilot's shoulders is for light and soft materials only.

Permanent installation of batteries or other equipment is possible on the landing gear box, see section 8.3.

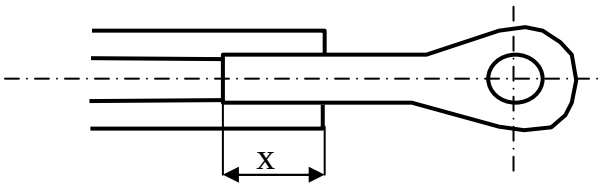
1.13 Oxygen system

Receptacle for oxygen bottles provided, size of bottles 3 or 4 liters, diameter 100 mm (3.94 in).

1.14 Hint for working at the control systems

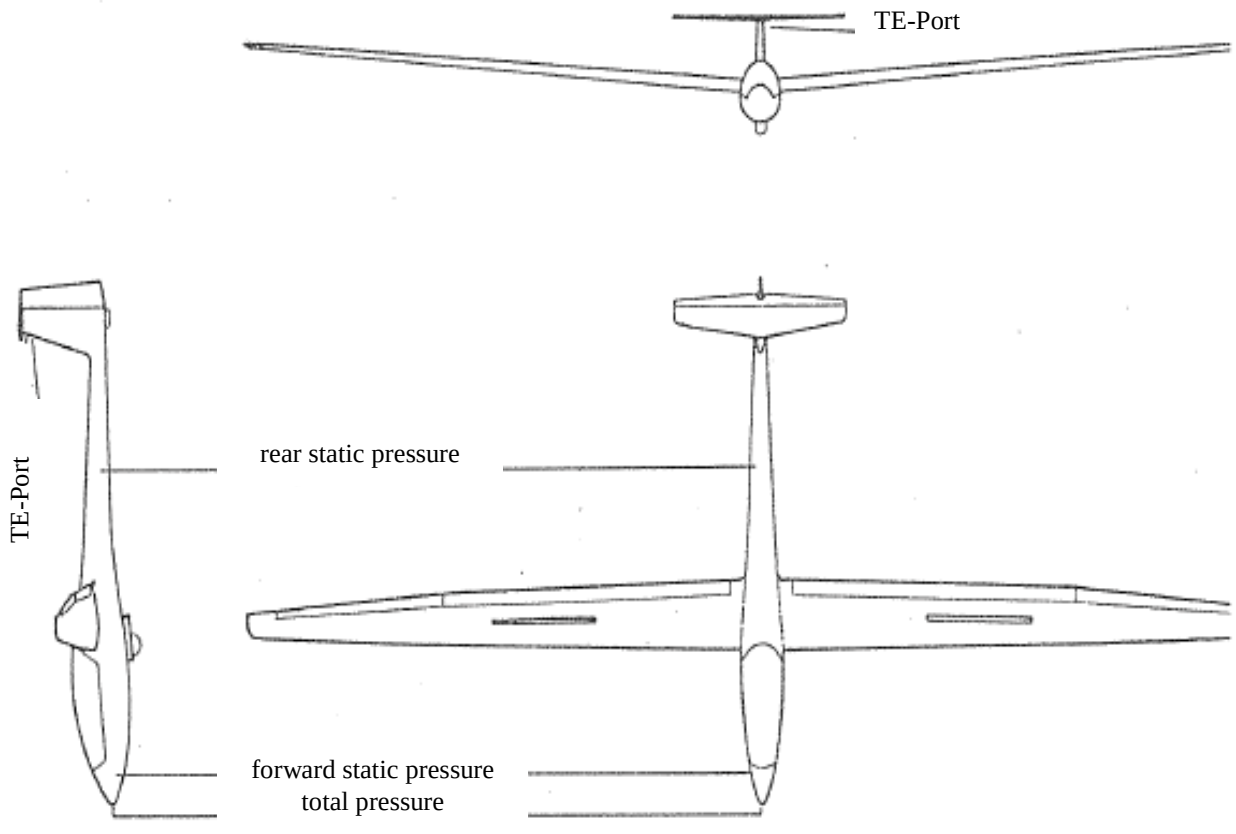
Caution: When working on control systems:
Protection against corrosion (humidity entering pushrods) required for previously used inspection openings to check minimum reach of thread to be dropped.
Used rod end bearings may have different thread lengths with identical heads. Therefore, before adjusting rod end bearings, remaining thread reach must be checked by dismantling.

Thread diameter	Minimum reach x	Rod end designation
M6 x 1 (Standard)	17 mm / 0.67 in	EM 6 R (used in single cases only)
M8 x 1,25 (Standard)	17 mm / 0.67 in	variuos versions possible
M10 x 1 (Fine thread)	17 mm / 0.67 in	PM 6 long

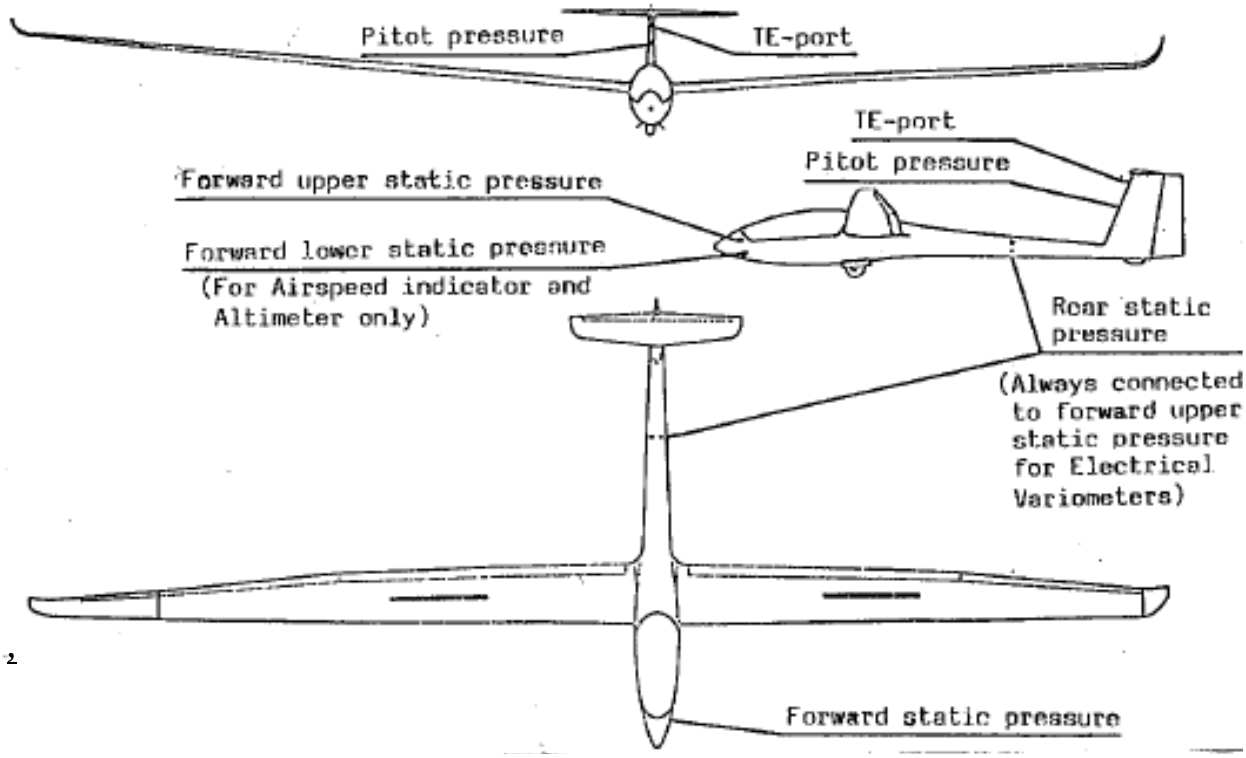


1.15 Pressure ports

1.15.1 Pressure ports LS6, LS6-a, LS6-b:

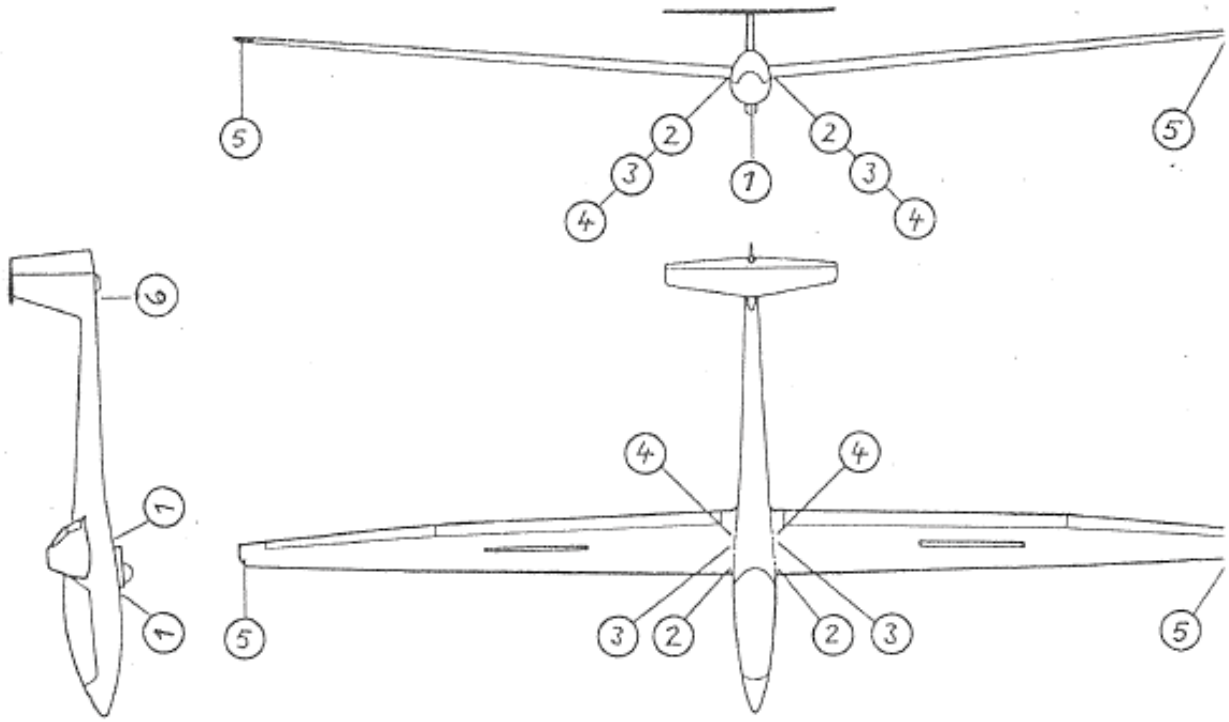


1.15.2 Pressure ports LS6-c, LS6-c18, LS6-18w:

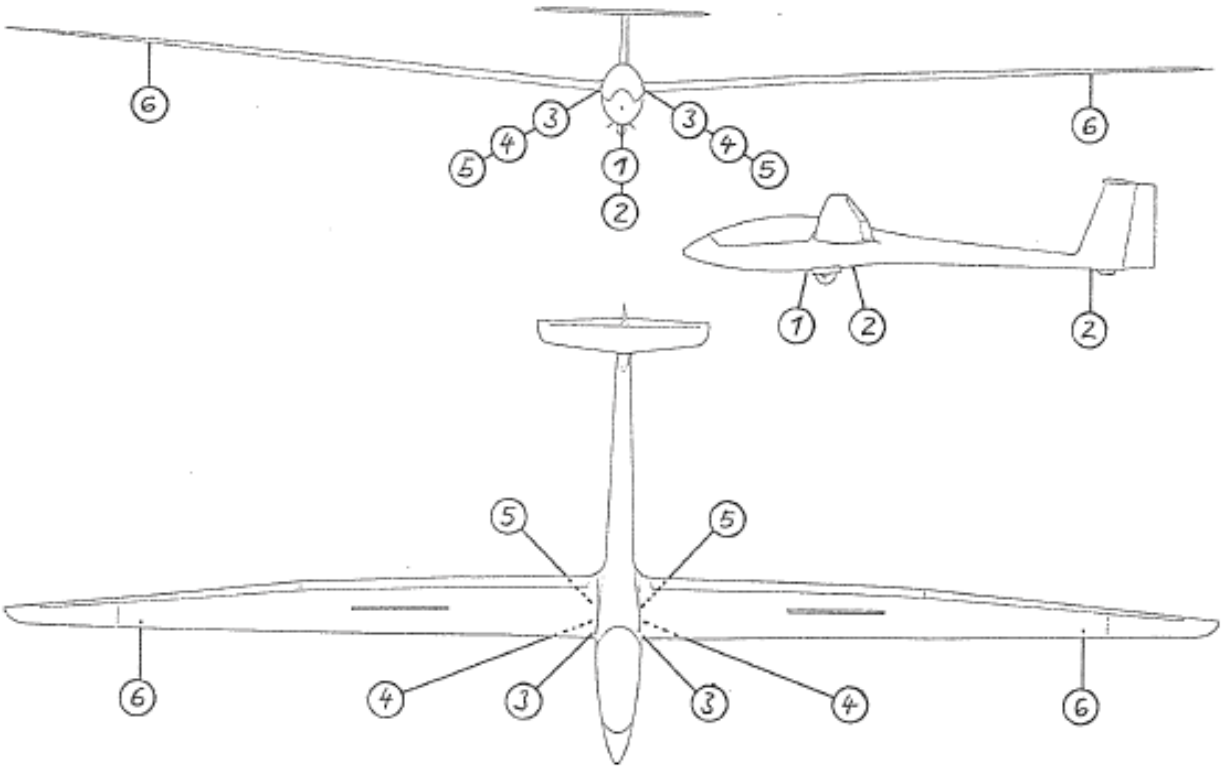


1.16 Drain orifices

1.16.1 Drain orifices LS6, LS6-a, LS6-b:



1.16.2 Drain orifices LS6-c, LS6-c18, LS6-18w:



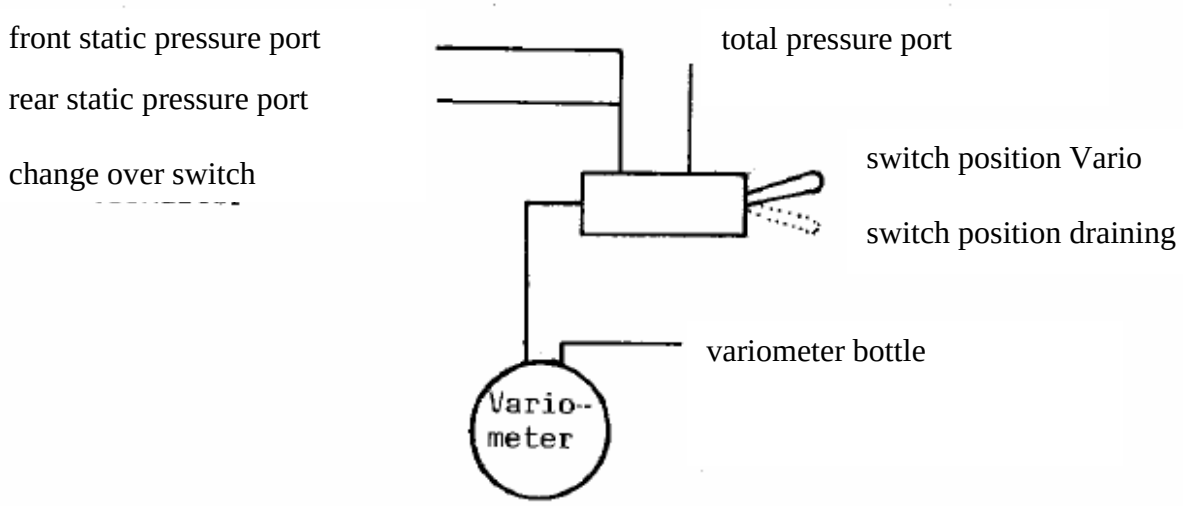
1.17 Colour coding of instrument lines

For LS6 and LS6-a coloured rings at translucent hoses were used, all other models used completely coloured hoses.
The following colour code is used on cockpit end of the lines:
Hoses are dia. 8x1,5 mm

Red = pitot pressure
Blue = lower static pressure forward (Airspeed indicator and altimeter)
Yellow = static pressure aft
Green = pressure port for TE probe (tota1 energy probe).

Transparent dia. 6x1: upper front static pressure ports for very sensitive variometers or connected together with yellow line for electric variometers (Scheme for draining the lines see section 1.17).
Additionally clear tubes without colour marking are installed from the vacuum bottle stowage compartment.

1.18 Static Pressure drain for electric Variometers



1.19 Primary and secondary structure

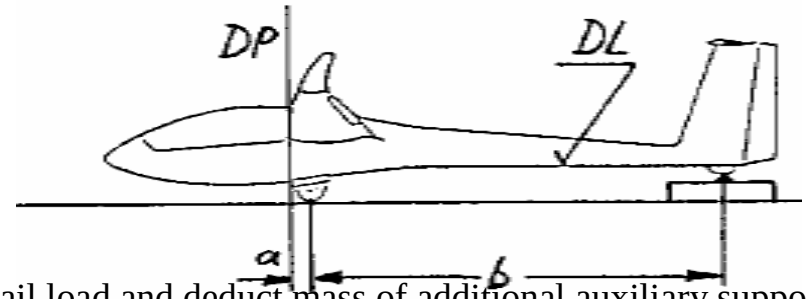
No secondary structure specified.

2 Mass and balance

2.1 Weighing procedure

Datum Line (DL): Under side of fuselage boom placed horizontal
Datum Point (DP): Leading edge of wing at root

1. Determine total mass by weighing all parts and adding together for all wing span versions . For inflight C.G. position, the pilot's mass must also be taken into account.
2. Assemble sailplane [15 m version]. For inflight C.G., the pilot must be seated in the sailplane.
3. Raise tail on weighing machine until datum line is level using wooden blocks or adjustable jack. (Check with leveling gauge)
4. Measure distance (b) from tail support to centre of landing gear axis.
5. Using plumb lead, determine points on floor perpendicular to left and right datum points, and points on floor perpendicular to centre of landing gear axis. Measure distance (a) from wheel axis to datum point.



6. Determine tail load and deduct mass of additional auxiliary supports to get net tail load.
7. Calculate empty mass C.G. position for empty or non-existent vertical tail fin tank:

$$Xcg = \frac{\text{net tail load} * b}{\text{empty mass}} + a$$

8. **<u>With a fin tank installed</u>:** Calculate C.G. position for full vertical tail fin tank:

$$Xcg = \frac{(\text{net tail load} + \text{tail fin water mass}) * b}{\text{empty mass} + \text{tail fin water mass}} + a$$

9. When a battery is fitted in the vertical tail fin, weighing must be done in this configuration. Weigh tail fin battery separately. (Maximum 2.6 kg <5.7 lbs>).

Note: This is also applicable for LS6-a and LS6-b with fin battery installation according to TN 6020

10. Calculate loading limits according to next page.

Mass and balance continued

2.2 Calculation of loading limits

1. Determine Minimum Cockpit Load for the 15 m full and empty tail fin ballast tank version following procedure given in section 2.4 from table "Empty mass C.G. Position".
   When being used in a club, Minimum Cockpit Load should be 70 kg (154 lbs) for empty or non-existent tail fin tank. If it is higher, permanent ballast may be fitted under the forward seat portion, see section 8.

   LS6, LS6-a, LS6-b: Finally, resulting Minimum Cockpit Load for empty tail fin tank (incl. fin battery if existent) should be entered in the following places:
   - in weighing report of inspection
   - in Flight Manual page 6-3
   - under instrument panel cover
   - on Data Placard in cockpit

Note: LS6-a and LS6-b: It is not permitted to use the fin tank to compensate the mass of heavy pilots. Therefore the Minumum Cockpit Load without ballast in the fin tank must be entered in the cockpit-placards.

   LS6-c, LS6-c18, LS6-18w: Finally, resulting Minimum Cockpit Load for full tail fin tank should be entered in the following places:
   - in weighing report of inspection
   - in Flight Manual page 6-2 in full tail fin tank column
   - under instrument panel cover
   - on Data Placard in cockpit

   For existing tail fin tank, enter Minimum Cockpit Load for empty tail fin tank into Flight Manual page 6-2, column tail fin tank empty.

Note: LS6-c, LS6-c18 and LS6-18w: It is permitted to use the fin tank to compensate the mass of heavy pilots. Therefore the Minimum Cockpit Load with full ballast in the fin tank must be entered in the cockpit-placards.

Mass and balance continued

2. Maximum mass of non-lifting parts may vary between
   LS6, LS6-a: 230 and 245 kg (507 and 540 lbs)
   LS6-b, LS6-c: 240 and 255 kg (529 and 562 lbs)
   LS6-c18: 235 and 251 kg (518 and 553 lbs)
   LS6-18w: 240 and 256 kg (529 and 564 lbs)
   The maximum mass of non-lifting parts can be determined in relation to empty mass and empty mass C.G. position according to tables in section 2.3.
   Maximum mass of non-lifting parts for 15m wing span should be entered into Weighing Report.

3. Determine maximum permissible Cockpit Load from table "Empty mass C.G. Position", see section 2.4.
   Maximum Cockpit Load normally should be 110 kg <242 lbs>, as given in empty mass C.G. table. It may be lower due to trim conditions, excessive equipment or repairs.
   Calculate Maximum Cockpit Load on weighing report; see also examples on page 2-4 and 2-5.
   Resulting Maximum Cockpit Load should be entered in the following places:
   - in weighing report of inspection
   - in Flight Manual, page 6-2
   - on Data Placard in cockpit

4. Empty mass (perhaps increased by mass of permanently fitted trim ballast) should be entered in the following places:
   - in weighing report of inspection
   - in Flight Manual, page 6-2 for calculation of maximum permissible water ballast mass

5. Battery position during weighing should be entered in the following places:
   - in equipment list and weighing report of inspection
   - on Data Placard in cockpit
   - in Flight Manual, page 6-2, if fitted in tail fin

For permanent installation of trim ballast mass see section 8.

Mass and balance continued

Examples for calculation of loading limits:

	LS6, LS6-a	LS6-b	LS6-c	LS6-c18	LS6-18w	
1) Minimum Cockpit Load (no fin tank or empty fin tank)						
For empty mass of	255	255	255	280	280	kg
	562	562	562	617	617	lbs
and empty mass C.G. position	665	665	665	655	655	mm
	26.181	26.181	26.181	25.787	25.787	in
the minimum cockpit load						
according to table pages 2.4 is	75	75	75	80	80	kg
	165	165	165	176	176	lbs
limit value greater	...667	…667	…667	…659	…659	mm
	...26.260	...26.260	...26.260	...25.945	...25.945	in
than calculated value	665	665	665	655	655	mm
	26.181	26.181	26.181	25.787	25.787	in
2) Minimum Cockpit Load (for fin tank 4.1 kg (9 lbs) full) **NOT valid for LS6**						
Mass	259.1	259.1	259.1	284.1	284.1	kg
	571	571	571	626	626	lbs
and new mass C.G. position	723	723	723	709	709	mm
	28.465	28.465	28.465	27.913	27.913	in
Minimum cockpit load	95	95	95	100	100	kg
according to table pages 2.4 is	209	209	209	220	220	lbs
limit value greater	...730	...730	...730	...717	...717	mm
	..28.740	..28.740	..28.740	..28.228	..28.228	in
than calculated value	723	723	723	709	709	mm
	28.465	28.465	28.465	27.913	27.913	in
3) Minimum Cockpit Load (for fin tank 5.5 kg (12 lbs full) **NOT valid for LS6**						
Mass of	260.5	260.5	260.5	285.5	285.5	kg
	574	574	574	629	629	lbs
and new mass C.G. position	742	742	742	727	727	mm
	29.213	29.213	29.213	28.622	28.622	in
the minimum cockpit load						
according to tables pages 2.4 is	100	100	100	105	105	kg
	220	220	220	231	231	lbs
limit value greater	..744	..744	..744	..729	..729	mm
	29.291	29.291	29.291	28.701	28.701	in
than calculated value	742	742	742	727	727	mm
	29.213	29.213	29.213	28.622	28.622	in
4) Maximum Mass of Non-lifting Parts						
For empty mass of	255	255	255	280	280	kg
	562	562	562	617	617	lbs
and empty mass C.G. Position						
	665	665	665	655	655	mm
	26.181	26.181	26.181	25.787	25.787	in
Maximum Mass of Non-lifting Parts	235	245	245	242	247	kg
according to table pages 2.3	518	540	540	534	545	lbs

Continued next page

Examples for calculation of loading limits (continued):

	LS6, LS6-a	LS6-b	LS6-c	LS6-c18	LS6-18w	
5) Maximum permissible Cockpit Load						
Fuselage with complete equipment, canopy, battery and main pins	118.6	120.6	120.6	131.2	131.2	kg
	261	266	266	289	289	lbs
Horizontal tail unit	6.3	6.3	6.3	6.8	6.8	kg
	14	14	14	15	15	lbs
Cockpit load (max.110 kg/ 242 lbs)	110	110	110	104	109	kg
	242	242	242	229	240	lbs
Mass of Non-lifting Parts	234.9	236.9	236.9	242.0	247.0	kg
	517	522	522	533	544	lbs
Maximum cockpit load (max. 110 kg / 242 lbs)	110	110	110	104	109	kg
	242	242	242	242	242	lbs
Maximum take-off mass	525	525	525	525	525	kg
	1157	1157	1157	1157	1157	lbs

LS6-c18: entry in flight Manual page 6-2/3 for example above

Empty mass 15 m 18m [kg]	C.G. position at 15 m span [mm]	Max. loading [kg]	Min. loading for vertical fin tank		Permanently fitted mass balance		Vertical tail fin battery Yes / No	Wing tank volume [Ltr.]	Date/ Inspector
			Full [kg]	Empty [kg]	Front [kg]	rear [kg]			
280 288	655	104	105	80	---	---	No	104	18.03.10 GS

The small margin between maximum load (104 kg <229 lbs>) and minimum cockpit load with vertical fin tank full (105 kg < 231 lbs>, here entered for 5.5 Liter tank) indicates a pre-flight check of the fin tank valve before every take-off is required. If passage can't be verified while blowing air through the valve, water is most likely remaining in the tank and therefore the tank requires such a high minimum cockpit load.

LS6-18w: entry in flight Manual page 6-2/3 for example above

Empty mass 15 m 18m [kg]	C.G. position at. 15 m span [mm]	Max. loading [kg]	Min. Loading for vertical fin tank		Permanently fitted mass balance		Vertical tail fin battery Yes / No	Wing tank volume [Ltr.]	Date/ Inspector
			Full [kg]	Empty [kg]	Front [kg]	rear [kg]			
280 288	655	109	105	80	---	---	No	150	18.03.10 GS

The small margin between maximum load (109 kg <240 lbs>) and minimum cockpit load with vertical fin tank full (105 kg < 231 lbs>, here entered for 5.5 Liter tank) indicates a pre-flight check of the fin tank valve before every take-off is required. If passage can't be verified while blowing air through the valve, water is most likely remaining in the tank and therefore the tank requires such a high minimum cockpit load.

Mass and balance continued

2.3 Calculation of Max. Mass of Non-Lifting Parts

2.3.1 Calculation of Max. Mass of Non-Lifting Parts LS6, LS6-a

Maximum mass of non-lifting parts of 245 kg (540 lbs) must be reduced in relation to empty mass and empty mass C.G. position.

Example: For empty mass C.G. position of 649 mm (25.55 in) and empty mass of 249 kg (549 lbs) the permissible mass of non-lifting parts is 234 kg (515 lbs).

Table for <kg> and <mm>

	Empty mass C.G. Xs <mm>											
Empty mass G <kg> from-to	from 540 to 559	from 560 to 579	From 580 to 599	from 600 to 619	from 620 to 639	from 640 to 659	from 660 to 679	from 680 to 699	from 700 to 719	from 720 to 739	from 740 to 759	from 760 to 779
246-247	230	230	230	231	232	233	234	236	237	238	239	240
247-248	230	230	230	231	232	233	235	236	237	238	239	241
248-249	230	230	230	231	232	233	235	236	237	238	239	241
249-250	230	230	230	231	232	234	235	236	237	238	240	241
250-251	230	230	230	231	232	234	235	236	237	238	240	241
251-252	230	230	230	231	233	234	235	236	237	238	240	241
252-253	230	230	230	231	233	234	235	236	238	239	240	241
253-254	230	230	230	231	233	234	235	236	238	239	240	241
254-255	230	230	230	232	233	234	235	237	238	239	240	241
255-256	230	230	230	232	233	234	235	237	238	239	240	242
256-257	230	230	231	232	233	234	235	237	238	239	240	242
257-258	230	230	231	232	233	234	236	237	238	239	241	242
258-259	230	230	231	232	233	234	236	237	238	239	241	242
259-260	230	230	231	232	233	235	236	237	238	240	241	242
260-261	230	230	231	232	233	235	236	237	238	240	241	242
261-262	230	230	231	232	233	235	236	237	239	240	241	242
262-263	230	230	231	232	234	235	236	237	239	240	241	242
263-264	230	230	231	232	234	235	236	238	239	240	241	243
264-265	230	230	231	232	234	235	236	238	239	240	241	243
265-266	230	230	231	233	234	235	236	238	239	240	242	243
266-267	230	230	231	233	234	235	237	238	239	240	242	243
267-268	230	230	231	233	234	235	237	238	239	241	242	243
268-269	230	230	232	233	234	235	237	238	239	241	242	243
269-270	230	230	232	233	234	236	237	238	239	241	242	243
270-271	230	230	232	233	234	236	237	238	240	241	242	244
271-272	230	230	232	233	234	236	237	238	240	241	242	244
272-273	230	231	232	233	235	236	237	238	240	241	242	244
273-274	230	231	232	233	235	236	237	239	240	241	243	244
274-275	230	231	232	233	235	236	237	239	240	241	243	244
275-276	230	231	232	233	235	236	237	239	240	241	243	244
276-277	230	231	232	234	235	236	238	239	240	242	243	244
277-278	230	231	232	234	235	236	238	239	240	242	243	244
278-279	230	231	232	234	235	236	238	239	241	242	243	245
279-280	230	231	232	234	235	237	238	239	241	242	243	245
280-281	230	231	233	234	235	237	238	239	241	242	243	245

Mass and balance continued

Calculation of Max. Mass of Non-Lifting Parts LS6, LS6-a cont.

Maximum mass of non-lifting parts of 540 lbs (245 kg) must be reduced in relation to empty mass and empty mass C.G. position.

Example: For empty mass C.G. position of 25.55 in (649 mm) and empty mass of 549 lbs (249 kg) the permissible mass of non-lifting parts is 515 lbs (234 kg).

Table for <lbs.> and <in.>

	Empty mass C.G. Xs <in>											
Empty mass G <lbs> from-up to	from 21.2 to 22.01	from 22.02 to 22.80	From 22.81 to 23.58	from 23.59 to 24.37	from 24.38 to 25.16	from 25.17 to 25.96	from 25.97 to 26.75	from 26.76 to 27.52	from 27.53 to 28.31	from 28.32 to 29.11	from 29.12 to 29.90	from 29.91 to 30.70
542-544	507	507	507	509	511	513	515	520	522	524	526	529
544-546	507	507	507	509	511	513	518	520	522	524	526	531
546-548	507	507	507	509	511	513	518	520	522	524	526	531
548-551	507	507	507	509	511	515	518	520	522	524	529	531
551-553	507	507	507	509	511	515	518	520	522	524	529	531
553-555	507	507	507	509	513	515	518	520	522	524	529	531
555-557	507	507	507	509	513	515	518	520	524	526	529	531
557-559	507	507	507	509	513	515	518	520	524	526	529	531
559-562	507	507	507	511	513	515	518	522	524	526	529	531
562-564	507	507	507	511	513	515	518	522	524	526	529	533
564-566	507	507	509	511	513	515	518	522	524	526	529	533
566-568	507	507	509	511	513	515	520	522	524	526	531	533
568-570	507	507	509	511	513	515	520	522	524	526	531	533
570-573	507	507	509	511	513	518	520	522	524	529	531	533
573-575	507	507	509	511	513	518	520	522	524	529	531	533
575-577	507	507	509	511	513	518	520	522	526	529	531	533
577-579	507	507	509	511	515	518	520	522	526	529	531	533
579-264	507	507	509	511	515	518	520	524	526	529	531	535
582-584	507	507	509	511	515	518	520	524	526	529	531	535
584-586	507	507	509	513	515	518	520	524	526	529	533	535
586-588	507	507	509	513	515	518	522	524	526	529	533	535
588-590	507	507	509	513	515	518	522	524	526	531	533	535
590-593	507	507	511	513	515	518	522	524	526	531	533	535
593-595	507	507	511	513	515	520	522	524	526	531	533	535
595-597	507	507	511	513	515	520	522	524	529	531	533	537
597-599	507	507	511	513	515	520	522	524	529	531	533	537
599-601	507	509	511	513	518	520	522	524	529	531	533	537
601-604	507	509	511	513	518	520	522	526	529	531	535	537
604-606	507	509	511	513	518	520	522	526	529	531	535	537
606-608	507	509	511	513	518	520	522	526	529	531	535	537
608-610	507	509	511	515	518	520	524	526	529	533	535	537
610-612	507	509	511	515	518	520	524	526	529	533	535	537
612-615	507	509	511	515	518	520	524	526	531	533	535	540
615-617	507	509	511	515	518	522	524	526	531	533	535	540
617-619	507	509	511	515	518	522	524	526	531	533	535	540

2.3.2 Calculation of Max. Mass of Non-Lifting Parts LS6-b, LS6-c

Maximum mass of non-lifting parts of 255 kg (562 lbs) must be reduced in relation to empty mass and empty mass C.G. position.

