Chapter 2
PREPARATION FOR FLIGHT

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LIST OF ILLUSTRATIONS

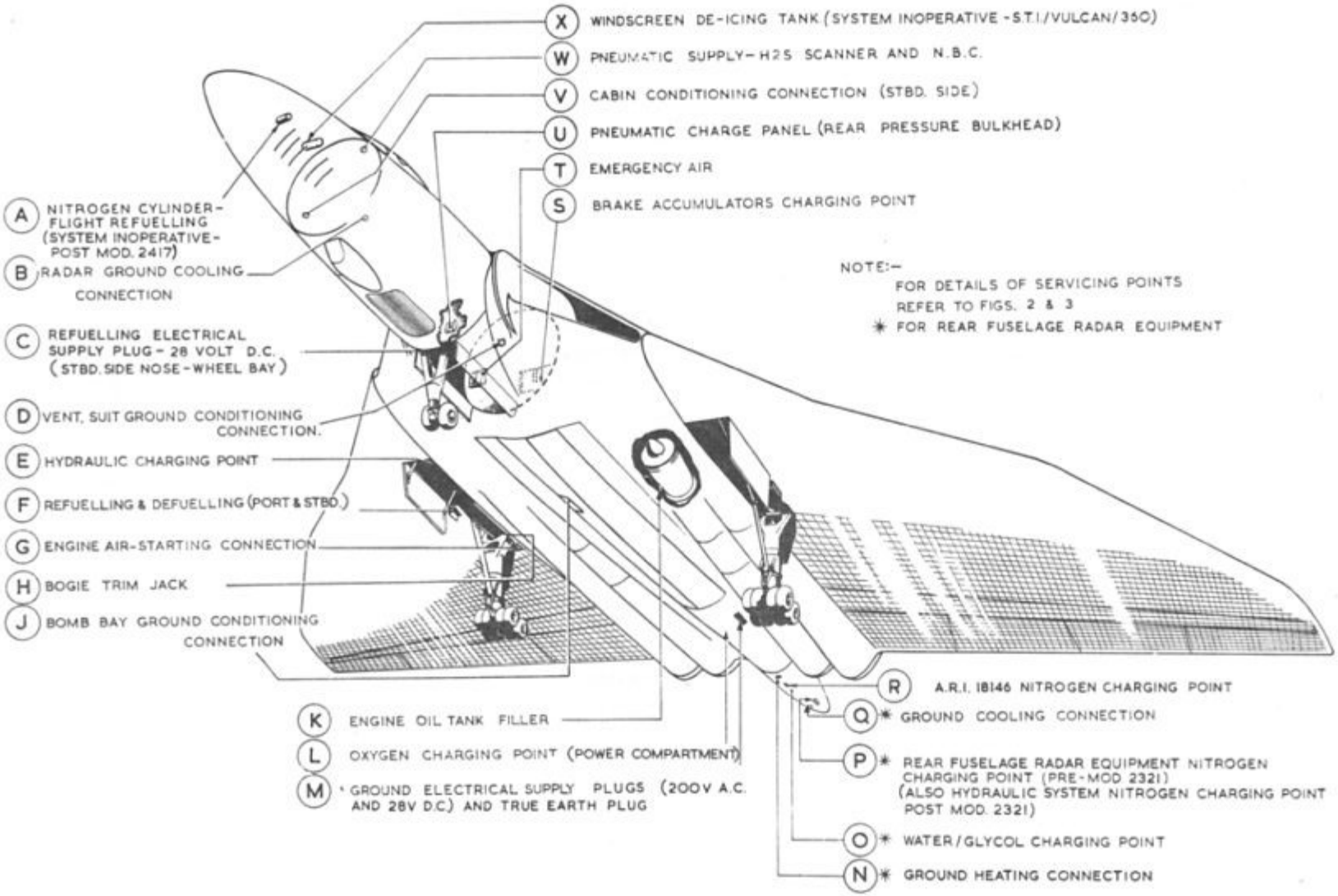

Fig. 1. Location of servicing points

WARNING . . .
Before entering the cockpit for any purpose, personnel must ensure that the ground safety precautions affecting the ejection seats have been applied in accordance with the instructions given on the ejection seat warning marker card at the front of this Book.

Introduction

1. This chapter gives information on the preparation of the aircraft for flight. Servicing and replenishing points are illustrated on fig.1, 2 and 3. Specifications for oil, fuel, etc. are given in the Leading Particulars. The method of using the pressurised fluid replenishing can ◀ Part No GM4605, referred to in para.13, 14 ▶ and 15, is detailed in A.P.1464G, Vol.1, Part 2.

GROUND SUPPLIES

WARNING . . .
Before connecting any ground electrical supply to the aircraft, all powered flying control unit switches must be disengaged. To ensure this condition, select the aircraft's battery isolation switch to ON and press each P.F.C. switch (port console) in turn. Failure to comply with this instruction may cause inadvertent operation of the flying control systems with injury to personnel or damage to the aircraft being a possible consequence.

Normal supplies

2. A 3-pin 28V plug, for general purpose use (including ground lighting and refuelling), and a 6-pin 200V main supply plug, are installed together with a true earth plug, in the port side of the power compartment. To facilitate rapid start and take-off (para.5) the three plugs are mounted on a sloping bracket located under a spring-loaded access panel immediately to the rear of the port bomb bay door.

3. A switch, provided in the nose-wheel bay, will, when operated, provide lighting at the following positions:-

Two	-	each main-wheel bay
Two	-	nose-wheel bay
Nine	-	bomb compartment
Two	-	power compartment
Two	-	rudder powered flying control compartment
Four	-	rear fuselage

In addition to the above mentioned lights, two inspection lamp sockets are provided in the bomb compartment.

Refuelling supplies

4. A 3-pin plug, provided exclusively for refuelling purposes, is located under an access panel outboard of the starboard nose-wheel bay door. When connecting the ground supply socket the cable must be supported by attaching the harness hook to the bracket provided at the plug.

GROUND CONNECTIONS - RAPID TAKE-OFF

5. To obtain the rapid take-off capability required by the service, modifications are embodied which provide an engine rapid start system and introduce quick-disconnect type couplings at those ground service points which will be required during the stand-by period. Ground equipment hoses, power cables, communication lines, etc., are anchored to the Operational Readiness Platform (O.R.P.) and will automatically 'snatch' disconnect as the aircraft moves forward. The engine rapid start system (Mod.1320) is described in Sect.4, Chap.1 of this Publication. The ground service connections are illustrated in fig.4 and 7 and with the exception of the normal ground power supply cables, described in para.2, are described in the following paragraphs.

Communications

6. When Mod.1418 is embodied, a telescramble land-line plug (operation staff to pilots) and a mic./tel. plug (ground crew to air crew) are fitted in the starboard side of the power compartment. These plugs, mounted in a similar manner to the electrical power supply plugs for pull-off disconnection, are accessible through a spring-loaded door in the underside of the starboard main plane, adjacent to the power compartment.

