

VICKERS VISCOUNT AIRLINER

GROUND EQUIPMENT AND REMOVAL OF MAIN COMPONENTS

INTRODUCTION.

Equipment has been designed to facilitate the servicing and maintenance of Viscount aircraft. These notes are a guide to the use of this equipment, and for ease of reference are divided into six sections.

I N D E X.

SECTION NO. I.

JACKING AND TRESTLING.

INTRODUCTION.		Page 1.
NOSE JACKING.	(Fig. 1).	" 1.
WING JACKING.	(Fig. 1).	" 1.
NOSE WHEEL JACKING.	(Fig. 2).	" 1.
MAIN WHEEL JACKING.	(Fig. 2).	" 1.
WING TRESTLING.	(Fig. 1).	" 2.
REAR FUSELAGE TRESTLING.	(Fig. 1).	" 2.

SECTION NO. II.

TOWING.

INTRODUCTION.		Page 1.
FORWARD TOWING ARM.	(Fig. 3).	" 1.
TOWING BRIDLE.	(Fig. 4).	" 1.
STEERING ARM.		" 2.

SECTION NO. III.

PICKETING AND WEATHER PROTECTION.

PICKETING.	(Fig. 7).	Page 1.
WEATHER PROTECTION.		" 1.
UNDERCARRIAGE GROUND LOCKS.	(Figs. 17 & 18).	" 1.

SECTION NO. IV.

RIGGING.

INTRODUCTION.		Page 1.
MAINPLANES.	(Figs. 5 & 6).	" 1.
TAILPLANE.	(Figs. 5 & 6).	" 1.
POWER PLANTS.	(Fig. 6).	" 1.

I N D E X

SECTION NO. V.

SLINGS AND COMPONENT HANDLING EQUIPMENT.

INTRODUCTION.		Page	1.
OUTER PLANE SLING.		"	1.
FIN SLING.	(Fig. 15).	"	1.
RUDDER SLING.	(Fig. 16).	"	1.
TAIL PLANE AND ELEVATOR SLING.	(Figs. 13 & 14).	"	1.
POWER PLANT SLING.	(Fig. 21).	"	1.
POWER PLANT STAND AND SLING.		"	1.
POWER PLANT TRANSPORT CRADLE.		"	1.
UNDERCARRIAGE HANDLING TROLLEY.		"	2.

SECTION NO. VI.

REMOVAL OF MAIN COMPONENTS.

SLIPPER TANKS.	(Fig. 9A).	"	1.
FLAPS.	(Figs. 9 & 10).	"	1.
AILERON.	(Fig. 11).	"	1.
WING TIP.	(Fig. 8).	"	1.
OUTER PLANE.	(Fig. 12).	"	1.
ELEVATOR.	(Fig. 13).	"	3.
TAIL PLANE.	(Fig. 14).	"	3.
RUDDER.	(Fig. 16).	"	3.
FIN.	(Fig. 15).	"	4.
MAIN UNDERCARRIAGE.	(Fig. 20).	"	4.
NOSE UNDERCARRIAGE.	(Fig. 19).	"	4.
POWER PLANT.	(Figs. 21, 22, 23 & 24).	"	5.

LEADING PARTICULARS

309/12

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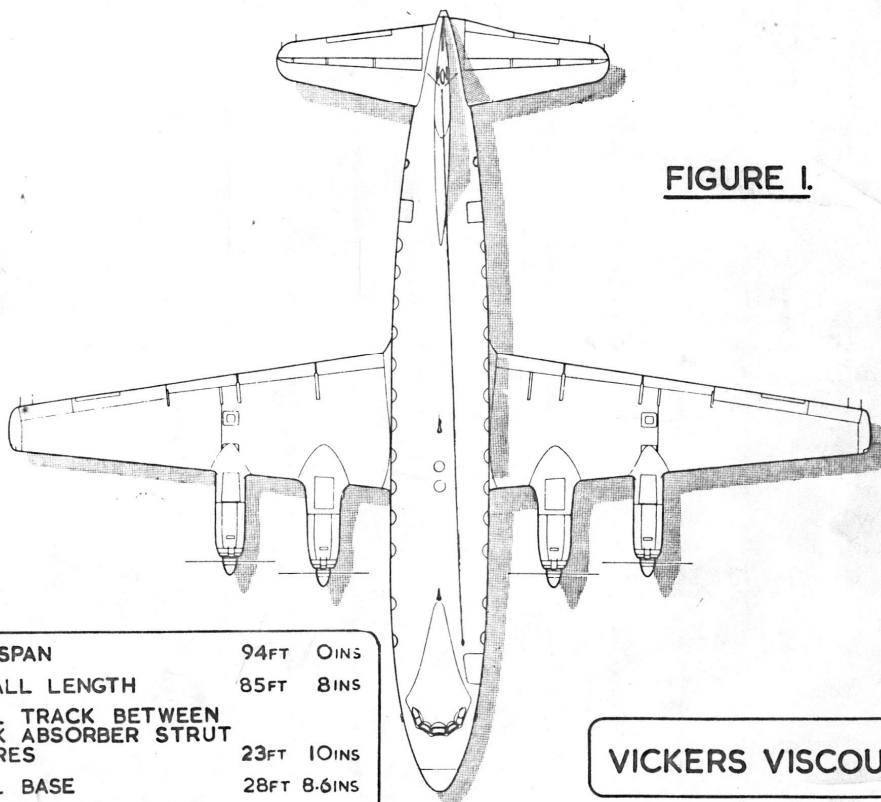
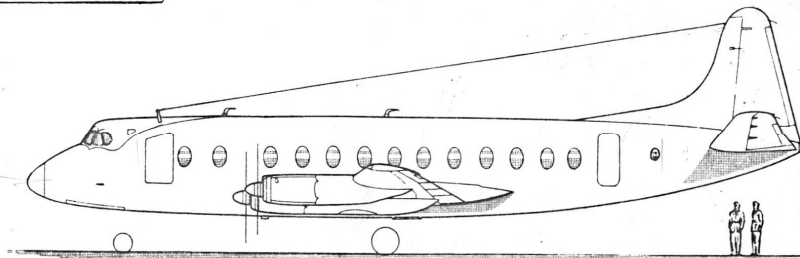
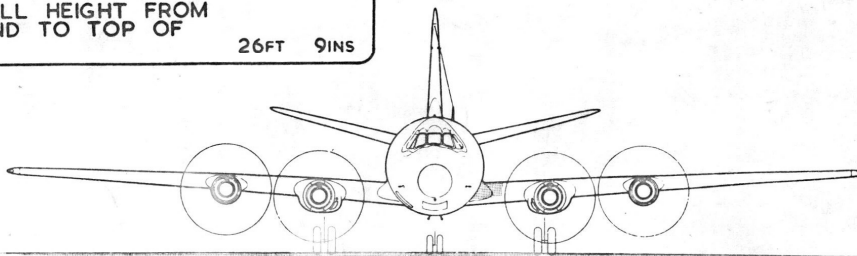


FIGURE 1.

WING SPAN	94FT 0INS
OVERALL LENGTH	85FT 8INS
WHEEL TRACK BETWEEN SHOCK ABSORBER STRUT CENTRES	23FT 10INS
WHEEL BASE	28FT 8.6INS
OVERALL HEIGHT FROM GROUND TO TOP OF FIN	26FT 9INS

VICKERS VISCOUNT.



ARRANGEMENT OF FUSELAGE STRUCTURE

309/12

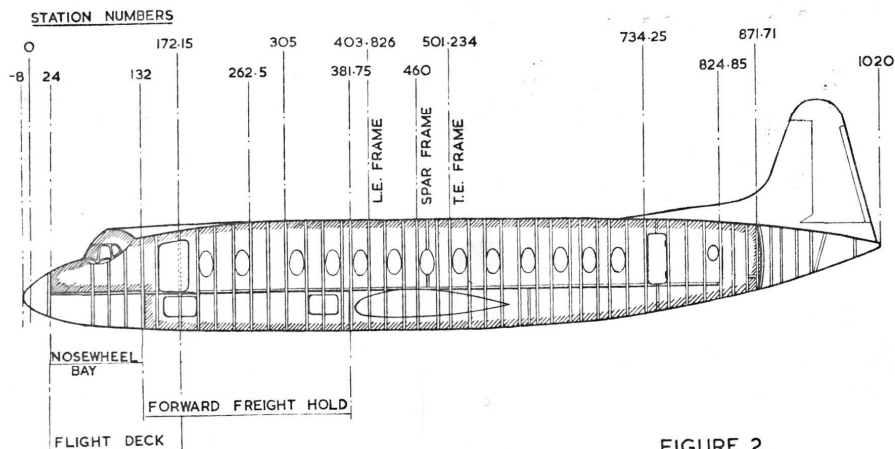


FIGURE 2.

FUSELAGE STATIONS ARE MEASURED IN INCHES FROM DATUM 'O'

PRESSURISED WITHIN AREA SHOWN THUS

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FUSELAGE COVERED STRUCTURE.

REAR PASSENGER ENTRANCE DOOR

COCKPIT HOOD

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RADOME PRESSURE BULKHEAD

WING ATTACHMENT POINTS

UNDERFLOOR FREIGHT COMPARTMENT

NOSE WHEEL BAY

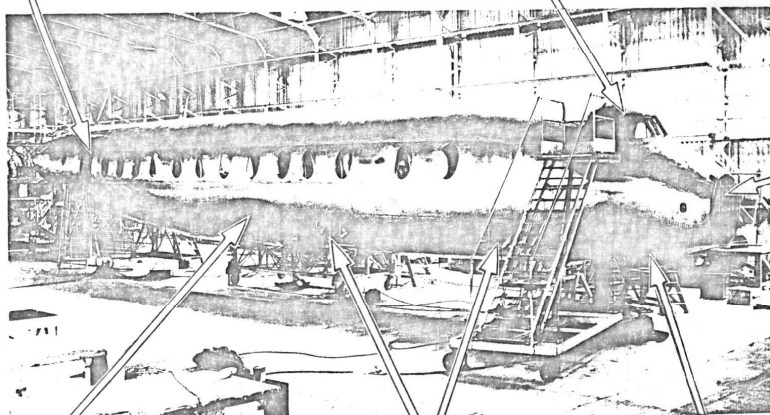


FIGURE 3.

1/11/7

SECTION NO. I.

JACKING AND TRESTLING.

INTRODUCTION.

Jacking points are located under the wings and under the nose of the aircraft, provision is also made for jacking each oleo should it be necessary to change a wheel. Points for steadying trestles are located under each outer-plane and under the rear of the fuselage

NOSE JACKING.

With reference to Fig. 1 it can be seen that there are two jacking points, one each side of the nose at station No. 132. Special jacking pads (Drawing No. 70179 Part 89) are provided and are secured to the fuselage structure by four bolts which screw into tapped holes; these holes are sealed by rubber plugs when not in use. Each pad will accommodate the 3" diameter ball head used with the jack.

Both jacks should be used together to ensure an even lift.

WING JACKING.

As shown on Fig. 1 there are four jacking points, two under each main-plane on the undersurface of the main spar. Jacking pads (Drawing No. 70179 Part 335) accommodate the 3" diameter ball heads used with the jacks. Three dowels project from the top of the pad and locate in three holes under the main spar; the front of the pad is cut away to avoid the mushroom headed bolts on the undersurface of the wing. The holes are sealed with rubber plugs when not in use.

NOTE: The following weight limitation must be observed whilst using the underwing jacking points.

