

Chapter 2 PREPARATION FOR FLIGHT
(Completely Revised)

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SAFETY PRECAUTIONS

1. Before running the engine, careful positioning of the aircraft in relation to other aircraft and to neighbouring buildings must be observed, as an unobstructed clearance for 100 yards should be maintained behind the jet pipe. It is important that the ground in the vicinity of the air-intakes is free from rags, paper, light pieces of wood, etc., since these may easily be sucked into the ducts, and that no person should approach within a distance of 4 yards of the intake ducts.

2. The air intake guards (Chap. 4, Table 1, Item F. 1. and F. 2.) are to be fitted whenever the engine is run for test purposes and it is not the intention to take off after running up. A check must be made to ensure that the gun heating pipe, between No. 14 and 15 combustion chambers, is not touching the H. T. lead securing nut on No. 14 combustion chamber igniter plug. If necessary, the pipe can be rotated so that it is well clear of the H. T. nut. When starting the engine, the electrical supply cable from the starter trolley must only be withdrawn

when a pre-arranged signal is received from the cabin. It is advisable to run the engine with the aircraft into wind, not as a consideration for performance, but as a safeguard in the event of a wet start and subsequent fire. After any failure to start, particularly after failure to light up and where fuel has drained to the ground beneath the engine, it is recommended that the aircraft be moved to a new location before attempting to re-start. The air-intake and jet pipe blanking plates (Chap. 4, Table 1, Item F. 3, F. 4 and F. 5) must be in position when-

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ever the engine is stationary.

NOTE...

All ground equipment referred to in this chapter is fully classified in the appropriate Tables in Chap. 4.

Refuelling

3. The position of the fuel filler caps is shown in Fig. 3. The tanks should be refuelled in the following order, using the special key spanner (Chap. 4, Table 2, Item 9) to unscrew the caps:-

- (1) Fuselage tank
- (2) Inner wing tanks
- (3) Outer wing tanks
- (4) Drop tanks (if fitted)

NOTE...

(1) The contents of the inner wing tanks should be re-checked after filling the outer wing tanks.

(2) The outer wing tank is shallow and care must be taken to ensure that the refuelling nozzle does not touch the bottom of the tank and thus damage the tank fabric.

4. Although a small quantity of water will not affect the running of the engine, it may, however, freeze and possibly restrict the fuel flow or even damage components; therefore the tanks should, where possible, be kept

