

## Chapter 2 MAIN PLANES

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## Introduction

1. This chapter contains a general description of the main plane structure, together with the lubrication and servicing information necessary to maintain it in a serviceable condition. Illustrations showing the method of slinging and dismantling the structure into its major components, are also included.

**DESCRIPTION**

## General

2. The main plane is built in three sections, the stub wing, which is integral with the centre fuselage and the port and starboard outer wings. The outer wings are of swept-back design with slight negative dihedral and carry the wing fuel tanks, pylons and the main undercarriages. The wings incorporate conventional ailerons and split trailing edge flaps, the ailerons being provided with hydro-boosters to facilitate their operation at high speed. The stub wing structure is described in Sect. 3, Chap. 1.

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### Outer wings (fig. I)

3. Each outer wing is an all metal stressed skin cantilever structure consisting of leading edge, front and rear spars, undercarriage girder, nose ribs, inter-spar ribs and tail ribs, it is covered with a heavy-gauge light-alloy skin which is additionally strengthened by stringers and stiffeners. An extension is fitted on to the outboard portion of the leading edge extending from ribs H-J to rib R consisting of nosing ribs and heavy gauge skins, this extension is riveted to the nosing of the main structure. A detachable wing tip which extends from the leading edge to aft of the rear spar completes the structure. Ribs A, G, M and R are of heavier construction than the remaining ribs and with the front spar, undercarriage girder and rear spar form the major framework of the outer wing. The wing fuel tanks are carried forward of the front spar in compartments formed between nose ribs A and G; the leading edge of the wing over this portion is removable for

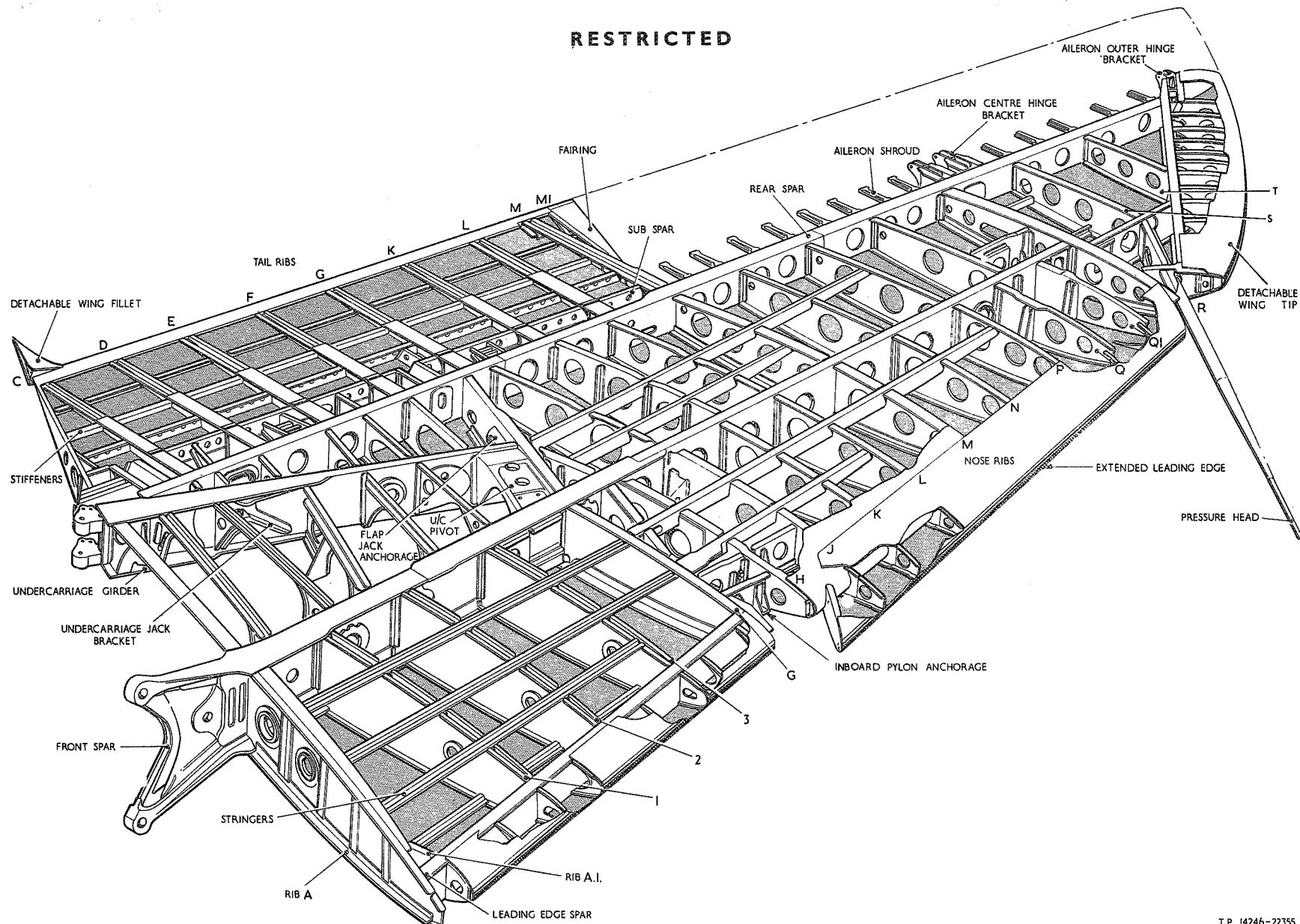
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access to the tanks. Inboard pylons when fitted are bolted to the underside of the wing outboard of the fuel tank compartments and outboard pylons just inboard of the wing tip.

### Spars and undercarriage girder

4. Both spars are fabricated in three portions, but are continuous when assembled, both inboard ends of the inner portions carry high-tensile wing attachment fittings which pick up with the fittings on the fuselage stub wing frames. The undercarriage girder is attached to the inboard end of the rear spar and extends outward and forward to the inter-spar rib G, thus forming a box-like structure between the two spars in which the main undercarriage is housed when retracted. The undercarriage pivot block is accommodated at the outboard end of this structure being attached to the front spar, inter-spar rib G and the undercarriage girder.

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Fig. 1 Outer wing

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**Trailing edge and aileron shroud**

5. The trailing edge structure, aft of the rear spar, consists of a number of tail ribs extending from the wing root to the aileron shroud. These ribs are recessed to form the flap housing. The flap is mounted on four bearing brackets located as follows:—Between tail ribs A and C, at rib E, between tail ribs F and G and at rib L. The aileron shroud structure extends from tail rib M to the outer rib and is attached to the rear spar. Rib M carries the aileron inner hinge, the outer rib carries the outer hinge and the centre hinges are mounted on the shroud structure.

**Leading edge extension**

6. The leading edge extension is a fixed portion of structure consisting of ribs and heavy gauge skins riveted to the outboard portion of the leading edge of the main wing structure between ribs H-J to rib R. The chord line of this extension is angled downwards in relation to the chord line for the main portion of the wing, thus minimising "pitch up" effects in flight.

**Fuel tank compartments**

7. The flexible-bag type fuel tanks in each outer wing are contained in four compartments formed between the leading edge spar and front spar in the region of ribs A to G. These compartments are sealed from the remaining structure and each other by moulded packing attached to the ribs and spars, and are provided with internal skinning to support the tanks. The leading edge forward of these compartments is detachable to provide access to the tanks, it consists of a curved light-alloy shell stiffened by a number of dished nose ribs. The nosing is attached to the top and bottom booms of the leading edge spar and to the nose ribs extending forward from this spar.

**Pylon attachments**

8. Inboard pylons may be fitted to each wing. The pylon is bolted to the under-surface of the outer wing, forward of the front spar, in the region of nose ribs G to J, in

which region the structure is strengthened by spanwise ribs located just aft of the nosing and by reinforcing plates on the lower wing skin between the nose ribs. Eleven machined stampings in the form of mounting brackets with nut plates attached are riveted to the spanwise ribs and nose ribs H and J. The inboard pylon is bolted to these mounting brackets by special bolts extending through the top member of the pylon and wing skin to engage with the nut plates on the mountings. Access panels and cover plates are provided to give access to the fuel and electrical connections between the wing and pylon. On aircraft Post-mod. 228-9 a diaphragm, joining interspar ribs Q and R between the front and rear spars, and an additional nose rib also between ribs Q and R, provide the necessary strengthening of the structure for the accommodation of the outboard pylon on each wing, the attachments being similar to those for the inboard pylons.

**Inboard pylons**

9. The structure of the inboard pylons consists of a top member of light alloy channel between two extruded angles connected by a cover plate. A light alloy bottom member completes the main structure. The top and bottom members are connected at intervals by vertical angles between which are steel bridge pieces. The whole is covered with a metal skin to form a structure which, when bolted to the underside of the wing (*para. 8*), houses the release mechanism and electrical cables, etc., together with the fuel pipes and valves necessary when a drop fuel tank is fitted.

**Outboard pylons (Post-mod. 228-9)**

10. The outboard pylons are of similar construction to the inboard pylons (*described in para. 9*), but the release mechanism and electrical fittings differ.

