L-13 "BLANIK"

SAILPLANE FLIGHT MANUAL

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THIS FLIGHT MANUAL MUST BE CARRIED ABOARD THE SAILPLANE
AT ALL TIMES WHEN IN OPERATION

THIS REVISION No. 01 TO SFM Do-L13-1111.6 HAS BEEN APPROVED
UNDER THE AUTHORITY OF DOA REF. EASA.21J.609

CAUTION

EACH OPERATOR / OWNER OF THE SAILPLANE IS OBLIGED TO INFORM THE TC HOLDER (EASA.21J.609 – BLANIK AIRCRAFT CZ) IMMEDIATELY IN CASE OF ANY OCCURRENCE, INCIDENT OR ACCIDENT.

THE TC HOLDER MUST BE INFORM BY E-MAIL, PHONE, LETTER OR VIA THE WEBSITE www.blanik.aero WHERE ALSO OTHER CONTACTS CAN BE FOUND

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0.1 RECORD OF REVISIONS

In case of new Flight Manual revision this table indicates which pages have been affected by the revision. The changed text is also marked by a vertical line beside the text on those pages.

In case of any revision the Flight Manual is always distributed as a whole document via the Blanik Aircraft CZ Client Zone website (www.clientzoneblanik.cz) or as a hardcopy with the sailplane.

Rev. No.	Bulletin No.	Affected Sections and Pages	Date of Issue	Approved Within
1	L13/117a Rev.2	All pages. Re-issued acc. to TC holder address, ATA 100 structure. Flight Data Collection requirement added	18.09.2019	DOA EASA.21J.609

0.2 LIST OF EFFECTIVE PAGES

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0.3 CONTENTS

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SECTION 1

GENERAL

CONTENTS

1.1 INTRODUCTION

This Flight Manual contains instructions, performance and limitations for the L-13 "BLANIK" Sailplane. Pilots are assumed to be familiar with basic theory of flying and therefore this Manual contains only instructions specific for the L-13 "BLANIK" Sailplane.

In accordance with the provisions in the L-13 Maintenance Manual Do-L13-1131.3 there is strongly recommended to keep and record a flight data for determination of real flight spectra. Sailplane logbook should contain at least the following data for each flight:

Flight No.	Take-off time	Landing time	Persons on board	Take-off weight	Aero-tow (A) Winch (W)	Spins in flight Yes / no	Observations, occurrences
1.	*hh:mm*	*hh:mm*	*2*	*xxx kg*	*W*	*Y*	
2.	*hh:mm*	*hh:mm*	*1*	*xxx kg*	*A*	*N*	

Example of table for keeping of minimum required data

NOTE: If the required data will be not recorded then there is not possible to extend the sailplane life time above the basic life time limit defined in the maintenance manual

1.2 CERTIFICATION BASIS

- Bauvorschriften für Segelflugzeuge (BSV) issued August 1939
- BCAR, Section E, issued June 16, 1966
- Type Certificate No. EASA.A.024 has been issued for model L-13 "BLANIK" on 04-FEB-2005

1.3 WARNINGS, CAUTIONS AND NOTES

WARNING: MEANS THAT THE NON-OBSERVATION OF THE CORRESPONDING PROCEDURE LEADS TO AN IMMEDIATE OR IMPORTANT DEGRADATION OF THE FLIGHT SAFETY.

CAUTION: MEANS THAT THE NON-OBSERVATION OF THE CORRESPONDING PROCEDURE LEADS TO A MINOR OR TO A MORE OR LESS LONG TERM DEGRADATION OF THE FLIGHT SAFETY.

NOTE: Draws the attention on any special item not directly related to safety but which is important or unusual.

km/IAS	indicated airspeed in kilometers per hour
KIAS	indicated airspeed in knots
EAS	equivalent airspeed
FM	Flight Manual
QFE	atmospheric pressure at aerodrome level (altimeter reads 0)
QNH	setting of altimeter pressure scale to obtain sailplane altitude level
MAC	Mean Aerodynamic Chord
VFR	Visual Flight Rules
V_A	manoeuvring speed
V_{NE}	never exceed speed in smooth air
V_{RA}	rough air speed
V_T	maximum aerotowing speed
V_W	maximum winch-launching speed
V_{LO}	maximum landing gear operating speed
V_{FE}	maximum speed with extended flaps
MTOW	maximum take-off weight

1.4 DESCRIPTIVE DATA

1.4.1 INTRODUCTION

The L-13 "BLANÍK" Sailplane is a two-seat cantilever high-wing monoplane of all-metal structure with fabric-covered control surfaces. Both flight compartments are covered by single-section canopy which may be emergency jettisoned in flight.
In both flight compartments are located all elements to control the sailplane including instrument panels with flight and navigation instruments. The sailplane is provided with hooks to enable winch and aerotow launching. Both flight comportments are vented by air bled from fuselage nose, and its supply may be controlled. There is a baggage compartment behind the rear flight compartment. Both flight compartments are upholstered. The wing including ailerons and air brakes is attached by six bolts to the fuselage. A vertical fin with rudder is attached to the rear fuselage. The horizontal tail is also attached to the end of fuselage. The elevator and ailerons are manually controlled by control cables and push-pull rods. The rudder control is feet operated, using control cables and rods. The air brakes are controlled by levers. The elevator trim tab is also lever controlled. The sailplane is fitted with a main and tail-wheel type landing gear. The main landing gear is mechanically retractable with a hydro-pneumatic shock absorber and a wheel with mechanically actuated brake. The tail landing gear is a tail wheel with shock absorber.

1.4.1.1 Main landing gear retraction

To retract the main landing gear lift the handle on the right-hand side panel up and pull to the rear. Push the handle downwards to lock it in the retracted position.

1.4.1.2 Main landing gear extension

To extend the main landing gear, lift the handle and move it forward. Push the handle down to lock it in the extended position. The landing gear is in the locked position if the handle cannot be moved rearward.

1.4.2 BASIC DIMENSION

1.4.2.1 Main dimensions

Wing span	53.15 ft (16.2 m)
Length	27.56 ft (8.4 m)
Height	6.86 ft (2.9 m)

1.4.2.2 Wing

Area	206.13 sg.ft (19.15 m^2)
Aspect ratio	13.7
Dihedral	3°
Sweep angle	-5°
Mean aerodynamic chord	4.11 ft (1253 m)
Geometric twist	-3°

1.4.2.3 Fuselage

Width	2.03 ft (0.62 m)
Height	3.74 ft (1.14 m)
Pressure in tire	36.98 psi (255 kPa)

1.5 THREE-VIEW DRAWING

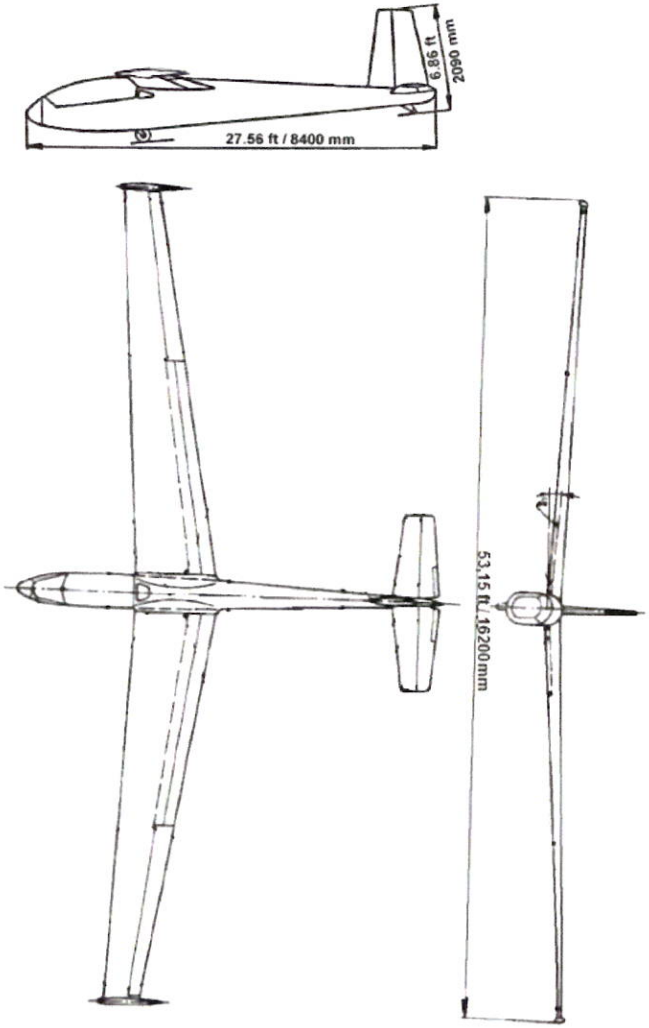

Fig. 1.1

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SECTIONS 2

LIMITATIONS

CONTENTS

2.1 INTRODUCTION

Section 2 includes operating limitations and basic placards necessary for safe operation of the sailplane, its standard systems and standard equipment.

