

Chapter 4 GENERAL SERVICING

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holes. This is important, particularly in relation to control surfaces, because water trapped in leading edges can cause severe overbalancing which may lead to loss of control of the aircraft.

Access and inspection panels (fig. 2)

4. Reference is made only to those panels which are readily detachable and the annotations refer to the components to which access is gained when the panels are removed.

Rigging (fig. 7)

5. The rigging information in this chapter refers to the checking of the linear and

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General

1. This chapter contains servicing information which, being of general application, is not covered in those chapters dealing with the servicing of specific components or systems. It also includes tabulated lists of ground equipment and special tools. The use of some of the equipment is described in this chapter, the remainder being covered elsewhere in the volume under the heading of the component to which it relates.

Dismantling the complete aircraft

2. To dismantle the aircraft for transportation, it is recommended that the power unit should be removed first, followed by the tail unit and, finally, the main planes.

Detailed instructions for the removal of these components and the further break down of the assemblies are given in the appropriate chapters in Sections 3 and 4. The packing dimensions and the approximate weights of the various items are given in fig. 6.

Airframe drain holes (fig. 1)

3. Drain holes are situated on the underside of the airframe, and vary in diameter from $\frac{3}{16}$ to $\frac{3}{8}$ in. These must be kept clear, and any foreign matter removed from the vicinity of the