**By-pass valve**

11. When a pylon is not fitted, the disconnected air and fuel pipes are interconnected by means of a by-pass valve which takes the form of a ducted plate. A blanking plate is provided to fit over the by-pass valve in

place of the fuel and air pipes in the pylon, thus completing the inter-connection. *The plate must be fitted at all times when the pylon is not assembled to the wing.*

**R.P. attachments (Post-mod. 228-9)**

12. Provision is made for fitting rocket projectiles under each wing, the rails are located as follows:—

*Rail A* — outboard of rib R and across rib S.  
*Rail B* — between nose rib Q and rib R (*across main spar*).

*Rail C* — between nose rib N and interspar rib Q (*across the juncture of nose rib P and interspar rib P with main spar*).

*Rail D* — between nose rib L and interspar rib N (*across juncture of rib M with stringer*).

Rail B on each wing is an alternative installation to that of the outboard pylons which must be removed before the complete installation of R.P. can be effected. A description of the R.P. equipment together with removal and assembly instructions are given in Sect. 7, Chap. 2.

**Aileron operating gear**

13. The aileron hydrobooster and operating gear is housed between ribs R and S in a bay formed by these two ribs, a diaphragm and the rear spar. The gear consists of the booster jack, control tubes and levers, all of which are carried on two sets of bearing blocks attached to the outboard face of rib R. For further information on this installation, refer to Sect. 3, Chap. 4.

**Wing tip**

14. The detachable wing tip consists of a light-alloy shell stiffened by a number of ribs, it is attached to the wing outer rib. A housing with a transparent window, containing the navigation lamp, is incorporated at its leading edge. The pressure head, which is mounted to a rib extending diagonally from the forward end of rib R to rib S, projects forward from the leading edge of the port wing tip.

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◀ **Flaps**

**15.** The flaps are of conventional design, each consisting of a single spar with a number of ribs covered on the undersurface only with a light-alloy skin. A reinforcing plate is incorporated along the upper surface of the trailing edge. Each flap is hinged at four points (*para. 5*) and extends from the wing root to just inboard of the ailerons.

◀ **Ailerons**

**16.** Each aileron consists of a main spar with a number of ribs and stiffeners covered with a light-alloy skin. They are hinged at three points, the centre point having a double hinge (*para. 5*). The port aileron incorporates a small electrically-operated trim-tab in its inboard trailing edge. The ailerons are provided with hydro-boosters to facilitate operation at high speed.

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## SERVICING

## General

17. Little servicing is necessary to the main plane apart from the various systems incorporated therein; these are described in the various chapters of this volume dealing with the systems concerned. The instructions given in this chapter will, therefore, only include items not covered in other chapters. The drain holes in the bottom surface should be examined periodically to ensure that they are not blocked.

18. After servicing, it is necessary to check that all access panels and doors are securely locked and flush with the surrounding structure; this is very important as any alteration in contour will give rise to a shock-wave, resulting in a vast increase in drag and consequently a loss in performance as well as the possibility of the panels becoming detached in flight. Extreme care must, therefore, always be taken, during removal or fitment of the access panels, to ensure that they are not damaged or distorted in any way.

## Undercarriage pivot fittings

18A. These should be examined frequently [by AP.101B-1304, 5, 6 and 9 5G Section 6 technique Eddy current No.3 (RN)] for cracks around the circumference of the machined faces into which the bearing-cap retaining studs are screwed. Fittings found cracked must be changed.

◀ Skin, outboard top, forward of rear spar, examination for cracking (SI/Hunter/121C)

18B. Cases have occurred where cracks have developed in the outboard top skin, forward of the rear spar, between the forward line of rivets attaching the skin to the rear spar between ribs S and T, on both port and starboard main

planes. Periodically at the periods detailed in the servicing schedule examine the outboard top skin forward of the rear spar using either method (a) or (b).

◀ (a) NATEC/EDDY-CURRENT/5 (RN).

(b) (1) On each main plane, remove the paint from the skin at the forward line of rivets attaching the skin to the rear spar between ribs S and T.

(2) Visually examine, with the aid of a magnifying glass, for cracks developing between the rivets on the forward line of rivets attaching the skin to the rear spar, between ribs S and T.

## Note...

*Where there is doubt about the presence of cracks on main plane skins, following visual examination, examine further for cracking using a dye penetrant method.*

◀ (3) Where no cracking is evident, restore the surface finish.

◀ (c) (1) Where one or more cracks exist but do not exceed 4.50 inches total length, the main plane is considered satisfactory for a further period of unrestricted flying subject to re-examination at each subsequent 5 week period. Restore the surface finish.

◀ (2) Where the total length exceeds 4.50 inches but does not exceed 5.0 inches the aircraft may continue to fly subject to re-examination at 10 hour intervals. At each of these examinations the length of the crack is to be marked on the wing and recorded. Comparison with the previous measurements will determine whether or not the rate of growth indicates that the 5.0 inches will be exceeded before the next 10 hour examination.

◀ (3) Where cracks exceed 5.0 inches total length or are indicated to do so before the next 10 hour examination, replace the skin, Port Pt.No.D.206924/9 (Ref.26FX/8156) or Starboard Pt.No. D.206924/18 (Ref. 26FX/8165) as applicable.

◀ (4) During the examination also examine the rivets, on the forward rivet line, attaching the skin to the rear spar, between ribs S and T, for soundness and security. Replace any unsatisfactory rivet, unless it is required to replace the skin.

## Lubrication

19. The principal lubrication points for the main plane are given in Sect.3, Chap.4. The remaining points are dealt with in this chapter and are given on fig. 16, 17 and 18 with a key to the lubricants on fig.15.

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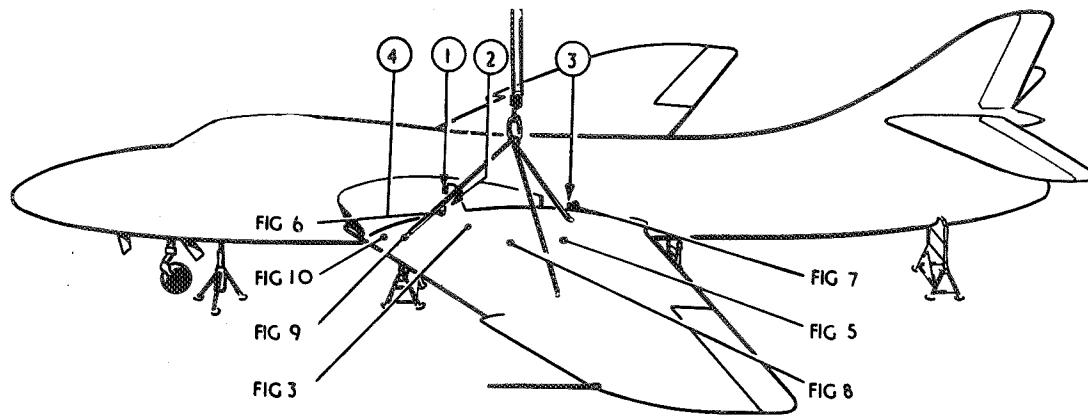


Fig. 2 Removing wing

**REMOVAL AND ASSEMBLY**

**General**

20. The separation of the outer wings from the stub wing and the removal of the various major components, together with the method of slinging during removal, is shown in the illustrations contained in this chapter. In general, the assembly of the units is a reversal of the removal, but where there is any special assembly feature it is covered in the key to the illustration.

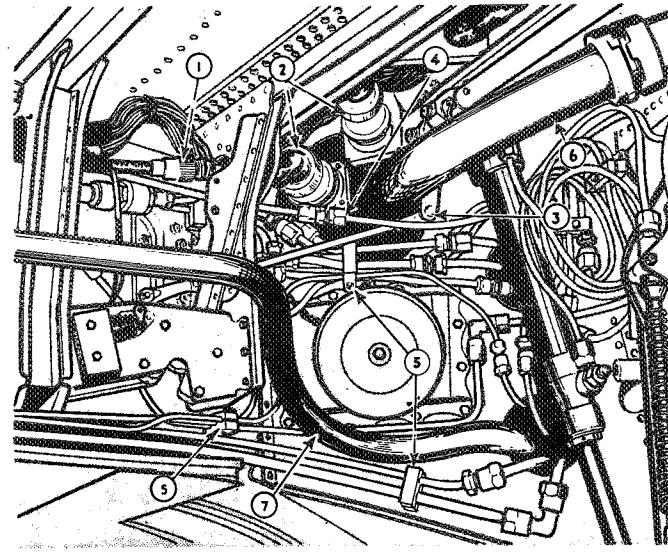


Fig. 3 Connections at front spar (port)

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## KEY TO FIGS. 2 TO 10 (Removal of wings)

Jack and trestle the aircraft (Sect. 2, Chap. 4), and place two additional trestles beneath the centre fuselage (Sect. 3, Chap. 1).

Render the aircraft electrically safe (Sect. 5, Chap. 1).

Dissipate the hydraulic fluid pressure (Sect. 3, Chap. 6).

Remove the access panels over the front and rear spar joints (fig. 2, items 1, 2 and 3 and the panels forward of the front spar for the refuelling pressure relief valve, item 4).

Remove the pressure head from the port wing as described later in this chapter.

Drain the wing fuel tanks (Sect. 2, Chap. 2). If fitted, remove the wing drop tanks or external stores from the pylons (Sect. 2, Chap. 2). Should it be required to remove the pylons, reference should be made to fig. 20 and 21 of this Chapter.

From inside the wheel well, disconnect all the services between the fuselage and the wing.