2.2 AIRSPEED LIMITS

SPEED		KIAS (km/h IAS)	NOTE
V_{NE}	Never exceed speed	136 (253)	Do not exceed this speed in any operation and do not use more than 1/3 of control deflection
V_{RA}	Rough air speed	78 (145)	Do not exceed this speed except in smooth air, and then only with caution. Examples of rough air are lee-wave rotor thunderclouds etc.
V_A	Manoeuvring speed	78 (145)	Do not make full or abrupt control movement above this speed, because under certain conditions the sailplane may be overstressed by full control movement
V_{FE}	Maximum Flap Extended speed	60 (110)	Do not exceed these speeds with the given flap setting
V_W	Maximum winch-launching speed	65 (120)	Do not exceed this speed during winch- or autotow-launching
V_T	Maximum aerotowing speed	76 (140)	Do not exceed this speed during aerotowing

Stalling speed with extended wing flaps at 500 kg AVW; IAS	55 km/h
Stalling speed with retracted wing flaps at 500 kg AVW; IAS	60 km/h
Minimum rate of descent at 500 kg	0.82 m/sec
Maximum gliding ratio at 500 kg	1 : 28 ±5 %

2.3 AIRSPEED INDICATOR MARKINGS

Marking	km/h IAS (value-range)	Significance
White arc	60 - 110	Positive Flap Operating Range
Green arc	66 - 145	Normal Operating Range
Yellow arc	145 - 253	Manoeuvres must be conducted with caution and only in smooth air
Red line	253	Maximum speed for all operations
Yellow triangle	110	Approach speed at maximum weight without water ballast (only applicable when water ballast is installed)

2.4 POWER-PLANT, FUEL AND OIL - NOT USED

2.5 POWER-PLANT INSTRUMENTS MARKING - NOT USED

2.6 WEIGHT AND CENTRE OF GRAVITY POSITION

Maximum take-off weight
(with two occupants): 1102 lb (500 kg)

Empty weight
(with standard equipment) 644 lb ± 2 % (292 kg ± 2 %)

and the corresponding center of gravity position from reference plane:

(starting point of wing rib No. 1) x_T = 27.323 +0.51 in (694 +13 mm)
i.e. 65.5 ± 1 % MAC

Weight of non-lifting parts 342 lb (155 kg)
(without wing weight)

- max. weight of all non-lifting parts 783 lb (355 kg)
- max. load in baggage area 22 lb (10 kg)

2.7 CENTRE OF GRAVITY

Permissible centre of gravity range:

- front limit	23 % MAC
- rear limit	38 % MAC

2.8 APPROVED MANOEUVRES (UTILITY CATEGORY)

- STALL
- SPIN
- SIDE SLIPPING

WARNING: ALL AEROBATIC MANOEUVRES ARE PROHIBITED.

2.9 LOAD FACTORS

The maximum load factors:

CATEGORY	LOAD FACTOR			
	n1	n2	n3	n4
CLOUD-FLYING	5	4	-2.5	-2.5

2.10 FLIGHT CREW

The flight crew may consist of one or two pilots. If the sailplane is to be flown solo, the pilot must be sitting in the front seat and his weight (including parachute) must be 154 lb (70 kg) at least. The rear seat must be secured aft using by closing lock and tightened by safety belts to prevent its uncontrolled movement.

2.11 KINDS OF OPERATION

Only day VFR flights and cloud flights are permitted. Intentional flights in icing conditions are prohibited.

2.12 MINIMUM EQUIPMENT

Installation of instruments or additional equipment added to the minimum equipment must be approved.

2.12.1 FLIGHTS ACCORDING TO VFR CONDITIONS

- 2 Airspeed indicator with color-markings according to item 2.3
- 2 Altimeters
- 2 Four-point safety harnesses
- 2 Personal parachutes or backrests

2.12.2 CLOUD FLYING

Added to minimum equipment as para 2.12.1

- 2 Magnetic compass
- 2 Vertical Speed Indicator
- 2 Turn and Bank Indicator

2.13 AEROTOW AND WINCH LAUNCHING

2.13.1 AEROTOW

Use front attachment point for aerotow only

- the maximum towing cable or weak link strength for aerotowing is 1 400 lb (6 230 N)
- the minimum cable length for aerotowing is 100 ft (30.5 m)

2.13.2 WINCH-LAUNCHING

Use side, attachment points for winch-launching only

- the maximum cable or weak link strength for winch-launching is 1,400 lb (6230 N)

WARNING: NEVER USE THE FRONT ATTACHMENT POINT FOR WINCH-LAUNCHING

2.14 OTHER LIMITATIONS

Maximum demonstrated crosswind component for safe approach, landing and aerotow launching is 10 kt (5.5 m/s).

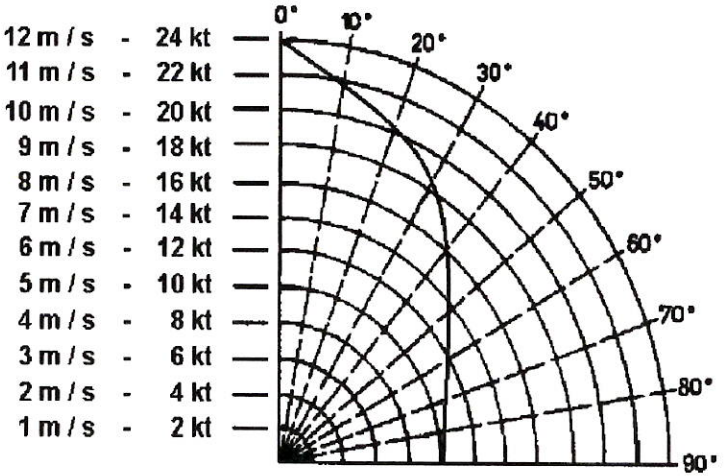


Fig. 2.1 - Determination of maximum wind speed at winch-launching:
Wing angle relative to connecting line: Take-off – Winch

2.15 LIMITATION PLACARDS

The following operating limitations are emphasized on the limitation placards in both cockpits. For location of the placards see Para 7.1 and 7.2. Values and units given on the placards must comply with the installed instrument (e.g. airspeed indicator).

2.15.1 FRONT COCKPIT

MINIMUM WEIGHT FOR SOLO FLIGT 70 kg (154 lb)

2.15.2 BOTH FRONT AND REAR COCKPIT

LANDING GEAR

UP	UNDERCARRIAGE	DOWN

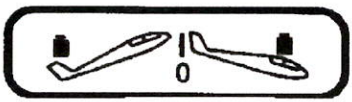
FLAPS

RETRACTED	FLAPS MAX. SPEED 110 KM/H (60 kt)	EXTENDED

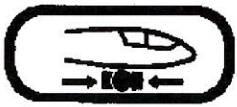
AIR BRAKES

RETRACTED	AIR BRAKES	EXTENDED

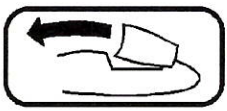
TRIM



WHEEL BRAKE



CANOPY OPEN



CANOPY JETTISON

TOWING ROPE TOGGLE

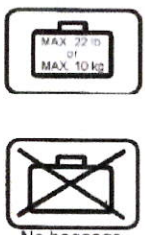
PEDALS ADJUSTMENT

AIR VENT

WEIGHTS		AEROBATIC PROHIBITED!
Maximum Take-off Weight	500 kg (1102 lb)	Cloud Flying Permitted
Empty Weight (Standard)	292 kg (645 lb)	
Maximum Weak Link Strength	635 kg (1400 lb)	Solo Flights from Front Seat only

V_{NE}	Never-exceed speed	253 km/h	(136 kt) IAS
V_{RA}	Rough air speed	145 km/h	(78 kt) IAS
V_A	Manoeuvring speed	145 km/h	(78 kt) IAS
V_{FE}	Maximum Flap Extended speed	110 km/h	(60 kt) IAS
V_W	Maximum winch-launching speed	120 km/h	(65 kt) IAS
V_T	Maximum aerotowing speed	140 km/h	(76 kt) IAS

AEROBATIC PROHIBITED!



2.15.3 EXTERIOR MARKINGS

Near the static pressure sensor:

SECTION 3

EMERGENCY PROCEDURES

CONTENTS

3.1 INTRODUCTION

Section 3 provides procedures for handling emergency situations.

3.2 CANOPY JETTISON

3.2.1 COCKPIT CANOPY INSTALLATIONS NOT FITTED WITH AN EMERGENCY RELEASE LEVER – see Fig. 3.1.

1. Release the canopy lock
2. Open the canopy fully
3. Force the canopy lock forward until the locking wire on the center hinge is cut and the canopy lock falls away
4. Release the safety bell and abandon the sailplane

3.2.2 COCKPIT CANOPY LOCK INSTALLATIONS FITTED WITH EMERGENCY RELEASE LEVER – see Fig. 3.2.

1. Rotate through 180° in the direction marked by the arrow the emergency release lever installed on the right hand side of the canopy lock in both the front and rear cockpits. (The emergency release levers are retained in the normal position by means of 0.5 mm locking wire fitted with seals and by aluminum shear pins of 2 mm diameter. Both the locking wire and the shear pin will be cut when the release lever is moved.)
2. Holding the release lever at the end of its travel with the left hand, force the right hand side of the canopy lock upwards when the airflow will carry it away.

WARNING: USE EMERGENCY COCKPIT CANOPY LOCK RELEASE JUST BEFORE SAILPLANE ABANDONING ONLY. THERE IS HIGH RISK THE RELEASED CANOPY MAY HIT THE TAIL AND DAMAGE IT CAUSING THE UNCONTROLLABILITY OF THE SAILPLANE.

CANOPY JETTISON DURING FLIGHT

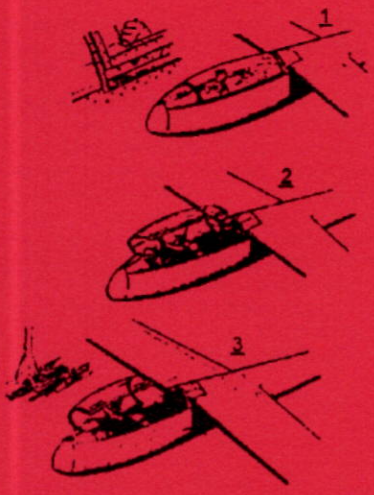


Fig. 3.1
Jettisoning of canopy lock of sailplane NOT fitted with canopy lock emergency release mechanism

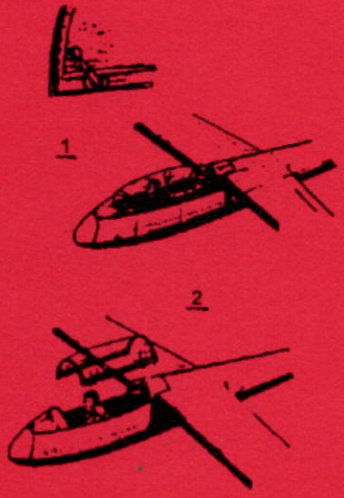


Fig. 3.2
Jettisoning of canopy lock of sailplane fitted with emergency release mechanism

3.3 BAILING OUT

Release the safety harnesses and stow them. Grasp cockpit rails, pull your legs under you, as much as possible and bail out over the side. If possible, exit below the sailplane wing.