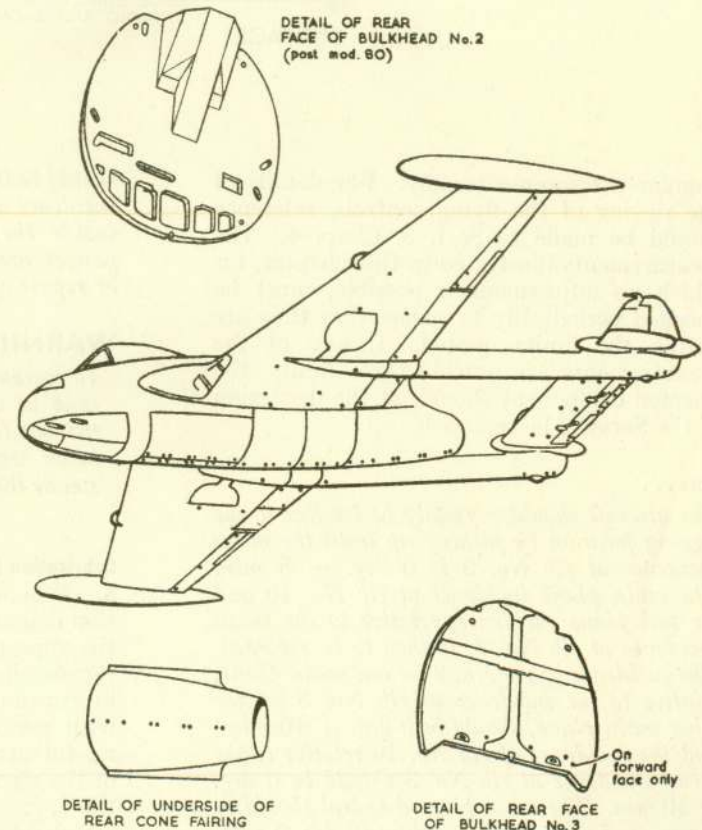


Fig. 1. Location of drain holes

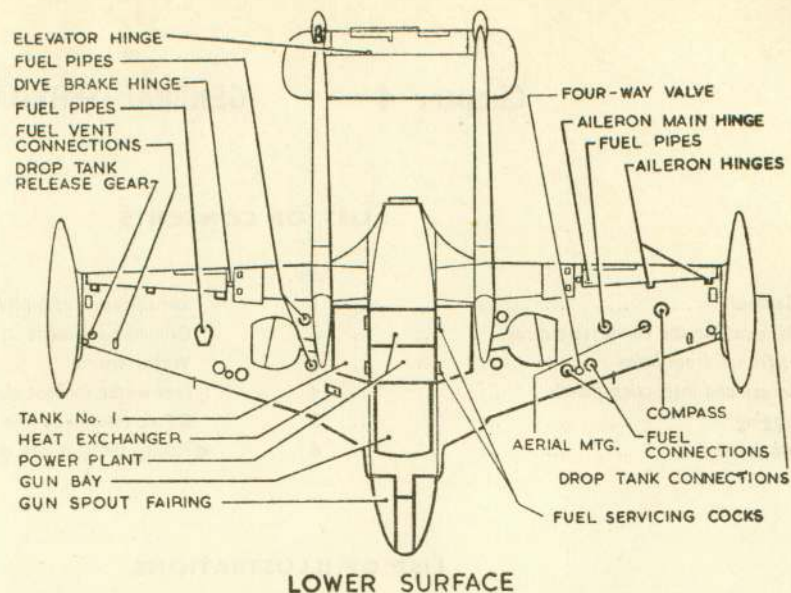
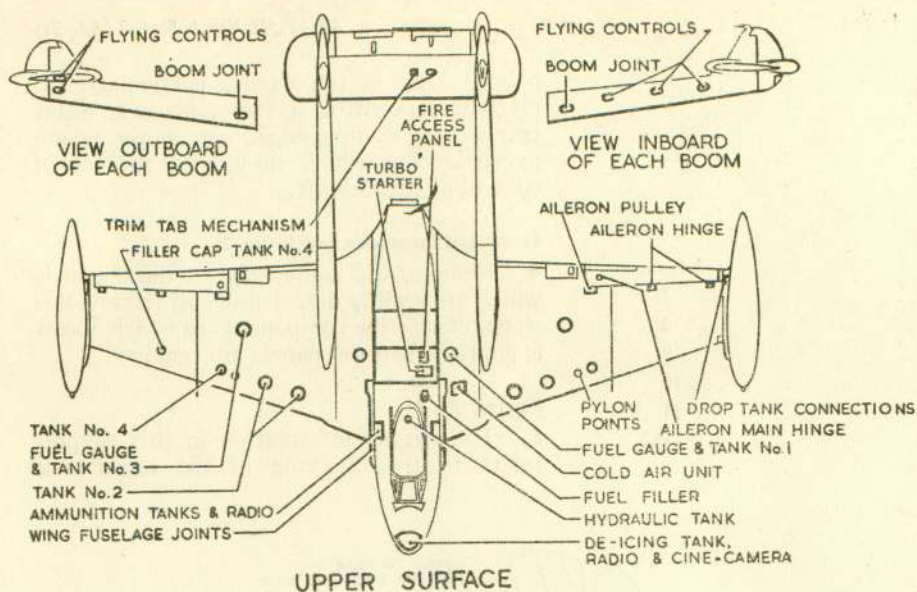


Fig. 2. Access panels

angular measurements only. For details of the rigging of the flying controls, reference should be made to Sect. 3, Chap. 4. The measurements illustrated in this chapter, for which no adjustment is possible, must be checked periodically to ensure that they are within the limits quoted. If any of the measurements are outside these limits, the affected component should, at the discretion of the Service, be replaced.

Note . . .

The aircraft should normally be levelled to the rigging position by jacking up until the mean incidence at rib No. 3 is 0 deg. \pm 5 min. The main plane incidence at rib No. 10 and the tail plane incidence, relative to the mean incidence at rib No. 3, is then to be recorded. The incidence of rib No. 3 on one main plane, relative to the incidence at rib No. 3 on the other main plane, should be 0 deg. \pm 10 min., and the incidence of rib No. 10 relative to the mean incidence at rib No. 3 should be 0 deg. \pm 10 min. The main plane dihedral should be 3 deg. \pm 5 min. at spar datum (2 deg. 9 min. at top skin surface). The tail plane incidence

should be 0 deg. \pm 10 min. relative to the mean incidence at rib No. 3. The levelling blocks inside the cabin and the internal levelling gauges are only for use during manufacture or repair of aircraft.

WARNING

To prevent distortion of the tail booms, ballast is to be added to the cabin so as to remove the load from the rear boom trestles. The rear boom trestles must remain in position to steady the aircraft.

Lubrication (fig. 3)

6. Where reference is made in the lubrication diagram to other Sections and Chapters, the appropriate chapter should be referred to for details of the various points requiring lubrication. Sealed ball races are packed with grease on assembly and should need no further attention during the normal life of the aircraft. The following table identifies the symbols and the lubricants recommended for this aircraft, and where applicable are shown in each chapter.

Note . . .

The Stores References and N.A.T.O. Code Numbers of the undermentioned lubricants are printed on the reverse of the Contents marker card.

Symbol	Designation
▲	XG-273, Grease
■	XG-275, Grease
⊠	XG-315, Grease
⊞	XG-410, Grease
▲	ZX-13, Grease
●	OM-150, Oil
○	OX-14, Oil
⊞	Pre-packed bearings
⚡	Grease gun application

Identification of pipe lines

7. The pipe lines of the various systems may be readily identified by reference to A.P.1464D, Vol. 1, Part 2, Sect. 3. Chap. 2.

For Definition of Symbols, refer to para.6
Where no Symbols are shown refer to
Section indicated.

