Chapter 5

CONVERSION TO BLUE STEEL ROLE

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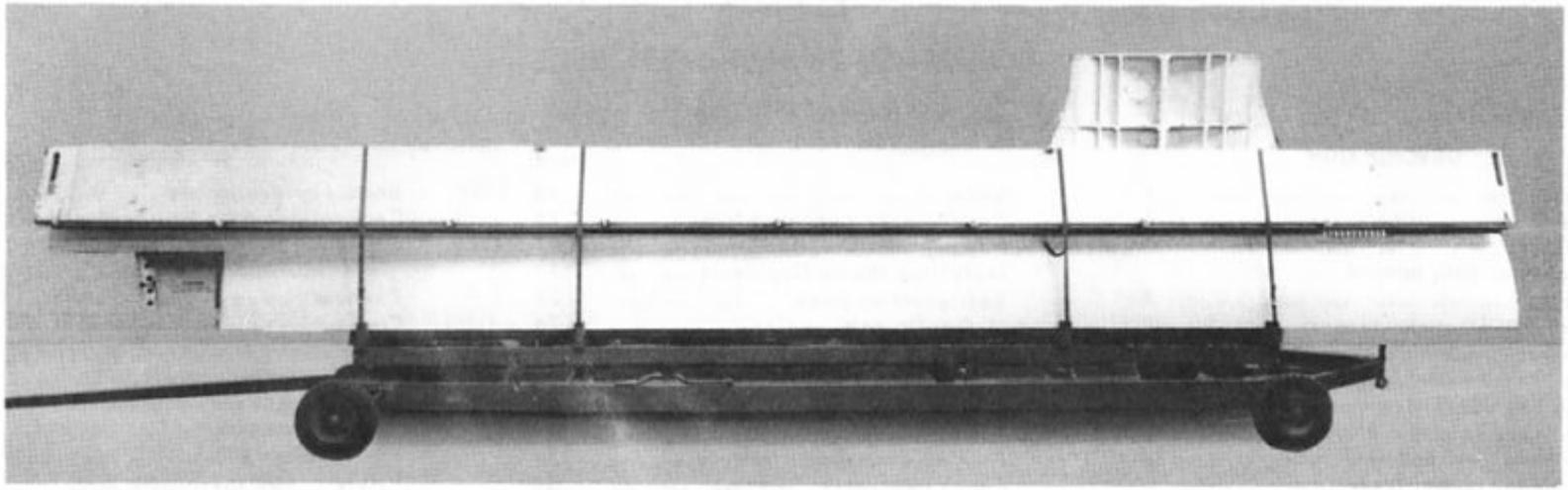
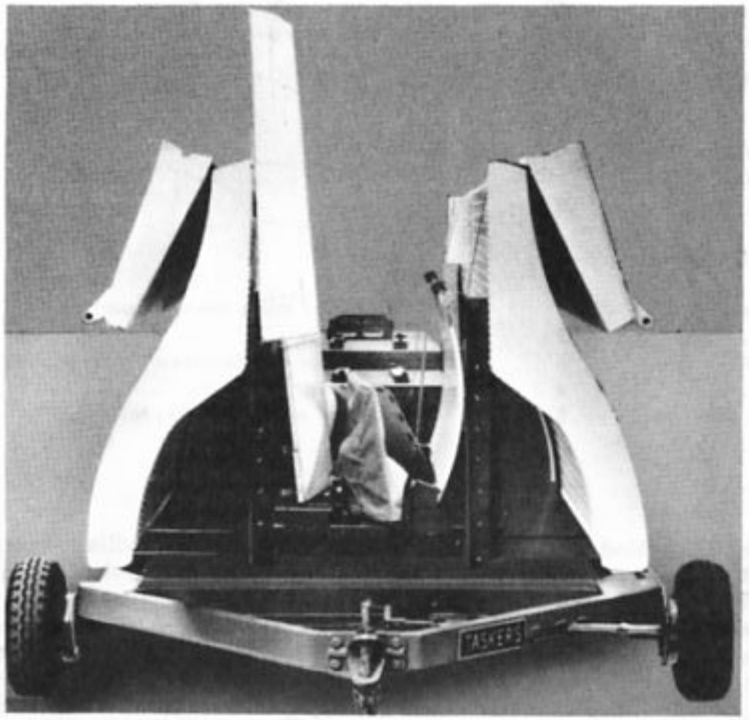
DESCRIPTION

Introduction

1. This chapter deals with the conversion of the aircraft from the normal bombing role to the Blue Steel role. Aircraft designated for this role have been modified to include special fixed fittings which provide the attachments and connections whereby various removable assemblies can be installed. These removable assemblies are supplied as a change of role kit introduced by Mod.200, and when fitted, convert the aircraft for carriage of the Blue Steel. The modifications which introduce the fixed fittings, and the modifications applicable to the removable assemblies are listed at the end of the chapter.

2. The following text contains a brief description of the handling equipment required and details the operations necessary for this conversion. This information is arranged in two parts, one for the removal of components from the aircraft, the other for installation of the change of role equipment. The procedures for preparing the systems and the tests required after this initial installation are detailed in Section 5, Chapter 5.





STOWAGE BOX CONTENTS

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Universal couplings
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Fig. 1. Conversion trolley - component stowage

General

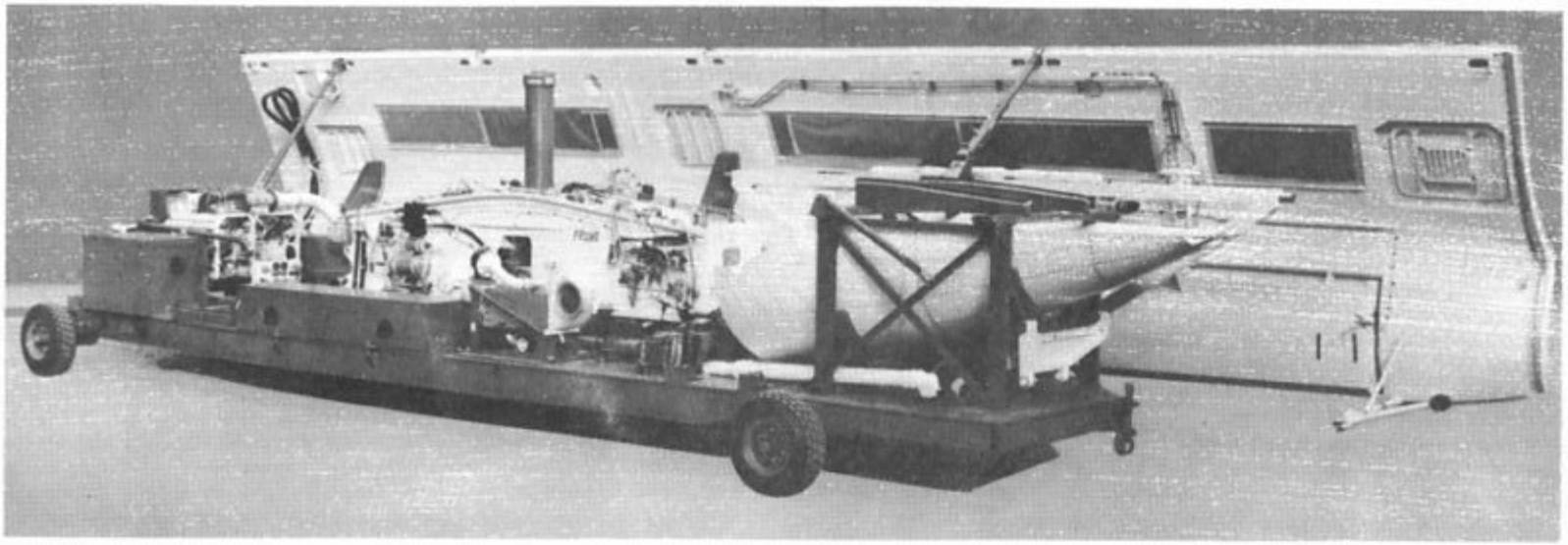
3. Conversion of the aircraft consists primarily of the fitment of replacement control panels in the crews compartment and the installation of additional equipment in the bomb bay, arranged as shown in Sect.5, Chap.5, fig.1. This equipment includes a carrier beam and crutching frame for suspension of the store, refrigeration and warm air packs, a hydraulic unit and electrical panels, which, in conjunction with existing aircraft systems provide the necessary services for the store. Connections between the aircraft mounted equipment and systems and the store are made through umbilical connections mounted on fixed fairing doors. These fairing doors replace the bomb doors. The hydraulic jacks, levers, piping and the inflatable seals associated with the bomb doors are removed, and sealing angles for the fairing doors are fitted. The fairings to the front and rear of the bomb bay are also removed, and replaced by detachable fairings. Two transportation trolleys are used during conversion; one 26DC/95448 accommodates the assemblies removed from the aircraft, whilst the other, 26DC/95447, carries the change of role kit and the handling equipment necessary for its installation.

EQUIPMENT

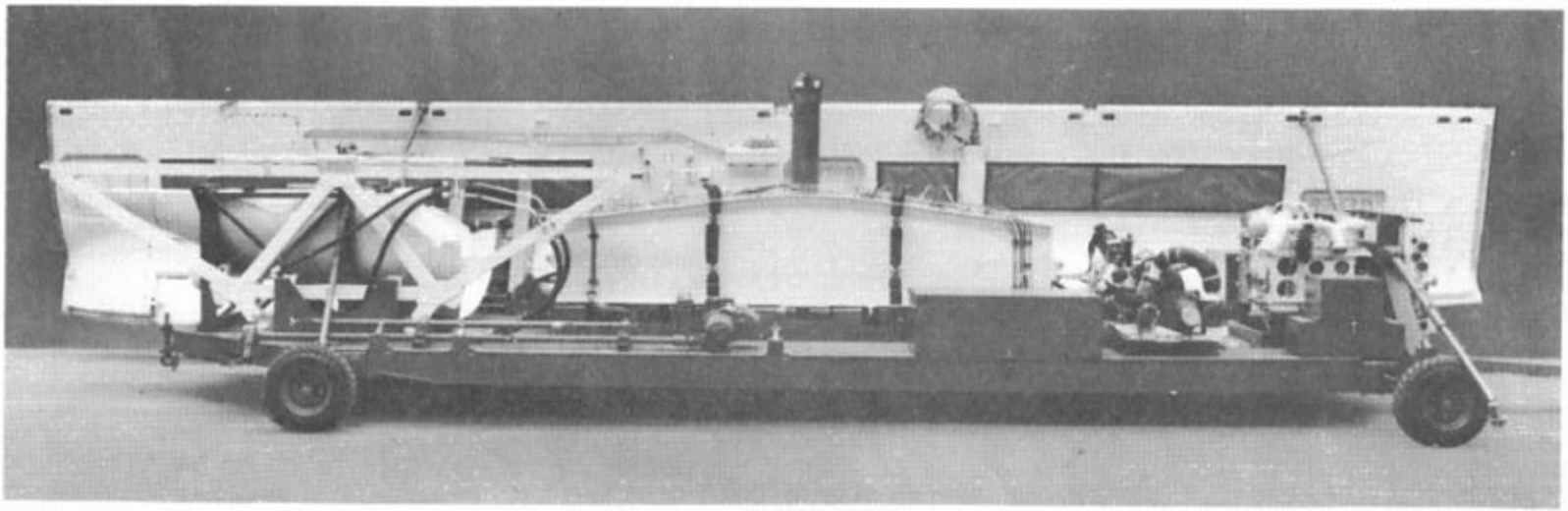
4. The transportation trolleys are of the Tasker type fitted with mountings and stowages for the various components and equipment as shown in figs. 1 and 2. Both trolleys can be towed into position beneath the aircraft bomb bays, and component handling is facilitated by arranging the larger assemblies on their respective trolleys in positions corresponding to their location in the aircraft.

5. On the change of role trolley, mounting crates are provided for the larger assemblies, and six stowage boxes accommodate the smaller components and loose items of equipment. The crates and boxes are secured to the wooden floor of the trolley by swivel bolts which can be quickly released to allow the trolley to be used as a work platform. The handling equipment provided with this trolley is listed below, and includes the slings and hoisting assemblies, and the gauges and sighting rods used for installing and setting-up the components in the aircraft.

Ref.No.	Part No.	Description		Application
26DC/95473	1/U1730	Strut, jury		Fairing door, rear
26DC/95474	1/U1732	Strut, jury		Fairing door, front
26DC/95444	1/U1758	Sling, refrigeration pack		
26DC/95476	1/U1765	Gauge, setting		Release system cables
	1/U1887	Gauge, setting		Release system checking
	1/U1930	Gauge, setting		Rear crutch
	1/U1867	Guard, safety switches		
26DC/95475	1/U1773	Lock, ground manual release		
26DC/95477	1/U1862	Pin, ground locking		
26DC/95456	1/U1762	Rod, sighting		Front crutching point
26DC/95472	1/U1791	Rod, sighting		Rear crutching point
26DC/95266	1/U1579	Hoist, 2,500 lb.		Fairing door closing
	RA5/88/530	Beam, hoisting		Top fin
		Hoist, heavy components comprising:-		
4GC/5703	42/1	Winch, 5 cwt.	(A)	Refrigeration pack- use (A) (B) (C) (E) and (H) 1 off each
4GC/6036	42/50	Top sheath	(B)	
4GC/5743	41/77	Handle winch, 9 in.	(C)	Hydraulic unit - use (A) (B) (C) (D) (G) (H) and (J) 1 off each
4GC/5433	25/41	Ball end cable, winch	(D)	
4GC/5429	41/76	Hook, cable winch	(E)	Carrier beam - use (A) (B) (C) (D) and (H) 2 off each
4GC/5730	41/102	Tube extension, 48 in.	(F)	
4GC/5444	41/103	Tube extension, 60 in.	(G)	Crutching frame - use (A) (B) (C) (D) (F) (G) and (J) one off each
4GC/5452	29/19	Tube extension, 84 in.	(H)	
4GC/5446	41/10	Sleeve, connecting	(J)	Fairing doors - use (A) (B) (C) (E) and (G) 2 off each



L.H. view - port fairing door removed



R.H. view - starboard fairing door removed

Fig. 2. Conversion trolley - change of role equipment

REMOVAL OF COMPONENTS

General

6. To prepare the aircraft for installation of the change of role equipment, the following components and sub-assemblies are to be removed.