When using	OUTBOARD	jacking points	aircraft weight must not exceed	49,000 lbs.
"	"	INBOARD	"	"
"	"	ALL FOUR	"	"
				56,000 lbs.
				69,000 lbs.

NOSE WHEEL JACKING.

Individual nose wheels may be changed by using the special jacking stirrup and a 10 ton jack (see Fig. 2).

NOTE: If an inboard wheel is to be changed it is necessary to disconnect the undercarriage door from the operating linkage, and swing it inboard, or the door will prevent the wheel sliding off the axle.

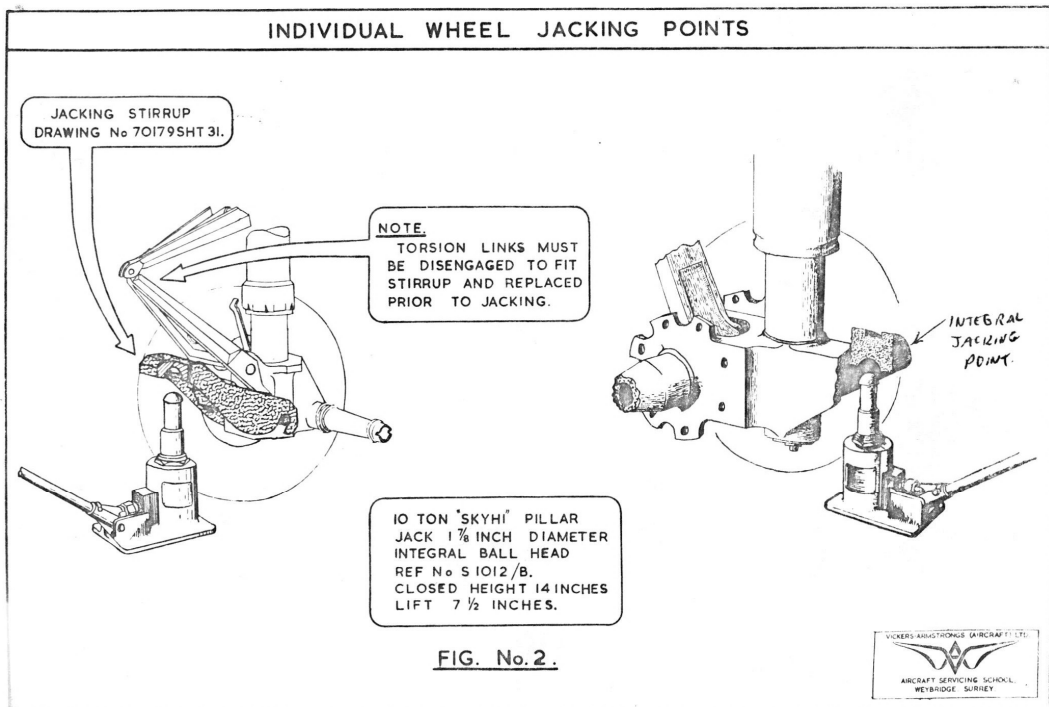
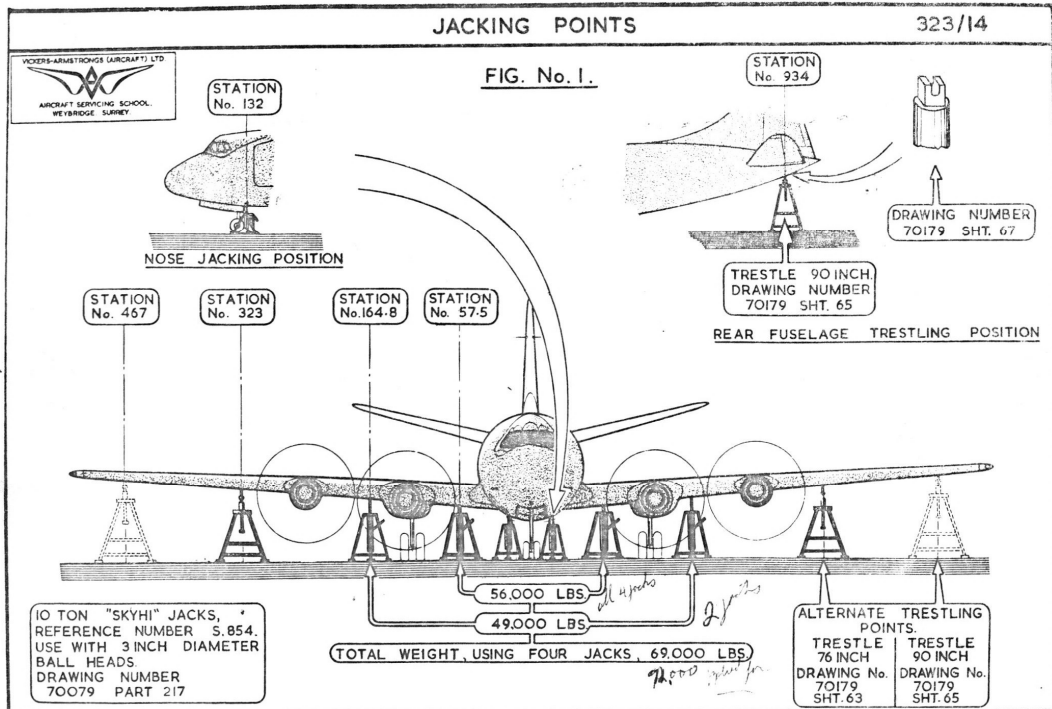
WING TRESTLING.

Two points for placing steady trestles under the outer-plane are indicated by the words TRESTLE HERE stencilled on the undersurface of each wing. Reference to Fig 1 will indicate the station numbers.

REAR FUSELAGE TRESTLING.

A position for a steady trestle as seen in Fig 1 is located on the centre line of the fuselage under the tail-plane spar, between the tail-plane spar frames at the bottom, and accessible through a panel is a spool under which fits the adapter for use with the 90 inch trestle.

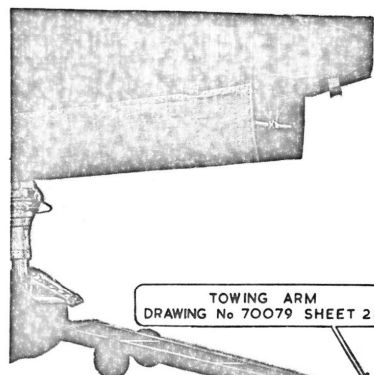
EMPTY.WT.
44801 Lbs approx.



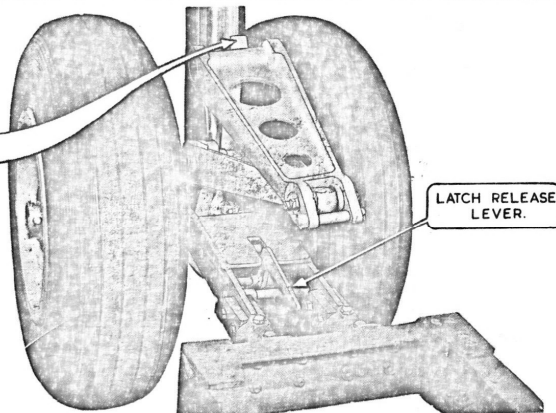
FORWARD TOWING ARM.

323/15

NOTE BEFORE COMMENCING TO TOW
DISCONNECT TORSION LINKS AND
PLACE IN SPRING CLIP.



TOWING ARM
DRAWING No 70079 SHEET 21.



LATCH RELEASE
LEVER.

FOUR SPARE SHEAR PINS.

SHEAR PIN
SHEARS AT 10000 LBS.

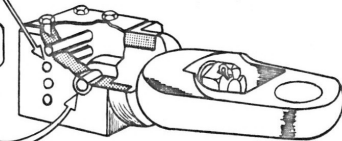
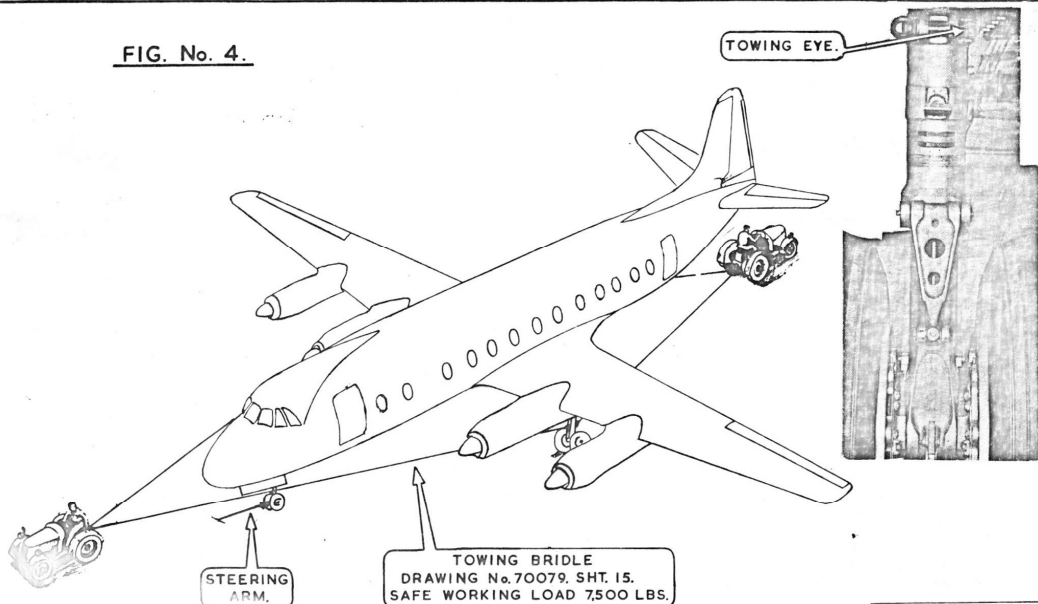


FIG. No. 3.

BRIDLE TOWING EQUIPMENT.

FIG. No. 4.



TOWING EYE.

STEERING
ARM.

TOWING BRIDLE
DRAWING No.70079. SHT. 15.
SAFE WORKING LOAD 7500 LBS.

2/3/8



SECTION NO. II.

TOWING.

INTRODUCTION.

Provision is made to tow the aircraft forward from the nose undercarriage using the towing arm. The aircraft may also be towed either forward or rearward from both main undercarriages using a towing bridle, when this method is employed a special steering arm is attached to the nose undercarriage.

NOTE: The aircraft may be pushed rearwards for short distances using the forward towing arm, but only on a hard level surface as there is no protection from the shear pin.

IMPORTANT: BEFORE TOWING, THE NOSE STRUT MUST BE RENDERED FULLY CASTORING BY DISCONNECTING THE UPPER TORSION LINK, IF BEING TOWED BY A BRIDLE THE STEERING ARM MUST BE FITTED.

The tractor towing hook must be spring loaded to protect the towing arm and undercarriage from shock loads whilst towing. The 12 ton 'NEATE' towing hook is recommended.

FORWARD TOWING ARM.

With reference to Fig. 3 it will be seen that the towing arm is fabricated from steel channel suitably welded; two transport wheels are fitted. The detail of the towing swivel illustrates the shear pin protection also the spare shear pin stowage. The arm is attached to the aircraft by hooks fitting over spigots protruding from each side of the ram foot; the towing arm is prevented from prematurely disconnecting by the action of two spring loaded latches, these latches may be released by lifting the release handle seen in the enlarged picture of the aircraft end of the towing arm.