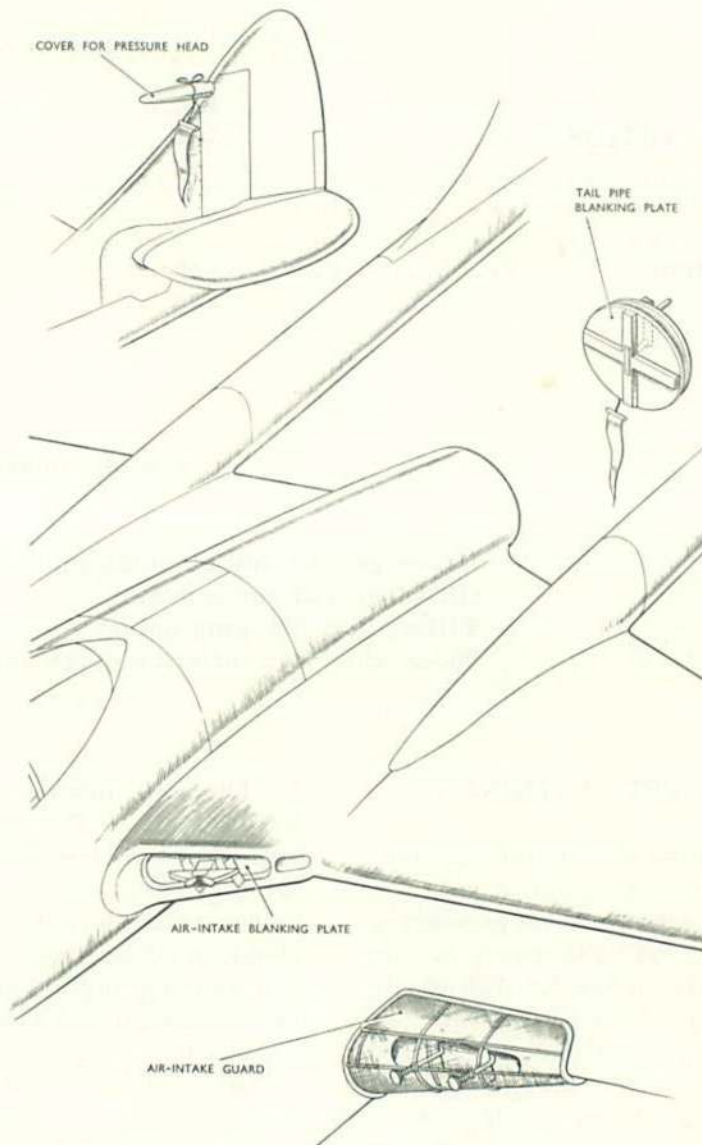


Fig. 1 Intake guards and blanking plates

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full in order to reduce the condensation of water to a minimum. By removing the small drain plugs from the elbow connections and from the immersed fuel pump at the base of the collector box, any water can be drained off. The filler cap sealing washers must be kept in good condition, especially those for the drop tanks since these must withstand the pressure venting which transfers the fuel from the drop tanks. Further details of the fuel system are contained in Sect. 4, Chap. 2.

Defuelling

5. The complete fuel contents, other than that in the drop tanks, must be drained from the low-pressure fuel filter on the lower port side of the engine bay (Fig. 3). The draining is effected by removing the base cover from the filter and turning the low-pressure fuel cock ON. The fuel flow may thus be controlled by the cock. The rate of drainage may be accelerated by the use of the immersed fuel booster pump.

6. The drop tanks are drained individually by removing the drain plug from the bottom of each tank (Fig. 3). When refitting the drain plugs, ensure that the sealing washers are in good condition as these must withstand the pressure venting of the tanks.

Oil system

7. The oil system is self-contained within the engine and is supplied from a small sump of $1\frac{1}{2}$ gal. capacity at the

bottom of the engine wheelcase. The positions of the filler cap and the dipstick are shown in Fig. 3. The dipstick must be removed in order to vent the system when filling. The oil should be poured in slowly and a few minutes allowed to elapse to enable the oil to settle before reading the dipstick. Details of the oil system will be found in A. P. 4121B and C, Vol. 1, Goblin Mk. 2 and 3 Aero-engine.

drain valve. After cleaning and refitting the filter element, the mating surfaces of the cover and sump must be cleaned and the joint remade with the approved jointing compound.

Hydraulic system

9. The positions of the filler for the fluid reservoir and the air charging connection for the accumulator are shown in Fig. 3. The charging con-

