8. SPECIAL FLIGHT CONDITIONS AND EMERGENCY PROCEDURES

8.1. Flying in the rain and icing conditions

Raindrops, ice or frost on the sailplane's surfaces will considerably reduce its performance: Stall speed increases 5 to 10 percent and also rate of descent is greater than normal. This must be taken into consideration in particular during approach and landing.

8.2. Flying at high altitude

If you fly above 3500 m (11000 ft) altitude use oxygen.

8.3. Landing on uneven or soft ground

Landing on uneven or soft ground may be done with the landing gear extended or retracted depending on circumstances. Usually the sailplane is not damaged by landing on grass with the landing gear retracted.

8.4. Jettisoning of the canopy

To jettison the canopy pull the red locking control and the red knob on the right hand side of the cockpit and lift the canopy.

II SERVICE MANUAL

1. ASSEMBLY AND DISASSEMBLY

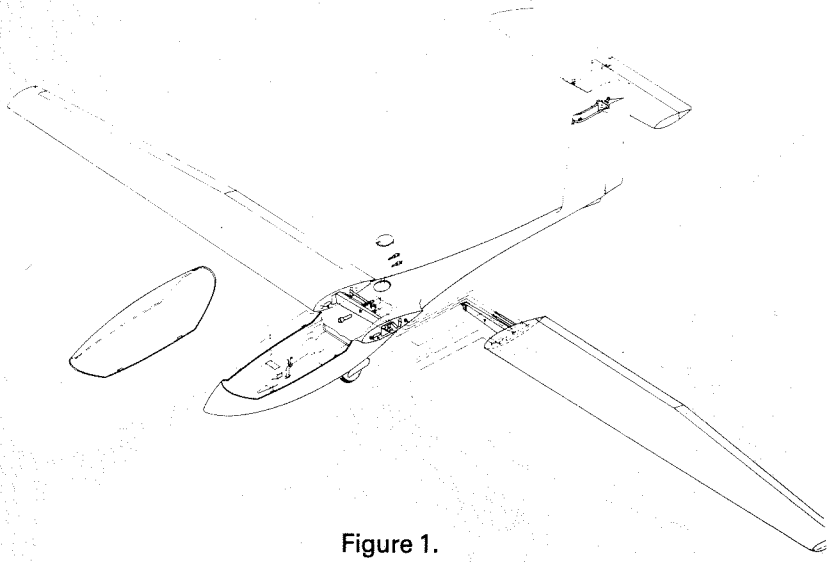


Figure 1.

1.1. Preparation

Three or even two persons can easily assemble and disassemble the PIK-20. Before assembly remove the canopy and prepare the required tools, clean clothes, grease of mineral or synthetic basis, the wing assembly tool and a bit of steel wire for pulling out the locking pin of the horizontal stabilizer. Clean and grease all fitting surfaces, bolts, pins and control system connectors.