NOTE: To ensure that the nose wheels are rendered fully castoring before towing commences, the lower end of the lower torsion link will prevent the fitting of the towing arm unless the upper link has been disconnected.

TOWING BRIDLE.

The Viscount can be towed forward or rearward by using the towing bridle attached to the towing eyes, one on each main oleo. (Refer to Fig. 4)

The bridle consists of two 45 foot lengths of $2\frac{1}{2}$ inch steel galvanised cable linked together at one end by a towing ring. At the opposite end of each cable is a towing link and pin for attachment of the towing eyes or the main oleos, the same towing eye is used for towing either forward or rearward.

When towing by the bridle the aircraft is steered by use of the steering arm fitted to the nose undercarriage.

STEERING ARM.

This steering arm is used whenever the aircraft is being towed from the main undercarriage using the bridle.

The Steering Arm has a 'T' shaped tubular handle which is attached by two hooks similar to the towing arm and has two spring loaded latches with a release handle. The steering arm is engaged and disengaged on the towing spigots in the same manner as the towing arm.

NOTE: The steering arm must not be used for towing purposes.

SECTION NO. III.

PICKETING AND WEATHER PROTECTION.

PICKETING.

Provision is made to picket the aircraft by attaching 2 inch circumference Manilla ropes to the Nose and both Main Undercarriages, each wing tip and at the rear end of the fuselage. The aircraft should be headed into wind before picketing. For details of rope attachment see Fig. 7.

WEATHER PROTECTION.

Various items of equipment are available to provide a means of weather protection if it is necessary to park the aircraft in the open. The waterproof covers are secured in position either by tapes or elastic bands sewn onto the covers. See list for drawing numbers of various covers and plugs.

	Drawing No.
Cockpit Cover.....	70079 Part 81.
Nosewheel Cover.....	70079 Part 89.
Mainwheel Cover.....	70079 Part 87.
Spinner Cover.....	70079 Part 83.
Air Intake Cover (inboard).....	70079 Part 251.
" " " (outboard).....	" " "
Engine Cover (inboard).....	74579 Part 15/16.
" " " (outboard).....	74579 Part 13/14.
Jet Pipe Cover.....	70079 Part 291.
Oil Cooler Outlet Cover.....	70179 Part 293.
Generator Cooling Inlet Blanking Cap.....	70179 Part 577.
Fuselage Air Inlet Bung.....	72479 Part 151.
Pitot Head Cover.	
Static Vent Plug.	

GROUND LOCKS.

Ground locks are available for both main and nose undercarriages, and when inserted in the down lock mechanism, prevent movement of the lock mechanism in case of inadvertant selection of the undercarriage when the aircraft is parked or being towed. For details of the locks and fitting see Fig. 17 & 18.

SECTION NO. IV.

RIGGING.

INTRODUCTION.

There are three levelling points located aft of the flap gearbox and accessible through an access panel in the undersurface of the fuselage between frames 541.75 and 563.25. The aircraft is considered to be in a rigging position when, with a straight edge placed on these points, it is laterally and longitudinally level.

All rigging points are identified by a one inch diameter black disc stencilled on the top surface of the components at their respective checking stations.

Incidence. This is checked at the positions shown in Fig. 5 with a special gauge.

Dihedral. This is checked, by means of a straight edge and inclinometer, at the positions shown in Fig. 5.

Symmetry. The measurements for the symmetry check are taken from raised buttons, internally tapped to take a 2 B.A. bolt, which are rivetted to the lower surface of the nose, tail, each wing tip and each tail plane tip.

MAIN PLANES.

The inner and outer planes are checked for correct incidence and dihedral, and for symmetry about the fuselage centre line as indicated in Figs. 5 and 6.

TAIL PLANE.

This is checked for incidence and dihedral in a similar manner to the mainplanes.

The mainplane must be checked for symmetry before checking the tailplane for parallelism.

POWER PLANT.

The nacelles are to be checked for parallelism by measuring from the rigging point under each wing tip to the centre of the spinner on each outboard engine. The distance between the centres of the inboard and outboard spinners must then be measured.

Special Equipment.

The following special equipment is provided to assist in checking the rigging.

Drawing No. 81079 Sheet 103. Mainplane incidence gauge.

Drawing No. 80279 Sheet 485. Tailplane incidence gauge.

RIGGING DIAGRAM — INCIDENCE AND DIHEDRAL.

323/12

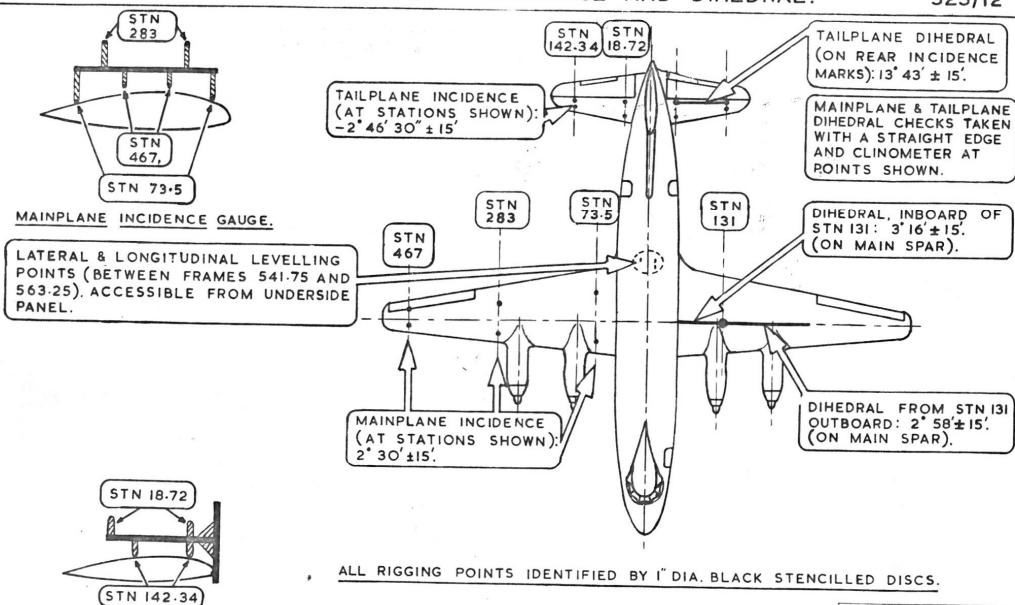


FIG. No. 5.



RIGGING DIAGRAM — SYMMETRY AND PARALLELISM.

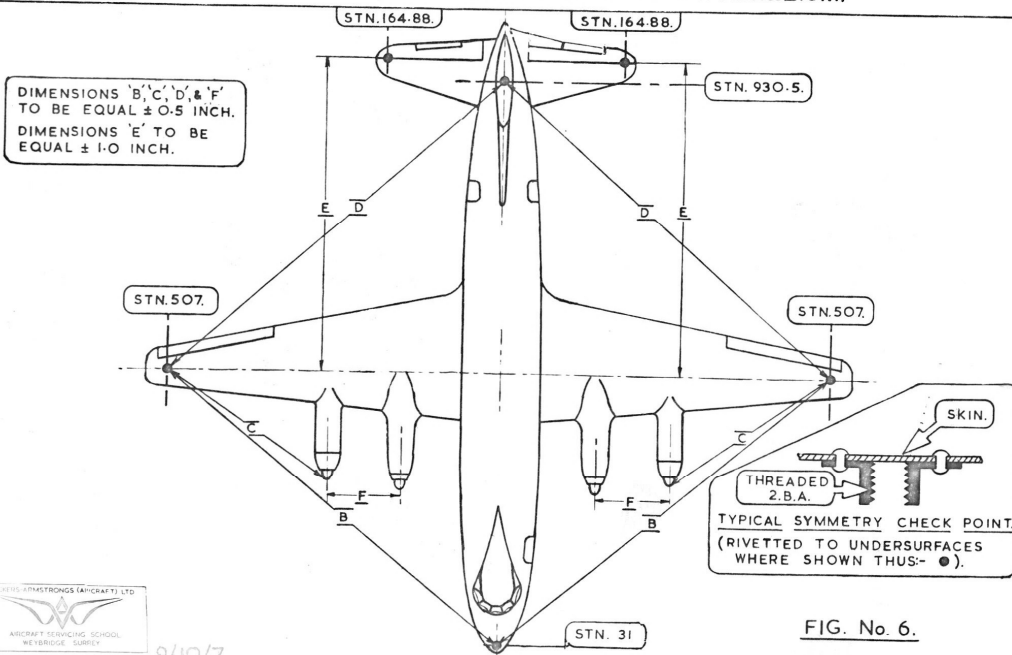


FIG. No. 6.



9/10/7

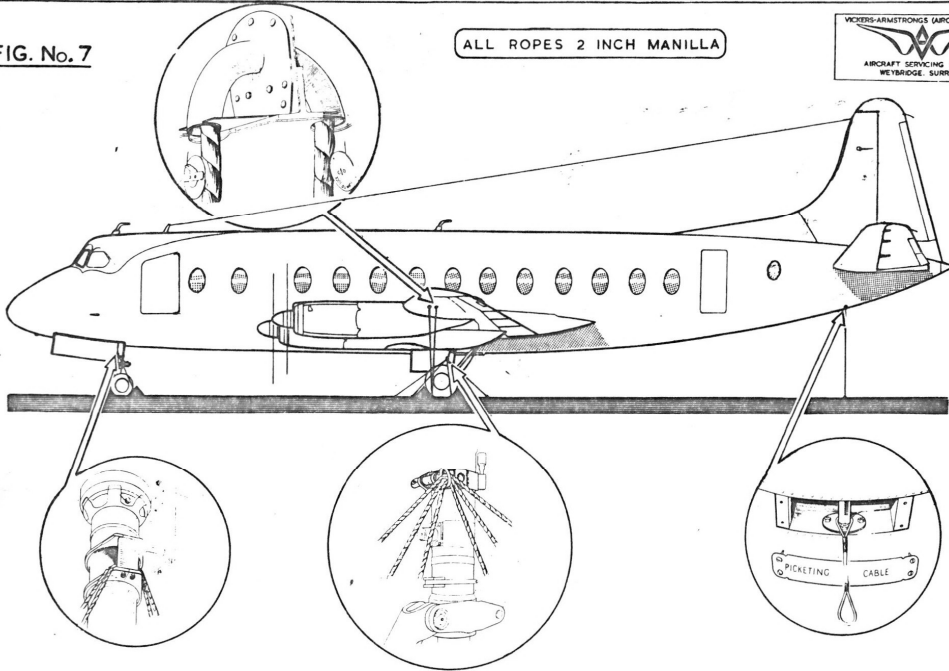
PICKETING.