3.4 STALL RECOVERY

He stall is entirely conventional, and the normal recovery action is immediately effective. If the sailplane is stalled with the flaps extended, recovery must be initiated before reaching the V_{FE} speed.

Pre-stall warning first is a gently buffeting in the control stick from elevator, followed by a gentle nose down pitching at stall. A stall at high speed usually results from a disproportional application of elevator.

Initial stall recovery consists in easing the control stick forward. If the sailplane wing stalls, the control stick must be gently eased forward up to pushing forward. If wings are not level, correct with simultaneous application of opposite rudder.
Elevator and rudder control reaction must be energetic to prevent an inadvertent entry into a spin. If the sailplane falls to dive, recovery it to gliding. Stall recovery from turn is to be done by an energetic forward movement of the control stick and at the same time by applying the rudder against the stalling wing (in case the sailplane stalls to the right, we apply left rudder and vice versa). If we apply the control surfaces in time and energetically, the sailplane will stop slightly below the horizon which is enough to adjust speed to let it continue its controlled gliding. If it is not corrected, the sailplane may enter a spin. Before loss of controllability there is sense a warning (at speed by 5% higher than stall speed) as vibration of pedals and the whole sailplane nose.

3.5 SPIN RECOVERY

The spin is steep but normal recovery action is effective. Entry is achieved by applying full rudder in the required direction of spin at about 60 km/h (32 knots) while the control column is held fully back. Loos on height occurs at about 100 m (320 ft) per revolution when flown dual. The rate of spin is approximately 3.5 seconds per revolutions, and the attitude 60° to 70° nose down. Because a speed of 110 km/h (60 knots) may be exceeded when spinning, especially during the recovery, it is particularly important to ensure that the flaps are up and secured before entering a spin.

STANDARD PROCEDURE TO RECOVER FROM A SPIN:

- Apply full opposite rudder against direction of the spin, pause.
- Then ease stick forward until the rotation cases, centralize the controls and carefully pull out of the dive.
- The aileron should be kept neutral during recovery.

3.6 SPIRAL DIVE RECOVERY

Spiral characteristics may appear if speed increase during a descending turn.

The spiral mode is noted by speed increasing rapidly.

The rapid airspeed increase is the difference between the spin and the spiral.

Spiral dove recovery: timely control the bank and sideslip by coordinated movement of the rudder and aileron and recover from the dive.

3.7 ENGINE FAILURE – NOT USED

3.8 FIRE

3.8.1 IN THE EVENT OF AN ON-BOARD FIRE:

- On the ground – open the canopy, escape from the cockpit, and extinguish the fire
- During take-off – release the towing cable, land, and extinguish the fire
- In flight – if it is not possible to extinguish the fire, and if the altitude is sufficient, bail out as instructed in item 3.2 and 3.3.

3.9 OTHER EMERGENCIES

3.9.1 LANDING WITH LANDING GEAR RETRACTED

The landing manoeuvre is the same as when landing with the landing gear extended. It is, however, necessary that the touchdown should be gentle because the energy of landing is only absorbed by the tire (the shock absorber is out of operation when the landing gear is retracted).

3.9.2 EXIT FROM CLOUD

3.9.2.1 Standard procedure for exit from cloud:

- Apply full airbrakes
- Exit cloud with assign direction (depend of terrain and traffic expected situation)
- Descent as much as possible
- Do not exceed V_{NE}
- Be aware about terrain hight!

3.9.2.2 Emergency procedure if standard is not successful:

- Exit cloud by using spin (see Section 4.)

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SECTION 4

NORMAL PROCEDURES

CONTENTS

4.1 INTRODUCTION

Section 4 provides procedures for performing normal operations.

4.2 RIGGING AND DE-RIGGING

Prior to removing wings, tilt upwards horizontal tail – see Para 4.2.3.

4.2.1 WING REMOVAL

Four people are needed for the wing removal. The first one holds the fuselage, the second one holds the wing tip, the third and fourth one hold the wing root (see Fig. 4.1). Level the sailplane to the horizontal position.
Remove the fairings between the fuselage and the wing. Disconnect bounding strip on aileron control tie rods. Uncouple the aileron control tie rods by unlocking safety pins and removing pins on rocker levers, pivoted in consoles on outside ribs (from the fuselage side). Remove lock pins out of both front hinge pins and wing main pins and knock out the front pin. Gently move the wing up and down when installing or removing the pins. Pull the wing from the fuselage by slow careful movement and place it vertically with the leading edge pointing downwards on the special handling equipment.

4.2.2 WING INSTALLATION

Clean, check and lube the pins, bushings and the control connections.

The wing installation is the opposite procedure. For easier installation of the center hinge pins use the centering pin (see Fig. 4.1, Detail A) before inserting the pins. When slipping wing hinges on fuselage hinges make sure that the ball (spherical) joint of the air brakes control (see Fig. 4.1, Detail B) is set in a position to fit into the control drivers in the wing.
When assembling, first slide in the wing main hinge pin and only then the wing front hinge pin.

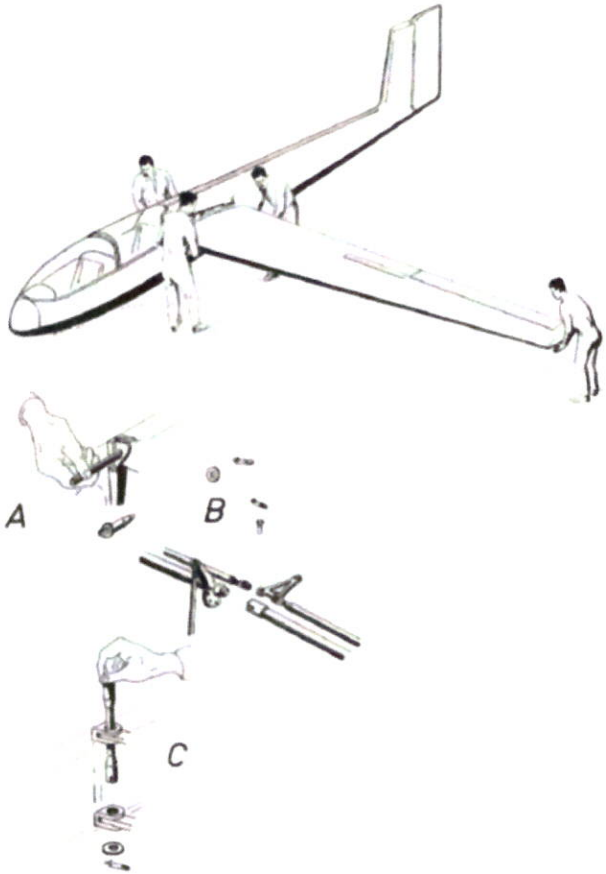

Fig. 4.1 – Wing Installation

Legend:

A – Centering the front hinge pin
B – Control joint between the wing and the fuselage
C – Wing main hinges with main pin

4.2.3 FOLDING OF HORIZONTAL TAIL UNIT INTO VERTICAL POSITION

The horizontal tail unit can be folded upwards for sailplane transportation – see Fig. 4.2, Detail B. Fold the fuselage tail portion upwards first. During this, the rudder is to be deflected to one side. Unlock and take out the middle securing pin (5) – see Fig. 4.2 which secures the position of both tail unit halves. The hinged portion of the fuselage tail can be set back, the rudder set in its neutral position and horizontal tail unit folded upwards. When folding these surfaces, care should be taken to not damage the hinged part of the fuselage end. This can be prevented by proper deflection on both halves of the elevator. When folding the horizontal tail unit upwards, disconnection of the elevator control countershaft takes place automatically (4) – see Fig. 4.2. The tail unit surfaces shall be secured in their folded vertical position by a horizontal tail unit surface securing strut or both surfaces may be secured by a securing strap (9) – see Fig. 4.2. The strut latter shall be inserted into the cut out in the fuselage in front of the bulkhead No. 15 and secured in the middle by means of the pin, having been removed from the hole in bulkhead No. 15 – see Fig. 4.2, Detail B). The pin shall be secured with a safety pin. Extended parts of the elevator spars shall be inserted into the clevises on both ends of the strut and secured with pins. The latter shall be locked with safety pins. To avoid damage to the elevator during sailplane transit, both rudder and elevator shall be secured by means of strap (textile) bound over them.

4.2.4 RETURNING THE HORIZONTAL TAIL UNIT BACK TO THE FLIGHT POSITION

Clean, check and lube the pins, bushings and the control connections – see Fig. 4.2.

Three people are needed for this procedure. Two men to hold the tail unit surfaces in the vertical position, the third – having folded the fuselage tail portion upwards –, unlock and removes 3 pins (5, 7, 8) – see Fig. 4.2 and then the strut. After removing out the securing strut or securing strap both halves of horizontal tail unit surfaces shall be slowly folded down. Meanwhile, the mechanic working close to the fuselage, holds the elevator control countershaft so that it fits with its channels in the carriers on both halves of the elevator. When folding both halves down, it is necessary to keep the elevator in such a position that its extended ribs do not contact the hinged part of the fuselage tail. As soon as the countershaft channels are meshed with the carriers on the elevator and tail unit control surfaces are in their normal position, the securing pin shall be inserted into the bushing on the bulkhead No. 15. The pin should be secured with a safety. The hinged portion of fuselage tail should be returned to its normal position and secured with two screws.