Cabin conditioning and air ventilated suits

7. Quick-disconnect facilities are also provided at the ground supply points for cabin conditioning and air ventilated suit system by Mod.1393 and 1394 respectively. The ventilated suit system ground connection remains as for the pre Mod. type, reinforcing of the mounting area being the only change. For cabin conditioning, however, a new ground connection is introduced which, when correctly set up for the standby period, will disconnect and close automatically as the aircraft moves forward. A simple draw string method, operated by the falling hose connection, is used to draw the inner valve and outer door together, and a spring-loaded catch secures the door to the valve. Reference to fig.4 shows the method of setting up the connection operating lanyard.

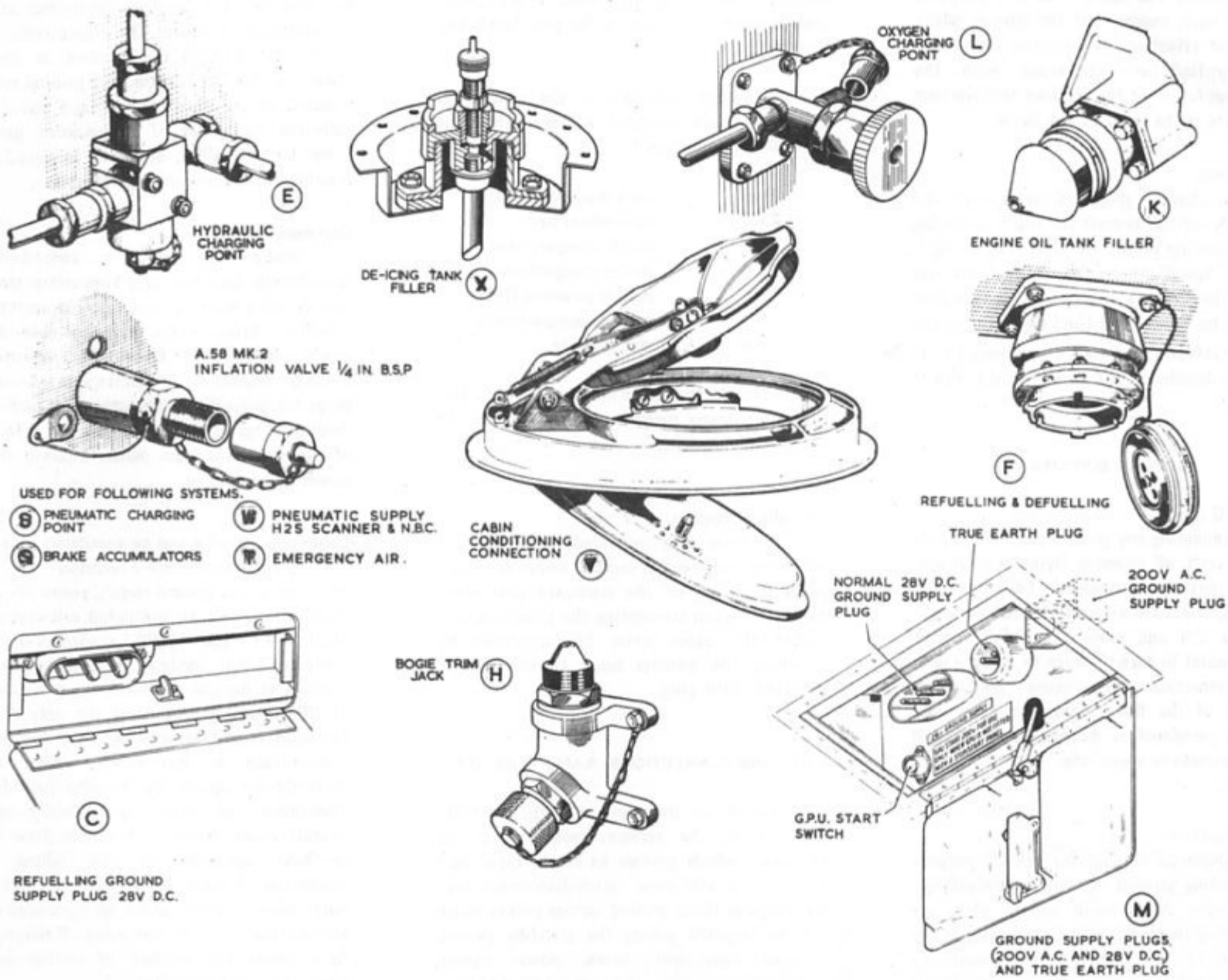

Fig. 2 Details of servicing points (1)

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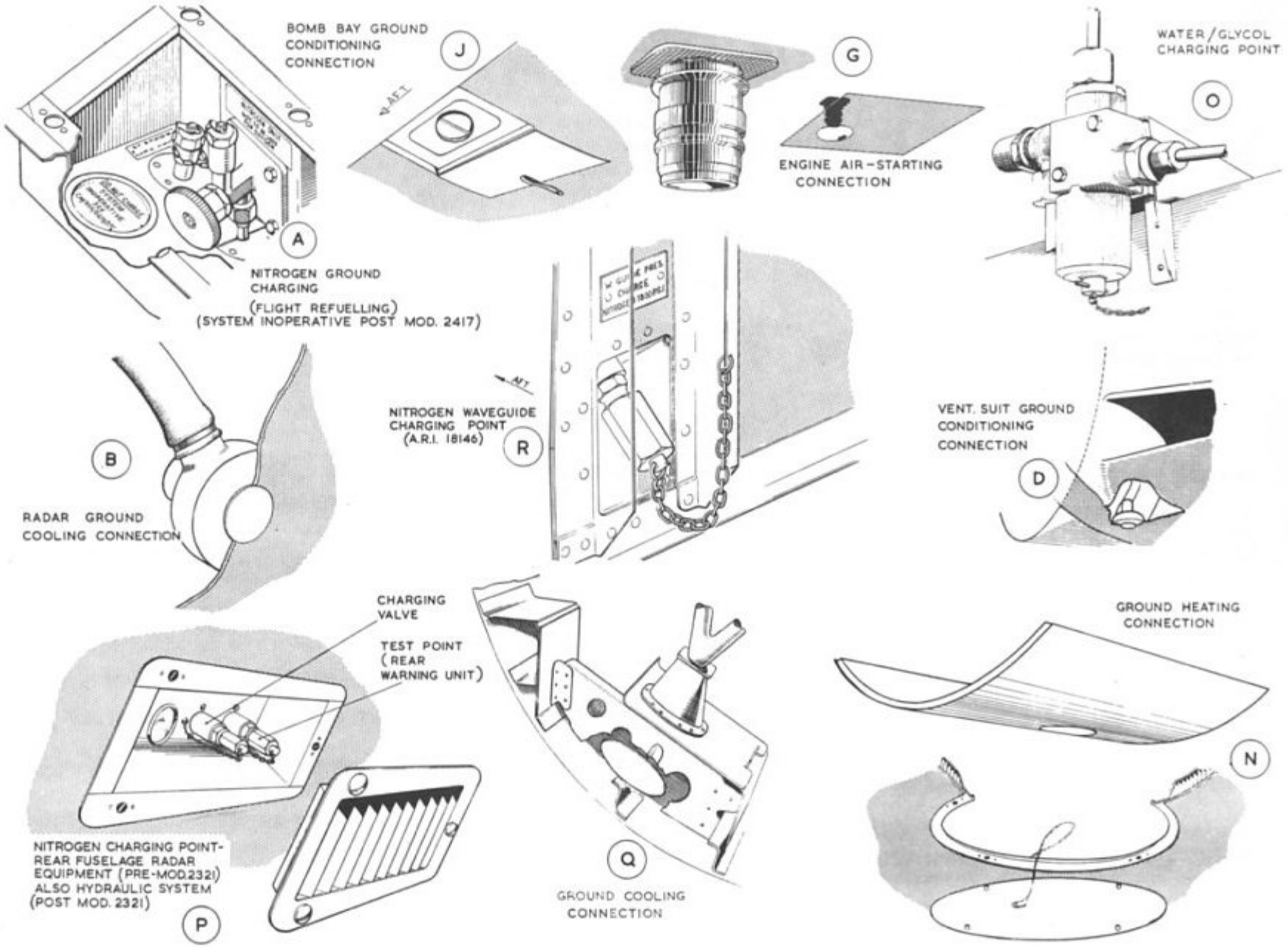