1/Z10485	Bomb bay heating injector sub-assembly.
FHO/A/97	Overheat switch
FDF/A/3010	Inching control
AT62150	Universal couplings - bombing gear.
D8729	Bomb bay doors.
	Bomb door inflatable seals and structure.
	Bomb door jacks, levers and piping.
1/D10520	Front fairing - No.2 tank bay.
79/F10361	Bottom centre portion - rear spar.
8/D10981	Power compartment access panel.
4/V9301	Bomb door and jettison panel - 6P.
1/V6581	Alternative bombing panel - 9P.
24/V6317	Stowage panel - 9P.
C5175Y Mk.15	Electro magnetic indicator - 1P.

7. The procedures for removing these components are detailed in the following paragraphs, with the exception of the control panels and indicators which together with the installation of equipment in the crews compartment, are contained in para.49 to 53. All hardware (bolts, clamps, clips etc.) other than expendable items should be retained with the parent assembly unless required for installation of the replacement assemblies as specified in the text.

8. The bomb doors provide a convenient work platform for removal of the heating injector sub-assembly and the bombing gear universal couplings. If this method is adopted, the bomb doors should be fully closed and the fuses 602, 638, 639 and 922 removed from panel 3P as detailed in Sect.3, Chap.6.

WARNING . . .

Before any electrical connections are broken, ensure that all electrical supplies in or to the aircraft are either switched off or disconnected.

Heating system components

9. A section of the bomb bay heating system comprising the injector and barrel assembly is removed together with the cold air inching control and overheat switch, as shown in fig.3. To remove these components:-

(1) Locate the section of hot air supply piping which runs from the branch duct to the overheat shut-off valve between bomb arches 182·967 and 225·227. Temporarily remove the pipe run by releasing the half clamps at each end connection and removing the bolt assemblies at the attachments to the injector assembly support channel. Discard the seals, but retain the clamp and bolt assemblies for refitment of the pipe run as detailed in para.35 item (13).

(2) At the diffuser forward of the injector barrel, disconnect the capillary tube and release the tube support clips. Disconnect cable F538 from the overheat switch, tape back and stow the cable, and remove the overheat switch. Blank off the adapters in the diffuser using nuts SS.2356C and SS.2356F.

(3) Release the duct clip at the connection of the diffuser to the injector barrel.

(4) Disconnect the half clamps, at the connection of the injector body to the cold air valve body. Retain the clamp and bolt assemblies.

(5) Disconnect the half clamps, at the connection of the injector nozzle to the extension duct 79/Z7723 from the hot air valve.

(6) Release the cable clips from the injector and barrel assembly support channels. Support the assembly and remove the three bolts at each end attachment of the channels to the bomb arch brackets. Remove the channels complete with the injector and barrel assembly.

(7) Remove the extension duct 79/Z7723 by releasing the half clamps at the hot air valve connection. Retain the clamp and bolt assemblies.

(8) Disconnect the connecting rod between the inching control and the cold air valve actuator at the actuator connection.

(9) Disconnect the cables 1 and 2/F541 at the inching control and connect the cables to the stowage on the fin de-icing support member.

(10) Remove the inching control FDF/A/3010 complete with its mounting bracket 82/Z7723, capillary tube and connecting rod, by removing the four attachment bolts.

(11) Disconnect the cable 5/F541 from the cold air valve actuator and connect the cable to the stowage on the fin de-icing support member.

(12) Disconnect the cables 1/F537 from the hot air valve and 3/F541 from follow-up resistor FLJ/A/4 and connect these cables to the stowages on the hot air valve mounting channel.

(13) Temporarily blank off the open ends of the valves and ducting in the bomb bay.

Universal couplings - bombing gear

10. At the port and starboard intercostals between bomb arches 151·919 and 171·842, remove the universal couplings AT.62150. Refit the attachment bolts to the intercostals.

Bomb bay doors

11. To remove the bomb bay doors:-

(1) Open the bomb bay doors.

(2) Disconnect all electrical and hydraulic ground supplies from the aircraft.

(3) Position the transportation trolley 26DC/95448 beneath the bomb bay.

(4) Disconnect the electrical cables at the connections to the door micro switches mounted on the inner hinge at the front and rear of each door, tape back and stow the cables.

(5) Remove the bomb bay doors as detailed in Sect.3, Chap.1, fig. 21, of this publication.

(6) Lower the doors on to the trolley and secure to the supports; position and tighten the retaining straps.

(7) Refit the hinge pins to the bomb bay hinge support channels at stations 7·47, 43·61, 94·978, 170·86, 258·109 and 347·937. These hinge pins are required for installation of the fairing door hinge brackets.

(8) Secure the free ends of the self-locking struts to the stowages in the bomb bay using the Pip-pins provided.

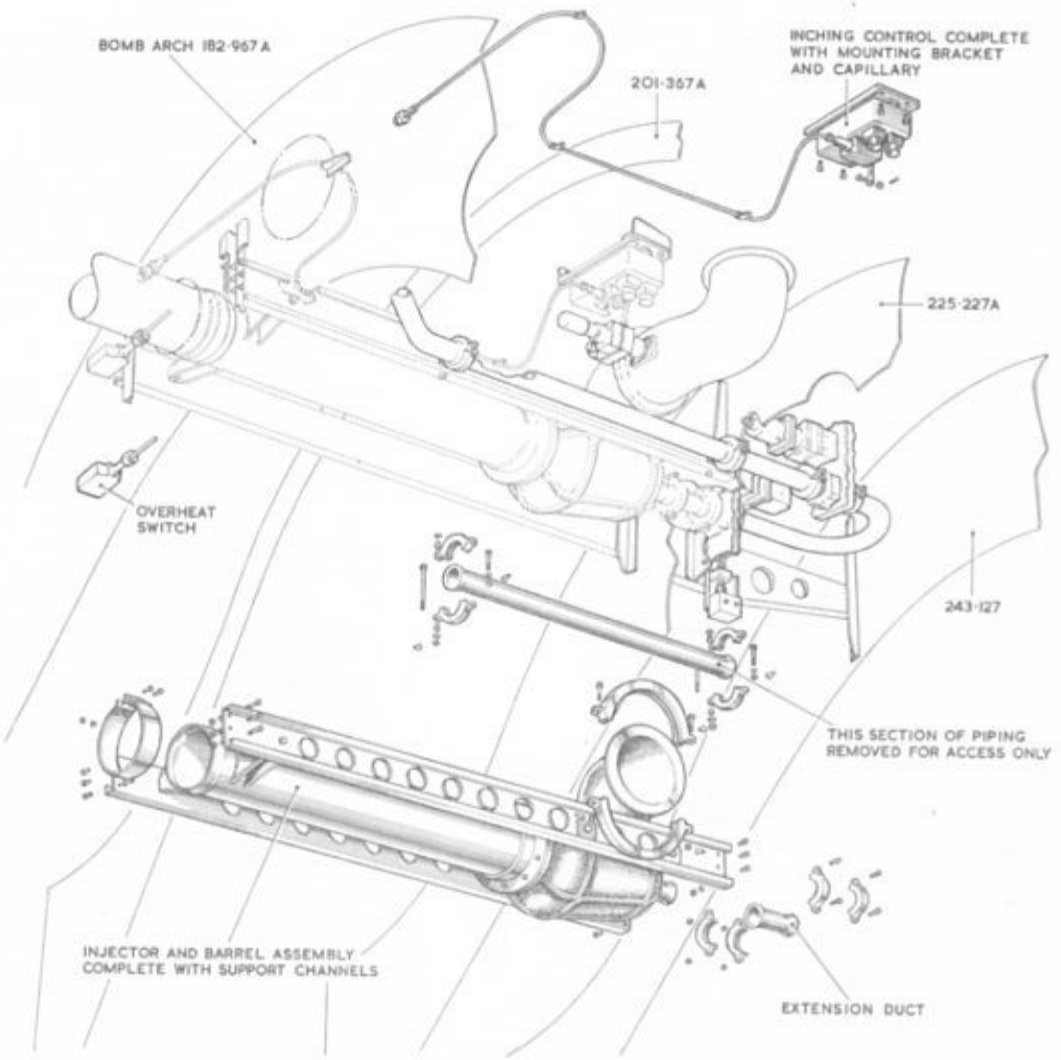


Fig.3. Removal of heating system components

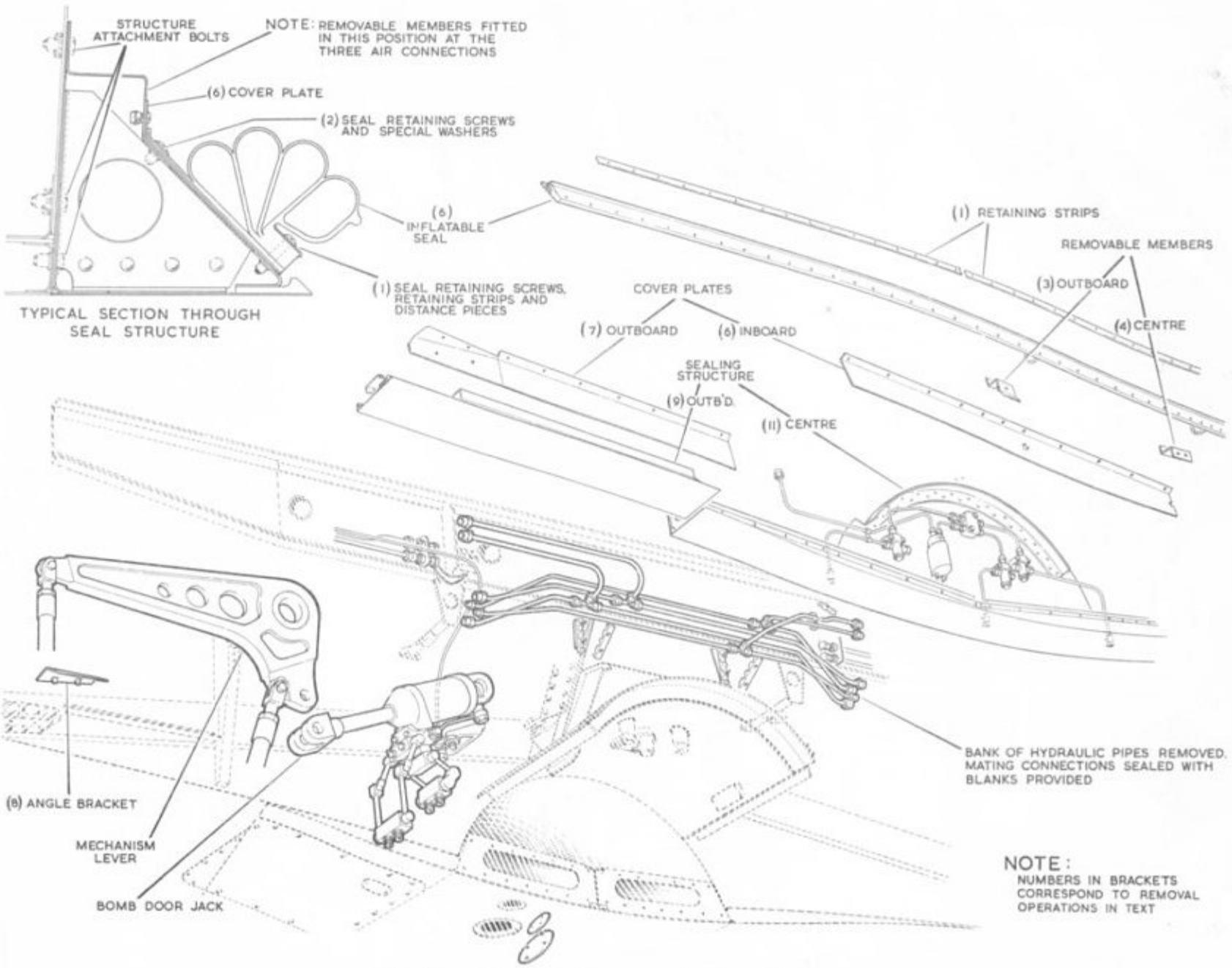


Fig. 4. Removal of components from front spar.

(9) Remove the transportation trolley.

.ont spar and sealing structure

12. The bomb door seal and sealing structure are removed from the front spar as shown in fig.4, together with the front fairing from beneath No.2 tank bay. To remove the seal and structure:-

(1) Remove the complete bottom row of seal retaining screws and remove the three retaining strips.

(2) Remove the complete top row of seal retaining screws and the special washers. The seal is now retained only at the three air connections. Access to these connections is provided by three removable members through which pass the air supply pipes to the seal.

(3) At the port air connection position, remove the screw and the two bolts which secure the removable member to the cover plate and to the spar web. Repeat this procedure at the starboard air connection position.

(4) At the centre air connection position, remove the two screws and the two bolts securing the removable member to the cover plates and to the sealing structure plate. Note that the two bolts are retained by stiffnuts, which are accessible through the two rear access panel apertures, in the front fairing.

(5) Release the Dzus fasteners, nine each side which retain the port and starboard inboard cover plates, and remove the removable members.