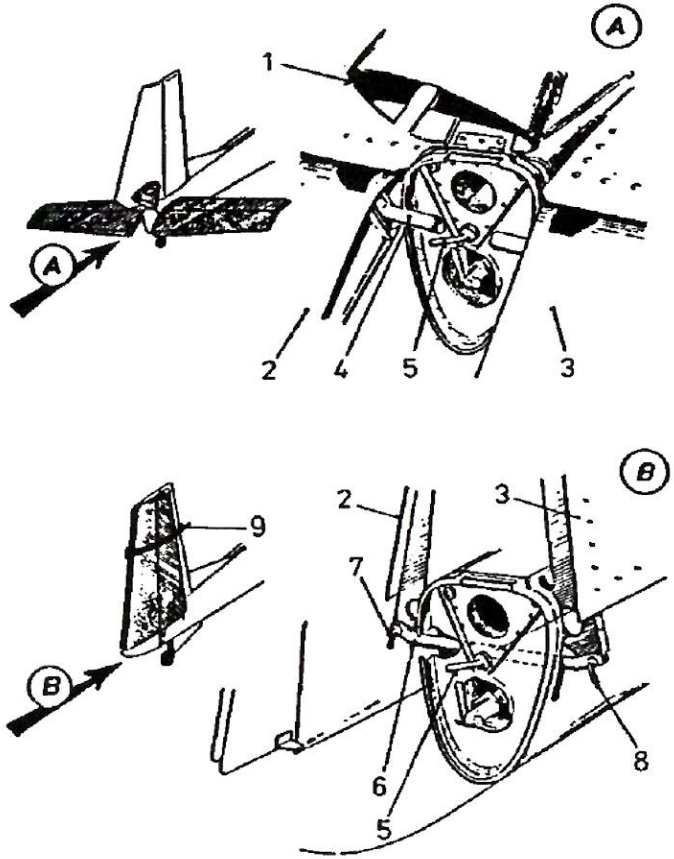

Fig. 4.2 – Horizontal tail surface set-up

Legend:
(1) Hinged fuselage tail portion; (2) Left half of elevator; (3) Right half of elevator; (4) Elevator control countershaft; (5) Securing pin; (6) Securing strut; (7, 8) Strut securing pin; (9) Securing strap.

WARNING: ENSURE THE CORRECT POSITION OF THE ELEVATOR CONTROL COUNTERSHAFT AFTER TILTING THE ELEVATOR INTO THE NORMAL FLIGHT POSITION: RED MARKED PART OF THE DRIVING MUST BE ON ITS LEFT SIDE IN THE BACK VIEW IN FLIGHT DIRECTION.

4.3 DAILY INSPECTION

After each flight day:

- inspect the fuselage surfaces
- check the operation of the control mechanism of the towing equipment
- inspect the canopy glass and side windows
- inspect the wing surfaces and the movable parts of the wing
- inspect tail surfaces and the deflection of the control surfaces
- inspect controls for proper operation and security
- check the pressure in tire
- inspect the bay of the main landing gear and the tail wheel unit, check operation of the brakes and the shock absorber
- inspect the attachment of the instrument panels and inspect the instruments for damage
- inspect ventilation system
- inspect attachment of the first aid kit
- inspect battery bay
- check the voltage of airborne battery and charge the battery if necessary
- inspect the moisture trap

For more details, see Maintenance Manual, System of inspections and revisions.

4.4 PREFLIGHT INSPECTION

Before getting into the sailplane, the pilot must check the whole sailplane for proper condition in accordance with the inspection checklist. Check the sailplane log book serviceability state. Perform the inspection in a system manner so no items are omitted. Perform the inspection as shown in Fig 4.3.

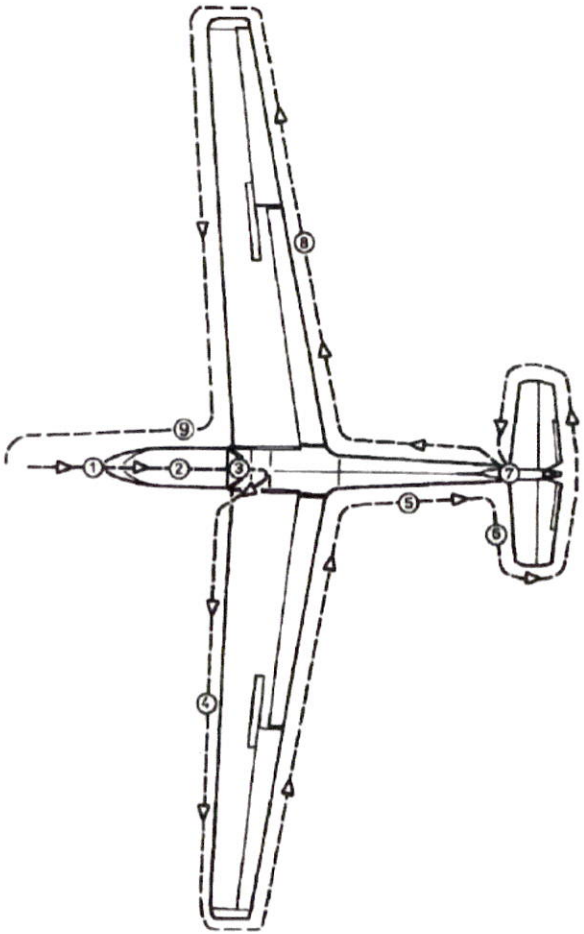

Fig. 4.3 – Sequence of the walk around inspection of the sailplane

4.4.1 PREFLIGHT INSPECTION CHECKLIST

Item No.	Subject	Check / Activity
1	**Front fuselage section**	
	Fuselage skin	no damage, deformation, loosened rivets
	Static pressure sensors	no dirt, no clogging
	Cockpit canopy surface	no damage, no dirt
	Pitot tube	no damage, no clogging
2	**Cockpit interior**	
	Instruments	no damage
	Altimeters	correct QNH (QFE) setting
	Transceiver (if installed)	proper operation
	Nose ventilation	no clogging, proper function
	Safety harnesses	no damage
	Control system, trim, air brakes	proper function
	Canopy jettison lever	check if has not be operated accidently, sealing wire is intact
3	**Landing gear wheel**	
	Tire	no damage, correct inflation: - main landing gear 0,25 + 0,02 Mpa (36.98 + 3 psi)
	Shock absorber	no damage, correct pressure 33 + 1 kg/sg.cm (470 + 15 lb/sq.in)
4	**Left wing**	
	Wing - fuselage connection	no damage to pins (main and front hinges), pins locking, wing - fuselage control connection
	Wing skin including leading edge	no damage, no deformations, loosened rivets
	Aileron surface	no damage to fabric cover, no damage to trailing edge
	Aileron	easy movement
	Airbrake locking hinges	no damage to locking in hinges and control tie rods
5	**Rear fuselage section**	
	Fuselage surface	no damage, no deformations, loosened rivets
	Inspection cover	proper attachment of control elements, connections securing
6	**Empennage**	
	Empennage surface	no damage, no deformations, loosened rivets
	Elevators	easy movement
	Locking of rear pin of horizontal tail	non-damaged condition of locking wire securing the rear pin of the horizontal tail unit
	Rudder	easy movement
7	**Tail landing gear**	
	Landing gear attachment	no damage of attachment
8	**Right wing**	see item 4 - left wing
9	**Front fuselage section**	
	Pins for canopy opening	proper position in relation to hinges

4.4.2 BEFORE TAKE-OFF CHECKLIST

Front seat	Set position of front seat back rest allowing safe control with fully adjusted safety harnesses.
Rudder control pedals	Set position of rudder pedals with fully adjusted safety harnesses, pedal full and free movement and continuous foot contact. Front setting by handle (25), rear setting by locking pin (2). Comfortable feel from setting.
Aileron/Elevator control stick	Check free movement of controls. (Wing tip lifted to prevent damage of aileron.)
Instruments	Set barometric pressure on altimeter, check variometers read zero (if windy can be affected and vertical speed can be indicated), check artificial horizon if is fitted.
Safety harnesses	Check fully and tightly fitting.
Cockpit canopy	Close and lock until a click is heard.
Trim	Check trim tab control full and free movement, set slightly forward or neutral.
Flaps and air brakes	Check air brakes and flaps for full and free movement, make sure that air brakes is fully retracted and flaps in position for take-off.
Tow release handle	Check the proper functioning.
Wheel brake	Check for free movement and set fully off position.

4.4.3 BEFORE STALL AND SPIN PROCEDURES

See Paragraph 3.4 and 3.5

NOTE: Be aware terrain relief and traffic expected situation!

4.5 NORMAL PROCEDURES AND RECOMMENDED SPEEDS

4.5.0 OPERATION OF THE LUN 1202 ARTIFICIAL HORIZON
(if installed) see Fig. 7.1 and 7.2

To operate the LUN 1202 Artificial Horizon, switch on the main Circuit breaker (22 or 22a as appropriate) and press the push button (19). This should be carried out prior to take-off with the instrument caged (i. e. red warning flag showing). When the gyro is functioning correctly, a light will appear in a slot in the dial approximately 1.5 minutes after the instrument is switched on. To uncage, pull the right hand knob (16) when the warning flag will disappear. The instrument should not be uncaged until the sailplane is in level flight, and the gyro always should be caged before switching off. The left hand knob (15) may be used to adjust the height of the aircraft silhouette. In an emergency, the gyro may be uncaged in level flight only 15 seconds after it has been switched on but, in this case, indications may not be very accurate and reliable indications will not be obtained until the glow discharge tube lights up.