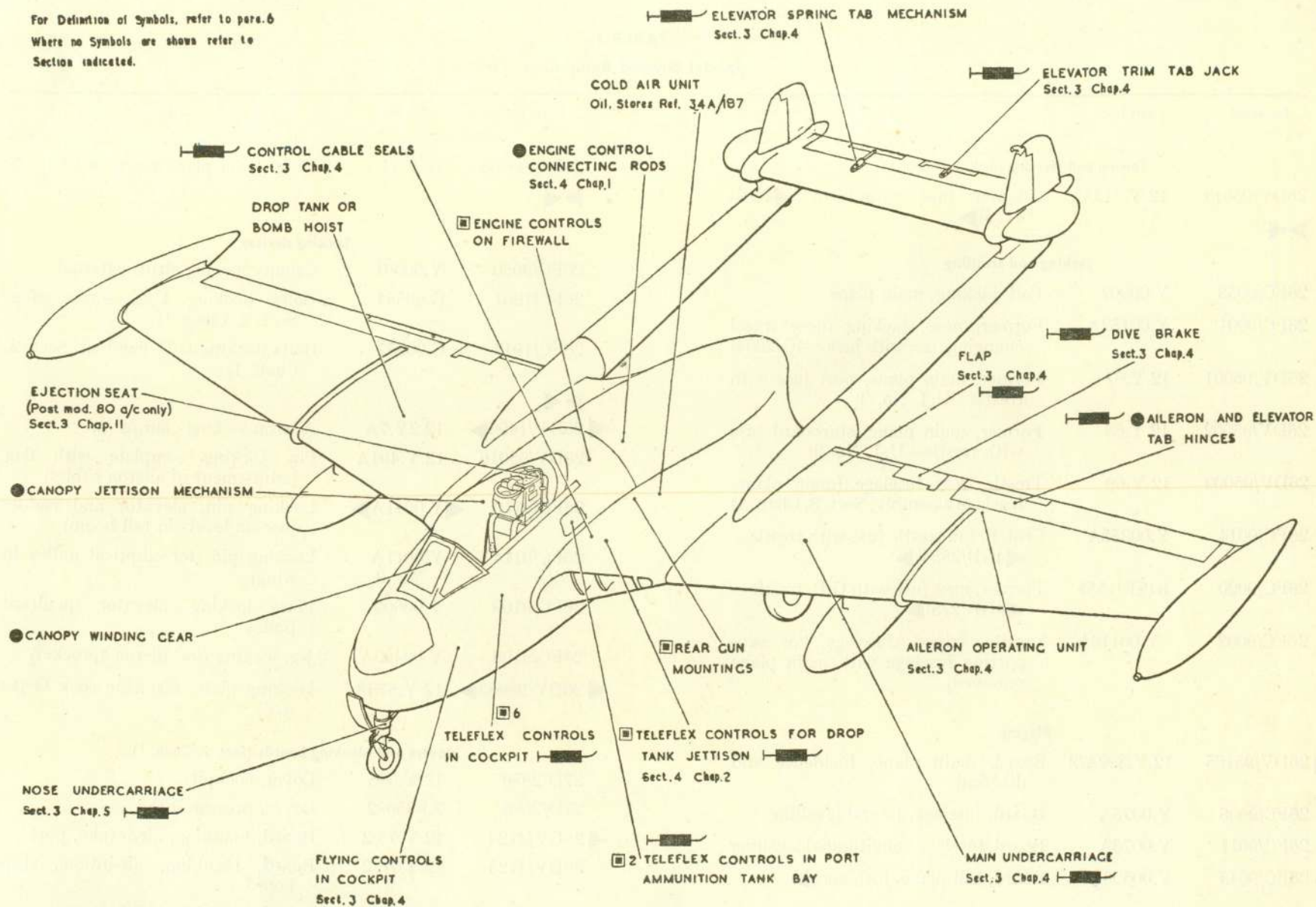


Fig. 3. Lubrication diagram

Ground equipment

8. The following items of ground equipment are provided for handling and servicing the aircraft. Table 1 identifies the special equip-

ment peculiar to the aircraft, and Table 2 the standard equipment. Where necessary, the application of the equipment is given in brackets below the relevant item and, in

some cases, reference is made to other Sections in this publication for the illustrations of items not covered in this chapter.