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Fig. 3 Details of servicing points (2)
Mod. 2321 and 2417

Static vent protection

8. Static vents are protected during the stand-by period by lanyard controlled plugs. Two nylon plugs, attached by a bridle to a ground anchored lanyard, are provided for the static vents on each side of the aircraft. These plugs pull out automatically as the aircraft moves forward.

8A. The illustration on fig.7 shows the recommended layout for ground anchorage points and gives details of ground supply sockets and couplings with the appropriate brackets and lanyards attached. All lanyards are attached to the ground anchor points by simple dog-clips.

FUEL SYSTEM

Fuel

9. All turbine fuel delivered into RAF aircraft should contain both Fuel System Icing Inhibitor (FSII), to inhibit fuel system icing and fungal growth, and a lubricity and anti-corrosion additive to reduce the risk of positive displacement fuel pump failure. Jet fuels from RAF sources contain AL38 fluid which is a blend of approximately 99 per cent FSII (AL31) and 1 per cent of a lubricity additive (Hitec E515).

9A. The lubricity and anti-corrosion constituent of AL38 may not be present in aviation fuels supplied from non-RAF sources, even if listed in the UK specification for the particular fuel, under the same NATO code number. A fuel supplied from a non-RAF source, to a NATO code number, should be checked to ensure that the requirements concerning lubricity are satisfied before uplifting such a fuel.

9B. Concessions have been granted for RAF aircraft to use fuel without a lubricity additive, dependent upon the type of engine fuel pump fitted. The concession applicable to the Vulcan is that the aircraft may operate for a limited period on approved aviation fuel not containing AL38 or a lubricity additive provided the following conditions are met.

(1) Uplifts of fuel not containing FSII, AL38 or a lubricity additive are recorded in the aircraft F.700.

(2) The duration of each flight following uplifts of such fuel is recorded in the aircraft F.700.

(3) The accumulated maximum duration of engine fuel pumps operating on fuel without a lubricity additive does not exceed 50 flying hours.

(4) Engine fuel pumps which accumulate 50 flying hours using fuel without a lubricity additive necessitate the replacement of the Chassis Mounted Fuel System (C.M.F.S.).

(5) A C.M.F.S. which is replaced for a fuel pump failure and has operated on fuel not containing AL38 or a lubricity additive is to be returned to the manufacturer for examination. The Chassis Mounted Fuel System, incorporating other fuel pumps fitted to the aircraft during the period of concessional operation, will be suspect, and are to be replaced and held, pending receipt of the result of the failure examination.

(6) The maximum duration operating on fuel not containing FSII is not to exceed 14 days followed by an equivalent period on fuel containing AL38 or FSII.

Refuelling

10. Two refuelling points are located in each main-wheel bay and are accessible through a panel in the outer fairing. Between the port pair of refuelling points is a control lever which, when pulled, operates a microswitch to energise the stabilised voltage power pack. Refuelling control panels 36P (port) and 37P (starboard) are located on the outboard rib in each main-wheel bay. The two refuelling points on each side of the aircraft are connected in parallel and either single point, or double point (using two units) refuelling is available. Also, if desired, both sides of the aircraft can be refuelled simultaneously.

NOTE . . .
The tanks must only be filled from a 2 500 gall dual purpose refueller, Zwicky (refer to A.P. 4485A, Vol.1) fitted with a streamline filter.

WARNING . . .
Correct distribution of fuel load during ground refuelling is essential, otherwise the aircraft may become tail heavy and overbalance. To avoid this hazard the following precautions must be observed prior to beginning a refuelling operation.

(1) The flight refuelling MASTER switches (starboard console) must be in the OFF position, otherwise, when the electrical ground supply is connected, the ground refuelling se-

quence circuit will be cancelled and all fuel tanks will be refuelled simultaneously.

(2) The flight refuelling system nitrogen purge switch (starboard console) must be in the OFF position. Should this switch be inadvertently left in the ON position, the No.2 tank refuelling valves will be opened and fuel venting will occur.

(3) The C. of G. transfer switches (centre console) must be in the OFF position, otherwise, when refuelling begins, fuel will be directed (forward or aft) to comply with the selection made.

(4) Check that all fuel tank indicator lights (starboard console and ground fuelling panel) are extinguished – showing that all refuelling valves are closed.

(5) Place the centre console in the retracted position to prevent the push-button switches on the fuel system control panel from being operated during the refuelling programme. If this instruction is ignored and a push-button is pressed during refuelling, the resultant current increase in the circuit will cause an interruption in the automatic sequence so that refuelling is transferred, prematurely, to the next tank in sequence. In these circumstances it is possible that No.7 tanks could be refuelled before the No.1 tanks are refuelled to their correct capacity.

(6) Ensure that the ground electrical supply is not less than 24 volts.

In addition to these precautions, it is essential to ensure, when refuelling begins, that No.1 and No.2 tanks are refuelled to their correct capacity before any attempt is made to refuel the remaining tanks; also, that the bomb bay tanks remain empty until the main fuel system refuelling programme is completed.

10A. When conditions are in accordance with those detailed above, preparations for ground refuelling may begin. The correct procedure is as follows:-

(1) Connect a 28V electrical supply to the refuelling plug in the nose-wheel bay.

(2) Connect the refuelling unit, or units as required, to the refuelling points on the starboard side of the aircraft, ensuring that the bonding is secured correctly in the 'earth' clip provided.