4.5.1 LAUNCH/ ENGINE STARTING, RUN UP, TAXYING - NOT USED

4.5.2 TAKE-OFF AND CLIMB

4.5.2.1 Aerotow launching

The take-off technique by aerotow is entirely conventional. The tow rope should be attached to the front hook only. Partial flap may be used, if required, to shorten the take-off run. In the initial stages of the take-off, the flap lever may tend to creep towards the flaps extended position. The lever should be steadied, therefore, with the left hand until flying speed has been attained. Thereafter the flaps will hold whatever position is selected. The elevator trim control should be set in a position slightly forward of neutral, and reset on tow as required. The change of trim when flaps or wheel are retracted is negligible.

NOTE: Before take-off at an airport where dirt may get into the cockpit close the ventilators. The ventilators can be opened during the climb. For take-off close to 0°C and high humidity fully open all ventilation to prevent condensation.

4.5.2.2 Winch-launching

CAUTION: USE EITHER SIDE HOOKS, OR LOWER HOOK (DEPENDING ON WHICH HOOK IS INSTALLED).

WARNING: NEVER USE FRONT HOOK FOR WINCH-LAUNCHING

If original towing-bridle is used, the maximum weak link strength is 1400 lb (635 kp).

For maximum launch height, the side-towing bridle should be used. To reduce the possibility of "whipping", the towing-bridle should be laid out in front of the sailplane before launching. During take-off, as the control loads are very light, care should be taken not to climb too steeply at a low airspeed, and it is important when releasing the cable to pull the release handle fully so as to allow the cable hooks to fall off.

Partial flap may be used during winch launching, if desired, in order to reduce the take-off run.

A speed of 54 knots (100 km/h) should not be exceeded if the flaps are extended, or 65 knots (120 km/h) with the flaps retracted. The recommended speed for winch launching is 43 – 54 KIAS (80 – 100 km/h IAS).

4.5.2.3 Aerotow

a) *Climbing*

If partial flap has been used for take-off, the flaps should be retracted when at a safe height or before a speed of 60 knots IAS (110 km/h) is reached.

b) *Level flight*

The maximum speed for aerotow is 76 knots (140 km/h IAS).

c) *Descending*

A satisfactory rate of descent (approx. 200 ft/min. or 2 m/s) can be obtained when the towing aircraft is flown at a speed of 54 knots (100 km/h IAS). Gently use the air brakes in order to keep proper position behind towing plane.

4.5.3 FLIGHT

4.5.3.1 Turns and circling

Since the sailplane is very manoeuvreable and controllable, its behavior is very good in turns with bank angles up to 60°.

4.5.3.2 Slide slipping

If a constant heading is to be maintained during a side slip, the maximum angle of bank will be between 10° and 20°. As a result, the side slip is not very effective means of losing height in this sailplane. However, the rate of descent may be increased by the simultaneous application of flaps and air brakes. The optimum speed for entry into a side slip is 46 – 54 knots (85 – 100 km/h) with flaps and air brakes retracted.

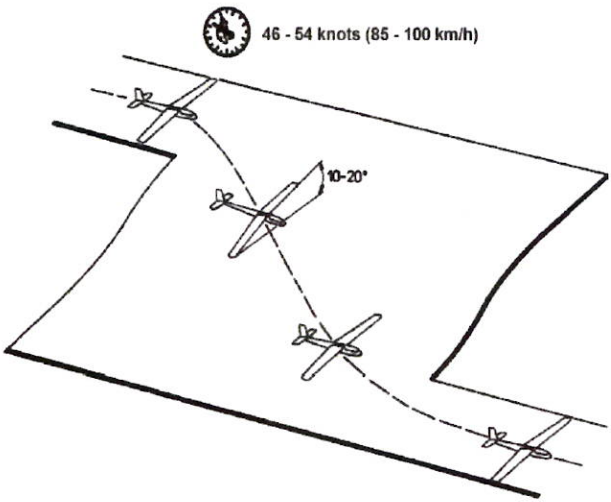

Fig. 4.4 – Side slipping

4.5.3.3 Stalls

The stall is entirely conventional, and the normal recovery action immediately effective. If the sailplanes is stalled with flaps extended, recovery must be effected before a speed of 60 knots IAS (110 km/h) is exceeded. Pre-stall warning takes the form of slight buffeting from the tail surfaces.

CAUTION: BEFORE STALLING AND SPINNING THE FOLLOWING IMPORTANT PROCEDURES MUST BE COMPLETED:

TRIM (5):	retracted and secured
AIR BRAKES and FLAPS (3, 4):	locked and secured, ventilation shut
COCKPIT CANOPY:	properly adjusted to allow full movement, check free
VENTILATION (24)	shut
RUDDER PEDALS: (25)	movement of control elements
SAFETY BELTS:	fastened and tight
COCKPIT:	loose objects removed and secured
HEIGHT:	sufficient for recovery
LOOK-OUT:	look-out neutral

Uncommented banking at stall must be corrected by releasing aft stick pressure and even pushing of the control stick forward with simultaneous application of opposite rudder.

4.5.3.4 Spin

The spin is steep but normal recovery action is effective. Entry is achieved by applying full rudder in the required direction of spin at about 32 knots (60 km/h) while the control column is held fully back. Loss of height occurs at about 320 feet (100 m) per revolution when flown dual. The rate of spin is approximately 3.5 seconds per revolutions, and the altitude 60° to 70° nose down. Because a speed of 60 knots (110 km/h) may be exceeded when spinning, especially during the recovery, it is particularly important to ensure the flaps are up and secured before entering a spin.

WARNING: IAS ERRORS. BECAUSE OF INTERFERENCE WITH THE AIRFLOW IN THE VICINITY OF THE STATIC VENTS, ESPECIALLY WHEN A "POT" PITOT HEAD IS FITTED, ERRORS IN THE AIRSPEED INDICATOR SYSTEM MAY BE CONSIDERABLE, BOTH WHEN SPINNING AND WHEN SIDE-SLIPPING.

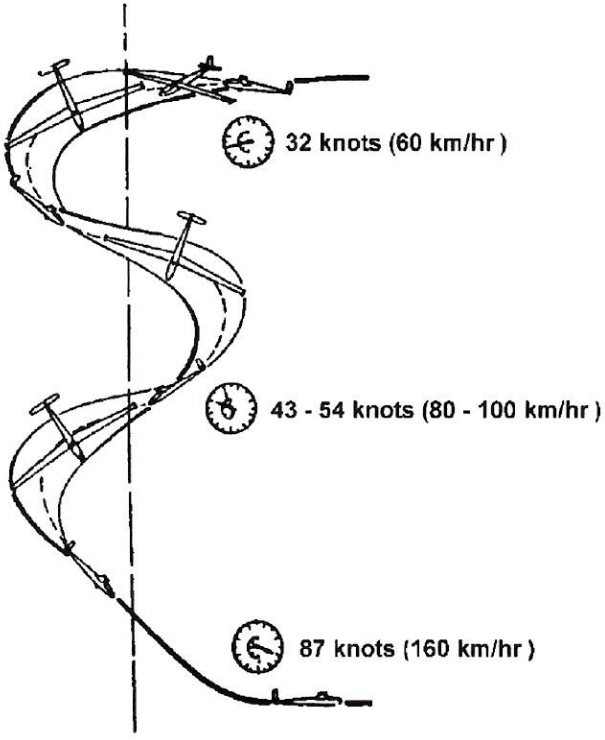

Fig. 4.5 – Spin

4.5.3.5 Use of air brakes

It is recommended to use the airbrakes in following cases:

1. For easy landing, mainly on the rough ground
2. To increase accuracy of the landing manoeuvre

NOTE: In case of using airbrakes at landing, it is necessary to maintain the approach speed of about 10 km/h higher, because the stalling speed with fully opened airbrakes is about 5 – 7 km/h higher.

3. To avoid exceed the never exceed speed during:
   a) unusual position for example during aerobatics
   b) unusual position when cloud flying

It is recommended to use the air brakes as a means for speed decrease in any case when the sailplane starts to increase its speed excessively and the pilot is uncertain of his orientation and how to manage the situation. Use of air brakes will enhance the safety and will make flying easier. The control lever should be held firmly during air brake extension, especially at high speeds.

4.5.4 APPROACH

The normal approach speed with air brakes retracted and flaps extended is 41 - 46 knots (75 - 85 km/h) but if air brakes are used during the approach, the speed should be 43 – 51 knots (80 - 95 km/h) to allow for the increase in stalling speed. For a step approach, full flap and full air brake should be selected and the approach made at a speed of 51 – 60 knots (95 - 110 km/h). In this case a longer float must be taken into account.

The following approach speeds are recommended:

Descent	Air brakes	Flaps	Approach speeds
Normal	retracted	retracted	41 - 46 KIAS (75 - 85 km/h IAS)
	extended	extended	43 - 51 KIAS (80 - 95 km/h IAS)
Steeper	extended	extended	51 - 60 KIAS (95 - 110 km/h IAS)

Anticipate mild sailplane ballooning when using higher approach speeds.

4.5.5 LANDING

4.5.5.1 Landing on the airport

Normally the landing should be made with the landing wheel down. After selection, check for correct locking by a firm rearward pull on the operating lever without turning the handle inboard. However, no damage should occur if the landing is made with the wheel up and, indeed, this procedure is recommended when landing on very soft ground.
The wheel may be extended after landing by lifting up the tail sufficiently high to allow the wheel to be extended fully, and this should be done before taking off again or it will not be possible to obtain the optimum take-off angle during the ground run. The wheel brake should be used with care after touch down. If applied too harshly at high ground speeds, it will lock the wheel and cause damage to grass surfaces. In order to prevent nose down pitching, the control column should be moved back progressively as the wheel brake is applied.

4.5.5.2 Off-field landing

The pilot must make a decision on the landing gear position. It is recommended to land with the landing gear retracted, if landing off-field on a soft ground. In this case, extend the landing gear on the ground prior to next take-off. The landing gear can be extended only when manually lifted. If need be, the take-off may be accomplished with retracted and secured landing gear.