Example: see section 2.3.1.

Table for <kg> and <mm>

	Empty mass C.G. position Xs <mm>											
Empty mass G <kg> from-up to	from 540 to 559	from 560 to 579	from 580 to 599	from 600 to 619	from 620 to 639	from 640 to 659	from 660 to 679	from 680 to 699	from 700 to 719	from 720 to 739	from 740 to 759	from 760 to 779
246-247	240	240	240	241	242	243	244	246	247	248	249	250
247-248	240	240	240	241	242	243	245	246	247	248	249	251
248-249	240	240	240	241	242	243	245	246	247	248	249	251
249-250	240	240	240	241	242	244	245	246	247	248	250	251
250-251	240	240	240	241	242	244	245	246	247	248	250	251
251-252	240	240	240	241	243	244	245	246	247	248	250	251
252-253	240	240	240	241	243	244	245	246	248	249	250	251
253-254	240	240	240	241	243	244	245	246	248	249	250	251
254-255	240	240	240	242	243	244	245	247	248	249	250	251
255-256	240	240	240	242	243	244	245	247	248	249	250	252
256-257	240	240	241	242	243	244	245	247	248	249	250	252
257-258	240	240	241	242	243	244	246	247	248	249	251	252
258-259	240	240	241	242	243	244	246	247	248	249	251	252
259-260	240	240	241	242	243	245	246	247	248	250	251	252
260-261	240	240	241	242	243	245	246	247	248	250	251	252
261-262	240	240	241	242	243	245	246	247	249	250	251	252
262-263	240	240	241	242	244	245	246	247	249	250	251	252
263-264	240	240	241	242	244	245	246	248	249	250	251	253
264-265	240	240	241	242	244	245	246	248	249	250	251	253
265-266	240	240	241	243	244	245	246	248	249	250	252	253
266-267	240	240	241	243	244	245	247	248	249	250	252	253
267-268	240	240	241	243	244	245	247	248	249	251	252	253
268-269	240	240	242	243	244	245	247	248	249	251	252	253
269-270	240	240	242	243	244	246	247	248	249	251	252	253
270-271	240	240	242	243	244	246	247	248	250	251	252	254
271-272	240	240	242	243	244	246	247	248	250	251	252	254
272-273	240	241	242	243	245	246	247	248	250	251	252	254
273-274	240	241	242	243	245	246	247	249	250	251	253	254
274-275	240	241	242	243	245	246	247	249	250	251	253	254
275-276	240	241	242	243	245	246	247	249	250	251	253	254
276-277	240	241	242	244	245	246	248	249	250	252	253	254
277-278	240	241	242	244	245	246	248	249	250	252	253	254
278-279	240	241	242	244	245	246	248	249	251	252	253	255
279-280	240	241	242	244	245	247	248	249	251	252	253	255
280-281	240	241	243	244	245	247	248	249	251	252	253	255

Mass and balance continued

Calculation of Max. Mass of Non-Lifting Parts LS6-b, LS6-c cont.

Maximum mass of non-lifting parts of 562 lbs (255 kg) must be reduced in relation to empty mass and empty mass C.G. position.
Example: see section 2.3.1.

Table for <lbs.> and <in.>

	Empty mass C.G. Xs <in>											
Empty mass G <lbs> from-up to	from 21.2 to 22.01	from 22.02 to 22.80	From 22.81 to 23.58	from 23.59 to 24.37	from 24.38 to 25.16	from 25.17 to 25.96	from 25.97 to 26.75	from 26.76 to 27.52	from 27.53 to 28.31	from 28.32 to 29.11	from 29.12 to 29.90	from 29.91 to 30.70
542-544	529	529	529	531	534	536	538	542	545	547	549	551
544-546	529	529	529	531	534	536	540	542	545	547	549	553
546-548	529	529	529	531	534	536	540	542	545	547	549	553
548-551	529	529	529	531	534	538	540	542	545	547	551	553
551-553	529	529	529	531	534	538	540	542	545	547	551	553
553-555	529	529	529	531	536	538	540	542	545	547	551	553
555-557	529	529	529	531	536	538	540	542	547	549	551	553
557-559	529	529	529	531	536	538	540	542	547	549	551	553
559-562	529	529	529	534	536	538	540	545	547	549	551	553
562-564	529	529	529	534	536	538	540	545	547	549	551	556
564-566	529	529	531	534	536	538	540	545	547	549	551	556
566-568	529	529	531	534	536	538	542	545	547	549	553	556
568-570	529	529	531	534	536	538	542	545	547	549	553	556
570-573	529	529	531	534	536	540	542	545	547	551	553	556
573-575	529	529	531	534	536	540	542	545	547	551	553	556
575-577	529	529	531	534	536	540	542	545	549	551	553	556
577-579	529	529	531	534	538	540	542	545	549	551	553	556
579-264	529	529	531	534	538	540	542	547	549	551	553	558
582-584	529	529	531	534	538	540	542	547	549	551	553	558
584-586	529	529	531	536	538	540	542	547	549	551	556	558
586-588	529	529	531	536	538	540	545	547	549	551	556	558
588-590	529	529	531	536	538	540	545	547	549	553	556	558
590-593	529	529	534	536	538	540	545	547	549	553	556	558
593-595	529	529	534	536	538	542	545	547	549	553	556	558
595-597	529	529	534	536	538	542	545	547	551	553	556	560
597-599	529	529	534	536	538	542	545	547	551	553	556	560
599-601	529	531	534	536	540	542	545	547	551	553	556	560
601-604	529	531	534	536	540	542	545	549	551	553	558	560
604-606	529	531	534	536	540	542	545	549	551	553	558	560
606-608	529	531	534	536	540	542	545	549	551	553	558	560
608-610	529	531	534	538	540	542	547	549	551	556	558	560
610-612	529	531	534	538	540	542	547	549	551	556	558	560
612-615	529	531	534	538	540	542	547	549	553	556	558	562
615-617	529	531	534	538	540	545	547	549	553	556	558	562
617-619	529	531	536	538	540	545	547	549	553	556	558	562

Mass and balance continued

2.3.3 Calculation of Max. Mass of Non-Lifting Parts LS6-c18

Maximum mass of non-lifting parts of 251 kg (553 lbs) must be reduced in relation to empty mass and empty mass C.G. position.

Example: see section 2.3.1.

Table for <kg> and <mm>

	Empty mass C.G. position Xs <mm>											
Empty mass G <kg> from - to	from 540 up to 559	from 560 up to 579	from 580 up to 599	from 600 up to 619	from 620 up to 639	from 640 up to 659	from 660 up to 679	from 680 up to 699	from 700 up to 719	from 720 up to 739	from 740 up to 759	from 760 up to 779
250-251	235	235	235	236	237	239	240	241	242	243	245	246
251-252	235	235	235	236	238	239	240	241	242	244	245	246
252-253	235	235	235	236	238	239	240	241	243	244	245	246
253-254	235	235	235	236	238	239	240	241	243	244	245	246
254-255	235	235	235	237	238	239	240	242	243	244	245	246
255-256	235	235	235	237	238	239	240	242	243	244	245	247
256-257	235	235	236	237	238	239	240	242	243	244	245	247
257-258	235	235	236	237	238	239	241	242	243	244	246	247
258-259	235	235	236	237	238	239	241	242	243	244	246	247
259-260	235	235	236	237	238	240	241	242	243	245	246	247
260-261	235	235	236	237	238	240	241	242	243	245	246	247
261-262	235	235	236	237	238	240	241	242	244	245	246	247
262-263	235	235	236	237	239	240	241	242	244	245	246	247
263-264	235	235	236	237	239	240	241	243	244	245	246	248
264-265	235	235	236	237	239	240	241	243	244	245	246	248
265-266	235	235	236	238	239	240	241	243	244	245	247	248
266-267	235	235	236	238	239	240	242	243	244	245	247	248
267-268	235	235	236	238	239	240	242	243	244	246	247	248
268-269	235	235	237	238	239	240	242	243	244	246	247	248
269-270	235	235	237	238	239	241	242	243	244	246	247	248
270-271	235	235	237	238	239	241	242	243	245	246	247	249
271-272	235	235	237	238	239	241	242	243	245	246	247	249
272-273	235	236	237	238	240	241	242	243	245	246	247	249
273-274	235	236	237	238	240	241	242	244	245	246	248	249
274-275	235	236	237	238	240	241	242	244	245	246	248	249
275-276	235	236	237	238	240	241	242	244	245	246	248	249
276-277	235	236	237	239	240	241	243	244	245	247	248	249
277-278	235	236	237	239	240	241	243	244	245	247	248	249
278-279	235	236	237	239	240	241	243	244	246	247	248	250
279-280	235	236	237	239	240	242	243	244	246	247	248	250
280-281	235	236	238	239	240	242	243	244	246	247	248	250
281-282	235	236	238	239	240	242	243	244	246	247	249	250
282-283	235	236	238	239	240	242	243	245	246	248	249	250
283-284	235	236	238	239	241	242	243	245	246	248	249	250
284-285	235	237	238	239	241	242	243	245	246	248	249	250
285-286	235	237	238	239	241	242	244	245	246	248	249	250
286-287	235	237	238	239	241	242	244	245	246	248	249	251
287-288	235	237	238	240	241	242	244	245	247	248	249	251
288-289	235	237	238	240	241	242	244	245	247	248	249	251
289-290	236	237	238	240	241	243	244	245	247	248	249	251
290-291	236	237	238	240	241	243	244	245	247	248	249	251

Mass and balance continued

Calculation of Max. Mass of Non-Lifting Parts LS6-c18 cont.

Maximum mass of non-lifting parts of 533 lbs (251 kg) must be reduced in relation to empty mass and empty mass C.G. position.
Example: see section 2.3.1.

Table for <lbs.> and <in.>

	Empty mass C.G. Xs <in>											
Empty mass G <lbs> from-up to	from 21.2 to 22.01	from 22.02 to 22.80	From 22.81 to 23.58	from 23.59 to 24.37	from 24.38 to 25.16	from 25.17 to 25.96	from 25.97 to 26.75	from 26.76 to 27.52	from 27.53 to 28.31	from 28.32 to 29.11	from 29.12 to 29.90	from 29.91 to 30.70
551-553	518	518	518	520	522	527	529	531	534	536	540	542
553-555	518	518	518	520	525	527	529	531	534	538	540	542
555-557	518	518	518	520	525	527	529	531	536	538	540	542
557-559	518	518	518	520	525	527	529	531	536	538	540	542
559-562	518	518	518	522	525	527	529	534	536	538	540	542
562-564	518	518	518	522	525	527	529	534	536	538	540	545
564-566	518	518	520	522	525	527	529	534	536	538	540	545
566-568	518	518	520	522	525	527	531	534	536	538	542	545
568-570	518	518	520	522	525	527	531	534	536	538	542	545
570-573	518	518	520	522	525	529	531	534	536	540	542	545
573-575	518	518	520	522	525	529	531	534	536	540	542	545
575-577	518	518	520	522	525	529	531	534	538	540	542	545
577-579	518	518	520	522	527	529	531	534	538	540	542	545
579-264	518	518	520	522	527	529	531	536	538	540	542	547
582-584	518	518	520	522	527	529	531	536	538	540	542	547
584-586	518	518	520	525	527	529	531	536	538	540	247	547
586-588	518	518	520	525	527	529	534	536	538	540	247	547
588-590	518	518	520	525	527	529	534	536	538	542	247	547
590-593	518	518	237	525	527	529	534	536	538	542	247	547
593-595	518	518	237	525	527	531	534	536	538	542	247	547
595-597	518	518	237	525	527	531	534	536	540	542	247	549
597-599	518	518	237	525	527	531	534	536	540	542	247	549
599-601	518	520	237	525	529	531	534	536	540	542	247	549
601-604	518	520	237	525	529	531	534	538	540	542	547	549
604-606	518	520	237	525	529	531	534	538	540	542	547	549
606-608	518	520	237	525	529	531	534	538	540	542	547	549
608-610	518	520	237	527	529	531	243	538	540	247	547	549
610-612	518	520	237	527	529	531	243	538	540	247	547	549
612-615	518	520	237	527	529	531	243	538	542	247	547	551
615-617	518	520	237	527	529	534	243	538	542	247	547	551
617-619	518	520	525	527	529	534	243	538	542	247	547	551
619-622	518	520	525	527	529	534	243	538	542	247	549	551
622-624	518	520	525	527	529	534	243	540	542	547	549	551
624-626	518	520	525	527	531	534	243	540	542	547	549	551
626-628	518	522	525	527	531	534	243	540	542	547	549	551
628-631	518	522	525	527	531	534	538	540	542	547	549	551
631-633	518	522	525	527	531	534	538	540	542	547	549	553
633-635	518	522	525	529	531	534	538	540	545	547	549	553
635-637	518	522	525	529	531	534	538	540	545	547	549	553
637-639	520	522	525	529	531	536	538	540	545	547	549	553
639-642	520	522	525	529	531	536	538	540	545	547	549	553

Mass and balance continued

2.3.4 Calculation of Max. Mass of Non-Lifting Parts LS6-18w

Maximum mass of non-lifting parts of 256 kg (564 lbs) must be reduced in relation to empty mass and empty mass C.G. position.

Example: see section 2.3.1.

Table for <kg> and <mm>

	Empty mass C.G. position Xs <mm>											
Empty mass G <kg> from-up to	from 540 to 559	from 560 to 579	from 580 to 599	from 600 to 619	from 620 to 639	from 640 to 659	from 660 to 679	from 680 to 699	from 700 to 719	from 720 to 739	from 740 to 759	from 760 to 779
250-251	240	240	240	241	242	244	245	246	247	248	250	251
251-252	240	240	240	241	243	244	245	246	247	248	250	251
252-253	240	240	240	241	243	244	245	246	248	249	250	251
253-254	240	240	240	241	243	244	245	246	248	249	250	251
254-255	240	240	240	242	243	244	245	247	248	249	250	251
255-256	240	240	240	242	243	244	245	247	248	249	250	252
256-257	240	240	241	242	243	244	245	247	248	249	250	252
257-258	240	240	241	242	243	244	246	247	248	249	251	252
258-259	240	240	241	242	243	244	246	247	248	249	251	252
259-260	240	240	241	242	243	245	246	247	248	250	251	252
260-261	240	240	241	242	243	245	246	247	248	250	251	252
261-262	240	240	241	242	243	245	246	247	249	250	251	252
262-263	240	240	241	242	244	245	246	247	249	250	251	252
263-264	240	240	241	242	244	245	246	248	249	250	251	253
264-265	240	240	241	242	244	245	246	248	249	250	251	253
265-266	240	240	241	243	244	245	246	248	249	250	252	253
266-267	240	240	241	243	244	245	247	248	249	250	252	253
267-268	240	240	241	243	244	245	247	248	249	251	252	253
268-269	240	240	242	243	244	245	247	248	249	251	252	253
269-270	240	240	242	243	244	246	247	248	249	251	252	253
270-271	240	240	242	243	244	246	247	248	250	251	252	254
271-272	240	240	242	243	244	246	247	248	250	251	252	254
272-273	240	241	242	243	245	246	247	248	250	251	252	254
273-274	240	241	242	243	245	246	247	249	250	251	253	254
274-275	240	241	242	243	245	246	247	249	250	251	253	254
275-276	240	241	242	243	245	246	247	249	250	251	253	254
276-277	240	241	242	244	245	246	248	249	250	252	253	254
277-278	240	241	242	244	245	246	248	249	250	252	253	254
278-279	240	241	242	244	245	246	248	249	251	252	253	255
279-280	240	241	242	244	245	247	248	249	251	252	253	255
280-281	240	241	243	244	245	247	248	249	251	252	253	255
281-282	240	241	243	244	245	247	248	249	251	252	254	255
282-283	240	241	243	244	245	247	248	250	251	252	254	255
283-284	240	241	243	244	246	247	248	250	251	252	254	255
284-285	240	242	243	244	246	247	248	250	251	253	254	255
285-286	240	242	243	244	246	247	249	250	251	253	254	255
286-287	240	242	243	244	246	247	249	250	251	253	254	256
287-288	240	242	243	245	246	247	249	250	252	253	254	256
288-289	240	242	243	245	246	247	249	250	252	253	254	256
289-290	241	242	243	245	246	248	249	250	252	253	255	256
290-291	241	242	243	245	246	248	249	250	252	253	255	256

Mass and balance continued

Calculation of Max. Mass of Non-Lifting Parts LS6-18w cont.

Maximum mass of non-lifting parts of 564 lbs (256 kg) must be reduced in relation to empty mass and empty mass C.G. position.
Example: see section 2.3.1.

Table for <lbs.> and <in.>

	Empty mass C.G. Xs <in>											
Empty mass G <lbs> from-up to	from 21.2 to 22.01	from 22.02 to 22.80	From 22.81 to 23.58	from 23.59 to 24.37	from 24.38 to 25.16	from 25.17 to 25.96	from 25.97 to 26.75	from 26.76 to 27.52	from 27.53 to 28.31	from 28.32 to 29.11	from 29.12 to 29.90	from 29.91 to 30.70
551-553	529	529	529	531	534	538	540	542	545	547	551	553
553-555	529	529	529	531	536	538	540	542	545	547	551	553
555-557	529	529	529	531	536	538	540	542	547	549	551	553
557-559	529	529	529	531	536	538	540	542	547	549	551	553
559-562	529	529	529	534	536	538	540	545	547	549	551	553
562-564	529	529	529	534	536	538	540	545	547	549	551	556
564-566	529	529	531	534	536	538	540	545	547	549	551	556
566-568	529	529	531	534	536	538	542	545	547	549	553	556
568-570	529	529	531	534	536	538	542	545	547	549	553	556
570-573	529	529	531	534	536	540	542	545	547	551	553	556
573-575	529	529	531	534	536	540	542	545	547	551	553	556
575-577	529	529	531	534	536	540	542	545	549	551	553	556
577-579	529	529	531	534	538	540	542	545	549	551	553	556
579-264	529	529	531	534	538	540	542	547	549	551	553	558
582-584	529	529	531	534	538	540	542	547	549	551	553	558
584-586	529	529	531	536	538	540	542	547	549	551	556	558
586-588	529	529	531	536	538	540	545	547	549	551	556	558
588-590	529	529	531	536	538	540	545	547	549	553	556	558
590-593	529	529	534	536	538	540	545	547	549	553	556	558
593-595	529	529	534	536	538	542	545	547	549	553	556	558
595-597	529	529	534	536	538	542	545	547	551	553	556	560
597-599	529	529	534	536	538	542	545	547	551	553	556	560
599-601	529	531	534	536	540	542	545	547	551	553	556	560
601-604	529	531	534	536	540	542	545	549	551	553	558	560
604-606	529	531	534	536	540	542	545	549	551	553	558	560
606-608	529	531	534	536	540	542	545	549	551	553	558	560
608-610	529	531	534	538	540	542	547	549	551	556	558	560
610-612	529	531	534	538	540	542	547	549	551	556	558	560
612-615	529	531	534	538	540	542	547	549	553	556	558	562
615-617	529	531	534	538	540	545	547	549	553	556	558	562
617-619	529	531	536	538	540	545	547	549	553	556	558	562
619-622	529	531	536	538	540	545	547	549	553	556	560	562
622-624	529	531	536	538	540	545	547	551	553	556	560	562
624-626	529	531	536	538	542	545	547	551	553	556	560	562
626-628	529	534	536	538	542	545	547	551	553	558	560	562
628-631	529	534	536	538	542	545	549	551	553	558	560	562
631-633	529	534	536	538	542	545	549	551	553	558	560	564
633-635	529	534	536	540	542	545	549	551	556	558	560	564
635-637	529	534	536	540	542	545	549	551	556	558	560	564
637-639	531	534	536	540	542	547	549	551	556	558	562	564
639-642	531	534	536	540	542	547	549	551	556	558	562	564

Mass and balance continued

2.4 Empty mass C.G. range

2.4.1 Empty mass C.G. range LS6, LS6-a, LS6-b

Calculated C.G. positions for weighed empty weight must be within limit values. Related cockpit loads are permissible minimum and maximum cockpit loads. For in and lbs values see following page.

Table for <kg> and <mm>

Empty mass <kg>	Minimum Cockpit Load to Maximum Cockpit load <kg>				
	70 - 110	75 - 110	80 - 110	85 - 110	90 – 110
246	659-659	659-677	659-695	659-713	659-730
247	657-658	657-676	657-694	657-711	657-729
248	656-657	656-675	656-693	656-710	656-728
249	654-656	654-674	654-691	654-709	654-726
250	653-655	653-673	653-690	653-708	653-725
251	651-654	651-672	651-689	651-706	651-724
252	649-653	649-671	649-688	649-705	649-723
253	648-652	648-669	648-687	648-704	648-721
254	646-651	646-668	646-686	646-703	646-720
255	645-650	645-667	645-685	645-702	645-719
256	643-649	643-666	643-683	643-700	643-717
257	642-648	642-665	642-682	642-699	642-716
258	640-647	640-664	640-681	640-698	640-715
259	639-646	639-663	639-680	639-697	639-714
260	637-645	637-662	637-679	637-696	637-713
261	636-644	636-661	636-678	636-695	636-711
262	634-643	634-660	634-677	634-694	634-710
263	633-642	633-659	633-676	633-692	633-709
264	631-642	631-658	631-675	631-691	631-708
265	630-641	630-657	630-674	630-690	630-707
266	628-640	628-656	628-673	628-689	628-706
267	627-639	627-655	627-672	627-688	627-704
268	625-638	625-654	625-671	625-687	625-703
269	624-637	624-653	624-670	624-686	624-702
270	623-636	623-653	623-669	623-685	623-701
271	621-635	621-652	621-668	621-684	621-700
272	620-634	620-651	620-667	620-682	620-699
273	619-634	619-650	619-666	619-682	619-698
274	617-633	617-649	617-665	617-681	617-697
275	616-632	616-648	616-664	616-680	616-696
276	614-631	614-647	614-663	614-679	614-694
277	613-630	613-646	613-662	613-678	613-693
278	611-629	611-645	611-661	611-677	611-692
279	610-629	610-644	610-660	610-676	610-691
280	608-628	608-643	608-659	608-675	608-690

Mass and balance continued

Empty Mass C.G.range LS6, LS6-a, LS6-b **continued**

Calculated C.G. positions for weighed empty weight must be within limit values. Related cockpit loads are permissible minimum and maximum cockpit loads. For mm and kg values see preceding page.

Table for <lbs.> and <in.>

Empty mass <lbs>	Minimum Cockpit Load to Maximum Cockpit load <lbs>				
lbs	154-242	165-242	176-242	187-242	198-242
542	25,945-25,945	25,945-26,654	25,945-27,362	25,945-28,071	25,945-28,740
545	25,866-25,906	25,866-26,614	25,866-27,323	25,866-27,992	25,866-28,701
547	25,827-25,866	25,827-26,575	25,827-27,283	25,827-27,953	25,827-28,661
549	25,748-25,827	25,748-26,535	25,748-27,205	25,748-27,913	25,748-28,583
551	25,709-25,787	25,709-26,496	25,709-27,165	25,709-27,874	25,709-28,543
553	25,630-25,748	25,630-26,457	25,630-27,126	25,630-27,795	25,630-28,504
556	25,551-25,709	25,551-26,417	25,551-27,087	25,551-27,756	25,551-28,465
558	25,512-25,669	25,512-26,339	25,512-27,047	25,512-27,717	25,512-28,386
560	25,433-25,630	25,433-26,299	25,433-27,008	25,433-27,677	25,433-28,346
562	25,394-25,591	25,394-26,260	25,394-26,969	25,394-27,638	25,394-28,307
564	25,315-25,551	25,315-26,220	25,315-26,890	25,315-27,559	25,315-28,228
567	25,276-25,512	25,276-26,181	25,276-26,850	25,276-27,520	25,276-28,189
569	25,197-25,472	25,197-26,142	25,197-26,811	25,197-27,480	25,197-28,150
571	25,157-25,433	25,157-26,102	25,157-26,772	25,157-27,441	25,157-28,110
573	25,079-25,394	25,079-26,063	25,079-26,732	25,079-27,402	25,079-28,071
575	25,039-25,354	25,039-26,024	25,039-26,693	25,039-27,362	25,039-27,992
578	24,961-25,315	24,961-25,984	24,961-26,654	24,961-27,323	24,961-27,953
580	24,921-25,276	24,921-25,945	24,921-26,614	24,921-27,244	24,921-27,913
582	24,843-25,276	24,843-25,906	24,843-26,575	24,843-27,205	24,843-27,874
584	24,803-25,236	24,803-25,866	24,803-26,535	24,803-27,165	24,803-27,835
586	24,724-25,197	24,724-25,827	24,724-26,496	24,724-27,126	24,724-27,795
589	24,685-25,157	24,685-25,787	24,685-26,457	24,685-27,087	24,685-27,717
591	24,606-25,118	24,606-25,748	24,606-26,417	24,606-27,047	24,606-27,677
593	24,567-25,079	24,567-25,709	24,567-26,378	24,567-27,008	24,567-27,638
595	24,528-25,039	24,528-25,709	24,528-26,339	24,528-26,969	24,528-27,598
597	24,449-25,000	24,449-25,669	24,449-26,299	24,449-26,929	24,449-27,559
600	24,409-24,961	24,409-25,630	24,409-26,260	24,409-26,890	24,409-27,520
602	24,370-24,961	24,370-25,591	24,370-26,220	24,370-26,850	24,370-27,480
604	24,291-24,921	24,291-25,551	24,291-26,181	24,291-26,811	24,291-27,441
606	24,252-24,882	24,252-25,512	24,252-26,142	24,252-26,772	24,252-27,402
608	24,173-24,843	24,173-25,472	24,173-26,102	24,173-26,732	24,173-27,323
611	24,134-24,803	24,134-25,433	24,134-26,063	24,134-26,693	24,134-27,283
613	24,055-24,764	24,055-25,394	24,055-26,024	24,055-26,654	24,055-27,244
615	24,016-24,764	24,016-25,354	24,016-25,984	24,016-26,614	24,016-27,205
617	23,937-24,724	23,937-25,315	23,937-25,945	23,937-26,575	23,937-27,165

Mass and balance continued

2.4.2 Empty mass C.G. range LS6-c

Calculated C.G. positions for weighed empty weight must be within limit values. Related cockpit loads are permissible minimum and maximum cockpit loads. For in and lbs values see pages 2-19/2-20

Table for <kg> and <mm>

Empty mass <kg>	Minimum Cockpit Load to Maximum Cockpit load <kg>				
	70 - 110	75 - 110	80 - 110	85 - 110	90 - 110
246	638 - 659	638 - 677	638 - 695	638 - 713	638 - 730
247	636 - 658	636 - 676	636 - 694	636 - 711	636 - 729
248	635 - 657	635 - 675	635 - 693	635 - 710	635 - 728
249	633 - 656	633 - 674	633 - 691	633 - 709	633 - 726
250	632 - 655	632 - 673	632 - 690	632 - 708	632 - 725
251	630 - 654	630 - 672	630 - 689	630 - 706	630 - 724
252	629 - 653	629 - 671	629 - 688	629 - 705	629 - 723
253	627 - 652	627 - 669	627 - 687	627 - 704	627 - 721
254	626 - 651	626 - 668	626 - 686	626 - 703	626 - 720
255	624 - 650	624 - 667	624 - 685	624 - 702	624 - 719
256	623 - 649	623 - 666	623 - 683	623 - 700	623 - 717
257	621 - 648	621 - 665	621 - 682	621 - 699	621 - 716
258	620 - 647	620 - 664	620 - 681	620 - 698	620 - 715
259	618 - 646	618 - 663	618 - 680	618 - 697	618 - 714
260	617 - 645	617 - 662	617 - 679	617 - 696	617 - 713
261	616 - 644	616 - 661	616 - 678	616 - 695	616 - 711
262	614 - 643	614 - 660	614 - 677	614 - 694	614 - 710
263	613 - 642	613 - 659	613 - 676	613 - 692	613 - 709
264	611 - 642	611 - 658	611 - 675	611 - 691	611 - 708
265	610 - 641	610 - 657	610 - 674	610 - 690	610 - 707
266	609 - 640	609 - 656	609 - 673	609 - 689	609 - 706
267	607 - 639	607 - 655	607 - 672	607 - 688	607 - 704
268	606 - 638	606 - 654	606 - 671	606 - 687	606 - 703
269	604 - 637	604 - 653	604 - 670	604 - 686	604 - 702
270	603 - 636	603 - 653	603 - 669	603 - 685	603 - 701
271	601 - 635	601 - 652	601 - 668	601 - 684	601 - 700
272	600 - 634	600 - 651	600 - 667	600 - 682	600 - 699
273	598 - 634	598 - 650	598 - 666	598 - 682	598 - 698
274	597 - 633	597 - 649	597 - 665	597 - 681	597 - 697
275	596 - 632	596 - 648	596 - 664	596 - 680	596 - 696
276	594 - 631	594 - 647	594 - 663	594 - 679	594 - 694
277	593 - 630	593 - 646	593 - 662	593 - 678	593 - 693
278	591 - 629	591 - 645	591 - 661	591 - 677	591 - 692
279	590 - 629	590 - 644	590 - 660	590 - 676	590 - 691
280	589 - 628	589 - 643	589 - 659	589 - 675	589 - 690

Mass and balance continued

Empty mass C.G. range LS6-c continued

The values for minimum load given in the right hand columns exceed the permissible max. cockpit loads. These values are required to determine the min. cockpit load with full fin ballast tank. With empty mass C.G.'s requiring such high min. cockpit loads, the use of the ballast in fin to compensate the mass of the pilot is prohibited of course!

Table for <kg> and <mm>

Empty mass <kg>.	Minimum Cockpit Load to Maximum Cockpit load <kg>			Minimum Cockpit Load <kg>			
	95 - 110	100 - 110	105 - 110	110	115	120	125
246	638 - 748	638 - 765	638 - 783	-800	-817	-835	-852
247	636 - 747	636 - 764	636 - 781	-799	-816	-833	-850
248	635 - 745	635 - 763	635 – 780	-797	-814	-831	-848
249	633 - 744	633 - 761	633 -778	-795	-812	-829	-846
250	632 - 742	632 - 760	632 - 777	-794	-811	-828	-845
251	630 - 741	630 - 758	630 - 775	-792	-809	-826	-843
252	629 - 740	629 - 757	629 - 774	-791	-808	-824	-841
253	627 - 738	627 - 755	627 - 772	-789	-806	-823	-839
254	626 - 737	626 - 754	626 - 771	-788	-804	-821	-838
255	624 - 736	624 - 753	624 - 769	-786	-803	-819	-836
256	623 - 734	623 - 751	623 - 768	-785	-801	-818	-834
257	621 - 733	621 - 750	621 - 766	-783	-800	-816	-832
258	620 - 732	620 - 748	620 - 765	-782	-798	-814	-831
259	618 - 730	618 - 747	618 - 764	-780	-797	-813	-829
260	617- 729	617 - 746	617 - 762	-779	-795	-811	-827
261	616 - 728	616 - 744	616 - 761	-777	-793	-810	-826
262	614 - 727	614 - 743	614 - 759	-776	-792	-808	-824
263	613 - 725	613 - 742	613 - 758	-774	-790	-807	-823
264	611 - 724	611 - 741	611 - 757	-773	-789	-805	-821
265	610 -.723	610 - 739	610 - 755	-772	-788	-803	-819
266	609 - 722	609 - 738	609 - 754	-770	-786	-802	-818
267	607 - 721	607 - 737	607 - 753	-769	-785	-800	-816
268	606 - 719	606 - 735	606 - 751	-767	-783	-799	-815
269	604 - 718	604 - 734	604 - 750	-766	-782	-797	-813
270	603 - 717	603 - 733	603 - 749	-765	-780	-796	-812
271	601 - 716	601 - 732	601 - 748	-763	-779	-795	-810
272	600 - 715	600 - 731	600 - 746	-762	-778	-793	-809
273	598 - 714	598 - 729	598 - 745	-761	-776	-792	-807
274	597 - 712	597 - 728	597 - 744	-759	-775	-790	-806
275	596 - 711	596 - 727	596 - 742	-758	-773	-789	-804
276	594 - 710	594 - 726	594 - 741	-757	-772	-787	-803
277	593 - 709	593 - 725	593 - 740	-755	-771	-786	-801
278	591 - 708	591 - 723	591 - 739	-754	-769	-785	-800
279	590 - 707	590 - 722	590 - 738	-753	-768	-783	-798
280	589 - 706	589 - 721	589 - 736	-752	-767	-782	-797

Mass and balance continued

Empty mass C.G. range LS6-c continued

Calculated C.G. positions for weighed empty weight must be within limit values. Related cockpit loads are permissible minimum and maximum cockpit loads. For mm and kg values see pages 2-17/2-18.