(3) Pull down the handle (between the refuelling points) outboard of the

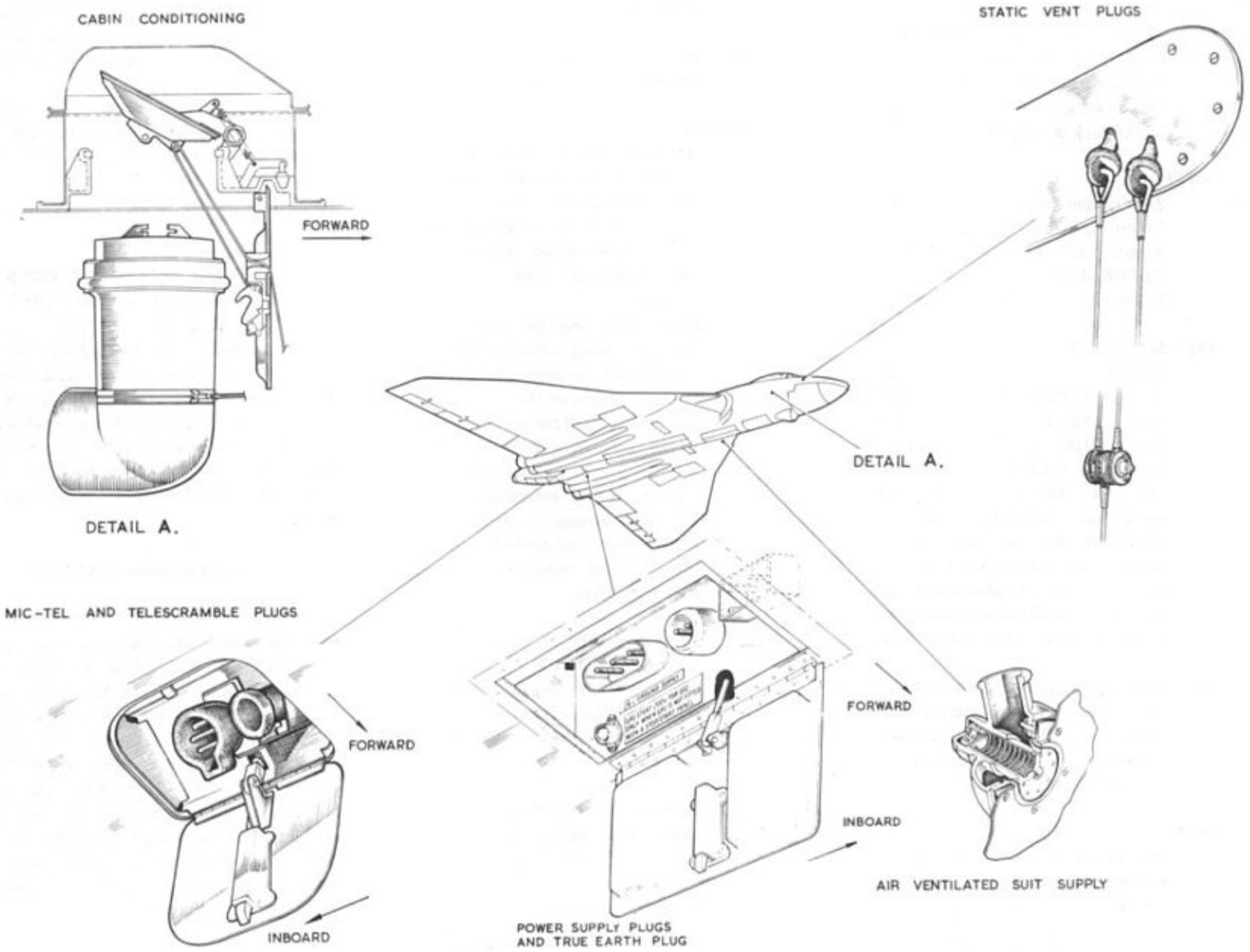


Fig. 4. Quick-disconnect couplings
(Detail changes)

'earth' clip. This energises the stabilised voltage power pack.

(4) Check that the COMMENCE REFUELLING indicator lamp (refuelling panel) is illuminated. This indicates that the voltage power pack is stabilised.

NOTE . . .

The system must be allowed to 'warm up' for a period of one minute, after the COMMENCE REFUELLING lamp comes on, before refuelling begins.

(5) Set the refuelling selector to the desired percentage and check that the output indicator of the power pack registers the selected percentage. If the voltmeter percentage reading is not within two per cent of the selected percentage, refuelling must not begin. It will be necessary to remove the power pack from the aircraft for re-adjustment in accordance with the instructions in Sect.6, Chap.9 of this publication.

(6) Push the MASTER switch slider bar (refuelling panel) upwards and check that both master switches remain in the ON position when the slider bar is released.

NOTE . . .

One group of tanks only may be replenished if desired by selecting one master switch instead of both.

(7) Operate the START switch (refuelling panel), repeatedly, until the two adjacent indicator lamps, marked 1 ON and 2 ON, illuminate.

(8) Begin refuelling by starting the refuelling unit (or units).

NOTES . . .

(1) As each tank refuelling valve is opened by the sequence selector, the corresponding lamp on the lower half of the refuelling panel will be illuminated. These lamps are numbered from 1 to 7 inclusive.

(2) During refuelling, the contents of the tank being refuelled may be observed on the appropriate group contents gauges in the cockpit. On no account must the press switches on the fuel system control panel be operated for individual tank readings during refuelling as this will cause damage to the contents gauge system and probably disrupt the refuelling sequence - warning para.9(5) refers.

(9) On completion of refuelling, the master switches will return to the OFF position and all indicator lamps will be extinguished, only the power pack will remain operating.

(10) Remove the refuelling hoses and repeat the foregoing operations on the opposite side of the aircraft.

(11) When refuelling is complete, remove the hoses, return the micro switch handle to the horizontal position and close the access doors.

NOTE . . .

As a safety precaution the port access panel cannot be closed until the micro switch handle has been returned to the OFF position.

On completion of refuelling, remove the accumulation of water from the tanks; the method is described in Sect.4, Chap.2 of this publication.

Override switches

11. Two TANK SELECTOR OVERRIDE switches, labelled No.1 GROUP TANKS - 1, 4, 5 and 7, and No.2 GROUP TANKS - 2, 3 and 6, are provided for use during ground servicing operations, i.e., when an individual tank is to be refuelled. When pressed once they select the next tank (in sequence) in the associated group of tanks. Care must be exercised when using this override facility, to ensure that correct fuel/weight distribution is maintained (See Warning).

CHECKING TANK CONTENTS

12. Each of the fuel tanks contains two contents gauge units suitably arranged so that the gauges mounted below the pilots' centre instrument panel indicate the correct reading irrespective of the attitude of the aircraft; dipsticks are not required. The contents gauges are switched on when the 28V battery ISOLATION SWITCH is ON. The gauges indicate on their inner ring, the tank group contents. It is necessary to press the associated push switch on the fuel contents panel (centre console) to read, on the outer ring, the individual tank contents.

NOTE . . .

At no time must more than one

push-button be pressed for individual tank readings and never during refuelling operation.

ENGINE OIL TANK

Mk.200 Series engines

13. An oil tank, with a maximum capacity of 4½ gall, is integral with each engine. Replenishment is through a ½ in B.S.P. pressure-type coupling Part No.A.V.X.2241, located below the engine just aft of the engine front bulkhead, using a pressurised fluid-replenishing can. Mk.2 Part No.GM 4605. The tank contents may be checked on a downward facing indicator on the forward port side of each engine. Indicators are calibrated (aircraft on ground attitude) to read from 0 to 4½ gall.