4.5.6 FLIGHT WITH WATER BALLAST – NOT USED

4.5.7 HIGH ALTITUDE FLIGHT – NOT USED

4.5.8 FLIGHT IN RAIN

Flight in rain has little effect on the pilot´s view.
Excessive moisture from pitot static system can be drained from the moisture trap. There are no rain induced airspeed errors.

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SECTION 5

PERFORMANCE

CONTENTS

5.1 INTRODUCTION

Section 5 provides approved data for airspeed calibration and stall speeds and non-approved further information from the Manufacturer.

5.2 APPROVED DATA

5.2.1 AIRSPEED INDICATOR SYSTEM CALIBRATION

The diagram is effective for maximum flight weight of 500 kg (1102 lb).

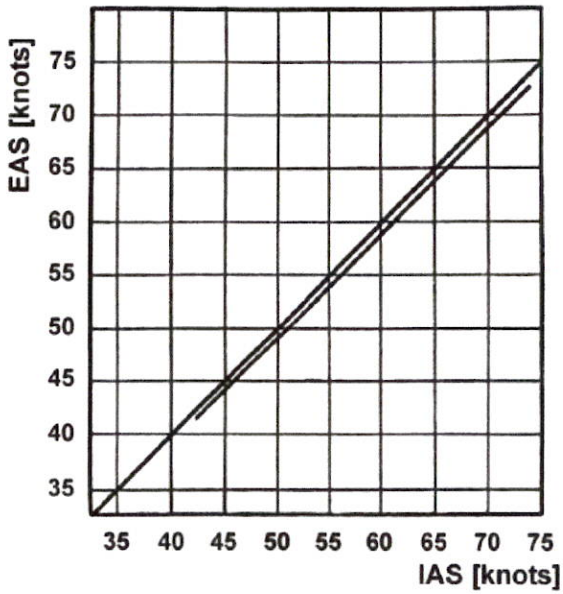


Fig. 5.1 – Aerodynamic correction to airspeed indicator
(Imperial System of Units)

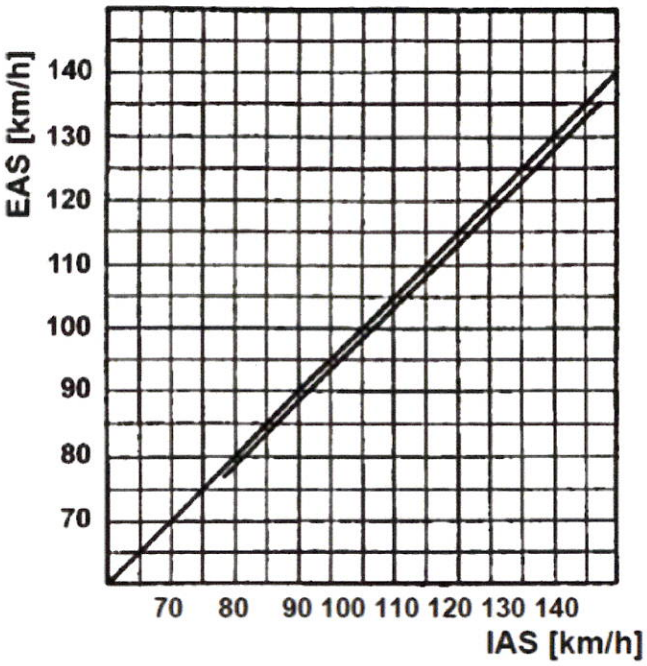


Fig. 5.2 – Aerodynamic correction to airspeed indicator
(Metric System of Units)

5.2.2 STALL SPEEDS

	Stall speed with extended wing flaps at MTOW, IAS	30 kts	55 km/h	Stalling speed with extended wing flaps
	Stall speed with retracted wing flaps at MTOW, IAS	32 kts	60 km/h	Stalling speed with retracted wing flaps

5.2.3 TAKE-OFF PERFORMANCE – NOT USED

5.2.4 ADDITIONAL INFORMATION – NOT USED

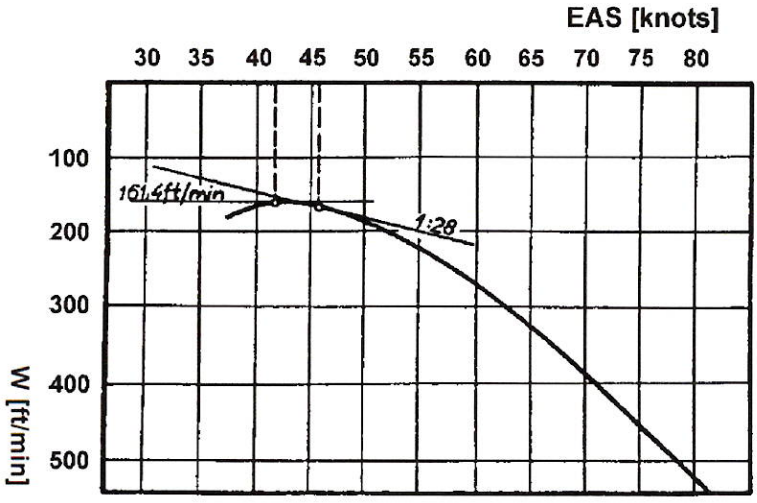
5.3 NON-APPROVED FURTHER INFORMATION

5.3.1 DEMONSTRATED CROSSWIND PERFORMANCE

Maximum demonstrated crosswind component is shown in the Para 2.14.

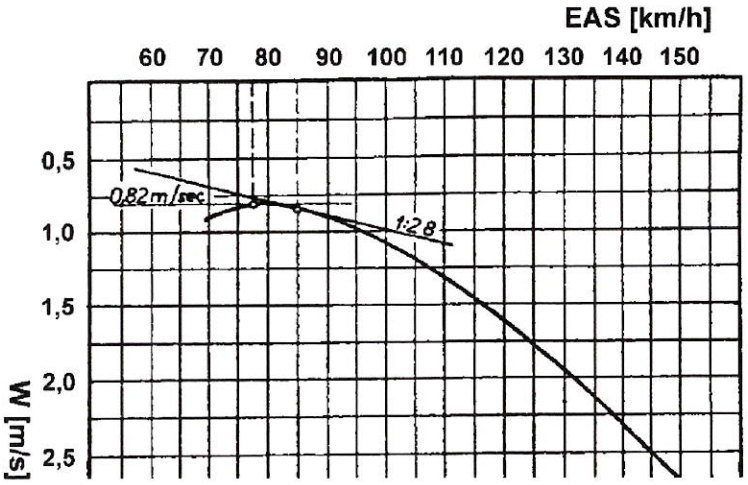
5.3.2 FLIGHT POLAR

Air brakes retracted, landing gear retracted.



W ..... vertical speed

Fig. 5.3 – Performance characteristic
(Imperial System of Units)



W ..... vertical speed

Fig. 5.4 – Performance characteristic
(Metric System of Units)

5.3.3 NOISE DATA – NOT USED (FOR POWERED SAILPLANES ONLY)

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SECTION 6

WEIGHTS AND BALANCE

CONTENTS

6.1 INTRODUCTION

Section 6 describes procedures to check flight weight and balance of loaded L-13 "BLANIK" Sailplane (pilots, baggage, optional equipment).

6.2 WEIGHING AND BALANCE RECORD AND PERMITTED PAYLOAD-RANGE

6.2.1 WEIGHING RECORD

Weight record including procedure for calculating center of gravity position is described in Para 6.2.3.1.

6.2.1 BASIC EMPTY WEIGHT AND MOMENT

Sailplane empty weight, equipped with needed instruments 644 lb (292 kg) – see Para 6.2.4.

6.2.3 BALANCE CHART

6.2.3.1 Balance chart – standard equipment

Item No.	Item	Occupants lb (kg)								
		2 persons				1 person				units
1.	Pilot in front seat	176	176	154	154	176	154	154	154	lb
		80	80	70	70	80	70	70	70	kg
2.	Front parachute or cushion	22	22	22	4	22	22	22	4	lb
		10	10	10	1.8	10	10	10	1.8	kg
3.	Pilot in rear seat	176	176	154	154	-	-	-	-	lb
		80	80	70	70	-	-	-	-	kg
4.	Rear parachute or cushion	22	22	22	4	-	-	-	-	lb
		10	10	10	1.8	-	-	-	-	kg
5.	Baggage or equipment	61	-	-	-	61	61	-	-	lb
		27.5	-	-	-	27.5	27.5	-	-	kg
Variable load		457	396	352	316	259	237	176	158	lb
		207.5	180	160	143.6	117.5	107.5	80	71.8	kg
Sailplane empty weight		644	644	644	644	644	644	644	644	lb
		292	292	292	292	292	292	292	292	kg
Operational weight		1101	1040	996	960	903	881	820	802	lb
		499.5	472	452	435.6	409.5	399.5	372	363.8	kg
Centre of gravity position (% of MAC)		27.5	25.8	28.7	30.7	32.4	35.3	33.7	36.2	%

6.2.3.2 Balance chart – standard and optional equipment

Item No.	Item	Occupants lb (kg)							
		2 persons			1 person				units
1.	Pilot in front seat	176	154	154	176	154	154	128	lb
		80	70	70	80	70	70	58	kg
2.	Front parachute or cushion	22	22	4	22	22	4	22	lb
		10	10	1.8	10	10	1.8	10	kg
3.	Pilot in rear seat	176	154	154	-	-	-	-	lb
		80	70	70	-	-	-	-	kg
4.	Rear parachute or cushion	22	22	4	-	-	-	-	lb
		10	10	1.8	-	-	-	-	kg
Variable load		396	352	316	198	176	158	150*	lb
		180	160	143.6	90	80	71.8	*68	kg
Sailplane empty weight		694	694	694	694	694	694	694	lb
		314.9	314.9	314.9	314.9	314.9	314.9	314.9	kg
Operational weight		109	104.6	101	892	870	852	844	lb
		494.9	474.9	458.5	404.9	394.9	386.7	382.9	kg
Centre of gravity position (% of MAC)		22.5	25.5	28.3	29.5	32.7	35.5	37.6	%

* Minimum load on front seat when flown solo.