For disconnecting the port wing (front spar) refer to fig. 3. Disconnect the aerial lead (1) and the electrical supply leads (2). Detach the wheel door lock controls from the lever (3). Disconnect the Teleflex control tube at (4) and at the connection to the swivel block on the bracket attached to the fuselage, leave loose. Unscrew the locknut and the Teleflex cable at the end connected to the link on the wheel door and also at the leg fairing lock. Withdraw the cable at this lock, coil up and attach it securely to the wing structure.

Referring again to fig. 3 dismantle the clamps (5) and remove the short lengths of pipes by disconnecting the unions at both ends of the pipe. Remove the fuel pipe (6) by disconnecting unions at both ends of the pipe.

Remove the vent pipe (7) by disconnecting the clamp fitting, similar to (8) at fig. 4, of the tank connection and at the union forward of the front spar.

For the starboard wing (front spar) refer to fig. 4. Dismantle the clamp (1). Remove the

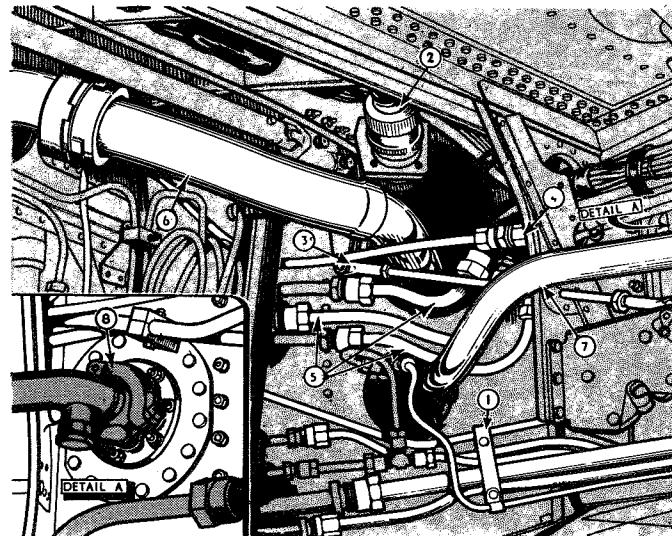


Fig. 4 Connections at front spar (Starboard)

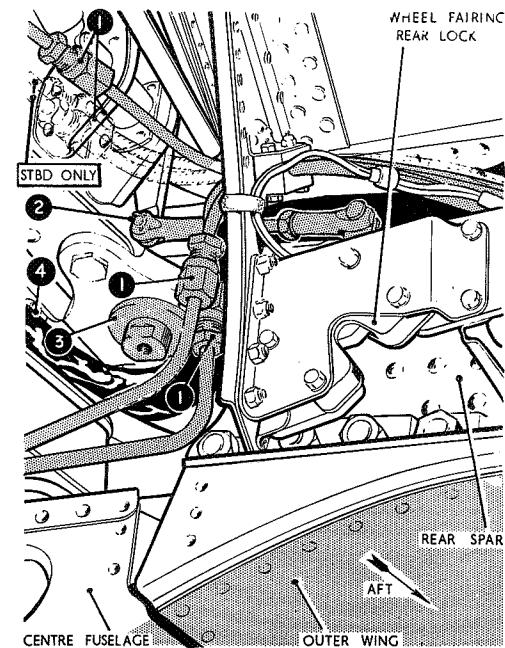


Fig. 5 Connections at rear spar (port)

short lengths of pipe by disconnecting the unions at both ends. Disconnect the electrical supply lead (2) and the compass lead (Pre-mod. 256). Detach the wheel door lock controls from lever (3). Disconnect Teleflex control (4). Remove the short lengths of pipe (5) and the fuel pipe (6) by disconnecting the unions at both ends of the pipes. Remove the vent pipes (7) by disconnecting the clamp fitting, (8) detail A, at the tank connection and at the union forward of the front spar. Refer to fig. 5 for either port or starboard wing. Disconnect the pipes (1) and the lever (2).

Note . . .

*There are three hydraulic pipes at this point for the port wing and five for the starboard wing.*

KEY TO FIGS. 2 TO 10 (Contd.)

Removal of Wings (Contd.)

Disconnect and stow away the electrical supply cable A.4, (4), the plug and socket is located between the drag members on the side of the fuselage.

Through the access hole (*port and starboard*) in the bottom surface of the stub wing forward of the front spar, first remove the pressure relief valve fig. 6 (1) by taking out the screws securing the valve to the mounting brackets and disconnecting the outer sleeve on the pipe (3).

Detach the mounting brackets (2) and remove the pipe (3).

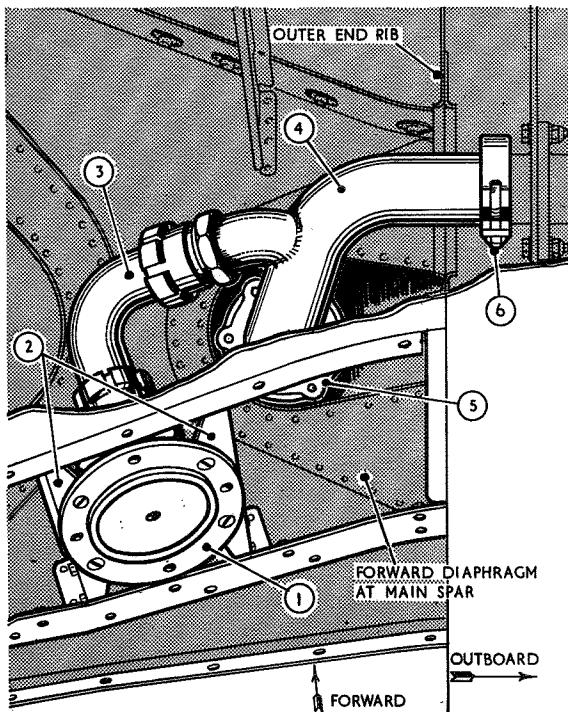


Fig. 6. Fuel pipe connections forward of front spar

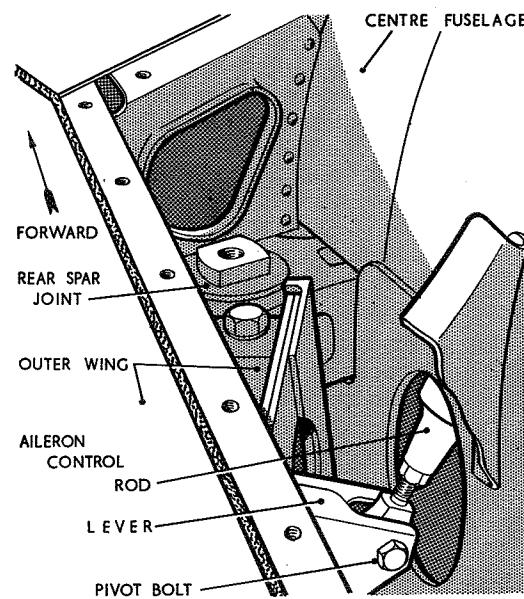


Fig. 7. Details of rear spar joint

Unscrew the bolts at (5) and the clamp fixing at (6) and remove the pipe (4), taking care not to lose the rubber sealing rings at each joint.

Disconnect the aileron control rod (fig. 7) by removing the pivot bolt. While at this access hole disconnect the three rear pipes. The two pipes running forward should not be disturbed.

Blank off all exposed pipe connections.

Remove the small access panel over the wheel axle in the leg fairing and remove the undercarriage wheel.

Procure an undercarriage up-lock tool (Ref. 26FX/95080) refer to fig. 8 and proceed as follows:

Insert the hook portion of the tool over the spigot mounting as shown and allow the screwed rod portion to hang down minus its retaining plate, washer and nut.

Connect a hydraulic ground rig direct to the main undercarriage jack via the pipes which have been disconnected from the stub wing.

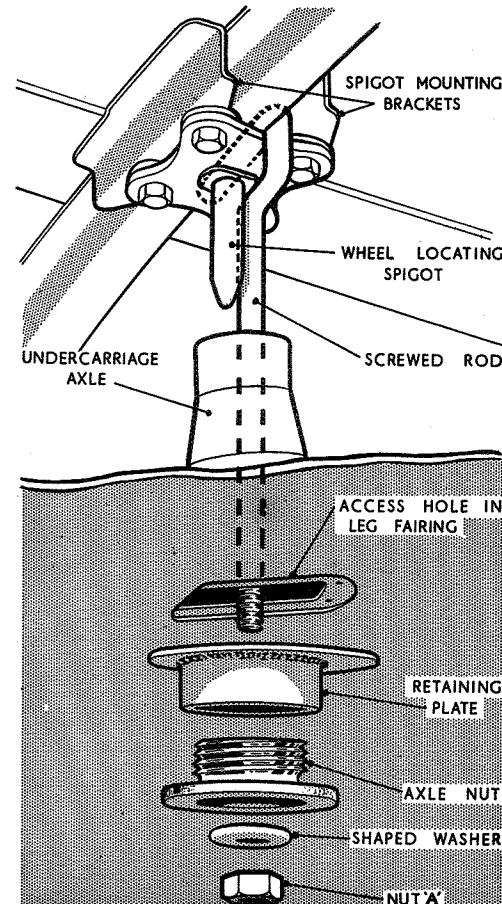


Fig. 8. Undercarriage up-lock tool

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## KEY TO FIGS. 2 TO 10 (Removal of wings) Contd.