TABLE I
Special Ground Equipment

Stores Ref.	Part No.	Item	Stores Ref.	Part No.	Item
Towing and steering (Sect. 2, Chap. 1)					
26DV/95013	12.Y.313A	Adapter (use with arm ◀4GB/4175)▶	26DV/95005	12.Y.71	Sling, main plane (Sect. 3, Chap. 2)
Jacking and trestling			Locking devices		
26FC/9053	Y.00907	Pad, jacking, main plane	26FC/9050	Y.00901	Canopy locking strut, external
26FC/9001	Y.00152A	Former, nose, jacking (nose wheel changing, use with jack—4Q/2604)	26FC/1961	G.00554	Bolts (locking U/C, screw plug, Sect. 2, Chap. 1)
26DV/95001	12.Y.67	Former, main plane, port (use with trestle—U.J. No. 3)	26FC/1917	G.00557	Bolts (locking U/C, flag bolt, Sect. 2, Chap. 1)
26DV/95002	12.Y.68	Former, main plane, starboard (use with trestle—U.J. No. 3)	◀26DV/1466▶	12.2Y.7A	Aileron locking clamps (2)
26DV/95003	12.Y.69	Trestle, rear fuselage (main plane-fuselage assembly, Sect. 3, Chap. 1)	26DV/95016	12.Y.401A	Pin, locking complete with flag (adjustment of aileron cables)
26FC/9014	Y.00258A	Crutch, tail trestle (use with trestle—◀4GB/2554)▶	26FC/9110	◀Y.0011A▶	Locking pin, elevator and rudder (use on levers in tail boom)
26FC/9020	K(SE)1551	Former, nose (use with G.P. trestle—◀4GB/275)▶	26FC/9114	Y.0011A Mk. 3	Locking pin (for elliptical pulley in wing)
26FC/9002	Y.00118A	Trestle, tripod, fuselage (for supporting fuselage with main plane removed)	26FC/9109	Y.00600	Plate locking, elevator quadrant pulley
Rigging			26FC/9108	Y.00403A	Jig, locking (for aileron sprocket)
◀26DV/95165	12.Y.399A/2	Board, main plane, incidence and dihedral	◀26DV/95063▶	12.Y.573A	Locking plate, servicing cock (4 per A/C)
26FC/9006	Y.0075A	Board, fuselage, lateral levelling	Covers and blanking boards (Sect. 2, Chap. 1)		
26FC/9011	Y.0076A	Board, fuselage, longitudinal levelling	27D/2850	12.Y.395	Cover, cockpit
26FC/9043	Y.00500A	Board, tail plane, incidence▶	27D/2666	Z.985082	Cover, pressure head
Slings			◀26DV/4124	12.Y.75/2	Board, blanking, air-intake, port
26DV/95004	12.Y.375	Sling, complete aircraft (Sect. 2, Chap. 1)	26DV/4125	12.Y.76/2	Board, blanking, air-intake, starboard
			26DV/6138	12.Y.745	Board, blanking, tail pipe
			26DV/95044	12.Y.669A	Guard, wire, air-intake, port
			26DV/95045	12.Y.670A▶	Guard, wire, air-intake, starboard

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NOTE: The fuselage trestles, which pick up on the engine mounting and the wing joint fittings, are shown in Sect. 3, Chap. 1.

