Chapter 4 GENERAL SERVICING

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General

1. This chapter contains servicing information which is of a general nature and therefore not covered in those chapters dealing with specific components or systems. It also includes tabulated lists of ground equipment and special tools, the use of which is described in this chapter or the relevant volume dealing with the specific component system.

Dismantling the complete aircraft

2. When dismantling 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 their sub-assemblies are given in the appropriate chapters in Sections 3 and 4. Packing dimensions and approximate weights of the various items are given in fig. 5.

Airframe drain holes (*fig.* 1)

3. The drain holes, in the underside of the aircraft, are represented by dots in the illustration and vary in diameter between $\frac{3}{16}$ and $\frac{3}{8}$ in. according to their locality. They must be kept clear and any foreign matter in the vicinity of the holes should be removed.

Access and inspection panels (*fig.* 2(1) *and* (2))

4. Only those panels which are readily detachable are shown in the illustration, the annotations referring to the components to which access is obtained.

Rigging (*fig.* 4)

5. The rigging information in this chapter refers to the checking of the linear and angular measurements only. Reference should be made to Sect. 3, Chap. 4 for details of the rigging of the flying controls. The measurements given in the diagram must be checked periodically to ensure that they are within the limits quoted. If any of the measurements are outside these limits the affected components should be replaced, at the discretion of the Service, since no adjustment is possible.

Note . . .

The aircraft should normally be levelled to the rigging position by jacking up until a mean incidence of 0 *deg.* ±5 *min. is obtained at rib No.* 3. *The incidence of the main plane at rib No.* 10 *and the tail plane, relative to the mean incidence at rib No.* 3, *is then to be recorded. The incidence at rib No.* 3 *on one main plane, relative to the incidence at rib No.* 3 *on the other main plane, should be* 0 *deg.* ±10 *min. and the incidence at rib No.* 10, *relative to the mean incidence at rib No.* 3, *should be* 0 *deg.* ±10 *min. The main plane dihedral should be*

2 deg. 46 min. ±5 min. at spar datum (1 deg. 55 min. ±5 min. at top skin surface). The tail plane incidence should be 0 deg. ±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

6. The parts of the aircraft requiring lubrication are indicated in fig. 6 to 13 inclusive. Sealed ball races are pre-packed with grease on assembly and are indicated by the symbol Ⓟ The following table identifies the lubricants, against their respective symbols, recommended for this aircraft:—

Symbol	*Designation*
▣	Grease, XG-275
■	Grease, XG-270
⋈	Grease, XG-315
◣	Grease, XG-273
●	Oil, OM-150
○	Oil, OX-14
⊢▬	Indicates grease gun application
Ⓟ	Pre-packed bearings

Note . . .

(1) *The fuselage fuel tank vent pipe, which passes through a seal in the starboard cannon access door (fig. 6), must be lubricated with a solution of ten per cent glycerine and water in the area in contact with the door seal, every time the door is refitted.*

(2) *The Reference Numbers and N.A.T.O. Code Numbers of the lubricants used in routine servicing are printed on the reverse of the Contents marker card.*

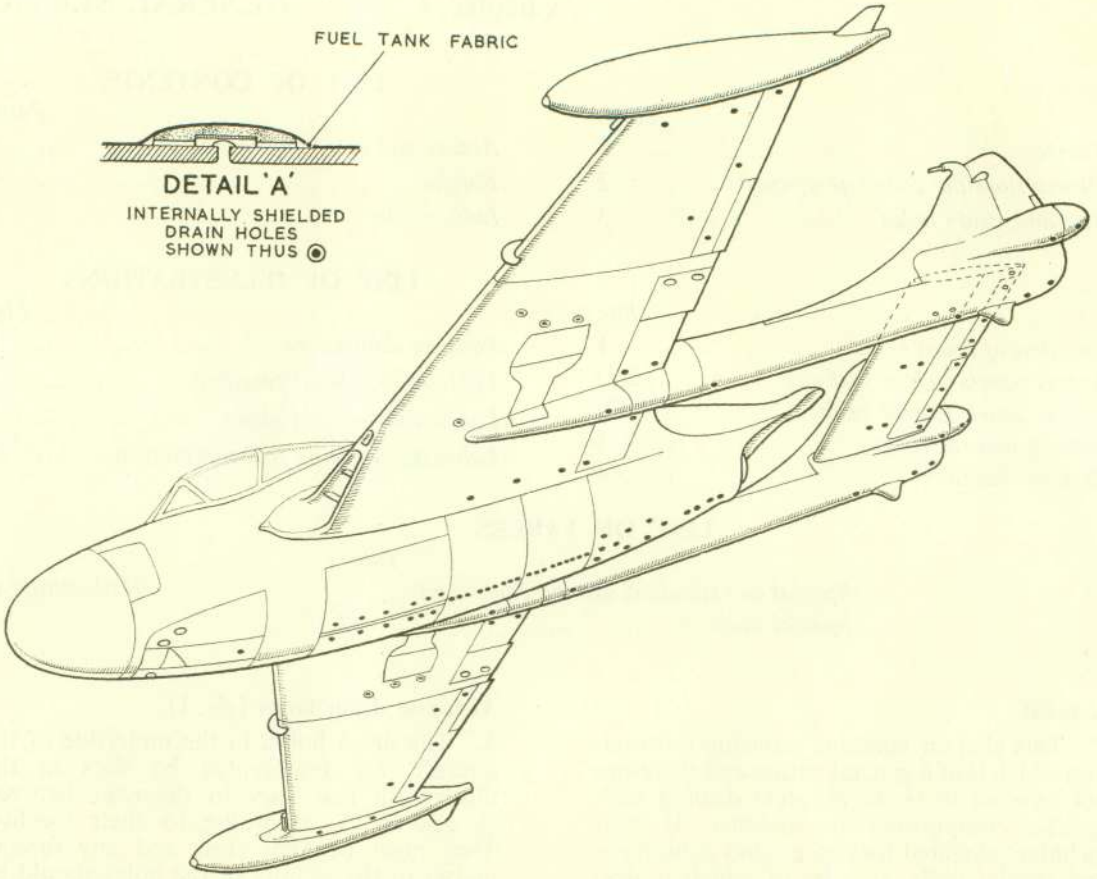

Fig. 1. Location of drain holes

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.

Ground equipment and special tools

8. The items of ground equipment and special tools, which are provided for handling and servicing the aircraft, are listed in the following tables, Table 1 listing the special and standard ground equipment and Table 2 the special tools. Any item which is described in another chapter is cross-referred to these tables by the inclusion of an item number, and reference must be made to the relevant table for description, etc.

Fitting the gun bay doors

9. It is essential to follow the proper fitting sequence, as it is possible for the doors to have every appearance of being secure, without, in fact, all the fastener hooks being engaged over the stirrups.

(1) Offer up the starboard door and feed the main fuel tank vent into the sleeve on the door.

(2) Offer up the port door and engage the three fasteners 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 in accordance with 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.