Partially retract the leg until the axle is approaching the end of the screwed rod. Ensure that this is in line with the hole through the axle and continue retracting the leg until the screwed rod passes through the hole in the centre of the axle. Secure the undercarriage leg in the retracted position by assembling the retaining plate, axle nut, and shaped washer and screwing up the nut 'A'.

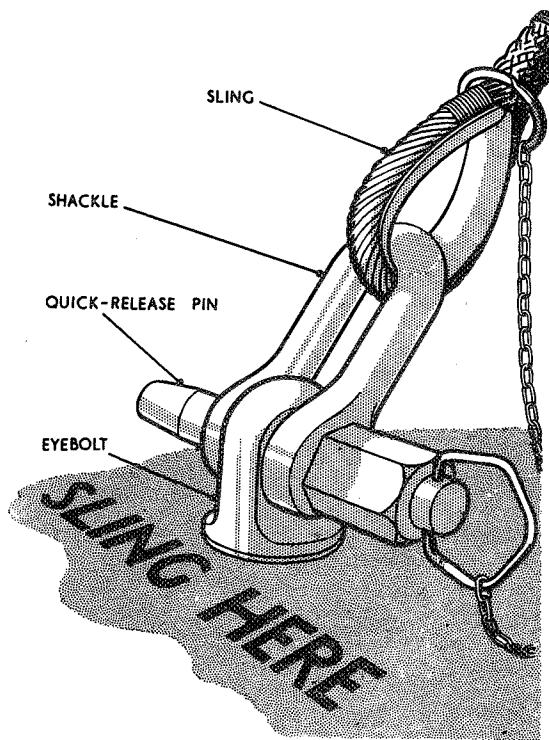


Fig. 9 Sling attachment

Disconnect the ground rig.

Remove the screwed plugs from the lifting sockets in the upper surface of the wing. Detach the eye-bolts from the sling, screw them into the wing lifting sockets and assemble the sling (fig. 9). Ensure that the sling cable marked "FORWARD" is fitted into the eye-bolt forward of the front spar. Remove the access panel (fig. 10) and withdraw the pin from the socket and spigot.

Take the weight of the wing from the trestles via the sling ensuring that the opposite wing not yet removed is correctly supported by its trestles.

Remove the split pins, slotted nuts and cup washers at the rear spar joints and withdraw the pins (3) fig. 5 using extractor (Ref. No. 26FX/95059).

Remove the split pins, slotted nuts and cup washers from the front spar joints and withdraw the pins using extractor (Ref. No. 26FX/95058).

Remove the split taper bushes from the front spar joints with bush extractor (Ref. No. 26FX/95140) and from the rear spar joints with bush extractor (Ref. No. 26FX/95141).

The wing may now be slung clear and placed on cradles (Ref. No. 26FX/95022 and 26FX/95023) supported by U.J. trestles No. 6.

To prevent damage and injury to personnel, while the wing is being slung, it is recommended that the small trailing-edge fillet be removed by unscrewing the six counter-sunk screws and the two bolts securing it to the wing structure (this can only be done after the wing is detached from the centre section).

Note . . .

When reassembling the main planes to the aircraft, the pins and bushes securing the wings (port and starboard) at the front and rear spar pin joints, together with the joint faces and the spigot, pin and socket at the nosespars pin joint must be well lubricated with oil OX-14. It should be noted that the tolerances between the main plane front spigot and its socket are such that, on occasions a metallic noise may be heard when the aircraft is being manhandled. This is normal, although personnel should confirm that the noise is due to this cause and investigate any abnormal movement of the main plane. ►

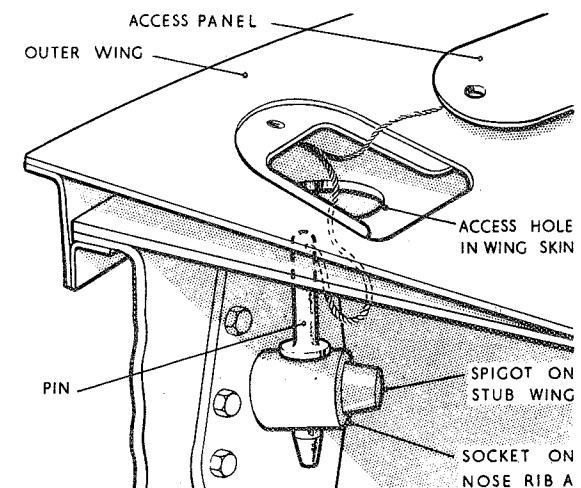


Fig. 10 Locating spigot and socket

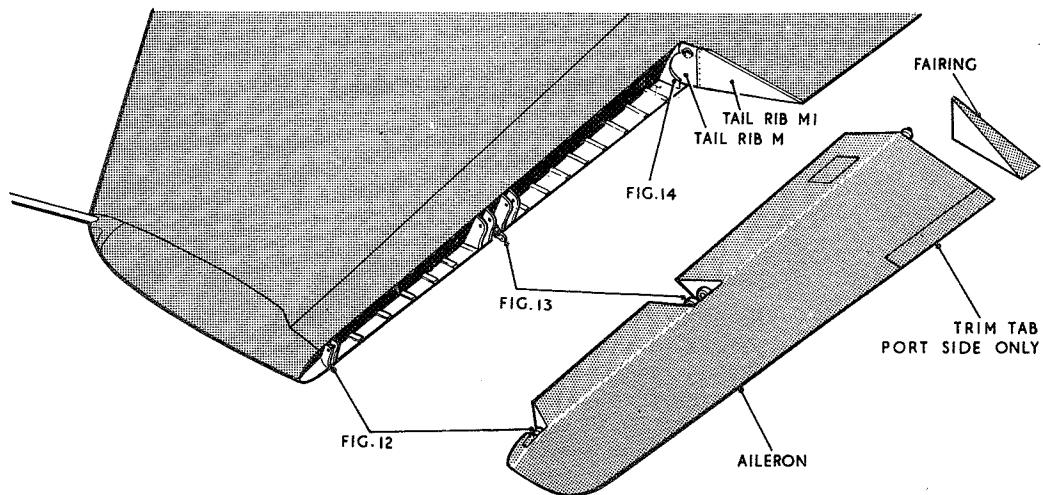


Fig. 11. Removing aileron

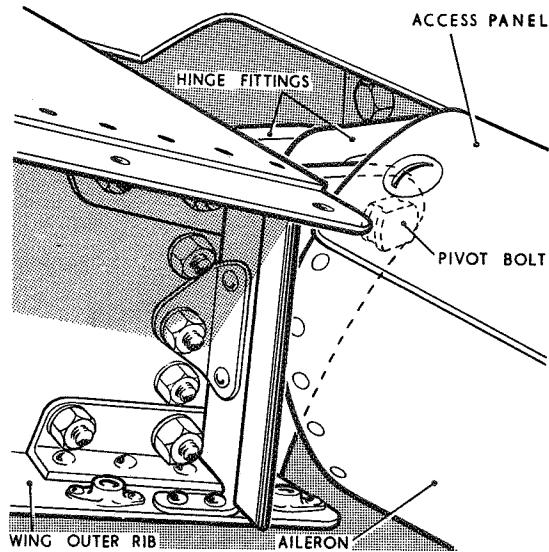


Fig. 12 Outer hinge

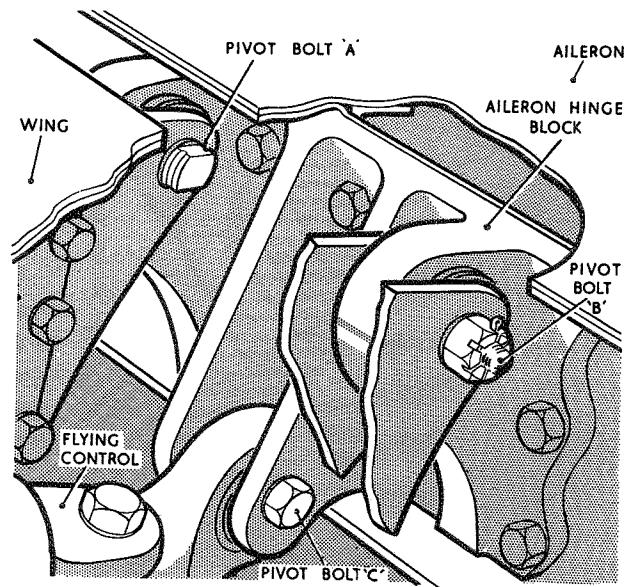


Fig. 13 Centre hinge

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**Aileron balance weight assembly—inspection**

20A. At those periods detailed in the Aircraft Servicing Schedule the balance weights attached to the nose of the ailerons should be inspected for looseness as follows:—

- (1) Using a suitable probe, e.g. aluminium alloy strip  $\frac{1}{8}$  in.  $\times$  1 in.  $\times$  12 in., and with the aid of a bright torch, inspect the ailerons, in situ, for slight movement of the nose balance weights by pushing on the edge of the balance weight skin adjacent to the attachment rivets. This inspection can be facilitated by moving the ailerons up and down to their fullest extent.
- (2) If any movement of the balance weights is noticed, remove the aileron and repair in accordance with instructions contained in Vol. 6.