323/12

FIG. No. 7

ALL ROPES 2 INCH MANILLA

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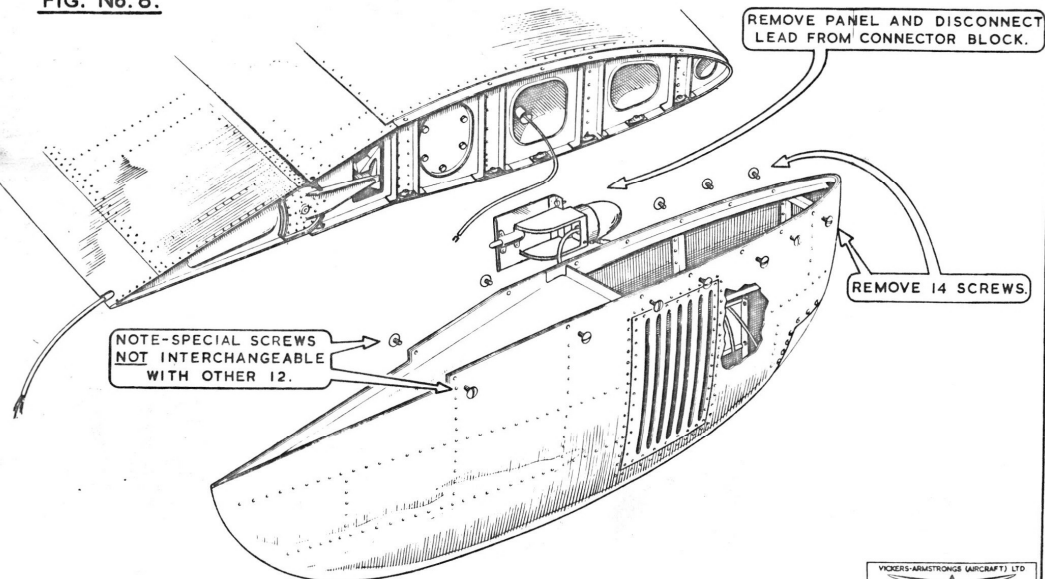
WING TIP REMOVAL.

FIG. No. 8.

REMOVE PANEL AND DISCONNECT
LEAD FROM CONNECTOR BLOCK.

NOTE-SPECIAL SCREWS
NOT INTERCHANGEABLE
WITH OTHER 12.

REMOVE 14 SCREWS.



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9/10/7

SECTION NO. V.

SLINGS AND COMPONENT HANDLING EQUIPMENT.

INTRODUCTION.

Special to type slings have been designed to facilitate the removal and assembly of all major components, the manhandling of which is considered impractical. The following list gives relevant details:-

SLING	DRAWING NO.	SAFE WORKING LOAD (lbs).	REFERENCE FIG.
Outerplane.	60979 Sheet 4.	900	
Fin.	70079 Sheet 5.	233.	15
Rudder.	70179 Sheet 71.	196	16
Tailplane and Elevator.	70079 Sheet 7.	212	13 & 14

POWER PLANT SLING.

Provision is made for lifting the power plant with or without the propeller, the sling having alternative lifting points. The sling is manufactured by Rolls Royce, reference No. J.47240; for sling attachment to power plant, see Fig. 24.

NOTE: At present, this sling has a safe working load of 1,600 lbs., but Rolls Royce have stated that the sling will take the increased weight of the 525 engine and propeller, and that the safe working load will be increased in due course.

POWER PLANT STAND AND SLING.

Power plant stand drawing No. 70079 PT. 97 enables complete power plants to be supported at the mounting points in readiness for installation. A sling, drawing No. 70079 Sheet 51 with a safe working load of 2,000 lbs, attaches to the four corners of the stand and enables the complete stand and power plant to be moved; alternate lifting points on the sling enable the power plant, complete with propeller, to be moved in the stand.

POWER PLANT TRANSPORT CRADLE.

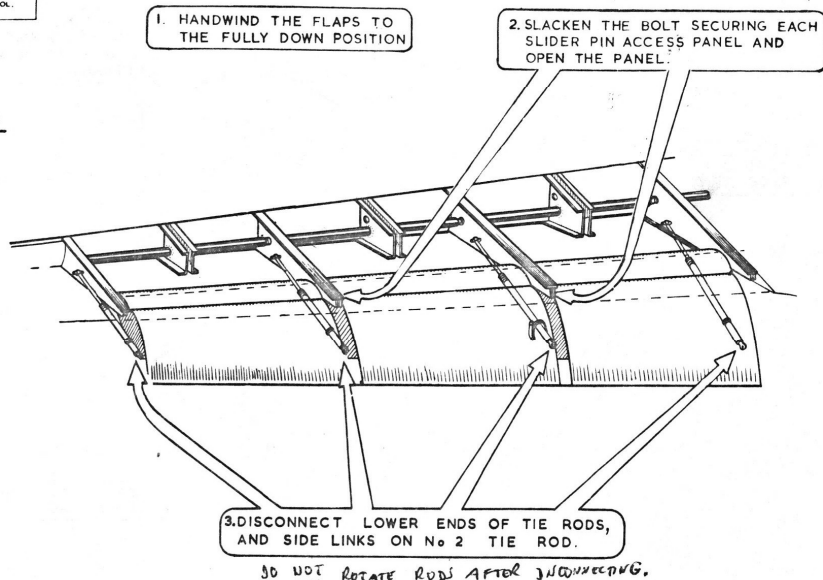
This stand is designed for transporting power plants, the pick-up points attach to the normal power plant mounted points. Provision is made at one end of the stand to support the unserviceable power plant whilst the replacement unit is being fitted. The cradle is fitted for lifting either by a crane or a fork lift.

FLAP REMOVAL — STAGE 1.

323/18

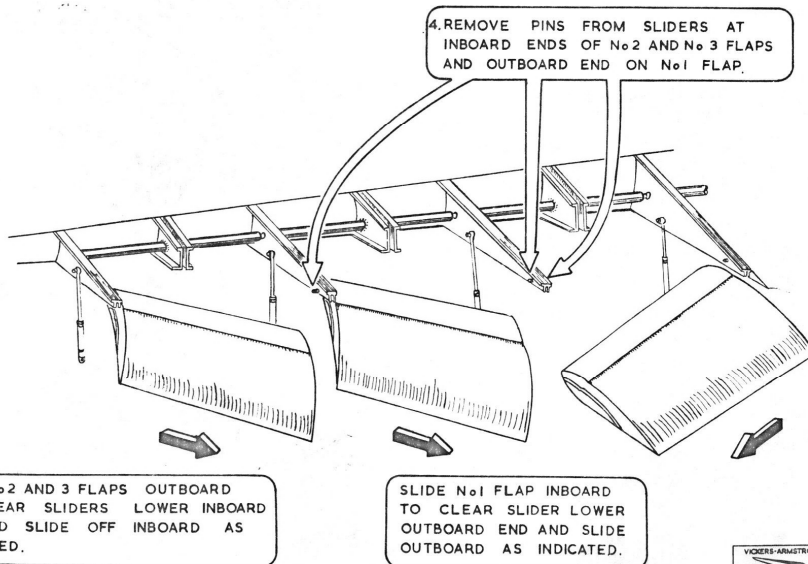


FIG. 9



FLAP REMOVAL — STAGE 2

FIG. 10

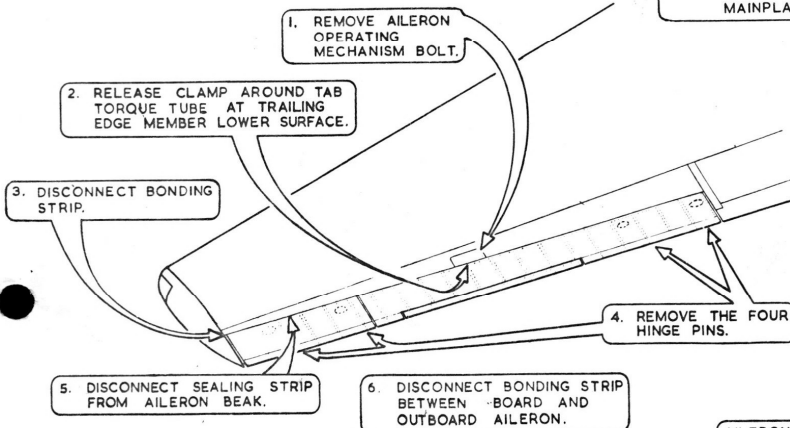


AILERON REMOVAL

323/15

NOTE: REMOVE ALL ACCESS PANELS
PRIOR TO REMOVAL OPERATIONS.

NOTE: STARBOARD AILERON TAB
MECHANISM DISCONNECTED AT
5-WAY CONNECTOR BLOCK
ADJACENT TO AILERON
OPERATING MECHANISM IN
MAINPLANE.



AILERON WEIGHT:
83 LBS. EACH



FIG. No. 11.

OUTER PLANE REMOVAL.

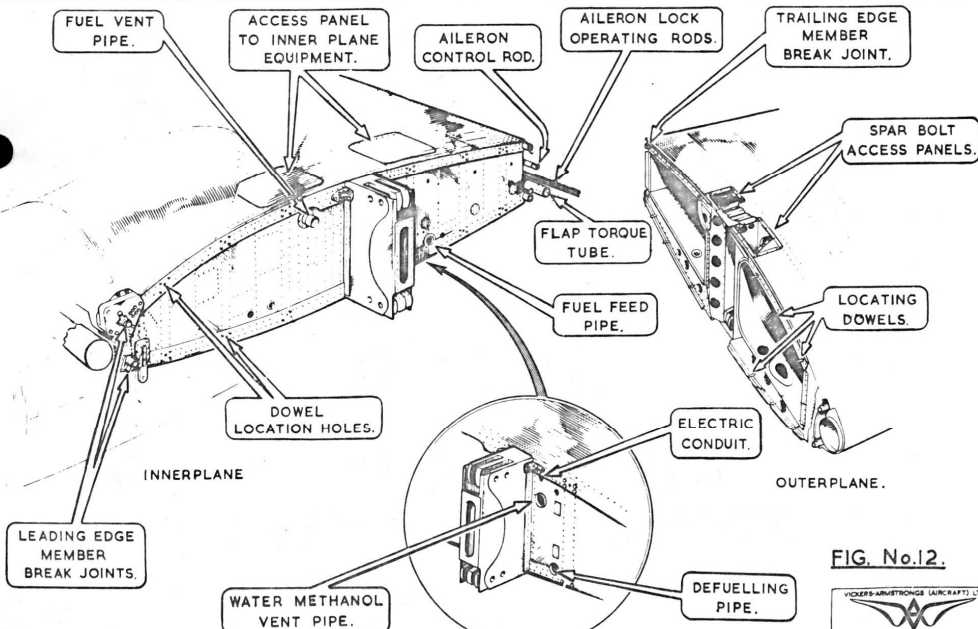


FIG. No. 12.



-1-

SECTION NO. VI.

REMOVAL OF MAIN COMPONENTS.

SLIPPER TANKS.

For removal sequence , see Fig. 9A.

FLAP REMOVAL.

The flap units may be removed in any order, refer to Figs. 9 and 10 for the sequence necessary. The approximate weight of each flap unit is as follows:-

No. 1 Unit - 80 lbs.

No. 2 Unit - 68 lbs.

No. 3 Unit - 55 lbs.

To refit the flap, reverse the removal sequence.

AILERON REMOVAL.

A special spanner, drawing No. 70079 Part 9, is provided to facilitate the removal of the hinge pins. For removal sequence refer to Fig. 11. The two aileron sections per side weigh approximately 85 lbs.

To refit reverse the removal sequence.

WING TIP REMOVAL.

For removal details, see Fig. 8.

OUTERPLANE REMOVAL.

To facilitate the removal the following special equipment is available:-

Sling Drawing No. 60979 Sheet 4.

Spanner Drawing No. 70179 Part 243.

The approximate weight of an outerplane, structure only, is 782 lbs. Before commencing removal, off load any fuel in tanks by suction defuelling or power draining. If Slipper Tanks are fitted, these must be removed before attempting to remove the Outerplane. Jack the aircraft in accordance with Fig. 1.