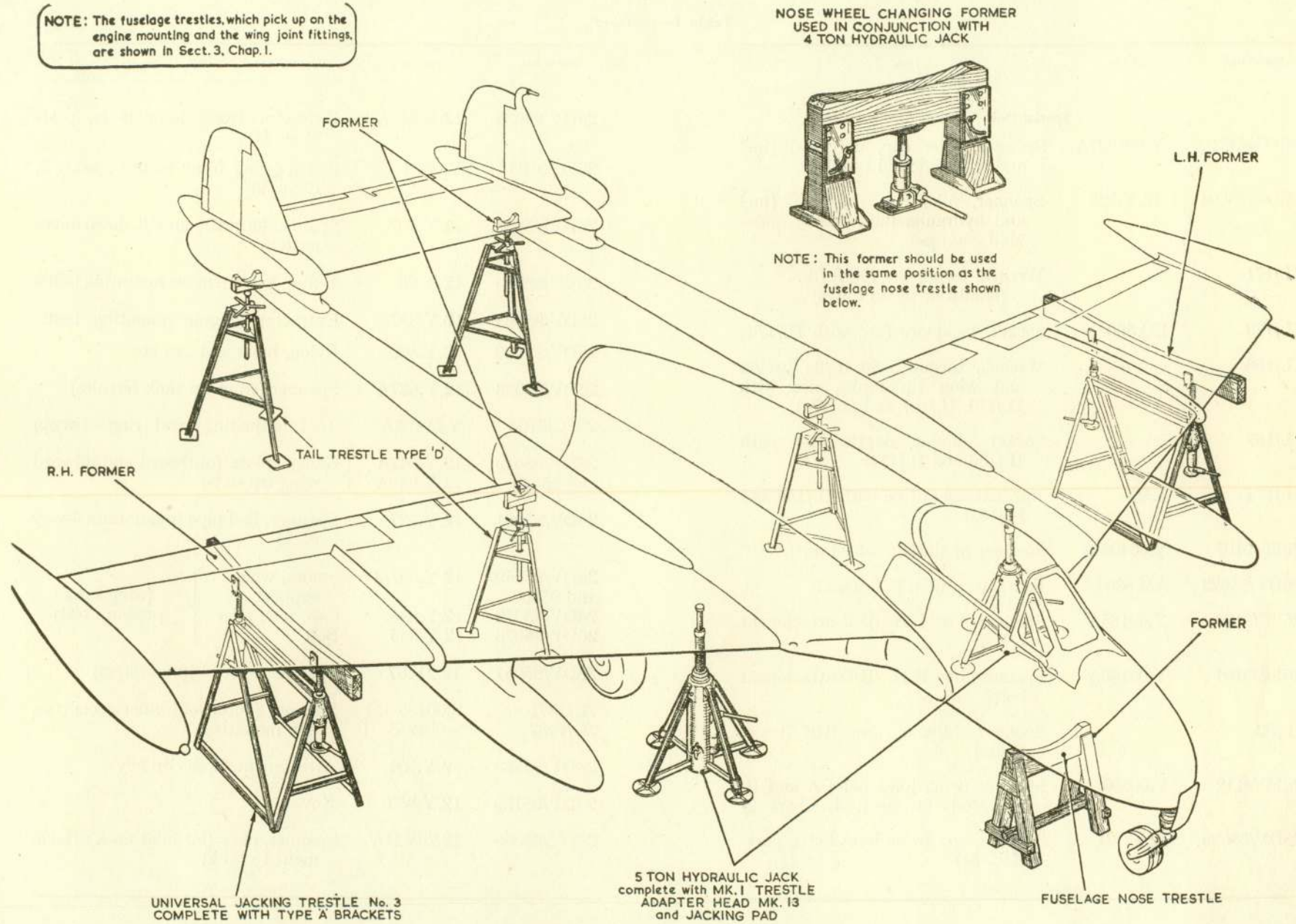


Fig. 4. Jacking and trestling

Table I—continued

Stores Ref.	Part No.	Item	Stores Ref.	Part No.	Item	
Special tools						
◀ 26FC/9062	Y.001227A	Spanner, filler cap, universal (fuel and hydraulic fluid tanks)	26DV/95035	12.Y.613A	Extractor (wing joint bolts, post-Mod. 51)	
26DV/95094	12.Y.725	Spanner, filler cap, universal (fuel and hydraulic fluid tanks) (post-Mod. 444) ▶	26FC/9105	Y.0093	Acorn (wing front bolts C, Sect. 3, Chap. 2)	
IL/171	—	Wrench, torque 20-100 ft./lb. (bombs or pylon tanks)	26DV/95025	12.Y.507	Spanner (adjustment U/C down micro switch)	
IL/173	EQ.500	Socket, bi-square (use with IL/171)	26DV/95033	12.Y.65	Bullet, guide (engine mounting bolts)	
IL/156	—	Wrench, torque 5-50 ft./lb. (pylon and wing tip tanks, use with IL/173, IL/167 and IL/174)	26DV/95093	12.Y.837	Extractor (engine mounting bolts)	
IL/167	—	Socket, double depth (use with IL/156 and IL/174)	26DV/95026	12.Y.539	Pylon, hoist and cap key	
IL/174	E.99	Bar, extension (use with IL/156 and IL/167)	26DV/95038	12.Y.627A	Spanner (wing tip tank ferrules)	
26FC/9107	Y.00406A	Spanner (main U/C wheel nut)	26FC/9104	Y.00133A	Tool (adjusting cowl ring stirrup)	
26DV/95022	AM.8305	Extractor (main U/C wheel)	26DV/95049 and 95048	12.Y.647A 12.Y.649A	} Gauge, plate (outboard and inboard wing tip slats)	
26FC/9100	Y.00185A	Spanner, box L.H. (U/C attachment bolts)	26DV/95061	12.Y.727		Spanner, fuel pipe (pylon tank 4-way cock)
26FC/9101	Y.00186A	Spanner, box R.H. (U/C attachment bolts)	26DV/95059 and 95060	12.Y.697/8	} Spider, wing support Cap, test, filler Bolt	
IL/32	—	Spanner, bi-hex., ring (U/C boom joints)	26DV/95072	12.Y.655		(wing tank pressure test)
26FC/9112	Y.00390	Spanner (wing joint bolts A and B, pre Mod. 51, Sect. 3, Chap. 2)	26DV/95073	12.Y.685		
26DV/95030	12.2Y.21	Spanner, box (wing joint bolts, post-Mod. 51)	26DV/95057	12.2Y.67	Spanner, special (fire system)	
			7G/1371	S.00135	} Spanner (outer and inner eccentrics gun mounting)	
			7G/1487	S.001255		
			26DV/95188	12.Y.851	Attachment, hose clip key	
			26DV/95189	12.Y.853	Key	
			26DV/95058	12.20Y.837	Spanner, claw (for filler neck attachment to tank)	