TABLE I

SPECIAL AND STANDARD GROUND EQUIPMENT

Item No.	Stores Ref.	Part No.	Item
		"A"—Picketing and control locking	
1	26DV/1466	12.2Y.7A	External clamps, aileron
◀2	26DV/95100 26DV/95101	12.21Y.7A.ND 21Y.8A.ND	Main U/C fittings, deck securing, port and starboard
3	26DV/95102	12.21Y.9A.ND	Nose U/C fitting, deck securing
4	26DV/95099	12.20Y.457A.ND	Tail boom fitting, deck securing
		"B"—Towing and steering equipment	
1	4GB/3070	—	Steering arm, short
2	4GB/4175	—	Towing arm, short
2A	4GB/4176	—	Adjustable fork unit, Mk. 2
3	26DV/95103	12.21Y.277A	Towing arm spool adapter
4	4GB/4137	—	Towing bridle, 25 ft. ▶
		"C"—Aircraft jacking equipment	
1	4Q/2617	—	5 ton jack body, hydraulic, tilting
2	4Q/2619	—	Trestle, Mk. 2 (use with item C1)
3	4Q/2305	—	Adapter head, Mk. 13 (use with item C1)
4	4Q/2655	—	Adapter head, Mk. 102 (use with item C1)
◀5	26DV/5104	12.21Y.163	Former, nose jacking (with hinged legs) ▶
6	4Q/2604	—	Jack, hydraulic, 4 ton pillar (use with item C.5)
7	26DV/3641	12.20Y.31	Pads, mainplane jacking. British screw-in type with deepened recess (use with items C.1 and C.3)
	OR		
◀8	26DV/95047	12.20Y.309	Pads, main plane jacking. American screw-in type with ball head
9	26DV/9756	12.21Y.331	Wheel change jack adapter
		"D"—Aircraft trestling equipment	
1	4GB/—	—	No. 3 U.J.T., main plane steadying (with type "A" brackets, less beam)
2	4GB/2554	—	Trestle, tail, type "D" (supporting stub boom and rear of tail boom)
3	4GB/275	—	Trestle, general purpose, 2 ft. (fuselage nose)
4	26DV/95107	12.21Y.185A	Former, nose trestle (use with item D.3) ▶
5		⋈	
◀6	26FC/9014	Y.00258	Former, for stub boom and trestle, 2 ft. (use with item D.2)
7	26DV/95106	12.21Y.223A	Trestle, fuselage side
8	26DV/95108	12.21Y.173A	Trestle, engine mounting
9	26DV/95001 26DV/95002	12.Y.67A 12.Y.68A	Trestle, wing, port and starboard (use with item D.1)
		"E"—Aircraft slinging equipment	
1	26DV/95066	12.3Y.17A	Sling, complete aircraft
2	26DV/95067	12.21Y.3	Sling, fuselage
3	26DV/95005	12.Y.71A	Sling, main plane
4	26DV/4009	12.20Y.273A	Sling, main plane (inboard section)
5	26DV/4010	12.20Y.275	Sling, main plane transporting (outboard section)
6	26DV/95043	12.20Y.349A	Sling, main plane extension (assembly purposes only)
7	26DV/6631 26DV/95182	12.20Y.363 12.20Y.2245A	Lifting bolt assembly, pre- and post-Mod. 2053 (use with items E.1 and G.9)
8	26DV/95082	12.20Y.697A	Lifting sling (use with G.8)
		"F"—Rigging equipment	
1	26DV/95183	12.20Y.2293A	Board, incidence/dihedral, main plane
2	26DV/95112	12.3Y.113A	Board, incidence, tail plane (low)
3	26DV/95089	12.3Y.47	Board, fuselage (lateral levelling)
4	26DV/95111	12.21Y.249	Board, fuselage (longitudinal levelling) ▶
5	26FC/9110	Y.0011A	Locking pin, elevator and rudder levers (rear of tail booms)
◀6	26DV/95114	12.21Y.245A	Locking pin, aileron pulley (rib 5)
7	26DV/95113	12.21Y.235	Locking plate, aileron, control column

TABLE I—*continued*

Item No.	Stores Ref.	Part No.	Item
8	26DV/95125	12.20Y.1001A	Plate setting, elevator lever quadrant
9	26FC/9079	13.Y.177	Bar, rudder pedal locking
10	26FC/9114	Y.0011A, Mk. 3	Locking pin, elevator and rudder elliptical pulleys, stub booms (false spar)
		"G"—Miscellaneous equipment	
1	26DV/95044	12.Y.669A	Guard, wire, air-intake, port
2	26DV/95045	12.Y.670A	Guard, wire, air-intake, starboard
3	26DV/95238	12.Y.905A	Board, blanking, air-intake, port
4	26DV/95239	12.Y.906A	Board, blanking, air-intake, starboard
5	26DV/6138	12.Y.745A	Board, blanking, jet-pipe
6	26DV/95184	12.21Y.385A	Locking bolt, main undercarriage
7	26DV/95087	12.21Y.89A	Locking bolt, nose undercarriage
8	26DV/95192	12.20Y.955A.ND	Jury undercarriage (removing crashed aircraft)
9	26DV/95164	12.20Y.845	Support sling (damaged aircraft)
10	26DV/4014	12.20Y.191A	Jury struts, wings folded, port and starboard
11	26DV/95083	12.20Y.953A	Cabin access ladder
12	26DV/95376	12.20FC.1117A	Locking pin assembly, hatch jettison gun▶
13		⋈	
◀14	26DV/95095	12.20Y.377	Cap, blanking, wing tip fuel jettison nozzle (2 off)

Item No.	Stores Ref.	Part No.	Item
		"H"—Standard servicing equipment	
1	4F/1714	—	Trolley, pressure cabin testing, Mk. 1C▶
2	4G/257	—	Pump, oleo, type "A"
◀ 3	4G/4131	—	Adapter, inflation
4	4G/3029	—	Gauge, 0 to 3,500 lb. per sq. in.▶
5	4G/3028	—	Gauge, 0 to 2,500 lb. per sq. in. (use with item H.2)
6	4G/1358	—	Syringe, oil (charging oleo legs)
◀ 7	4G/3138	—	Trolley, oxygen cylinder, type "B"▶
8	4G/4342	—	Mat, main plane
9	4G/4033	—	Creepers, aircraft servicing
◀10	4G/4220	—	Trolley, H.P. air charging, Mk. 2
10A	4G/2795	—	Trolley, air bottle carrying (carrier only)
11	4F/1796	—	Trolley, hydraulic servicing, Mk. 2A▶
		"I"—Engine change equipment	
1	4G/4354	T.75592	Stand, engine, Ghost
◀2	4GC/4355	GM.10209	Sling, engine, Ghost▶
3	40B/1009	—	Stand transit, Ghost (E.C.U.)
◀4	26DV/95075	12.20Y.619A	Engine change guide plate, port
5	26DV/95076	12.20Y.620	Engine change guide plate, starboard
6	26DV/95090	J.49307	Jig, engine alignment
7	26DV/95093	12.Y.837	Extractor, engine bolt▶
		"J"—Fabric covers	
◀1	27D/2964▶	⋈	Canopy
2	27D/2944	⋈	Nose
3	27D/2666	⋈	Pressure head

Fabric covers are not provided for air-intakes and jet pipes. Use items G.3, G.4 *and* G.5.

TABLE 2—"K"—SPECIAL TOOLS

Item No.	Ref. No.	Part No.	Item
1	26DV/95020	12.Y.441	Jubilee adapter, ratchet spanner. Ratchet handle $\frac{9}{32}$ in. square drive (used with standard ratchet spanner; Jubilee clips wing tank hoses)
2	26DV/95027	12.Y.571	Fuel connection spanner (bulkhead and rear joint at R.D. fuel supply from wings)
3	26DV/95030	12.2Y.21	Hexagon box spanner for wing joint "A" bolts
5	26DV/95033	12.Y.65	Bullet guide for engine mounting outboard bolts
6	26DV/95035	12.Y.613A	Extractor, wing joints bolts "A" and "B" (use with item K.18)
10	26DV/95052	12.20Y.69A	Latch pin extractor (manual wing folding)
11	26DV/95038	12.Y.627A	Special tool for wing-tip tank ferrules
12			
13			
14	26DV/95188	12.Y.851	Socket assembly for Cheney hose clip (fuel tank installation)
15	26DV/95053	12.20Y.33A	Alignment tool (use on fuel swivel unions when folding wings)
16	26DV/95189	12.Y.853	Keyhead (use with K.14)
17	26DV/95096	12.21Y.83	Spanner, wheel extracting
18	26FC/4177	Y.00181	Adapter plug (main plane fitting)
19	26FC/9105	Y.0093	Acorn (removal and fitting of bolt at joint "C")
20	26FC/9112	Y.00390	Box spanner (wing bolt "B")
21	26FC/9100	Y.00185A	Spanner, ratchet (port U/C and boom joint bolts)
22	26FC/9101	Y.00186A	Spanner, ratchet (starboard U/C and boom joint bolts)
23	7G/1483	12.2Y.49A	Spanner, ratchet, gun removal (use on locking sleeve)
24			
27			
28			
29			
30			
31	26DV/95058	12.20Y.837	Spanner, special, No. 1 and 4 tank filler attachments
32	26DV/95123	12.20Y.11A	Assembly, holdback line
33	26DV/95122	12.20Y.9A	Assembly, bridle line
34			
35, 36, 37	26DV/9113	YM.772-339B	Tool kit, canopy hatch jettison mechanism
38			
39	26DV/95057	12.2Y.67	Spanner, high rate discharge extinguisher bottle
40	26DV/95064	12.20Y.783A	Alignment sight kit
41	7G/1481	12.20Y.865A	Spanner, gun harmonisation
42	26DV/95063	12.Y.573A	Fuel servicing valve locking plates
43			
44	27VA/3303	.C.O.5928	Dunlop clamping block for pressure relay valves
45	26DV/95247	12.20Y.939A	Pump, suction pipe assembly (draining No. 4 wing tank)
46	26DV/95177 26DV/95178	12.20Y.20771 12.20Y.20231	Bullets for wing tank tie-rods
47	B11/156	—	Torque wrench, wing-tip tank
48	B11/H7609	—	Socket (use with items K.47 and K.49)
49	B11/H4416	—	Bar extension (use with items K.47 and K.48)
50	27G/5441	A.10019B	Brake alignment fixture
51	27G/5442	A.O.101242	Pad wear gauge
52	27G/5443	A.O.101212	Piston extractor
53	27G/5444	A.O.101096	Tenon wear gauge
54	27G/5445	A.M.20351	Assembly clamp