Table for <lbs.> and <in.>

Empty mass <lbs>	Minimum Cockpit Load to Maximum Cockpit load <lbs>				
	154-242	165-242	176-242	187-242	198-242
542	25,118-25,945	25,118-26,654	25,118-27,362	25,118-28,071	25,118-28,740
545	25,039-25,906	25,039-26,614	25,039-27,323	25,039-27,992	25,039-28,701
547	25,000-25,866	25,000-26,575	25,000-27,283	25,000-27,953	25,000-28,661
549	24,921-25,827	24,921-26,535	24,921-27,205	24,921-27,913	24,921-28,583
551	24,882-25,787	24,882-26,496	24,882-27,165	24,882-27,874	24,882-28,543
553	24,803-25,748	24,803-26,457	24,803-27,126	24,803-27,795	24,803-28,504
556	24,764-25,709	24,764-26,417	24,764-27,087	24,764-27,756	24,764-28,465
558	24,685-25,669	24,685-26,339	24,685-27,047	24,685-27,717	24,685-28,386
560	24,646-25,630	24,646-26,299	24,646-27,008	24,646-27,677	24,646-28,346
562	24,567-25,591	24,567-26,260	24,567-26,969	24,567-27,638	24,567-28,307
564	24,528-25,551	24,528-26,220	24,528-26,890	24,528-27,559	24,528-28,228
567	24,449-25,512	24,449-26,181	24,449-26,850	24,449-27,520	24,449-28,189
569	24,409-25,472	24,409-26,142	24,409-26,811	24,409-27,480	24,409-28,150
571	24,331-25,433	24,331-26,102	24,331-26,772	24,331-27,441	24,331-28,110
573	24,291-25,394	24,291-26,063	24,291-26,732	24,291-27,402	24,291-28,071
575	24,252-25,354	24,252-26,024	24,252-26,693	24,252-27,362	24,252-27,992
578	24,173-25,315	24,173-25,984	24,173-26,654	24,173-27,323	24,173-27,953
580	24,134-25,276	24,134-25,945	24,134-26,614	24,134-27,244	24,134-27,913
582	24,055-25,276	24,055-25,906	24,055-26,575	24,055-27,205	24,055-27,874
584	24,016-25,236	24,016-25,866	24,016-26,535	24,016-27,165	24,016-27,835
586	23,976-25,197	23,976-25,827	23,976-26,496	23,976-27,126	23,976-27,795
589	23,898-25,157	23,898-25,787	23,898-26,457	23,898-27,087	23,898-27,717
591	23,858-25,118	23,858-25,748	23,858-26,417	23,858-27,047	23,858-27,677
593	23,780-25,079	23,780-25,709	23,780-26,378	23,780-27,008	23,780-27,638
595	23,740-25,039	23,740-25,709	23,740-26,339	23,740-26,969	23,740-27,598
597	23,661-25,000	23,661-25,669	23,661-26,299	23,661-26,929	23,661-27,559
600	23,622-24,961	23,622-25,630	23,622-26,260	23,622-26,890	23,622-27,520
602	23,543-24,961	23,543-25,591	23,543-26,220	23,543-26,850	23,543-27,480
604	23,504-24,921	23,504-25,551	23,504-26,181	23,504-26,811	23,504-27,441
606	23,465-24,882	23,465-25,512	23,465-26,142	23,465-26,772	23,465-27,402
608	23,386-24,843	23,386-25,472	23,386-26,102	23,386-26,732	23,386-27,323
611	23,346-24,803	23,346-25,433	23,346-26,063	23,346-26,693	23,346-27,283
613	23,268-24,764	23,268-25,394	23,268-26,024	23,268-26,654	23,268-27,244
615	23,228-24,764	23,228-25,354	23,228-25,984	23,228-26,614	23,228-27,205
617	23,189-24,724	23,189-25,315	23,189-25,945	23,189-26,575	23,189-27,165

Mass and balance continued

Empty mass C.G. range LS6-c continued

The values for minimum load given in the right hand columns exceed the permissible max. cockpit loads. These values are required to determine the min. cockpit load with full fin ballast tank. With empty mass C.G.'s requiring such high min. cockpit loads, the use of ballast in the fin to compensate the mass of the pilot is prohibited of course!

Table for <lbs.> and <in.>

Empty mass <lbs>	Minimum Cockpit Load to Maximum Cockpit load <lbs>			Minimum Cockpit Load <lbs>			
	209-242	220-242	231-242	242	254	265	276
542	25,118-29,449	25,118-30,118	25,118-30,827	-31,496	-32,165	-32,874	-33,543
545	25,039-29,409	25,039-30,079	25,039-30,748	-31,457	-32,126	-32,795	-33,465
547	25,000-29,331	25,000-30,039	25,000-30,709	-31,378	-32,047	-32,717	-33,386
549	24,921-29,291	24,921-29,961	24,921-30,630	-31,299	-31,969	-32,638	-33,307
551	24,882-29,213	24,882-29,921	24,882-30,591	-31,260	-31,929	-32,598	-33,268
553	24,803-29,173	24,803-29,843	24,803-30,512	-31,181	-31,850	-32,520	-33,189
556	24,764-29,134	24,764-29,803	24,764-30,472	-31,142	-31,811	-32,441	-33,110
558	24,685-29,055	24,685-29,724	24,685-30,394	-31,063	-31,732	-32,402	-33,031
560	24,646-29,016	24,646-29,685	24,646-30,354	-31,024	-31,654	-32,323	-32,992
562	24,567-28,976	24,567-29,646	24,567-30,276	-30,945	-31,614	-32,244	-32,913
564	24,528-28,898	24,528-29,567	24,528-30,236	-30,906	-31,535	-32,205	-32,835
567	24,449-28,858	24,449-29,528	24,449-30,157	-30,827	-31,496	-32,126	-32,756
569	24,409-28,819	24,409-29,449	24,409-30,118	-30,787	-31,417	-32,047	-32,717
571	24,331-28,740	24,331-29,409	24,331-30,079	-30,709	-31,378	-32,008	-32,638
573	24,291-28,701	24,291-29,370	24,291-30,000	-30,669	-31,299	-31,929	-32,559
575	24,252-28,661	24,252-29,291	24,252-29,961	-30,591	-31,220	-31,890	-32,520
578	24,173-28,622	24,173-29,252	24,173-29,882	-30,551	-31,181	-31,811	-32,441
580	24,134-28,543	24,134-29,213	24,134-29,843	-30,472	-31,102	-31,772	-32,402
582	24,055-28,504	24,055-29,173	24,055-29,803	-30,433	-31,063	-31,693	-32,323
584	24,016-28,465	24,016-29,094	24,016-29,724	-30,394	-31,024	-31,614	-32,244
586	23,976-28,425	23,976-29,055	23,976-29,685	-30,315	-30,945	-31,575	-32,205
589	23,898-28,386	23,898-29,016	23,898-29,646	-30,276	-30,906	-31,496	-32,126
591	23,858-28,307	23,858-28,937	23,858-29,567	-30,197	-30,827	-31,457	-32,087
593	23,780-28,268	23,780-28,898	23,780-29,528	-30,157	-30,787	-31,378	-32,008
595	23,740-28,228	23,740-28,858	23,740-29,488	-30,118	-30,709	-31,339	-31,969
597	23,661-28,189	23,661-28,819	23,661-29,449	-30,039	-30,669	-31,299	-31,890
600	23,622-28,150	23,622-28,780	23,622-29,370	-30,000	-30,630	-31,220	-31,850
602	23,543-28,110	23,543-28,701	23,543-29,331	-29,961	-30,551	-31,181	-31,772
604	23,504-28,031	23,504-28,661	23,504-29,291	-29,882	-30,512	-31,102	-31,732
606	23,465-27,992	23,465-28,622	23,465-29,213	-29,843	-30,433	-31,063	-31,654
608	23,386-27,953	23,386-28,583	23,386-29,173	-29,803	-30,394	-30,984	-31,614
611	23,346-27,913	23,346-28,543	23,346-29,134	-29,724	-30,354	-30,945	-31,535
613	23,268-27,874	23,268-28,465	23,268-29,094	-29,685	-30,276	-30,906	-31,496
615	23,228-27,835	23,228-28,425	23,228-29,055	-29,646	-30,236	-30,827	-31,417
617	23,189-27,795	23,189-28,386	23,189-28,976	-29,606	-30,197	-30,787	-31,378

Mass and balance continued

2.4.3 Empty mass C.G. range LS6-c18

Calculated C.G. positions for weighed empty weight must be within limit values. Related cockpit loads are permissible minimum and maximum cockpit loads. For in and lbs values see pages 2-23/24.

Table for <kg> and <mm>

Empty mass <kg>	Minimum Cockpit Load to Maximum Cockpit load <kg>				
	70 - 110	75 - 110	80 - 110	85 - 110	90 - 110
250	624 - 655	624 - 673	624 - 690	624 - 708	624 - 725
251	623 - 654	623 - 672	623 - 689	623 - 706	623 - 724
252	621 - 653	621 - 671	621 - 688	621 - 705	621 - 723
253	620 - 652	620 - 669	620 - 687	620 - 704	620 - 721
254	618 - 651	618 - 668	618 - 686	618 - 703	618 - 720
255	617 - 650	617 - 667	617 - 685	617 - 702	617 - 719
256	616 - 649	616 - 666	616 - 683	616 - 700	616 - 717
257	614 - 648	614 - 665	614 - 682	614 - 699	614 - 716
258	613 - 647	613 - 664	613 - 681	613 - 698	613 - 715
259	611 - 646	611 - 663	611 - 680	611 - 697	611 - 714
260	610 - 645	610 - 662	610 - 679	610 - 696	610 - 713
261	609 - 644	609 - 661	609 - 678	609 - 695	609 - 711
262	607 - 643	607 - 660	607 - 677	607 - 694	607 - 710
263	606 - 642	606 - 659	606 - 676	606 - 692	606 - 709
264	605 - 642	605 - 658	605 - 675	605 - 691	605 - 708
265	603 - 641	603 - 657	603 - 674	603 - 690	603 - 707
266	602 - 640	602 - 656	602 - 673	602 - 689	602 - 706
267	601 - 639	601 - 655	601 - 672	601 - 688	601 - 704
268	599 - 638	599 - 654	599 - 671	599 - 687	599 - 703
269	598 - 637	598 - 653	598 - 670	598 - 686	598 - 702
270	597 - 636	597 - 653	597 - 669	597 - 685	597 - 701
271	595 - 635	595 - 652	595 - 668	595 - 684	595 - 700
272	594 - 634	594 - 651	594 - 667	594 - 682	594 - 699
273	593 - 634	593 - 650	593 - 666	593 - 682	593 - 698
274	592 - 633	592 - 649	592 - 665	592 - 681	592 - 697
275	590 - 632	590 - 648	590 - 664	590 - 680	590 - 696
276	589 - 631	589 - 647	589 - 663	589 - 679	589 - 694
277	588 - 630	588 - 646	588 - 662	588 - 678	588 - 693
278	587 - 629	587 - 645	587 - 661	587 - 677	587 - 692
279	585 - 629	585 - 644	585 - 660	585 - 676	585 - 691
280	584 - 628	584 - 643	584 - 659	584 - 675	584 - 690
281	583 - 627	583 - 643	583 - 658	583 - 674	583 - 689
282	582 - 626	582 - 642	582 - 657	582 - 673	582 - 688
283	581 - 625	581 - 641	581 - 656	581 - 672	581 - 687
284	580 - 625	580 - 640	580 - 655	580 - 671	580 - 686
285	578 - 624	578 - 639	578 - 655	578 - 670	578 - 685
286	577 - 623	577 - 638	577 - 654	577 - 669	577 - 684
287	576 - 622	576 - 638	576 - 653	576 - 668	576 - 683
288	575 - 621	575 - 637	575 - 652	575 - 667	575 - 682
289	574 - 621	574 - 636	574 - 651	574 - 666	574 - 681
290	573 - 620	573 - 635	573 - 650	573 - 665	573 - 680

Mass and balance continued

Empty mass C.G. range LS6-c18 continued

The values for minimum load given in the right hand columns exceed the permissible max. cockpit loads. These values are required to determine the min. cockpit load with full fin ballast tank. With empty mass C.G.'s requiring such high min. cockpit load the use of ballast in the fin to compensate the mass of the pilot is prohibited of course!

Table for <kg> and <mm>

Empty mass <kg>	Minimum Cockpit Load to Maximum Cockpit load <kg>			Minimum Cockpit Load <kg>			
	95 - 110	100 - 110	105 - 110	110	115	120	125
250	624 - 742	624 - 760	624 - 777	-794	-811	828	-845
251	623 - 741	623 - 758	623 - 775	-792	-809	826	-843
252	621- 740	621 - 757	621 - 774	-791	-808	824	-841
253	620 - 738	620 - 755	620 - 772	-789	-806	823	-839
254	618 - 737	618 - 754	618 - 771	-788	-804	821	-838
255	617 - 736	617 - 753	617 - 769	-786	-803	819	-836
256	616 - 734	616 - 751	616 - 768	-785	-801	818	-834
257	614 - 733	614 - 750	614 - 766	-783	-800	816	-832
258	613 - 732	613 - 748	613 - 765	-782	-798	814	-831
259	611 - 730	611 - 747	611 - 764	-780	-797	813	-829
260	610- 729	610 - 746	610 - 762	-779	-795	811	-827
261	609 - 728	609 - 744	609 - 761	-777	-793	810	-826
262	607 - 727	607 - 743	607 - 759	-776	-792	808	-824
263	606 - 725	606 - 742	606 - 758	-774	-790	807	-823
264	605 - 724	605 - 741	605 - 757	-773	-789	805	-821
265	603 -.723	603 - 739	603 - 755	-772	-788	803	-819
266	602 - 722	602 - 738	602 - 754	-770	-786	802	-818
267	601 - 721	601 - 737	601 - 753	-769	-785	800	-816
268	599 - 719	599 - 735	599 - 751	-767	-783	799	-815
269	598 - 718	598 - 734	598 - 750	-766	-782	797	-813
270	597 - 717	597 - 733	597 - 749	-765	-780	796	-812
271	595 - 716	595 - 732	595 - 748	-763	-779	795	-810
272	594 - 715	594 - 731	594 - 746	-762	-778	793	-809
273	593 - 714	593 - 729	593 - 745	-761	-776	792	-807
274	592 - 712	592 - 728	592 - 744	-759	-775	790	-806
275	590 - 711	590 - 727	590 - 742	-758	-773	789	-804
276	589 - 710	589 - 726	589 - 741	-757	-772	787	-803
277	588 - 709	588 - 725	588 - 740	-755	-771	786	-801
278	587 - 708	587 - 723	587 - 739	-754	-769	785	-800
279	585 - 707	585 - 722	585 - 738	-753	-768	783	-798
280	584 - 706	584 - 721	584 - 736	-752	-767	782	-797
281	583 - 705	583 - 720	583 - 735	-750	-765	780	-795
282	582 - 704	582 - 719	582 - 734	-749	-764	779	-794
283	581 - 702	581 - 718	581 - 733	-748	-763	778	-793
284	580 - 701	580 - 717	580 - 732	-747	-762	776	-791
285	578 - 700	578 - 715	578 - 730	-745	-760	775	-790
286	577 - 699	577 - 714	577 - 729	-744	-759	774	-789
287	576 - 698	576 - 713	576 - 728	-743	-758	773	-787
288	575 - 697	575 - 712	575 - 727	-742	-757	771	-786
289	574 - 696	574 - 711	574 - 726	-741	-755	770	-785
290	573 - 695	573 - 710	573 - 725	-739	-754	769	-783

Mass and balance continued

Empty mass C.G. range LS6-c18 continued

Calculated C.G. positions for weighed empty weight must be within limit values. Related cockpit loads are permissible minimum and maximum cockpit loads. For mm and kg values see pages 2-21/22.

Table for <lbs.> and <in.>

Empty mass <lbs>	Minimum Cockpit Load to Maximum Cockpit load <lbs>				
	154-242	165-242	176-242	187-242	198-242
551	24,567-25,787	24,567-26,496	24,567-27,165	24,567-27,874	24,567-28,543
553	24,528-25,748	24,528-26,457	24,528-27,126	24,528-27,795	24,528-28,504
556	24,449-25,709	24,449-26,417	24,449-27,087	24,449-27,756	24,449-28,465
558	24,409-25,669	24,409-26,339	24,409-27,047	24,409-27,717	24,409-28,386
560	24,331-25,630	24,331-26,299	24,331-27,008	24,331-27,677	24,331-28,346
562	24,291-25,591	24,291-26,260	24,291-26,969	24,291-27,638	24,291-28,307
564	24,252-25,551	24,252-26,220	24,252-26,890	24,252-27,559	24,252-28,228
567	24,173-25,512	24,173-26,181	24,173-26,850	24,173-27,520	24,173-28,189
569	24,134-25,472	24,134-26,142	24,134-26,811	24,134-27,480	24,134-28,150
571	24,055-25,433	24,055-26,102	24,055-26,772	24,055-27,441	24,055-28,110
573	24,016-25,394	24,016-26,063	24,016-26,732	24,016-27,402	24,016-28,071
575	23,976-25,354	23,976-26,024	23,976-26,693	23,976-27,362	23,976-27,992
578	23,898-25,315	23,898-25,984	23,898-26,654	23,898-27,323	23,898-27,953
580	23,858-25,276	23,858-25,945	23,858-26,614	23,858-27,244	23,858-27,913
582	23,819-25,276	23,819-25,906	23,819-26,575	23,819-27,205	23,819-27,874
584	23,740-25,236	23,740-25,866	23,740-26,535	23,740-27,165	23,740-27,835
586	23,701-25,197	23,701-25,827	23,701-26,496	23,701-27,126	23,701-27,795
589	23,661-25,157	23,661-25,787	23,661-26,457	23,661-27,087	23,661-27,717
591	23,583-25,118	23,583-25,748	23,583-26,417	23,583-27,047	23,583-27,677
593	23,543-25,079	23,543-25,709	23,543-26,378	23,543-27,008	23,543-27,638
595	23,504-25,039	23,504-25,709	23,504-26,339	23,504-26,969	23,504-27,598
597	23,425-25,000	23,425-25,669	23,425-26,299	23,425-26,929	23,425-27,559
600	23,386-24,961	23,386-25,630	23,386-26,260	23,386-26,890	23,386-27,520
602	23,346-24,961	23,346-25,591	23,346-26,220	23,346-26,850	23,346-27,480
604	23,307-24,921	23,307-25,551	23,307-26,181	23,307-26,811	23,307-27,441
606	23,228-24,882	23,228-25,512	23,228-26,142	23,228-26,772	23,228-27,402
608	23,189-24,843	23,189-25,472	23,189-26,102	23,189-26,732	23,189-27,323
611	23,150-24,803	23,150-25,433	23,150-26,063	23,150-26,693	23,150-27,283
613	23,110-24,764	23,110-25,394	23,110-26,024	23,110-26,654	23,110-27,244
615	23,031-24,764	23,031-25,354	23,031-25,984	23,031-26,614	23,031-27,205
617	22,992-24,724	22,992-25,315	22,992-25,945	22,992-26,575	22,992-27,165
619	22,953-24,685	22,953-25,315	22,953-25,906	22,953-26,535	22,953-27,126
622	22,913-24,646	22,913-25,276	22,913-25,866	22,913-26,496	22,913-27,087
624	22,874-24,606	22,874-25,236	22,874-25,827	22,874-26,457	22,874-27,047
626	22,835-24,606	22,835-25,197	22,835-25,787	22,835-26,417	22,835-27,008
628	22,756-24,567	22,756-25,157	22,756-25,787	22,756-26,378	22,756-26,969
631	22,717-24,528	22,717-25,118	22,717-25,748	22,717-26,339	22,717-26,929
633	22,677-24,488	22,677-25,118	22,677-25,709	22,677-26,299	22,677-26,890
635	22,638-24,449	22,638-25,079	22,638-25,669	22,638-26,260	22,638-26,850
637	22,598-24,449	22,598-25,039	22,598-25,630	22,598-26,220	22,598-26,811
639	22,559-24,409	22,559-25,000	22,559-25,591	22,559-26,181	22,559-26,772

Mass and balance continued

Empty mass C.G. range LS6-c18 continued

The values for minimum load given in the right hand columns exceed the permissible max. cockpit loads. These values are required to determine the min. cockpit load with full fin ballast tank. With empty mass C.G.'s requiring such high min. cockpit loads, the use of ballast in the fin to compensate the mass of the pilot is prohibited of course!

Table for <lbs.> and <in.>

Empty mass <lbs>.	Minimum Cockpit Load to Maximum Cockpit load <lbs>			Minimum Cockpit Load <lbs>			
	209-242	220-242	231-242	242	254	265	276
551	24,567-29,213	24,567-29,921	24,567-30,591	-31,260	-31,929	-32,598	-33,268
553	24,528-29,173	24,528-29,843	24,528-30,512	-31,181	-31,850	-32,520	-33,189
556	24,449-29,134	24,449-29,803	24,449-30,472	-31,142	-31,811	-32,441	-33,110
558	24,409-29,055	24,409-29,724	24,409-30,394	-31,063	-31,732	-32,402	-33,031
560	24,331-29,016	24,331-29,685	24,331-30,354	-31,024	-31,654	-32,323	-32,992
562	24,291-28,976	24,291-29,646	24,291-30,276	-30,945	-31,614	-32,244	-32,913
564	24,252-28,898	24,252-29,567	24,252-30,236	-30,906	-31,535	-32,205	-32,835
567	24,173-28,858	24,173-29,528	24,173-30,157	-30,827	-31,496	-32,126	-32,756
569	24,134-28,819	24,134-29,449	24,134-30,118	-30,787	-31,417	-32,047	-32,717
571	24,055-28,740	24,055-29,409	24,055-30,079	-30,709	-31,378	-32,008	-32,638
573	24,016-28,701	24,016-29,370	24,016-30,000	-30,669	-31,299	-31,929	-32,559
575	23,976-28,661	23,976-29,291	23,976-29,961	-30,591	-31,220	-31,890	-32,520
578	23,898-28,622	23,898-29,252	23,898-29,882	-30,551	-31,181	-31,811	-32,441
580	23,858-28,543	23,858-29,213	23,858-29,843	-30,472	-31,102	-31,772	-32,402
582	23,819-28,504	23,819-29,173	23,819-29,803	-30,433	-31,063	-31,693	-32,323
584	23,740-28,465	23,740-29,094	23,740-29,724	-30,394	-31,024	-31,614	-32,244
586	23,701-28,425	23,701-29,055	23,701-29,685	-30,315	-30,945	-31,575	-32,205
589	23,661-28,386	23,661-29,016	23,661-29,646	-30,276	-30,906	-31,496	-32,126
591	23,583-28,307	23,583-28,937	23,583-29,567	-30,197	-30,827	-31,457	-32,087
593	23,543-28,268	23,543-28,898	23,543-29,528	-30,157	-30,787	-31,378	-32,008
595	23,504-28,228	23,504-28,858	23,504-29,488	-30,118	-30,709	-31,339	-31,969
597	23,425-28,189	23,425-28,819	23,425-29,449	-30,039	-30,669	-31,299	-31,890
600	23,386-28,150	23,386-28,780	23,386-29,370	-30,000	-30,630	-31,220	-31,850
602	23,346-28,110	23,346-28,701	23,346-29,331	-29,961	-30,551	-31,181	-31,772
604	23,307-28,031	23,307-28,661	23,307-29,291	-29,882	-30,512	-31,102	-31,732
606	23,228-27,992	23,228-28,622	23,228-29,213	-29,843	-30,433	-31,063	-31,654
608	23,189-27,953	23,189-28,583	23,189-29,173	-29,803	-30,394	-30,984	-31,614
611	23,150-27,913	23,150-28,543	23,150-29,134	-29,724	-30,354	-30,945	-31,535
613	23,110-27,874	23,110-28,465	23,110-29,094	-29,685	-30,276	-30,906	-31,496
615	23,031-27,835	23,031-28,425	23,031-29,055	-29,646	-30,236	-30,827	-31,417
617	22,992-27,795	22,992-28,386	22,992-28,976	-29,606	-30,197	-30,787	-31,378
619	22,953-27,756	22,953-28,346	22,953-28,937	-29,528	-30,118	-30,709	-31,299
622	22,913-27,717	22,913-28,307	22,913-28,898	-29,488	-30,079	-30,669	-31,260
624	22,874-27,638	22,874-28,268	22,874-28,858	-29,449	-30,039	-30,630	-31,220
626	22,835-27,598	22,835-28,228	22,835-28,819	-29,409	-30,000	-30,551	-31,142
628	22,756-27,559	22,756-28,150	22,756-28,740	-29,331	-29,921	-30,512	-31,102
631	22,717-27,520	22,717-28,110	22,717-28,701	-29,291	-29,882	-30,472	-31,063
633	22,677-27,480	22,677-28,071	22,677-28,661	-29,252	-29,843	-30,433	-30,984
635	22,638-27,441	22,638-28,031	22,638-28,622	-29,213	-29,803	-30,354	-30,945
637	22,598-27,402	22,598-27,992	22,598-28,583	-29,173	-29,724	-30,315	-30,906
639	22,559-27,362	22,559-27,953	22,559-28,543	-29,094	-29,685	-30,276	-30,827

Mass and balance continued

2.4.4 Empty mass C.G. range LS6-18w

Calculated C.G. positions for weighed empty weight must be within limit values. Related cockpit loads are permissible minimum and maximum cockpit loads. For in and lbs values see pages 2-27/28

Table for <kg> and <mm>

Empty mass <kg>	Minimum Cockpit Load to Maximum Cockpit load <kg>				
	70 - 110	75 - 110	80 - 110	85 - 110	90 - 110
250	630 - 655	630 - 673	630 - 690	630 - 708	630 - 725
251	629 - 654	629 - 672	629 - 689	629 - 706	629 - 724
252	627 - 653	627 - 671	627 - 688	627 - 705	627 - 723
253	626 - 652	626 - 669	626 - 687	626 - 704	626 - 721
254	624 - 651	624 - 668	624 - 686	624 - 703	624 - 720
255	623 - 650	623 - 667	623 - 685	623 - 702	623 - 719
256	621 - 649	621 - 666	621 - 683	621 - 700	621 - 717
257	620 - 648	620 - 665	620 - 682	620 - 699	620 - 716
258	618 - 647	618 - 664	618 - 681	618 - 698	618 - 715
259	617 - 646	617 - 663	617 - 680	617 - 697	617 - 714
260	616 - 645	616 - 662	616 - 679	616 - 696	616 - 713
261	614 - 644	614 - 661	614 - 678	614 - 695	614 - 711
262	613 - 643	613 - 660	613 - 677	613 - 694	613 - 710
263	611 - 642	611 - 659	611 - 676	611 - 692	611 - 709
264	610 - 642	610 - 658	610 - 675	610 - 691	610 - 708
265	609 - 641	609 - 657	609 - 674	609 - 690	609 - 707
266	607 - 640	607 - 656	607 - 673	607 - 689	607 - 706
267	606 - 639	606 - 655	606 - 672	606 - 688	606 - 704
268	605 - 638	605 - 654	605 - 671	605 - 687	605 - 703
269	603 - 637	603 - 653	603 - 670	603 - 686	603 - 702
270	602 - 636	602 - 653	602 - 669	602 - 685	602 - 701
271	601 - 635	601 - 652	601 - 668	601 - 684	601 - 700
272	599 - 634	599 - 651	599 - 667	599 - 682	599 - 699
273	598 - 634	598 - 650	598 - 666	598 - 682	598 - 698
274	597 - 633	597 - 649	597 - 665	597 - 681	597 - 697
275	596 - 632	596 - 648	596 - 664	596 - 680	596 - 696
276	594 - 631	594 - 647	594 - 663	594 - 679	594 - 694
277	593 - 630	593 - 646	593 - 662	593 - 678	593 - 693
278	591 - 629	591 - 645	591 - 661	591 - 677	591 - 692
279	590 - 629	590 - 644	590 - 660	590 - 676	590 - 691
280	589 - 628	589 - 643	589 - 659	589 - 675	589 - 690
281	587 - 627	587 - 643	587 - 658	587 - 674	587 - 689
282	586 - 626	586 - 642	586 - 657	586 - 673	586 - 688
283	585 - 625	585 - 641	585 - 656	585 - 672	585 - 687
284	583 - 625	583 - 640	583 - 655	583 - 671	583 - 686
285	582 - 624	582 - 639	582 - 655	582 - 670	582 - 685
286	581 - 623	581 - 638	581 - 654	581 - 669	581 - 684
287	579 - 622	579 - 638	579 - 653	579 - 668	579 - 683
288	578 - 621	578 - 637	578 - 652	578 - 667	578 - 682
289	577 - 621	577 - 636	577 - 651	577- 666	577 - 681
290	576 - 620	576 - 635	576 - 650	576 - 665	576 - 680

Mass and balance continued

Empty mass C.G. range LS6-18w continued

The values for minimum load given in the right hand columns exceed the permissible max. cockpit loads. These values are required to determine the min. cockpit load with full fin ballast tank. With empty mass C.G.'s requiring such high min. cockpit loads the use of ballast in the fin to compensate the mass of the pilot is prohibited of course!

Table for <kg> and <mm>

Empty mass <kg>	Minimum Cockpit Load to Maximum Cockpit load <kg>			Minimum Cockpit Load <kg>			
	95 - 110	100 - 110	105 - 110	110	115	120	125
250	630 - 742	630 - 760	630 - 777	-794	-811	828	-845
251	629 - 741	629 - 758	629 - 775	-792	-809	826	-843
252	627- 740	627 - 757	627 - 774	-791	-808	824	-841
253	626 - 738	626 - 755	620 - 772	-789	-806	823	-839
254	624 - 737	624 - 754	624 - 771	-788	-804	821	-838
255	623 - 736	623 - 753	623 - 769	-786	-803	819	-836
256	621 - 734	621 - 751	621 - 768	-785	-801	818	-834
257	620 - 733	620 - 750	620 - 766	-783	-800	816	-832
258	618 - 732	618 - 748	618 - 765	-782	-798	814	-831
259	617 - 730	617 - 747	617 - 764	-780	-797	813	-829
260	616- 729	616 - 746	616 - 762	-779	-795	811	-827
261	614 - 728	614 - 744	614 - 761	-777	-793	810	-826
262	613 - 727	613 - 743	613 - 759	-776	-792	808	-824
263	611 - 725	611 - 742	611 - 758	-774	-790	807	-823
264	610 - 724	610 - 741	610 - 757	-773	-789	805	-821
265	609 -.723	609 - 739	609 - 755	-772	-788	803	-819
266	607 - 722	607 - 738	607 - 754	-770	-786	802	-818
267	606 - 721	606 - 737	606 - 753	-769	-785	800	-816
268	605 - 719	605 - 735	605 - 751	-767	-783	799	-815
269	603 - 718	603 - 734	603 - 750	-766	-782	797	-813
270	602 - 717	602 - 733	602 - 749	-765	-780	796	-812
271	601 - 716	601 - 732	601 - 748	-763	-779	795	-810
272	599 - 715	599 - 731	599 - 746	-762	-778	793	-809
273	598 - 714	598 - 729	598 - 745	-761	-776	792	-807
274	597 - 712	597 - 728	597 - 744	-759	-775	790	-806
275	596 - 711	596 - 727	596 - 742	-758	-773	789	-804
276	594 - 710	594 - 726	594 - 741	-757	-772	787	-803
277	593 - 709	593 - 725	593 - 740	-755	-771	786	-801
278	591 - 708	591 - 723	591 - 739	-754	-769	785	-800
279	590 - 707	590 - 722	590 - 738	-753	-768	783	-798
280	589 - 706	589 - 721	589 - 736	-752	-767	782	-797
281	587 - 705	587 - 720	587 - 735	-750	-765	780	-795
282	586 - 704	586 - 719	586 - 734	-749	-764	779	-794
283	585 - 702	585 - 718	585 - 733	-748	-763	778	-793
284	583 - 701	583 - 717	583 - 732	-747	-762	776	-791
285	582 - 700	582 - 715	582 - 730	-745	-760	775	-790
286	581 - 699	581 - 714	581 - 729	-744	-759	774	-789
287	579 - 698	579 - 713	579 - 728	-743	-758	773	-787
288	578 - 697	578 - 712	578 - 727	-742	-757	771	-786
289	577 - 696	577 - 711	577 - 726	-741	-755	770	-785
290	576 - 695	576 - 710	576 - 725	-739	-754	769	-783

Mass and balance continued

Empty mass C.G. range LS6-18w continued

Calculated C.G. positions for weighed empty weight must be within limit values. Related cockpit loads are permissible minimum and maximum cockpit loads. For mm and kg values see pages 2-25/26.