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TABLE 2
Standard Ground Equipment

Stores Ref.	Item	Stores Ref.	Item
	Towing and steering (Sect. 2, Chap. 1)		
4GB/4175	Arms, towing unit, short, Mk. 1	26DV/95075	Guard, engine changing, L.H.
4GB/4137	Bridle, towing, 25 ft. (for rearward towing)	26DV/95076	Guard, engine changing, R.H.
4GB/3070	Unit, steering, short		
	Jacking and trestling		Miscellaneous
4Q/2305	Adapter, head, Mk. 13	4G/4131	Adapters, inflation
4Q/2617	Body, jacking, hydraulic, 5 ton (main plane jacking)	4G/4033	Creepers, aircraft servicing
4Q/2618	Trestle, jacking, Mk. 1	4G/3026	Gauge, pressure, 0-600 lb. per sq. in.
4Q/2604	Jack, pillar, hydraulic, 4 ton (nose wheel changing, use with former—26FC/9001)	4G/3027	Gauge, pressure, 0-1,500 lb. per sq. in.
4GB/-	Trestle, U.J. No. 3 (main plane, use with formers—26DV/95001-2)	4G/4342	Mats, main plane, Type C
4GB/2554	Trestle, tail, Type D (use with crutch—26FC/9014)	4G/257	Pump, Oleo, U/C Type A
4GB/275	Trestle, G.P. 2 ft. (use with former 26FC/9020)	4G/1358	Syringe, oil
	Engine changing	4G/4220	Trolley, oxygen charging, Mk. 2
4GC/4355	Sling, aircraft engine, Ghost	4F/1714	Trolley, pressure cabin testing, Mk. 1C
4G/4354	Stand, engine erecting, Ghost	4G/4221	Trolley, H.P. air charging, Mk. 2
40B/1009	Stand, transit/servicing, Ghost, E.C.U.	4F/1799	Trolley, servicing, electric, Mk. 3
4G/4857 or } 4G/4858 }	Trolley, E.C.U. servicing Mk. 1 or Mk. 2	4F/1796	Trolley, servicing, hydraulic Mk. 2A
		26DV/95040	Guard, protective (main plane root end, trailing edge)
		◀ 21F/9	Blanket, smothering
		21F/37 ▶	Container, blanket, smothering