**Note . . .**

*Ailerons repaired under sub-para. (2) will have the modification plate on the aileron end rib marked in red paint "S.I./HUNTER/84", such ailerons need not be subsequently inspected in accordance with this paragraph.*

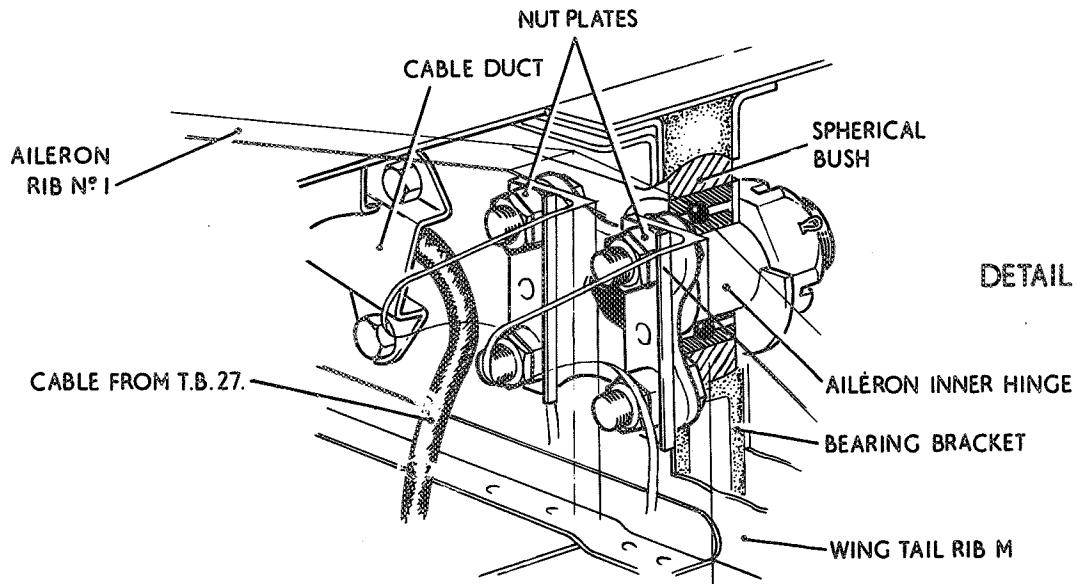


Fig.14 Inner Hinge

**KEY TO FIGS. 11 TO 14 (Removal of aileron)**

**Note . . .**

*Operations marked with an asterisk apply to the removal of the port aileron only.*

Remove the fairing between the inboard end of the aileron and tail rib M1 (fig. 11) by unscrewing and removing the twelve countersunk screws.

\*Lower the flaps to expose the access door in the port flap roof, between tail ribs L and M. Render the aircraft electrically safe (Sect. 5, Chap. 1). Remove the access door and release T.B.27 from its mounting and draw it and its cables through the access hole, remove the actuator and transmitter cables from the terminal block. Replace the terminal block temporarily on its mounting and re-fit the access door. Close the flaps with an electrical supply from the ground trolley.

Support the aileron in the neutral position and remove the split pin, slotted nut and washer from the pivot bolt 'C' (fig. 13) connecting the flying controls to the aileron hinge

block and remove the pivot bolt. From the aileron hinge block remove the split pins, slotted nuts and washers and withdraw the pivot bolts 'A' and 'B' (fig. 13) from the two centre hinges.

Lower the aileron as far as it will go and support it while in this position, thus exposing the access panel (fig. 12) in the top surface of the aileron, adjacent to and outboard of the outer hinge. Remove the panel after taking out the two screws. Remove the split pin, slotted nut and washer from the pivot bolt and withdraw it from the outer hinge fittings and out through the access hole.

The aileron may now be removed by raising it to the neutral position, swinging the outboard end rearwards sufficiently to separate the centre and outer hinge fittings and by lifting the outboard end. The inner hinge (fig. 14) will pivot with the spherical bush in the bearing bracket on tail rib M, when the hinge fittings have cleared one another, ease the inner hinge bearing out of the spherical bush.

\*Before finally removing the port aileron pull the electrical supply leads, from the actuator and transmitter, through the duct on tail rib M.

**Assembly**

The assembly of the aileron, is, in general, a reversal of the above procedure. All bearings should be lubricated, including the spherical bush (for the aileron inner hinge) and its housing in tail rib M, with grease XG-287.

**Note . . .**

*If either a port or starboard replacement aileron is fitted, the trimming tab on the port aileron must be adjusted after the test flight for the new components, in accordance with the instructions given in Sect. 3, Chap. 4 and the aircraft Servicing Form amended to record the new setting.*

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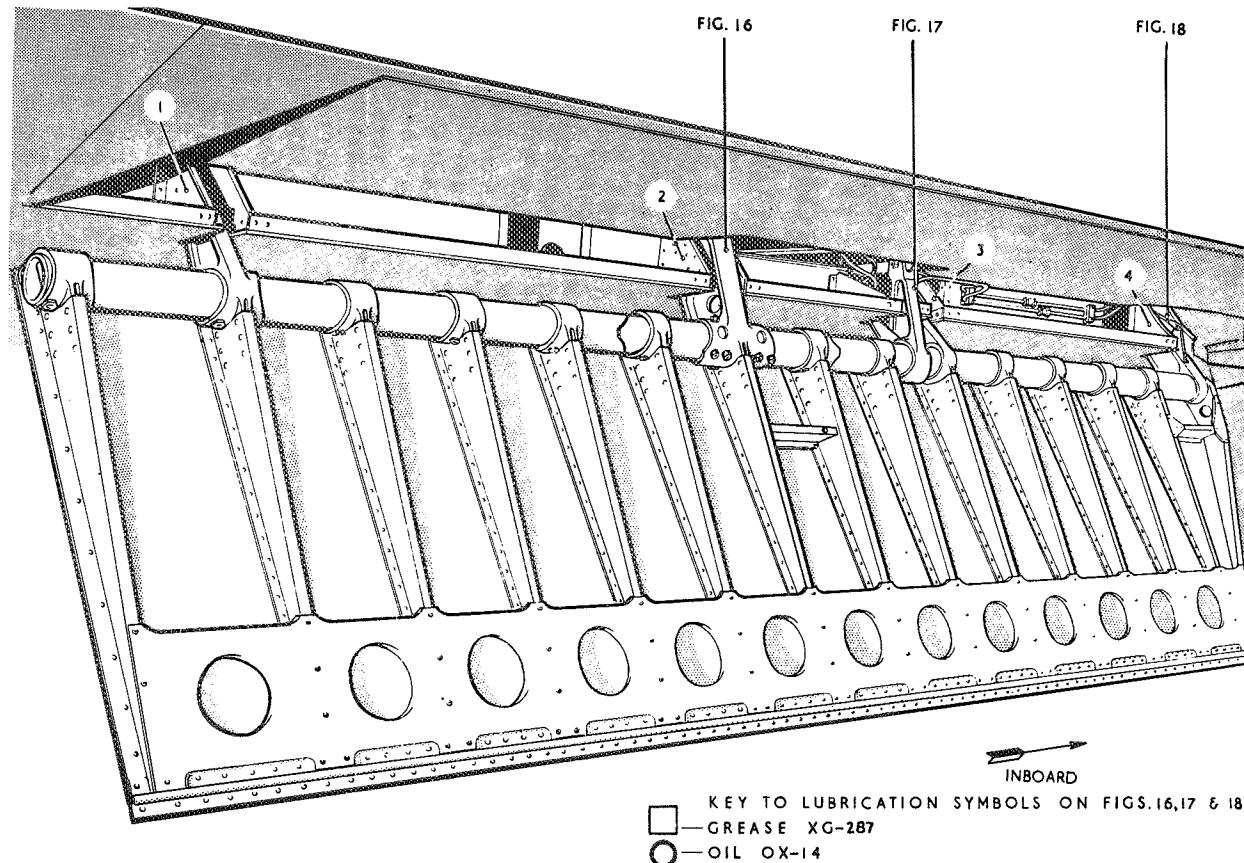


Fig. 15 Removing flaps  
◀ Grease XG-287 introduced. ▶

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## Note...

Removal of the port flap is dealt with in this text. The removal sequence of the starboard flap is similar but of opposite hand.

Lower the flaps to the maximum extended position (Sect.3, Chap.4).

Render the aircraft electrically safe (Sect.5, Chap.1).

Support the flap and remove the split pin, slotted nut, washer and bolt connecting the operating jack to the flap spar lever (fig.16) and similarly at the synchronizing jack (fig.17).