Table for <lbs.> and <in.>

Empty mass <lbs>	Minimum Cockpit Load to Maximum Cockpit load <lbs>				
	154-242	165-242	176-242	187-242	198-242
551	24,882-25,787	24,882-26,496	24,882-27,165	24,882-27,874	24,882-28,543
553	24,803-25,748	24,803-26,457	24,803-27,126	24,803-27,795	24,803-28,504
556	24,764-25,709	24,764-26,417	24,764-27,087	24,764-27,756	24,764-28,465
558	24,685-25,669	24,685-26,339	24,685-27,047	24,685-27,717	24,685-28,386
560	24,646-25,630	24,646-26,299	24,646-27,008	24,646-27,677	24,646-28,346
562	24,567-25,591	24,567-26,260	24,567-26,969	24,567-27,638	24,567-28,307
564	24,528-25,551	24,528-26,220	24,528-26,890	24,528-27,559	24,528-28,228
567	24,449-25,512	24,449-26,181	24,449-26,850	24,449-27,520	24,449-28,189
569	24,409-25,472	24,409-26,142	24,409-26,811	24,409-27,480	24,409-28,150
571	24,331-25,433	24,331-26,102	24,331-26,772	24,331-27,441	24,331-28,110
573	24,291-25,394	24,291-26,063	24,291-26,732	24,291-27,402	24,291-28,071
575	24,252-25,354	24,252-26,024	24,252-26,693	24,252-27,362	24,252-27,992
578	24,173-25,315	24,173-25,984	24,173-26,654	24,173-27,323	24,173-27,953
580	24,134-25,276	24,134-25,945	24,134-26,614	24,134-27,244	24,134-27,913
582	24,055-25,276	24,055-25,906	24,055-26,575	24,055-27,205	24,055-27,874
584	24,016-25,236	24,016-25,866	24,016-26,535	24,016-27,165	24,016-27,835
586	23,976-25,197	23,976-25,827	23,976-26,496	23,976-27,126	23,976-27,795
589	23,898-25,157	23,898-25,787	23,898-26,457	23,898-27,087	23,898-27,717
591	23,858-25,118	23,858-25,748	23,858-26,417	23,858-27,047	23,858-27,677
593	23,780-25,079	23,780-25,709	23,780-26,378	23,780-27,008	23,780-27,638
595	23,740-25,039	23,740-25,709	23,740-26,339	23,740-26,969	23,740-27,598
597	23,661-25,000	23,661-25,669	23,661-26,299	23,661-26,929	23,661-27,559
600	23,622-24,961	23,622-25,630	23,622-26,260	23,622-26,890	23,622-27,520
602	23,543-24,961	23,543-25,591	23,543-26,220	23,543-26,850	23,543-27,480
604	23,504-24,921	23,504-25,551	23,504-26,181	23,504-26,811	23,504-27,441
606	23,465-24,882	23,465-25,512	23,465-26,142	23,465-26,772	23,465-27,402
608	23,386-24,843	23,386-25,472	23,386-26,102	23,386-26,732	23,386-27,323
611	23,346-24,803	23,346-25,433	23,346-26,063	23,346-26,693	23,346-27,283
613	23,268-24,764	23,268-25,394	23,268-26,024	23,268-26,654	23,268-27,244
615	23,228-24,764	23,228-25,354	23,228-25,984	23,228-26,614	23,228-27,205
617	23,189-24,724	23,189-25,315	23,189-25,945	23,189-26,575	23,189-27,165
619	23,110-24,685	23,110-25,315	23,110-25,906	23,110-26,535	23,110-27,126
622	23,071-24,646	23,071-25,276	23,071-25,866	23,071-26,496	23,071-27,087
624	23,031-24,606	23,031-25,236	23,031-25,827	23,031-26,457	23,031-27,047
626	22,953-24,606	22,953-25,197	22,953-25,787	22,953-26,417	22,953-27,008
628	22,913-24,567	22,913-25,157	22,913-25,787	22,913-26,378	22,913-26,969
631	22,874-24,528	22,874-25,118	22,874-25,748	22,874-26,339	22,874-26,929
633	22,795-24,488	22,795-25,118	22,795-25,709	22,795-26,299	22,795-26,890
635	22,756-24,449	22,756-25,079	22,756-25,669	22,756-26,260	22,756-26,850
637	22,717-24,449	22,717-25,039	22,717-25,630	22,717-26,220	22,717-26,811
639	22,677-24,409	22,677-25,000	22,677-25,591	22,677-26,181	22,677-26,772

Mass and balance continued

Empty mass C.G. range LS6-18w continued

The values for minimum load given in the right hand columns exceed the permissible max. cockpit loads. These values are required for determination of the min. cockpit load with full fin ballast tank. With empty mass C.G.'s requiring such high min. cockpit loads, the use of ballast in the fin to compensate the mass of the pilot is prohibited of course!

Table for <lbs.> and <in.>

Empty mass <lbs>.	Minimum Cockpit Load to Maximum Cockpit load <lbs>			Minimum Cockpit Load <lbs>			
	209-242	220-242	231-242	242	254	265	276
551	24,882-29,213	24,882-29,921	24,882-30,591	-31,260	-31,929	-32,598	-33,268
553	24,803-29,173	24,803-29,843	24,803-30,512	-31,181	-31,850	-32,520	-33,189
556	24,764-29,134	24,764-29,803	24,764-30,472	-31,142	-31,811	-32,441	-33,110
558	24,685-29,055	24,685-29,724	24,685-30,394	-31,063	-31,732	-32,402	-33,031
560	24,646-29,016	24,646-29,685	24,646-30,354	-31,024	-31,654	-32,323	-32,992
562	24,567-28,976	24,567-29,646	24,567-30,276	-30,945	-31,614	-32,244	-32,913
564	24,528-28,898	24,528-29,567	24,528-30,236	-30,906	-31,535	-32,205	-32,835
567	24,449-28,858	24,449-29,528	24,449-30,157	-30,827	-31,496	-32,126	-32,756
569	24,409-28,819	24,409-29,449	24,409-30,118	-30,787	-31,417	-32,047	-32,717
571	24,331-28,740	24,331-29,409	24,331-30,079	-30,709	-31,378	-32,008	-32,638
573	24,291-28,701	24,291-29,370	24,291-30,000	-30,669	-31,299	-31,929	-32,559
575	24,252-28,661	24,252-29,291	24,252-29,961	-30,591	-31,220	-31,890	-32,520
578	24,173-28,622	24,173-29,252	24,173-29,882	-30,551	-31,181	-31,811	-32,441
580	24,134-28,543	24,134-29,213	24,134-29,843	-30,472	-31,102	-31,772	-32,402
582	24,055-28,504	24,055-29,173	24,055-29,803	-30,433	-31,063	-31,693	-32,323
584	24,016-28,465	24,016-29,094	24,016-29,724	-30,394	-31,024	-31,614	-32,244
586	23,976-28,425	23,976-29,055	23,976-29,685	-30,315	-30,945	-31,575	-32,205
589	23,898-28,386	23,898-29,016	23,898-29,646	-30,276	-30,906	-31,496	-32,126
591	23,858-28,307	23,858-28,937	23,858-29,567	-30,197	-30,827	-31,457	-32,087
593	23,780-28,268	23,780-28,898	23,780-29,528	-30,157	-30,787	-31,378	-32,008
595	23,740-28,228	23,740-28,858	23,740-29,488	-30,118	-30,709	-31,339	-31,969
597	23,661-28,189	23,661-28,819	23,661-29,449	-30,039	-30,669	-31,299	-31,890
600	23,622-28,150	23,622-28,780	23,622-29,370	-30,000	-30,630	-31,220	-31,850
602	23,543-28,110	23,543-28,701	23,543-29,331	-29,961	-30,551	-31,181	-31,772
604	23,504-28,031	23,504-28,661	23,504-29,291	-29,882	-30,512	-31,102	-31,732
606	23,465-27,992	23,465-28,622	23,465-29,213	-29,843	-30,433	-31,063	-31,654
608	23,386-27,953	23,386-28,583	23,386-29,173	-29,803	-30,394	-30,984	-31,614
611	23,346-27,913	23,346-28,543	23,346-29,134	-29,724	-30,354	-30,945	-31,535
613	23,268-27,874	23,268-28,465	23,268-29,094	-29,685	-30,276	-30,906	-31,496
615	23,228-27,835	23,228-28,425	23,228-29,055	-29,646	-30,236	-30,827	-31,417
617	23,189-27,795	23,189-28,386	23,189-28,976	-29,606	-30,197	-30,787	-31,378
619	23,110-27,756	23,110-28,346	23,110-28,937	-29,528	-30,118	-30,709	-31,299
622	23,071-27,717	23,071-28,307	23,071-28,898	-29,488	-30,079	-30,669	-31,260
624	23,031-27,638	23,031-28,268	23,031-28,858	-29,449	-30,039	-30,630	-31,220
626	22,953-27,598	22,953-28,228	22,953-28,819	-29,409	-30,000	-30,551	-31,142
628	22,913-27,559	22,913-28,150	22,913-28,740	-29,331	-29,921	-30,512	-31,102
631	22,874-27,520	22,874-28,110	22,874-28,701	-29,291	-29,882	-30,472	-31,063
633	22,795-27,480	22,795-28,071	22,795-28,661	-29,252	-29,843	-30,433	-30,984
635	22,756-27,441	22,756-28,031	22,756-28,622	-29,213	-29,803	-30,354	-30,945
637	22,717-27,402	22,717-27,992	22,717-28,583	-29,173	-29,724	-30,315	-30,906
639	22,677-27,362	22,677-27,953	22,677-28,543	-29,094	-29,685	-30,276	-30,827

3 Inspections

3.1 Regular inspections

3.1.1 Daily Inspections and preflight check

- Check function of emergency canopy jettison and LS latch according to page 3-4, items 14 and 15 without force measurements.

LS6, LS6-a: see Flight Manual pages 4-1 up to 4-4

- Check ball and swivel joints of flaperon - and air brake connection see Flight Manual page 4-3.
- Check aileron control damper function
  Only for shiftable damper: Flap position -5° to 0° the damper is locked and fully active, at a position of +5°, +10° and +15° it is unlocked and inactive. If it is accidentally locked at another flap position compared to unlocking, additional force has to be applied (ca. 10 daN <22 lbs>, max. 20 daN <44 lbs>) to align the fork.

LS6-b: see Flight Manual pages 4-2 to 4-4

- Check ball and swivel joints of flaperon - and air brake connection, see Flight Manual page 4-1.

LS6-c, LS6-c18, LS6-18w: see Flight Manual pages 4-3 to 4-5.

3.1.2 Daily postflight check

LS6, LS6-a: See flight manual page 3-5.

LS6-b: See Flight Manual 4-4.

LS6-c, LS6-18w: See flight manual page 4-17.

LS6-c18: See flight manual page 4-14.

3.1.3 Annual Inspections

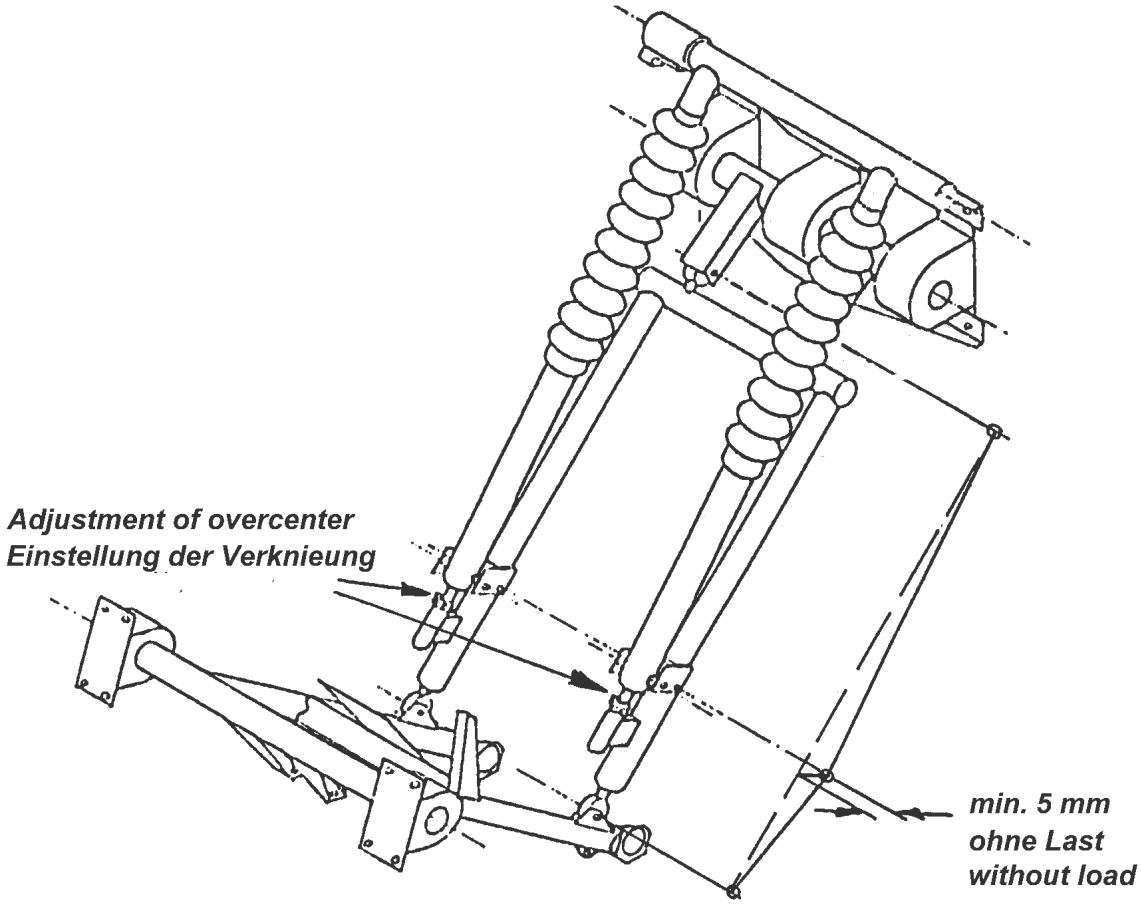
1. Check wing shells especially in the spar region for cracks , scratches, pressure marks
   Only for LS6-c, LS6-c18, LS6-18w: Carbon fiber shells and spar caps are sensitive to impacts and compression.
   Damage is difficult to detect. If you suspect any damage, tap the area. Compare bending frequency number to earlier measured data or with final production inspection data.

Note: LS6 and LS6-a have wing shells constructed from glasfibre. LS6-b has inner wing shells constructed from glasfibre and outer shells from carbonfibre. All 3 variants have spar caps from carbonfibre.

2. The flaperon sandwich shell is pressure-sensitive. If there are any pressure marks the sailplane may be no more airworthy. Because of resulting possible danger of flutter you must contact DG Flugzeugbau GmbH for damage classification and repair.
3. **Only LS6, LS6-a, LS6-b:** Check colour marking on ball and swivel joints of flaperon and air brake systems and replace if necessary. (See sketch in Flight Manuals LS6 / LS6-a page 4-3; LS6-b page 4-1).
4. **Only LS6-c, LS6-c18, LS6-18w:** The automatic flaperon connectors at the fuselage have deflectors to prevent incorrect mounting.
   Check if rigging of the second wing is impossible with intentionally incorrect flaperon deflection (flaperon neutral or deflected upward).
5. **Only LS6-c, LS6-c18, LS6-18w:** Check air brake friction damper at outer side of air brake box for proper operation of damper rod and pads free from grease.
6. Lubricate various parts according to plan see section 3.4
7. Protect gelcoat with car polish (see section 12). This wax film protects the gelcoat against brittleness and cracking due to ultra violet light. If you use a polishing machine, be careful not to damage anti-collision colour marking or registration signs or sealings.
8. Check anti-friction tape at control surfaces under metal or plastic strip seals. Damaged anti-friction tape will yield damage very quickly to the gelcoat at control surface.
   Installation of sealings see section 4.2.
   Remove residual adhesive using lead-free petrol; see section 12.

Annual Inspections continued

9. Check landing gear folding strut for proper overcenter lock and rubber torsion elements for deformation or separation of rubber from metal. Adjustable overcenter lock should be 5 mm (0.2 in), landing gear without load, value increases with load. When adjustments are being made, check for identical overcenter lock at both folding struts and for locking of adjusters.



10. **<u>Only LS6 and LS6-a</u>:** Check hydraulic aileron system damper for damping action and leakage, check that resulting damper air can be recognized by an oily damper rod and by jerky operation. Also check mylar sheeting glued to fork underside for completeness. If you suspect improper damper function contact DG-Flugzeugbau.

11. Perform Annual Inspection according to checklist in section 14. The annual inspection contains items (flaperon lateral bearing play, flaperon vent holes etc.), which may only be checked after removing seals. Unless changes are suspected (for instance lateral control surface gaps differing from design values see section 4.1), it is not necessary to remove (destroy) seals just for inspection purposes. Existence of retaining washer at fixed bearings can be checked after lifting sealing lids cautiously.

Annual Inspections continued

12. Check water ballast bags and vertical tail fin tank (if existent) for function (for instance chafe marks, tightness etc.). Leaking system parts – water dripping from drain ports – must be uninstalled and repaired. Wire meshing at tail fin tank upper end and in filling funnel are mandatory to establish proper function of vertical tail fin valve.With fin tank installed the fin tank filling hose must be with the glider (minimum equipment!).
13. **With fin tank installed:** Outside air temperature gauge: Check for correct indication, e.g. by comparing with another thermometer.
14. Check canopy locking and emergency release function:
    Measure force to open canopy emergency release according to following steps (If this measurement or an operational check is performed without a helper, the spring at the rear end temporary hinge bolt becomes deformed and must be exchanged!):
    - "Pilot" in seat with spring balance
    - both canopy locking levers opened
    - Helper at front canopy end to avoid lifting of canopy by gas spring
    - Force required to open right side emergency release max. 15 kg (33 lbs)
    - After force measurement, the pilot pushes the canopy up at the rear to disengage the the LS Latch (Röger hook) **(optional TN6025, standard equipment with LS6-c18 and LS6-18w)** from the spring at the fuselage and then lifts the canopy at the handles, the helper holds the front end on the opener
    - With canopy fully open, the helper pushes the connection pin upward and engages canopy to opener by turning driving lug anti-clockwise
    - When emergency release force is too high, grease all moving parts (especially in the region of the connection pin) and contact DG Flugzeugbau GmbH if necessary.
15. Check **function of LS-latch (Röger hook) for canopy emergency release (optional TN6025, standard equipment with LS6-c18 and LS6-18w):** Measure force required to pull bolt free from spring during opening of canopy at rear canopy edge: force should be between 8 and 15 kg (18 to 33 lbs). When force is clearly lower, the spring must be exchanged to guarantee proper separation of canopy from fuselage during jettison.

Annual Inspections continued

16. **Only LS6, LS6-a and LS6-b: L'Hotellier ball and swivel joints:**
    a) Inspection according to L'Hotellier IM.10.01 see section 14.3.
    b) Inspection of the spring force of the lock plate.

Warning: Don't replace or fix damaged or kinked springs. Exchange the complete joint in such a case.

    c) Remove any grease from the lock plate with Acetone

17. Perform a new weight and balance (see section 2):
    a) if equipment was changed, see last valid equipment list.
    b) with equipment not altered at least **every 4 years**.

3.2 Extraordinary inspections after heavy landings

Extraordinary inspections should be performed, depending on circumstances (rough landings, ground loops etc.), on these components:

- Landing gear functioning, attachment and drive
- Landing gear box for damage, rubber torsion spring elements for deformation
- Tail skid bonding or tail wheel for attachment, function and tyre pressure
- Wings, fuselage and tail for damage (cracks, buckling, compression)
- Wing's flex number (support fuselage in front of landing gear)
- Control surfaces function and deflections
- Tangential tubes across fuselage for straightness

3.3 Inspection procedure for increase of service time

1. **General**

   The results of fatigue tests of wingspar sections have demonstrated that the service time of GFRP/CFRP gliders and motorgliders may be limited to 12000 hours, if for each individual glider (in addition to the obligatory annual inspections) the airworthiness is demonstrated according to a special multi-step inspection program particularly with regard to the service life.

2. **Dates**

   When the glider has reached a service time of 3000 hours, an inspection must be done in accordance with the inspection programme mentioned under item 3. If the results of this inspection are positive or if any defects found have been duly repaired, the service time of the glider is extended by another 3000 hours to a total of 6000 hours (first step).

   The above inspection programme must be repeated when the glider has reached a service time of 6000 hours. If the results of this inspection are positive or if any defects found have been duly repaired, the service time of the glider is extended to 9000 hours (second step).

   When the glider has reached a service time of 9000 h the above inspection programme must be repeated. If the results of the inspection are still positive, or if any defects found have been duly repaired, the service time may be extended to a total of 10000 hours (third step).

   Proceed analogous when reaching 10000 and 11000 hours (4. + 5. step).

3. Ask DG Flugzeugbau for the necessary inspection document.
   When you request the inspection document, the following data should be submitted: Model/Type, Registration, Serial Number and the operating hours at which the inspection will be performed. A charge will be made for the inspection document.

4. The inspection must only be done by a licensed repair station or inspector.

5. The results of the inspections have to be recorded in an inspection report, wherein comments are required for each inspection instruction. If the inspections are done outside the DG Flugzeugbau facilities, a copy of the records must be sent to DG Flugzeugbau for evaluation and information.

3.4 Lubrication schedule

Location	Frequency	Lubricant
Main pins and matching holes Pins and matching holes of elevator connections **LS6, LS6-a, LS6-b:** Connector and ball of ball and swivel joints for flaperon and air brake control **LS6-c, LS6-c18, LS6-18w:** Wing side bearings at automatic flaperon and air brake system connectors, which are inserted into fuselage couplings	Before assembly	Water insoluble bearing grease or Molykote BR2 (Temperature range from -30°C to 130°C, -22°F to 266°F)
Landing gear: all joints at rubber bearings all metal parts	Once a year	Oil or Spray oil Note: Protect rubber parts against oil
Bearings of control surfaces	After disassembly only	Molykote grease BR2 (Temperature range from -30°C to 130°C, -22°F to 266°F) or Molykote grease 33 (Temperature range from -70°C to 180°C, -94°F to 356°F)

Caution: Never grease longitudinal motion pushrod bearings. They will soon be destroyed by collection of foreign matter. These bearings are used in the elevator system, aileron system, air brake system and landing gear drive.

Caution only LS6-c, LS6-c18, LS6-18w: The friction damper inside the air brake boxes prevents oscillations during extension of air brakes. Therefore, friction pads should never be greased or oiled !

Tow Hooks: see Maintenance Instructions of manufacturer (TOST)

Multiple point buckle of FAG-7H safety harness: see Maintenance Instructions of manufacturer (Autoflug)

4 Working instructions

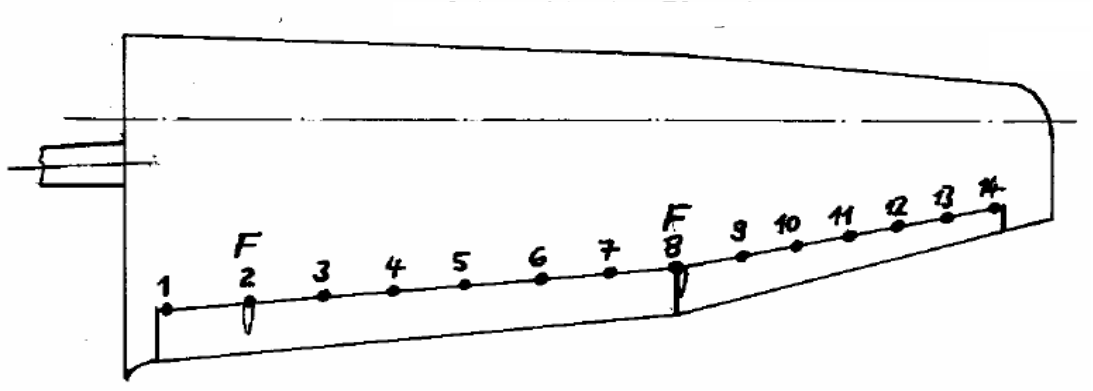
4.1 Removal and installation of control surfaces

Note: Instead of nuts LN9348 self-locking nuts DIN985-8 zn may be used.

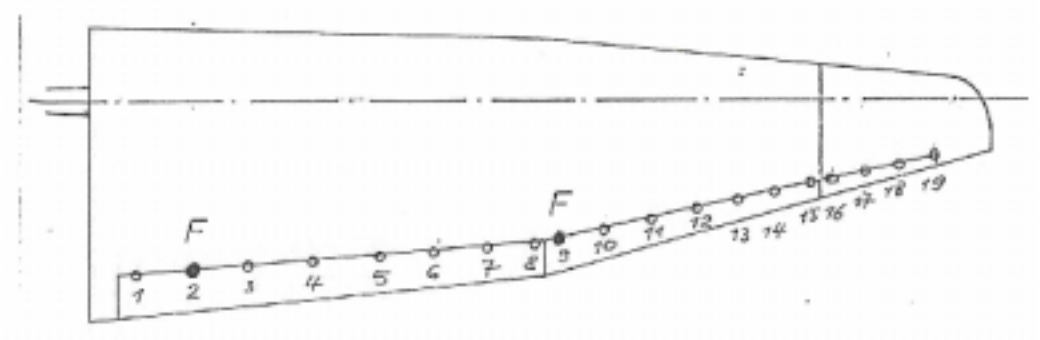
4.1.1 Flaperons

Wing scheme with flaperon bearings, F= laterally fixed bearing

LS6, LS6-a, LS6-b:



LS6-c, LS6-c18, LS6-18w:



4.1.1.1 Removal of flaperons

LS6, LS6-a, LS6-b:

- Remove internal seal from upper flaperon side completely
- Remove fillet on outside upper edge of flaperon near bearing No. 14.
- Remove bonded-on drive covers.
- Disconnect drive rods (6mm thread, nut LN9348, bolt LN 9037, width over flats 10mm), remember sequence and position of washers, if applicable.
- Do not deflect flaperon downward more than necessary to avoid loss of pretension of metal strip gap seal.
- Turn wing upside down, remove metal strip gap seal at bearings No. 2 and No. 8 locally.

Removal of flaperons

LS6, LS6-a, LS6-b: continued

- Loosen nut (6mm thread, LN9348, width over flats 10 mm) from bearings No. 2 and 8, remember sequence and position of washers.
- Deflect outer flaperon downward and remove it from pins towards wingtip. Use two people to avoid damage!
- Watch washers, if present, at inner side of bearing pin No. 8.
- Remove inner flaperon towards wingtip, 2 people!
- Watch washers, if present, at inner side of bearing pin No. 2.

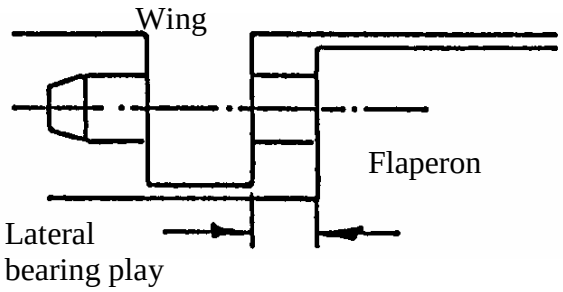
LS6-c, LS6-c18, LS6-18w:

- Remove wingtip
- Remove under side gap seal (convex metal or plastic strip) and inner sealing tape (Teflon tape) completely
- Carefully lift off drive covers using knife
- Disconnect drive rods from flaperon (6 mm thread, nut LN9348, bolt LN 9037, width over flats 10 mm), remember sequence and position of washers, if applicable.
- Loosen nuts (6 mm thread, LN9348, width over flats 10 mm) from bearing No. 2 and 9, (fixed bearings) remember sequence and position of washers.
- Remove outer flaperon, then inner flaperon from bearing pins towards wingtip. Use two people to avoid damage, low bending stiffness!
- Watch washers, if present, at inner side of bearing pins of fixed bearings No. 2 and 9.

4.1.1.2 Installation of flaperons

LS6, LS6-a, LS6-b:

- Install internal seals at inner upper rear edge of wing analogous to description on page 4-7.
- Grease bearings according to lubrication schedule, section 3.4.
- Make sure that washers, if present, are on inner side of bearings No. 2 and 8.
- Match inner flaperon pins with bearings using two people.
- Match outer flaperon pins with bearings, when flaperon fully deflected downward, also match connector pins. Use two people. Do not use force.
- Set up washers at bearing No. 8 as found during disassembly.
- Tighten nuts (6 mm thread, LN9348, width over flats 10 mm) at bearings No. 2 and 8 with maximum torque of 1 daNm (7.223 ft lbs).
- Check lateral bearing play:
  LS6, LS6-a, LS6-b:
  outer flaperon min. 2mm (0.079 in)
  inner flaperon min. 3mm (0.12 in)



- Check lateral flaperon gaps:
  at outer edge: min. 2mm (0.08 in)
  between flaperons: min. 3mm (0.12 in)
  at inner edge for **LS6, LS6-a, LS6-b:** min. 1mm (0.04 in)
- Connect both pushrods to flaperons using bolts, washers and nuts (6 mm thread, LN9348, width over flats 10 mm). Maximum torque is 1 daNm (7.233 ft lbs)
- Fix internal seal on upper flaperon side, see 4-8.
- Add sealing on lower side over bearings, see 4-8.
- Bond fillet at flaperon tip recess with contact adhesive (e.g. Pattex)
- Bond drive casings using contact adhesive or polyester filler.

LS6-c, LS6-c18, LS6-18w:

- grease bearings according to Lubrication Schedule, section 3.4.
- make sure that washers, if present, are on inner side of fixed bearing pins, No. 2 and 9.
- match inner flaperon pins with bearings with flaperon fully deflected downward, then outer flaperon. Use 2 people. Do not use force. Align flaperon connection pins.

Installation of flaperons continued

- set up washers at bearings No. 2 and 9 as found during disassembly.
- tighten nuts (6 mm thread, LN9348, width over flats 10 mm) at bearings No. 2 and 9 with maximum torque 6.4 Nm (0.64 daNm, 4.623 ft lbs).
- check lateral bearing play:
  minimum of 3 mm (0.12 in) See sketch on preceeding page
- check lateral flaperon gaps:
  at inner edge: minimum of 2 mm (0.08 in)
  between both flaperons: minimum of 3 mm (0.12 in)

  with 15 m tip fitted:
  at outer edge: minimum of 2 mm (0.08 in)
  with 17.5 or 18 m tip fitted:
  at outer edge at tip: minimum of 3 mm (0.12 in)
- fix drive rods to flaperon drives using bolts, nuts and washers (6mm thread, LN9348, width over flats 10 mm). Maximum torque 6.4 Nm (0.64 daNm, 4.623 ft lbs).
- bond drive covers using polyester filler.
- Install internal gap seal (38 mm (1.5 in) wide teflon tape) with flaperon deflected fully upward, see section 4.2.1.
- Install under side gap seal, see section 4.2.1.

4.1.2 Elevator

4.1.2.1 Removal of elevator

- Remove bearings and washers at elevator drive, remember sequence and position of washers (Width over flats 10 mm).
- Remove elevator halves towards centre. Watch washers, if present, at inner side of both inner bearing pins.

4.1.2.2 Installation of elevator

- Grease bearings according to Lubrication Schedule, page section 3.4.
- Make sure that washers, if present, are on inner side of inner bearing pins.
- Match elevator halves pins with bearings, do not use force.
- Minimum outer lateral elevator gap 1 mm (0.04 in), when inner bearings just touch collars.
- Install both drive bearings with washers as found during disassembly (0.1 mm [0.04 in] shim between bearings), bolt (LN 9037) and nut (LN9348). (6mm thread, LN9348, width over flats 10 mm) Maximum torque 6.4 Nm (0.64 daNm, 4.623 ft lbs).
- Do not brace elevator halves against inner bearings, maximum axial play 0.5 mm (0.02 in).
- Install gap seal according to section 4.2.2.

4.1.3 Rudder

4.1.3.1 Rudder removal

Only for LS6, LS6-a, LS6-b: Remove internal sealing from both sides completely.

Caution for all LS6 variants: Rudder cables can be pre-drilled. This must not be changed, otherwise the rudder neutral position is changed.

- Disconnect rudder cables, don't loose spacing casing.
- Loosen nut at lower bearing (6 mm thread, LN9348, width over flats 10 mm) using a socket wrench, remember sequence and position of washers.
- Lift rudder upward from bearings.
- **Only with LS6, LS6-a, LS6-b:** Remove internal seals from fin.

Note: Do not loose spacer bushings.

4.1.3.2 Rudder installation LS6, LS6-a, LS6-b:

- Install internal sealing to both sides of fin analogous to description in section 4.2.1.1.
- grease bearings according to Lubrication Schedule, see section 3.4.
- set rudder into bearings from above, do not use force!
- connect rudder cables provisionally, do not forget to insert spacing casings into thimbles.
- check rudder pedal alignment: with pedals in neutral position and rudder deflected to one side, twist **opposite** cable clockwise (maximum 5 turns) until properly aligned.
  Should more than 5 turns be required for alignment, replace cables. Never turn cables counter clockwise!
- Tighten nuts at rudder cable connection (6 mm thread, LN9348, width over flats 10 mm) with maximum torque 6.4 Nm (0.64 daNm, 4.623 ft lbs).
- First install the large, then the small washer under the bottom bearing, then tighten nut with maximum torque of 1 daNm (7.223 ft lbs). Axial rudder movement should be audible. Maximum axial play 1 mm (0.04 in).
- Fix internal sealings on both sides of rudder.