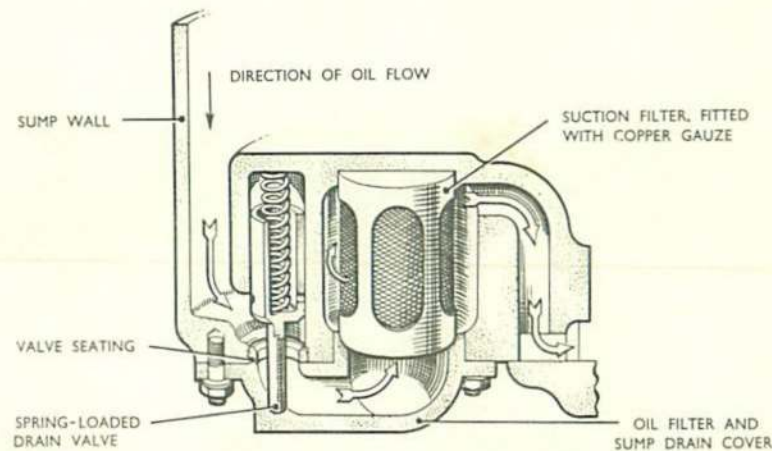


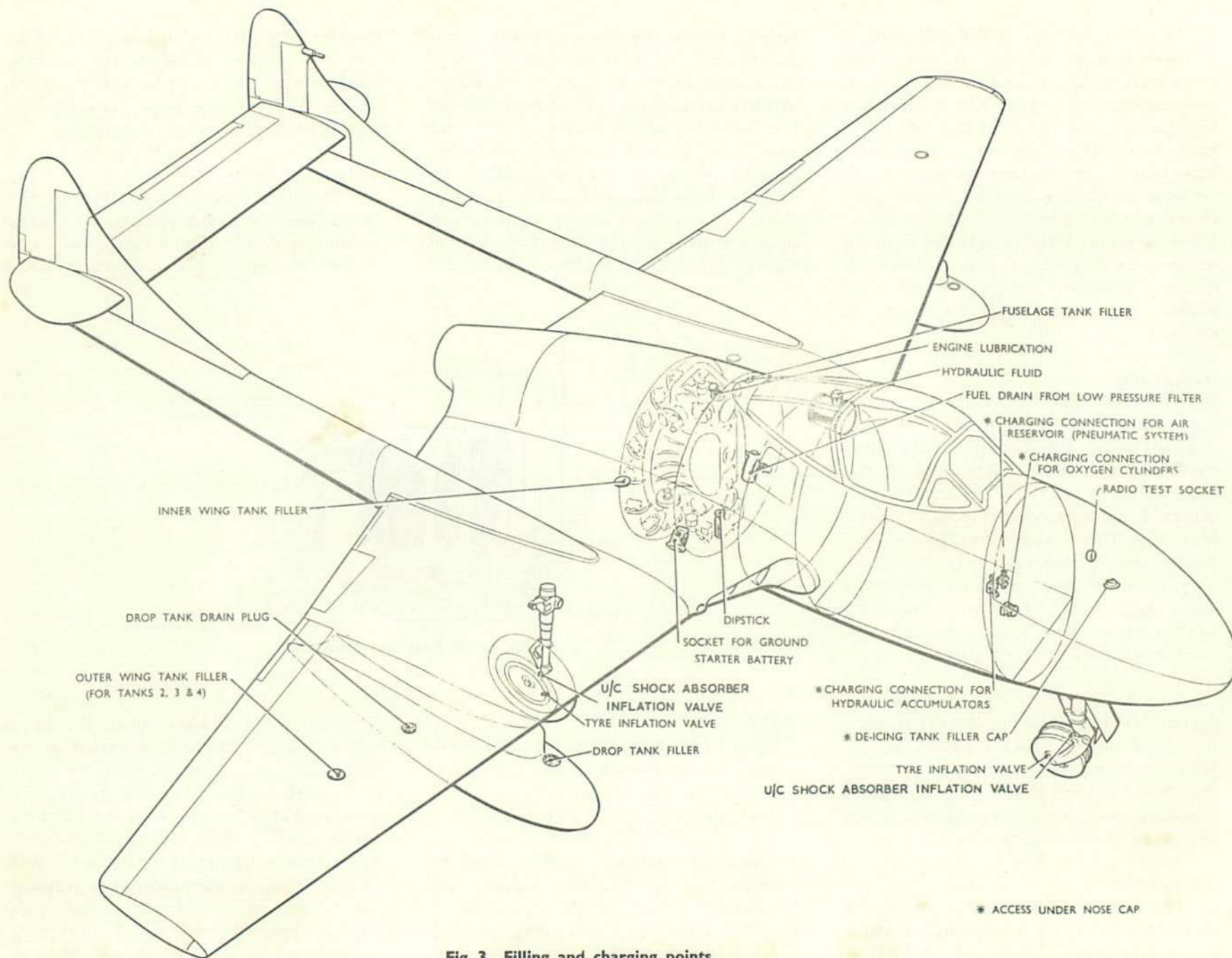
Fig. 2 Oil filter and sump drain

NOTE...

Avoid overfilling the oil sump as this would result in the accessory gears running submerged causing leakage and possible damage.