At the inboard end of the port flap spar remove the split pin, washer and pivot pin

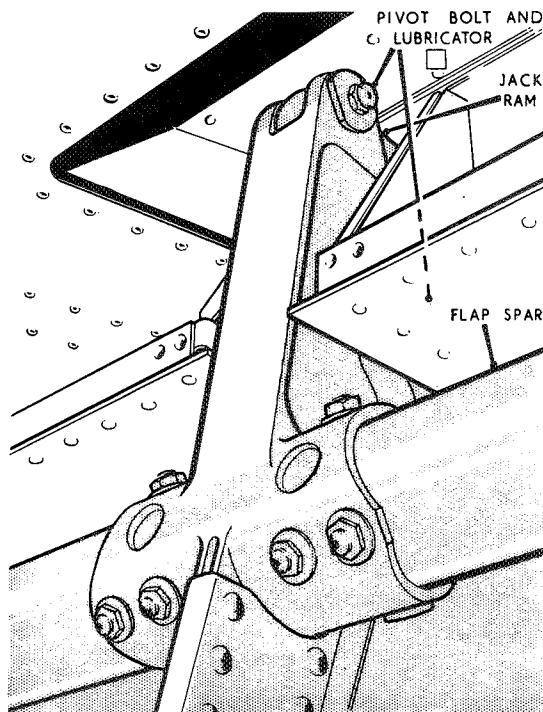


Fig. 16 Operating jack attachment

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## KEY TO FIGS. 15 TO 18 (Removal of flaps)

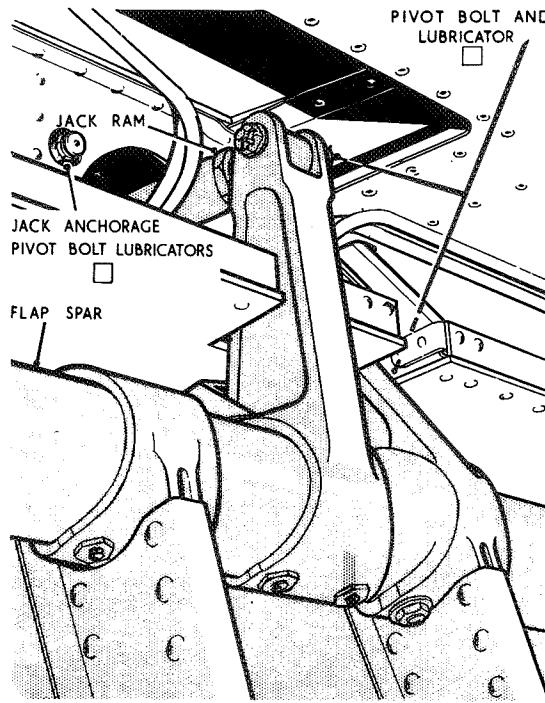


Fig. 17 Synchronizing jack attachment

from the control rod and lever (fig. 18).

At the four bearing brackets fig. 15 (1); (2); (3) and (4) remove the 2BA bolt from the locking plate, and remove the locking plate. Unscrew the pivot bolts and remove the flap. The sleeve must be removed from each bearing bracket and examined, together with the pivot bolts. Any sleeves or pivot bolts showing signs of appreciable scoring are to be renewed. Before assembly all sleeves and pivot bolts are to be thoroughly cleaned and lubricated with grease XG-287, particular attention being paid to freedom from obstruction in the oilways.

On assembly of the flap to the main plane ensure that the pivot bolts are fully tightened thus preventing sleeve rotation with flap movement.

## Note...

Slackening off the pivot bolt to locate the locking plate is not permitted.

On completion of assembly lubricate all pivot bolts and flap jack attachment bolts. Operate the flaps and ensure that the grease exudes freely from both ends of the bearing between the flap hinge boss and the housings in the main plane structure.

## Note...

Regular lubrication of the pivot bolts and flap jack attachment bolts is essential and is to be carried out at the correct periodicity.

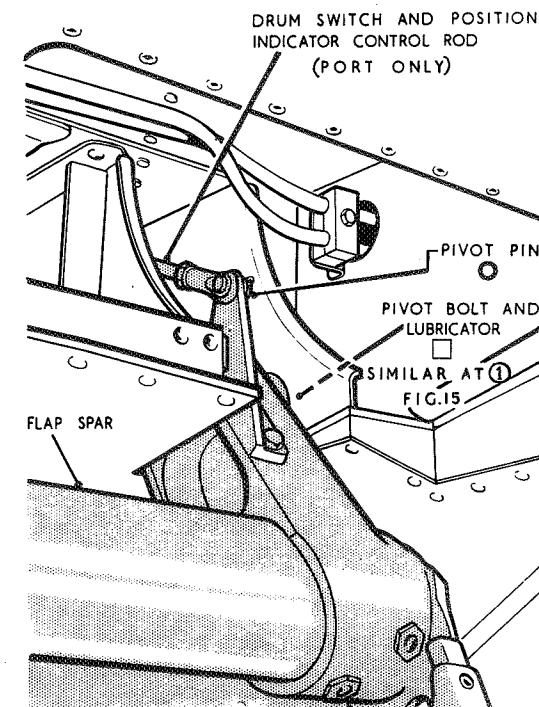


Fig. 18 Drum switch, etc., control rod attachment

**KEY TO FIG. 19 (Removing wing tip and pressure head)**

Unscrew and remove the countersunk screws securing the navigation light window and remove the window by sliding it along, and off, the pressure head.

Support the wing tip and detach it by removing the countersunk screws and withdraw the wing tip spigots out of the wing outer rib.

Render the aircraft electrically safe (*Sect. 5, Chap. 1*). Disconnect at T.B.22 the electrical supply leads from the pressure head, taking care not to disturb the leads from the navigation light at the same terminal block.

Disconnect the static and pressure pipes at the rear end of the pressure head, the unions being reached through the lightening holes in the wing outer rib.

Remove the two half clips from the mounting brackets on the pressure head mounting rib. Access to the clip on the rear mounting being gained through the lightening hole in the wing outer rib.

Withdraw the pressure head, complete with pipes and electrical supply lead, from the wing structure.

On re-assembly, check that the rubber seal on the port navigation light window is securely fixed to the fairing.

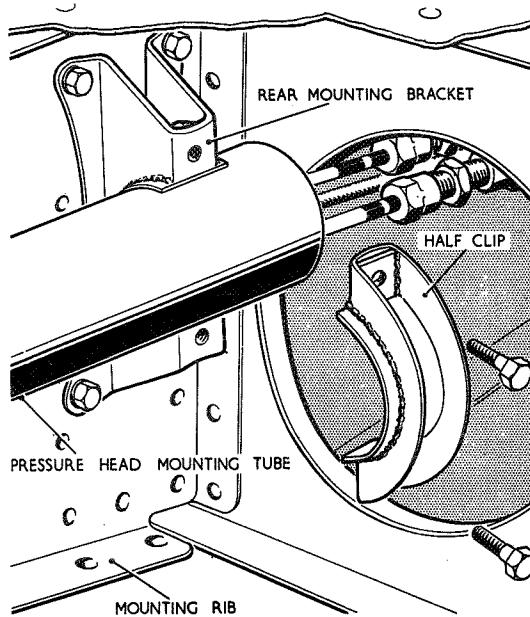
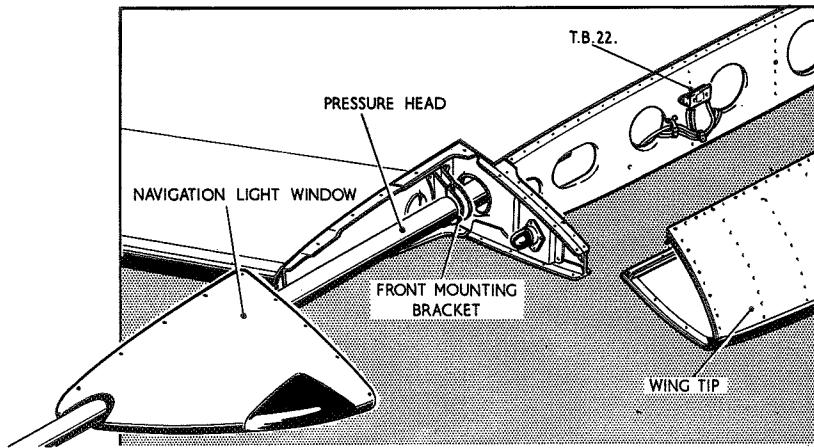


Fig. 19 **Removing wing tip and pressure head**

## Fitting and removing inboard pylons (fig. 20)

21. The inboard pylons are fitted to the wings as follows:—

- (1) Remove access panel for pylon crutching from the top skin of the wing.
- (2) Remove the access panel at (4), and render the aircraft electrically safe (Sect.5, Chap.1).
- (3) Remove the inner and outer cover plates at (1) and (3) from the wing bottom skin.
- (4) Remove the cover plate at (2) from the wing bottom skin.
- (5) Ensure that the fuel and air valve in the pylon is free from foreign matter and that the valve is working freely. Assemble the pipes (if not already fitted) to the fuel and air valve, ensuring that the sealing rings are correctly positioned and secure pipe couplings with 22 s.w.g. non-corrodible locking wire.
- (6) Offer up the pylon to the wing, engaging the pipes, via access hole (2), with the by-pass valve in the wing.
- (7) Pass the ejector release unit cable (5) from pylon through orifice (3) and then through conduit in wing and connect to breech cap (Sect.2, Chap.2). Pass connector of electrical lead (6) from pylon through orifice (3) to connect with plug in wing.