1. Remove top rear, bottom and outboard panels of the outer nacelle, also any falswork at trailing edge, necessary to facilitate work.
2. Remove two access panels on the upper surface of the innerplane at wing station No. 243, one panel in front of the main spar and one behind.
3. Remove the main spar break joint access panels, two on the upper surface of the outerplane and two on the under surface. The rear panel on the undersurface also allows access to No. 4 fuel cell outer tank.

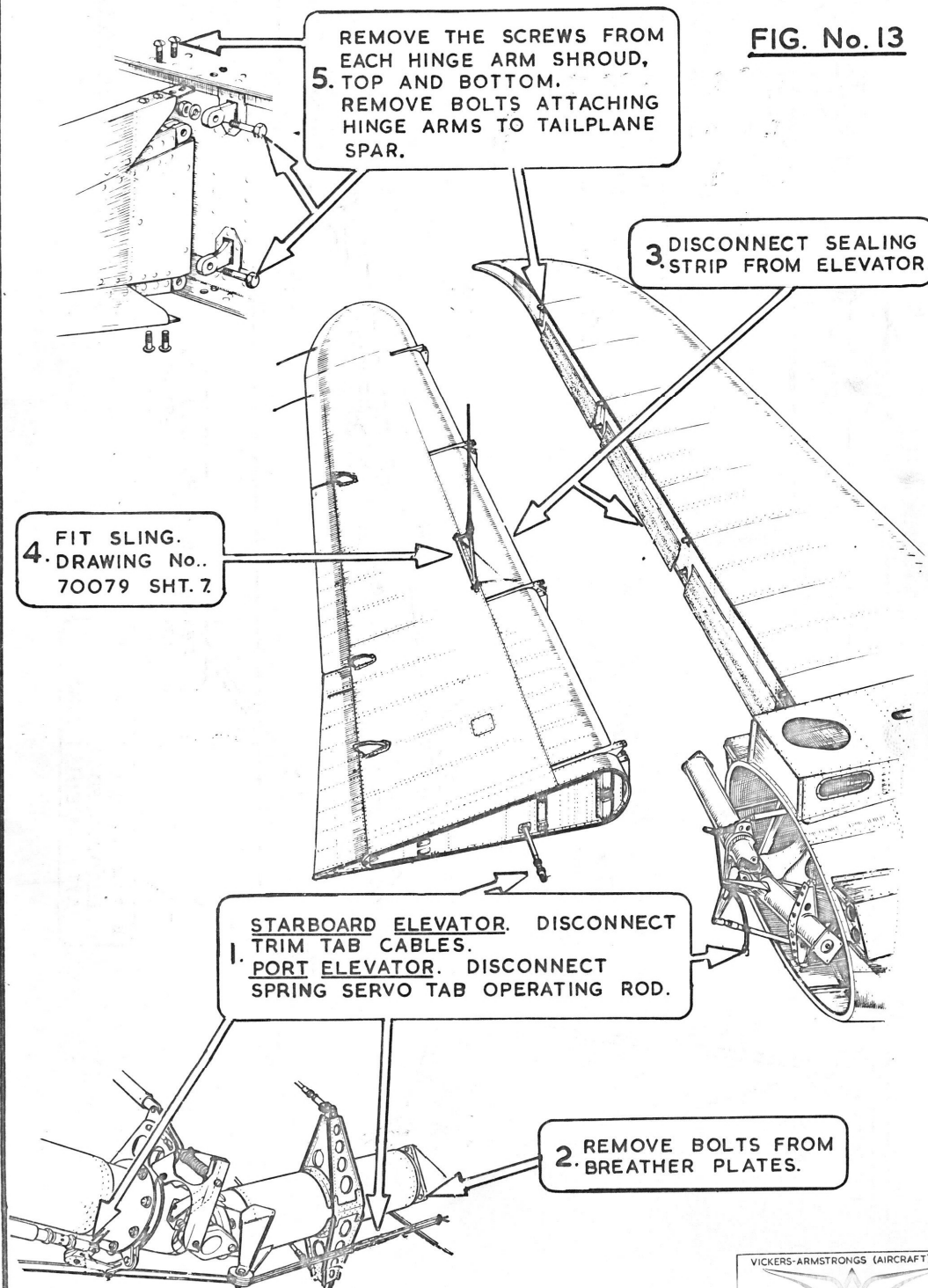
7/3/8.

4. Remove No. 3 flap as previously described (refer to Figs. 9 & 10).
5. Disconnect at trailing edge member:-
 - Flap torque tube (section already disconnected for flap removal).
 - Aileron operating rod.
 - Aileron lock tie rods.
 - Slipper tank fuel transfer pipe (if fitted).
6. Disconnections on upper surface of wing.
 - (a) Through rear panel on inner plane:-
 - Cell interconnecting pipe between Nos. 1 and 4 cells, outer tank.
 - Booster pump delivery pipe from No. 4 cell.
 - Water Methanol Vent pipe.
 - (b) Through forward panel on inner plane:-
 - Booster pump delivery pipe from No. 1 fuel cell outer tank.
 - Inboard fuel tank vent pipe.
7. Disconnection of the electric wiring to components in the outer plane; this can be achieved by two alternative methods:-
 - (a) Open the loom at panel 'N' through the forward panel in the upper surface inner plane and disconnect all electrical wiring from the outer plane.
 - (b) Disconnect wiring from components in outer wing and pull wires back into the inner plane; the disconnection should be made from the following components:-
 - Four tank contents measuring units.
 - Float Switch.
 - Landing Light.
 - Navigation Light.
 - Stall Warning Unit (Port wing only).
8. Disconnections under wing in outer nacelle:-
 - De-icing duct.
 - Bracket carrying engine controls (port wing only).
 - Refuelling pipe to outer wing tank also electric lead from valve.
 - Defuelling cock (attached to bracket on outer wing).
 - Pipe interconnecting fuel cells Nos. 1 and 4, disconnect pipe at each end also where it passes up through the spar bolt access panel, removing pipe from wing.
 - Disconnect feed pipe from booster pump in No. 1 cell also electric connection.
 - Disconnect feed pipe from booster pump in No. 4 cell also electric connection, together with the interconnecting pipe adjacent to pump.
 - Remove both booster pumps complete with isolating chambers and manhole covers.
 - Through manhole covers peel fuel cells away from inner plane rib.

ELEVATOR REMOVAL.

323/12

FIG. No. 13



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TAILPLANE REMOVAL.

323/12



1. DISCONNECT DE-ICING DUCT AT FLANGE JOINT INSIDE FUSELAGE.

5. REMOVE BOLTS FROM SHEAR PLATE IMMEDIATELY AFT OF TAILPLANE SPAR.

6. USING EXTRACTOR (DRAWING No. 60979 SHT.3.) REMOVE TWO SPAR BOLTS.

FIG. No. 14.

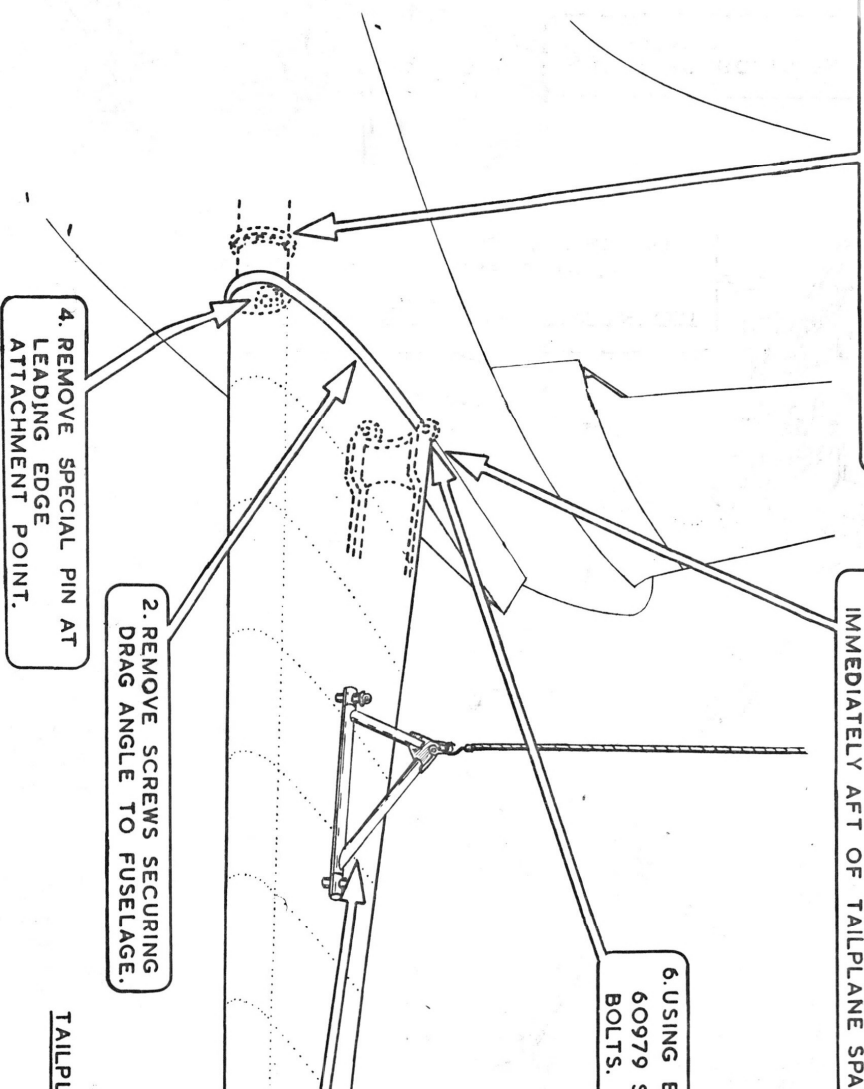
3. FIT SLING. (DRAWING No. 70079 SHT.7).

2. REMOVE SCREWS SECURING DRAG ANGLE TO FUSELAGE.

4. REMOVE SPECIAL PIN AT LEADING EDGE ATTACHMENT POINT.

TAILPLANE WEIGHT: 212 LBS.