TABLE 2—"K"—Special Tools—*contd.*

Item No.	Ref. No.	Part No.	Item
55	27G/5103	A.O.50592	Piston spanner
56			
57	26DV/95228	12.21Y.71A	Spanner, torque link plug
58	26DV/95137	12.21Y.73A	Spanner, retaining nut lower leg
59	26DV/95229	12.21Y.75	Spanner, orifice control assembly
60	26DV/95230	12.21Y.77A	Peg spanner, bottom end cap
61	26DV/95231	12.21Y.337A	Spanner, oleo seal nut
62	26DV/95232	12.21Y.351	Spanner, bolt
63	26DV/95233	12.21Y.361A	Special spanner, nose undercarriage shock-absorber
64	26DV/95234	12.21Y.373A	Peg spanner, nose undercarriage
65	26DV/95235	12.21Y.453	Spanner, fluid head retaining nut, main undercarriage
66	26DV/95136	12.20Y.2123A	Key spanner, fuel and hydraulic fluid tanks

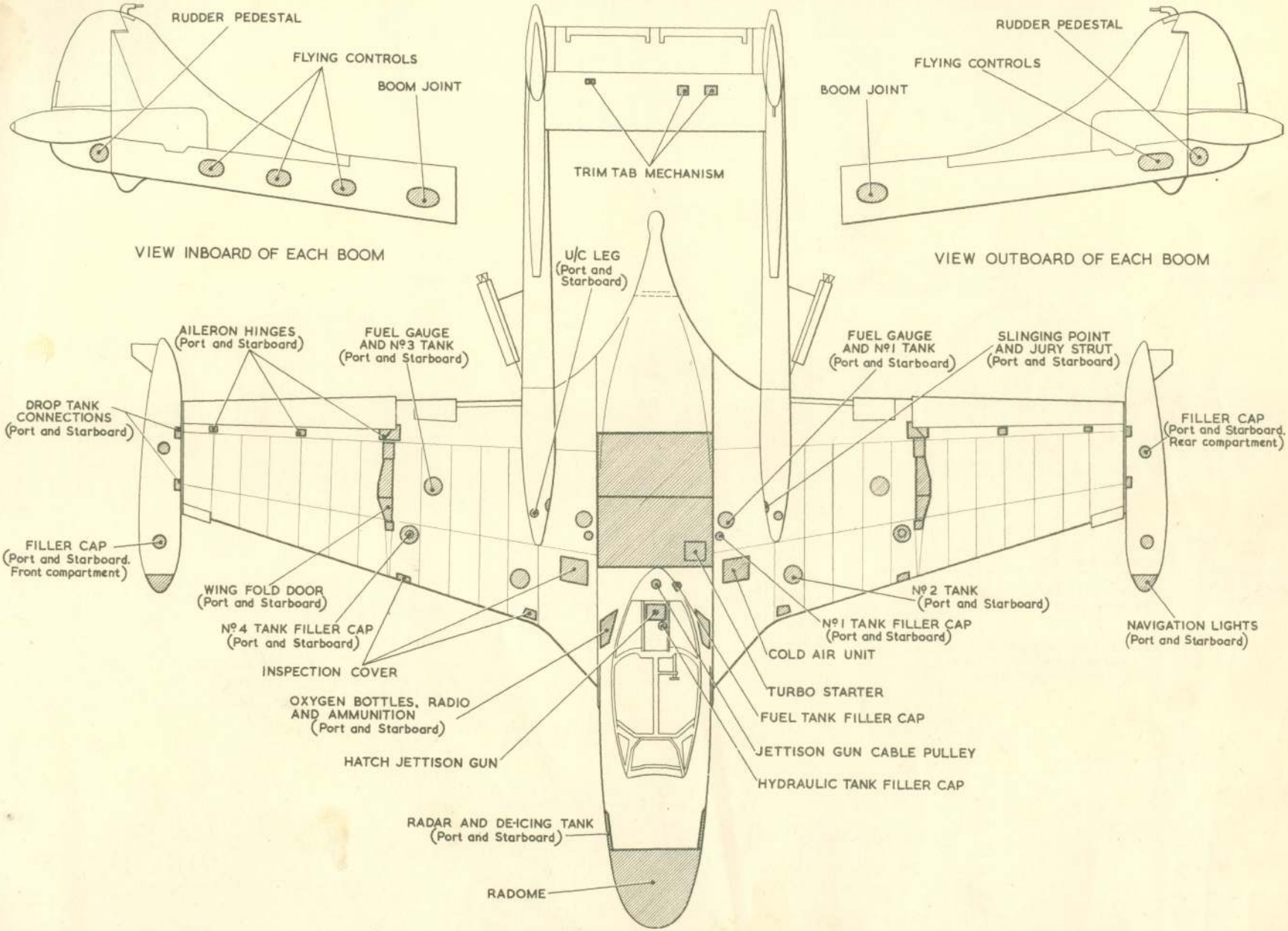

Fig.2 (1) Access panels (Upper surface)

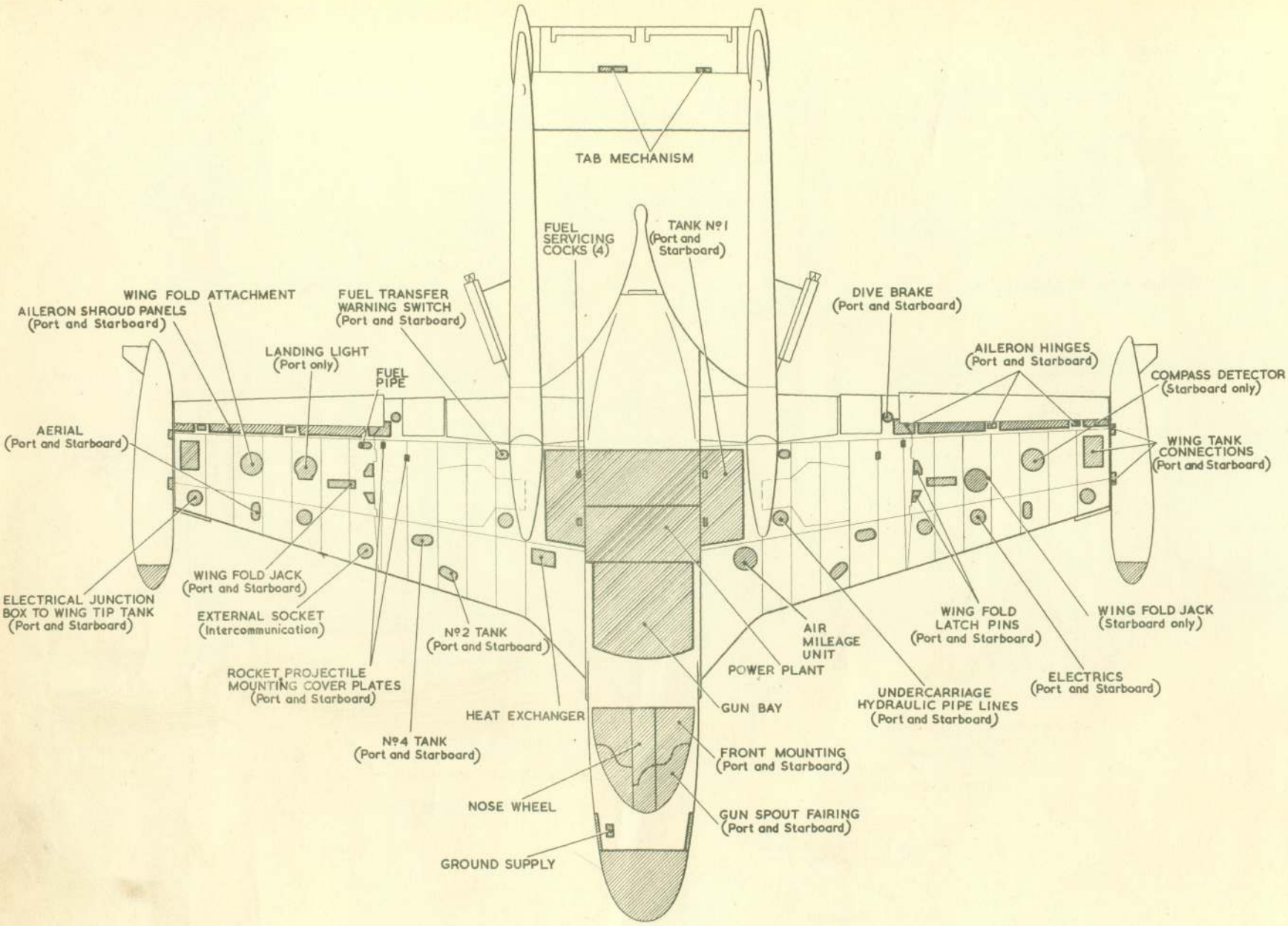

Fig.2 (2) Access panels (Lower surface)