Mk.300 Series engines

14. An oil tank, with a maximum capacity of 3.875 gall is mounted on the lower port side of the engine forward of the engine front bulkhead. Replenishment is through a ½ in B.S.P. pressure-type coupling, Part No.A.V.X.2241 positioned just aft of the engine front bulkhead, using a pressurised fluid-replenishing can, Mk.2 Part No.GM 4605. The tank contents may be checked on a sight glass indicator on the forward face of the tank.

TOPPING UP THE HYDRAULIC RESERVOIR

15. A sighting glass is provided in the reservoir through which the oil level can be visually checked.

On aircraft post Mod.2321:-
Before replenishing the reservoir the cover of the adjacent nitrogen pressurisation on/off valve must be removed and the valve lever moved to the 'off' position.

On aircraft both pre and post Mod.2321:-
Equipment to be used consists of a pressurised fluid-replenishing can Mk.2 Part No.GM 4605 (see para.1). The can, which terminates in a ½ in B.S.P. union, will require adapter Part No.GMA 16772 and Avery coupling union A.V.A.62C and half-coupling A.V.A.57C before it will fit at the charging valve.

16. Replenishing is to be carried out under the following conditions:-

(1) Alighting gear DOWN and doors OPEN.

(2) Bomb doors OPEN.

(3) Brake accumulators charged (para.17).

Replenishing, using the fluid specified in Leading Particulars, is achieved through a combined charging and overflow valve mounted on a panel in the starboard main-wheel bay. Escape of fluid through the ¼ in B.S.P. overflow is an indication that the oil level is correct.

On aircraft post Mod.2321:-
After replenishment the on-off valve lever must be returned to the 'ON' position and the valve cover replaced.

BRAKE ACCUMULATOR INFLATION

17. The brake accumulator air inflation points (A58 valves) and associated pressure gauges are on the hydraulic components panel in the nose-wheel bay. Before recharging with air it is necessary to discharge residual oil in the accumulators. This is done by pressing the manually-operated valves adjacent to the charging valves until the gauges settle to a steady reading. Recharge as necessary with air to 2 550 lb/in^2 using an inflation adapter Part No.772/B. When the engines are started, the accumulators will be charged from the aircraft hydraulic system to the maximum working pressure of 4 000 lb/in^2 without further action by the service personnel.

18. Should the brakes be required before the engines are started; i.e., for taxying or towing, charging may be accomplished using the power pack in the following manner:-

(1) Ensure that a 200 volt electrical supply is connected to the ground supply plug and operate the switch labelled HYDRAULIC POWER PACK on the starboard rear side of the nose-wheel bay, or the alternative switch on the port console labelled HYDRAULIC POWER PACK MOTOR SWITCH.

(2) The switch must be released immediately after operating as the charging of the accumulators and the subsequent stopping of the power pack follows automatically.

NOSE-WHEEL SHOCK-ABSORBER

19. The nose-wheel unit shock-absorber is liquid sprung and is not inflated with air. Provided the C.G. position and the aircraft All-Up Weight is known, the static ground load on the nose-wheel unit and the corresponding nose-wheel unit extension can be determined from fig.5. A check of the serviceability of the shock-absorber can then be made by measuring

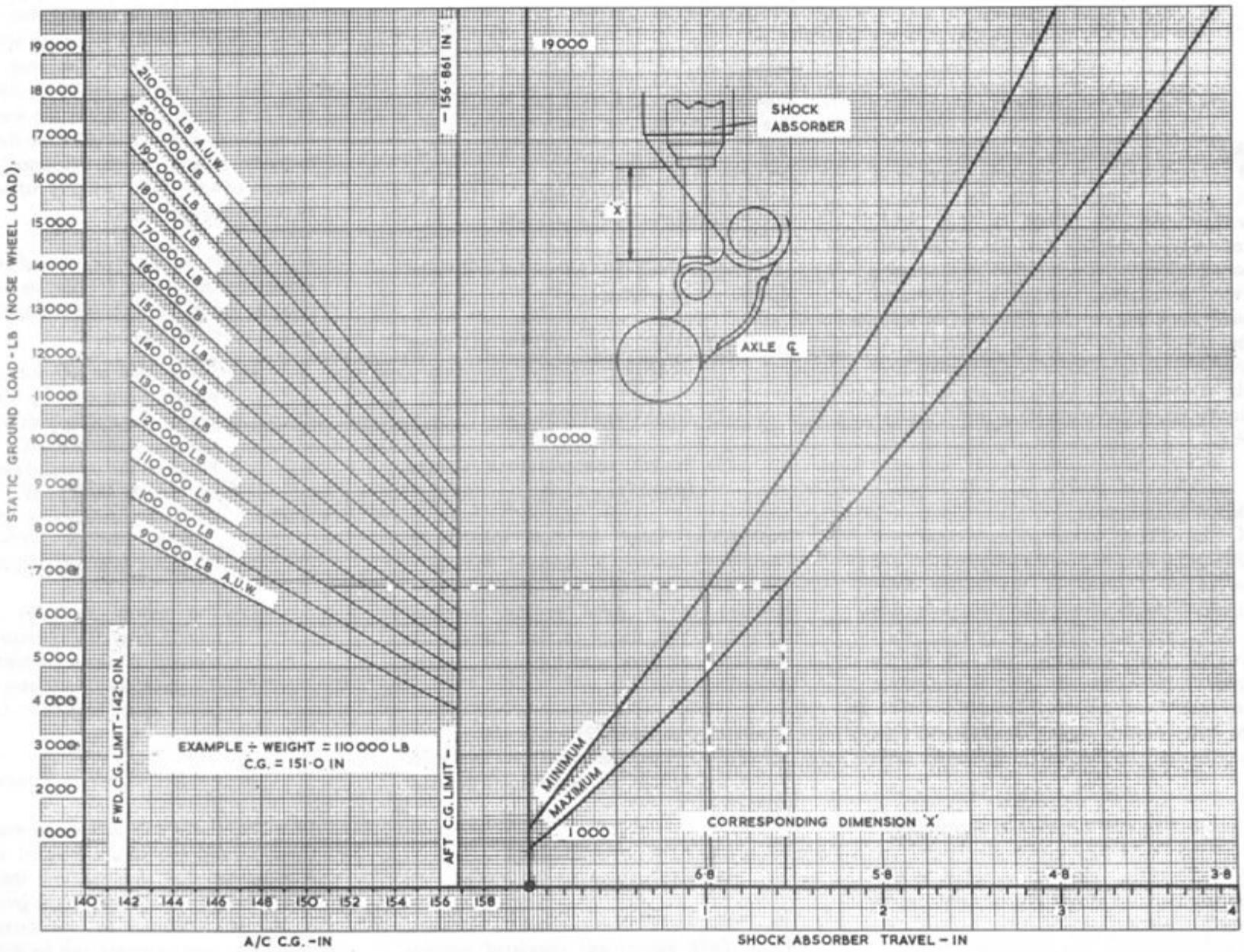


Fig. 5 Nose-wheel unit static load/deflection curves

the extension (dimension X, fig.5) and comparing it with the extension given for that particular nose-wheel loading. Alternatively it is necessary to jack the aircraft and check that the shock-absorber is correct in accordance with the instructions contained in Sect.3, Chap.5 of this Book.