(6) Lift the inboard cover plates sufficiently to give access to the hose connections between the air supply pipes and the seal, and release the bottom clip at each hose connection. Disconnect the seal from the pipes and remove the seal together with the inboard cover plates. To facilitate disconnection, it may be necessary to slacken off the air supply pipes at their connections to the rapid exhaust valve and the unimatic valve. Blank off the seal connections; remove and stow the lower attachment distance pieces.

(7) Remove the outboard cover plates, port and starboard, by releasing the seven Dzus fasteners and the two screws at each attachment.

(8) Remove the angle brackets, port and starboard, to which the outer ends of the outboard cover plates were previously attached, by removing the two bolts at the spar attachment.

(9) Remove the port outboard section of sealing structure, by removing the four bolts and four screws at the top attachment, and the twelve bolts at the bottom attachment. Repeat this procedure to remove the starboard outboard section of sealing structure.

(10) On the centre portion of sealing structure, disconnect air pipe 19/Q2074 at the connection to the adapter bracket on the port side of the spar web. Seal off the adapter with the blank provided. Disconnect the electrical cable at the bomb door seal valve connection, release the two support clips, tape back and stow the cable on the spar web.

(11) Commencing at the port side, outer end of the centre sealing structure, remove eight bolts from the top row attachment, ten bolts from the bottom row attachment and the bolt fitted midway between the rows. Repeat this procedure from the starboard outer end. Remove the remaining ten bolts from the top attachment and the twelve bolts from the bottom attachment. Note that these bolts pass through the rear edge of the front fairing and are retained by stiffnuts which are accessible through the elongated cut-outs in the structure and fairing. With the sealing structure supported, remove the nine bolts at the attachment to the centre section arch and the two bolts, one each side, at the attachment to the spar web. Remove the centre sealing structure and blank off the open ends of the air supply pipes.

(12) Fit screws AS.1242/1C to blank off the nine holes in the centre section arch.

13. The arrangement of the front fairing is shown in fig.5. To complete the removal of the fairing:-

(1) Remove the remaining access panels from the bottom skin of the fairing.

(2) Remove the No.2 tank sump access panels port and starboard.

(3) Remove the fairing extensions port and starboard by removing the six screws at each attachment. Note that one screw is fitted in the front radius of the extension.

(4) At the bottom of the nosewheel bay rear bulkhead 75F, remove the eighteen bolts equally disposed about the aircraft centre line, which secure the forward edge of the fairing. Note that with the exception of the four outboard

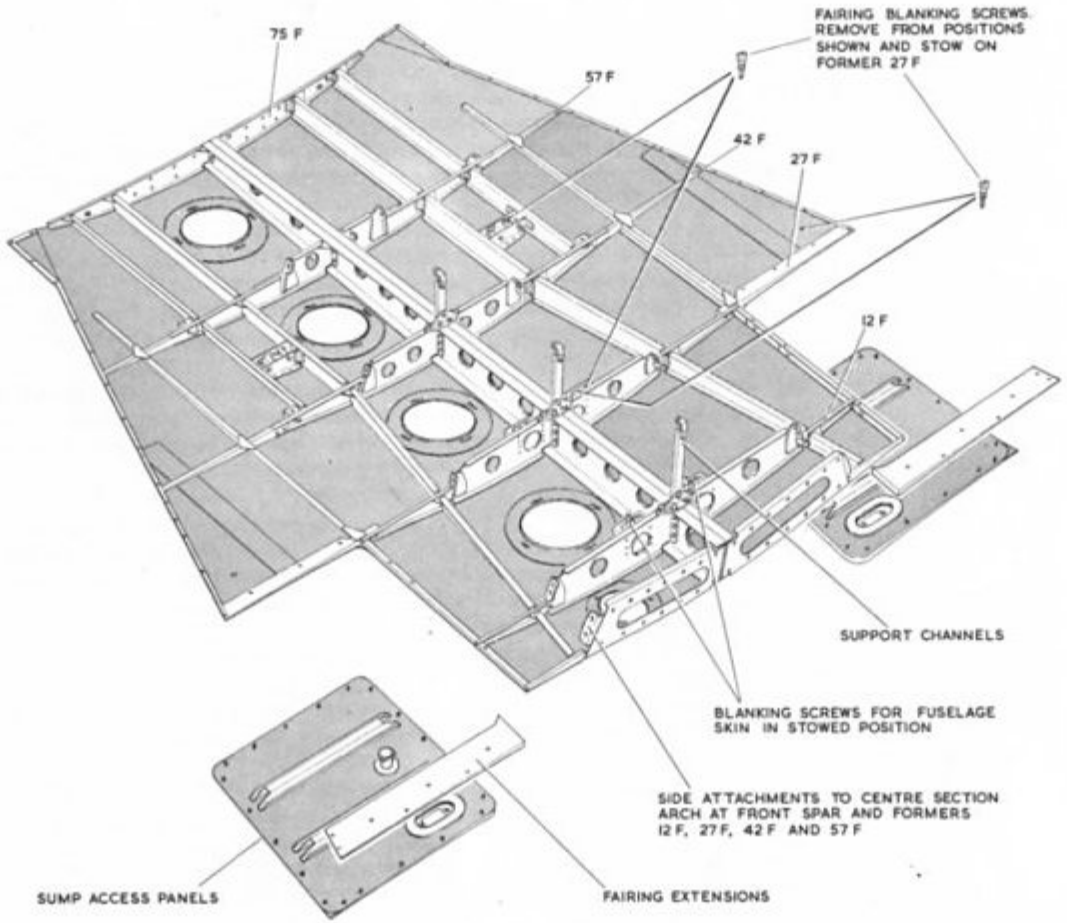


Fig.5. Front fairing - No.2 tank bay

bolts, two each side, the bolts are retained by stiffnuts which are accessible through the two front access panel apertures in the fairing bottom skin. Retain the four outboard bolts for fitment of fairing D11534.

(5) Remove the four blanking screws from the bottom skin. Note that the heads of these screws have been trimmed to the skin contour and must be identified for fitment to their appropriate stowage bracket when the fairing is removed.

(6) Using the bottom skin apertures for access, disconnect the three support channels at formers 12F, 27F and 42F by removing the bolt at the top attachments to the centre section arch.

(7) Remove the bolts which secure the fairing members to each side of the centre section arch at the front spar and at formers 12F, 27F, 42F and 57F.

(8) Remove the four countersunk screws fitted in the bottom skin approximately 17 inches either side of the aircraft centre line at formers 42F and 57F.

(9) With the fairing supported, remove the 42 screws at the forward and side edges, and remove the fairing.

(10) Stow the blanking screws removed in item (5) in their appropriate stowage brackets in the fairing at former 27F.

(11) Remove the blanking screws 119 and 120/D10520 from the stowage bracket on the fairing at former 12F, and fit these screws to blank off the four holes in the fuselage skin.

(12) Refit the access panels to the fairing.

Rear spar seal and structure

14. At the rear spar the bomb door seal and the bottom centre portion of the spar are removed as shown in fig.6 together with the access panel 8/D10981 from beneath the power compartment. To remove these components:-

(1) Remove the access panel 8/D10981 fitted aft of the rear spar beneath the power compartment, by releasing the 26 Dzus fasteners.

(2) On the lower forward face of the rear spar locate the air supply pipes 14/Q2074 port and 16/Q2074 starboard which run from the rapid exhaust valves to the bomb door rear seal. Disconnect these pipes at the connections to the rapid exhaust valves, and slacken off the lower clip at each hose connection to the seal.

(3) Release the pipe support clips and remove the pipes.

(4) Blank off the open ends of the rapid exhaust valves using the blanking caps stowed adjacent to each valve.

(5) Remove the 60 bolts and washers which secure the rear seal to the spar structure, remove the seal and the seal retaining caps port and starboard.

(6) Blank off the seal connectors and prepare the seal for storage.

(7) Locate the electrical cables F1665 and F1701 which are routed from the fuel tanker fairing door micro switch mounted on the bottom centre portion of the spar. Disconnect cable F1701 at its connection to the univalve mounted on the spar forward face.

(8) Gain access to the aft side of the rear spar below the power compartment, and disconnect the cable F1665 at its connection to plug break 411 on the starboard side.

(9) Whilst still in position aft of the spar, locate the six bolts and screw which provide the attachment at each side of the centre portion of the spar to the rear fuselage structure. Remove the bolts and screws at each side attachment.

(10) At the forward side of the rear spar, remove the four countersunk bolts, the two screws and the nine bolts which secure the forward edge of the bottom centre portion of the spar structure.

(11) Remove the bottom centre portion of the rear spar from the aircraft by removing the ten screws, five each side, at the underside attachment to the rear fuselage.

Bomb door jacks, levers and piping

15. The bomb door jacks, mechanism levers and the interconnecting hydraulic pipes are removed from the front and rear spars as shown in figs.4 and 6. To remove these components from the front spar:-

(1) Disconnect the bank of hydraulic pipes which extend between the swivel link blocks and the adapter brackets on the mechanism beam. Release the three support fairleads and remove the pipes together with the fairleads.

(2) Seal off the connectors on the adapter brackets using the blanking caps provided.

(3) Disconnect the bomb door jacks from the mechanism levers.

(4) Release the swivel blocks from the support brackets by removing the three attaching bolts and the packing plate.

(5) Remove the taper pins and bolts which secure the spacer bushes and the bearing brackets to the jack attachment pins.

(6) Using extractor 26DC/95058 withdraw the jack attachment pins and remove the jacks and the spacer bushes.

(7) Remove the taper pins and bolts which secure the spacer bushes and the bearing brackets to the mechanism lever attachment pins.

(8) Using extractor 26DC/95058 withdraw the lever attachment pins and remove the levers and the spacer bushes.

(9) Temporarily re-assemble the attachment pins, spacer bushes and bolt assemblies to the bomb door jacks and levers.

(10) Blank off the pipes and the swivel link block connections and stow the removed components on the transportation trolley.

16. To remove the jacks, levers and the interconnecting piping from the rear spar, repeat the procedure detailed in para.15. In addition remove the two angle brackets which support the fairleads for the pipes between the swivel blocks.

Stowage of components

17. All components removed from the aircraft are to be stowed on trolley 26DC/95448. Three equipment boxes are provided for the smaller assemblies, and

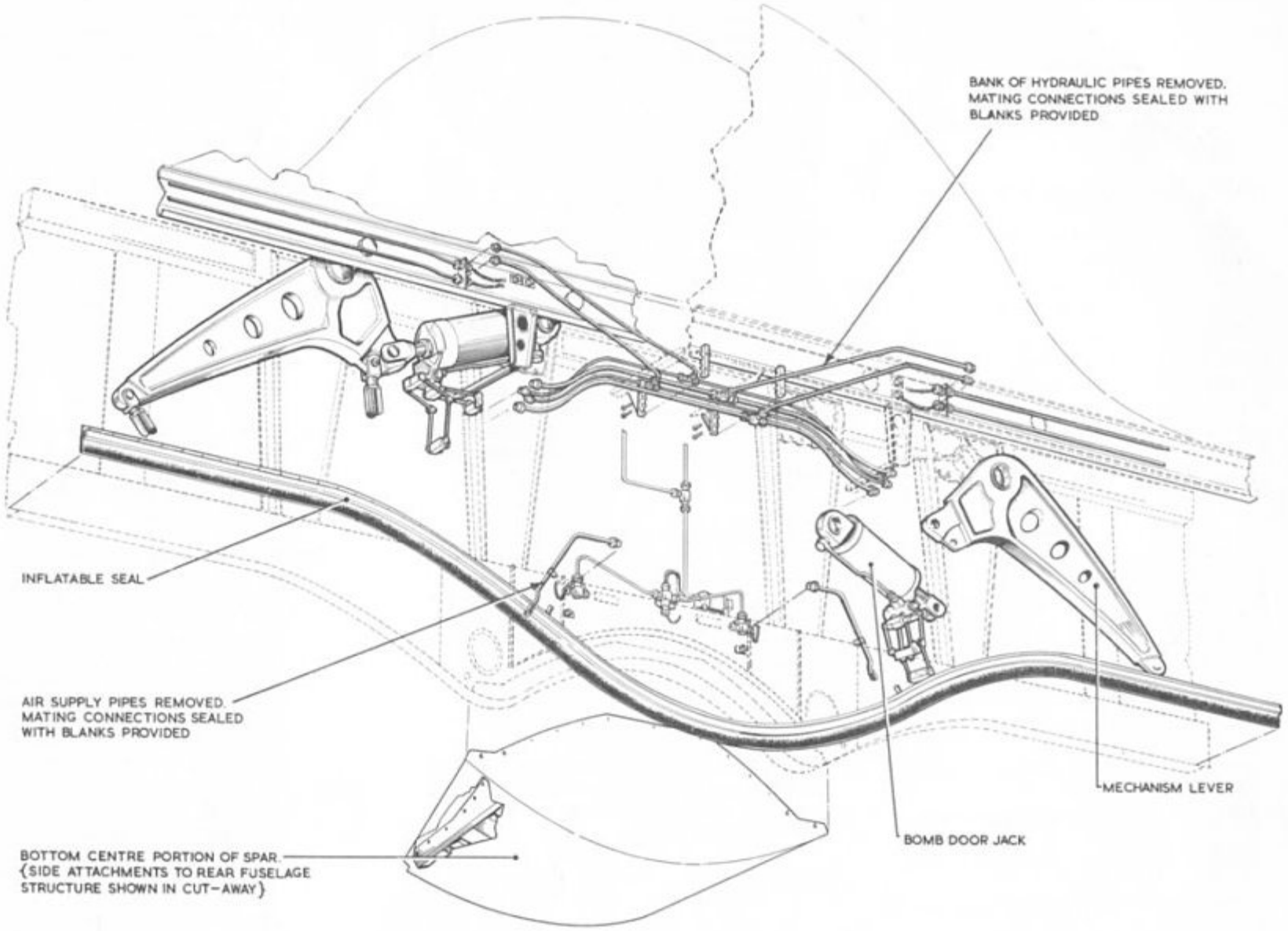


Fig. 6. Removal of components from rear spar

the fairings and rear spar structure are to be secured as shown in fig.1.