1.2. Wing assembly (Figure 2)

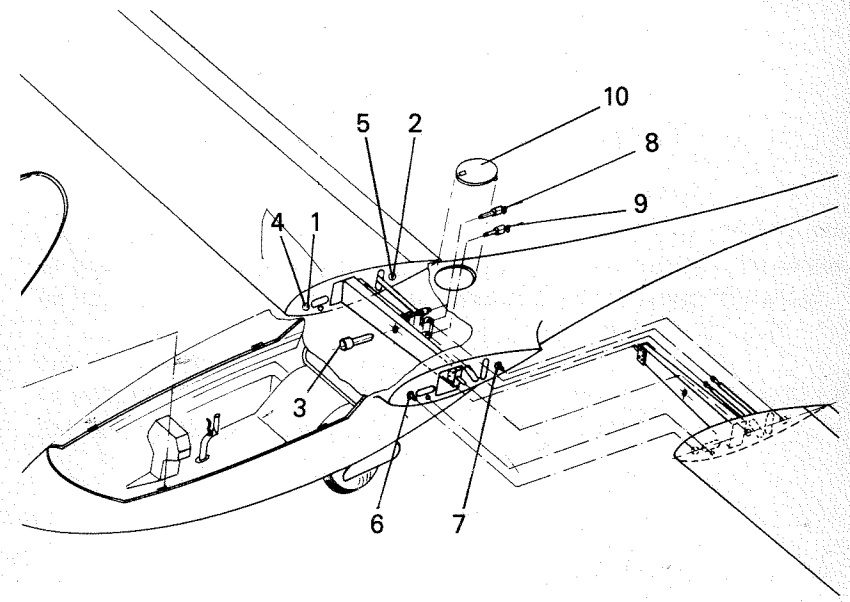


Figure 2

— Insert the right-hand wing ensuring that the fuselage bevel pins (1) and (2) are in the seats (4) and (5).
— Insert the left-hand wing in the same way and watch that the bevel pins (6) and (7) go correctly into their seats. Draw the wings together with the wing assembly tool and install the main wing pin and secure it using a Fokker-pin. It is necessary to upload the wing tips when using the assembly tool.
— Connect aileron and flap control rods by installation of pip-pins (8) and (9). Close the inspection opening (10) on the top of the fuselage.

1.3. Empennage assembly (Figure 3)

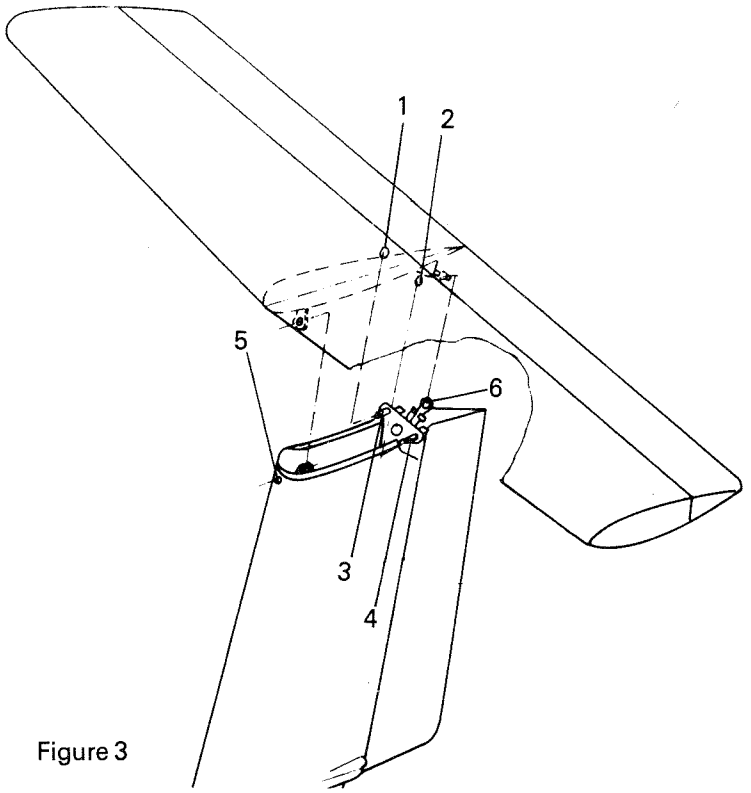


Figure 3

— Insert the horizontal stabilizer by lifting the leading edge up a little and by pushing the ball bearings (1) and (2) on to the pins (3) and (4) on the vertical stabilizer.
— Pull out the locking pin (5) with a tool (steel pin) and push the leading edge into place. Remove the tool and push the locking pin in. Ensure that the safety spring is engaged and secure the pin using a Fokker-pin.
— Deflect the elevator upwards and connect elevator control rod (6) and secure it using a Fokker-pin.

1.4. Disassembly

— The wings are removed in the reverse sequence to assembly. Reinstall all attachment bolts and control rod connection bolts in their holes and secure them.
— Remove the horizontal stabilizer in the reverse sequence to assembly.

2. PREFLIGHT CHECK

Following sailplane rigging, and before the first flight of the day carry out the following checks:

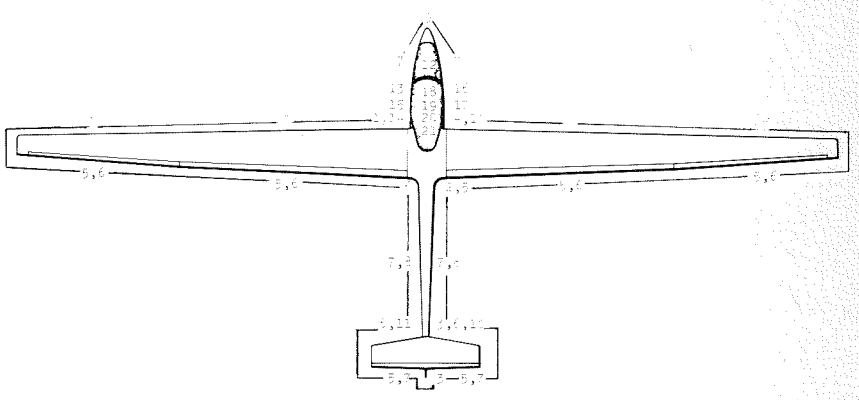


Figure 4

1. Main wing pin secured.
2. Pip-pins connecting ailerons and flaps-airbrakes secured.
3. Horizontal stabilizer attachment pins correct and locking pin all the way in and secured. Quick release for elevator control rod secured.
4. Tow coupling clean and functioning properly.
5. Ailerons, flaps-airbrakes, elevator and rudder correct, free and full travel.
6. Tapes over control-surface gaps for adherence (if fixed).
7. Wings, fuselage and empennage for damages to the skin, dents or cracks.
8. Static pressure vents free.
9. Pitot tube free.
10. Tyre pressure correct.
11. Tail dolly removed.
12. Ballast properly fastened.
13. Canopy clean and locking mechanism for condition.
14. Water ballast system for condition and proper functioning.
15. No foreign matter or loose particles in the cockpit.
16. Control stick and pedals free and full travel.
17. Flaps-airbrakes full travel.
18. Safety belts for condition.
19. Instruments for condition and correct indication.
20. Trim control for condition.
21. Documents in the sailplane.

3. TRANSPORTATION OF SAILPLANE

For transportation, the use of the special PIK-20 trailer is recommended. If the sailplane is being transported in another vehicle, the following should be checked:

- Depending on transportation van, the sailplane may be fixed and supported by the following elements: Wing spar root shanks; Bevel pins of the fuselage; Undercarriage wheel (take care of hatch covers) and tail wheel. Besides this wing, fuselage and horizontal stabilizer may be placed in appropriate holding clamps.
- Fix all control surfaces using gust locks.
- Lock aileron and flaps rods and attachments in the wing using cords or rubber belts.
- Take care of that no shifting, jamming or deformation can arise and avoid entry of dirt and water into the sailplane.
- On an open trailer, protect the canopy, the area of the horizontal stabilizer attachment and cover the pitot tube and static pressure vents.
- Ensure that all components cannot be shifted during transportation.

4. CARE AND MAINTENANCE

The PIK-20 fiberglass sailplane requires minimal maintenance.

4.1. General care

The outside of the sailplane can be kept bright and smooth simply by washing with water and mild soap. Avoid abrasive or harsh detergents. Rinse with clean water and dry with terry-cloth towels or chamois. If you choose to wax your sailplane, use a good automotive-type wax, however, not one containing silicone.
The canopy surface may be cleaned and polished using the conventional plexiglass care products. Never clean with a dry cloth.

Note: Never use gasoline, benzine, alcohol, acetone, carbon tetrachloride, lacquer thinner or glass cleaner to clean plexiglass.

In hot sunshine it is recommended that the sailplane is protected with fabric.
Prior to hangaring, the water drain holes, shown in Figure 5 should be inspected for free outlets and cleaned if necessary.

4.2. Before assembly

Clean and grease points marked "X" in Figure 6.

4.3. Every week

Clean cabin and wheel box e.g. with vacuum cleaner.