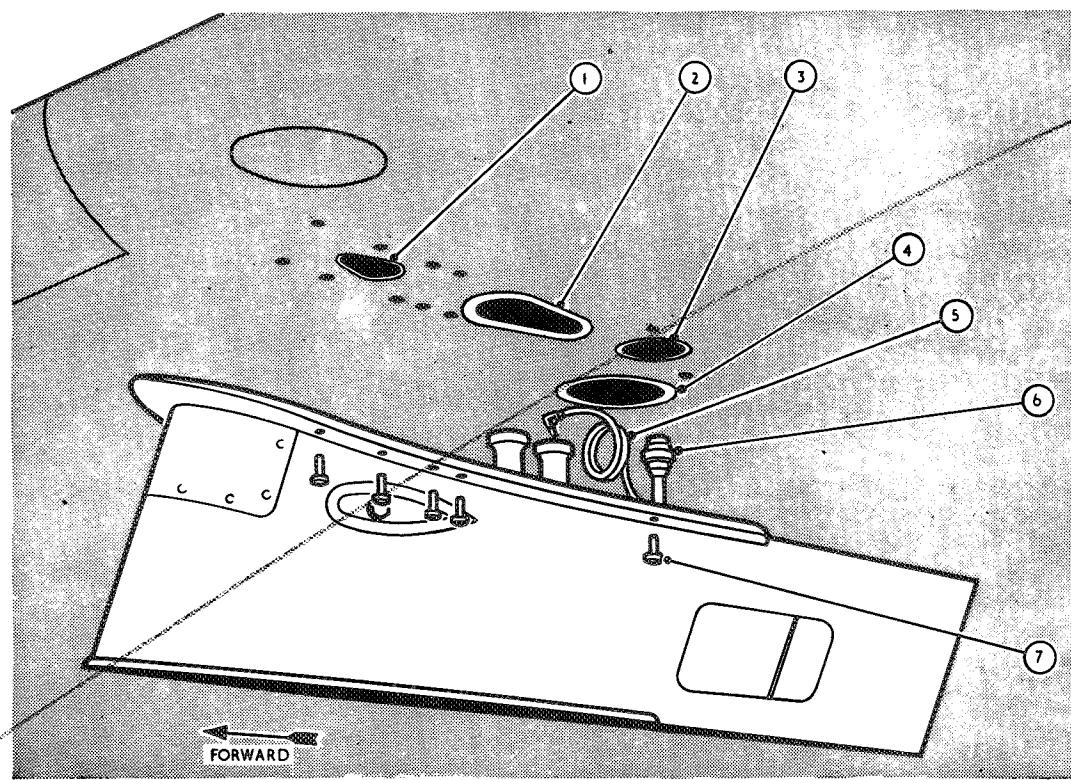


Fig 20 Fitting inboard pylon

◀ (8) Secure the pylon to the undersurface of the wing with the securing bolts (7), lightly lubricated with oil OX-14, and ensure that the bolts are tightened to a torque load of 200 lbf in. ▶

Note...

If Mod. 964 which introduces thicker pylon attachment nuts of stainless steel, is embodied on the wings, the special (longer) bolts, Part No. F.244905, which have a white marking, must be used for securing the pylon to the wing.

(9) Crutch up the cover plate (see note) and replace access panel for pylon crutching in the wing top skin.

Note...

To prevent swinging of the E.R.U. when stores are not being carried on the pylon, Cover Plate, Part No. B.235438, with Suspension Lug Ref. 12A/2230 must be fitted to the underside of the pylon and crutched up with the torque spanner set to 20 lbf ft.

(10) Carry out the electrical tests called for in Sect. 5, Chap. 1 and replace the access panel (4).

22. The removal of the pylons is, in general, a reversal of the fitting procedure, but after the pylons have been removed the cover plates at (1), (2) and (3) must be replaced.

## Fitting and removing outboard pylons (fig. 21)

23. The outboard pylons are fitted to the wings as follows:—

- (1) Remove the access panel for pylon crutching from the fairing on the top skin of the wing.
- (2) Remove the access panel at (4), and render the aircraft electrically safe (Sect. 5, Chap. 1).
- (3) Remove the cover plate and clamp at (1) from the wing bottom skin.
- (4) Remove the cover plates at (2) and (3) from the wing bottom skin. Refit existing bolts at (3) using 2 B.A. nuts and washers (Ref. 28M/10328 and 28W/9419404 respectively).
- (5) Ensure that the fuel and air valve in the pylon is free from foreign matter and that the valve is working freely. Assemble the pipes (*if not already fitted*) to the fuel and air valve, ensuring that the sealing rings are correctly positioned and the pipe couplings locked with 22 s.w.g. non-corrodible locking wire.
- (6) Offer up the pylon to the wing, engaging the pipes, via access hole (2), with the by-pass valve in the wing.
- (7) Pass the ejector release cable (5) from the pylon, through orifice (3) and the wing, taking care to run and strap the cable well clear of the aileron control rods and place the breech cap connector, at the end of the cable, in its stowage in the wing fairing. Pass connector of electrical leads (6), from pylon, through orifice (3) to connect with plug in wing.

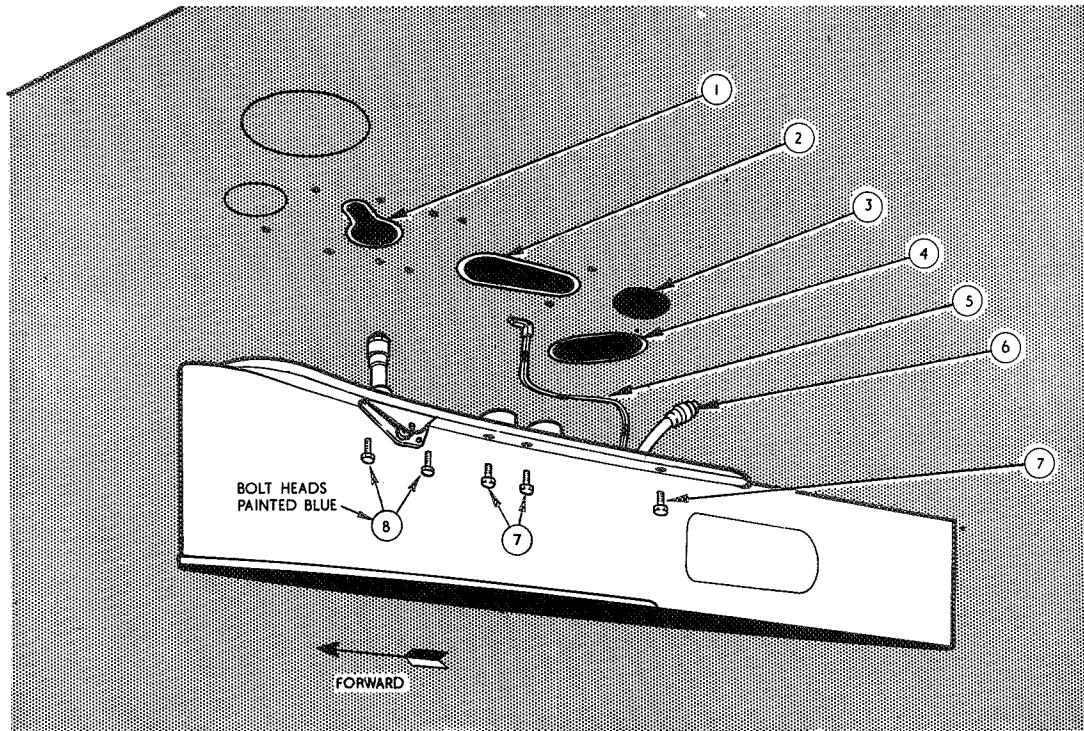


Fig. 21 Fitting outboard pylon  
(Mod. 1293)

◀ (8) Secure the pylon to the undersurface of the wing with the securing bolts (7) and (8), lightly lubricated with oil OX-14, and ensure that the bolts are tightened to a torque load of 200 lbf in. ▶

Note . . .

*If Mod. 964 which introduces thicker pylon attachment nuts of stainless steel, is embodied on the wings, the special (longer) bolts, Part No. F.244905, which have a white marking, must be used for securing the pylon to the wing at positions marked (7).*

(9) Crutch up the cover plate (*see note*) and replace the access panel on the wing fairing.

Note . . .

*To prevent swinging of the E.R.U. when stores are not being carried on the pylon, Cover Plate (Part No. B.235438) with Suspension Lug (Ref. 12A/2076 or 12A/2209) must be fitted to the underside of the pylon and crutched up with the torque wrench set to 20 lbf ft.*