INSTALLATION OF EQUIPMENT

General

18. The change of role kit consists of the following items:-

D11220	Fairing doors port and starboard.
Z10005	Carrier beam.
D11208	Rear crutching frame.
Z9954	Refrigeration pack.
Q2422	Hydraulic unit.
Z10050	Warm air pack.
D10827	Detachable fairing.
D11534	Detachable fairing.
D11117	Optical link mounting.
D10998	Sealing angles - front.
D11105	Sealing angles - rear.
Z10317	Shock absorbers.
	Fairing door hinge brackets.
	Fairing door support struts.
V10102.	Distribution panel 85P.
V10287	Junction box 97P.
V9950	Magnetic amplifier assembly.
V10297	Plug break assembly.
	Electrical cable assemblies.
V9802	Fin folding control panel.
V9783	Alternative bombing panel.
V10446	E.Q. unit mounting panel.
C5175 Mk.154	Fin position indicator.
R/A1/A02/ 31415	Adapter box.
9C.104	Inertia navigator monitoring unit.

19. The procedure for installing this equipment is detailed in the following paragraphs, the electrical installations and connections in the bomb bay and crews compartment being grouped together for ease of reference. Whilst the sequence of installing the equipment has been arranged as a guide to assembly, the piping installations and connections to the respective assemblies in the bomb bay can be made after the fairing doors have been closed, using the doors as a walkway.

20. The transportation trolley 26DC/ 95447 should be positioned beneath the aircraft, with all handling equipment, stowage boxes, fairings, and the optical link mounting removed to permit the trolley to be used as a work platform. The refrigeration pack and hydraulic unit will normally have been serviced to the current schedule requirements and should be checked to ensure that such action has been taken.

NOTE . . .

The trolley can be brought into position from the front or rear of the aircraft. When towing in from the rear care must be taken to ensure that the starboard fairing door does not foul the under-surface of the aircraft. The fairing door support struts on the trolley can be lengthened to provide clearance.

Fairing door sealing angles

21. The fairing door sealing angles D10998 and D11105 are fitted to the front and rear spars respectively. To fit the sealing angles:-

(1) Position the inner section of sealing angle 3/D10998 on the port side aft face of the front spar web, so that the mitred end is in alignment with and 0.05 in. outboard of the existing sealing angle on the forward crutch structure.

(2) Secure the sealing angle to the anchor nuts in the spar web using five screws AS.1242/2C. Secure the inboard end of the top flange of the sealing angle to the stiffening channel on the forward crutch structure using two screws AS.1242/2C, washers SP.15C and stiff nuts AGS.2001/C1.

(3) Position the outer section of sealing angle 5/D10998 on the spar web, 0.05 in. outboard of sealing angle 3/D10998. Secure the sealing angle to the existing anchor nuts along the bottom of the spar web using eleven screws AS.1242/2C and four screws AS.1242/3C Note that screws AS.1242/3C are to be fitted at the third to sixth positions from the inboard end.

(4) Repeat the above procedure to fit the inner and outer sections of sealing angle 4 and 6/D10998 respectively, to the starboard side of the front spar.

(5) Position sealing angle 1/D1105 on the port side of the rear spar lower structure so that it is in alignment with and 0.05 in. outboard of the existing sealing angle 51/F10183.

(6) Align the twenty holes in the sealing angle flange to the anchor nuts attached to the spar structure, and secure the sealing angle using bolts A25/2B and washers SP.15B.

Note that washers are not required under the bolt heads at the stiffening member positions.

(7) Align the three stiffening members of the sealing angle to the diaphragms mounted on the spar web and secure the members to the diaphragms using two bolts A25/1C, nuts AGS.2002/C1 and washers SP.15C at each attachment.

(8) Repeat the above procedure to fit the starboard sealing angle 2/D11105 to the rear spar.

Fairing door hinge brackets

22. Six hinge brackets are provided for each fairing door, the brackets being mounted to existing support channels in the bomb bay as follows:-

Hinge station	Bracket Part No. Port	Starboard
7·47	16/D11240	17/D11240
43·61	3/D11240	4/D11240
94·978	5/D11240	6/D11240
170·86	7/D11240	8/D11240
258·109	5/D11240	6/D11240
347·937	9/D11240	10/D11240

To fit the hinge brackets:-

(1) Remove the brackets from the stowage box on the trolley.

(2) Position the brackets in the appropriate support channels and insert the existing hinge pins retained as in para.11 item (7).

(3) With the exception of hinge station 347·937 secure the brackets at the top attachment to the channel using bolt 14/D11240, washer SP.16C and nut AGS.2001/C3.

(4) At hinge station 347·937 secure the bracket at the top attachment using hinge pin 15/D11240, washers 13/D9094 and nuts A27/EC.

(5) Fit hinge pin 11/D11240, washers 13/D9094 and nuts A27/EC to the brackets at stations 7·47, 43·61 and 347·937. These hinge pins are provided for engagement of the hook plates fitted at corresponding positions on the fairing doors.

Installing the fairing doors

23. For installing the fairing doors, two 5 cwt. mini-hoist assemblies as detailed in para.5 are required, and the method of slinging is identical to that used for installation of the bomb doors. To install the fairing doors:-

(1) Position the mini-hoists in the suspension brackets fitted on the starboard side of the bomb bay at stations 119·385 and 229·727 as shown in Sect.5, Chap.5, fig.40.

(2) Fit the slings 26DC/95073 to the slinging points on the starboard fairing door and engage the hook ends of the hoist cables with the slings.

(3) Release the strut and clamping block assemblies securing the starboard fairing door to the transport trolley.

(4) Operate the hoists to lift the fairing door and align the door hinges to the hinge brackets in the bomb bay.

(5) Position the thrust washers 18/D11240 one each side of the door hinge at station 170·86 and insert hinge pin 11/D11240. Fit washer 13/D9094 and nut A27/EC to the hinge pin and lock with split pin.

(6) Insert hinge pins 11/D11240 at hinge stations 94·978 and 258·109, fit washers 13/D9094 and nut A27/EC to the hinge pins and lock with split pin.

(7) Attach the jury struts, 1/U1732 front, and 1/U1730 rear, to the fittings on the fairing door ribs 56·58 and 257·95 and on the centre section as shown in Sect.5, Chap.5, fig.39.

(8) Repeat operations 1 to 7 to install the port fairing door.

Refrigeration pack

24. The refrigeration pack is mounted at the forward end, starboard side of the bomb bay, and for convenience should be installed prior to fitment of the hydraulic unit.

To install the refrigeration pack:-

(1) Remove all loosely stowed items from the pack stowage crate, and release the clamps securing the pack to the crate.

(2) Attach the sling 26DC/99444 to the slinging brackets on the pack platform.

(3) Obtain the mini-hoist assembly detailed in para.5 and locate in the support fitting on bomb arch 44·592 as shown in Sect.5, Chap.5, fig.43. Extend the hoist cable and engage the hook end with the sling.

(4) Operate the hoist to lift the pack and align the hinge fittings to the three hinge brackets located on the starboard side of the bomb bay forward of bomb arches 21·717, 64·592 and 81·707 respectively. Secure the hinge attachments using the pin and collar at the front and rear positions and the bolt assembly at the centre position, and lock with the locking pins provided.

(5) Connect the tie rod 2/Z9955 and the support strut 36/Z9955 to the support fittings at the centre and rear positions respectively on the pack platform, and secure to the corresponding attachment brackets on bomb arches 44·592 and 81·707.

(6) Remove the mini-hoist and sling.

(7) Obtain the pipe support bracket 21/Z9955, position to the attachment holes at the bottom of the mechanism beam and in the spar web angle outboard of the forward crutch structure, and secure using the six bolt assemblies provided.

(8) Unstow the flexible pipes CE13467 and CE13468 from the pack. Secure the pipes to the support bracket using the fairlead tubes, clamping blocks and bolt provided. Engage the half couplings fitted at the ends of the pipes in the slides provided in the forward crutch frame, and secure with the spring-loaded cross bar.

25. To install the air vent piping:-

(1) Obtain the outlet assembly 61/Z9954 and connect to the refrigeration pack jet pump nozzle using hose coupling DAS.582/56/2.5 in. and clip AGS.605/4.

(2) Connect the expansion unit 5/Z7478 to the outlet of the pack relief valve using seal AS.5407 and half clamps 9/Z7648.

(3) Obtain the air vent elbow pipe 6/Z9955 and connect to the expansion unit using seal AS.5407 and half clamps 9/Z7648, and to the outlet assembly using hose coupling DAS.582/80/4 in. and clip AGS.605/6. Secure the support bracket and the two lugs which are fitted to the pipe, to the corresponding attachment brackets provided on bomb arch 95·967 and on the bomb bay rib aft of the bomb arches 108·687 and 123·015 respectively.

(4) Position the garter spring BAS.35/6.5 and the dished ring 5/Z9955 on the outlet flange of pipe 6/Z9955, and secure using the eight bolt assemblies provided.

(5) Obtain the air vent outlet assembly 7/Z9955, and secure to the outlet duct aperture on the starboard fairing door using the seal 8/Z9955 and the eight bolts provided.

26. To install the air bleed piping:-

(1) Locate the expansion unit fitted at the end of the air supply pipe on the starboard side aft face of bomb arch 95·967. Slacken the half clamps at the outlet end of the unit and remove the blanking cap 19/Z10237.

(2) Obtain the pipe assembly 26/Z9955 and connect to the expansion unit using a new seal AS.5405 and the existing half clamp assemblies.

(3) Obtain the expansion unit 10/Z7478, and connect the unit between the pack regulating valve and the flange of pipe . 26/Z9955 using seal AS.5405 and half clamps, 27/Z7648 at each joint. Fit the tie bar assemblies 12/Z7613 between the ends of the half clamps, secure using the bolts provided and lock with split pins.

(4) Connect the pressure sensing pipe 28/Z9955 to the regulating valve and to pipe 26/Z9955.

(5) Fit bonding leads AS.3360/C6C to the expansion unit and outlet assembly joints.

27. Make the electrical connections to the refrigeration pack electrical panel 93P as detailed in para.44.

Hydraulic unit

28. The hydraulic unit is mounted to the front spar mechanism beam at a position inboard of the refrigeration pack. Three brackets on top of the beam, and three anchor nuts at the bottom of the beam are provided for attachment of the unit. To install the hydraulic unit:-

(1) Release the clamp assemblies securing the unit to the trolley.

(2) Secure the mini-hoist assembly to the support beam located between the front spar and the starboard side of bomb arch 21·717 as shown in Sect.5, Chap.5, fig.42.

(3) Extend the hoist cable, and engage the cable ball end with the slinging point on the hydraulic unit structure.

(4) Operate the hoist to position the unit to the support brackets and anchor nuts on the mechanism beam and secure, using bolt A25/2C, washer SP.15C and nut AGS.2002/C1 at each top attachment, and bolt A25/4C and washer SP.15C at each bottom attachment.

(5) Remove the mini-hoist.

(6) Remove the blanking caps from the pressure and return pipe connections at the Avery coupling mounting bracket on the mechanism beam, and connect to the stowage adapters provided.

(7) Connect the hose 8W3/102/10/10/0/32.7 from the hydraulic unit selector valve to the pressure connection on the Avery coupling mounting bracket.

(8) Connect the hose 10W3/101/8/10/0/30.0 from the tee-piece in the hydraulic unit return pipe to the return connection on the Avery coupling mounting bracket.

(9) Connect the flexible air cooling pipe FL.13438 to the branch duct forward of the refrigeration pack

intercooler using seal AS.5407 and clamp C4370/3½/A.

(10) Connect the flexible air cooling branch pipe FL.13439 to the refrigeration pack condenser using seal AS.5404 and clamp C4370/2¼-2½/A.

(11) Make the electrical connections to the hydraulic unit electrical panel 92P as detailed in para.45.

Carrier beam

29. To install the carrier beam:-

(1) Release the angle clamps securing the carrier beam to the mounting crate. Swivel the beam into position across the trolley and support at each end with packing blocks.

(2) Remove the two suspension links from the stowage on the trolley. Lightly lubricate the mating faces of the links and the suspension lugs which are mounted between bomb arches 151·919 and 182·967 with ZX-28. Position the suspension links to the suspension lugs and insert the bolts 14/A3214 front and 13/A3214 rear with the bolt heads facing to the front and rear respectively. Fit special washer 24/D11230 and nut A27/SQ to each bolt, securely tighten and lock with locking pin AGS.1551/6.

(3) Position the two mini-hoist assemblies on the support pegs at the port and starboard sides of bomb arch 151·919. Extend the hoist cables over the pulley assemblies 12/A3214, and fit the pulleys to the mounting brackets on bomb arch 171·842 using the special Pip-pin as shown in Sect.5, Chap.5, fig.47. Engage the cable ball ends in the hoisting attachments on top of the carrier beam.

(4) Operate the hoists to lift the carrier beam, engage the suspension links in the beam end fittings and insert the bolts 23 and 24/D11230 at the front and rear attachments respectively.

(5) With the beam freely suspended, adjust the stop bolt in each suspension link so that the bolt head just contacts the spring plunger in the end of the beam.

(6) Fit washer 24/D11230 and nut A27/QS to each attachment bolt, securely tighten and lock with split pin SP.9G12.