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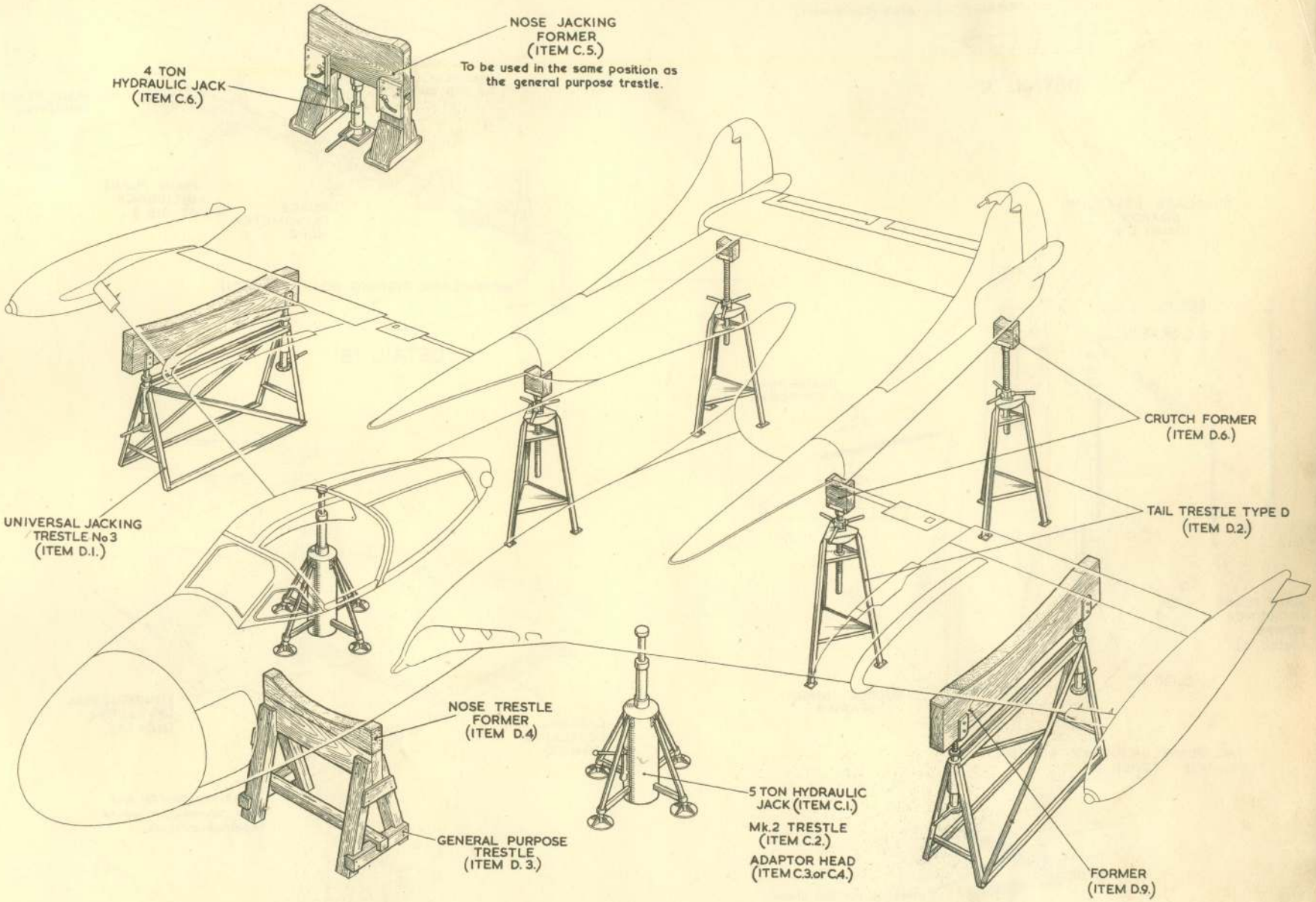

Fig. 3 Jacking and trestling

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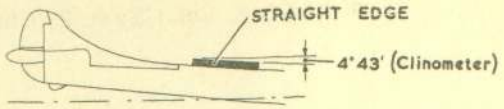
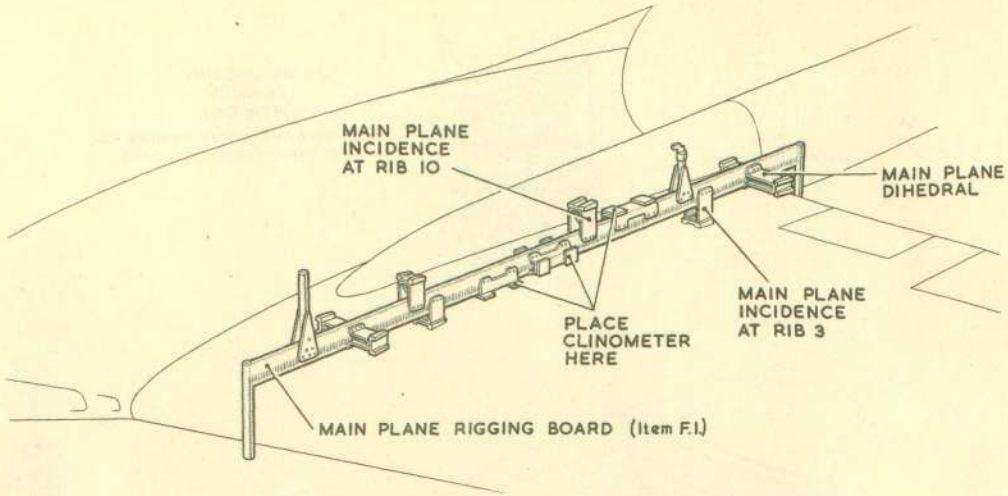
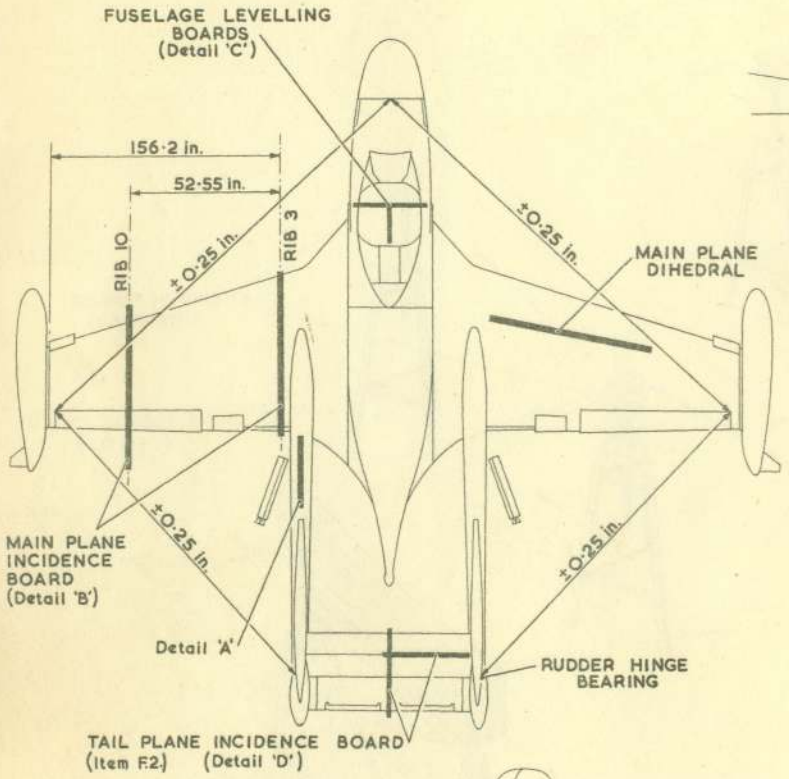
PP8504 357917/8667 2/59 755 C & P Gp. 924 (4)

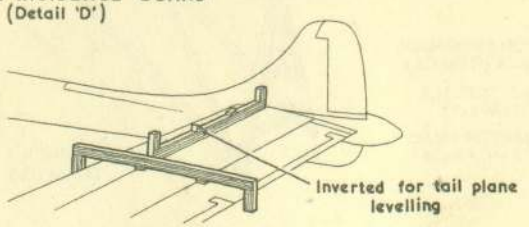


DETAIL 'A'