AIR CHARGING

WARNING . . .
Fatal accidents have occurred owing to the mistaken use of cylinders containing oxygen, etc., when recharging air systems. It is emphasised that compressed air cylinders are painted light grey and cylinders of any other colour must not be used. (A.P.1464G, Vol.1, Part 2, Sect.5 refers).

General

20. When recharging compressed air systems, dry air from approved charging cylinders, i.e., Mk.7 Ref.No.71A/29 or other approved sources must be used.

21. The charging connections on this aircraft are standard ¼ in B.S.P. non-return inflation valves except where otherwise indicated, and the systems are recharged using a standard inflation adapter Ref.No. 4G/1050581. The method of charging high pressure air systems is detailed in A.P.1464G, Vol.1, Part 2, Sect.5.

Emergency air system

22. Two A58 Mk.2 inflation valves together with 0-4 000 lb/in^2 pressure gauges are provided on the aft bulkhead in the nose-wheel compartment to replenish the air storage cylinders for the emergency operation of the hydraulic system. The correct charge pressure is 3 000 lb/in^2.

Pneumatic system - entrance door

23. The two air storage cylinders of the pneumatic system are charged through separate A58 Mk.2 inflation valves located together with pressure gauges, one to each cylinder, on a panel mounted on the aft face of the rear pressure bulkhead in the nose-wheel bay. The correct charge pressure is 2 000 lb/in^2.

Pneumatic system - T4 bombsight

24. The air storage cylinder for the T4 bombsight system is charged through the valve used to charge the entrance door (close) system, and a pressure gauge, mounted on the lower portion of the charge panel indicates the system pressure. The correct charge pressure is 2 000 lb/in^2. Mod.2377 renders the system inoperable but connects the storage cylinder into the entrance door (close) system.

Pneumatic system - H2S scanner

25. The storage cylinder of the pneumatic system employed to pressurise the H2S scanner is charged through an A58 Mk.2 charging valve located, together with a pressure gauge, behind the emergency equipment panel on the port side of the nose section. The correct charge pressure 1 800 lb/in^2.

Pneumatic system - N.B.C.

26. On aircraft fitted with Mod.715, the pneumatic system installed to pressurise the N.B.C. equipment, is charged through the valve used for the H2S scanner system. A pressure gauge mounted on the charge panel adjacent to the charging valve indicates the pressure in the system. The correct charge pressure is 1 800 lb/in^2.

Engine rapid start

27. The two pneumatic systems installed for the engine rapid start facility (Mod.1320) are charged through separate connections, one on each side of the aircraft. Charge points with associated pressure gauges are revealed when the access panel, in the underside fairing between each pair of jet pipes, is removed. Each system is charged with dry air to 3 300 lb/in^2 from an approved source, i.e., in this case, 4 cylinders Ref.No. 71A/269 on a trolley Ref.No. 4GD/5888 equipped with a Mk.5 regulator Ref.No. 6D/2141.

Bogie trim jacks

28. The pressure in the bogie trim jacks may be checked using an inflation adapter Ref.No. 4G/1050581 fitted with a 0-600 lb/in^2 pressure gauge Ref.No. 4G/4420032 applied to the A.58 Mk.2 inflation valve located at the upper end of the main body casting, level with the selector valve. The correct charge pressure, off load, is 255 lb/in^2.

Tyre inflation

29. Tyre inflation pressures are given in A.P.101B-1902-5. The equipment to be used is the automatic tyre inflator Ref.No. 4G/1050542 and the tyre pressure gauge Ref.No. 4G/5874. The equipment caters for pressures up to 600 lb/in^2.

OXYGEN SYSTEM

30. The oxygen system charging valve Mk.10 Ref. No.6D/2313, a ¼ in dia. B.S.P. connecting

coupling, is mounted on the starboard side of the platform at the rear of the power compartment. Detailed information on the charging of, in situ, systems using an oxygen trolley is given in A.P.1275G, Vol.1. The trolley which carries an H.P. charging regulator Mk.1 or Mk.2 and several oxygen cylinders, is connected to the aircraft charging valve by a length of H.P. flexible tube, Mk.2 Ref. No. 6D/2058026 fitted with a swivel union nut, Type 31A Ref. No.6D/1082. Charging must be continued until, with the regulator stop valve closed, the L.P. gauge on the regulator indicates a pressure of 1 900 lb/in^2. This provides for the correct pressure of 1 800 lb/in^2 when the oxygen has cooled down.

DE-ICING SYSTEM – WINDOWS

◀ *NOTE . . .*
S.T.I./Vulcan/360 renders the de-icing system inoperable. The following information, therefore, is applicable only to aircraft in pre-S.T.I./Vulcan/360 condition. ▶

31. Access to the de-icing system fluid tank is through a hinged circular panel situated on the top surface of the nose section secured by a press-catch type fastener. Before replenishing the tank, CLOSE the pneumatic system main ground isolation cock which is mounted at the rear of the entrance door aperture and protected by a red-painted cover. After the shut-off cock is closed, open the access panel and release any pressure in the tank by pressing the Schrader-type valve in the centre of the filler cap. The screwed filler cap can then be removed and the tank replenished, using the fluid specified in Leading Particulars. Refit the filler cap when filling is complete and, finally, open the pneumatic system shut-off cock.