(7) Remove the mini-hoist and pulley assemblies.

30. Make the following hydraulic connections to the carrier beam:-

(1) Release from the temporary stowage the six hoses, three port, three starboard, which are connected to the coupling brackets at the outboard positions on the carrier beam bottom member. Connect the free end of the hoses to the fin gap door connections on the fairing doors. Note that at the starboard side, the shorter hose is connected at the rear position.

(2) Release from the temporary stowage the two hoses which are connected to the coupling bracket at the top starboard position on the beam forward face. Locate the Avery coupling mounting bracket at the starboard side of the bomb bay forward of bomb arch 171·842 and remove and stow the coupling blanking caps. Connect the hoses to the Avery couplings.

(3) Disconnect the flexible hoses DC.202A/24.8 and DC.203A/25.4 at the connections to the adapter bracket fitted at station 130·53 port side of the bomb bay. Re-connect the flexible hoses to the fin gap door connector bracket at the top outboard position on the port side forward face of the carrier beam. Seal off the open connections at the adapter bracket with the blanks provided.

(4) Disconnect the flexible hoses DC.203A/18.0 and DC.202A/18.0 at the connections to the adapter bracket 3/Q2322 fitted at bomb arch 171·842 starboard side of the bomb bay. Re-connect the flexible hoses to the fin gap door connector bracket at the bottom outboard position on the starboard side forward face of the carrier beam. Seal off the open connections at the adapter bracket with the blanks provided.

31. Connect the hot air supply from the bomb bay to the A.L.S.U. piping on the carrier beam as follows:-

(1) Locate the hot air supply ducting which runs across the bomb bay between bomb arches 171·842 and 182·967. At the port side feed duct 177/Z9446, release the clamp at the end of the stub pipe and remove the blank 178/Z9446 and the seal AS.5402. Discard the seal. Position the blank in the stowage brackets on the aft face of bomb arch 171·842 and secure with the knurled nut provided.

(2) Unstow the adapter pipe 50/D11952 at the upper end of the A.L.S.U. air supply piping fitted at the port side aft face of the carrier beam, and run the pipe to the bomb bay feed duct.

(3) Position a new seal AS.5402 between the duct stub pipe and the flange of pipe 50/D11952, and secure the joint using the existing clamp and bolt assemblies.

(4) Fit a bonding lead AS.3360/C3C across the joint using bolts A25/1C washer SP.15C and nut AGS.2001/C1.

(5) Repeat operation (1) to (4) to connect the adapter pipe 50/D11952 from the starboard side of the carrier beam to the starboard hot air feed duct.

32. Connect the actuating cables from the release and the safety lock levers at the port and starboard sides respectively of the carrier beam, to the system cables installed in the bomb bay as follows:-

(1) At the port side forward face of bomb arch 171·842, locate the stowage bracket and tie rod at the end of the release system cable run. The lower lightening hole in the skinning between the bomb arches provides access to these components.

(2) Remove the three bolts A25/1C securing the bracket to the support channels and slacken off the tie rod lock nuts. Unscrew the tie rod from the turnbuckle SP.33C and remove the bracket complete with the tie rod. Retain the three bolts, and stow the bracket and tie rod on the stowage trolley.

(3) Obtain the pulley AS.103, plate 8/A3214 and bracket 10/A3214. Position the plate on the support channels previously used for the stowage brackets, and secure using the three countersunk bolts 4/SS.4337 at the upper inboard positions. Fit bolt A25/1C and washer SP.10C at the bottom inboard position. Secure the bracket to the three remaining holes in the plate using the existing bolts.

(4) Disconnect the release lever actuating cable 9/Z10005 from the stowage bracket on top of the carrier beam. Pass the cable upward through the slotted access hole in the bomb arch skinning and position under the bracket.

(5) Fit the pulley to the plate and the bracket using the shear pin SP.113J, collar AGS.899/8. Lock with split pin SP.9E8. Connect the cable to the turnbuckle.

(6) Repeat operations (1) to (5) to connect the actuating cable 10/Z10005 from the safety lock lever to the cable run at the starboard side of bomb arch 171·842. Note that plate 9/A3214 and bracket 11/A3214 are provided for mounting the pulley in the starboard side installation.

(7) Adjust the port and starboard turnbuckles to lightly tension the actuating cables, and wire lock the turnbuckles.

33. Make the electrical connections to the carrier beam as detailed in para.46.

Rear crutching frame

34. The rear crutching frame is supported in two bearing brackets mounted, one each side of the bomb bay forward of bomb arch 243·127, and can be adjusted laterally for the purpose of lining up with the carrier beam and forward crutch spigots. To install the rear crutching frame:-

(1) Position the suspension brackets 4/A3214 port and 5/A3214 starboard to the attachment fittings on bomb arch 243·127, so that the brackets' lugs are offset to the front. Secure each bracket using the four bolt assemblies provided.

(2) Locate the crutching frame bearing brackets mounted on the port and starboard bomb bay ribs forward of bomb arch 243·127. Remove the lower bearing cap and bush from each bracket.

(3) Remove the sections of fuel piping, 7 and 17/P3584 port, and 67/P3584 starboard from the pipe runs along the sides of the bomb bay between bomb arches 225·227 and 259·092.

(4) Engage the hook of the mini-hoist assembly in the support channel between bomb arches 225·227 and 243·127. Extend the hoist cable and engage the cable ball end in the suspension fitting on the crutching frame as shown in Sect.5, Chap.5, fig.49.

(5) Release the rear crutching frame from the support cradle on the trolley.

(6) Operate the hoist to lift the port end of the crutching frame above the bomb bay fittings and into the space between bomb arch 243·127 and the bomb door locking strut. Swing the starboard end into the corresponding position.

(7) Lightly lubricate the bushes removed in operation (2) using grease XG-295 and fit the bushes to the crutching frame trunnions. Align the crutching frame to the bearing brackets, and finally hoist into position, engaging the bush flanges in the bracket recesses. Refit the lower bearing caps, and tighten the securing bolts. Check that the crutching frame can be moved laterally, and if necessary

slacken off the bolts sufficiently to obtain this movement pending the setting of the crutching frame and alignment of the spigots.

(8) Connect the two side-load members, attached to the top member of the crutching frame, to the suspension brackets on the bomb arch 243·127 using the Pip-pin and safety pin provided.

(9) Remove the mini-hoist assembly.

(10) Obtain the two stabilising struts D11219 from the stowage box. Connect the struts to the attachment fittings on the carrier beam and the crutching frame using pin SPY4/D18, collar AGS.899/4 and locking pin AGS.1551/1 at each attachment. Note that the adjustable ends of the struts are to be connected to the carrier beam.

(11) Check the setting of the crutching frame and the alignment of the spigots as detailed in Sect.5, Chap.5, Para.152. Tighten and lock the bearing cap securing bolts.

(12) Refit the fuel vent pipes 7,17 and 67/P3584.

(13) Locate the Avery coupling mounting bracket 14/Q2286 fitted on the starboard bomb bay rib aft of bomb arch 225·227. Remove the blanking caps and connect to the stowages provided.

(14) Release the two flexible hoses 8/W3/102/8/8/32 and 10/W3/121/8/8/33 from the temporary stowage at the starboard side of the crutching frame, and connect to the adapters on the Avery coupling bracket.

(15) For installation of the warm air piping on the crutching frame and connection to the bomb bay heating system refer to para.36.

Warm air pack

35. The warm air pack, comprising a heat exchanger assembly and a follow-up resistor, replaces the injector assembly and inching control in the bomb bay heating system. Additional ducting is also provided to supply the store. To install this equipment:-

(1) Remove all loosely stowed items from the warm air pack mounting crate, and release the pack from the crate.

(2) Obtain the follow-up resistor and mounting bracket assembly. Position the assembly on the support brackets in the bomb bay roof previously used for attachment of the inching control, and secure, using the four bolts A25/1C, washers SP.15C and nuts AGS.2001/C1.

(3) Connect the connecting rod from the follow-up resistor to the cold air valve actuator using pin SP.113/C/5½, collar AGS.899/2 and split pin SP.9/C8.

(4) Obtain the heat exchanger assembly and the support channel 49/Z10050. Fit the channel to the outboard side of the assembly by engaging the spigot in the top attachment angle in the forward bracket on the channel. Secure the rear bracket on the channel to the lower attachment angle using bolt A25/1E, washer SP.15E and nut AGS.2001/E1.

(5) Position the adapter pipe 50/Z10050 on the assembly outlet duct and temporarily secure using clip 51/Z10050.

(6) Position the complete assembly in the bomb bay roof between arches 182·967 and 225·227, and secure the support channel to the existing brackets on the bomb arches using the six bolts A25/1C, washers SP.15C and nuts AGS.2001/C1.

(7) Fit the support channel 48/Z10050 to the inboard side of the assembly and secure the channel to the bomb bay brackets as detailed in items (4) and (6).

(8) Slide the adapter pipe 50/Z10050 forward to engage the rear end of the diffuser, and secure the pipe to the diffuser using the sealing ring 78/Z7723 and the bolt assembly provided. Tighten the clip at the connection to the outlet duct.

(9) Connect the assembly inlet duct to the cold air valve body using sealing ring AS.5413 and the existing half clamps and bolt assemblies.

(10) Obtain the pipe assembly 54/Z10050 and connect to the hot air valve using a new seal AS.5403 and the existing half clamp and bolt assemblies. At the forward face of bomb arch 225·227 remove the blank from the end of existing pipe 3/Z10559. Connect the branch of pipe 54/Z10050 to pipe 3/Z10559 using seal AS.4502 and King clamp C.4205/1¼ - 1½B.

(11) Obtain the expansion unit 16/Z4748. Connect the unit to the stub pipe at the bottom of the heat exchanger, and to pipe 54/Z10050 using a seal AS.5403 and half clamps 4/Z7648 at each joint. Fit the tie bar assemblies 42/Z10050 between the ends of the half clamps and secure using the bolt assemblies provided. Secure the pipe 54/Z10050 to the support link at the heat exchanger rear flanged joint.

(12) At the forward face starboard side of bomb arch 201·367 remove the blank from existing pipe 2/Z10559. Obtain the pipe 55/Z10050 complete with the bellows SS/BA.461, and connect the bellows to pipe 2/Z10559 using seal AS.4502 and the existing clamp. Temporarily secure pipe 55/Z10050 to the attachment angle on the bomb arch using the clip, distance piece, and bolt assembly provided, pending connection to the relief valve on the starboard fairing door as detailed in para.54.

NOTE . . .
The fixed piping 2 and 3/Z10559 and the removable piping 54 and 55/Z10050 were introduced by Mod.1318 and 1319 respectively to cater for repositioning of the relief valve on the fairing door. When these modifications are not incorporated, the heat exchanger is connected via the expansion unit to the hot air valve by pipe 47/Z10050.

(13) Refit the section of hot air supply piping which was temporarily removed (para.9, item (1)), using new seals AS.5402 at each end of the pipe run. Secure to the heat exchanger inboard support channel using the existing bolts.

36. To install the store hot air supply piping:-

(1) Obtain the pipe assembly 37/Z10050. Assemble the two ductstats FHG/A35 to the adapters at the inlet end of the pipe, using sealing washer 17/Z10050, washers SP.15C and nuts AGS.2001/C1. Assemble the temperature bulb S110/G6 to the pipe, using the adapter 14/Z10050, sealing washer 18/Z10050, washers SP.15C and nuts AGS.2001/C1.

(2) Pass the outlet end of pipe 37/Z 10050 through the lightening hole in bomb arch 225·227 starboard of the aircraft centre line. Support the pipe in the bracket on the bomb arch using the clipping block 16/Z10050, clip 15/Z10050, bolt A25/15C saddle washers 8/Z9954, washers SP.15C and nuts AGS. 2001/C1. Connect the pipe to the branch duct on top of the heat exchanger using seal AS.5406, half clamps 7/Z7648 washers SP.15E and nuts A27/E5. Tighten the nuts and lock with locking pin AGS.1551/1. Tighten the bolt assemblies at the support bracket.

(3) Obtain the warm air connection AC4M/MK.2/151223, the reducing neck 12/Z10050, the Flexflyte duct BE.8954 and pipe 38/Z10050. Connect the Flexflyte duct to the outlet of pipe 38/Z10050 and to the reducing neck using hose clip AGS.605/4 at each connection. Connect the warm air connection to the reducing neck using seal AS.5403 and King clamp C.4370/1¼ - 2 in./A.

(4) With the rear crutching frame installed as detailed in para.34, secure pipe 38/Z10050 to the support channel on the starboard side forward face of the crutching frame cross member using the two bolts A25/4C, bushes 13/Z10050, washers SP.15C and nuts AGS.2001/C1. The bolts are to be positioned at the bottom of the slots in the pipe bracket.

(5) Connect pipe 38/Z10050 to pipe 37/Z10050 using seal AS.5406, half clamp 7/Z7648, bolts A25/20E, washers SP.15E, and nuts A27/ES. Tighten the bolt assemblies and lock with locking pin AGS.1551/1.

(6) Fit bonding leads AS.3360/C6C across all the pipe joints and the expansion unit joints, and secure using bolts A25/1C, washers SP.15C and nuts AGS.2001/C1.

(7) Make the electrical connections to the warm air system components as detailed in para.47.

Optical link mounting

37. The optical link mounting assembly D11117 is fitted at the forward end of the bomb bay at the aircraft centre line position. The assembly comprises a mounting D10998 and a light tube D11119, the receiver 701W/1N/11 being supplied in a separate container. To install the assembly:-

(1) Position the mounting on the support brackets fitted on the front spar mechanism beam, align the four dowel holes in the mounting and brackets, and fit the four bolts A25/6E washer SP.13E and nuts AGS.2001/E1. Secure at the six anchor nut positions in each bracket using bolts A25/3C and washer SP.13C.