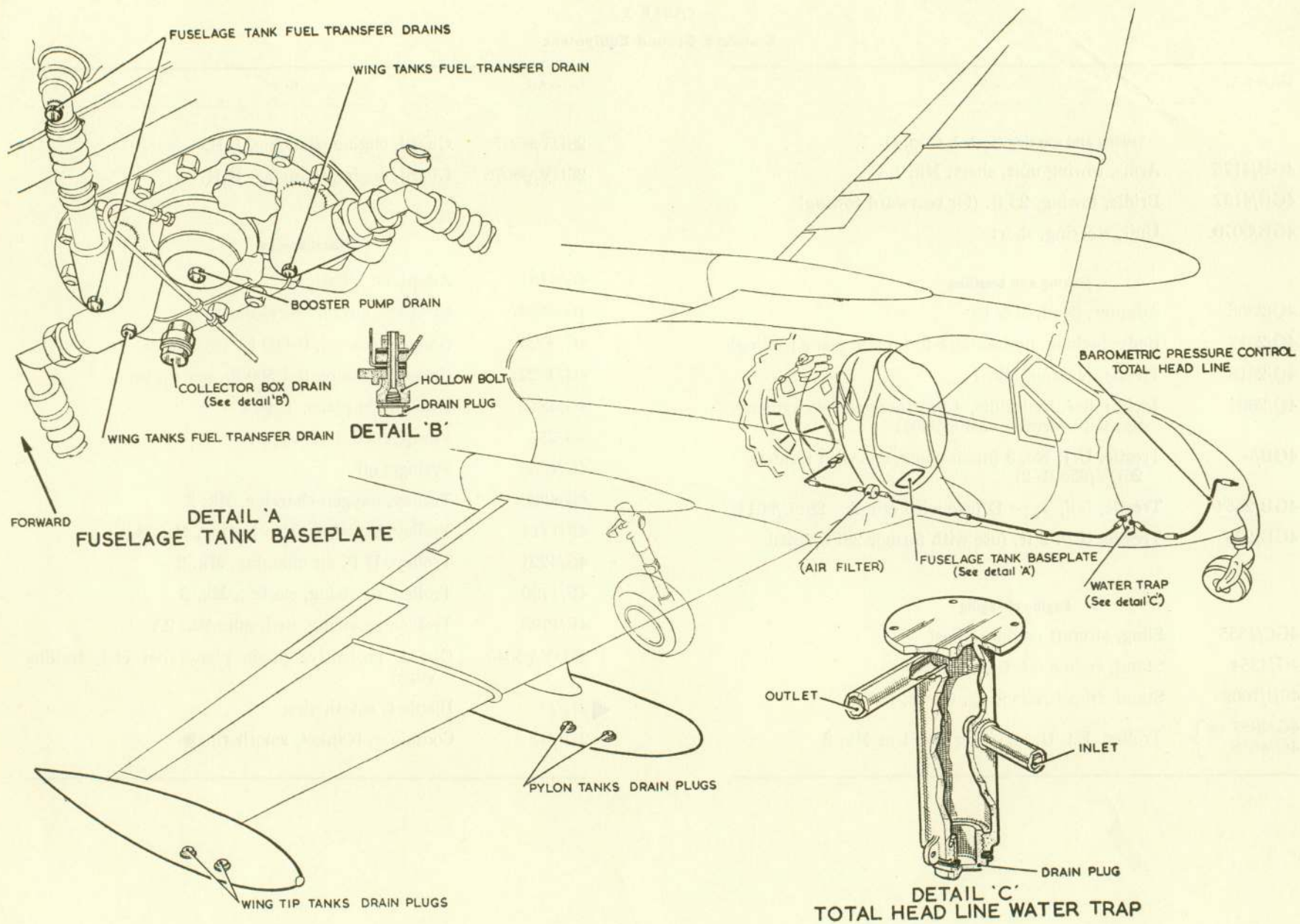


Fig. 5. Water drain points

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Water drains (fig. 5)

9. A small quantity of water in the tanks will not effect the running of the engine, but it may, however, freeze and possibly reduce the fuel flow or damage the components. The tanks should therefore be kept as full as practicable in order to reduce the condensation of water to a minimum. Due allowance must be made, in certain circumstances, for the expansion of fuel as instructed in Chap. 2 of this section.

Fuel-water content check

10. A water content check must be made on the contents of the fuel tanks at the drain points detailed below :—

- (1) *Fuselage tank.* Remove the fuselage tank water-drain plug, and collect the resultant flow of fuel in a suitable container. The plug is a special hollow bolt with a small blanking plug in its head, situated on the aft side of the tank base plate. If no fuel emerges the hole should be probed with a suitable piece of wire to clear any blockage. The fuel collected must be examined to ascertain if any water is present and samples taken off until only pure fuel emerges.
- (2) Carry out the same procedure at the following points :—

- (1) The three drain plugs on the elbows of the fuel connections on the fuselage tank base plate.
- (2) The booster pump drain plug on the fuselage tank base plate.
- (3) The drain plug on the elbow of the fuel transfer point on the bottom of the fuselage tank forward of the base plate.
- (4) The two drain plugs on each pylon tank.
- (5) The two drain plugs on each wing tip tank.

Note . . .

The sealing washers on the drain plugs must be examined and replaced if necessary, especially those for the pylon and drop tanks which must withstand pressure during fuel transfer.

B.P.C. total head line water-drain (fig. 5)

11. The water trap in the barometric pressure control line must be drained at frequent intervals, as any excess of water allowed to collect here may freeze with consequent effect upon the engine performance. Access is by removing the forward starboard gun blast panel. The air filter in the cannon bay should also be periodically inspected and thoroughly cleaned before re-assembly.

◀ Fitting the gun bay doors

12. Instances have occurred of the gun bay doors becoming detached in flight. It is possible for the doors to have every appearance of being secured, without, in fact, all the fastener hooks being engaged over the stirrups. It is essential therefore to follow the correct fitting sequence.