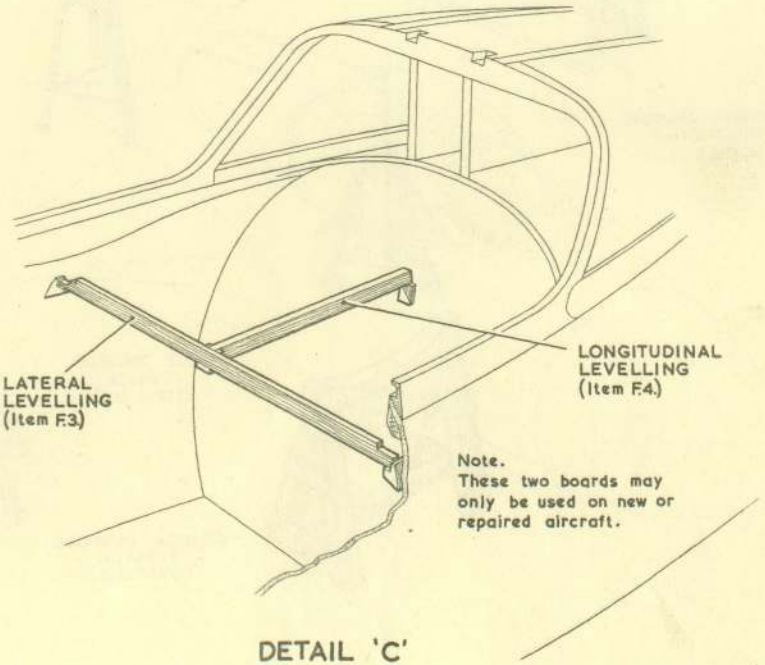


DETAIL 'B'





DETAIL 'D'



DETAIL 'C'

Fig. 4 Rigging diagram

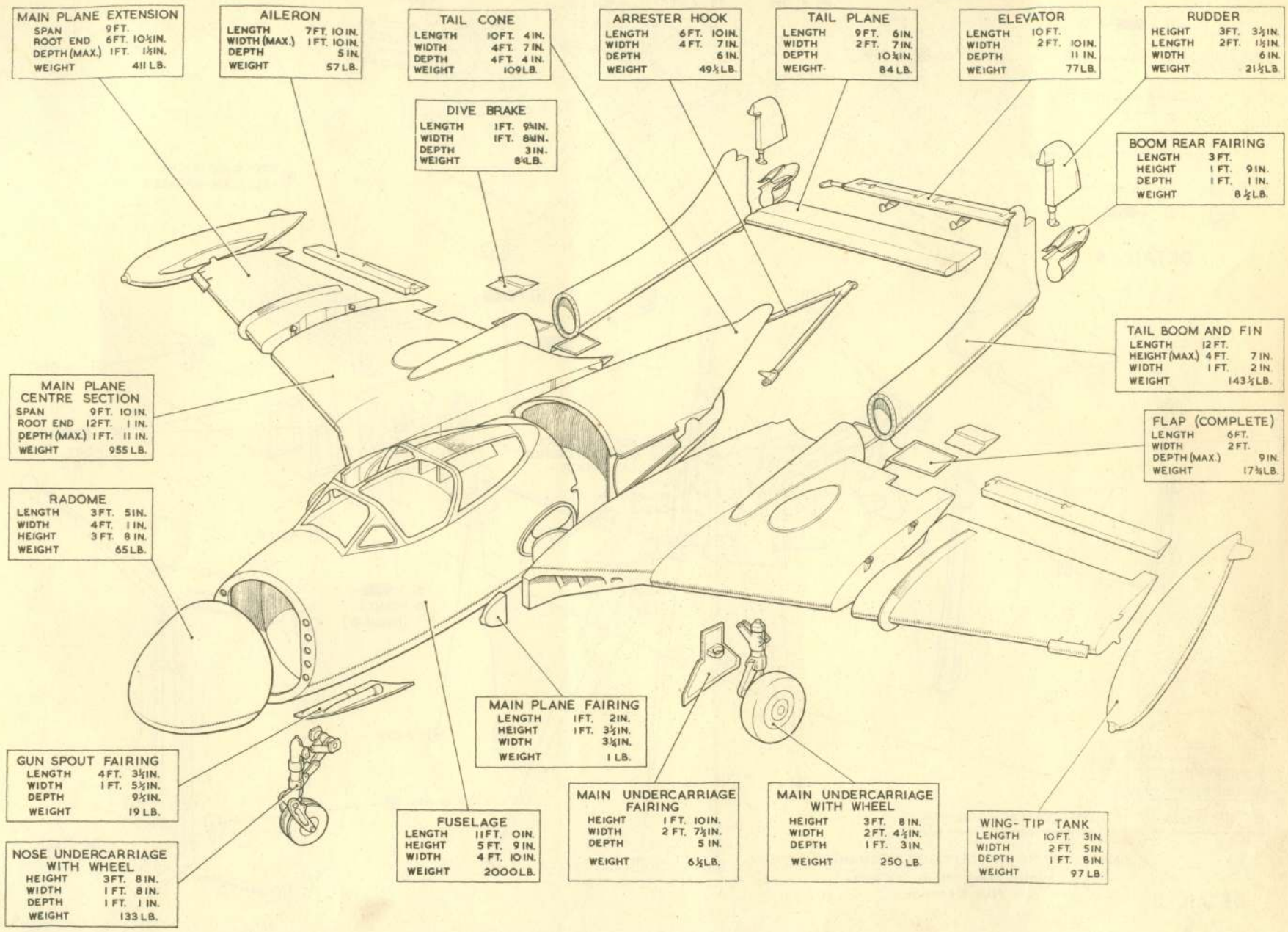


Fig. 5 Packing dimensions

PP8520 361556/8987 4/59 630 C & P Gp. 924 (4)

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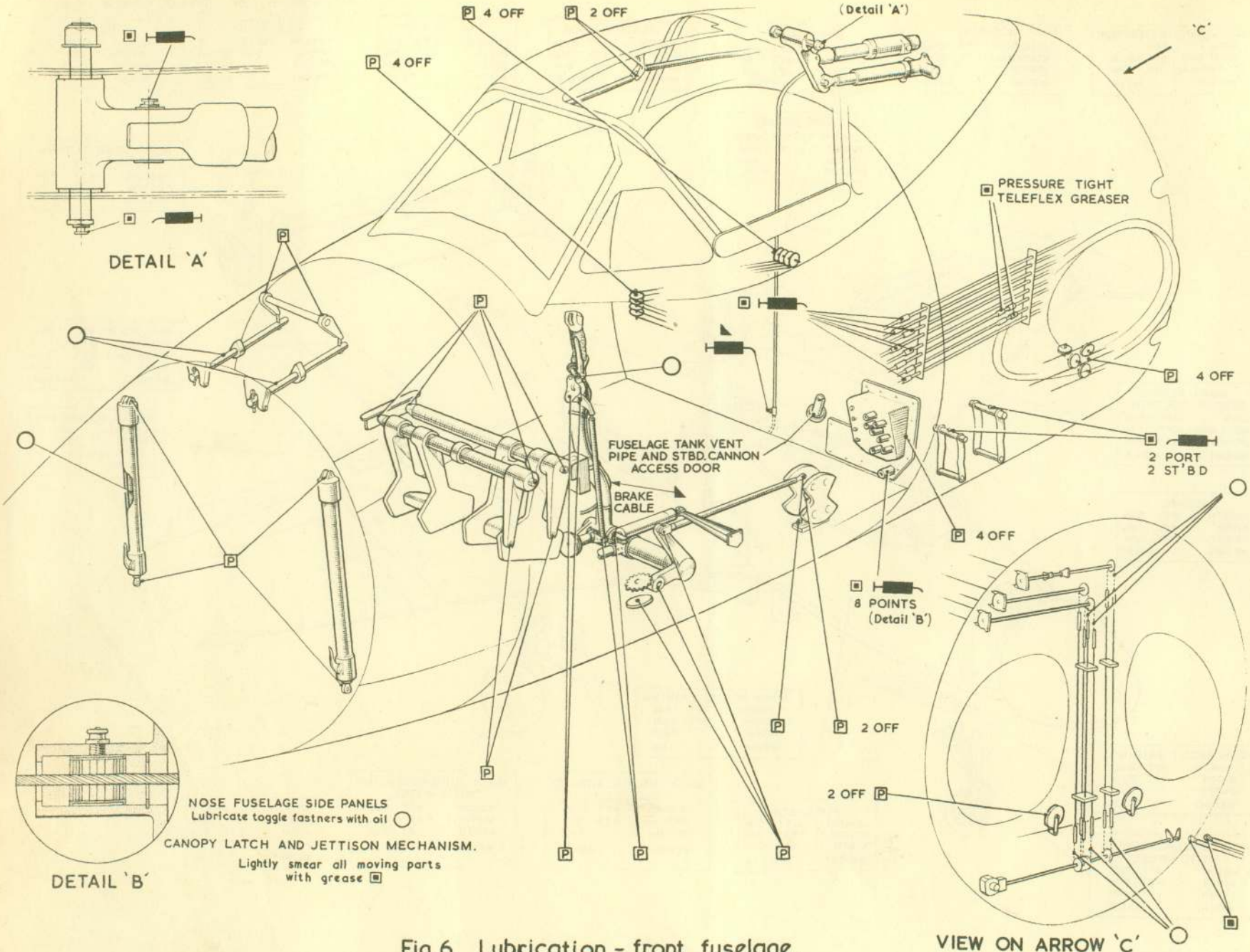

Fig.6. Lubrication - front fuselage.