6.2.4 EQUIPMENT LIST

The items marked with X-letter are included in the empty standard equipped sailplane mass, the items marked with O-letter are not included in the empty sailplane mass but they are delivered on the customer´s demand.

	Subject	Marking	Mass lb (kg)	Arm from reference plane - rib No. 1 (mm)	Installation date
X	Altimeter	LUN 1121.01 front instrument panel rear instrument panel	0.84 (0.38)	- 69.8 (- 1773.5) - 21.8 (- 553.5)	
X	Airspeed indicator	LUN 1106-8 front instrument panel rear instrument panel	0.88 (0.40)	- 69.9 (- 1775.5) - 21.9 (- 555.5)	
X	Electric turn-and-bank / sidestep indicator	LUN 1211.1 front instrument panel rear instrument panel	0.79 (0.36)	- 69.9 (- 1775.5) - 21.9 (- 555.5)	
X	Vertical speed indicator 5 m/sec	LUN 1141.04 front instrument panel rear instrument panel	1.06 (0.48)	- 70.4 (- 1788.5) - 22.4 (- 568.5)	
X	Vertical speed indicator 15 m/sec	LUN 1147.23-8 front instrument panel	1.10 (0.50)	- 69.6 (- 1768.5)	
X	Magnetic compass	LUN 1222.1 front instrument panel rear instrument panel	0.82 (0.37)	- 69.5 (-1766.5) -21.5 (- 546.5)	
X	Side attachment points	A 001 023 L A 001 023 P	0.99 (0.45)	- 0.6 (- 16)	
O	Transceiver unit				
O	Paint	Polyurethane	18.74 (8.5)	40.9 (1038)	

6.2.4 BALANCE RECORD

It is valid for S/N No. .....

No.	Empty weight lb (kg)	C. G. pos. % MAC	Permitted crew + baggage weight (lb/kg) with:														Approved	
			Max. baggage (22 lb/10 kg)				Half baggage (11 lb/5 kg))				No baggage (0 lb/0 kg)						Date	Signed
			Front seat		Rear seat		Front seat		Rear seat		Front seat		Rear seat					
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.				
1																		
2																		
3																		

Legend: 1. Single seat
2. Tandem seater (front pilot – max. weight)
3. Tandem seater (rear pilot – max. weight)

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SECTION 7

SAILPLANE AND SYSTEM DESCRIPTION

CONTENTS

7.1 INTRODUCTION

Section 7 describes the sailplane, its operation and systems. Duplicity data are not shown.
The detailed description and operation of the sailplane and its systems is given in the L-13 Maintenance Manual Do-L13-1131.3.

7.2 COCKPITS CONTROL

See Para 7.3

7.3 INSTRUMENT PANEL

The front and rear cockpit with instrument panels, instruments and control elements is represented schematically in this Section Fig. 7.1 and 7.2.

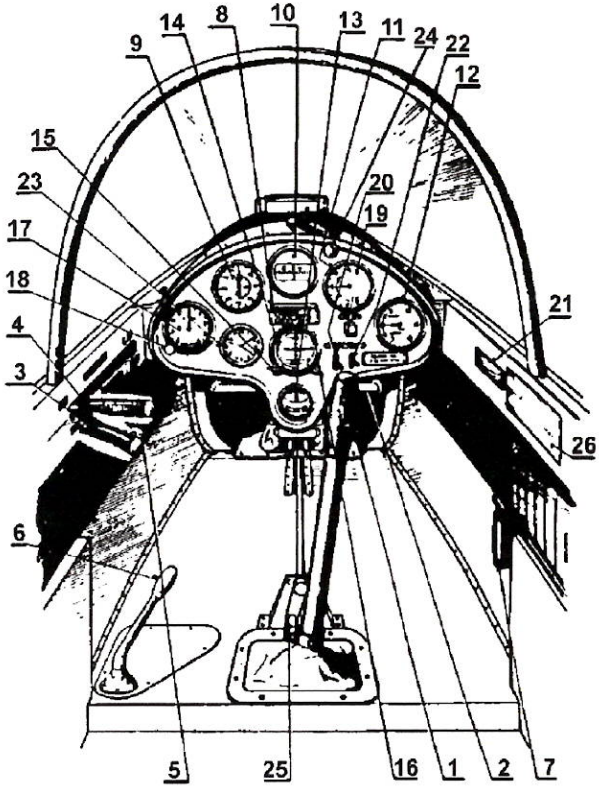

Fig. 7.1 – Front cockpit

Legend:
(1) Control column; (2) Rudder pedals; (3) Air brake control; (4) Flap control; (5) Elevator trim tab control; (6) Wheel brake lever; (7) Landing gear handle; (8) Towing cable release; (9) Airspeed indicator; (10) Compass; (11) Variometer 0 – 5 m/sec; (12) Variometer 0 – 15 m/sec or 0 – 30 m/sec; (13) Turn and slip indicator; (14) Artificial horizon; (15) A/H aircraft silhouette height adjusting knob; (16) A/H caging knob; (17) Altimeter; (18) Altimeter barometric pressure adjustment knob; (19) A/H "on/off" push button; (20) Turn indicator switch; (21) Compass correction card; (22) Battery circuit breaker (on sailplanes up to 21st series only); (22a) Battery circuit breaker (on sailplanes of 22nd series and upwards); (23) Clock; (24) Ventilator; (25) Rudder pedal adjustment handle; (26) Table of operating limits.

NOTE: Items 14, 15, 16, 19, 22 (or 22a) and 23 are optional which are installed only at the customer special request.

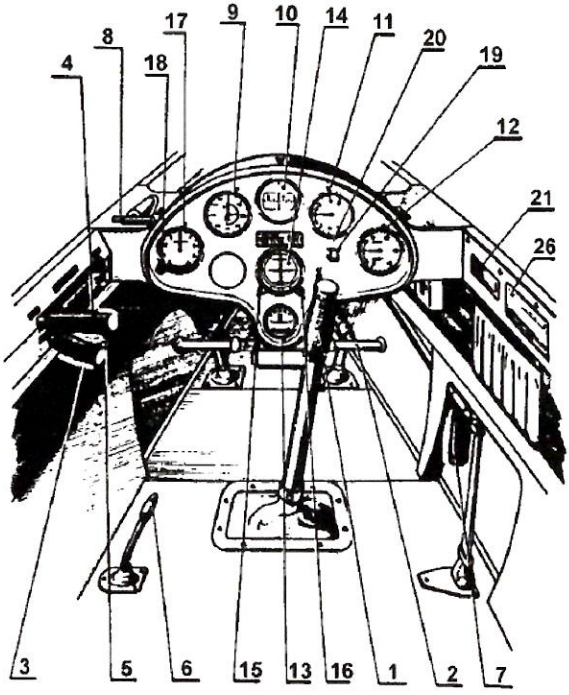

Fig. 7.2 – Rear cockpit
(including optional instruments)

Legend:
1 to 21, 26 inclusive – These items are identical to those shown in Fig. 1, Item 12.
Variometer 0 – 15 or 0 – 30 m/sec is installed in this cockpit only at the special request of the customer.
In addition, a first aid box is installed on the right side of the cockpit just under the instrument panel.

7.4 LANDING GEAR SYTEM

See Para 1.4.1 of this Flight Manual for description and using of the landing gear.

7.5 SEATS AND SAFETY HARNESS

Front back-rest is formed of a welded steel tube frame covered by a tarpaulin fabric sewn together in such a way that it forms a bay for the parachute worn by the pilot on its back. The back-rest frame is anchored in two hinges protruding from the floor. Its upper part is fastened with screws to the reinforced cover of the rear instrument panel.

Rear back-rest is similar to the front back-rest, its frame bears, however, with its bent upper part against the bulkhead No. 5, this being easily adjustable. By tilting the rear back-rest access is gained to the lower accommodation area between bulkheads No. 5 and 6.

The seat cushion are made of foamy polystyrene, glass-fibre and wadding filling. They are covered with fabric and artificial leather. In the bottom part of the rear seat cushion is a recess, covered with a glass-fibre laminate cover. The recess serves for location of the pivoted suspension of the undercarriage shock-absorber protruding from the cockpit floor. The cushion is attached to the latter by means of two press buttons on both sides of the cushion. A cut out for the control column is provided in the front part of the front cushion.

Back rest cushion
Two back-rest cushions are provided in addition to two seat cushions forming part of the standard outfit of the sailplane. The former are employed when flying without a parachute worn on pilot´s back. These cushions are shaped as a parachute and are filled with grass. They are covered with artificial leather and fabric.
Safety belts are attached in suspension projecting from the floor in the front and rear cockpits. Arm straps in the front cockpit are attached to the back-rest frame whilst in the rear cockpit they are fastened in suspensions riveted to the upper floor between bulkheads No. 5 and 6.