(2) Fit the tie rods F11074 one each side between the eye bolts in the mounting top casting and the attachment fittings on the spar web angle, and secure at each attachment using bolt A25/6E washer SP.13E and nut AGS.2001/E1.

(3) Position the optical link receiver in the mounting top casting and secure using the bolts provided.

(4) Make the electrical connections to the receiver as detailed in para.48.

Fairing door support struts

38. The port and starboard fairing doors

are each supported in the closed position by five adjustable struts which are fitted at the front and rear spars, station 44·592A, and to the carrier beam and rear crutching frame respectively. To fit the support struts:-

(1) Lightly lubricate the attachment pins 8 and 9/D11101 using grease XG-295, and fit the pins to the port and starboard bomb bay jack mounting brackets on the front spar. Secure the pins to the rear brackets using bolt A25/25E, washer SP.13E and nut, AGS. 2002/E1. Engage the fixed end of the support struts 1 and 2/D11101 in the port and starboard attachment pins respectively, and secure using the pin SP.4Y/H14, collar AGS. 899/8 and safety pin AGS. 1551/3.

(2) Fit the two support brackets 2/D11102 to the attachment fittings each side of the aircraft centre line on bomb arch 44·592A, so that the bracket lugs are approximately vertical. Secure each bracket to its fitting, using the four bolts A25/9E, washers SP.16E, and nuts A27/EC, and lock with split pin SP.9C8. Engage the fixed ends of the support struts D11102 in the brackets and secure using the pin SP.4Y/M20 and collar AGS. 899/12, and lock with safety pin AGS. 1551/4.

(3) Fit the four support struts D11126 to the attachment fittings, two on the carrier beam, and two on the rear crutching frame using the pins SP.4Y/M20 and collar AGS. 899/12, and lock with safety pin AGS. 1551/3.

(4) Lightly lubricate the two attachment pins 2/D11103 with grease XG-295 and fit to the bomb door jack mounting brackets on the rear spar. Secure the pins to the rear brackets using bolt A25/25E, washer SP.13E and nut AGS. 2002/E1. Secure the fixed end of the support struts D11103 to the attachment pins using the pins SP.4Y/H14 and collar AGS. 899/8, and lock with safety pin AGS. 1551/3.

Shock absorbers

39. Two shock absorbers are fitted to the undersurface of the aircraft to prevent damage in the event of runaway of the store foreplane. The housing structure for the shock absorber was introduced by Mod. 1076. To fit the shock absorber:-

(1) Position the shock absorber 1/Z10317, in the aperture provided in the structure, just forward of the front spar to the port side of the aircraft centre line. Align the four holes in the casing flange with the anchor nuts in the structure and secure the shock absorber, using bolt A25/5C, at the outboard position, and bolts A25/4C, at the other positions.

(2) Repeat this procedure to install the shock absorber 2/Z10317 at the starboard position.

Detachable fairings and access panels

40. Two detachable fairings are fitted to the undersurface of the aircraft, beneath the No.2 tank bay and the power compartment respectively. The access panels replace the tank sump access panels, removed in conjunction with the bottom fairing. To fit these items:-

(1) Position the fairing D11534 on the aircraft centre line to the rear of the nose wheel bay. Secure the forward end of the fairing to the nose wheel bay rear former 75F using the four existing bolts and the 14 bolts provided. Note that the two bolts A25/3C and washers SP.13C are to be fitted at the first positions, and the four bolts A25/1C at the third and fourth positions at the top row attachments either side of the fairing centre line. Secure the fairing to the undersurface skin using the eight countersunk bolts 8/SS.4353 at the side positions, and the nine countersunk bolts 5/SS.4353 at the rear edge position.

(2) Fit the two access panels 27/D10539 port and 28/D10539 starboard to the No.2 tank sump access holes in the undersurface skin and secure the Dzus fasteners.

(3) Fit the fairing D10827 beneath the power compartment and secure the Dzus fasteners. Secure the front and forward side edges of the fairing using the 39 bolts AS.1248/1C.

Electrical equipment

41. All components of the electrical installation are fitted with multi-pin plugs and sockets numbered to correspond with the connecting assemblies. In addition to the components listed in the change-of-role kit, part of the electrical equipment is mounted on the fairing doors. The plugs and sockets at the termination of this equipment are stowed on the fairing doors, and are connected to their mating connections after the fairing doors have been installed. The bomb bay mounted equipment is interconnected by the various cable assemblies, which are supplied as loose items, and connections to existing aircraft wiring are made through plug break assemblies, mounted at the port and starboard sides of the front spar.

Bomb bay equipment

42. The arrangement of electrical components and wiring in the bomb bay is shown in fig.7. To install this equipment:

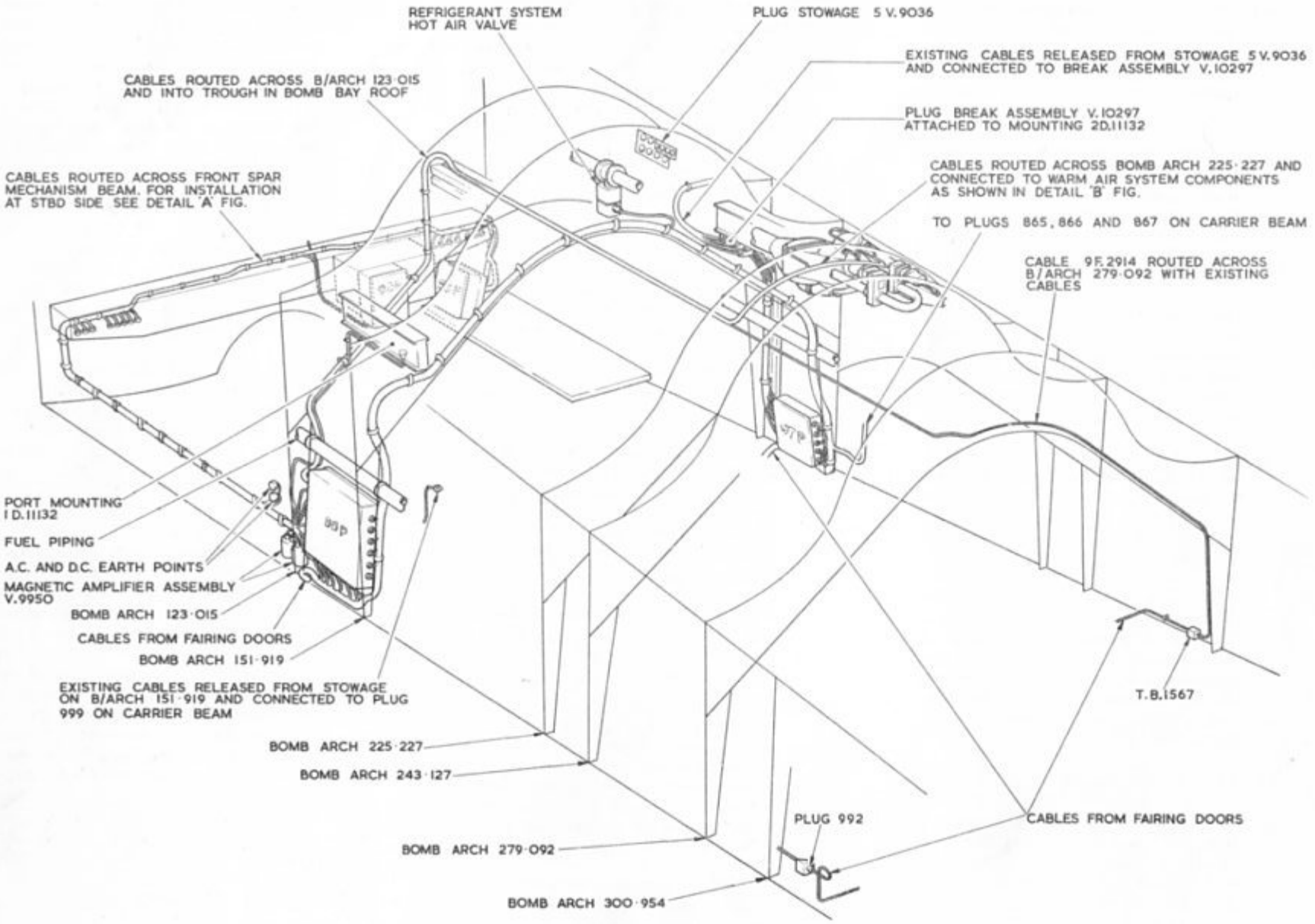


Fig. 7. Installation of electrical components and wiring.

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(1) Position the distribution panel 85P on the mounting brackets provided on the lower port side of bomb arch 123·015 and on the rib stiffener at station 145·982. Secure the panel using the four bolts A25/1C.

(2) Position the magnetic amplifier assembly V9950, on the mounting brackets provided on the port side bomb bay rib stiffeners, between bomb arches 108·627 and 123·015. Secure the assembly using the four bolts A25/1C.

(3) Position the junction box 97P on the mounting brackets on the lower starboard side of bomb arch 151·919 and on the rib stiffener at station 139·0. Secure the junction box using the four bolts A25/1C.

(4) Attach the connector block V5650, which is identified T.B.1567, to the anchor nuts fitted at the lower end of the starboard side bomb bay rib, forward of bomb arch 279·092 using the two screws A35/A/16.

(5) Locate the strut mounting 2/D11132 which extends from bomb arch 123·015 to 151·919 at the starboard side of the bomb bay. Attach the plug break assembly V10297 to the brackets provided at the forward end of the mounting using the four bolts A25/1C. Note that the cables supplied with the break assembly are to face outboard.

(6) Connect the five cables supplied with the break assembly V10297 to plugs 815, 816, 817, 818 and 819 at the forward end of junction box 97P by identifying the cable connections with the plug numbers. Secure the cable run to the three brackets fitted on the bomb bay hinge support channel aft of bomb arch 123·015 using clips AS.4580/5.

(7) Locate the plug stowage 5/V9036 fitted in the starboard side bomb bay roof above the strut mounting. Disconnect the existing cables from plugs 815, 816, 817, 818 and 819 on the plug stowage, and reconnect the cables to the corresponding plugs on the break assembly. Secure these cables to the strut mounting using clip AS.4580/5.

(8) Obtain cable assemblies F3069, F3068 and F3055 and connect to plugs 994, 996 and 997 respectively at the rear end of junction box 97P. Run the cables to the starboard side of bomb arch 151·919 and temporarily secure to the bomb arch, pending connection to the carrier beam as detailed in para.46.

(9) Connect the cables 11 and 13/V9628, and 12 and 14/V9628, which are supplied with 85P, to No.1 and No.2 magnetic amplifiers mounted at the rear and front respectively, on assembly V9950.

(10) Obtain cable assemblies F2809, F2810, F2911, F2915, F2929, F2931, F3088, F2926 and F3084. This group of cables is routed from panel 85P to the plug break at the port side aft face of the front spar, with cable F3084 and branch cables F2929 and F2931 extending across the mechanism beam to the hydraulic unit and refrigeration pack. Installation of the cables is facilitated if carried out prior to fitment of these assemblies. The tail end length of these branch cables should therefore be established by comparing them with existing aircraft cables before any final clipping is made.

(11) Run out the cables along the port side of the bomb bay. Tape together branch cables 3 and 4/F2931 at intervals along their lengths, commencing at the refrigeration pack connections, and temporarily coil the free end of cable 4/F2931. Tape together branch cables 1 and 3/F3088 from the front spar break connection and temporarily coil the free end of cable 1/F3088.

(12) At panel 85P connect the cables to the panel plugs in accordance with the cable idents as follows:-

Cable	Plug No.
F2809	990
F2810	991
F2911	843
F2915	838
F2929	842
F2926	841
F2931	844
F3088	840
F3084	672

(13) Connect the branch cable 2/F2926 to the a.c. earth point, and branch cables 2 and 5/F2931 to the d.c. earth point located on the port side bomb bay rib between bomb arches 108·627 and 95·967.

(14) Using Helvyn strapping, temporarily secure the group of cables together, and support them at the ten clipping points along the port side of the bomb bay between panel 85P and the front spar, using clips AS.4580/5.

(15) Route the cables upwards along the bomb door hinge support channel at station 7·47, and across to the forward face of the mechanism beam. Temporarily secure the cables to the two brackets fitted to the support channel using clips AS.4580/5.