8. The oil system is drained by removing the sump drain cover from beneath the suction filter element on the starboard side of the engine (Fig. 2), and depressing the spring-loaded

nection is accessible when the nose cap is open. The specification of the hydraulic fluid, which differs from that used in the alighting gear compression legs, is given in the Leading Particulars. Full details of the procedures for filling the reservoir and charging the accumulator are given in Sect. 3, Chap. 6. Scrupulous cleanliness is essential during all servicing operations on the hydraulic system,



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Fig. 3 Filling and charging points

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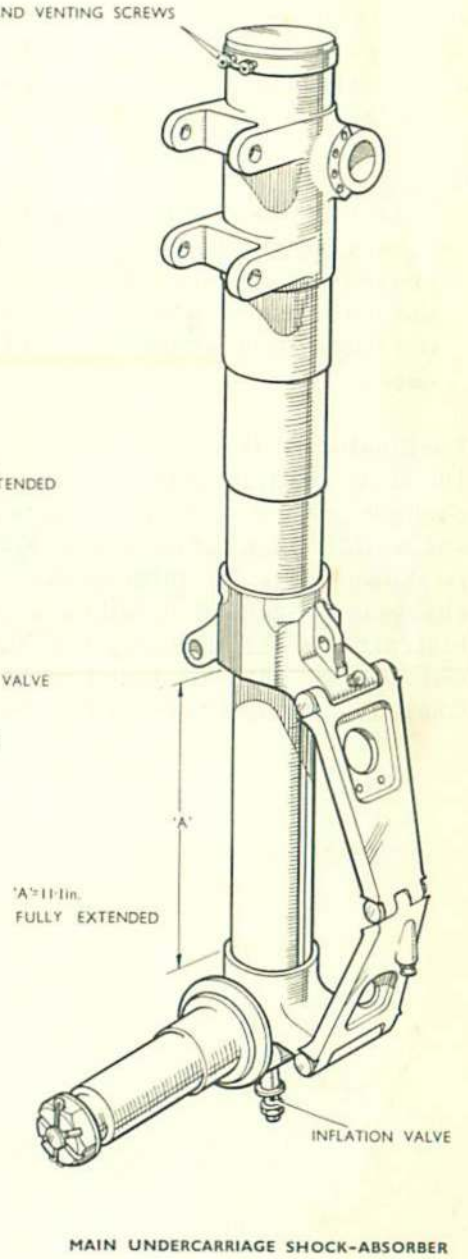
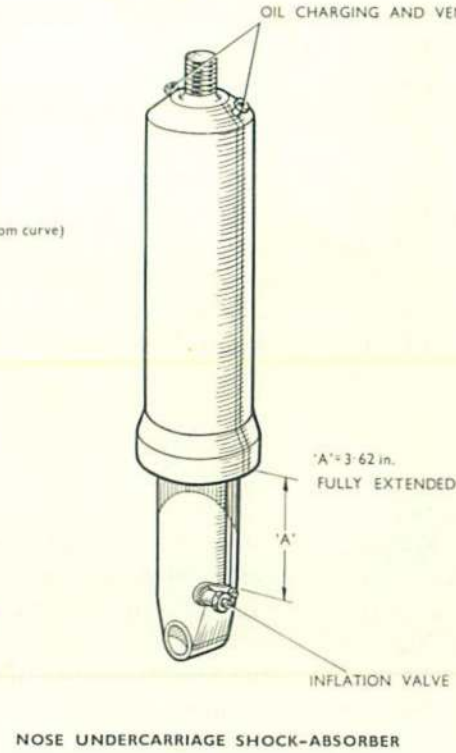
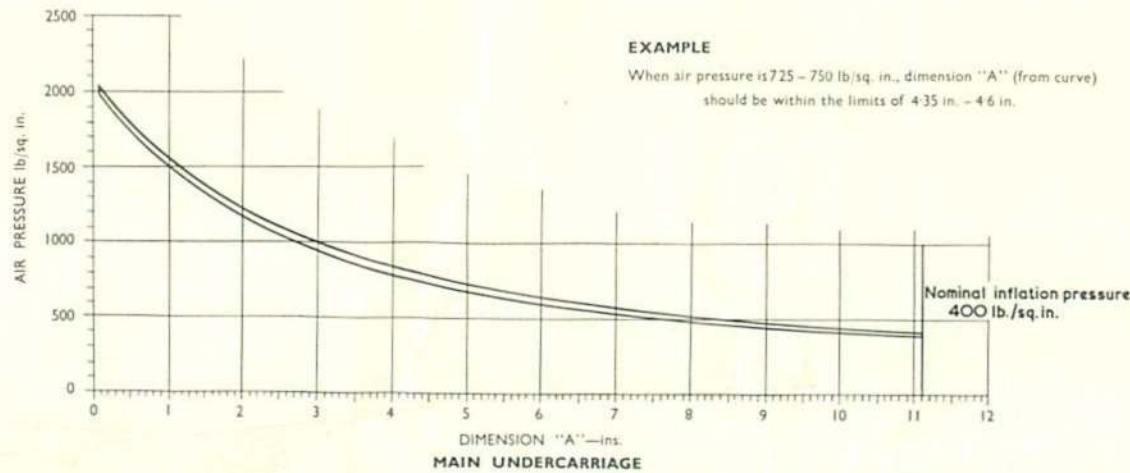
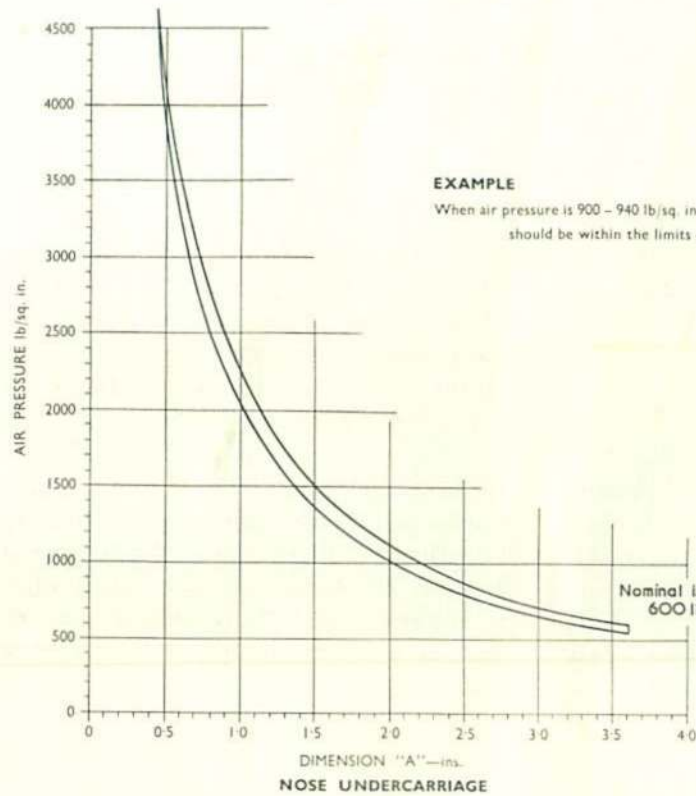