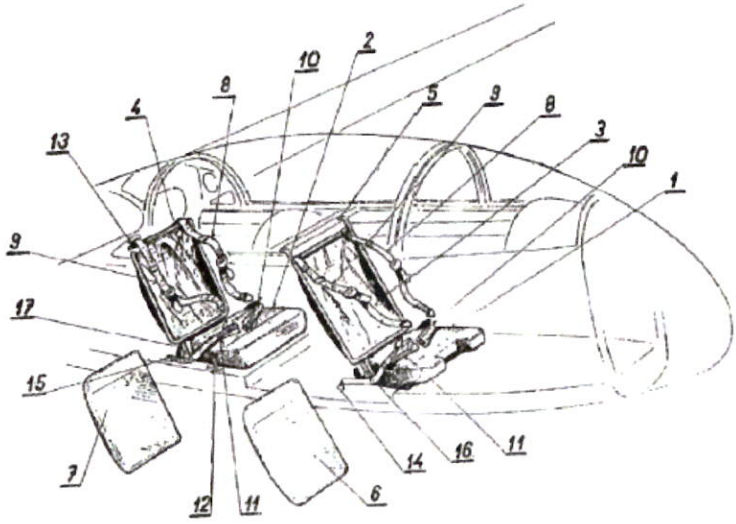

Fig. 7.3 – Seats and safety harness

Legend:
(1) Front cushion; (2) Rear cushion; (3) Front back-rest; (4) Rear back rest; (5) Front back-rest attachment screw; (6) Front back-rest cushion; (7) Rear back rest cushion; (8) Left arm strap type MON 0901; (9) Right arm strap type MON 0902; (10) Safety belt, left, type 570-MON 0911; (11) Safety belt, right, type 570-MON 0912; (12) Press button for attachment of rear cushion; (13) Arm strap suspension; (14) Front strap suspension; (14) Rear safety belt suspension; (16) Front back-rest hinge; (17) Rear back-rest hinge.

7.6 PITOT STATIC SYSTEM

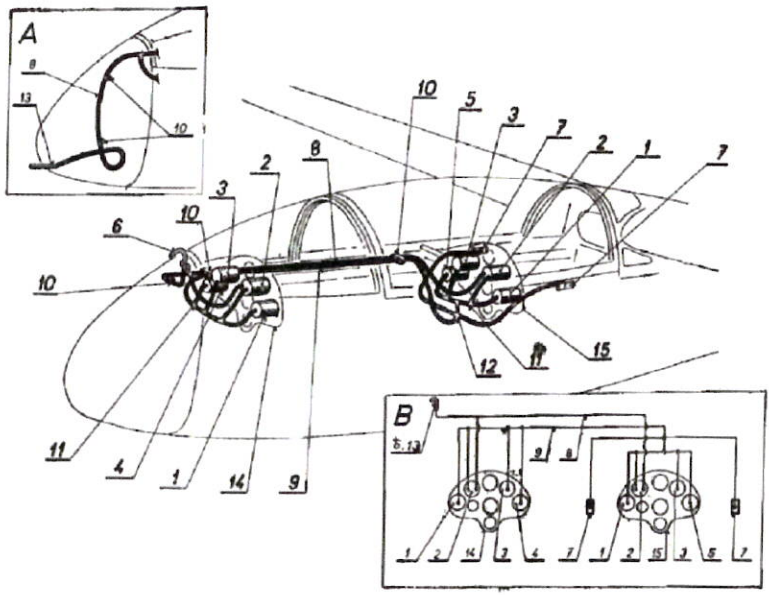

Fig. 7.4 – Pitot static system

Legend:

Detail A – Location of Pitot (dynamic) pressure tube on sailplanes from 1st to 4th batches
Detail B - Diagram showing connection of piping and instruments

(1) Altimeter; (2) Air-speed indicator; (3) Ratio of climb indicator, rating +5 m/s; (4) Ratio of climb indicator, rating +15 m/s; (5) Ratio of climb indicator, rating +30 m/s; (6) Pitot pressure tube; (7) Static pressure tube end; (8) Pitot pressure piping; (9) Static pressure piping; (10) Clip; (11) Bifurcated coupling; (12) Gross piece coupling; (13) Pitot (dynamic) pressure piping; (14) Front instrument panel; (15) Rear instrument panel.

7.7 AIR BRAKES

The air brakes of DFS type are, with their attachments, overhung – mounted in the wing into ribs No. 15 and 17. They are flush with the wing surface in closed position. The structure of the air brake upper and lower is similar. The skeleton consist of the steel tube with welded-on which a strap of duralumin sheet is riveted with flush rivets. The edges of the strap are stiffened with longitude stiffener. With the air brakes retracted the tie rod of air brakes control is set to the neutral position in relation to the double-armed lever. It is possible to completely exclude the suction of the upper air brake during flight by adjusting both tie-rods without any augmentation of the forces in the control mechanism. The air brake is secured in the open position with a stop.

Air brakes are extended or retracted by shifting of the lever on the cockpit left side (see Fig. 7.1 and 7.2).

Air brakes using during flight is described in this Flight Manual in the Para 4.5.3.5.

7.8 BAGGAGE COMPARTMENT

Two baggage compartments are formed between 5th and 6th frame. The lower baggage compartment is provided with the net for attaching of the baggage on the requirement of the customer.
The access into the baggage compartment is ensured by unlocking of the back-rest lock and its folding.
Baggage mass and area for putting is shown on the placards (see Fig. 7.5).

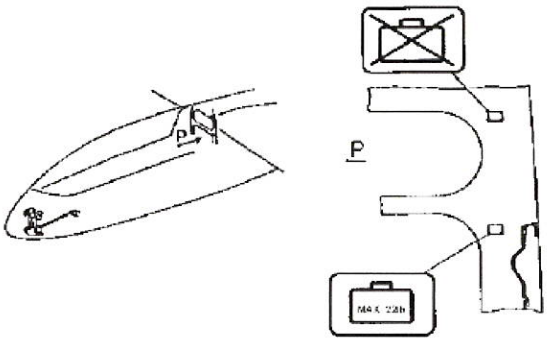

Fig. 7.5 – Baggage compartments

7.9 WATER BALLAST SYSTEM – NOT USED

7.10 POWERPLANT – NOT USED

7.11 FUEL SYSTEM – NOT USED

7.12 ELECTRICAL SYSTEM – NOT USED

7.13 MISCELLANEOUS EQUIPMENT – NOT USED

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SECTION 8

SAILPLANE HANDLING, CARE AND MAINTENANCE

CONTENTS

8.1 INTRODUCTION

Procedures recommended by the manufacturer for proper ground handling, servicing and maintenance, which must be observed in order to maintain the same performance and dependability of the sailplane as that are provided in the L-13 Maintenance Manual Do-L13-1131.3.

8.2 SAILPLANE INSPECTION PERIODS

Inspection and maintenance of the sailplane consist of operational and periodical maintenance.

Operational inspections:

- preflight inspections
- daily inspection (after each flight day)

Operational inspections scope is mentioned in this Flight Manual, Par. 4.3 and 4.4.

Periodical inspections intervals and scope – see L-13 Maintenance Manual No. Do-L13-1131.3.

8.3 SAILPLANE ALTERNATIONS OR REPAIRS

Before each sailplane alternation contact appropriate CAA to ensure adequate level of operation.
Instruments and aggregates which were recognized as disable for the further operation, can be replaced only by the same type of the instruments (aggregates) and they must be tested before mounting on the sailplane.

Common sailplane repairs are mentioned in the L-13 Maintenance Manual Do-L13-1131.3.

Work procedures which can be done by the operator are mentioned in the Maintenance Manual. It includes repairs of the skin, deformed or broken stringers, parts of the ribs and frames, small faults of fabric skin and instrument installation failures.

8.4 GROUND HANDLING/ROAD TRANSPORT

8.4.1 TOWING OF SAILPLANE

Carry out the towing of sailplane behind the trolley by means of aerotowing cable. It is necessary to hold the wing tip during the sailplane towing. The aerotowing cable is modified for the connection to the front attachment and it is provided weak a link. Since the aerotowing cable has a considerable length, it is possible to shorten it by means of a loop.

8.4.2 PARKING

The following ground equipment is intended for securing of the sailplane during the parking:

- blocking fork for controls blocking (optional), blocking is performed in the rear cockpit
- plug of the sensor of compensated pressure
- cockpit cover

For more details see L-13 Maintenance Manual Do-L13-1131.3.

8.4.3 MOORING

If the sailplane is to be parked out of a hangar, it is to be moored to prevent its damage in the event of a strong wind. The following equipment is intended for sailplane mooring:

- 4 mooring eyes (screws);
- 3 mooring ropes (optional);
- 2 mooring eyes to wing.

For more details see L-13 Maintenance Manual Do-L13-1131.3.

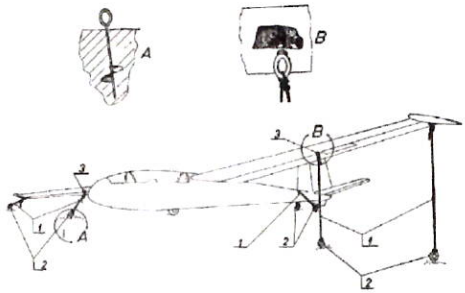

Fig. 8.1 – Mooring points

Legend:

(1) Mooring rope; (2) Mooring eye (anchor screw); (3) Mooring eye on wing.

8.5 CLEANING AND CARE

Keep the sailplane in cleanness. Wash the sordid places. Give the special attention to the glasses of the cockpit canopy and aft cockpit canopy and to the glasses of left and right side windows.

- The cockpit canopy is made of plexiglass, remove the soil (powder, mud etc.) with wet soft cloth or with buckskin, polish the glasses with clean flannel rag after cleaning.

CAUTION: IT IS PROHIBITED TO USE THE LACQUER THINNERS, PETROL, BENZOL, ALCOHOL, TURPENTINE, NITRO LACGUERS AND THE AGENTS CONTAINING THE SILICON OIL.

- Wash the soil on the outer painted surface with detergent water and consecutively polish the surface.

SECTION 9

SUPPLEMENTS

CONTENTS

9.1 INTRODUCTION

Section 9 of this Sailplane Flight Manual provides supplemental information for optional equipment which is installed on the sailplane and additionally it may contain the supplementary information on sailplane operation.

The information contained in this document supplements or supersedes the basic Sailplane Flight Manual where covered in the sections contained herein. For limitations, procedures and performance not contained in this supplement, consult the basic Sailplane Flight Manual.

9.2 LIST OF INSERTED SUPPLEMETS

Date of insertion	Supplement No.	Title of inserted supplement
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	8	
	9	
	10	
	11	
	12	

9.3 SUPPLEMENTS INSERTED