(16) Remove the protective caps from the plugs on the break assembly

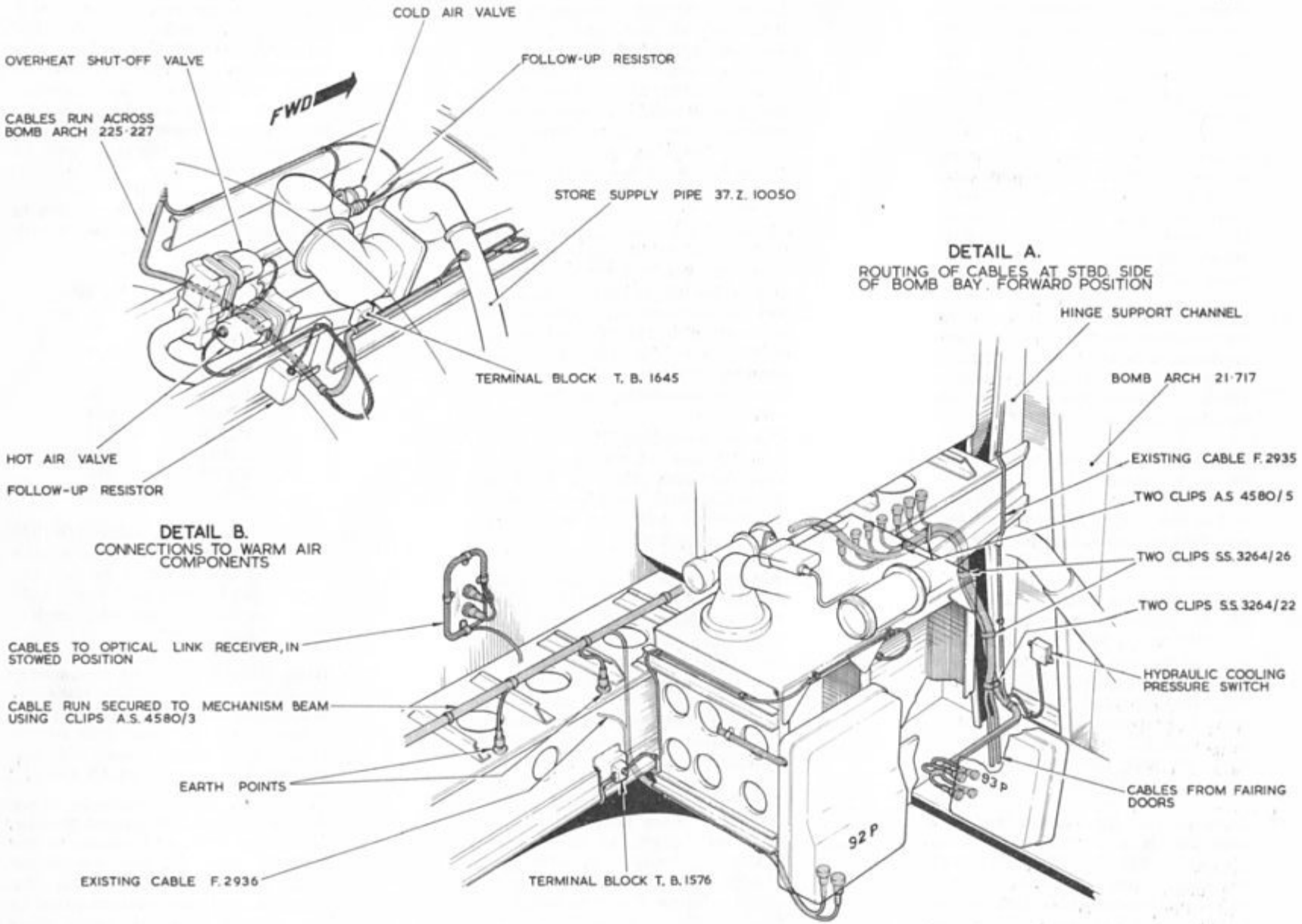

Fig. 8. Details of electrical installation

mounted at the port side aft face of the front spar.

(17) Connect the cables to the appropriate plugs on the break assembly in accordance with the cable idents as follows:-

Cable	Plug No.
F2911	965
F2915	967
F2926	968
F2931	966
F2929	969
F3088	868
F2809	970
F2810	971

(18) Temporarily secure the cables to the two brackets fitted to the angles on the forward face of the mechanism beam, using clips AS.4580/5.

(19) Route the remaining cable F3084 and branch cables 3 and 4/F2929 and 3 and 4/F2931 upward through the second lightening hole from the end of the beam, and along the top of the beam toward the starboard side of the aircraft.

(20) Pass cable F3084 downward through the first lightening hole in the beam, starboard of the aircraft centre line.

(21) Locate the existing cable F2936 which is stowed at the starboard side of the forward crutch structure, and release from the stowage.

(22) Compare the tail end length of cable F3084 with that of F2936 and set accordingly.

(23) Route the branch cable 3/F3084 back along the cable run and connect to the earth point located on top of the mechanism beam, port of the aircraft centre line.

(24) Secure the cables F3084 and F2926 to the bracket fitted on the starboard side of the forward crutch structure, using clip AS.4580/3, and coil the cables pending connection to the hydraulic unit as detailed in para.45.

(25) Continue to route cables 3 and 4/F2929 and 3 and 4/F2931 across the beam and downwards through the lightening hole positioned second from the starboard end of the beam. Continue the cable run across the forward face of the beam and downward on the starboard bomb door hinge support channel at station 7·47. Temporarily secure the cables to the bracket fitted to the outboard angle on the beam forward face, and to the two brackets on the support channel using clips as shown in fig.8.

(26) Locate the existing cable F2935 which is stowed on the starboard bomb bay rib forward of bomb arch 21·717 and release from the stowage.

(27) Compare the tail lengths of cables 3 and 4/F2929 and 3 and 4/F2931 with that of cable F2935 and set accordingly.

(28) Route branch cable 4/F2929 back along the cable run and connect to the earth point located on top of the mechanism beam, starboard of the aircraft centre line.

(29) Obtain cable F2826 and connect to the hydraulic cooling pressure switch, mounted between the front spar and bomb arch 21·717.

(30) Secure the cables F2935, 3 and 4/F2929, 3 and 4/F2931 and F2826 to the rib stiffener between the hinge support channel and bomb arch 21·717 as shown in fig.8. Coil the cables pending connection to the refrigeration pack, as detailed in para.44.

(31) Secure the cable run at the eleven clipping points along the top of the mechanism beam using clips AS.4580/3, and finally tighten the clips at the port side beam forward face and hinge support channel.

(32) Finally secure the Helvyn strapping and the support clips along the cable run from panel 85P to the front spar.

(33) Uncoil the branch cable 4/F2931 and run rearwards below panel 85P and up the port side forward face of bomb arch 151·919 and across the bomb arch to the aircraft centre line.

(34) Connect the cable to the refrigeration system hot air valve mounted in the bomb bay roof forward of bomb arch 151·919. Secure the cable to the three brackets provided on the bomb bay rib stiffeners below panel 85P using clips AS.4580/2, /4 and /5 respectively, and temporarily support the cable at the six anchor nut positions along the port side of the bomb arch, using clips AS.4580/5.

(35) Obtain the cable assemblies F3079, F3080 and F3217 and connect to plugs 673, 675 and 944 respectively mounted at the rear end of panel 85P.

(36) Run the cables rearward to bomb arch 151·919 and across the forward face of the bomb arch, supporting the cables to the bomb arch using the clips provided for cable 4/F2931. Secure the cables to the lower fuel pipe running along the

port side of the bomb bay, and to the bottom of the port strut mounting 1/D11132 using clips AS.4580/5.

(37) Continue to run cables F3079, F3217 and F3080 down the starboard side of the bomb arch, and connect to plugs 871 and 943, and socket 859 respectively, at the rear end of junction box 97P.

(38) Temporarily support the cables, at the five anchor nut positions along the starboard side of the bomb arch and, secure to the lower fuel pipe and stiffener, at the starboard side of the bomb bay, using clips AS.4580/5.

(39) Obtain cable assembly F2914 and connect to plug 845 at the forward end of panel 85P.

(40) Uncoil branch cable 1 and 2/F3088 (item (11) refers), and route with cable F2914 upwards to the aft face of bomb arch 123·015. Secure the cables to the lower fuel pipe run above panel 85P and at the anchor nut position on the bomb arch, using clips AS.4580/3.

(41) Connect branch cable 1 and 2/F3088 to the stowage provided on the strut mounting 1/D11132. Secure this cable to the hydraulic pipe fairlead using clip AS.4580/1.

NOTE . . .
When the Telemetry relay switching unit is installed, Mod.1088, cable 1 and 2/F3088 is connected to the relay switching unit.

(42) Continue to run cable F2914 upward on the bomb arch and into the second cable trough from the port side of the bomb bay. Secure the cable at the anchor nut positions on the bomb arch using clips AS.4580/3 as shown in fig.7.

(43) Run the cable rearwards in the trough, to the forward face of bomb arch 225 227 and run branch cables 1 to 8/F2914 across the bomb arch to the aircraft centre line position and secure with existing clipping. Temporarily coil the cables, pending connection to the bomb bay heating and warm air system components, as detailed in para.47.

(44) Continue to run branch cable 9/F2914 along the cable trough to the aft face of bomb arch 279·092, and run with the existing cables across the bomb arch to the starboard side of the bomb bay. Connect branch cable 9/F2914 to T.B.1567 mounted on the bomb bay rib forward of bomb arch 279·092.

(45) Locate the bomb gear panel 65P, which is mounted on aft face of the front spar, to port of the aircraft centre line. Remove the panel cover, and disconnect cables F403 and 2/F404 from terminals A, B, C, D and E, of the terminal block T.B.897. Tape back and stow the cables and refit the panel cover.

Connections from fairing doors

43. With the fairing doors installed as in para.23 make the connections from the fairing doors as follows:-

(1) Remove the protective caps from the plugs on the break assembly mounted at the starboard side aft face of the front spar.

(2) Release the cable assemblies which are coiled and stowed at the forward end of the starboard fairing door.

(3) Route the cables to the plug break assembly and connect to the appropriate plugs by identifying the cable connections with the plug numbers as follows:-

Cable	Plug No.
F2989	980
F2961	981
F2993	982
F2977	983
F2987	984
F2994	985
F2995	986

(4) Secure the cables using the clipping provided for the run of cables to panel 93P as shown in fig.8.

(5) Release the cable assemblies, which are stowed at the centre of the starboard fairing door, and route the cables upward and rearward below junction box 97P. Secure the cables to the stiffener below junction box 97P using clip AS.4580/5.

(6) From this group locate cable assemblies F3056, F3057, F3070 and F3066 and connect to plugs 857, 856, 855 and 995, respectively, mounted on the bottom of junction box 97P.

(7) Locate cable assemblies F3051 and F3196 and connect as follows:-

(a) When air log safety units are installed (Mod.1080) connect cable F3196 to plug 993 mounted on the bottom of junction box 97P.

(b) When air log safety units are not installed i.e., when fuze timing units are fitted, connect cable F3051 to plug 993.

(c) Connect the unused cable F3196 or F3051 as appropriate, to the stowage plug mounted on the bomb bay rib aft of junction box 97P.

(8) Run the remaining cables F2917, F2922, F2923 and F3092 upwards aft of junction box 97P, to the forward face of bomb arch 151·919, and route with the cables previously installed across the bomb arch to the port side of the bomb bay. Temporarily support the cables on the bomb arch and at the starboard and port sides of the bomb bay using the existing clipping.

(9) Connect cables F2917 and F3092 to plugs 846 and 671 respectively, mounted on the bottom of distribution panel 85P.

(10) Connect cables F2922 and F2923 to plugs 956 and 849 respectively, mounted on the rear end of panel 85P.

(11) Release the cable assemblies F2819, F2820, F3082 and F3083, which are stowed at the rear end of the starboard fairing door. Connect these cables to the appropriate terminals on T.B.1567 fitted on the starboard side bomb bay rib forward of bomb arch 279·092.

(12) Release the cable 1/F3081 which is stowed at the rear end of the port fairing door, and connect to plug 992 mounted on the port side bomb bay rib, between bomb arches 300·954 and 321·986.

(13) Release the cable assemblies which are stowed at the centre of the port fairing door.

(14) Connect cables F2912, F2919, F2920, F3091, F3081 and F3197 to plugs 955, 848, 957, 670, 674 and 839 respectively, mounted on the bottom of distribution panel 85P.

(15) Connect cable F2918 to plug 847 mounted at the rear end of panel 85P.

(16) Run the remaining cable F3071 upward aft of panel 85P to the forward face of bomb arch 151·919, and route with the previously installed cables across the bomb arch to the starboard side of the bomb bay, using the existing clipping.

(17) Connect cable F3071 to plug 854 mounted at the rear end of junction box 97P.

(18) Tighten the support clips along the cable run across the bomb arch and at the port and starboard sides of the bomb bay.

Connections to refrigeration pack

44. With the refrigeration pack installed as in para.24, make the following connections:-

(1) Release the cables F2935, 3 and 4/F2929, 3 and 4/F2931 and F2826, which are coiled at the starboard side forward end of the bomb bay, para.42 item (30) refers. Run the cables along the forward lower member of the refrigeration pack support platform, and connect to plugs 827, 828, 829 and 945 respectively on the refrigeration pack electrical panel 93P.

(2) Secure the cables as necessary to the platform member.

Connections to hydraulic unit

45. With the hydraulic unit installed as in para.28 make the following connections:-

(1) Release the cables F3084 and F2936 which are temporarily coiled at the front spar mechanism beam, para.42 item (24) refers.

(2) Run the cables rearwards and connect cable F3084 to plug 825 and cable F2936 to plug 826 on the hydraulic unit electrical panel 92P.

(3) Secure the cables at the three anchor nut positions on the inboard lower member of the hydraulic unit crate, using the clips provided.

(4) Connect the cable F3113 (from the temperature bulb in the distribution block) to T.B.1576, which is mounted on the mechanism beam to starboard of the aircraft centre line.

(5) Connect cable 22/V10774, which is attached to the refrigeration pack, to the hydraulic cooling valve actuator.

(6) Connect the cables 27, 28 and 29/V10774, which are attached to the refrigeration pack, to T.B.1647 mounted on the outboard diaphragm of the hydraulic unit crate.

(7) Secure cables 22, 27, 28 and 29/V10774 at the anchor nut position on the outboard diaphragm using clip SS.4657, screw A32/B16 and washer SP.13B.

Connections to carrier beam

46. With the carrier beam installed as detailed in para.29, make the following connections:-

(1) Release the cable assemblies F3069, F3068 and F3055 from the starboard side of bomb arch 151 919 para.42 item (8) refers. Run the cables rearward and connect F3069 to plug 867, F3068 to plug 866 and F3055 to plug 865 which are mounted on the forward face of the carrier beam.

(2) Secure the cables to the brackets

provided on the carrier beam, using clips AS.4580/4.