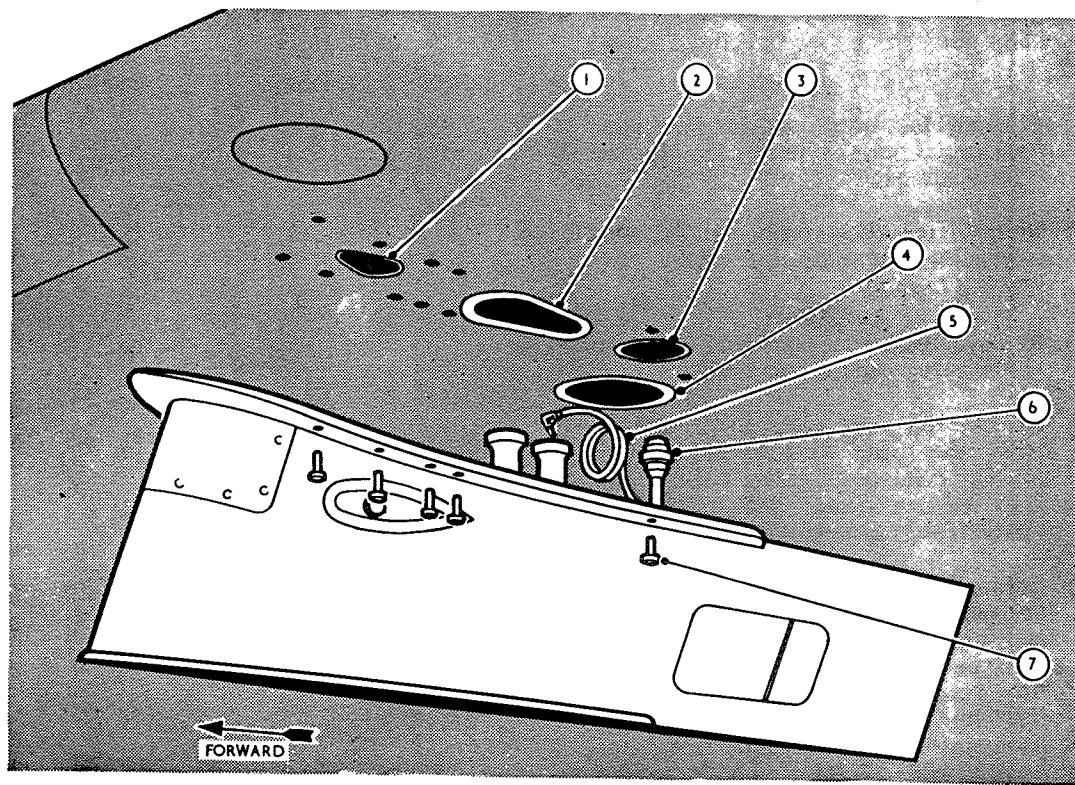
(10) Carry out the electrical tests called for in Sect. 5, Chap. 1 and replace the access panel (4).

24. The removal of the pylons is, in general, a reversal of the fitting procedure, but after the pylons have been removed the cover plates at (1), (2) and (3) must be replaced.

**Fitting and removing inboard pylons (fig. 20)**

21. The inboard pylons are fitted to the wings as follows:—

- (1) Remove access panel for pylon crutching from the top skin of the wing.
- (2) Remove the access panel at (4), and render the aircraft electrically safe (Sect.5, Chap.1).
- (3) Remove the inner and outer cover plates at (1) and (3) from the wing bottom skin.
- (4) Remove the cover plate at (2) from the wing bottom skin.
- (5) Ensure that the fuel and air valve in the pylon is free from foreign matter and that the valve is working freely. Assemble the pipes (*if not already fitted*) to the fuel and air valve, ensuring that the sealing rings are correctly positioned and secure pipe couplings with 22 s.w.g. non-corrodible locking wire.
- (6) Offer up the pylon to the wing, engaging the pipes, via access hole (2), with the by-pass valve in the wing.
- (7) Pass the ejector release unit cable (5) from pylon through orifice (3) and then through conduit in wing and connect to breech cap (Sect.2, Chap.2). Pass connector of electrical lead (6) from pylon through orifice (3) to connect with plug in wing.
- (8) Secure the pylon to the undersurface of the wing with the securing bolts (7), lightly lubricated with oil OX-14, and ensure that the bolts are tightened to a torque load of 200 lbf in. A minimum gap of 0.05 in. is to be obtained between



**Fig 20 Fitting inboard pylon**

the wing skin and the top edge of the pylon rear fairing, by filing the edge of the fairing as necessary.

**Note...**

*If Mod. 964 which introduces thicker pylon attachment nuts of stainless steel, is embodied on the wings, the special (longer) bolts, Part No. F.244905, which have a white marking, must be used for securing the pylon to the wing.*

- (9) Crutch up the cover plate (*see note*) and replace access panel for pylon crutching in the wing top skin.

**Note...**

*To prevent swinging of the E.R.U. when stores are not being carried on the pylon, Cover Plate, Part No. B.235438, with Suspension Lug Ref. 12A/2230 must be fitted to the underside of the pylon and crutched up with the torque spanner set to 20 lbf ft.*

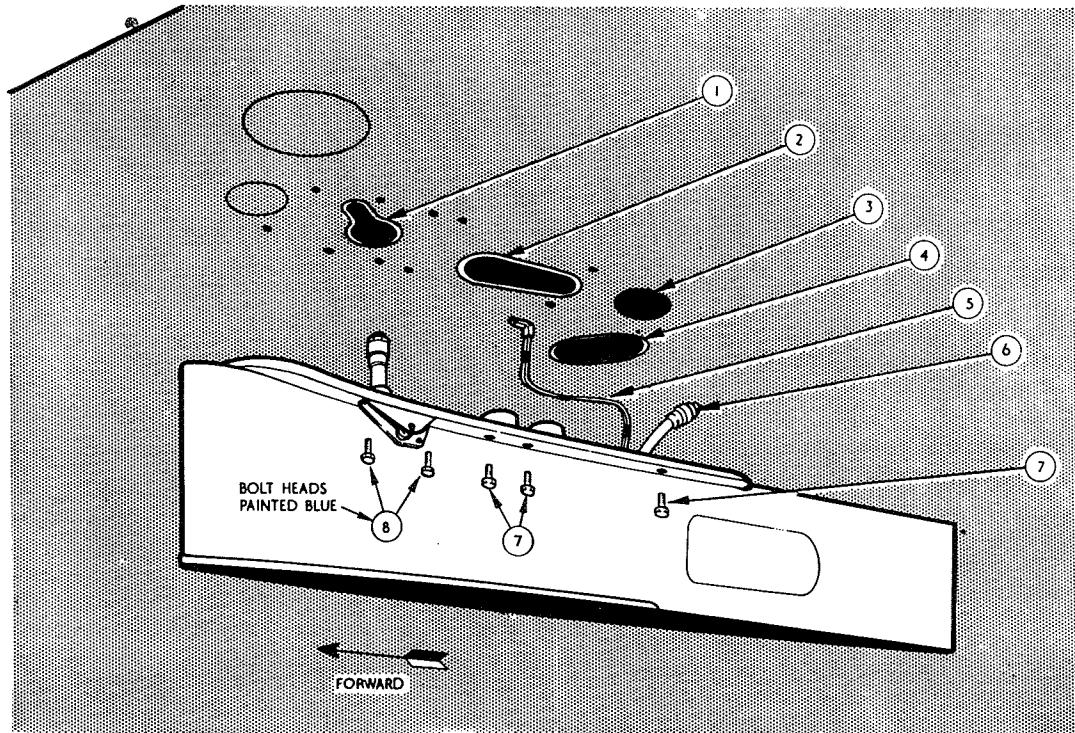
- (10) Carry out the electrical tests called for in Sect. 5, Chap. 1 and replace the access panel (4).

- (22) The removal of the pylons is, in general, a reversal of the fitting procedure, but after the pylons have been removed the cover plates at (1), (2) and (3) must be replaced.

**Fitting and removing outboard pylons (fig. 21)**

23. The outboard pylons are fitted to the wings as follows:—

- (1) Remove the access panel for pylon crutching from the fairing on the top skin of the wing.
- (2) Remove the access panel at (4), and render the aircraft electrically safe (Sect. 5, Chap. 1).
- (3) Remove the cover plate and clamp at (1) from the wing bottom skin.
- (4) Remove the cover plates at (2) and (3) from the wing bottom skin. Refit existing bolts at (3) using 2 B.A. nuts and washers (Ref. 28M/10328 and 28W/9419404 respectively).
- (5) Ensure that the fuel and air valve in the pylon is free from foreign matter and that the valve is working freely. Assemble the pipes (*if not already fitted*) to the fuel and air valve, ensuring that the sealing rings are correctly positioned and the pipe couplings locked with 22 s.w.g. non-corrodible locking wire.
- (6) Offer up the pylon to the wing, engaging the pipes, via access hole (2), with the by-pass valve in the wing.
- (7) Pass the ejector release cable (5) from the pylon, through orifice (3) and the wing, taking care to run and strap the cable well clear of the aileron control rods and place the breech cap connector, at the end of the cable, in its stowage in the wing fairing. Pass connector of electrical leads (6), from pylon, through orifice (3) to connect with plug in wing.
- (8) Secure the pylon to the undersurface of the wing with the securing bolts (7) and (8), lightly lubricated with oil OX-14, and ensure that the bolts are tightened to a



**Fig. 21 Fitting outboard pylon**

(Mod. 1293)

◀ torque load of 200 lbf in. A minimum gap of 0.05 in. is to be obtained between the wing skin and the top edge of the pylon rear fairing, by filing the edge of the fairing as necessary. ▶

**Note . . .**

*To prevent swinging of the E.R.U. when stores are not being carried on the pylon, Cover Plate (Part No. B.235438) with Suspension Lug (Ref. 12A/2076 or 12A/2209) must be fitted to the underside of the pylon and cruched up with the torque wrench set to 20 lbf ft.*

(10) Carry out the electrical tests called for in Sect. 5, Chap. 1 and replace the access panel (4).

*If Mod. 964 which introduces thicker pylon attachment nuts of stainless steel, is embodied on the wings, the special (longer) bolts, Part No. F.244905, which have a white marking, must be used for securing the pylon to the wing at positions marked (7).*

(9) Crutch up the cover plate (*see note*) and replace the access panel on the wing fairing.

24. The removal of the pylons is, in general, a reversal of the fitting procedure, but after the pylons have been removed the cover plates at (1), (2) and (3) must be replaced.

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