Note: Instead of the internal sealings as described above the easier to install type of sealings of the later LS6 variants may be installed. see section 4.2.3

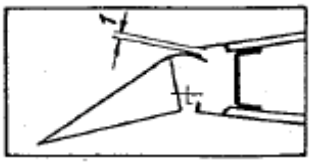
4.1.3.3 Rudder installation LS6-c, LS6-c18, LS6-18w:

- grease bearings according to Lubrication Schedule, see section 3.4.
- if necessary, renew V-type sealing tape.
- set rudder into bearings from above, do not use force!
- Check radial play of upper bearing. Maximum allowable radial play 0.5 mm (0.02 in). If necessary, renew brass bushing. Make sure, that nonconcentric position of bearing keeps relative position to direction of flight.
- Connect rudder cables provisionally, do not forget to insert spacing casings into thimbles.
- Check rudder pedal alignment: with pedals in neutral position and rudder deflected to one side, twist **opposite** cable clockwise (maximum 5 turns) until properly aligned.
  Should more than 5 turns be required for alignment, replace cables. Never turn cables counter clockwise!
- Tighten nuts at rudder cable connection (6 mm thread, LN9348, width over flats 10 mm) with maximum torque 6.4 Nm (0.64 daNm, 4.623 ft lbs).
- set up washers at lower bearing as found during disassembly (normally: recessed washer first, then large washer). Tighten nut (6 mm thread, LN9348, width over flats 10 mm) with maximum torque 6.4 Nm (0.64 daNm, 4.623 ft lbs). After assembly the rudder should have slight axial play. Maximum axial play: 1 mm (0.04 in).
- if necessary, restore gap seals according to section 4.2.3.

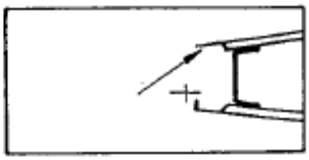
4.2 Installation of control surface gap sealings

4.2.1 Gap sealings Flaperons

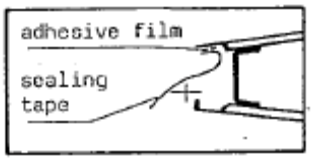
4.2.1.1 Installation of internal sealing at flaperon upper side LS6, LS6-a, LS6-b:



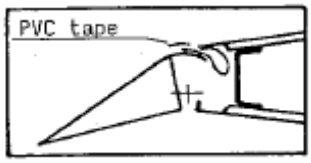
1. Gap between wing and flaperon upper side must be at least 1 mm (0.04 in) wide in all positions. Enlarge smaller gap on wing side only using 60 grade sandpaper glued to 0.5 mm (0.02 in) thick sheet metal.
2. Mark rear edge of wing on upper side of flaperon using soft pencil, when fully deflected downward. Take flaperon off, see also pages 4-1/2, use two people to avoid damage.



3. Roughen gluing area on inside upper rear wing edge using sanding paper grade 60. Round sharp edge slightly (sanding paper grade 180) and blow off dust.
4. Clean gluing area at inner wing edge and on sealing tape using lead-free petrol. Lay sealing tape on table and stick adhesive film edge flush to sealing tape edge.
5. Mark rear gluing edge inside rear wing edge approximately 3 - 4 mm (0.12 - 0.16 in) forward of rear edge.



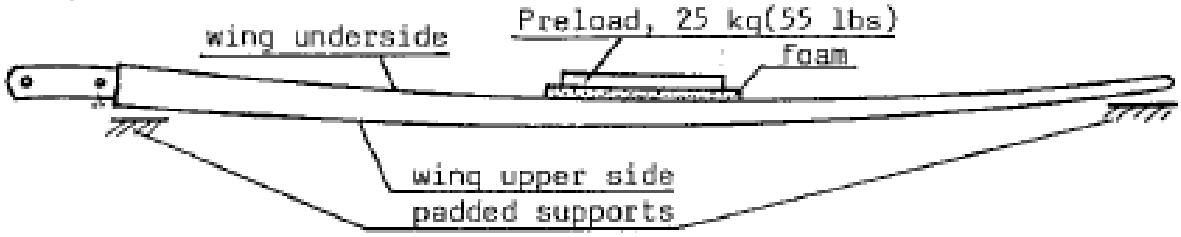
6. Pull masking tape off prepared sealing tape and glue to inside rear wing edge along marked line. Press gluing temporarily using plastic spatula or similar.
7. Clean leading edge of flaperon behind marked rear edge of wing using lead-free petrol, and second side of sealing tape.
8. Stick adhesive film to leading edge of flaperon flush behind marking line.
9. Assemble flaperon and deflect fully downward. Pull sealing tape cautiously out of gap, pull masking tape off and lay sealing tape on adhesive film avoiding branching or lateral displacement. Press adhesive film area temporarily using roller.



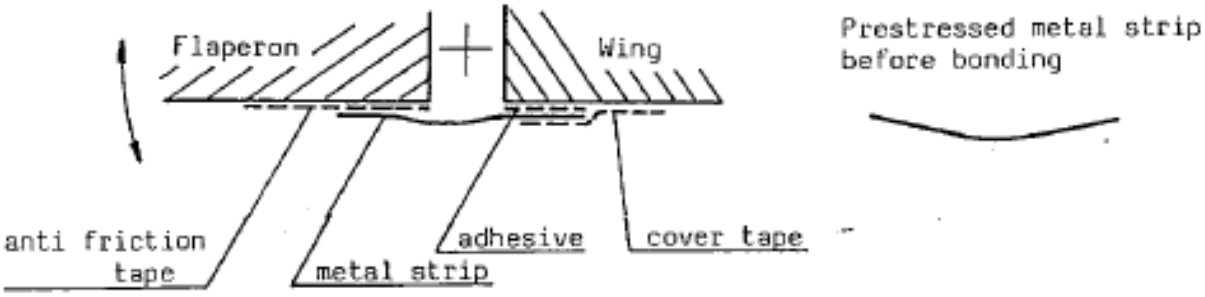
10. Cut excess sealing tape along rear edge of adhesive film using sharp knife and straightedge.
11. Mask rear edge of sealing tape with white PVC tape to avoid warping. Full bonding strength of adhesive tape is reached after about 3 days.

4.2.1.2 Installation of lower side gap sealing LS6, LS6-a, LS6-b:

1. Lay wing upside down on adequately padded supports at root rib and wingtip, outside of flaperon, see also sketch below.
   Preload wing with approximately 25 kg (55 lbs) to avoid warping under negative loads.



2. Mark leading edge of bonding area on wing, approximately 11 – 12 mm (0.43 – 0.47 in) in front of gap.
3. Coat metal strip (convex, 33*0.7 mm <1.3*0.028 in> on one inside half with primer (Example: Wiederholt Wash Primer N54628/L with Hardener 37678 and Thinner 36880, mixture weight ratio 100:25:25)
4. Apply self adhesive anti friction tape flush with flaperon leading edge after wiping edge with lead-free petrol. Without anti friction tape, metal strip seal will destroy gelcoat, especially with dust particles present.
5. Apply contact adhesive (Example: Pattex Spezial) to marked bonding area on wing and let dry according to manufactures recommendations.
6. Position metal strip, preferably pretensioned, with prepared side to bonding area and apply pressure temporarily with roller or plastic spatula.
7. Cover metal strip leading edge and joints with tape (Example: Scotch Magic 810)



4.2.1.3 Installation of lower side gap sealing LS6-c, LS6-c18, LS6-18w

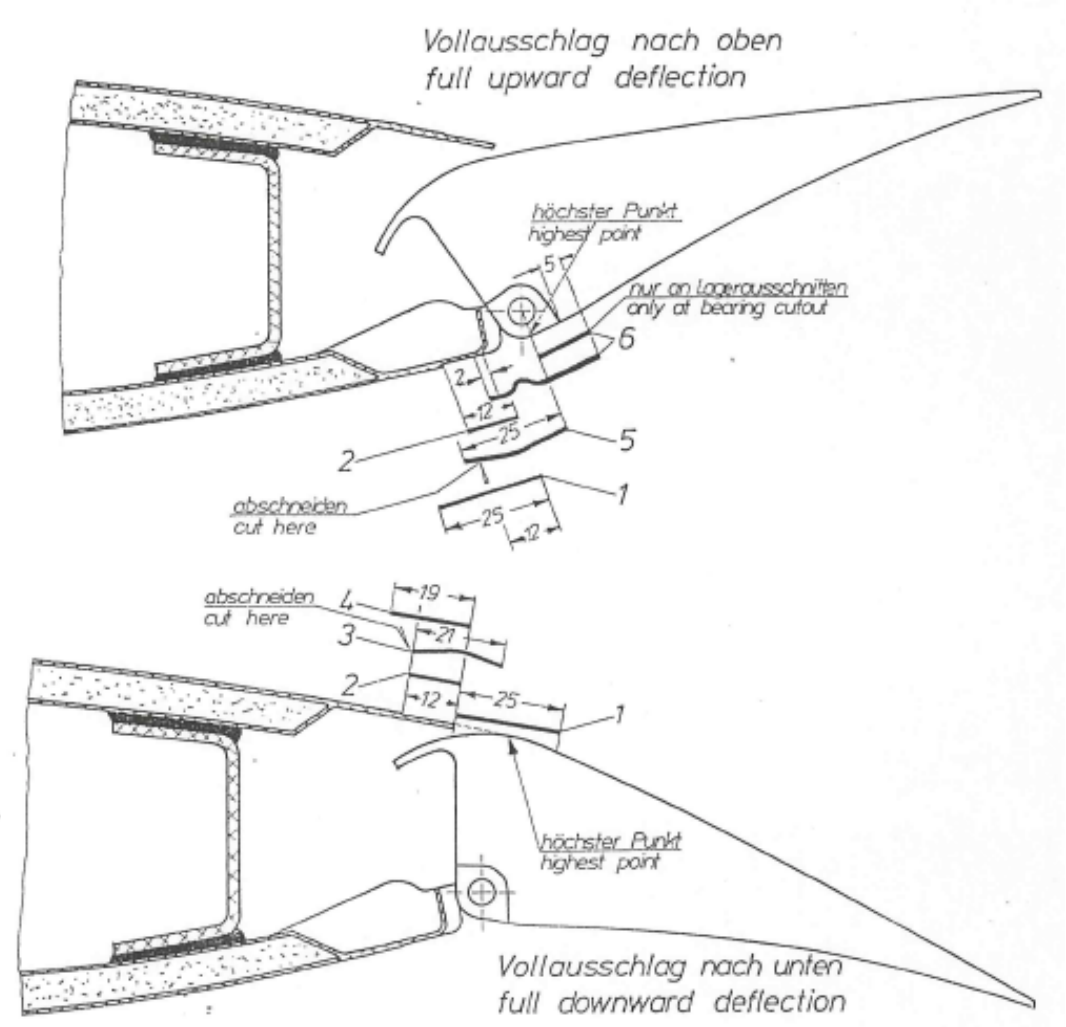
General remarks related to sketches

1. Lay wing upside down on adequately padded supports at root rib and wingtip, outside of aileron, see sketch below.
   Always use 2 people to tighten plastic gap seal during bonding.
2. Clean bonding area from adhesive residues. If bonding area is milled (no or almost no white gelcoat exists) prime with contact adhesive (Example: Pattex).
3. Deflect flaperon fully downward, mark rear edge of seal on flaperon using a short length of seal and soft pencil.
4. Deflect flaperon fully upward, place self-adhesive Teflon tape (38 mm <1.5 in> wide) with its rear edge 2 mm (0.08 in) behind marking of sealings rear edge. Place a second layer of Teflon tape over bearing cutouts.
5. Cut Teflon tape leading edge using a sharp knife such, that bonding width on wing is 2 mm (0.08 in). When Teflon tape bonding width on wing is wider, bonding width for convex plastic seal is insufficient because Teflon prevents proper bonding.
6. Remove masking tape from convex plastic seal (30mm (1.18 in) wide) and position leading edge flush with wing side cutout.
7. Cover leading edge of convex plastic seal with tape to prevent warping (Example: Tescal 4178 or Tesafilm 4104 white). For types of sealing tapes see details and sketches on following pages.

Installation of lower side gap sealing LS6-c:

Material:

No.	Denomination	Amount required
1	Tesafilm 4104 white 25 mm	32 m (105 ft)
2	Bonding film Tesafix transparent 12 mm	32 m (105 ft)
3	Convex sealing strip 0.25, form 1, 21 mm	16 m (52.5 ft)
4	Tesafilm 4104 white 19 mm	16 m (52.5 ft)
5	Convex sealing strip 0.25, form 2, 30 mm	16 m (52.5 ft)
6	Teflon-glass tape 0.08*38	16 m (52.5 ft)

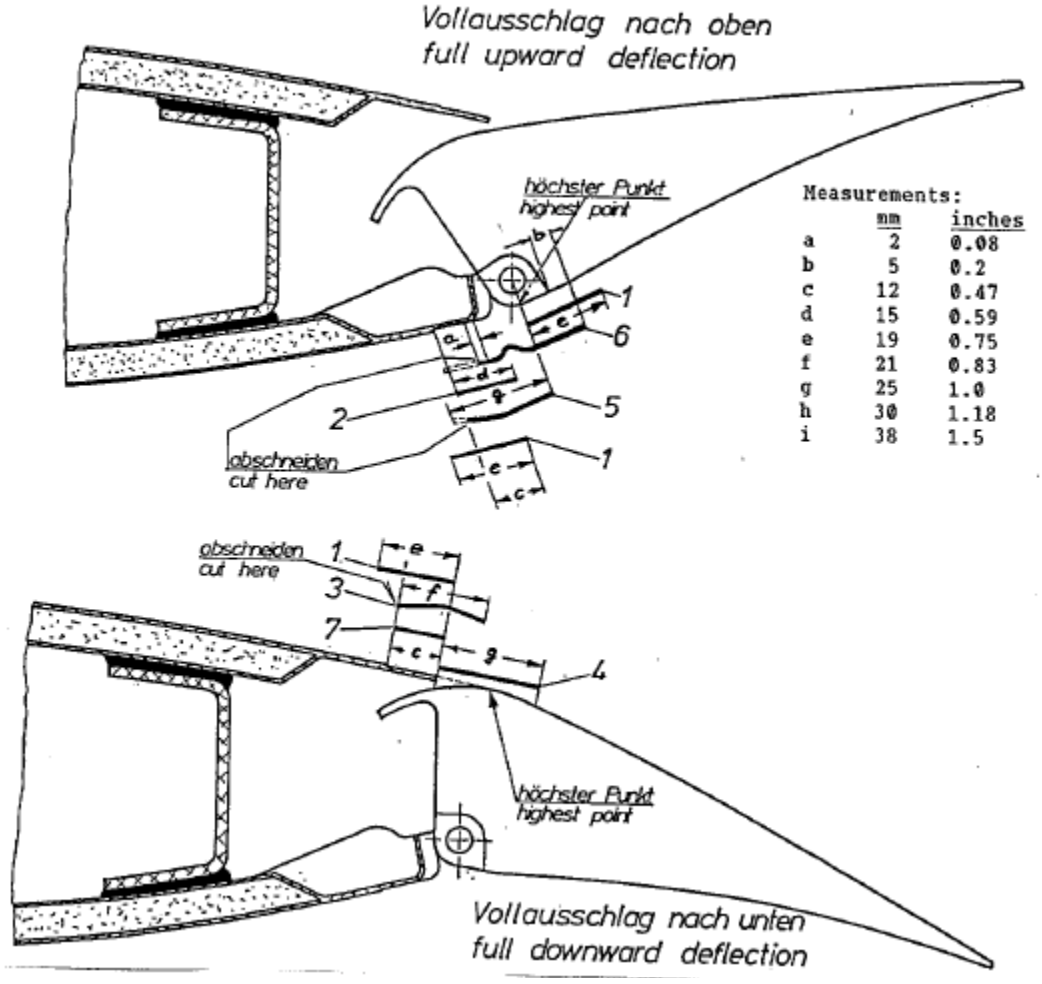


Rear edges of sealing strips No. 3 and 5 must end before or at highest point of control surface. Strips must be cut at leading edge in outer wing region.

Installation of lower side gap sealing LS6-c18, LS6-18w:

Material:

No.	Denomination	Amount required
1	Tesafilm 4104 white 19 mm (0.75 in)	32 m (105 ft)
2	Bonding film Tesafix 15 mm (0.59 in) transparent	16 m (52.5 ft)
3	Convex sealing strip 0.25, form 1, 21 mm (0.83 in)	16 m (52.5 ft)
4	Tesafilm 4104 white 25 mm (1.0 in)	16 m (52.5 ft)
5	Convex sealing strip 0.25, form 2, 26 mm (1.0 in)	16 m (52.5 ft)
6	Teflon-glass tape 0.08*38	16 m (52.5 ft)
7	Tesa tape 4976 0.4 mm (0.16 in) black 12 mm (0.47 in) wide	16 m (52.5 ft)



Rear edges of sealing strips No. 3 and 5 must end before or at highest point of control surface. Strips must be cut at leading edge in outer wing region.

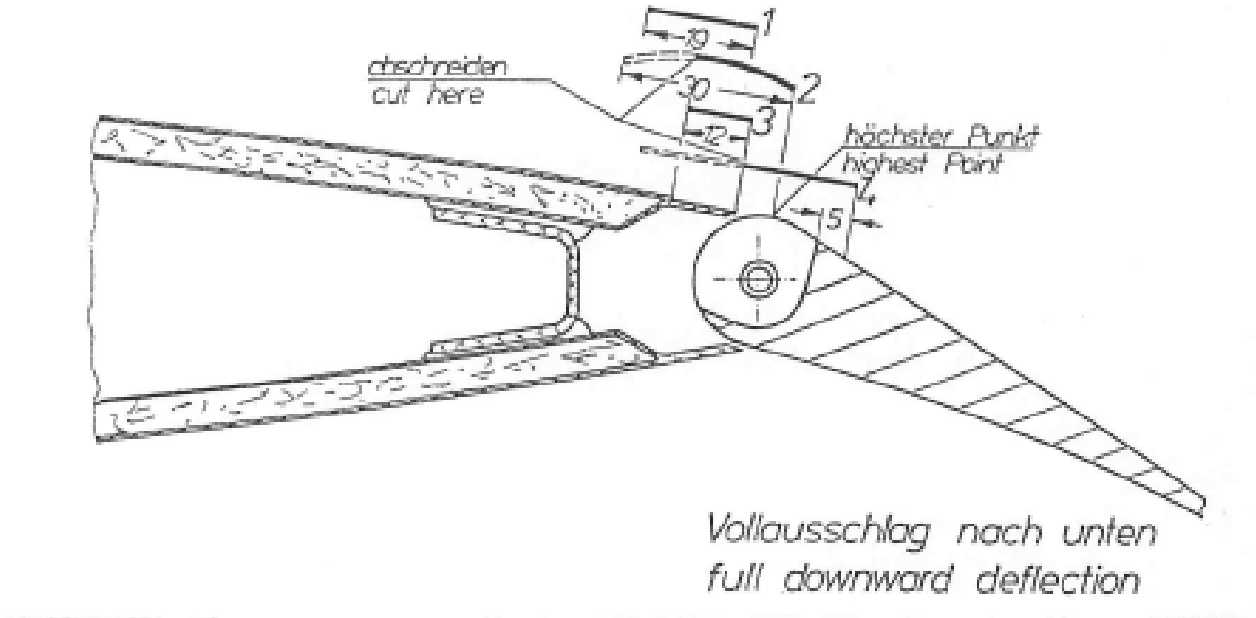
4.2.2 Gap sealings elevator

LS6, LS6-a, LS6-b:

For the upper side sealing of the elevator a convex plastic strip is used together with another primer (Scotch Tape Primer No.83), installation analogous to described method page 4-8, but without preload and pretensioning.

LS6-c, LS6-c18, LS6-18w:

No.	Denomination	Amount required
1	Tesafilm 4104 white 25 mm	2.3 m (7.6 ft)
2	Bonding film Tesafix 12 mm transparent	2.3 m (7.6 ft)
3	Convex sealing strip 0.25, form 2, 30 mm	2.3 m (7.6 ft)
4	Teflon-glass tape 0.08*38 mm	2.3 m (7.6 ft)

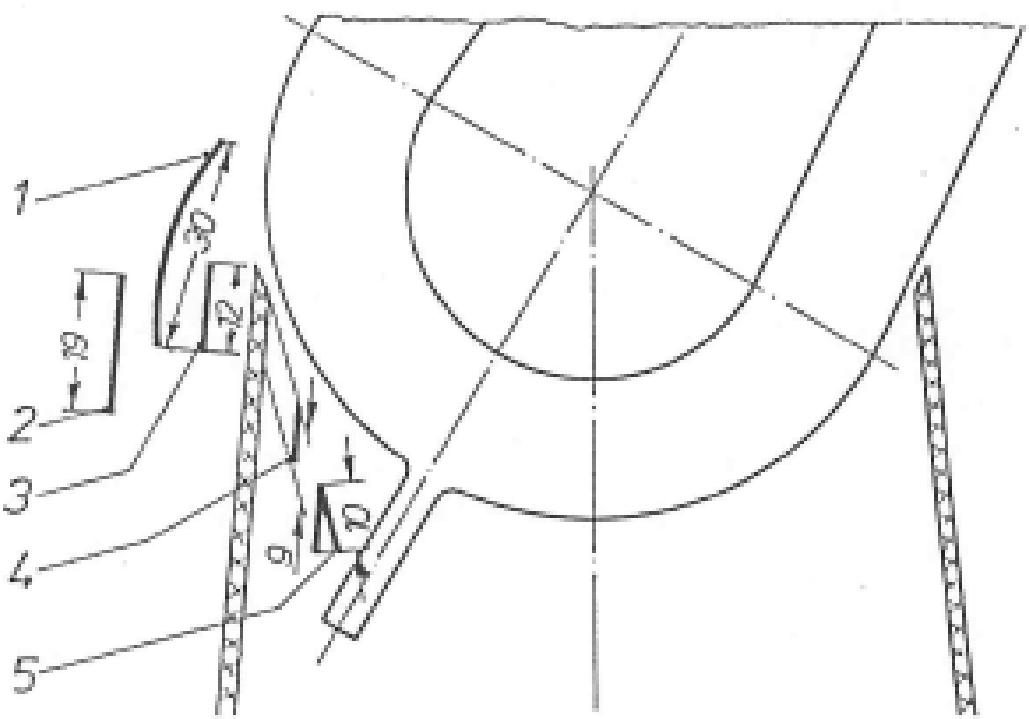


4.2.3 Gap sealings rudder

LS6, LS6-a, LS6-b:
Originally: Procedure according to section 4.2.1.1 is analogous for rudder (internal sealing on both sides).
Optionally, the procedure which is standard with variants LS6-c, LS6-c18, LS6-18w can also be used,

LS6-c, LS6-c18, LS6-18w:

No	Denomination	Amount required
1	Convex sealing strip 0.25, form 2, 30 mm	2.3 m (7.2 ft)
2	Tesafilm 4104 white 25 mm	2.3 m (7.2 ft)
3	Bonding film Tesafix 12 mm transparent	2.3 m (7.2 ft)
4	Bonding film Tesafix 9 mm transparent	2.3 m (7.2 ft)
5	Tesa V-type sliding seal	2.3 m (7.2 ft)



4.3 Seat shell removal and installation

4.3.1 Removal of seat shell

- **LS6, LS6-a, LS6-b:** Remove 6 bolts
  LS6-c, LS6-c18, LS6-18w: Remove 8 boltsULS-M8 (8 mm thread), hexagon recess No. 5; watch for length and position of bolts (if shorter ones used, they are normally colour marked)
- **LS6, LS6-a, LS6-b:** Disconnect backrest lower end
  - Remove backrest adjuster cable from left cockpit rim
  - Hang backrest to the right out of cockpit (protect rim with soft material to avoid damage)
  - Dismount, if applicable, speaker support from landing gear box
  - Take out screws near flaperon/air brake handles guide
  - Remove ball off pedal adjuster cable
- **LS6-c, LS6-c18, LS6-18w:** Disconnect backrest base from seat and remove backrest.
  - Remove T-shaped handle from pedal adjuster cable (5 mm thread, nut LN9348, width over flats 8 mm)
- Use 8 mm socket wrench and hold cable with pliers against rotation, pull cable through seat guide tube.
- Remove 5 countersunk screws, Phillips recess, at left side along air brake/flap handles guide and at right side along gear handle guide
- Loosen stick cover, move flaperon and air brake handles into forward positions
- Swivel left seat side up, direct nut at left lap belt fitting around longitudinal motion pushrod guide, and take seat out to upper left

4.3.2 Seat shell installation

Follow disassembly steps in reverse order, in addition observe the following:

- inspect seat area for foreign matter, tools etc.
- **<u>Only LS6-c, LS6-c18, LS6-18w</u>:** The tensioner strip in front of the control stick must not be removed: It prevents opening of the front fuselage in case of a crash.
- rest right side of seat on support, direct control stick into cutout and pedal adjuster cable into guide, place air brake handle into forward position
- when lowering seat, hold flap handle vertically, direct release handle around seat edge and watch especially for nut at left lap belt fixing point, this should never be forced over the seat support and elevator pushrod guide.

- use short seat fixing bolts
  for **LS6, LS6-a, LS6-b** normally at right rear end to avoid chafing of the landing gear pushrod.
  for **LS6-c, LS6-c18, LS6-18w** in the centre of the left hand side (behind trim indicator) to avoid chafing at trim system or poor trim function

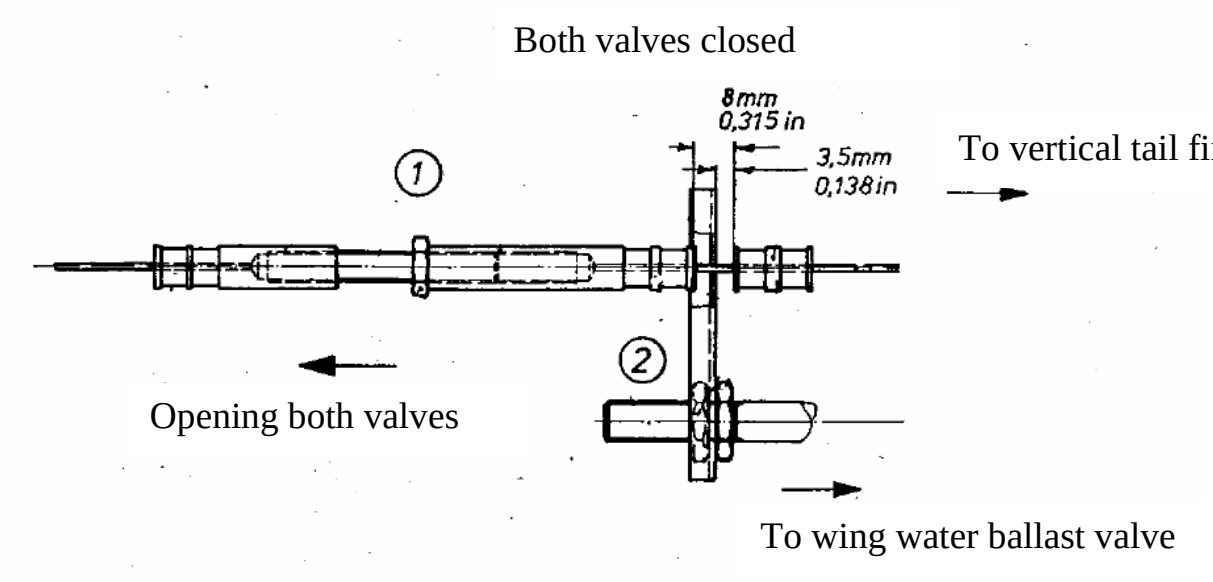
- fix countersunk screws along left hand side air brake / flap handle guide and right hand side landing gear handle guide
- screw handle (ball or T-shaped handle) to pedal adjuster cable and use pliers to prevent rotation of the cable end fitting.
- check control system after installation for proper operation

Caution for LS6, LS6-a, LS6-b: Removing the trim spindle nut without a transfer sleeve destroys the nut. This can only be repaired by the spindle manufacturer! This warning is also placarded near the trim spindle.

4.4 Adjustment of water ballast valves

4.4.1 Adjustment of water ballast valves LS6-a, and LS6-b (Version with central valve in fuselage)

- Adjust with valves in closed position at ① so, that vertical tail tank valve just does not open.
- Adjust distance 3.5 mm(0.138 in) for wing valve at ②
- Check function by filling system with water: Vertical tail tank valve must open before wing valve

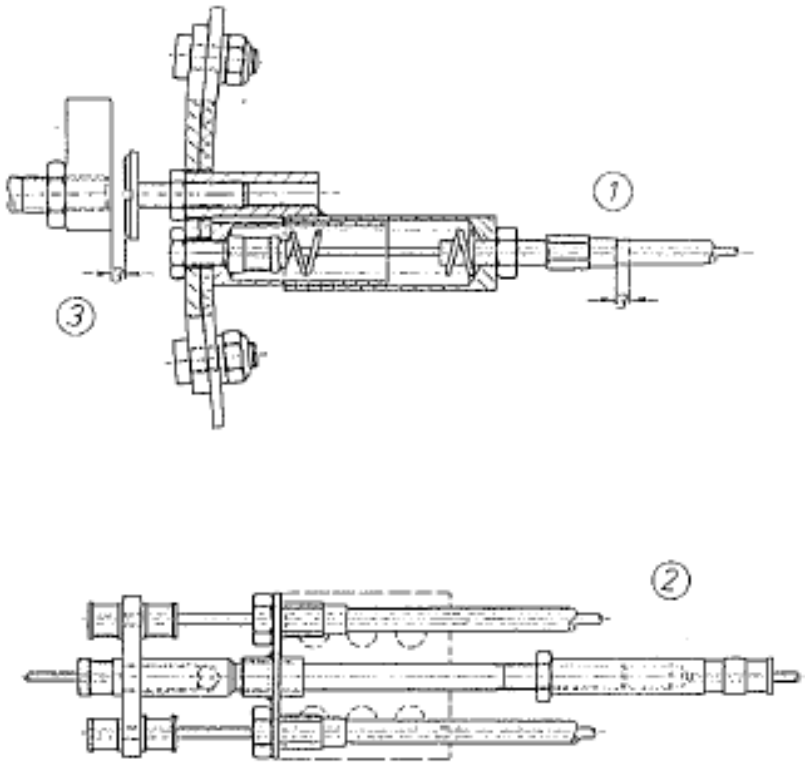


4.4.2 Adjustment of water ballast valves LS6-b (Version with valves in each wing) and LS6-c, LS6-c18, LS6-18w

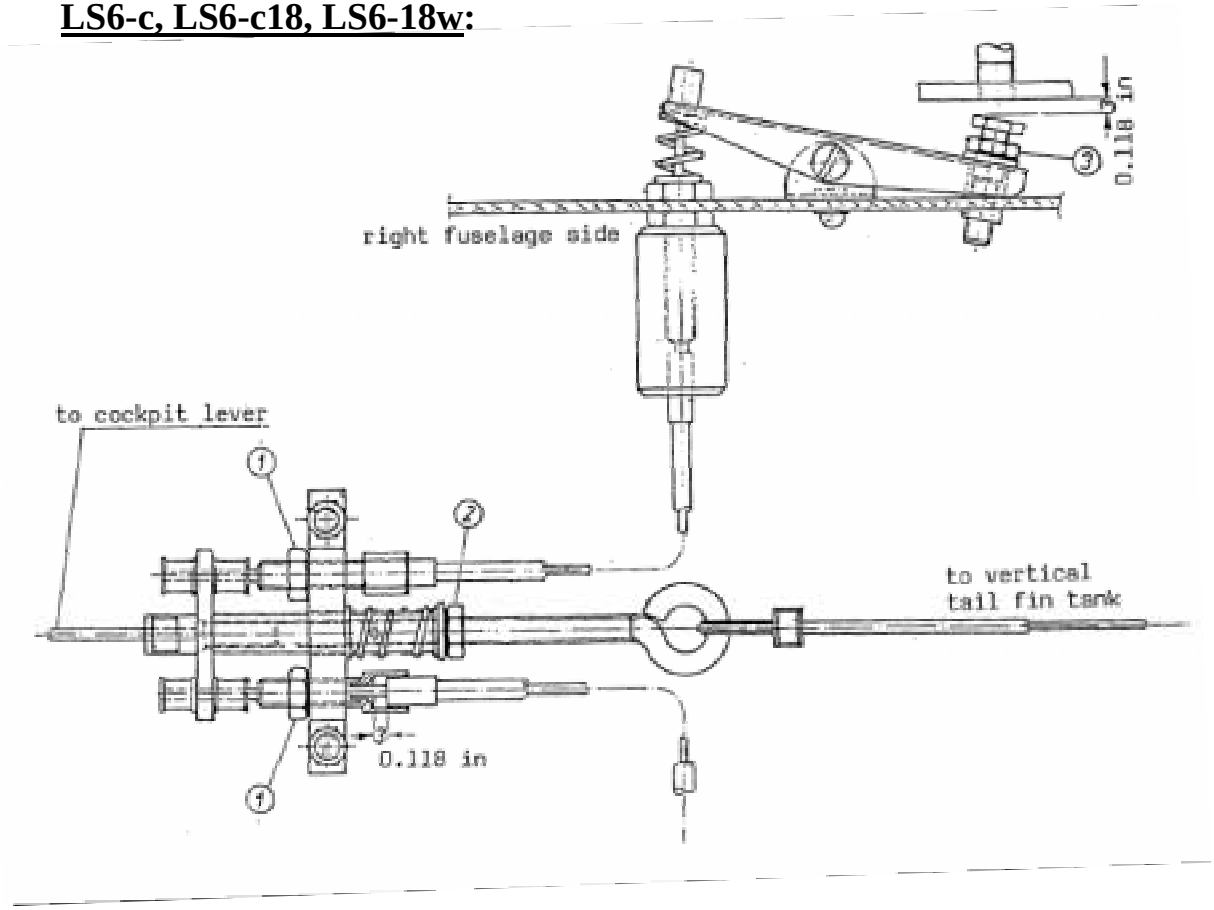
- Check cockpit operation lever for overcenter lock in open position
- check bowden cable end play ① at fuselage to wing mechanisms for nominal value of 3 mm (0.118 in)
  (For **LS6-c, LS6-c18 and LS6-18w** knurled nuts at drive inside baggage compartment must be turned clockwise to stop).
- check vertical tail fin tank opening after filling some water: nominal value 5 to 7 mm (0.197 to 0.276 in) travel at upper end of operating lever. If necessary, adjust at ②
- check play at ③ by pressing fuselage to wing mechanisms until touching wing valve stems for nominal value 3 mm (0.118 in). If necessary, adjust at fuselage from outside.
- do not forget to lock nuts after adjusting