(3) At the port side forward face of bomb arch 151·919 release the cables 3 and 5/F3037 and 6/F3037 from their stowages just outboard of the hydraulic connector mounting bracket. Run the cables inboard to the port side forward face of the carrier beam, and connect cable 3 and 5/F3037 to plug 999 on the hydraulic panel, and cable 6/F3037 to the lock pin and wedge test plug.

(4) Secure the cables as necessary to the carrier beam.

Connections to warm air system

47. With the warm air components installed as detailed in para.35, make the following connections:-

(1) Release the cables 1 to 8/F2914 at the top centre position on bomb arch 225·227.

(2) Run the branch cables 1 and 2/F2914 forward along the top edge of the fin de-icing outboard support channel and across to the cold air valve. Connect cable 2/F2914 to the cold air valve actuator and cable 1/F2914 to the follow up resistor FLJ/A/12. Note that this follow-up resistor replaced the inching control in the normal bomb bay heating system.

(3) Pass cable 5/F2914 through the bomb arch and connect to the overheat shut-off valve.

(4) Continue to run cables 3, 4, 6, 7 and 8/F2914 along the lower forward edge of the bomb arch. Connect cable 8/F2914 to T.B.1645 mounted on the heat exchanger, outboard support channel.

(5) Run cables 3 and 4/F2914 forward along the support channel and connect to the ductstats in the warm air supply pipe 37/Z10050. Run the cable F3373, fitted to the temperature bulb in the warm air supply pipe, back along the cable run and connect to T.B.1645.

(6) Pass the cables 6 and 7/F2914 rearwards through the bomb arch and run along the hot air valve support channel. Connect cable 7/F2914 to the follow-up resistor FLJ/A/4 and cable 6/F2914 to the hot air valve.

(7) Secure the cables as necessary to the respective support channels.

Connections to optical link

48. With the optical link installed, as detailed in para.37, make the following connections:-

(1) Release the two cables 2/F2927 and 4/T4882 from the stowage on the aft face of the front spar at the aircraft centre line position, immediately above the mechanism beam.

(2) Run the cables rearward along the top of the optical link mounting and connect the cables to the appropriate connections on the optical link receiver. Secure the cables to the anchor nut provided in the mounting at the centre diaphragm position using clip AS.4580/3, bush AS.4671 and screw A31/B28.

Equipment in crews compartment

49. In the crews compartment, replacement control panels and indicators are fitted to panels 1P and 9P and console 6P, and additional equipment is installed at the navigators station.

Bombing panel 9P

50. An alternative bombing panel V9783 and E.Q. control unit mounting panel V10446, are provided to replace the two panels which occupy the top portion and the bottom forward portion of the navigator bombers panel 9P. Install these panels as follows:-

(1) At panel 9P, release the two screws securing the bottom right hand hinged panel and allow the panel to swing down. From behind this panel disconnect cable 2/V6517 from plug 470, mounted on the aft diaphragm of the panel frame.

(2) At the top panel release the two Dzus fasteners securing the small hinged panel and allow the panel to swing down. From behind the panel disconnect cable 5/V6517 from plug 473 mounted on former 246.

(3) Release the ten screws securing the complete top panel and support the panel away from the structure.

(4) Disconnect the cable at the plug connection at the back of the switch selector and indicator unit.

(5) Disconnect the cables at the plug and the two socket connections, at the back of the bomb spacing unit.

(6) Remove the complete top panel.

(7) Reconnect the cable, which was previously connected to the switch selector and indicator, to the stowage socket on the forward face of former 246.

(8) Reconnect the cables, which were previously connected to the bomb spacing unit, to the stowage plugs and socket, on the aft face of former 246.

(9) Support the replacement panel V9783 in the top panel position.

(10) Connect nine of the twelve cables attached to the panel, to the appropriate plug and sockets mounted on the aft diaphragm of the panel frame, by identifying the cable connections with the plug and socket numbers on the diaphragm as follows:-

Cable		Plug No.
3/V9639	to	804
4/V9639	to	807
5/V9639	to	800
6/V9639	to	810
15/V9639	to	808
22/V9639	to	795
81/V10492	to	802
71/V10492	to	989
82/V10492	to	988
84/V11106	to	802 (Mod.1226)
83/V11106	to	988 (Mod.1215)
85/V11325	to	988 (Mod.1375)

(11) Route the three remaining cables which are identified PANEL LIGHTS, D.C. POWER 1 and D.C. POWER 2, respectively, over the cross rail forward of the structure.

(12) Secure the panel V9783 by the eleven captive screws.

(13) At the bottom left hand panel, remove the securing screw from the bottom flange of the panel and retain. Release the five captive screws on the face of the panel and support the panel off the structure. Disconnect the cables which are connected to the stowages on the back of this panel, and remove the panel.

(14) Position the E.Q. control unit, HC.2834, to the mounting panel V10446 and secure, using the six screws AS.1248/½C.

(15) Support the replacement panel V10446 in the bottom left hand panel position.

(16) Connect the three remaining cables from the top panel, identified, PANEL LIGHTS, D.C. POWER 1 and D.C. POWER 2, to the appropriate connections on the E.Q. control unit.

(17) Connect cable 63/V10206 to plug 472, mounted on the aft diaphragm of the panel frame and, to the E.Q. control unit.

(18) From the cables previously stowed on the removed bottom panel, select the two, identified PORT and STARBOARD EY control, respectively, and connect to the appropriate connections on the E.Q. control unit.

(19) Connect the three previously stowed cables, identified T18, T19 and T35 CONTROL, to the stowages provided on the replacement panel.

(20) Tape back and stow the remaining two previously stowed cables.

(21) Secure the panel V10446, by the five captive screws on the panel face and fit and tighten the screw to the panel bottom flange.

(22) Secure the bottom right hand panel by the two captive screws.

(23) Locate the plug No.132, on the starboard side forward face of the rear pressure bulkhead at a position just below the bulkhead centre line. Disconnect the cable F197 from this plug. Disconnect cable F3086 from the stowage adjacent to plug 132, and reconnect cable F3086 to plug 132. Reconnect cable F197 to the stowage.

Port console 6P

51. On the pilots port console 6P, the bomb door and jettison panel 4/V9301 is replaced by the fin folding control panel V9802. Install this panel as follows:-

(1) Remove the four bolts and washers securing panel 4/V9301 to the console.

(2) Withdraw the panel and disconnect the cables at the panel plug 264 and stowage socket 833.

(3) Remove panel 4/V9301.

(4) Position the fin folding control panel V9802 on the console, and reconnect the cables to the corresponding plug and socket on the panel.

(5) Secure panel V9802 to the console, using the existing four bolts and washers.

Pilots' centre instrument panel

52. On the pilots' centre instrument panel, the existing bomb door and fin position indicator C5175Y, Mk.15 is replaced by indicator C5175Y, Mk.154. To install the indicator:-

(1) Remove the two bolts securing the instrument panel, and with a suitable strain cord fitted, allow the panel to swivel downwards.

(2) Locate the indicator at the top centre position on the panel.

(3) Withdraw the rubber grommet from the indicator terminals and disconnect the leads. Release the

bayonet type fixing ring and spring, from the indicator body and remove the indicator C5175Y, Mk.15 from the panel.

(4) Slip the fixing ring and spring, over the leads and pass the leads through the aperture in the panel. Slip the rubber grommet over the leads and connect the leads to the appropriate terminals on the replacement indicator C5175Y, Mk.154. Fit the grommet over the terminals, pass the indicator back through the panel and secure the fixing ring and spring, ensuring that the locating pip engages in the keyway.

(5) Position the instrument panel and refit the two attachment bolts.

Navigator's station

53. The inertia navigator monitoring unit 9C104 and the adapter box R/A1/A02/31415 are installed at the navigator's station. To fit these components:-

(1) Position the inertia monitoring unit in the well provided in the port side of the navigator's table. Through the access holes in the well structure, fit and tighten the three attachment bolts AS.1248/2E and washers SP.13E.

(2) Disconnect the cables F2939 and F2945 from the stowage panel, mounted below the well and, connect to the appropriate connections on the monitoring unit.

(3) Mount the adapter box to the mounting tray fitted at the port side of the navigator's table structure, aft of the instrument panel, and secure with the four bolts A25/2C and washers SP.10C.

(4) Disconnect the four cables 7 and 8/F2928, and 2 and 3/F2909 from the stowages on the radio connector trough, on the port side of former 218, and connect to the appropriate connections on the adapter box.

Closing the fairing doors

54. With the equipment installed in the bomb bay, the fairing doors can be closed and the final connections made. The procedure for closing the doors, and the connections are detailed in Sect.5, Chap.5. The refrigeration pack ram air inlet duct is connected to the fairing door intake by King clamp C4370/4½/A and seal AS.4510 which are supplied with the refrigeration pack. Connection of the warm air pipe 55/Z10050 (para.29 item (12)) to the relief valve is made by King clamp C4205/1¼-1½/B and seal AS.4502 supplied with the warm air pack.

55. Ensure that adequate clearance exists between the refrigeration pack flexible pipes and the cable loom to No.4 butt connector on the starboard fairing door. Adjust the pipe run if necessary to obtain a clearance.

Stowage of equipment

56. Secure the component mounting crates and covers, and the handling equipment to their appropriate stowages on the transportation trolley.

TABLE 1

Modifications - fixed fittings

The following modifications introduce the fixed fittings which must be incorporated for this change of role.

Mod.198 To modify the rear end of the bomb bay for carriage of the missile

Mod.199 Introduction of fixed fittings.

Mod.525 Repositioning of front crutch pads.

Mod.748 Introduction of fixed fittings not covered by Mod.199.

Mod.1076 To make provision for shock absorbers in the aircraft to cater for nose-up runaway of the missile foreplane.

Mod.1100 Introduction of shut off cock in the bomb bay hot air system to prevent overheating of the missile.

The following modifications are associated with the fixed equipment.

Mod.1074 To enable the aircraft hydraulic power pack to be operated from an external source.

Mod.1075 To provide for Exactor coupling in lieu of Lockheed coupling, in the refrigerant system.

Mod.1078 Changes to the electrical system.

Mod.1079 To replace the existing five zone circuit, by a single duplicate circuit, in the fire detector system.

Mod.1139 To make provision for and introduce on the airframe, a bomb release safety lock facility.

Mod.1214 To introduce a control switch and indicator to enable the E.P.C.U. to be started from the aircraft.

Mod.1217 To introduce 25D connectors in lieu of 18D connectors, Blue Steel junction box to front spar break.

Mod.1218 To provide for R.A.E. recorder type IT3-15-61.

Mod.1219 To provide illumination of temperature gauges and selectors on the set operators sloping panel, and for the forward portion of panel 9P. To provide a lock on the cover of the bomb release safety lock.

Mod.1222 To provide A.V. mountings for the Blue Steel junction box 9GA/105.

Mod.1225 (a) To delete provision for release unit thermostat.

(b) To provide ground test facility for fin folding.

(c) To provision for the operation of the hydraulic unit throughout a training flight.

Mod.1306 To introduce thermal relief valves in the piping from the hydraulic unit to the store.

Mod.1318 To provide for and introduce ducting to suit repositioning of the Normalair relief valve in the warm air system.

Mod.1374 Miscellaneous electrical changes.

TABLE 2

Modifications - removable assemblies

The following modifications are applicable to the removable assemblies introduced by Mod.200

Mod.1039 Introduce hand pump on hoisting platform.

Mod.1082 Introduce hydraulic unit 1/Q2422, in lieu of unit 1/Q2262.

Mod.1083 To provide:

(a) A means of controlling the inlet and outlet pressure on the Arcton compressor.

(b) A cooling air supply to the hydraulic unit during ground running.

(c) Exactor couplings, in lieu of Lockheed.

Mod.1084 To provide clearance in the fairing doors to cater for tail up runaway of the store foreplane.

Mod.1080 To make provision for Air Log Safety Units and delete redundant fuzing units.

Mod.1081 To make provisions for ground safety lock.

Mod.1085 To introduce Godfrey type connector in lieu of Normalair in the warm air system.

Mod.1086 To introduce changes in the electrical equipment introduced by Mod.200.

Mod.1087 To replace the five-zone circuit, by a single duplicated circuit, in the fire detector system.

Mod.1089 To reposition the relief valve in the warm air system and to introduce a shut-off valve (Partially superseded by Mod.1319).

Mod.1212 To revise the warm air supply for the A.L.S.U. installation and revise the unlocking lanyard pull-off arrangements.

Mod.1213 To introduce separation switch No.2, Mk.2 in lieu of No.1, Mk.1.

Mod.1215 To introduce relays and associated wiring to enable the E.P.C.U. to be started from the aircraft.

Mod.1216 To introduce extra wiring to No.4 butt connector for the R.A.E. recorder.

Mod.1223 To introduce dowels on the electrical umbilical connections.

Mod.1224 To introduce nitrogen charging connections for the reservoir and accumulator of the hydraulic unit.

Mod.1226 (a) To delete provision for release unit thermostat.

(b) To provide ground test facility for fin folding.

(c) To provision for operation of the hydraulic unit throughout a training flight.

Mod.1303 Introduce telescopic handle in place of the fixed handle for the hoisting system hand pump.

Mod.1304 Introduce mixing chamber and filter in the refrigeration pack.

Mod.1319 To reposition the Normalair relief valve in the warm air system.

Mod.1350 To introduce two warning lamps in lieu of 3 position indicator for the release safety lock.

Mod.1351 To introduce drip trays for electrical panels 85P and 97P.

Mod.1352 To introduce air regulating valve 523850 in lieu of valve 519220 on the refrigeration pack.

Mod.1354 To make provision on the fairing doors to locate and secure the umbilical connections.

Mod.1375 Changes to electrical system.