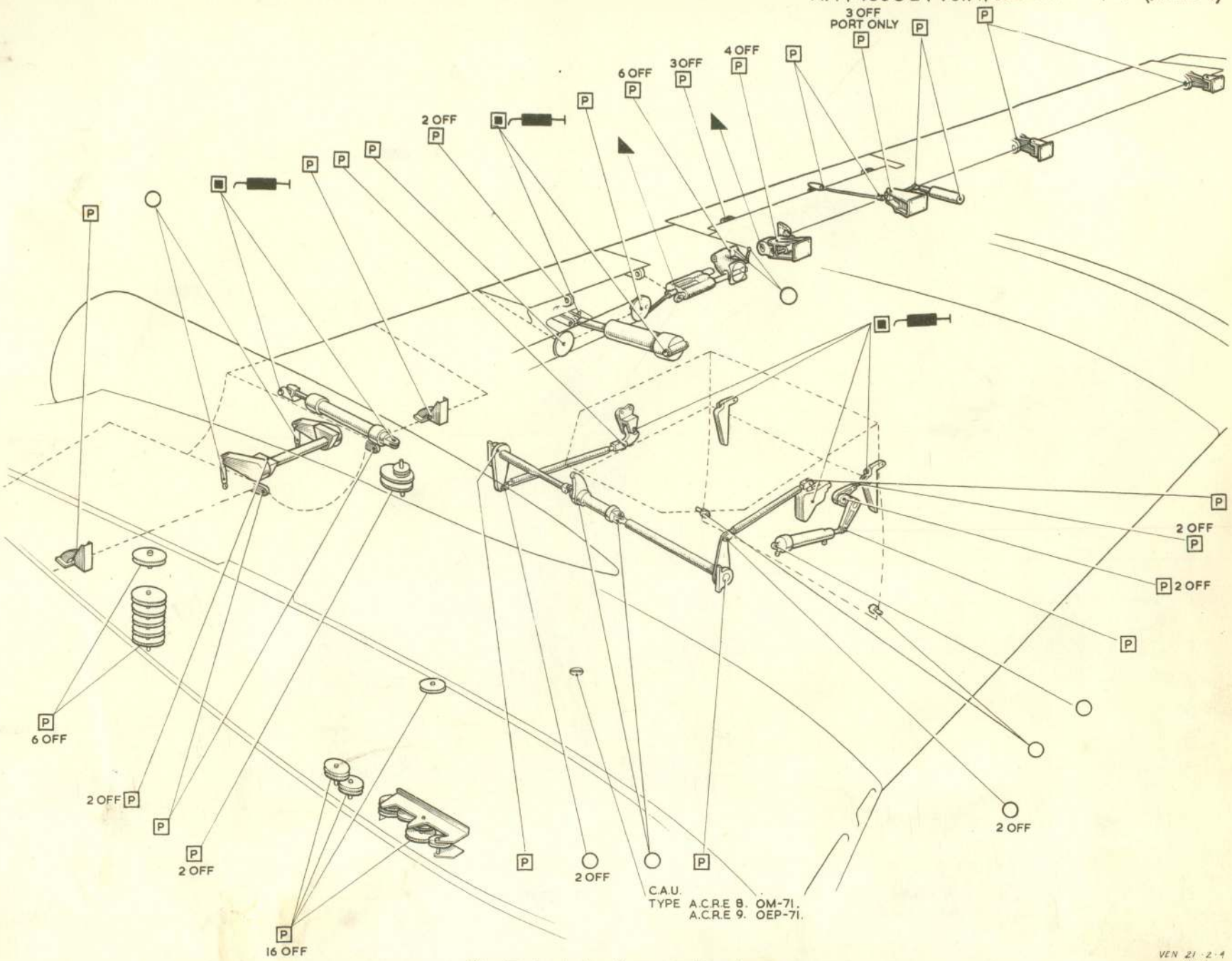

Fig. 7 Lubrication - main plane

VEN 21-2-4
1SS-4

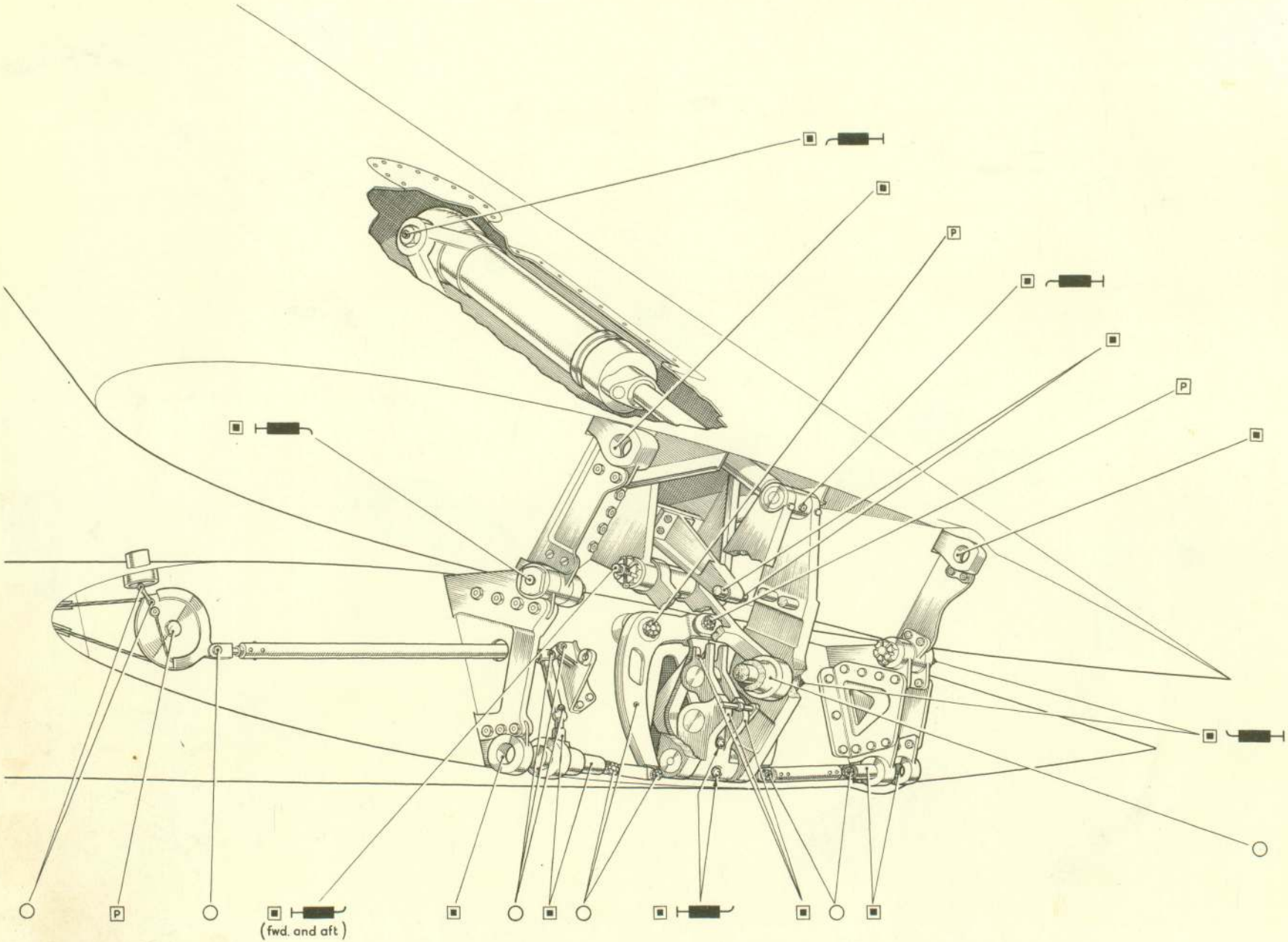

Fig.8 Lubrication-wing fold mechanism

VZI 2-4
155.3

Dmd 5750 176997 750 7/57 AB 979/3 14-67

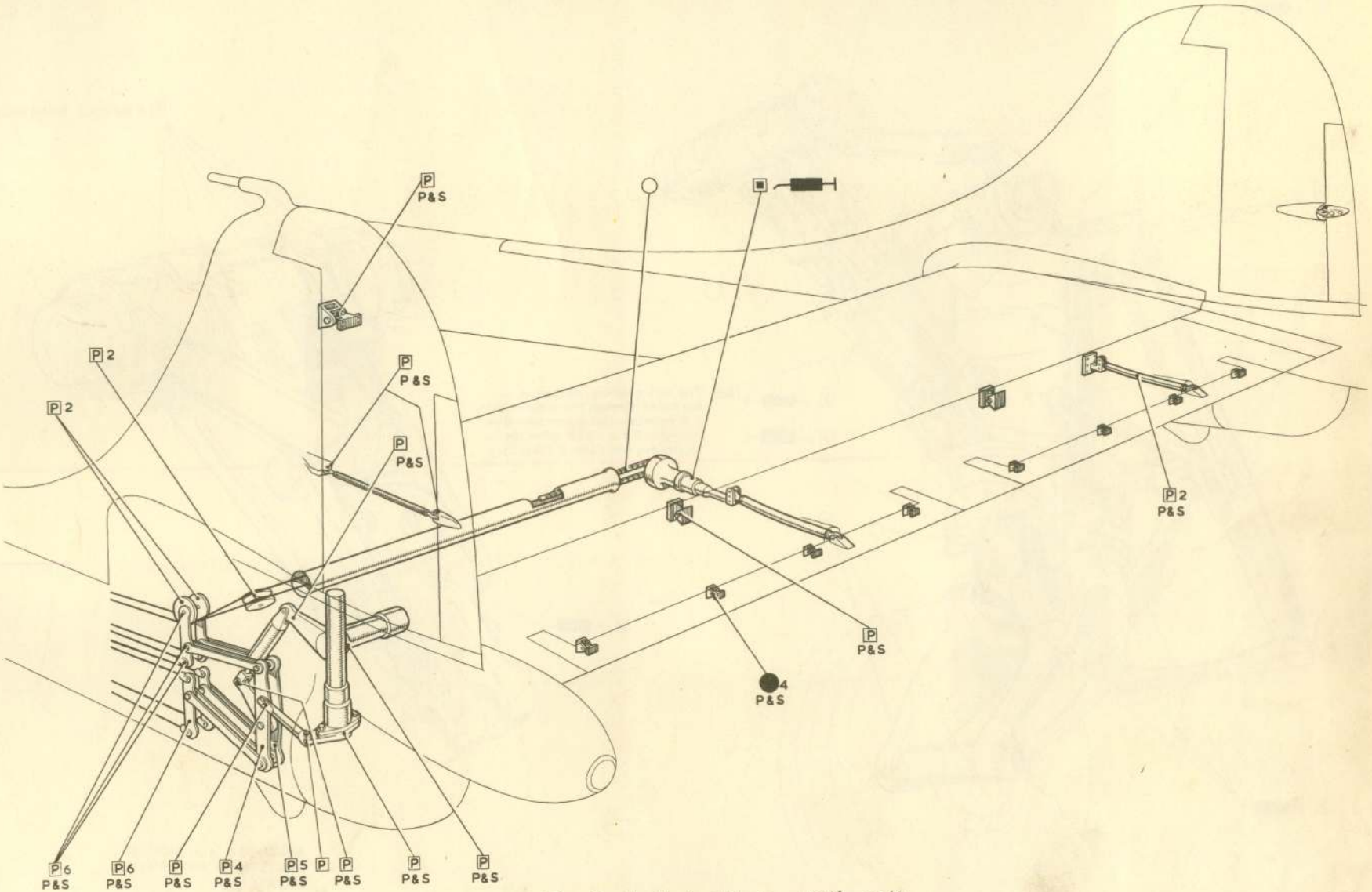