- (1) Offer up the starboard door and feed the fuel tank vent into the sleeve on the door.
- (2) Offer up the port door and engage the three hooks over their respective stirrups, but do not lock any of the fasteners.
- (3) Pull up each fastener *in turn* and release again, checking that as *each* one is pulled up the doors are drawn together; this is the only method of being positive, without using a torch, that the fasteners are properly engaged.

Note . . .

If the doors do not meet properly when each fastener is pulled up in turn, then the fasteners require adjustment according to the instructions given in A.P.1464B, Vol. 1.

- (4) Pull up and lock the *front* fastener.
- (5) Pull up and lock the *middle and rear* fasteners.▶

The control surface movements are given in Sect. 3. Chap. 4.

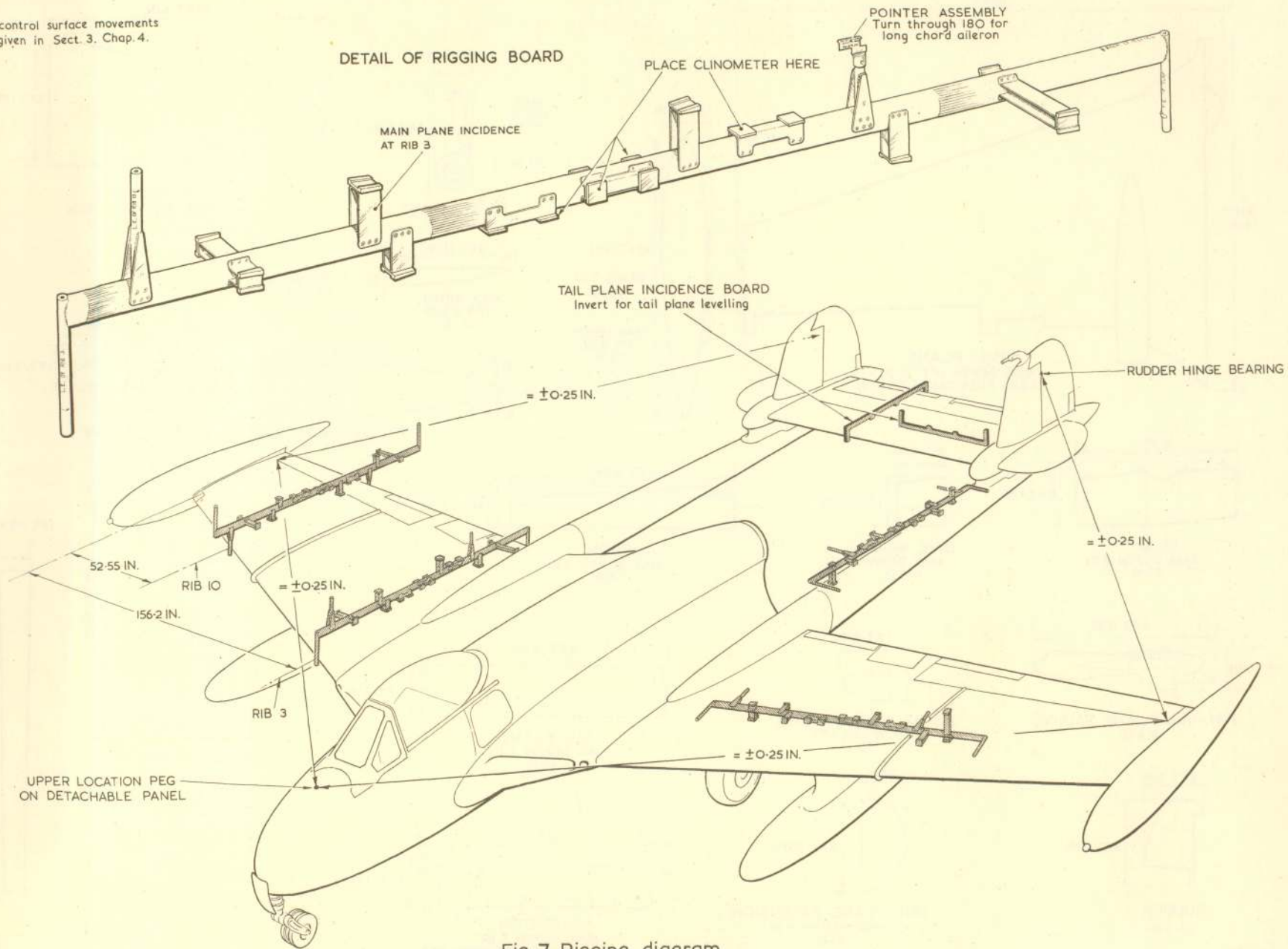


Fig. 7 Rigging diagram

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