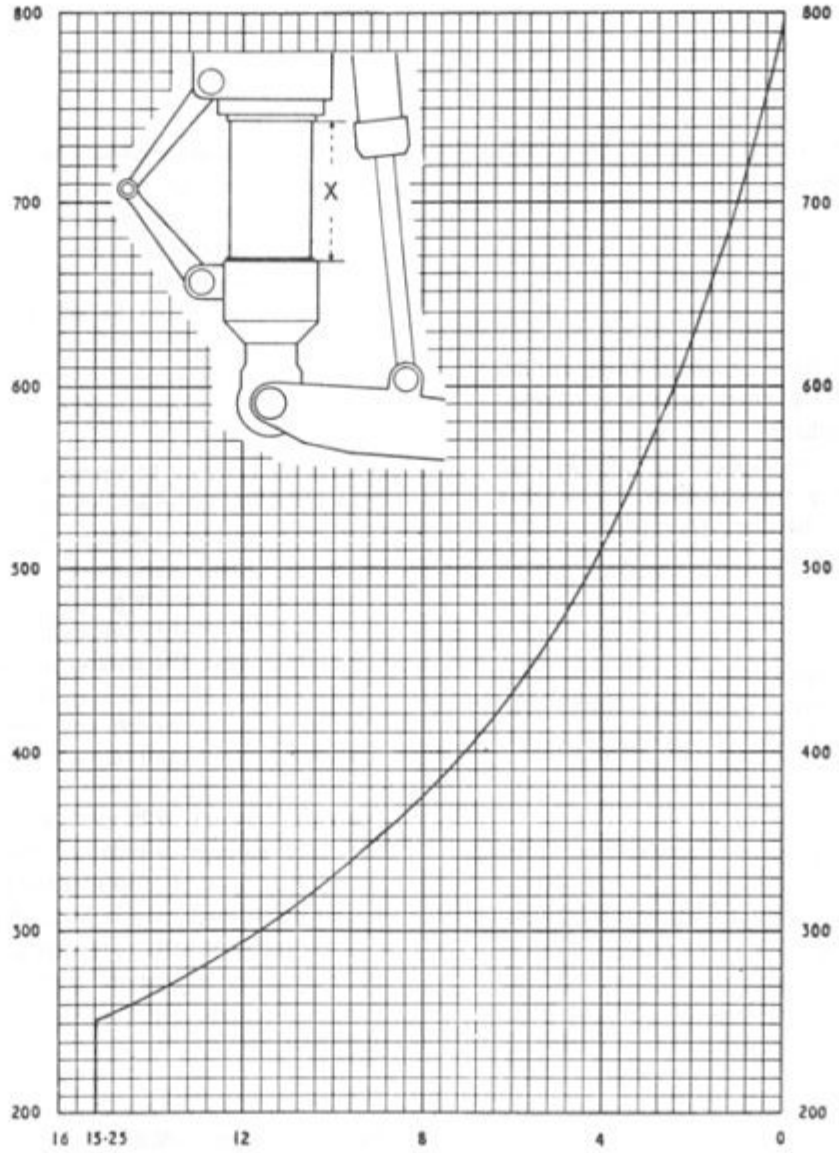
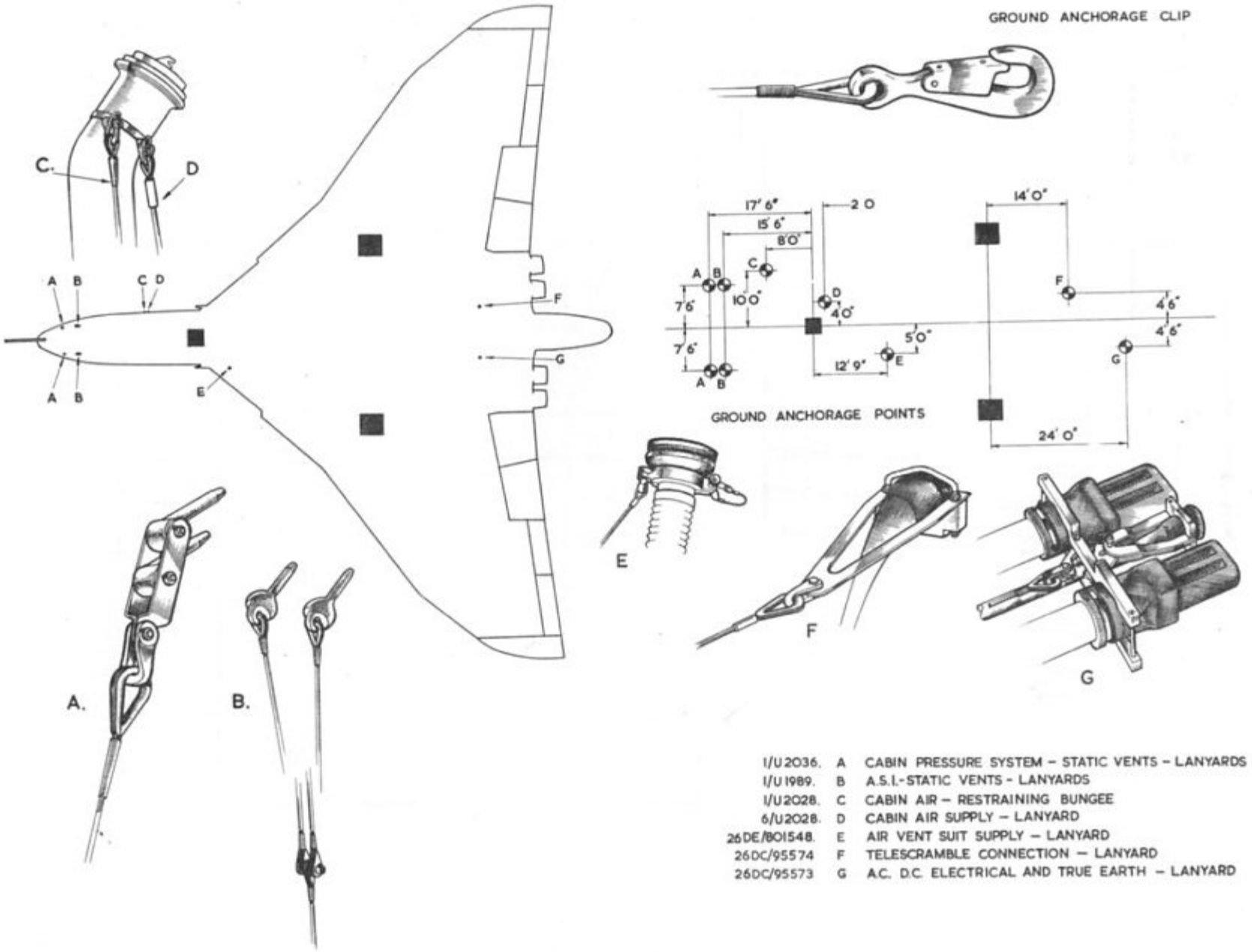


Fig.6 Bogie trim jack inflation graph



1/U2036.	A	CABIN PRESSURE SYSTEM – STATIC VENTS – LANYARDS
1/U1989.	B	A.S.I.-STATIC VENTS - LANYARDS
1/U2028.	C	CABIN AIR – RESTRAINING BUNGEE
6/U2028.	D	CABIN AIR SUPPLY – LANYARD
26DE/801548.	E	AIR VENT SUIT SUPPLY – LANYARD
26DC/95574	F	TELESCRAMBLE CONNECTION – LANYARD
26DC/95573	G	A.C. D.C. ELECTRICAL AND TRUE EARTH – LANYARD