Fig. 9 Lubrication – tail unit

(A.L.55, May 57)

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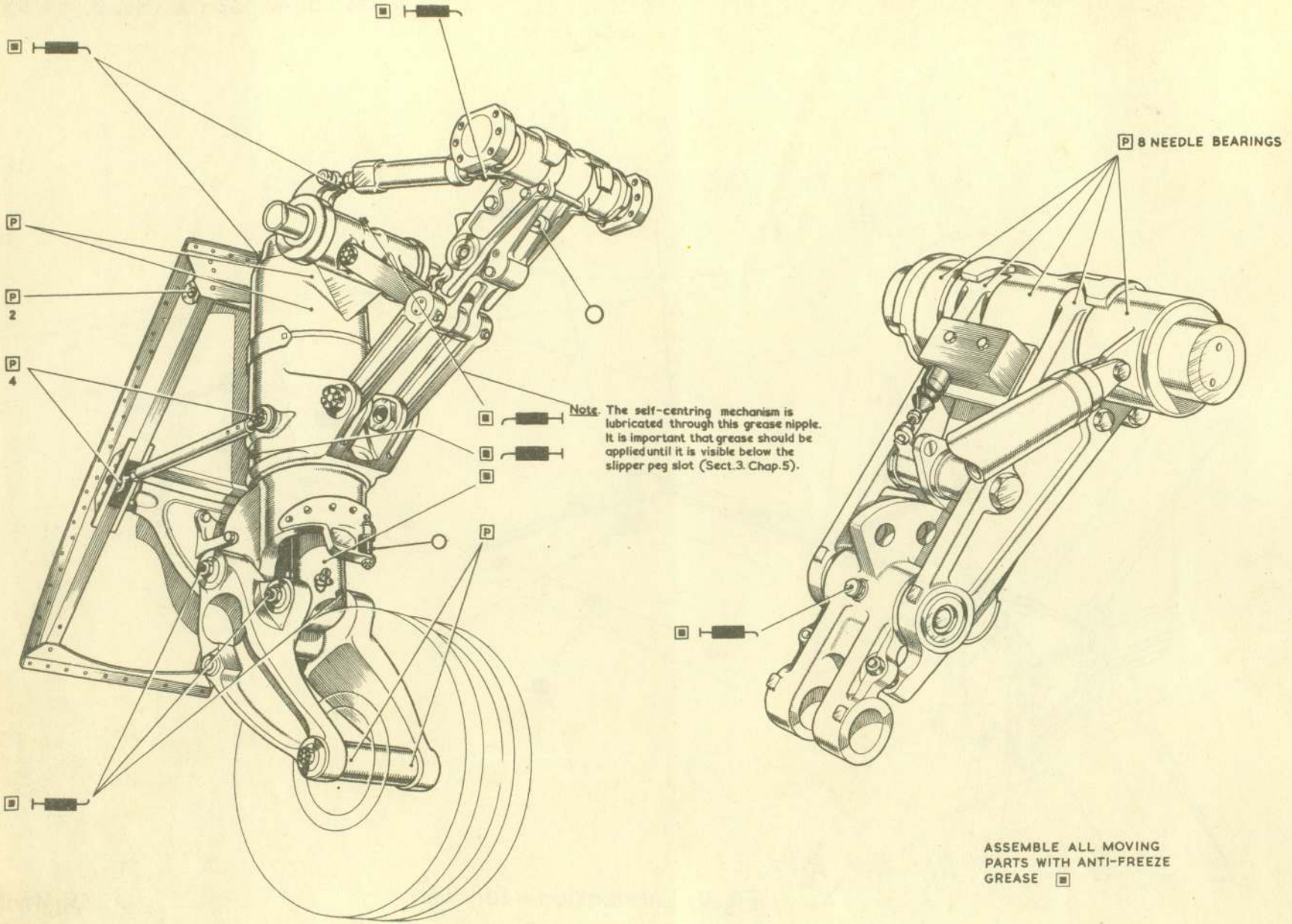

Fig.10 Lubrication - Nose undercarriage

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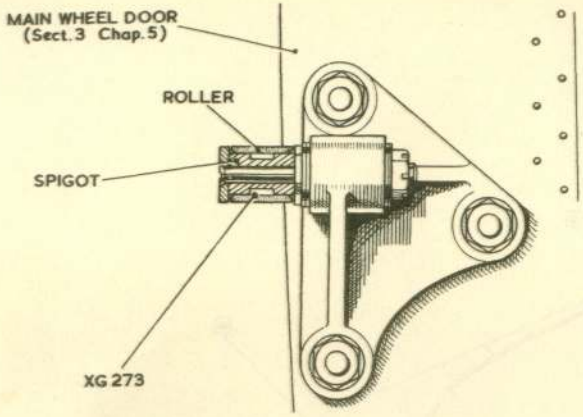