910/17





5. ATTACH RUDDER SLING
DRAWING No 70179 SHT 71

1. OPEN ALL
ACCESS PANELS.

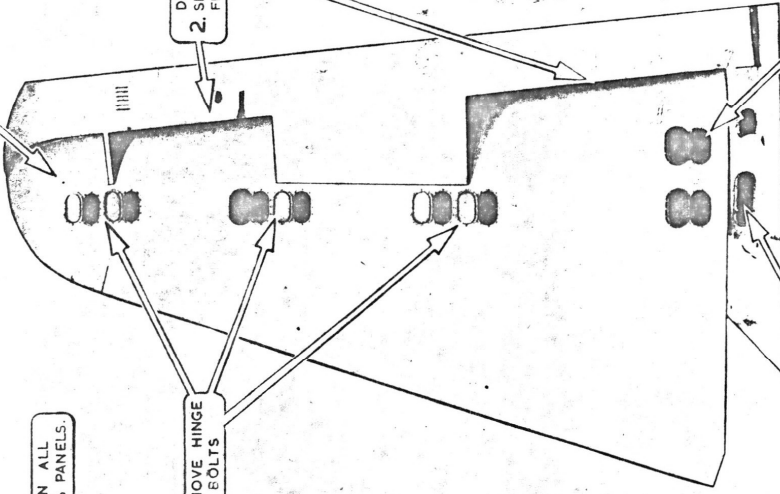
2. DISCONNECT
SEALING STRIP
FROM RUDDER

6. REMOVE HINGE
BOLTS

FIG. 16

4. REMOVE FIXED RUDDER
STOP FROM RUDDER STUB

3. DISCONNECT RUDDER
TORQUE TUBE AND
TAB OPERATING ROD.



1. DISCONNECT AERIALS FROM
TENSIONERS IN ROOF OF
REAR FUSELAGE, STN. No. 887.2

3. REMOVE SCREWS
SECURING FIN
TO DORSAL FIN.

6. DISCONNECT FRONT
ATTACHMENT THROUGH
DORSAL FIN, STARBOARD
SIDE.

2. DISCONNECT DE-ICING
DUCT IN FUSELAGE.

5. FIT SLING.
DRAWING No.
70079 SHT. 5

7. REMOVE BOLTS FROM
SHEAR PLATE AT REAR
OF FIN SPAR.

8. REMOVE 3 BOLTS FROM
EACH ROOT FITTING.

4. REMOVE SCREWS
SECURING DRAG
ANGLE TO FUSELAGE.

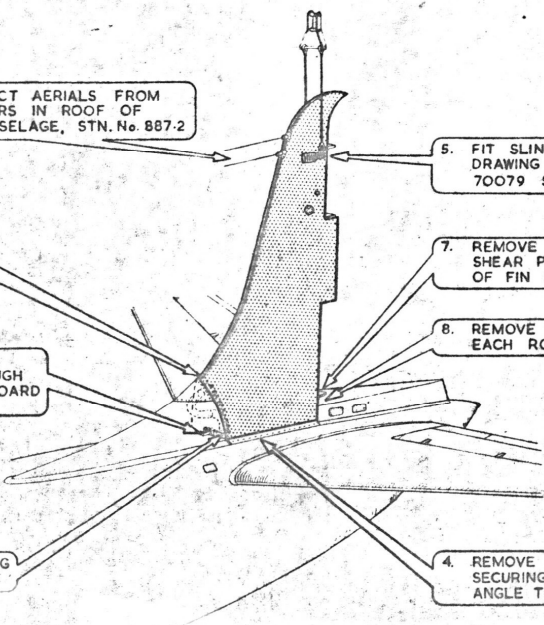


FIG. 15

9. Attach sling, drawing No. 60979 Sheet 4, to outer plane.
10. Disconnect leading edge and trailing edge attachments.
11. Remove main spar bolts, two from top attachment and two from lower attachment.

To Remove Bolts. Unscrew nut on rear face of spar and remove washer; tighten nut on front face of spar, this will extract the bolt.

To Fit Bolts. Coat the bolt and all mating surfaces with Duralac D.T.D. 369, insert bolt and tap home, fit nut and washer to the bolt at the rear face of the spar and pull the bolt in a further 0.1 inch, using special spanner, drawing No. 70179 Part 243. Having done this, check that there is at least 0.02 inch of the taper still protruding through the forward face of the spar.

ELEVATOR REMOVAL.

Special equipment for elevator removal comprises a sling, drawing No. 70079 Sheet 7, the approximate weight of each elevator is 158 lbs.

For removal sequence see Fig. 13. Refitting an elevator is essentially the reverse of the removal sequence.

TAIL PLANE.

The elevators must be removed from the tailplane before the tailplane is removed from the aircraft. (See fig. 13).

Special equipment provided for removal and refitting of the tailplane comprises:-

Sling	Drawing No. 70079 Sheet 7.
Spar bolt extractor	" " 60979 Sheet 3.
Drift.	" " 60979 Part 171.
Driving Stud	" " 70079 Part 245.

For removal sequence refer to Fig. 14. The approximate weight of each tailplane is 212 lbs.

Refitting the tailplane is essentially the reverse of the removal sequence. Spar attachment bolts can be inserted with the special driving stud and drift provided.

RUDDER REMOVAL.

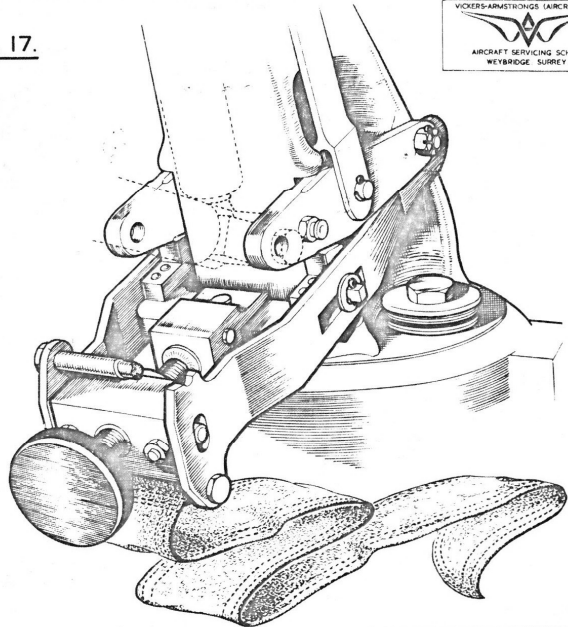
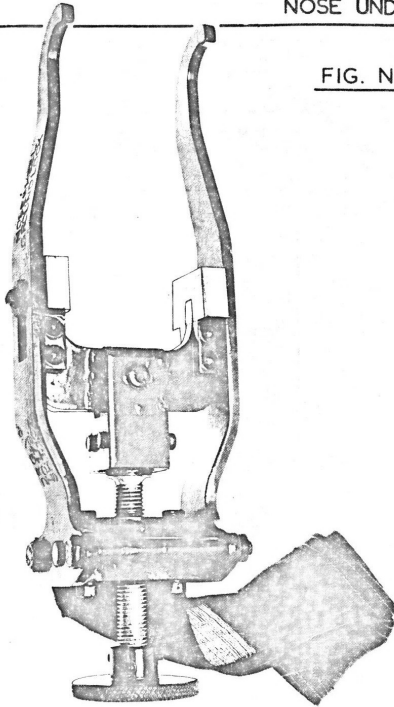
A special sling drawing No. 70179 Sheet 71, is provided for hoisting the rudder. The approximate weight of the rudder is 188 lbs.

For removal sequence refer to Fig. 16. To refit reverse the removal sequence.

NOSE UNDERCARRIAGE GROUND LOCK.

323

FIG. No. 17.



VICKERS-ARMSTRONGS (AIRCRAFT) LTD.
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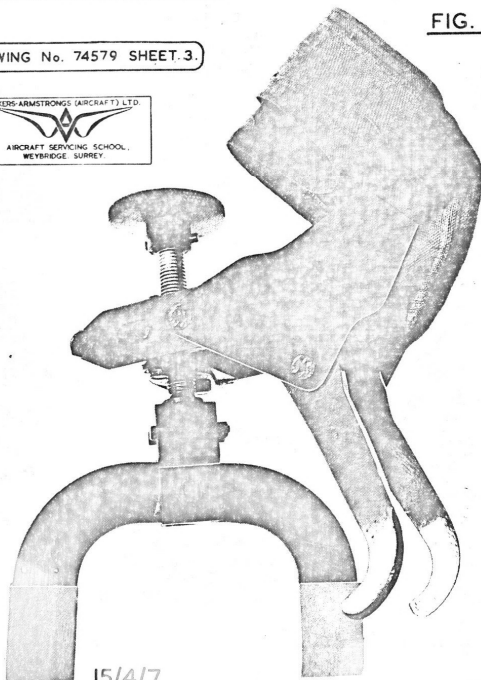
DRAWING No 70179 SHEET 107.

MAIN UNDERCARRIAGE GROUND LOCK.

FIG. No. 18.

DRAWING No. 74579 SHEET. 3.

VICKERS-ARMSTRONGS (AIRCRAFT) LTD.
AIRCRAFT SERVICING SCHOOL,
WEYBRIDGE, SURREY.

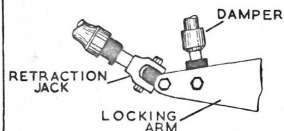


15/4/7

NOSE UNDERCARRIAGE REMOVAL

323/12

4. DISCONNECT RETRACTION JACK. REMOVE BOLT ATTACHING DAMPER TO LOCKING ARM



5. USING THE JACK ATTACHMENT BOLT, SECURE THE LOADING LEVER TO THE LOCKING ARMS. PULL DOWN LOADING LEVER AND ROTATE LEG CLEAR OF LOCKING RECESS



PLACE AXLE ON HANDLING TROLLEY AND ATTACH WINCH CABLE TO PICKETING POINT

1. RELEASE HYDRAULIC PRESSURE - DISCONNECT PIPE UNIONS

2. REMOVE CONDUIT AND CENTRALISER MICRO-SWITCH

8. REMOVE END CAPS OVER BALL ENDS AND LOWER U/C CLEAR

7. DISCONNECT THE FLEXIBLE COUPLING TO BEVEL GEAR ON PORT END CAPS

3. REMOVE BOTH NOSE WHEELS

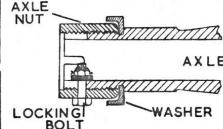


FIG. No. 19

MAIN UNDERCARRIAGE REMOVAL

8. REMOVE BOLTS FROM FLANGED JOINTS. MOVE UNDERCARRIAGE OUTBOARD TO FREE INBOARD SPIGOT. FREE OUTBOARD SPIGOT

6. DISCONNECT RETRACTION JACK

BEFORE COMMENCING WORK JACK AIRCRAFT AND RELEASE
1. ALL HYDRAULIC PRESSURE, REMOVE ANY FAIRINGS NECESSARY TO FACILITATE WORK.

5. REMOVE PIN ATTACHING BACKSTAY TO OLEO LEG

7. REMOVE DOWN LOCK MICRO SWITCH AND WIRING; ALSO VISUAL DOWN LOCK INDICATOR CABLE.

2. REMOVE TWO OLEO SWITCHES AND WIRING FROM OLEO

3. REMOVE WHEELS. DISCONNECT BRAKE PIPES AND REMOVE BRAKE UNITS. PLACE AXLE ON HANDLING TROLLEY, ATTACH WINCH CABLE TO TOWING EYE AND TAKE WEIGHT OF U/C

4. DISCONNECT PIPE UNIONS AND FLEXIBLE ASSEMBLY (3 BOLTS) AT RAM FOOT

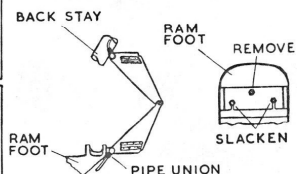


FIG. No. 20

FIN REMOVAL.

The rudder must first be removed from the aircraft before attempting to remove the fin. (Refer to Fig. 16 for rudder removal.).

Reference to Fig. 15 will show the necessary removal sequence, the refitting sequence is essentially the reverse of the removal sequence.

MAIN UNDERCARRIAGE REMOVAL.

Special equipment required for the removal and refitting comprises:-

Handling trolley	Drawing No. S2647 Sheet 1 or equivalent.
Main Wheel Axle Spanner	" " 70179 Part 303.

Before commencing work, jack all wheels clear of the ground from the main jacking points and position steadying trestles.

The approximate weight of the unit is 995 lbs. For removal operations refer to Fig. 20, to refit, reverse removal sequence.

NOSE UNDERCARRIAGE REMOVAL.

Special equipment required for removal and refitting comprises:-

Handling trolley	Drawing No. S2647 Sheet 1 or equivalent.
Loading lever	" " 9439 Part 3.

Before commencing work jack all wheels clear of the ground at main jacking points and position steadying trestles.

Reference to Fig. 19, shows the necessary removal sequence, to refit reverse the removal sequence.

POWER PLANT REMOVAL.