Adjustment of water ballast valves continued:

LS6-b:



LS6-c, LS6-c18, LS6-18w:



4.5 Removal and installation of the wing water ballast bags:

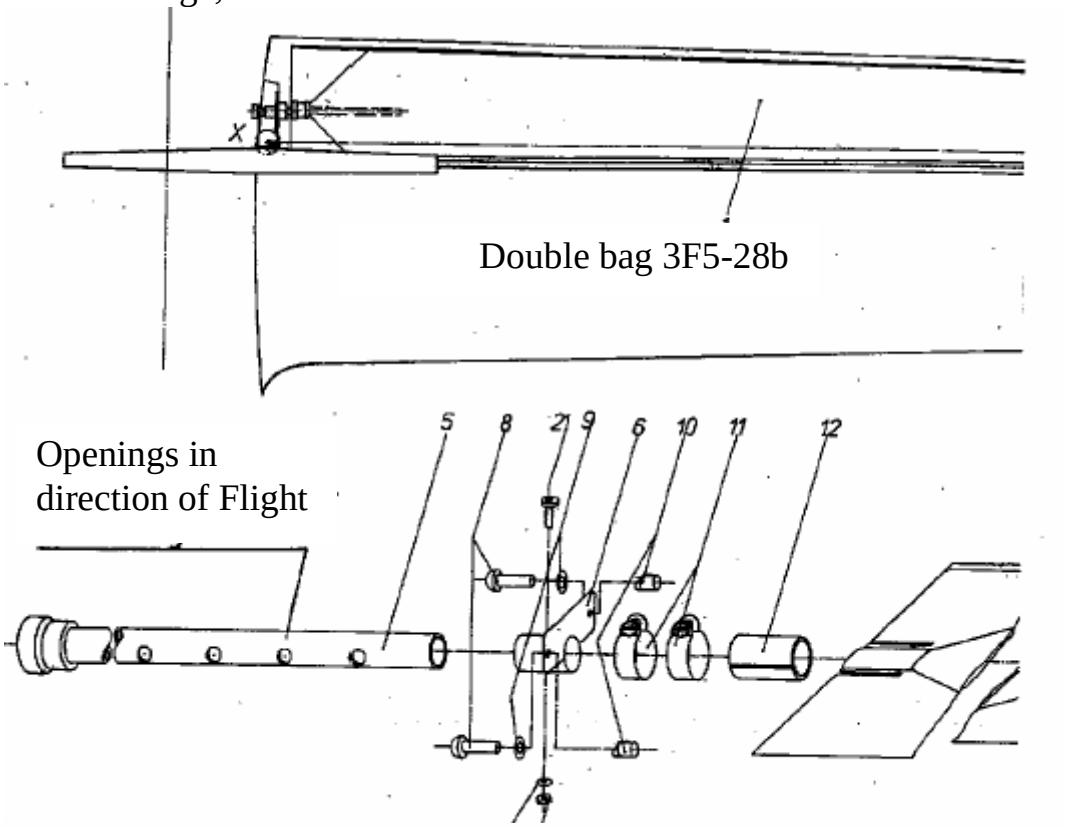
4.5.1 Wing water ballast bags, system descriprion

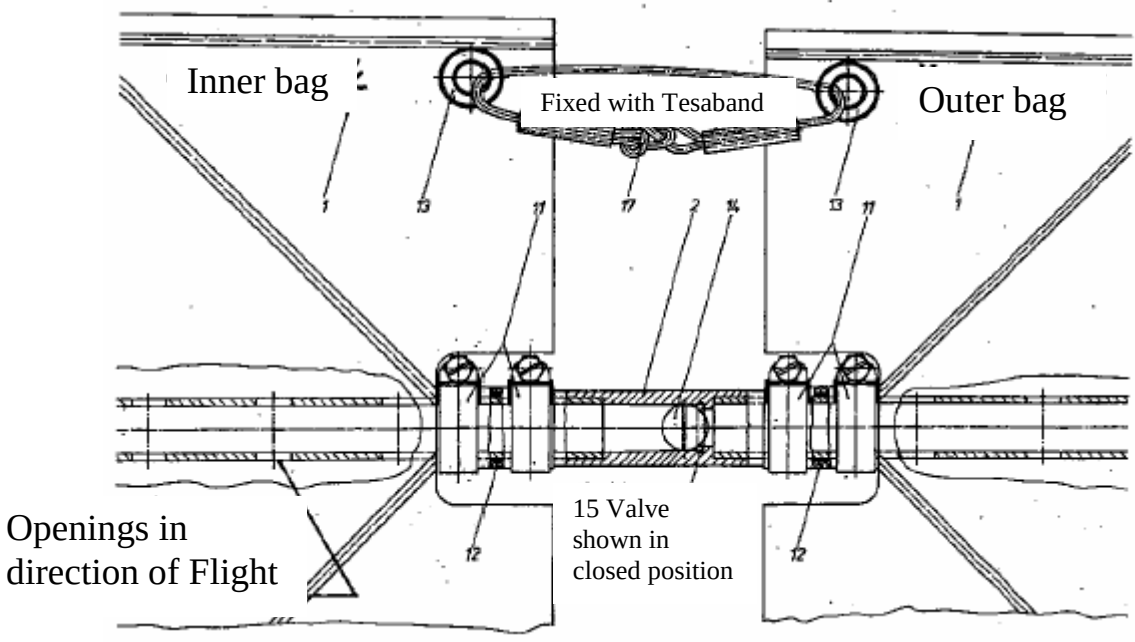
All LS6 variants:

Wing water bags are kept in straight position by nylon rope, running from bag end over a pulley to the root rib, tension approx. 10 kg <45 Ibs>.

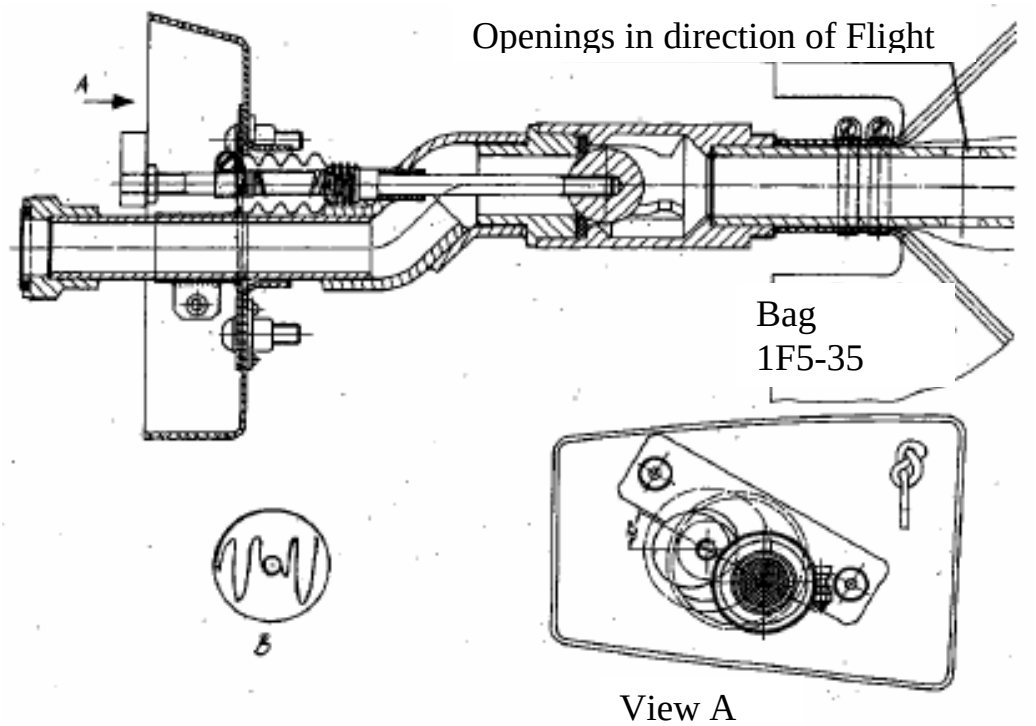
LS6, LS6-a, LS6-b: 2 versions of waterbags exist.

1. **LS6, LS6-a, LS6-b**: Double bag with non-return valve, 1 central dump valve in fuselage, see below.





2. **LS6, LS6-a, LS6-b**: Single bag, valves in wings, dumping through fuselage



3. **LS6-c, LS6-c18, LS6-18w:** Waterbags with filling and dump valve in the wing, see section 1.5.5.

4.5.2 Removal of the water ballast bags

LS6, LS6-a, LS6-b:

- Open screwed joint of bag at root rib.

LS6-c, LS6-c18, LS6-18w:

- using water valve key part no. 4F05-82 (standard equipment), disconnect screwed joint of valve with release tube from wing under side through release tube

All LS6 variants:

- open knot at rope end and connect approx. 15 m <49 ft> of braided nylon rope (ends heat sealed) by stitching for about 50 mm <2 in>. Do not connect by knot, this will not pass through pulley guide
- if water bags are taken out of wings without additional rope, the wing shell must be cut open near the pulley to reinstall the rope !
- pull valve and bag through opening in root rib, disconnect rope from bag.
- Check bags for tightness, damage and no water between inner and outer bag layers.

Warning: The pressure tube between double valve and outer ballast bag at **LS6-18w** is prone to buckling, therefore use 2 persons during disassembly and assembly!

4.5.3 Assembly of the wing water ballast bags

- pull bicycle type tube over valve end, 60 mm <2.4 in> long

LS6, LS6-a, LS6-b:

- adjust ballast bag with seam to leading edge. Root rib bracket for version 1 must be fitted parallel, for version 2 under 30º to bag, openings in discharge tubes always parallel to direction of flight! See sketches pages 4-19 and 4-20, different direction of these openings increases discharge time extremely.

LS6-c, LS6-c18, LS6-18w:

- adjust ballast bag with seam to leading edge and to valve as shown below (different valve direction can change discharge time considerably)

All LS6 variants:

- push bag on valve stub, cover bag on stub with tape (example Tesaflex 4163) to protect bag against damage from hose clamps. Turn both seams during taping in the same circumferential direction, otherwise the discharge time will increase.
- tighten hose clamps and check for watertightness before installation into wing

LS6, LS6-a, LS6-b:

- For installation of the non-return valve of system version 1, see sketch in section 4.5.1, the outward direction is being locked.

All LS6 v variants:

- connect braided nylon rope to brass eye at bag end by special knot ("Pahlsteek") as shown on the next page, fix free rope end with tape.
- connect rope to intermediate rope in wing (if no longer connected) by stitching

LS6-c, LS6-c18, LS6-18w:

- check for presence of bonded-on gasket at valve discharge port.

4.5.4 Installation of the wing water ballast bags

LS6, LS6-a, LS6-b:

- place bag with seam to leading edge and fold as shown under item B for version 2, page 4-20. Push folded bag into root rib cutout and pull cautiously at intermediate rope.
- Screw bracket to root rib.

LS6-c, LS6-c18:

- place bag with seam to leading edge and valve discharge port 45° downward from the trailing edge, roll bag and push into root rib cutout, pull cautiously on intermediate rope.
- Screw brass nut through ballast dump port using water valve key to assemble valve from the outside.

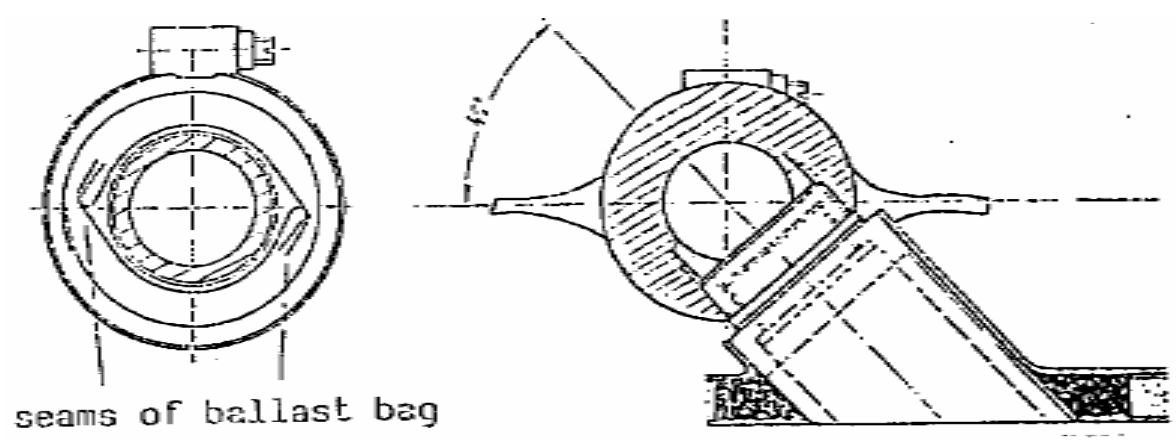
Wing water ballast bags continued

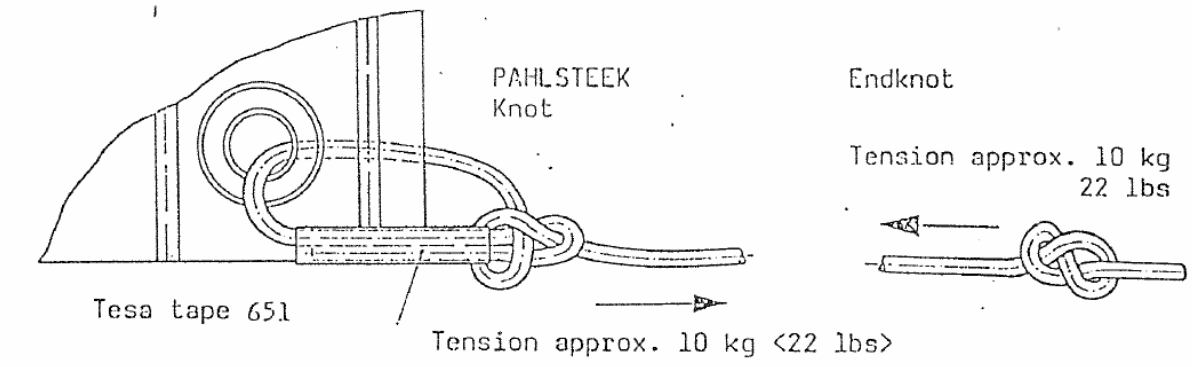
LS6-18w:

- place bag with seam to leading edge and valve discharge port 45° downward from the trailing edge, fold bag parallel to pressure tube (analogous as depicted at item "B" of LS6, LS6-a, LS6-b version 2, page 4-20) and push into root rib cutout, pull cautiously on intermediate rope.
- Screw brass nut through ballast dump port using water valve key to assemble valve from the outside.

All LS6 variants:

- pretension rope with about 10 kg (45 lbs), place end knot as shown below. Fix rope end (about 0.5 m <20 in> long) at root rib, do not cut off.
- check adjustment of water valves as outlined in section 4.4.
- fill bags according to instructions given in Flight Manual, check for tightness, proper discharge function and time.
- if discharge time exceeds 4.5 minutes, the bag may be twisted. If the bag is not tight, water may drip from one of the drain holes. Disassembly is required again to find and solve the problem in order to clear the plane for flight!
- **<u>Only LS6-18w</u>**: Check for correct filling and dumping sequence of the double bag according to inspection plan page 14-5.





4.5.5 Tail fin water ballast tank (not for LS6)

Removal:

- Disconnect operating cable from cockpit distributor at position ②, see sketch in section 4.2 and extend with approx. 6 m (20 ft) of thin nylon cord
- Loosen clamp (or cut bonding) at right lower rudder cutout, holding discharge tube, push stiff tube of approx. 7 to 8 mm (0.28 to 0.32 in) outside diameter and 1.5 m (5 ft) length into discharge tube.
- Dismount 2 bolts holding upper tank end (and horizontal tail bracket), 8 mm thread, LN 9037, width over flats 13 mm.
- Cut silicon rubber sealing at upper end cautiously with sharp knife.
- pull tank upward and push auxiliary tube from lower end accordingly. Remove tank from auxiliary tube and nylon cord , which must stay in the tail fin for re-installation.

Installation:

- Before installation, check valve tightness using water, also tightness with valve fully open, but discharge tube held closed. Total valve travel between 7 and 9 mm (0.27 to 0.35 in). (In fully open position spring coils are solid)
- Push auxiliary tube into discharge tube, cover joint with tape to avoid edge catching at ribs or webs.
- Connect drive cable with auxiliary cord.
- Insert tank into vertical tail fin upper end, at the same time guide auxiliary tube and pull carefully on cord from cockpit.
- Valve must be inserted into cutout in lower tail fin rib, use caution to avoid valve damage.
- Seal upper tank edge with silicon rubber to surrounding structure.
- Mount 2 bolts holding upper tank end (and horizontal tail bracket), 8 mm thread, LN 9037, width over flats 13 mm. When tank is combined with battery box, these bolts also hold the battery box cover.
- Clamp end of discharge tube (or fix by bonding with hot-melt adhesive) in right lower rudder cutout.
- Adjust valve operation according to section 4.4.

Operation Check:

a) Watertight with valve closed
b) Opening before wing system
c) Tightness during filling (back to front via funnel). With valve open, water level in filling tube must remain constant.

4.6 Removal and installation of the nose hook (Optional equipment) LS6, LS6-a and LS6-b (optional TN6018, standard equipment with LS6c, LS6-c18 and LS6-18w)

Tools: 3/8" or 1/4" drive ratchet, 8 and 10 mm sockets, 3 and 4 mm hex head driver sockets, 10 mm ring spanner, 12 mm open end spanner.

Note: Note length of bolts and positioning of washers for all assembly positions. Do not include fixing bolts of hook, when sending to overhaul.

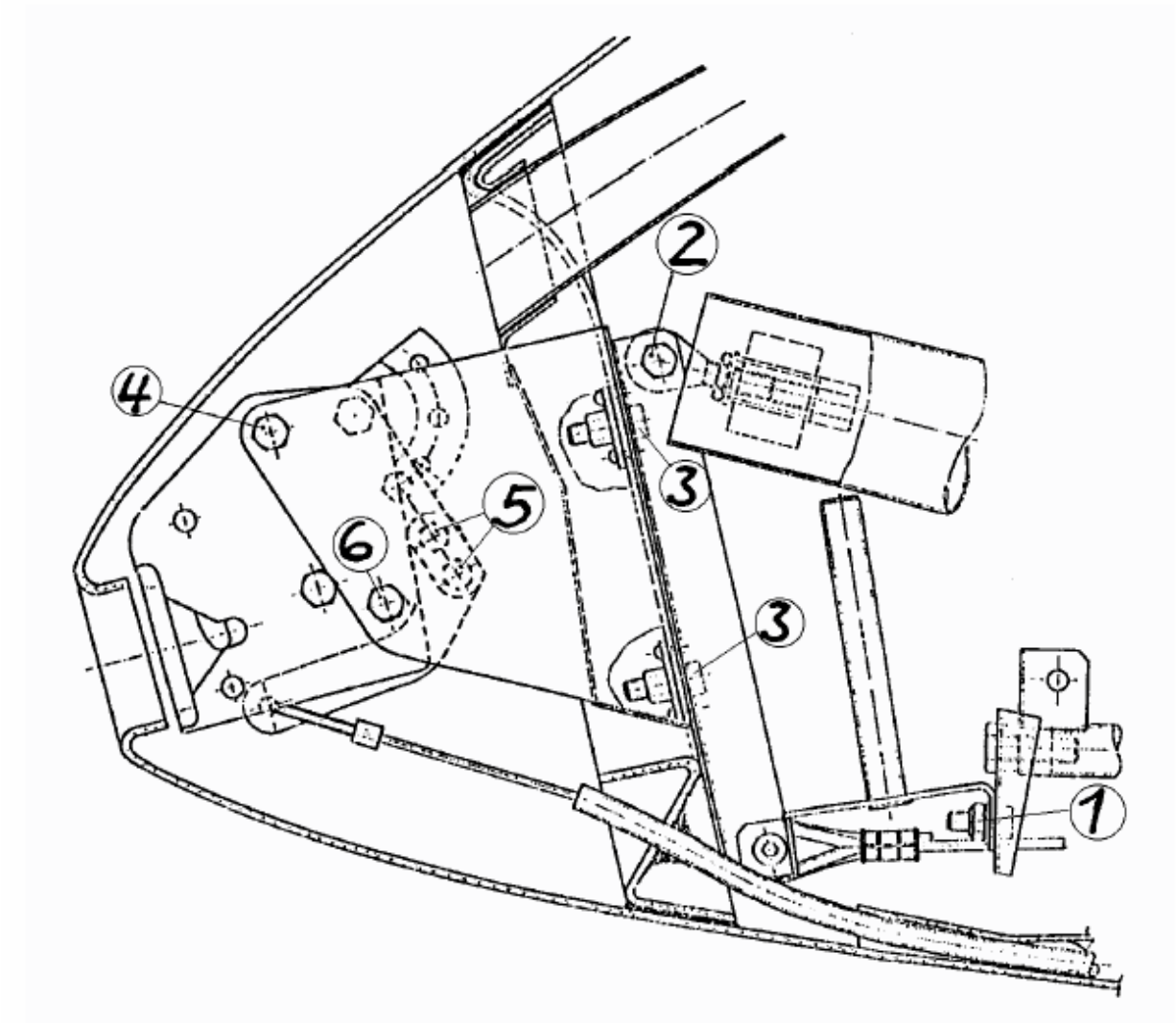
4.6.1 Removal of the nose hook

- take canopy off fuselage with a helper after pulling emergency canopy release according to section 3.1.3 item 14.
- disassemble seat according to secton 4.3.
- under seat, disconnect C.G. release cable from pulley, watch for spacer casing.
- pull pedals to rearmost position
- disconnect trim mass holder from pedal guide >1<
- disconnect 2 bolts >2< at front end of canopy support from bracket, move support as far back into cockpit as possible, perhaps disconnecting gas strut at one end as well
- also disconnect both canopy support brackets including trim mass holder from nose bulkhead >3< and move backwards
- pull nose hook support backward from bulkhead
- disassemble nose hook from support >4<, watch for 4 spacers between nose hook case and support, at >6< 1 spacer inside nose hook case
- disassemble drive extension with cable at >5< from drive lever

4.6.2 Installation of nose hook

in reverse order, watch out especially for the following:

- insert spacer at >6< before assembly of drive lever extension
- when assembling nose hook into support, direct spacers into position using a 12 mm open ended wrench
- after assembly at >3< and connection of C.G. hook cable to pulley, check function of both hooks
- before installation of seat, check functions of pedal system and locking of pedal adjustment, function of canopy support, electrical and pneumatic installations of all instrumentation and check for foreign matter.



4.7 Removal and installation of the C.G. Hook System

Tools: 3/8” or 1/4” drive ratchet, 8 and 10 mm sockets, 8 and 10 mm ring- or open end spanners.

Note: Note length of bolts and positioning of washers for all assembly positions. Do not include fixing bolts of hook, when sending to overhaul.

4.7.1 Removal of the C.G. Hook System:

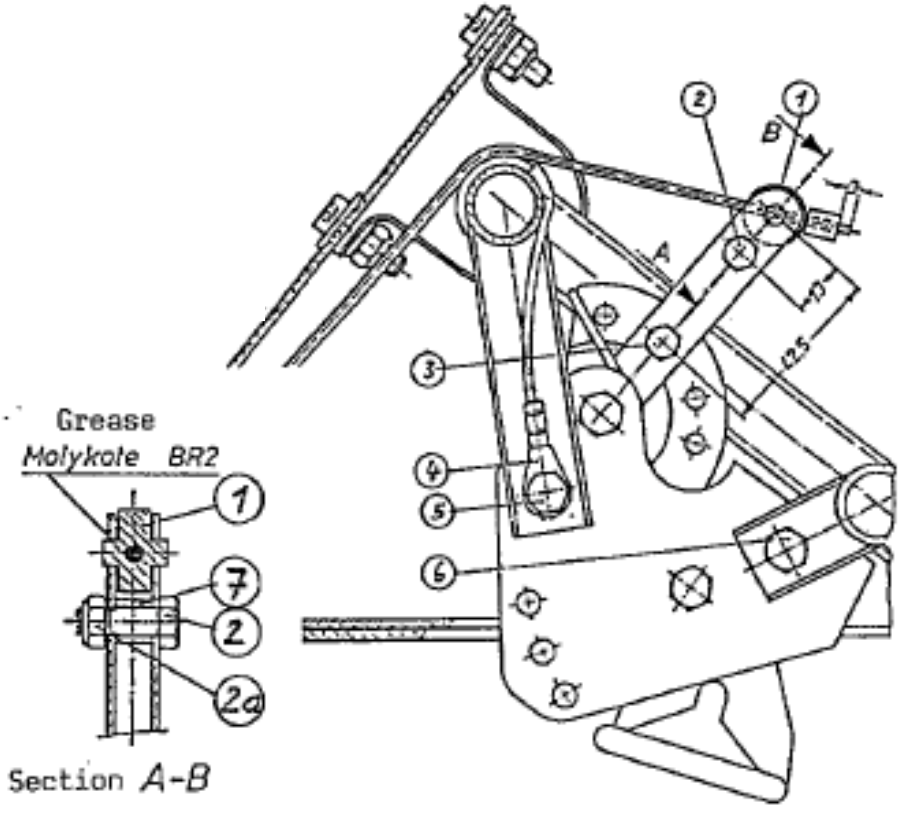
- Take canopy off fuselage according to section 3.1.3, item 14 with a helper after pulling emergency canopy release.
- Disassemble seat according to section 4.3.
- Under seat, disconnect C.G. release cable from pulley, watch for spacer casing..
- Remove fixing bolts ⑤ and ⑥, pull hook downward.
- Open screwed joints ② below cable end and ③ at lower end of drive lever for about 4 mm (0.16 in), expand lever arms and remove cable end ①.

4.7.2 Installation of C.G. hook

in reverse order, watch out especially for the following:

- Replace cable if wear is considerable, especially in region over landing gear fork cross member (See also chapter 11.3 and in FAA "Aircraft Inspection and Repair" Manual)
- Cable must be routed **over** cross member of landing gear fork.
- For position of drive lever at circular segment and fixing bores see sketch below.
- Bushing ⑦ between lever arms and below cable end avoids clamping of connector.
- Grease cable connector ①, set into bores at drive lever end and tighten at ② and ③.
- Connect ground cable ④ together with forward fixing bolt ⑤.
- Connect cable to pulley under seat (insert spacer casing into thimble) and check function of C.G. hook.
- For proper overcenter lock of C.G. hook, 5 mm (0.2 in) of free cable travel at cockpit handle must be available with landing gear down and locked.
- Before installation of seat, check for foreign matter.

Warning: Missing bushing ⑦ at position ② between drive levers below cable connector ① , cable below cross member of landing gear fork, wrong drive lever position at segment or use of other hook fixing positions may result in false takeoffs or make release impossible.



5 Control surfaces

5.1 Control surface deflection limits

			LS6, LS6-a, LS6-b	LS6-c, LS6-c18, LS6-18w
Elevator	Up		28° - 30°	25° - 30°
	Down		22° - 24°	22° - 26°
Rudder	To both sides		26° - 30°	26° - 28°
Aileron	With flap position -5:			
		Up		-18° - -22°
		Down		5° - 10°
	With flap position +10			
		Up	-2° - 2°	
		Down	26° - 30°	
			LS6, LS6-a, LS6-b, LS6-c LS6-c18, LS6-18w	
Flap	With aileron in neutral position:			
	at flap position	"L"	13° - 15°	
		"10"	8° - 10°	
		"5"	3° - 5°	
		"0"	-2° - 0°	
		"-5"	-5° - -3°	
			LS6, LS6-a, LS-b	LS6-c
Air brake	With flap position	"0"	Average 100 to 110 mm (3,94 to 4.33 in)	Minimum average 93 mm (3.66 in)
		"L"		Minimum average 150 mm (5.91 in)
			LS6-c18, LS6-18w	
	With flap at high speed stop between flap positions "0" and "5"		Minimum average 120 mm (4.72 in)	
	With flap position "L"		Minimum average 150 mm (5.91 in)	

Measuring method for flaperons: Set the respective flaperon so that it matches the fixed part at the wing root. Install a protractor on the flaperon upper surface and set it to -5°.

Control surface deflection limits continued

For easier checking, measured angles may be converted to mm/in deflection values, using the actual local radius of the defined measuring place. See also table in section 5.5.

5.2 Control surface weight and mass balance

(Check when suspecting changes of mass and after repairs)

5.2.1 Data

Weight and mass balance should be within given limits for safety against flutter.

	Mass/Weight	Horizontal-.Ref. line	Hinge Moment
Elevator, both halves together (All LS6 models)	1.00 to 1.60 kg 2.21 to 3.53 lbs	Upper side	*) ±10% of moment as measured during final production inspection
Rudder			
LS6, LS6-a, LS6-b	3.80 to 4.22 kg 8.38 to 9.30 lbs	Centerline of section	± 1.33 kg*cm ± 18.47 in*oz
LS6-c, LS6-c18, LS6-18w	3.00 to 6.80 kg 6.61 to 14.99 lbs		0 – 8.20 kg*cm 0 – 113.88 in*oz
Inner Flaperon LS6, LS6-a, LS6-b	2.61 – 3.33 kg 5.75 – 7.34 lbs	Underside of section Leading and trailing edges of under side connected	9.85 – 13.93 kg*cm 136.8 – 193.5 in*oz
Outer Flaperon (with connector pins) LS6, LS6-a, LS6-b	1.37- 1.74 kg 3.02 – 3.84 lbs		3.74 – 5.28 kg*cm 51.9 – 73.3 in*oz
Inner Flaperon LS6-c	2.14 to 2.74 kg 4.72 to 6.04 lbs		8.06 to 10.18 kg*cm 111.93 to 141.37 in*oz
Inner Flaperon LS6-c18, LS6-18w	2.14 to 2.74 kg 4.72 to 6.04 lbs		8.06 to 9.00 kg*cm 111.93 to 124.99 in*oz
Middle Flaperon incl. connecting pins LS6-c, LS6-c18, LS6-18w	1.19 to 1.53 kg 2.62 to 3.37 lbs		3.60 to 4.75 kg*cm 49.99 to 65.97 in*oz
17.5 m Flaperon incl. connecting pins LS6-c	0.34 to 0.50 kg 0.75 to 1.10 lbs		0.51 to 1.33 kg*cm 7.08 to 18.47 in*oz
18 m Flaperon incl. connecting pins. LS6-c18, LS6-18w	0.34 to 0.50 kg 0.75 to 1.10 lbs		0.51 to 1.00 kg*cm 7.08 to 13.89 in*oz

*) Elevator hinge moment limits are not absolutely fixed, they are determined during final production inspection and entered into the inspection form “Control surface Weight/Moment”, which should be in the technical log. This means, each LS6 has individual limit values, because compensation was reached by change of mass of the vertical elevator pushrod, see section 5.2.2, during final production inspection. In no case should the moment be above 4,95 kg*cm (68,74 in*oz).

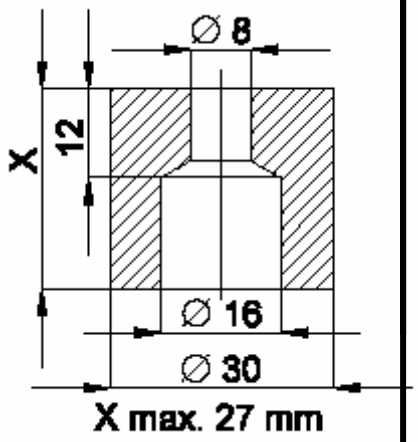
5.2.2 Instructions

Mass balancing of the elevator

The mass balancing of the elevator (approx. 100 %) is by heavy pushrod in the vertical tail fin.

At early S/N pushrod mass was increased by filling in resin plus lead shot, later S/N used washers or turned part as depicted at the top end. It is prohibited to remove the mass fixed to the top of the pushrod.

When the hinge moment of the elevator is no longer within limits as given under section 5.2.1, proceed as follows:



- Remove the mass from the pushrod.. Check wether there is further mass in the pushrod.
- Determine the new mass M with the following equation:
  M= (MR x 0,115)- $M_{pushrod}$ <kg>
  $M_{pushrod}$= 0,4 kg (without mass in the pushrod)
- MR= measured hinge moment in <kg cm>
  (divide “in*oz” value by 13,8874 to obtain required “kg*cm” value)
- Determine the amount of washers necessary: Steel or brass washers inner dia. 8 mm, outer dia. 30 mm.
- If it is not possible to install enough washers, a. brass turned part with the correct mass must be produced according to sketch and installed

Measuring technique for hinge moments: Control surfaces should be attached individually (elevator halves one by one) at two bearings without any tension or friction. Measure mass at trailing edge with reference line level and local radius from hinge, multiply mass and radius to yield hinge moment.