Fig. 7. Lanyard attachment - quick-disconnect couplings

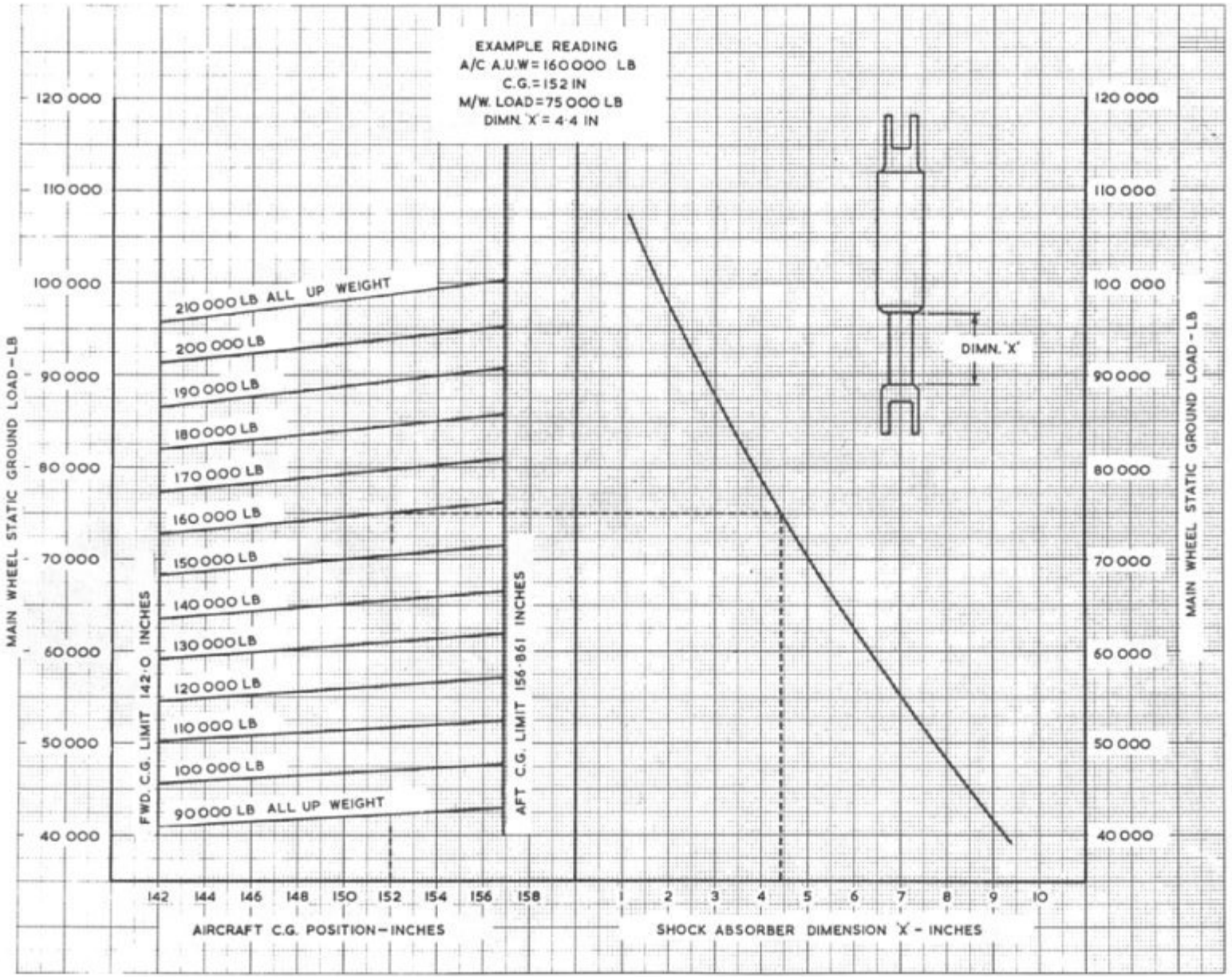


Fig. 8 Main-wheel unit static load / deflection curve

BOMB BAY CONDITIONING

32. A 5 in ground conditioning connection, fitted in the starboard inner bomb door, enables the bomb bay to be conditioned when the aircraft is on the ground and is carrying special stores. When not in use this connection is covered by a rectangular hinged door.

RADAR COOLING

33. To avoid overheating of components during ground running of the nose scanner, radar equipment, etc., cooling air is introduced through the ground servicing connection (fig.1(a)) and distributed in the radome via the cabin exhaust air system. This exhaust/cooling duct system and the 'in flight' cooling system for the radar equipment in the nose-wheel bay is shown in Sect.3, Chap.8, Fig.6 of this book.

REAR FUSELAGE EQUIPMENT

Nitrogen charging

34. *Rear warning unit, ARI 18076 and ARI 5874*

The two nitrogen storage cylinders which pressurise the rear warning scanner unit, the ARI 18076 aerials and the ARI 5874 aerial tuning unit are located in the rear fuselage forward of and above the scanner. The cylinders are charged from a point on a panel located under a removable louvre on the port underside of the rear fuselage, aft of the rear fuselage access doors. The panel consists of a charging valve and pressure gauge, the latter indicating the system pressure. The correct pressure when fully charged is 3 000 lb/in^2.

WARNING . . .

When charged ensure the locking plate, introduced by Mod.2321 (Sect.3, Chap.16), is fitted to the pressurisation panel line valve before flight or engine run. This ensures the supply of nitrogen is available to the ARI 18076, ARI 5874, the hydraulic reservoir and the emergency power pack (para.40) should the rear warning scanner unit be removed or isolated.

35. *ARI 18146*

The nitrogen storage cylinder which pressurises the ARI 18146 system is located on the starboard side of the rear fuselage between formers 472.5A and 487.5A. The pressurisation panel which is situated on the centre line of the aircraft and below the floor is accessible through an access panel in the underside of the rear fuselage. After closing the line valve (Sect.3, Chap.16 Fig.6A) the system is charged through the charging valve on former 461.5A to a pressure of 1 800 lb/in^2, the relief valve will release any excess pressure. After charging, the line valve is opened and the pressure gauge checked to ensure that a full charge of 1 800 lb/in^2 is maintained.

Water/glycol charging

36. The water/glycol reservoir, mounted on the starboard side of the rear fuselage, is charged through a valve located just inside the rear access door. A pressurised fluid replenishing can Part No.GM 4605 is required for charging. The charging valve incorporates an overflow connection through which fluid will flow should the reservoir be overfilled. The fluid level can be checked through a sighting glass located on the starboard side of the rear fuselage and marked GLYCOL RESERVOIR LEVEL. The reservoir is to be filled with coolant to the specification given in Sect.3, Chap.16.

Tail warning unit

37. To enable this unit to be cooled during ground functioning tests, a source of cooling air is connected to the air outlet in the underside of the rear fuselage. Access is through a circular panel in the fuselage skin and an air cooling trolley Ref.No.4F/2396 should be used.

Ground heating connection

38. In very cold conditions the equipment in the rear fuselage may be heated through a circular access panel located in the centre of the forward access door, using a non-toxic heater.

Cooling pack

39. For servicing details of the cooling pack refer to Sect.3, Chap.16.

HYDRAULIC SYSTEM RESERVOIR AND POWER PACK PRESSURISATION

40. On aircraft post Mod.2321 the hydraulic system reservoir and power pack fluid cylinder are pressurised with nitrogen tapped from the rear fuselage radar equipment supply fed from two cylinders located in the rear fuselage. No separate charging facility is provided for the hydraulic reservoir and power pack, the

cylinders being charged from the point described in para.34. On aircraft pre Mod.2321 the hydraulic reservoir and power pack are pressurised with engine air.

EARTHING POINT

41. Subsequent to Mod.1793, an aircraft-to-ground earthing point is provided for use during ground servicing. This earthing point, additional to the true earth connection in the rapid take-off system, is located on the face of the starboard longeron in the nose wheel bay.

MAIN-WHEEL SHOCK-ABSORBER

42. Provided the C.G. position and the aircraft All-Up Weight is known the static ground load on the main-wheel unit and the corresponding main-wheel unit shock-absorber extension can be determined from fig.8. A check of the serviceability of the shock-absorber can then be made by measuring the extension (dimension X, fig.8) and compare it with the extension given for that particular main-wheel unit loading. Charging of the main-wheel unit shock-absorber is given in A.P.1803V, Vol.1, Sect.3, Chap.4.