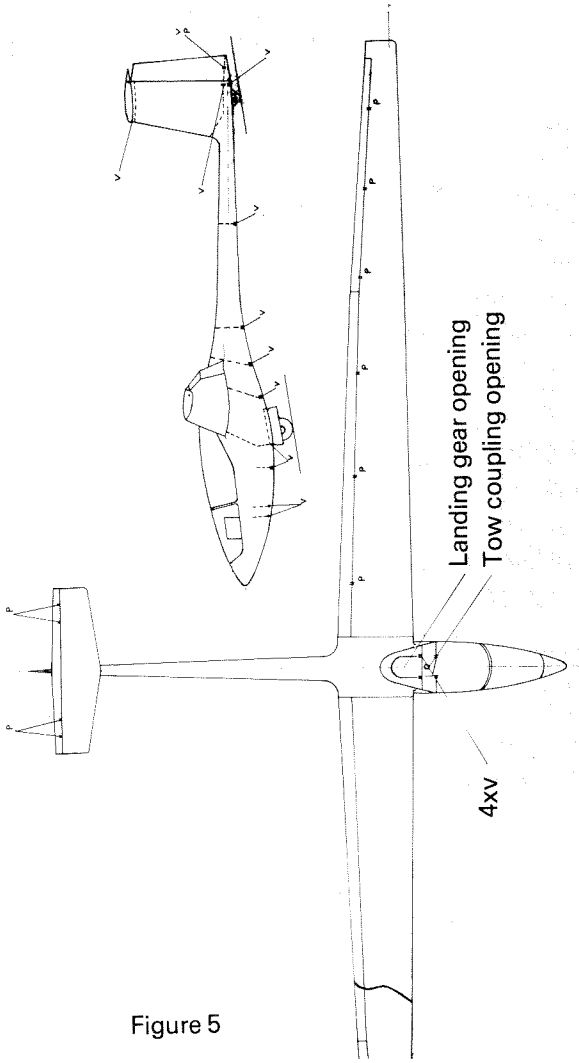


Figure 5

Water drain (v) and pressure relief (p) holes

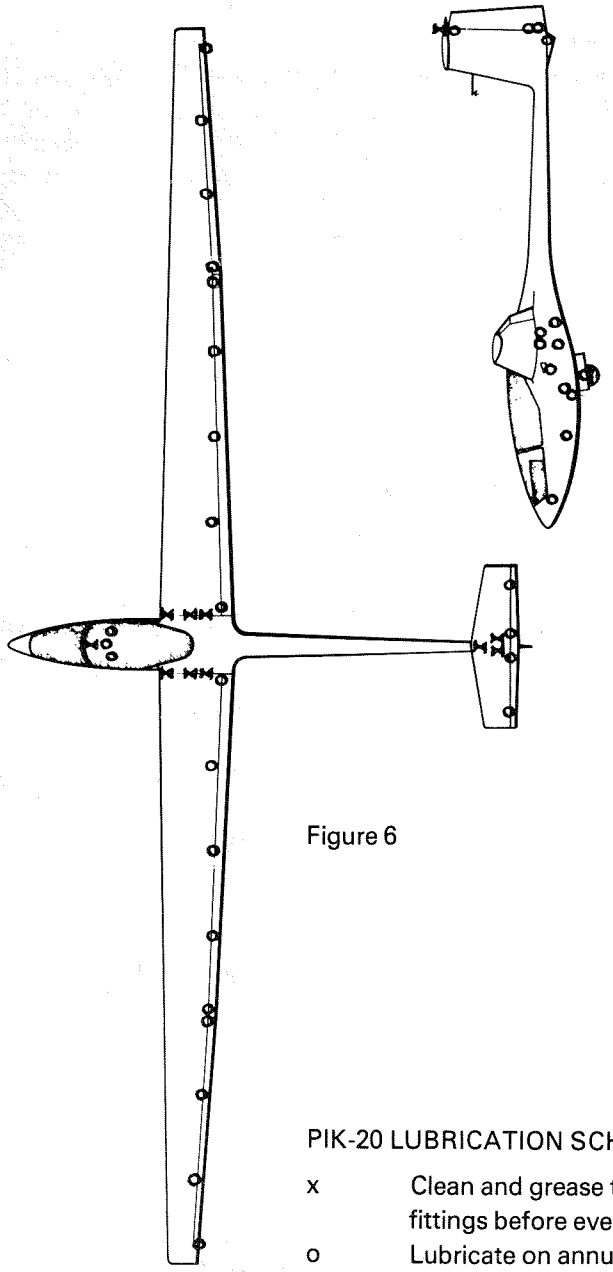


Figure 6

PIK-20 LUBRICATION SCHEME

x	Clean and grease these fittings before every assembly
o	Lubricate on annual inspection

4.4. Annual inspection

- Inspect, clean and lubricate with oil the bearings and hinges marked "O" in Figure 6.
- Inspect the other bearings and rod endings and, if necessary, protect with litium-grease.
- Inspect the rudder cables.
- Inspect Bowden control cables of the tow release coupling, wheel brake, pedal adjustment, cabin ventilation and water tanks.
- Inspect and lubricate the tow release coupling(s).
- Inspect landing gear, wheel brake and gear doors.
- Inspect wing attachment points and tightness of attachment.
- Inspect horizontal stabilizer attachment points.
- Inspect and clean the pitot-static system.
- Check control surface deflections.
- Inspect water tanks.
- Inspect and lubricate the flap drive wheel and the differential lever inside the fuselage.