When using identical locations for measuring as used in final production inspection, only rear edge mass must be checked.

Caution: Repairs are possible only in exceptional cases. After changes of local static moments due to repairs, local mass balance must be fixed in order to yield identical static moment values as in the factory-built condition. As this requirement from the flutter investigation due to low moment tolerances and little available room may exclude a repair, you should contact DG Flugzeugbau **beforehand**.

5.3 Control surfaces free play

(Should be inspected annually)

Measuring technique for trailing edge play:
Free play should be measured with control stick fixed to neutral position.
Measure at the trailing edge of the control surface.

LS6, LS6-a, LS6-b, LS6-c:

Elevator:	maximum 2.4 mm (0.094 in) at inner edge
Flaperon:	maximum maximum 2.8 mm (0.11 in) at inner edge
Rudder:	not applicable

LS6-c18, LS6-18w:

Elevator:	maximum 2.5 mm (0.10 in) at inner edge
Flaperon:	maximum 2.5 mm (0.10 in) at inner edge
Rudder:	not applicable

5.4 Control surfaces friction

(Should be inspected annually)

Surface/variants	Friction
Elevator	
LS6, LS6-a, LS6-b	Maximum 50 grams (0.110 lbs)
LS6-c, LS6-c18, LS6-18w	Maximum travel due to friction 16 mm (0.63 in) at top end of control stick
Ailerons	
LS6, LS6-a,	Damper not in operation (TB 6011 only) about 300 grams (0.661 lbs) Damper operating about 600 grams (1.323 lbs)
LS6-b	Minimum 200 grams (0.441 lbs)
LS6-c LS6-c18, LS6-18w	200 to 500 grams (0.441 to 1.102 lbs)
Rudder	
All variants	Up to 500 grams (1.102 lbs)

Measuring technique for friction:

All surfaces (except for elevator LS6-c, LS6-c18, LS6-18w):
Use a spring balance with suitable measuring range. Start measurement from neutral position of control surface. Measure the force when the control or surface starts moving. Don't measure at larger defelctions. Measure in both directions.

Rudder friction should be measured at upper rudder trailing edge.

Aileron friction should be measured 30 mm (1.2 in) from top end of control stick. Values include friction of seals.
LS6, LS6-a: In addition move aileron control with damper engaged over the whole range. If the friction varies during the movement air bubbles may be in the damper and the damper must be exchanged.

Elevator friction should be measured with trim setting neutral.

a) **LS6, LS6-a, LS6-b:** measure 30 mm (1.2 in) from top end of control stick.

b) **LS6-c, LS6-c18, LS6-18w:** apply approximately 1/3 of travel. Retard movement towards neutral position by hand. Measure neutral position. Repeat procedure for opposite movement, difference of neutral positions yields friction travel.

Caution: The seals on the upper and undersides of the flaperons must remain attached.

5.5 Limit values for control surface deflections in mm/in Flaperons

Measured against the fixed rear edge at the wing root. Set protractor to -5° at flap position -5°.

All LS6 variants Local radius mm/in	**Flap Position "L"**	**Flap Position "10"**	**Flap Position "5"**	**Flap Position "0"**	**Flap Position "-5"**
	13° to 15°	**8° to 10°**	**3° to 5°**	**-2° to 0°**	**-5 to -3**
140 mm 5.512 in	44 to 49 1.732 to1.929	32 to 37 1.260 to 1.457	20 to 24 0.787 to 0.945	7 to 12 0.276 to 0.472	0 to 5 0 to 0.197
141 mm 5.551 in	44 to 49 1.732 to 1.929	32 to 37 1.260 to 1.457	20 to 25 0.787 to 0.984	7 to 12 0.276 to 0.472	0 to 5 0 to 0.197
142 mm 5.591 in	44 to 49 1.732 to 1.929	32 to 37 1.260 to 1.457	20 to 25 0.787 to 0.984	7 to 12 0.276 to 0.472	0 to 5 0 to 0.197
143 mm 5.630 in	45 to 50 1.772 to 1.969	32 to 37 1.260 to 1.457	20 to 25 0.787 to 0.984	7 to 12 0.276 to 0.472	0 to 5 0 to 0.197
144 mm 5.669 in	45 to 50 1.772 to 1.969	33 to 38 1.299 to 1.496	20 to 25 0.787 to 0.984	8 to 13 0.315 to 0.512	0 to 5 0 to 0.197
145 mm 5.709 in	45 to 50 1.772 to 1.969	33 to 38 1.299 to 1.496	20 to 25 0.787 to 0.984	8 to 13 0.315 to 0.512	0 to 5 0 to 0.197
146 mm 5.748 in	46 to 51 1.811 to 2.008	33 to 38 1.299 to 1.496	20 to 25 0.787 to 0.984	8 to 13 0.315 to 0.512	0 to 5 0 to 0.197
147 mm 5.787 in	46 to 51 1.811 to 2.008	33 to 38 1.299 to 1.496	21 to 26 0.827 to 1.024	8 to 13 0.315 to 0.512	0 to 5 0 to 0.197
148 mm 5.827 in	46 to 51 1.811 to 2.008	34 to 39 1.339 to 1.535	21 to 26 0.827 to 1.024	8 to 13 0.315 to 0.512	0 to 5 0 to 0.197
149 mm 5.866 in	47 to 52 1.850 to 2.047	34 to 39 1.339 to 1.535	21 to 26 0.827 to 1.024	8 to 13 0.315 to 0.512	0 to 5 0 to 0.197
150 mm 5.906 in	47 to 52 1.850 to 2.047	34 to 39 1.339 to 1.535	21 to 26 0.827 to 1.024	8 to 13 0.315 to 0.512	0 to 5 0 to 0.197
151 mm 5.945 in	47 to 52 1.850 to 2.047	34 to 39 1.339 to 1.535	21 to 26 0.827 to 1.024	8 to 13 0.315 to 0.512	0 to 5 0 to 0.197
152 mm 5.984 in	48 to 53 1.890 to 2.087	34 to 40 1.339 to 1.575	21 to 26 0.827 to 1.024	8 to 13 0.315 to 0.512	0 to 5 0 to 0.197
153 mm 6.024 in	48 to 53 1.890 to 2.087	35 to 40 1.378 to 1.575	21 to 27 0.827 to 1.063	8 to 13 0.315 to 0.512	0 to 5 0 to 0.197
154 mm 6.063 in	48 to 53 1.890 to 2.087	35 to 40 1.378 to 1.575	21 to 27 0.827 to 1.063	8 to 13 0.315 to 0.512	0 to 5 0 to 0.197
155 mm 6.102 in	48 to 54 1.890 to 2.126	35 to 40 1.378 to 1.575	22 to 27 0.866 to 1.063	8 to 14 0.315 to 0.551	0 to 5 0 to 0.197

Limit values for control surface deflections in mm/in Flaps / Aileron continued

Local radius mm / in	LS6, LS6-a LS6-b		LS6-c, LS6-c18, LS6-18w	
	Aileron	**Aileron**	**Aileron**	**Aileron**
	-2° to 2°	**26° to 30°**	**-18° to -22°**	**5° to 10°**
140 mm 5.512 in			-32 to -41 -1.260 to -1.614	24 to 37 0.945 to 1.457
141 mm 5.551 in			-32 to -42 -1.260 to -1.654	25 to 37 0.984 to 1.457
142 mm 5.591 in			-32 to -42 -1.260 to -1.654	25 to 37 0.984 to 1.457
143 mm 5.630 in			-32 to -42 -1.260 to -1.654	25 to 38 0.984 to 1.496
144 mm 5.669 in			-32 to -42 -1.260 to -1.654	25 to 38 0.984 to 1.496
145 mm 5.709 in	-5 ti 5 -0.197 to 0.197	65 to 75 2.559 to 2.953	-33 to -43 -1.299 to -1.693	25 to 38 0.984 to 1.496
146 mm 5.748 in	-5 to 5 -0.197 to 0.197	66 to 76 2.598 to 2.992	-33 to -43 -1.299 to -1.693	25 to 38 0.984 to 1.496
147 mm 5.787 in	-5 to 5 -0.197 to 0.197	66 to 76 2.598 to 2.992	-33 to -43 -1.299 to -1.693	26 to 38 1.024 to 1.496
148 mm 5.827 in	-5 to 5 -0.197 to 0.197	67 to 77 2.638 to 3.031	-34 to -44 -1.339 to -1.732	26 to 39 1.024 to 1.535
149 mm 5.866 in	-5 to 5 -0.197 to 0.197	67 to 77 2.638 to 3.031	-34 to -44 -1.339 to -1.732	26 to 39 1.024 to 1.535
150 mm 5.906 in	-5 to 5 -0.197 to 0.197	67 to 78 2.638 to 3.071	-34 to -44 -1.339 to -1.732	26 to 39 1.024 to 1.535
151 mm 5.945 in	-5 to 5 -0.197 to 0.197	68 to 78 2.677 to 3.071		
152 mm 5.984 in	-5 to 5 -0.197 to 0.197	68 to 79 2.677 to 3.110		
153 mm 6.024 in	-5 to 5 -0.197 to 0.197	69 to 79 2.717 to 3.110		
154 mm 6.063 in	-5 to 5 -0.197 to 0.197	69 to 80 2.717 to 3.150		
155 mm 6.102 in	-5 to 5 -0.197 to 0.197	70 to 80 2.756 to 3.150		

5.6 Limit values for control surface deflections in mm/in Elevator

Local radius mm / in	**LS6, LS6-a, LS6-b**		**LS6-c, LS6-c18, LS6-18w**	
	22° to 24°	**28° to 30°**	**22° to 26°**	**25° to 30°**
67 mm 2.638 in	26 to 28 mm 1.024 to 1.102	32 to 35 mm 1.260 to 1.378	26 to 30 mm 1.024 to 1.181	29 to 35 mm 1.142 to 1.378
68 mm 2.677 in	26 to 28 mm 1.024 to 1.102	33 to 35 mm 1.299 to 1.378	26 to 31 mm 1.024 to 1.220	29 to 35 mm 1.142 to 1.378
69 mm 2.717 in	26 to 29 mm 1.204 to 1.142	33 to 36 mm 1.299 to 1.417	26 to 31 mm 1.024 to 1.220	30 to 36 mm 1.181 to 1.417
70 mm 2.756 in	27 to 29 mm 1.063 to 1.142	34 to 36 mm 1.339 to 1.417	27 to 31 mm 1.063 to 1.220	30 to 36 mm 1.181 to 1.417
71 mm 2.795 in	27 to 30 1.063 to 1.181	34 to 37 mm 1.339 to 1.457	27 to 32 mm 1.063 to 1.260	31 to 37 mm 1.220 to 1.457
72 mm 2.835 in	27 to 30 1.063 to 1.181	35 to 37 mm 1.378 to 1.457	27 to 32 mm 1.063 to 1.260	31 to 37 mm 1.220 to 1.457

5.7 Limit values for control surface deflections in mm/in Rudder

LS6-c, LS6-c18, LS6-18w:

mm / in)*	Local radius mm / in	**26° to 28°**
472 mm 18.583 in	468 mm 18.425 in	211 to 226 mm 8.307 to 8.898 in
473 mm 18.622 in	469 mm 18.465 in	211 to 227 mm 8.307 to 8.937 in
474 mm 18.661 in	470 mm 18.504 in	211 to 227 mm 8.307 to 8.937 in
475 mm 18.701 in	471 mm 18.543 in	212 to 228 mm 8.346 to 8.976 in
476 mm 18.740 in	472 mm 18.583 in	212 to 228 mm 8.346 to 8.976 in
477 mm 18.800 in	473 mm 18.622 in	213 to 229 mm 8.396 to 9.016 in

LS6, LS6-a, LS6-b:

)* measure this value from trailing edge to center of cable bolt to obtain radius from adjacent column

local radius mm / in	**26° to 30°**
312 mm 12.283 in	140 to 162 mm 5.512 to 6.378 in
313 mm 12.323 in	141 to 162 mm 5.551 to 6.378 in
314 mm 12.362 in	141 to 163 mm 5.551 to 6.417 in
315 mm 12.402 in	142 to 163 mm 5.591 to 6.417 in
316 mm 12.441 in	142 to 164 mm 5.591 to 6.457 in
317 mm 12.480 in	143 to 164 mm 5.630 to 6.457 in

6 Special tools LS6-c18, LS6-18w:

Tool	Function
Ratchet Key **All LS6 models**	for assembly / disassembly of elevator and outer wing panels / winglets (as far as existent)
Filling tube and funnel with wire meshing **LS6-a, LS6-b, LS6-c Minimum Equipment** LS6-c18, LS6-18w	for filling of water ballast system through discharge openings, for LS6-c18 and LS6-18w: use together with adapters
Vertical tail tank adapter **LS6-c18, LS6-18w Minimum Equipment**	for testing of vertical tail fin valve, to avoid take-offs with unintentionally filled vertical tail tank, as well as for filling of tail tank together with filling funnel with wire meshing
Valve key	for removal and installation of the waterbag from the wing dump valve (as long as this version is installed)

7 Placards and markings

7.1 Placards and markings LS6, LS6-a, LS6-b:

See Flight Manual section 2.12 for placards

7.2 Placards and markings LS6-c, LS6-c18, LS6-18w:

LS6-c CHECKLIST
This sailplane must be operated in compliance with operating limitations as stated in the form of markings, placards and Flight Manual.

1. Main pins secured ?
2. Horizontal tail secured ?
3. Wingtip secured ?
4. Test controls
5. Tail fin valve opening checked?
6. Check loading conditions
7. Check tail dolly removed
8. Fasten seat belt harness
9. Connect parachute static line
10 Lock airbrakes
11. Trim neutral
12. Flap position +5° ?
13. Check release
14. Lock canopy

>1< at under side of instrument panel

MINIMUM COCKPIT LOAD kg/ lbs
For use of lower Minimum Cockpit Load see Flight Manual pages 2-6 and 6-2

>2< under instrument panel cover

>3< at right cockpit side

Rolladen-Schneider Flugzeugbau GmbH

Type: LS6-c Serial Number: xxxx

DATA PLACARD

		km/h	MPH	kts
Airspeed Limits (IAS)				
Winch launch / Auto tow		140	87	76
Aero Tow		190	118	103
In Rough Air		190	118	103
Never Exceed (VNE)		270	168	146
Flap	"L" "10"	150	93	81
Position from "10" to "0"		190	118	103
"0" "-5"		270	168	146

Maximum Weight 525 kg (1157 lbs) including Water Ballast
Aerobatic manoeuvres not approved

WEIGHT LIMITATIONS
Maximum Cockpit Load kg. . lbs. .
Minimum Cockpit Load kg. . lbs. .
For lower Minimum Cockpit Loads see Flight Manual pages 2-6 and 6-2

Battery in fin / Baggage Compartment
Lighter Pilots must compensate lack of of weight as suggested in Flight Manual

For LS6-c18 and LS6-18w the value for flap-position >> „0“ to „-5“ is 280 km/h, 174 MPH, 151 kts

Maximum Baggage Weight 5 kg/11 lbs
(Soft items only)

at main bulkhead

Tyre Pressure 3 to 3.5 bar — on right landing gear door

Tyre Pressure 2.5 - 3.5 bar — above tail wheel, if fitted

Ball of bearing must be fixed — at forward horizontal tail attachment on vertical tail fin

ROLLADEN-SCHNEIDER FLUGZEUGBAU GMBH

TYPE	LS6-c
TCDS No.	.
Serial Number	6xxx
Registration	.

Type Placard at main bulkhead >4<

Batt. I
Batt. II
OFF

Electrical switch positions

Placards and markings LS6-c, LS6-c18, LS6-18w continued

LS6-c:

On instrument panel near airspeed indicator

Altitude related Never Exceed Speed	km/h	kts	MPH
up to 6500 ft MSL:	270	146	168
up to 9800 ft MSL:	257	139	160
up to 13100 ft MSL:	244	132	152
up to 19700 ft MSL:	219	118	136
up to 26200 ft MSL:	195	105	121
up to 32800 ft MSL:	173	93	107

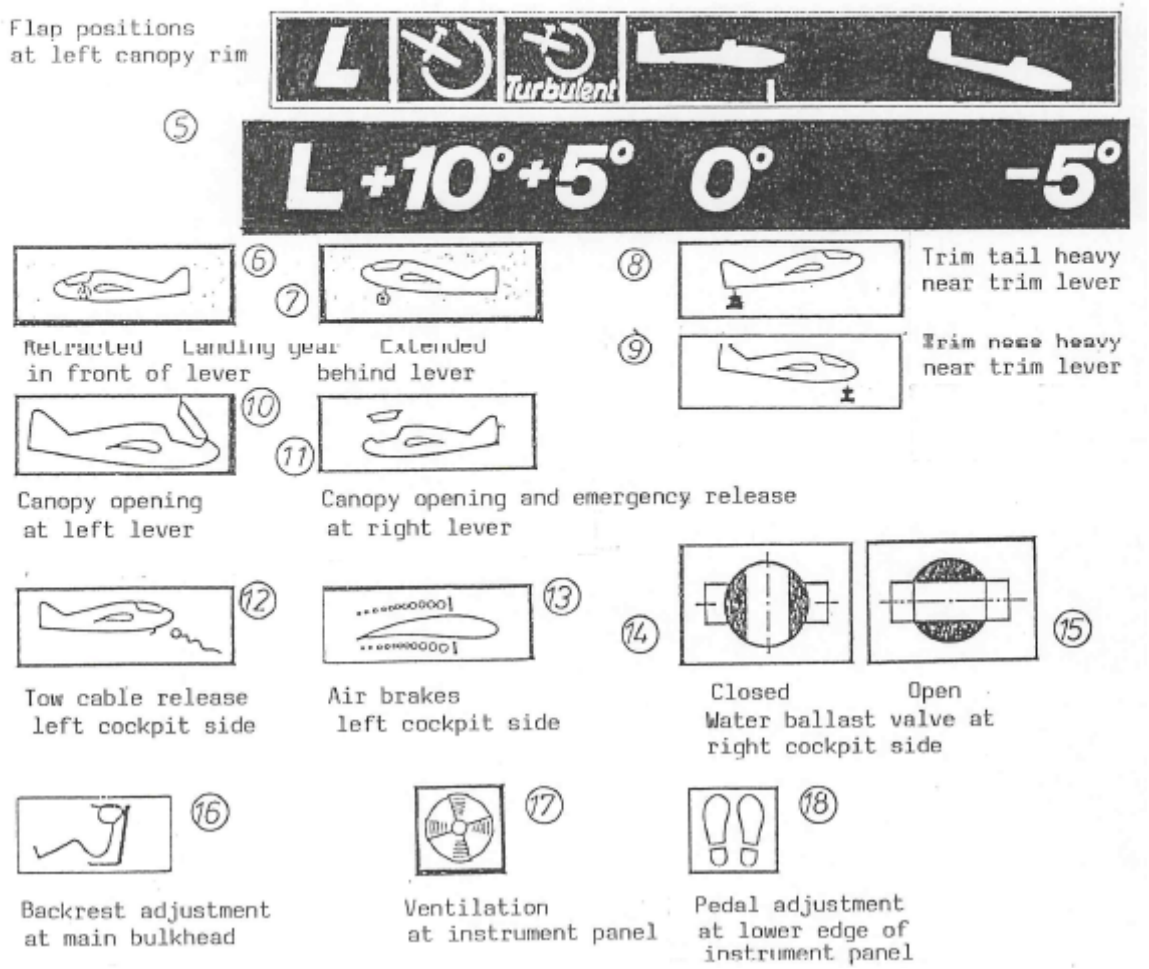
< This line for **LS6-c18 and LS6-18w** reads:
up to 6500 ft MSL 280 km/h, 174 MPH, 151 kts

Use vertical tail fin battery only with main fuse at battery

(under battery box cover of vertical tail, if fitted)

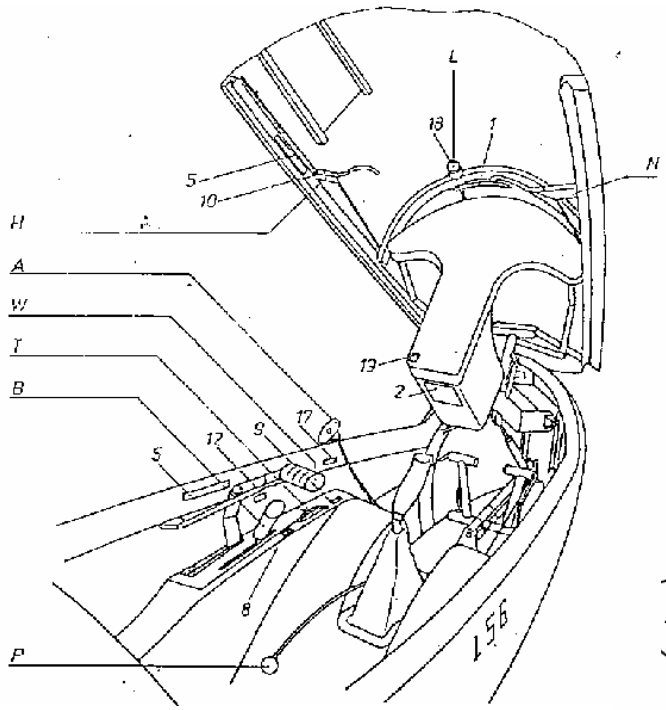
When using a battery in the vertical tail fin, Minimum Cockpit Load must be redetermined by weighing

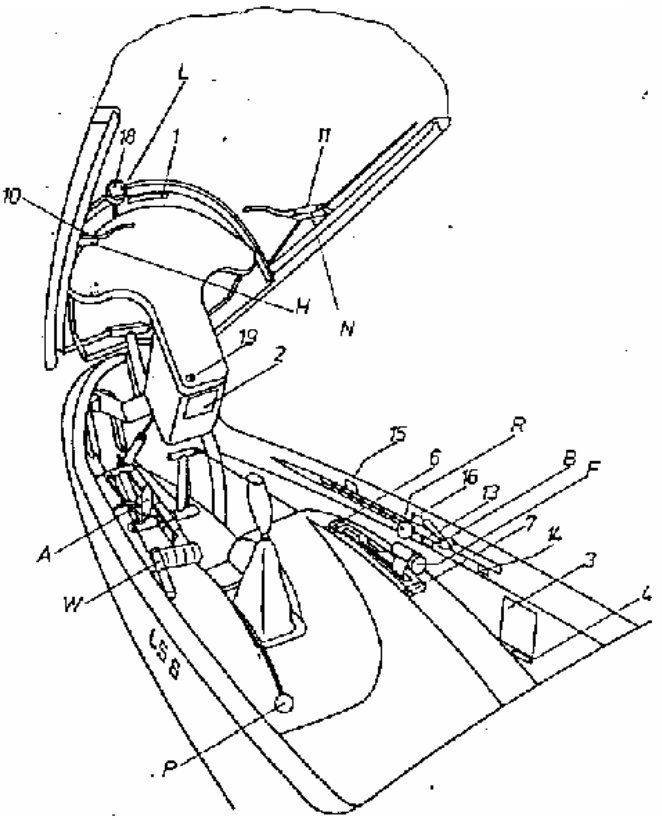
(under battery box cover of vertical tail, if fitted)



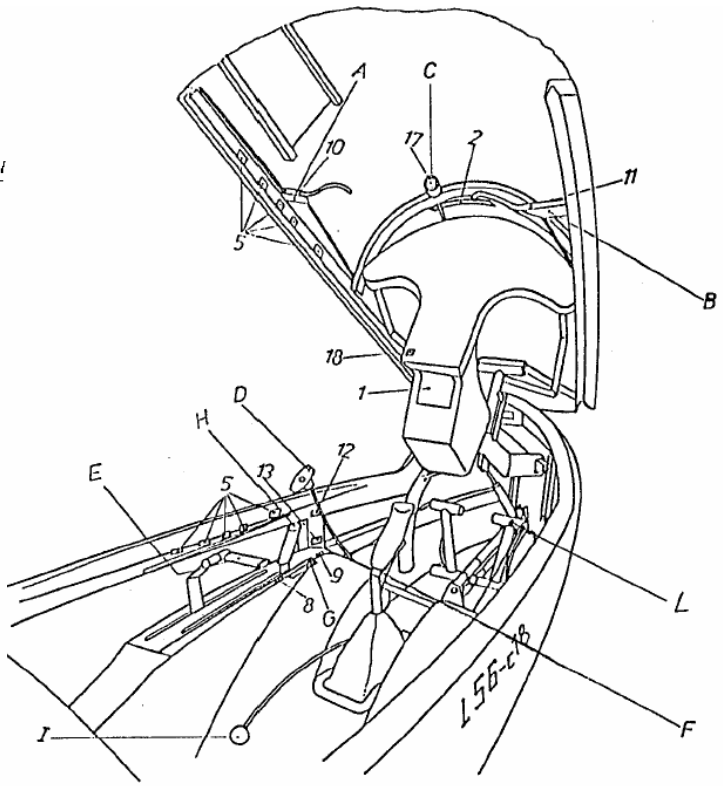
7.3 Placards and markings Cockpit Views

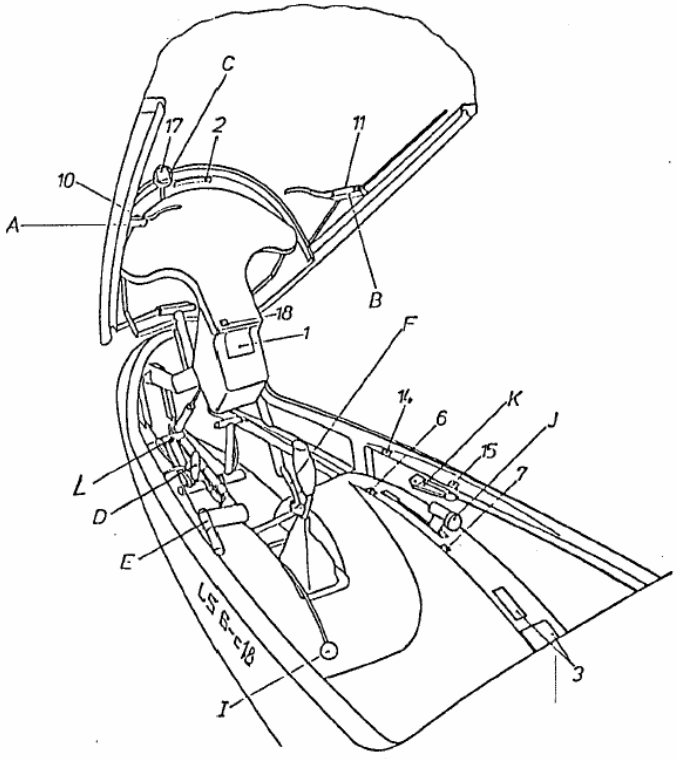
LS6, LS6-a, LS6-b





LS6-c, LS6-c18, LS6-18w





7.4 Airspeed Indicator Colour Markings

	LS6, LS6-a, LS6-b			LS6-c			LS6-c18, LS6-18w		
	km/h	MPH	kts	km/h	MPH	kts	km/h	MPH	kts
Green arc	100-200	62-124	54-108	90-190	56-118	49-103	90-190	56-118	49-103
Yellow arc	200-270	124-168	108-146	190-270	118-168	103-146	190-280	118-174	103-151
White arc	90-200	56-124	49-108	86-190	53-118	46-103	86-190	53-118	46-103
Red radial	270	168	146	270	168	146	280	174	151
Flaps “5,10”	200	124	108	190	118	103	190	118	103
Flaps “L”	160	99	86	150	93	81	150	93	81
Yellow triangle	90	56	49	90	56	49	90	56	49

8 Permanent installation of fixed ballast and equipment

8.1 Fixed ballast under instrument panel

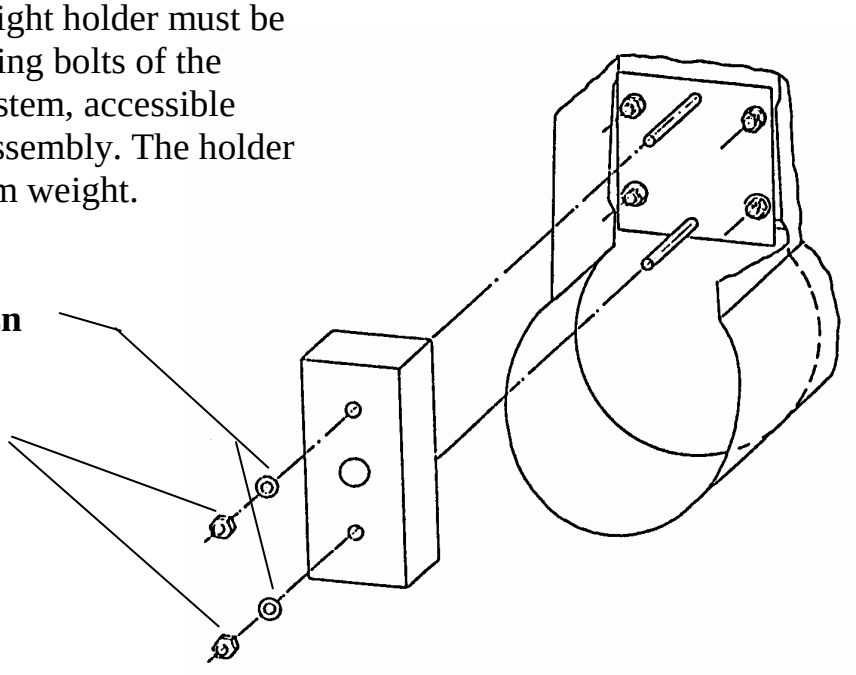
If empty mass C.G. position is too far back to allow 70 kg <154 lbs> as Minimum Cockpit Load, permanent installation of ballast (trim mass, 2,5 kg <5,5 lbs> each, part No. 4R8-108) under seat in front of control stick is possible (lever arm 1050 mm <41.3 in.> in front of datum).
A trim mass holder 4R8-134 can be ordered as optional equipment, installation according to drawing 3BR-149. mass should be fixed in flight direction, using large washers and self-locking nuts such that vibration will not allow mass to rotate.
One mass of 2.5 kg <5.5 lbs> reduces the min. cockpit load by about 3 kg <6.6 lbs.>.
After permanent installation of fixed ballast, empty mass C.G. position and loading limits should be redetermined by weighing. See Chapter 2.

8.2 Fixed Ballast at rear fuselage end

In special cases empty weight C.G. position may be shifted rearward to allow heavy pilots to fly with rearward in-flight C.G. positions.
Therefore it is possible to install a battery, see section 9.10 (when a battery box is fitted), a heavy tail wheel hub or a trim weight (drawing 4R8-109) at the vertical tail fin web lower end using a holder (according to drawing 4R8-107b), see sketch (Tail wheel box and lower rudder bearing not drawn).
The rear trim weight holder must be fitted to 4 mounting bolts of the elevator drive system, accessible after rudder disassembly. The holder can carry one trim weight.

Washers
B6.4 DIN9021-Stzn

Nuts
M6 LN9348 or
M6 DIN985-8zn
(width over flats 10 mm)



Warning: Never dismount the rear trim weight holder, bolts and nuts are fixing points for the elevator system!

Disassembly and assembly of rudder see section 4. Check for unobstructed movement of rudder and measure rudder deflections after work!

After permanent installation of fixed ballast, execute a new empty mass and balance weighing, see section 2.

Maximum weight of rear trim weight: approx. 2.45 kg <5.4 lbs>. (Part 4R8-109)

8.3 Permanent installation of equipment in baggage compartment

Installation is possible as follows:

a) **LS6-a, LS6-b:** Equipment can be fixed to the platform (part 1R7-33) above the spar connection.

b) **LS6, LS6-a, LS6-b:** because of the water ballast system only on an additional platform (part 4R7-36), which at the front end is bolted to the main bulkhead and at the rear on the landing gear box (NOT to the baggage compartment cover!) using large washers (DIN 9021).

c) **LS6-c, LS6-c18, LS6-18w:** Equipment must be attached to landing gear box using threaded spacers, three of which are necessary per unit. Baggage compartment cover has to be cut to for the spacers (numbers see sketch).