MAIN WHEEL DOOR

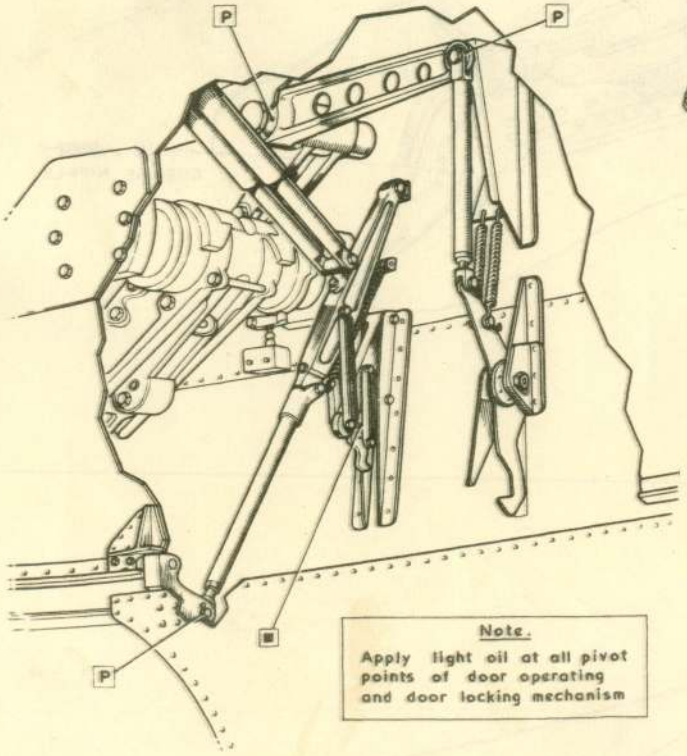

Fig.11. Lubrication - Nose and main wheel doors

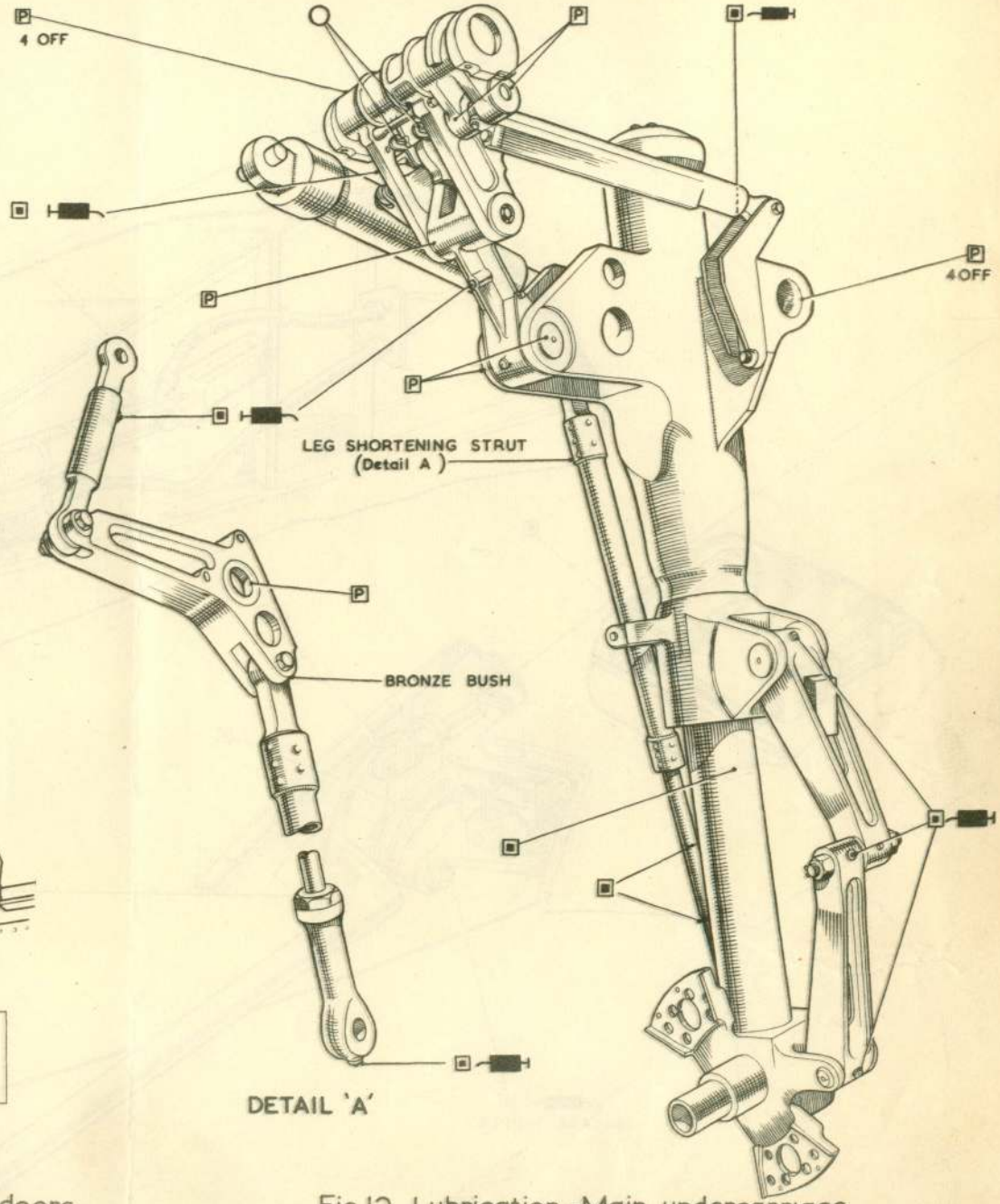

Fig.12. Lubrication - Main undercarriage

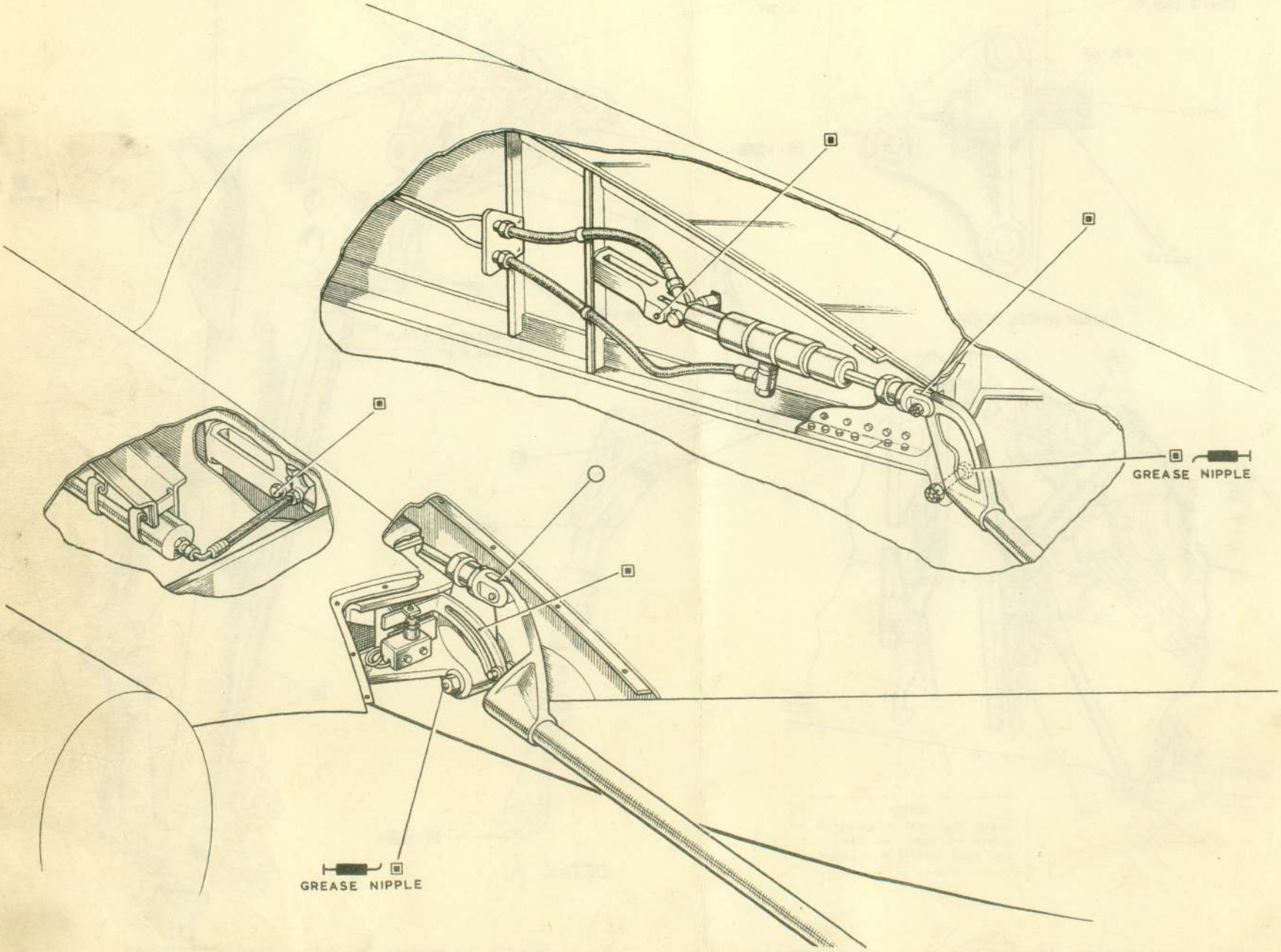

Fig 13 Lubrication – arresting hook

Dmd 6143 588032 750 8/56 A.B. 979/3 1144.