Each Power Plant consists of a Rolls Royce Dart Mk. 525 engine, Rotol propeller, engine mountings and all engine accessories, piping, etc. The approximate weight of a power plant dry is 1,318 lbs and the propeller 366 lbs.

NOTE: The power plant sling permits the power plant to be removed with or without the propeller being fitted.

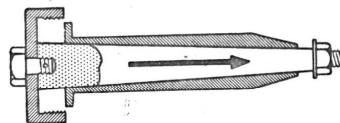
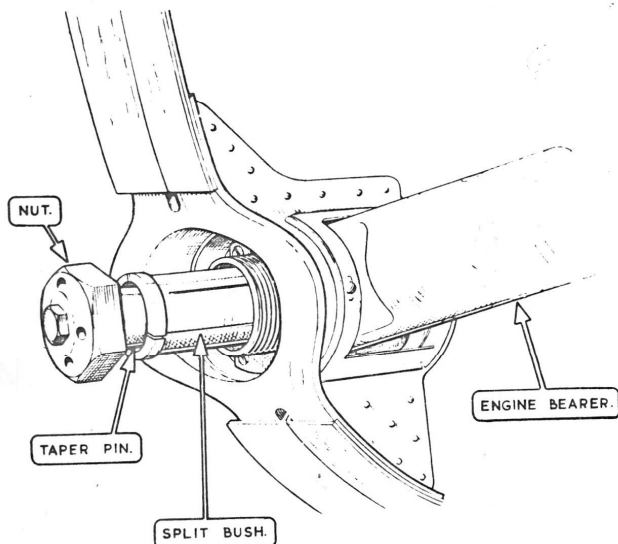
All disconnections are made at the airframe firewall, and for ease of installation all electrical connections and engine controls are identified by colour codes.

POWER PLANT REMOVAL - BOLT ASSEMBLY.

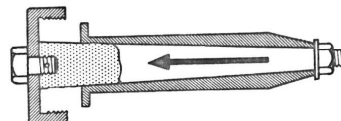
323/12

FIG: No. 21.

VOICES-ARMSTRONGS (AIRCRAFT) LTD
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WEYBRIDGE, SURREY



BOLT INSERTION
SCREWING ON NUT PUSHES TAPER PIN
INTO SPLIT BUSH SO EXPANDING
BUSH INTO ENGINE MOUNT FITTING.



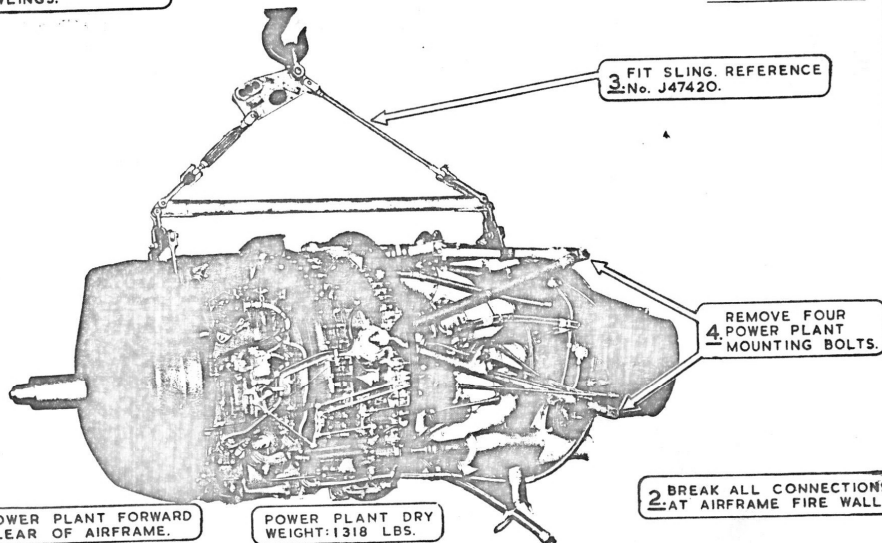
BOLT EXTRACTION
INITIAL UNSCREWING PULLS TAPER
PIN OUT OF SPLIT BUSH UNTIL
WASHER ABUTS BUSH END FURTHER
UNSCREWING SLACKENS BUSH IN
ENGINE MOUNT FITTING.

POWER PLANT REMOVAL.

FIG. No. 22.

VOICES-ARMSTRONGS (AIRCRAFT) LTD
AIRCRAFT SERVICING SCHOOL,
WEYBRIDGE, SURREY

BEFORE COMMENCING WORK,
1. OPEN COWLINGS.

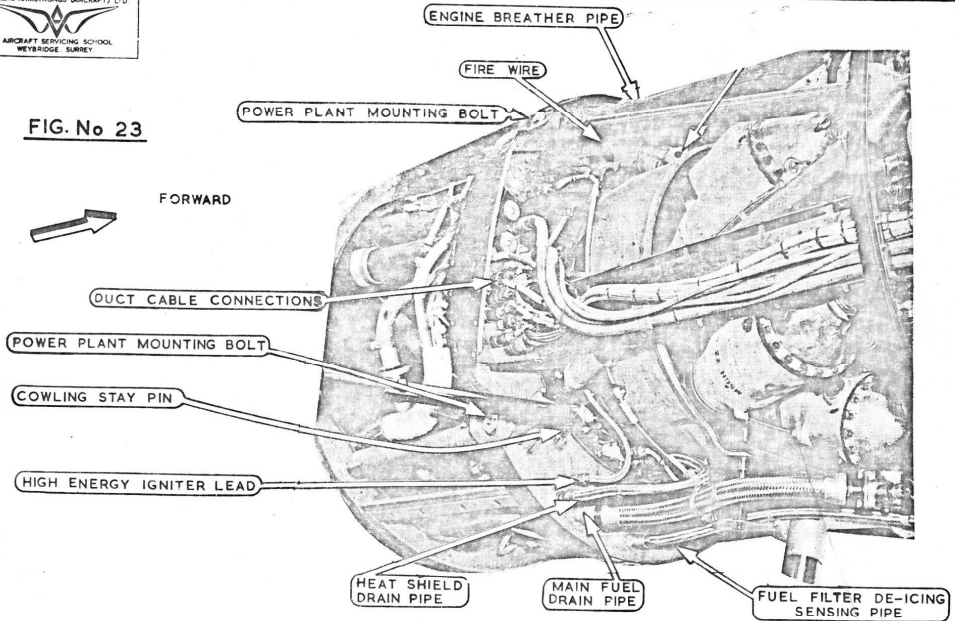


9/10/7

POWER PLANT REMOVAL-DISCONNECTIONS AT AIRFRAME FIREWALL. (RIGHT SIDE)

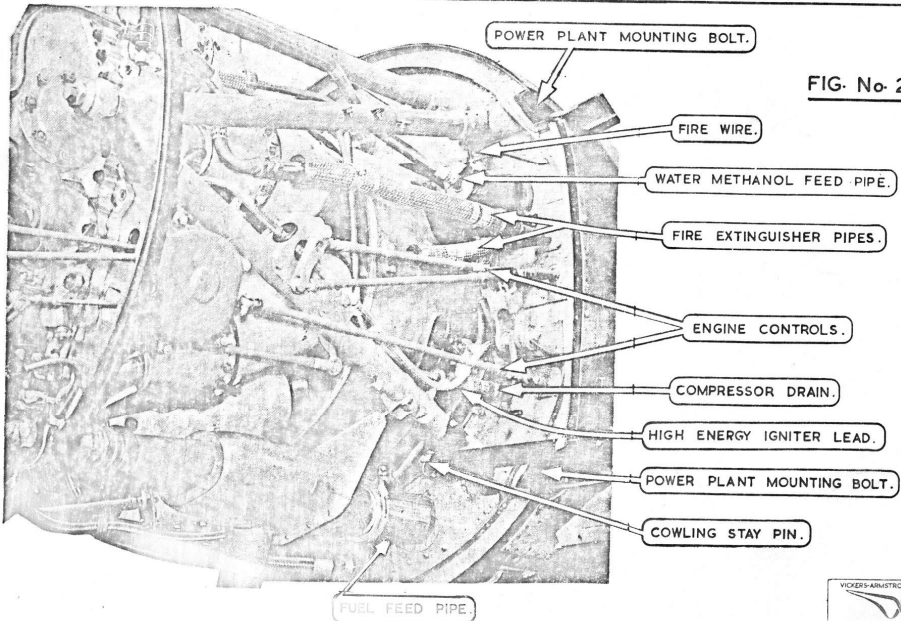


FIG. No 23



POWER PLANT REMOVAL DISCONNECTIONS AT AIRFRAME FIREWALL. (LEFT SIDE)

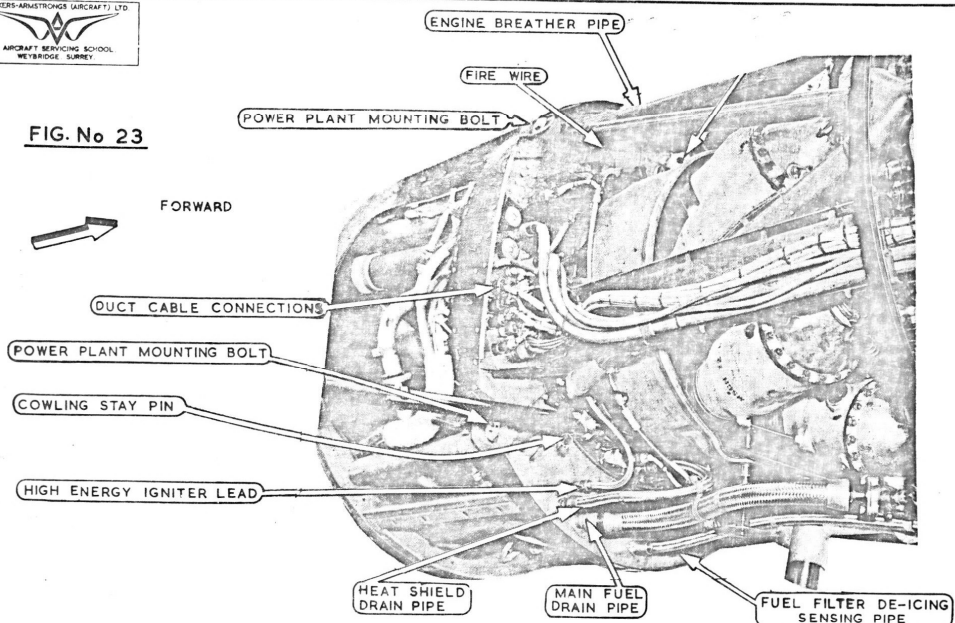
FIG. No 24.