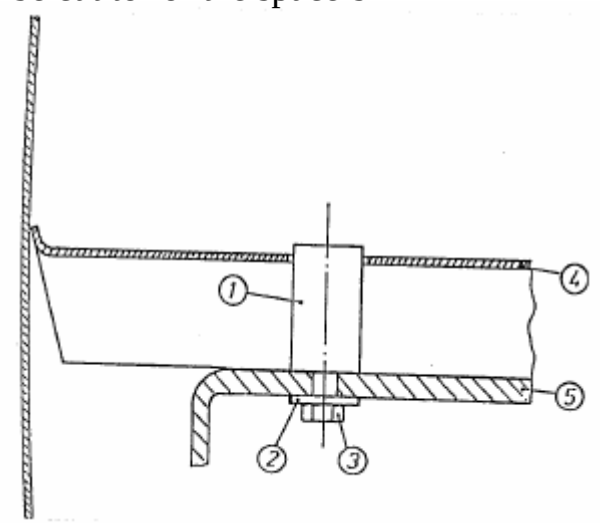
1. Spacer, diameter 15 mm (o.6 in), length 27 mm (1.1 in). (part 4R7-8)

2. Large washer B 6.4 DIN9021

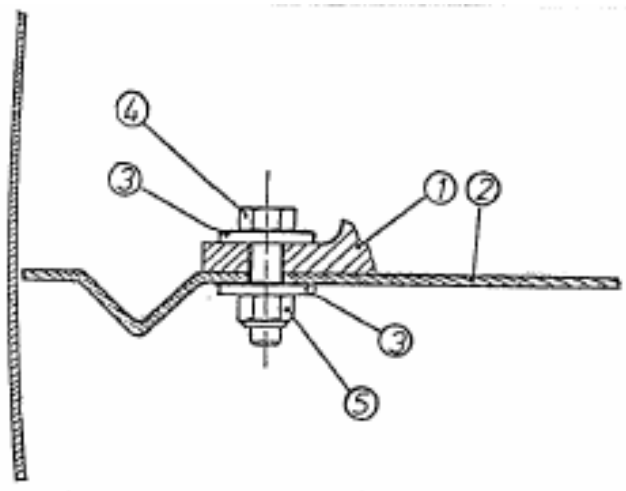
3. Screw M6*10 DIN85-A2 (secured with Loctite 243)

4. Baggage compartment cover

5. Landing gear box



d) **LS6-c, LS6-c18, LS6-18w:** Attach to cover ② behind spar connection (only approved for ELT and Barograph) as close as possible to stiffening corrugation. Use large steel washers ③ according to DIN 9021 (15 mm diameter for 5 mm thread) and self locking nuts ⑤.
See also sketch below ((1) Mounting flange of unit, (4) 5 mm bolt).



9 Instruments- and Equipment List (Master Equipment List)

9.1 Airspeed Indicator

LS6, LS6-a, LS6-b

Manufacturer	Type	TCDS No.
Winter	6FMS 4 (Diameter 80mm) 0-300 km/h Ident.No.. LS-6-2 0-186 mph Ident.No.. LS-6M-2 0-160 kts Ident.No.. LS-6K-2	TS 10.210/15
Winter	6FMS 5 (Diameter 58mm) speed ranges and Ident.No. see 6FM4	TS 10.210/16
Winter	7FMS 4 (Diameter 58mm) speed ranges and Ident.No. see 6FM4	TS 10.210/19

LS6-c

Manufacturer	Type	TCDS No.
Winter	6FMS 4 (Diameter 80mm) 0-300 km/h Ident.No.. LS-6C-1 0-186 mph Ident.No.. LS-6CM-1 0-160 kts Ident.No.. LS-6CK-1	TS 10.210/15
Winter	6FMS 5 (Diameter 58mm) speed ranges and Ident.No. see 6FM4	TS 10.210/16
Winter	7FMS 4 (Diameter 58mm) speed ranges and Ident.No. see 6FM4	TS 10.210/19

LS6-c!8, LS6-18w

Manufacturer	Type	TCDS No.
Winter	6FMS 4 (Diameter 80mm) 0-300 km/h Ident.No.. LS-6C-2 0-186 mph Ident.No.. LS-6CM-2 0-160 kts Ident.No.. LS-6CK-2	TS 10.210/15
Winter	6FMS 5 (Diameter 58mm) speed ranges and Ident.No. see 6FM4	TS 10.210/16
Winter	7FMS 4 (Diameter 58mm) speed ranges and Ident.No. see 6FM4	TS 10.210/19

Manufacturer	Type	variant	TCDS No.
Thommen	5A58() range 300 km/h	all	
PZL	PR-400 S range 400 km/h	LS6	

9.2 Altimeter

Manufacturer	Type	TCDS No.
Winter	4 FGH 10 (Diameter 80mm) 1000-10000m Ident.No.. 4100 3000-30000ft Ident.No.. 4330	TS 10.220/46
Winter	4 FGH 20 (Diameter 58mm) 1000-10000m Ident.No. 4220	TS 10.220/47
Winter	4 FGH 40 (Diameter 58mm) 1000-20000ft Ident.No.. 4550	TS 10.220/48
PZL	W-12S in m	

or other Altimeters approved according to TSO, JTSO or ETSO for use in aircraft; one turn of dial max. 1000 m or 3000 ft. A similar FAA approved altimeter to meet TSO C10 with a range of approximately 30000 ft and a mercury or millibar or hektopascal subscale may be used. When an altimeter of up to 20000 ft only is being used, a placard must be near the altimeter stating: Maximum flying altitude 20000 ft. See also Flight Manual section
2-8.

9.3 Seat Belt Harness (with multiple point buckles)

Manufacturer	Type	TCDS No.
Schroth	4-01-0104 (Lap belt and shoulder strap)	40.073/11
Gadringer	Lap belt 5303 or 5203 with bracket 4R11-22a sewn in Shoulder strap 2700	40.070/32 40.071/05
Autoflug	Lap belt FAG-12 D Shoulder strap FAG-12/ H	40.070/47 40.071/25
Autoflug	Lap belt FAG-7 D Shoulder strap FAG-7 H	40.070/30 40.071/21

Note: For replacement, lap belts without sewn in brackets may be used with the old bracket detached from the old lap belts.

9.4 Compass

Manufacturer	Type	TCDS No.
Ludolph	FK 16, FK 5, FK 10	10.410/3
Airpath	C 2300	TS 10.220/47
Airpath	C 2400 P	
PZL	BS1, KJ-13A	FD 19/77
Bohli	46 MFK 1	Not approved, only as additional system

9.5 UHF – Transmitter and Receiver

Manufacturer	Type	TCDS No.
Dittel	FSG-40 S	10.911/45
	FSG-50	10.911/71
	FSG-60 M	10.911/72
	FSG-70, 71 M	10.911/81
	FSG-90	10.911/98JTSO
	FSG 2T	LBA.0.10.911/103JTSO
Becker	AR 3201-(1)	10.911/76
	AR 2008/25 (A)	10.911/48
	AR 4201	JTSO-2C37 D, ED-23A
Filser / Funkwerk	ATR 720 A	10.911/74
	ATR 720 C	10.911/83
	ATR 600	O.10.911/106JTSO
	ATR 500	LBA.0.10.911/113JTSO
	ATR 833	EASA.210.0193

or other radios approved according to TSO, JTSO or ETSO for use in aircraft.

9.6 Variometer

Manufacturer	Type	TCDS No.
Winter	5 StVM5 (Diameter 58 mm)	TS 10.230/14
	+ 5 m/s Ident.No. 5451	
	+1000 ft/min Ident.No. 5452	
	+ 10 kts Ident.No. 5453	
Winter	5 STV 5 (Diameter 80 mm)	TS 10.230/13
	+ 5 m/s Ident.No. 5251	
	+1000 ft/min Ident.No. 5252	
	+ 10 kts Ident.No. 5253	
Thommen	4A16() or 4A58()	
Bohli	68PVF1 or 68PVF2 in m/s	
PZL	WRS-5D in m/s	

9.7 Turn and Bank Indicator

Manufacturer	Type	TCDS No.
Apparatebau Gauting	WZ 402/31 12V	10.241/8
Kelvin & Hughes	KTS 0406 or KTS 0406 R	TS 10.210/19
PZL	EZS-3	

9.8 Thermometer

Fabrikat	Typ	Model
Störck	TF-00-059K, sensor in landing gear box or in air duct	All models
VDO	No. 397.064/010/002, sensor in air duct or in landing gear box	LS6, LS6-a, LS 6-b

9.9 Equipment, not being part of minimum equipment:

Transponder: Units approved according to TSO, JTSO or ETSO for use in airplanes can be installed.
Installation of transponder and transponder antenna must be accomplished according to technical note DG-G-03.

Other equipment as gliding computers or loggers: These instruments can be installed, as long as it is guaranteed, that they themselves or their effect on the aircraft do not impair safe operation.
The installation must be must be accomplished according to technical note DG-G-07.

After installation a new weighing report must be filed.

Caution: When additional instruments are installed after production, these must be properly secured as long as they are not installed to a manufacturer provided position.
Electrical instruments must be connected via appropriately dimensioned fuses, current for one instrument must not exceed 3A.

Max. Mass of all instruments and equipment at the instrument panel: 6.7 kg (14.8 lbs.)

9.10 Electrical Supply

Only sealed batteries with built in fuse may be used.
Vertical Tail Fin Battery: Optional. Only batteries according to drawing No. 3BR-185 or 3BR-199 are approved for use.

Battery in baggage compartment: Optional. Fixing to landing gear box only. E.g. Dittel ZT 092 12 V 6.5Ah with test set

Position of main fuse: at battery
Position of instrument fuses: at instrument panel.
Name: Microfuse 20x5 mm DIN 41571
Rating: 2A quick action for radios.
1A quick action for electrical variometers and turn and bank.

10 Materials for repair

Resinsystems for repairs

Resin Momentive EPIKOTE ™ Resin MGS LR 285 with
Hardener EPIKURE ™ Curing Agent MGS LH 286
mixing ratio 100:40 ±2 by weight

or

Resin Momentive EPIKOTE ™ Resin MGS LR 385 with
Hardener EPIKURE ™ Curing Agent MGS LH 386
mixing ratio 100:35 ±2 by weight

Repaired regions must be postcured for 20 hours at a min. of 54°C (129°F) before the next take-off.

Fibre Glass Fabric:

Alkalifree E-glass with finish I-550 or FK 144 Manufacturer: Interglas

Interglas No.	Kind of weave	Mass (g/m²)	Usage
90070	Linen	79	Elevator
92110	2/2 twill	163	Stabiliser
92125	2/2 twill	280	local reinforcing
92145	Unidir. Plain	216	Fuselage
92146	Unidir. Plain	440	Fuselage

Carbon Fibre Fabric: Manufacturer Interglas

Interglas No.	Kind of weave	Mass (g/m²)	Usage
98320	Linen	132	wings, spar box stablilizer,elevator

Aramid Fibre Fabric (Kevlar): Manufacturer Interglas

Interglas No.	Kind of weave	Mass (g/m²)	Usage
98605	Linen	61	Aileron, elevator rudder

Polyester Fabric: Manufacturer: Lückenhaus

No.	Kind of weave	mass(g/m²)	Usage
34048 or 30781	Linen	206	Fuselage

Foam:

PVC foam Divinycell H 60, 8 mm thick, mass 60 kg/m²,
<wing shells>, <vertical tail fin> Manufacturer: Diab

PVC foam Divinycell H 80, 6 mm thick, mass 80 kg/m²,
<stabilizer> Manufacturer: Diab

PVC foam Divinycell HP 80, 10 mm thick, mass 80 kg/m²,
<spar shearweb > Manufacturer: Diab

alternatives

PVC foam Divinycell HT 70, 6/8/10 mm thick, mass 70 kg/m²,
<spar shearweb, stabilizer>, Manufacturer: Diab

Foam Rohacell 71, 2.5 mm thick, mass 70 kg/m²,
<control surfaces> Manufacturer Röhm

Glue for Plexiglas

To attach the canopy:

glue	Teroson Macroplast UK 8303B60
hardener	Teroson Macroplast UK5400
	mixing ratio: 6 : 1 by mass thickened with Aerosil.

To repair cracks in the canopy:
Röhm Acrifix 192 hardening by exposure to light.

Filler

For glueing, the resin-hardener mix should be thickened with chopped cotton fibres FL l f. (add enough so that the resin no longer flows). The surfaces to be glued should be wetted with non-thickened resin + hardener beforehand.

To glue foam pieces into place when repairing sandwich sections and to fill in irregularities and gaps etc. around the repair, Microballoon BJO - 0930 can be used mixed with the resin + hardener. Application and mixing is identical as for cotton flocks.

Paint UP (Polyester Gelcoats)
Akzo Nobel UP Schwabbellack 03-69066
with hardener 07-20510
mixing ratio: 100:2 by weight
Up to 10 % thinner 0630260 can be used.

or Momentive T35 with hardener SF 2
mixing ratio: 100:2-3 by weight
Up to 10 % thinner SF can be used.

or PUR paint, if such paint was optionally applied

Warning Colour:
Nitro Cellulose Kombilack: Manufacturer: various
reinorange RAL 2004 (orange) or
rot RAL 3000 (red)

Sources for material
All materials can be obtained from the DG Flugzeugbau Factory.

11 Repairs

11.1 FRP repairs

Caution: You are only allowed to use the materials specified in section 10.

Warning: Major damage which is outside the scope of the list below should only be repaired by an approved repair station rated for composite aircraft structure work.
For all aircraft under EASA regulations the following applies: According to part 21, subpart M to accomplish major repairs an approved repair instruction is required, see also TN DG-G-01 “Approved repair methods according to EU Commission Regulation 1702/2003 part 21, subpart M”

1. The following can be repaired:
    a. All damage to paint and putty.
    b. Holes on the belly of the fuselage if the maximum diameter does not exceed the following:
    Forward fuselage 80 mm
    Aft boom 40 mm
    Cracks in the belly, maximum length:
    Forward fuselage 120 mm
    Aft boom 80 mm
    The blind glue joints of the fuselage boom should not be damaged.
    c. Holes, cracks, blisters in the wings, tail, and control surfaces not in excess of the following dimensions:

	Diameter	Length
Wings	100 mm	150 mm
Rudder	50 mm	80 mm

    Wings must not be damaged in the spar region.

Caution: The stabilizer is a load carrying structure without spar. Damage in the region 600 mm (23.6 in) from the centerline must not be repaired. For control surfaces, limit values for mass and mass balance are mandatory (see section 5.2). In case of doubt ask DG Flugzeugbau **prior** to repairing.

    d. Replacement of bent fittings.

Note: Special hints for handling FRP repairs are found in the Petite Plane Patch Primer (Author U. Hänle).
Caution: In the rear fuselage shell a layer of Diolen-fabric is installed between the glasfibre-layers. In case of repair replace this layer by 2 layers of glasfibre 92125.

11.2 Repairs of Metal Fittings

Repairs of Metal Fittings should not be performed before the manufacturer has been consulted. Most fittings are made from 1.7734.4 aircraft material and welded in 141-WIG process (Shielded arc welding). In no case should they be gas welded, because required properties of the material will disappear.

11.3 Control cables and connections

For processing Nicopress sleeves refer to FAA "Aircraft Inspection and Repair" FAA AC 43.13-1 A or later issue

1. Rudder cables

   Cable: B 3.2 MIL-W-83420 I/A resp. ISO 2020 (former LN9374) zinc plated

   Steel thimbles: A 3.5 DIN6899

   Cable sleeves: Nicopress NT 283M (28-3-M), 3 pressings required, with tool groove Oval M of tool 64-CGMP, press 3 times.

2. Tow hook operation, wheel brake, waterballast control

   Cable: A 2.4 MIL-W-83420 I/A resp. ISO 2020 (former LN9374)
   A 2.4 LN9389 corrosion resistant (C.G. hook)
   2.5 DIN3055 corrosion resistant with steel core (C.G. hook)

   Steel thimbles: A 2.5 DIN6899

   Cable sleeves: Nicopress NT 282GA (28-2-G), for pressing use tool groove Oval G of tool 64-CGMP. 1 pressing.

   Stop sleeve: Nicopress NT S117J (871-17-J), use tool groove "J" of tool 51-MJ 1-pressing.

3. Waterballast control cable to fin tank

   Cable: 1.2 LN9389 (stainless) resp. 1,25mm D construction 7x7 DIN3055 stainless steel 1.4401

   Steel thimble: A 1.7 DIN 6899 connected with screw nipple 4F5-120

   Stop sleeve: Nicopress NT S117J (871-17-J), for pressing use
   a.groove "J" of tool 51-MJ, thereafter
   b.groove "G" of tool 64-CGMP, 1 pressing each in given sequence

11.4 Longitudinal motion pushrod bearings

During repairs, never pull pushrods out of longitudinal motion bearings, because all balls will leave their cages. Consequently, for re-installation near each bearing an opening must be cut and repaired afterwards.

These bearings are being used throughout the wing control systems, in the fuselage for elevator-, aileron- and landing gear drive systems.

Caution: Longitudinal motion pushrod bearings should never be greased or oiled, their plastic balls and bearing surfaces will soon be destroyed due to collection of small foreign matter !

12 Recommendations for maintenance and care of gelcoat surfaces

according to paint manufacturer Lesonal's note dated 7.7.81:

Suitable: Water with washing,-up liquid added in recommended quantities, car polish without silicone

Suitable with reservations: Tar remover based on petrol for cars. Alcohol, like spirit or isopropyl alcohol. Reservations are, that these liquids should only be used for wiping off, not for soaking with rags!

Unsuitable: Strong solvents and thinners, they may decompose gelcoat and cause local shrinking.

Completely unsuitable: Trichloroethylene, carbon tetrachloride or similar hydrocarbon chlorides. These liquids destroy the gelcoat.

Other mediums must be checked for suitability by Lesonal before use!

Caution: Sanded gelcoat shows distinctive weathering marks due to changes of temperature, ultra violet radiation and humidity unless regularly polished with hardwax.

13 Transport of sailplane

13.1 Support areas for road-transport

Fuselage	Tail skid, main wheel, and fuselage structure in front of the landing gear, where support should at least be 30cm <11.8 in> wide
Wings	Right wing spar end near pin holes. Left forked wing spar end near both outside pin holes only when **both ends** are supported. Wing shell at root rib if support is at least 15cm <5.9 in> wide Wing shell near air brake if support is at least 25 cm <9.8 in> wide.
Horizontal tail	Anywhere, the 2 supports should be at least 8 cm <3.1 in> wide.

13.2 Support areas when lifting the entire plane

- Under wing spar near wing root, not on the leading edge
- Under the fuselage shell in front of the wing
- Under the fuselage shell behind the wing

13.3 Ground Towing

- Ground towing at walking speed.
- Use an elastic cord from the tow hook and a helper at the wing tip
- or use tail dolly with towbar and sprung wheel at one wingtip.

14 Appendix

14.1 Equipment list

Serial No.:	Reg. Signs:	Year of Manuf.:

Minimum equipment

	Type	Manufac-turer	Serial No.	Position	Certificate	Function
Airspeed Ind.						
Altimeter						
Radio						
Microphone			---			
Loudspeaker			---			
Battery			---	Bagg. Comp.		
Batteryholder			---	Bagg. Comp.		
Lapbelt				Seat		
Shoulder strap				Main bulkh.		
CG-Hook		Tost		Landing. gear		

Additional Equipment for Cloud Flying

Turn & Bank or						
Art. Horizon						
Comp.Compass						
Variometer						

Additionally for Vertical Tail Tank (LS6-a, LS6-b, LS6-c, LS6-c18, LS6-18w)

Thermometer						
Filling adapter						

Additional equipment

	Type	Manufac-turer	Serial No.	Position	Certificate	Function
Nose hook		Tost		Nose		
Variometer						
E- Variometer						

Place: _____ Date: _____ Stamp: _____ Signature: _____

Issued: May 2011

14.2 Annual inspection checklist

Page 1 of 3 [*LS6, /-a, /-b; **LS6, /-a; ++ nicht LS6; # LS6-c, /-c18, /-18w]

Serial No.:	Reg. Signs:	Year of Manuf.:

	Wings
	Serial No.: _____
	Finish condition
	Wings pressure marks
	Spar stub
	Root ribs and pins
	Sandwich shell condition
	Drain orifices
	Flaperons (FL)
	Air brakes
	Connecting means
	FL pressure marks
	-Drives at flaperons
	-Drives at root ribs #
	-ball end *
	-LS securing sleeve *
	-Fixed bearing + washer
	-Bearings
	-Lateral bearing gaps
	-Lateral gaps to wing
	-Sealing
	-Stops
	-Ventilation
	-Cracks / buckling
	Air brake bearings
	-Drive at root rib #
	-Cover springing
	-Locking
	-Friction damper funct. #
	-ball end *
	-LS securing sleeve *
	Main pins
	Main pins S/N_____
	Wing water system
	Function + tightness
	Wing tips/Winglets
	15/17.5/18m tip shells
	Spar tube / spar stub
	Pins
	Wing tip skids
	Assembly free from play
	Locking of ratchet #

	Wingtips/Winglets cont.
	Ventilation openings
	Sealing
	FL bearings / play
	FL connecting pins
	Horizontal Tail
	S/N: _____
	Finish condition
	Sandwich shell condition
	Stabiliser ventilation
	Elevator ventilation
	Elevator drive lever
	drive bearings
	Bearings
	Fuselage connection
	Sealing
	Fuselage
	S/N: _____
	Finish condition
	Shell condition
	Cracks
	Drain orifices
	Rudder mounting
	Stabiliser mounting
	Tangential tubes
	Bushes for wing root pins
	Aileron damper function**
	" Oil tightness**
	" Ratched mechanism**
	Cockpit
	Seat
	Under seat
	Lap belt fixing at seat
	Control stick
	Elevator drive under seat
	Aileron syst. under seat
	FL swivel joints *
	Flaperon connectors #
	-Deflectors straight
	Air brake system
	Swivel joints *
	Air brake connectors #
	Trim wheel + system *
	Trim wheel ratchet *

	Fuselage continued
	Trim system #
	Trim operation + locking #
	Pedals
	-Adjustment + locking
	Rudder cables
	Ground connections
	Aileron system
	Air Brake System
	Aileron-FL-mixer
	Aileron damper system **
	Backrest locking #
	-Upper end stop #
	-Lower end pins + bolt #
	-Locking at both ends *
	Trim weight holder
	-Fixing nut
	Nose hook fitting
	-Drive
	Tail skid – cable deflector
	at front end
	-Skid bonding
	Tail wheel
	Connecting means
	Water ballast system
	Tail fin tank
	Volume: _____ Litres
	Tail tank adapter existent
	Cable wear + corrosion
	Valve operating ease
	Functioning
	Funnel filter + level ind.
	Opening before/with wing
	Closing after wing system
	Discharge time for
	7.5 Ltr.: _____ Sec.
	(max. 90 Sec)
	Tail fin battery box
	-battery box cover
	Tail fin water system ++
	Thermometer fuction ++
	Indication check ++

Place: _____ Date: _____ Stamp: _____ Signature: _____

Annual inspection checklist

Page 2 of 3 [*LS6, /-a, /-b; **LS6, /-a; ++ nicht LS6; # LS6-c, /-c18, /-18w]

Serial No.: | Reg. Signs: | Year of Manuf.:

	Canopy		**Equipment**		**Adjustments** cont.
	S/N: _____		Minimum instrumentatio		Control surface deflections
	Locking mechanism		Additional Instrumentatic		according to section 5
	Emergency release funct.		Operating range marks		Air brake extension, for
	Window		Limit marks		values see chapter 5
	Ventilation system		Vacuum flasks		Air brake locked, lateral gap
	Canopy opener fixing		Pneumatic tubing		min. 1 mm at inner end
	Gas strut operation		Instruments functioning		min.2.5 mm at outer end
	LS latch (for jettison)		Total energy unit		Air brake locked, cockpit
	Lift force:____ (8-15 kg) (18-33 lbs)		Systems free from leaks Total pressure		Lever min. 6mm from stop
	Rudder		Static pressure		Control surface friction
	Finish condition		T.E. system		Control surf. rear edge play
	Shell		Electrical wiring		Landing gear locking
	Ventilation openings		Battery + fitting		Trim system function
	Drive		Battery main fuse		Harness condtion
	Fixed bearing + washer		Tail fin battery		Multiple point buckle funct.
	Bearings		Tail fin battery main fuse		Op.Limit: _____
	Connecting means		Radio		Ballast system function
			Antenna system		Absolutely tight?
	Landing gear		SWR: _____		**General**
	Undercarriage + axle		Communication check		Registration signs
	Tyre		**Tow Hooks**		Nationality marks
	Springing		C.G. hook		Fireproof type placard
	Bearings + joints		-Function + automatic rel		External colour marking
	Folding strut overcenter		-Serial No.: _____		Checklist
	Folding strut preset load		-Op.Limit: _____		Minimum cockpit load
	Cockpit locking in flight-		Nose hook function		Flight Manual
	direction: no play		-Serial No.: _____		Maintenance Manual
	Doors		-Op.Limit: _____		AD status
	Drive rods + longitudinal		Release cable end play		Certificate of Airworthiness
	motion bearing		existent with gear down		Logbook notation
	Connecting means		Data placard		Placard notations
	Wheel brake system		Placards accord. to Maint		TB-AD-List up to date
	C.G. hook + drive		Manual		Non-exist. of foreign matter
	Ground conn. to contr. stic		Compass deviation list		Wings flex number (support
			Adjustments		fuselage in front of landing
	Baggage comp. cover		Wings and horizontal tail		gear) _____ / Minute
	Oxygen bottle receptacle		Tangential play		
	Fixed ballast at front/rear		Zero position of controls		

Place: _____ Date: _____ Stamp: _____ Signature: _____

Annual inspection checklist

Page 3 of 3 [*LS6, /-a, /-b; **LS6, /-a; ++ nicht LS6; # LS6-c, /-c18, /-18w]

Serial No.:	Reg. Signs:	Year of Manuf.:

	Check wing air brake levers for corrosion at lower end.
	Pull with about 25 kg <55 lbs> force at upper end of each lever in flight direction, simultaneously retract without twisting upper plate (do not counter hold at cockpit lever!).
	When under load of last item jamming at wing structure results, then bearings at related lever must be exchanged immediately by repair station according to repair instruction "Air Brake Levers".
	Bearings should be exchanged within 6 months, when corrosion is clearly visible, but no locking or jamming occurs.

	Valid C.G. weighing dated _____		**Flight Hours** Total _____ hr.		Entry of Cockpit Load in Cockpit + Flight Manual 6.2 checked, unaltered
	Valid Equipment List dated _____		Last Ann.. _____ hr.		changed to _____kg/lbs
			Take-offs Total _____		
			Last Ann.. _____		

	Inspect automatic couplings for possible wrong rigging #
	Permanent installation of equipment in baggage compartment according to chapter 8
	Special inspection hints according to chapter 3 taken care of
	Technical Bulletins performed: _____
	AD's performed: _____
	TB-AD-List updated
	Life time limits / Repetitive Inspections taken care of, see MM section 0.4

Findings / Complaints / Remedy

No.	Findings	Remedy / Repair	Inspector

Place: _____ Date: _____ Stamp: _____ Signature: _____

14.3 Wing Water Ballast Inspection LS6-16w

(Double bag with 2 valves)

Serial No.:	Reg. Signs:	Date:

With this inspection proper valve functioning is verified, it ensures that during discharge the inner wing tank is emptied before the outer tank.

- With sailplane rigged and main wheel on the ground, check that wing first, which lays down on the ground by it's own weight.
- Check buckets used for filling: weigh 10 kg (22 lbs) of water and place tape mark into bucket.
- Level wings. Cut a piece of a wooden bar such, that it fits between the scale and the intersection of outer wing tip and inboard wing. Set tare weight to zero with wooden bar included. Weigh basic load of wing to be checked in level attitude.
- Lay wingtip onto ground. Open filling / dump valve – with cockpit handle in closed position – using the knurled nut in the baggage compartment. Prior to filling water, suck residual air out of bag. Initially hold funnel in such vertical position, that no air bubbles are sucked into the wing. Fill 30 kg (66 lbs) without interruption and close valve. Place wings level again using wooden bar and scale under wing tip intersection, weigh load.
- Lay wingtip down again, suck out residual air, fill another 30 kg (66 lbs) of water without interruption and weigh load as described before.
- Leave wing in horizontal position, discharge 30 kg (66 lbs) of water, weigh load again, then discharge remaining water.
- Before testing second wing, place enough weight on its wingtip using tape to ensure that it lays on the ground by its weight. Weight basic load with wings horizontal.
- Fill and weigh second wing in steps as described above.
- Deduct basic weight from measured values, results must be above minimum values provided, otherwise valve system does not operate properly and should not be used.

Caution: Residual air in ballast bags influences measurement in this direction.

		Left	Right		Values minus basic load			Minimum Values
		kg/lbs	kg/lbs		Left	Right		
1	Basic load				kg/lbs	kg/lbs		kg/lbs
2	30 kg filled							8,2 / 18
3	60 kg filled							21,4 / 47
4	30 kg discharged							8,2 / 18

Place: _____ Date: _____ Stamp: _____ Signature: _____

Issued: May 2011

14.4 Instruction for maintenance of L'Hotellier ball and swivel joints

DOCUMENT IMA N° : 10.01 Rev : E		E08-A

INSTRUCTIONS FOR THE MAINTENANCE L'HOTELLIER BALL AND SWIVEL JOINTS

HISTORIQUE DU DOCUMENT

REV.	DATE	OBJET DE LA MISE A JOUR	RED.	QUAL.	RESP.
A	11/85	Creation of document	BE	MJD	JMB
B	02/86	Representation of 1 swivel	BE	MJD	JMB
C	01/89	Adjunction of Fig.1 and Fig.2	BE	MJD	JMB
D	07/92	Updating of function of CR147	BE	MJD	JMB
E	03/94	Updating following DEI229-EM	BE	MJD	JMB

LISTE DES DESTINATAIRES

B.E. B.C. Q.C. B.C. Q.C. C.B.	OR. +1 EX. 1 EX. 1 EX.	PRODUCTION	1 EX.

Louis L'HOTELLIER S.A. 93, avenue Charles De Gaulle - 92270 BOIS COLOMBES Tél.(1)42.42.13.94 Télex 611153F LHOTAIR Télécopie (1)47.60.07.07	RED. : BE DATE : 03/94 PAGE : TIT IND. : E

PROPRIETE L'H FORME E11- REV B du 06.02.92 REPRODUCTION INTERDITE 12/73

DOCUMENT IMA N° : 10.01	INSTRUCTIONS FOR THE MAINTENANCE L'HOTELLIER BALL AND SWIVEL JOINTS	E08-A

COMPOSITION DU DOCUMENT

PAGE	IND.	PAGE	IND.	PAGE	IND.	PAGE	IND.	PAGE	IND.
TIT	E	SOM	E	1	E	2	E		

SUMMARY

DOCUMENT IMA N° : 10.01	INSTRUCTIONS FOR THE MAINTENANCE L'HOTELLIER BALL AND SWIVEL JOINTS	E08-A

1 - PREVENTIVE AND SAFETY MAINTENANCE INSTRUCTIONS

The rotation of the swivel around the ball must be done with resisting strengh, due to minimum frictions. Consequently it is mandatory to lubricate the swivel/ball assy. This lubrification must be done after cleaning and before assembly, with a non cold coagulating grease.

Eg : ESSO purpose (general use) :
Spray containing oils enriched with silicone (recommended for assemblies exposed to sand or other abrasive materials).

It is mandatory to verify, after each assembly, the correct location of the ball in the swivel. To do so, a location hole is drilled in the locker. When the assembly is good, the hole must be visible and must enable to insert the pin "B" réf. L'H 140-31, or other devices, linked to the locker only.

2 - PERIODICAL CHECK

During the annual visit or no later than every 500 flight hours, it is necessary to verify balls and swivels as follows :

2.1. FREE MOVEMENT OF THE BALL INTO THE HOUSING

- Check that the ball move free of friction point.
- Check the angular displacement.
- Check that there is no crack at the base of the ball

2.2. BALL SPHERICITY MEASUREMENT (See fig. 2)

The variation between several measures of the ball diameter must not exceed 0,1 mm.
This check aim is to detect an abnormal ball wear.

2.3. BALL THREAD CHECK

No thread damage is acceptable. During reassembly the collar must be perfectly set on its base. It is mandatory to fix the ball in position with an adequate locking device.

2.4. SWIVEL VISUAL CHECK

No deformation or penning in ball location or in the locking device seat is acceptable.

2.5. MEASUREMENT OF THE LOCKER LOWER PART PROJECTION AFTER ASSEMBLY OF THE SWIVEL ON THE BALL (see fig. 1)

This projection must be higher than 2 mm.
The aim of this requirement is to verify the efficiency of the automatic take up clearance

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2.6. CHECK OF THE LINK BETWEEN DRIVE ROD AND SWIVEL

In the case of an adjustable swivel, verify that the link between swivel and drive rod is tight and properly secured by an adequate locking device.

2.7. SWIVEL ASSY OPERATION CHECK

Seat or locker : no clamping, due to oxydation or other reason, is acceptable.

If after these verifications, one of the above check is out of tolerance, it is mandatory to replace both ball and swivel.
nevertheless it is recommended to replace this assembly every 10 years or every 3000 flight hours.

IMPORTANT NOTE

Any defection parts may be returned to Ets Louis L'HOTELLIER for technical investigation.

FIG. 1

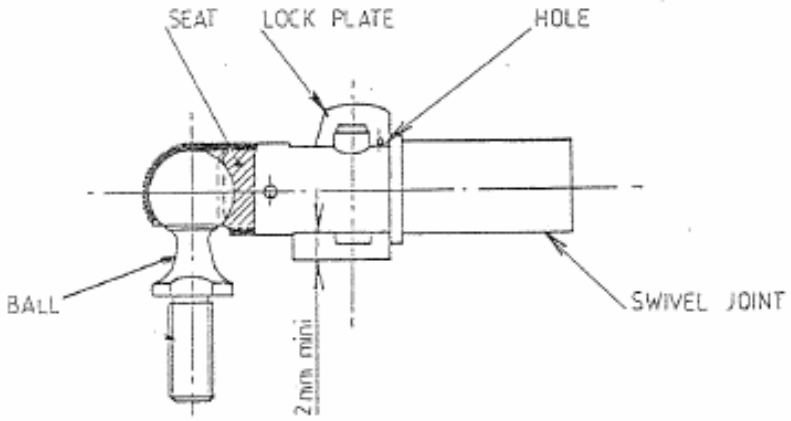

FIG. 2