Note: If the sailplane is damaged, the structural repair schemes are given in "Repair Manual".

5. WEIGHING PROCEDURE

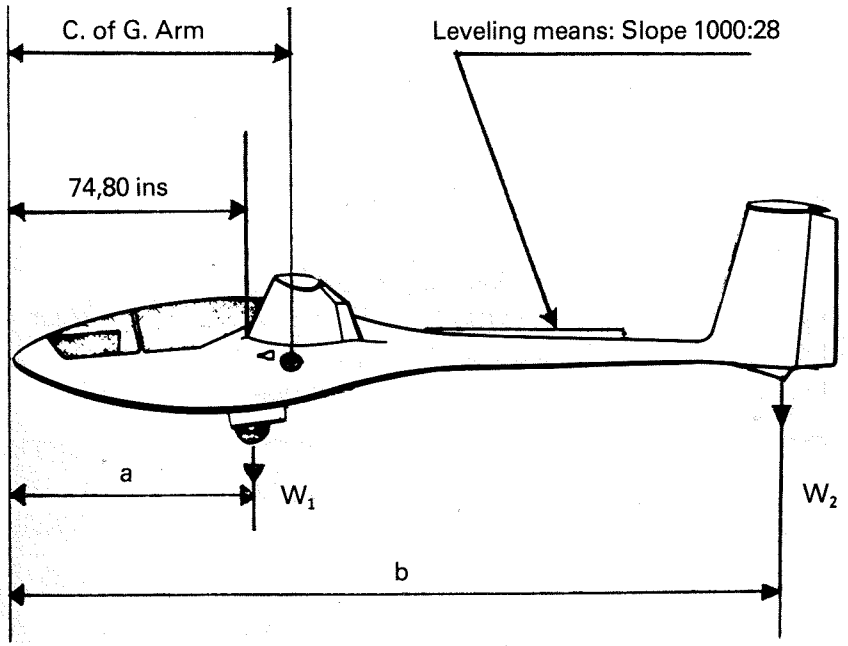
5.1. Preparation

- Ensure that all items marked in the sailplane equipment list are installed in their proper location in the sailplane.
- Remove dirt, moisture, foreign items such as rags and tools from the sailplane before weighing.
- Weigh the sailplane inside a closed building to prevent errors in scale readings due to wind.

5.2. Weighing

- Level sailplane (see diagram). Levelling means: Slope of top surface of rear fuselage between stations 140 ins and 180 ins 1000 to 28 tail down.

Datum: Vertical plane 1.90 m (74.80 ins) in front of leading edge of wing root rib.



— With the airplane level, record the weight shown on each scale. Deduct the tare, if any, from each reading.

Scale Position on Symbol	Scale Reading (lbs)	Tare (lbs)	Net Weight (lbs)
Main wheel (W_1)			
Tail wheel (W_2)			

Empty weight and moment	Net Weight (lbs)	Arm (ins)	Moment (lb.-ins./1000)
W_1		a = 79.6	
W_2		b = 229.2	
Licensed Empty Weight		C. of G.	

$$\text{C. of G.} = \frac{W_1 a + W_2 b}{W_1 + W_2}$$

6. EQUIPMENT

The following list shows equipment items which may be installed in the PIK-20. Items marked "X" are included in the Empty Weight recorded in Weight and Balance Data Sheet.

Item	Part	Weight (lbs)	Arm (ins.)	Moment (lb.-ins./1000)
	I Minimum Equipment (Standard USA)			
	Airspeed indicator Model:			
	Altimeter Model:			
	Compass Model:			
	Safety belts Model:			
	Seat cushion			
	Tow coupling Model:			
	II Optional Equipment			
	Variometer Model:			
	Compensating bottle			

Item	Part	Weight (lbs)	Arm (ins.)	Moment (lb.-ins./1000)
	Turn and bank indicator Model:			
	Artificial horizon Model:			
	Battery Model:			
	Accelerometer Model:			
	Clock Model:			
	Radio Model:			
	Oxygen Equipment Model:			
	Water Ballast tanks Model:			

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PIK-20
REPAIR MANUAL

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