POWER PLANT REMOVAL-DISCONNECTIONS AT AIRFRAME FIREWALL. (RIGHT SIDE)

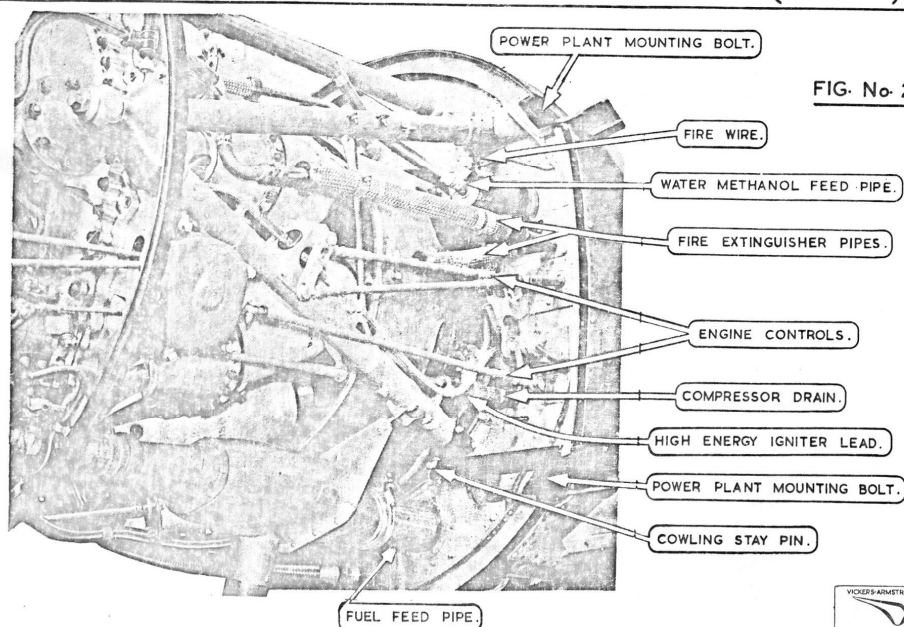


FIG. No 23



POWER PLANT REMOVAL DISCONNECTIONS AT AIRFRAME FIREWALL. (LEFT SIDE)

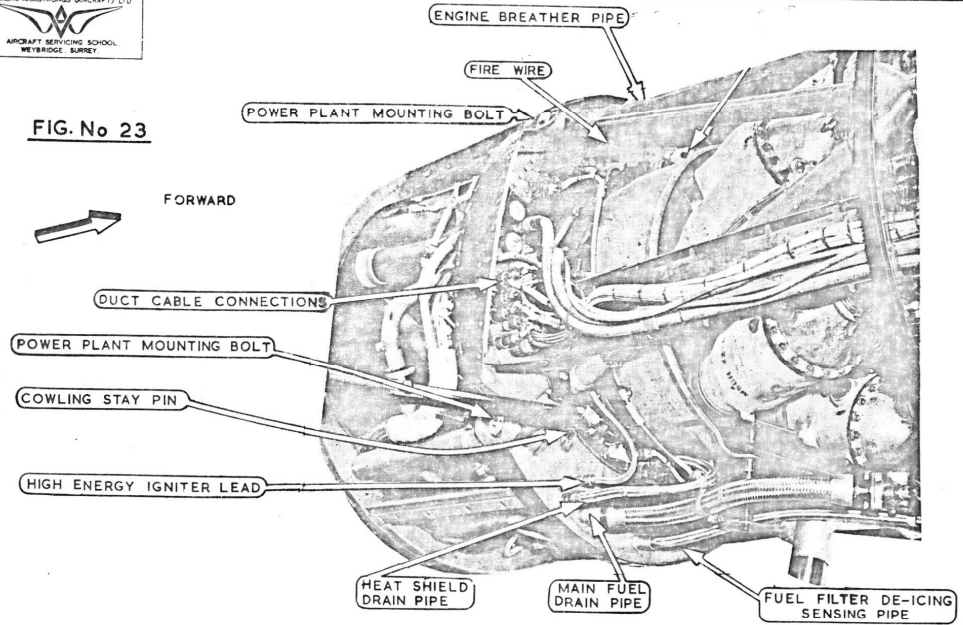
FIG. No 24.



POWER PLANT REMOVAL- DISCONNECTIONS AT AIRFRAME FIREWALL. (RIGHT SIDE)

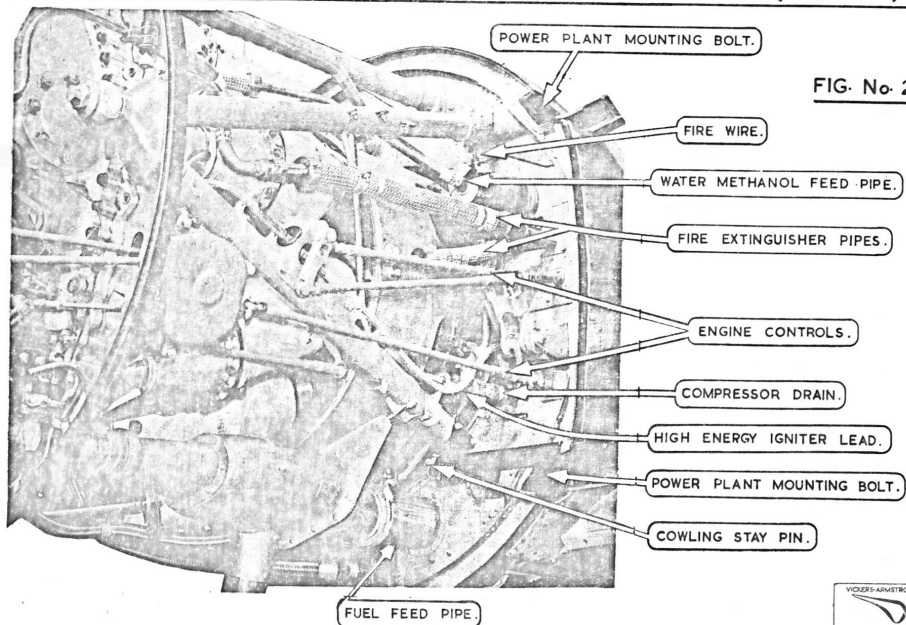


FIG. No 23



POWER PLANT REMOVAL DISCONNECTIONS AT AIRFRAME FIREWALL. (LEFT SIDE)

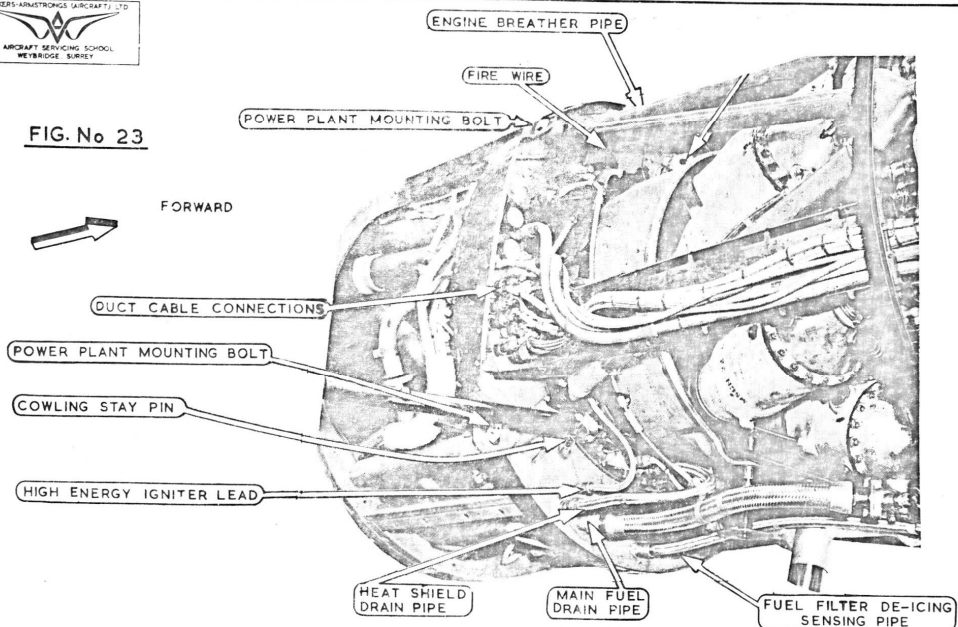
FIG. No 24.



POWER PLANT REMOVAL- DISCONNECTIONS AT AIRFRAME FIREWALL. (RIGHT SIDE)

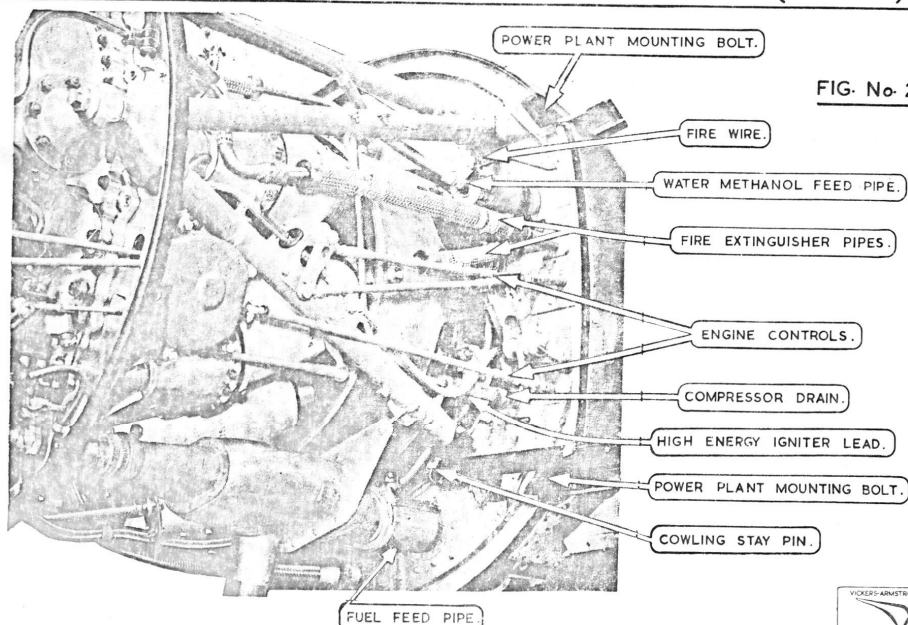


FIG. No 23



POWER PLANT REMOVAL DISCONNECTIONS AT AIRFRAME FIREWALL. (LEFT SIDE)

FIG. No 24.



The jet pipe, jet pipe shroud and engine cone shroud are integral with the nacelle structure and are not removed during a power plant change, the engine cone is attached to the turbine casing and extends into the shroud, but is not attached to it.

PRECAUTIONS.

WHEN HIGH ENERGY IGNITERS ARE FITTED IT IS POSSIBLE THAT ELECTRICAL ENERGY MAY BE STORED WITHIN THE CONDENSERS OF THE IGNITER UNITS, AND THIS ENERGY IS POTENTIALLY LETHAL. THEREFORE IT IS NECESSARY TO DISCONNECT THE L.T. SUPPLY AND WAIT AT LEAST ONE MINUTE BEFORE HANDLING EITHER THE UNITS OR THE H.T. CABLE.

Before commencing to remove the engine check that all cocks are closed. All apertures should be blanked, and during the removal if any Water-Methanol is spilt it should be wiped off immediately as it possesses corrosive properties.

The power plant is attached to the airframe firewall by four taper bolts and expanding bush assemblies which, in conjunction with quick release firewall connections for engine controls and general services, facilitate speedy power plant changes. The power plants are interchangeable on all nacelles, but the exhaust cones of outer and inner engines are not identical. The cones, however, are easily separated from the turbine casing to enable an engine to be changed over. The power plant can be removed from the aircraft with or without the propeller fitted.

The special equipment provided for the removal of the power plant comprises:-

Power Plant Stand	Drawing No. 70079. Part 97.
Engine Sling	" " J.47240 (Rolls Royce).
Power Plant Stand Sling	" " 70079. Sheet 51.

A torque wrench and socket for engine mounting bolts. The wrench must be capable of measuring torque of 120 lb. Ft.

To remove the power plant proceed as indicated in Figs. 21, 22, 23 and 24. Refitting the power plant is essentially the reverse of the removal sequence.

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Aircraft Servicing School.

Approved by... *J. H. Sinclair*...
Manager,
Aircraft Servicing School.