Fig. 4 Shock-absorber inflation diagrams

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and care must also be taken to avoid spilling the hydraulic fluid which has a deleterious effect on most aircraft materials.

NOTE...

It is important that the reservoir should only be filled after the fluid pressure has been released from the main accumulator and only when the filter is in position in the filler neck.

Pneumatic system

10. The position of the air charging connection for the air container, accessible when the nose cap is open, is shown in Fig. 3. Information on the charging procedure together with the instructions for draining the oil and water trap will be found in Sect. 3, Chap. 7. Access to the oil and water

trap is through the gun bay doors.

Oxygen system

11. The oxygen cylinders may be charged in-situ through the charging connection, (Fig. 3) access to which is gained by opening the nose cap. Care must be taken to avoid getting oil or grease in any of the components of this system. The installation is described in Sect. 3, Chap. 10.

Windscreen de-icing system

12. The small fluid container for the windscreen de-icing spray is located forward of bulkhead No. 1 and is accessible for refilling when the nose cap is open. Details of this system will be found in Sect. 3, Chap. 9, and the specification of the fluid to be used is given in the Leading Particulars.

Alighting gear

13. The location of the inflation valves for the main and nose undercarriage shock-absorbers is shown in Fig. 3, whilst the respective inflation pressures relative to aircraft loading are shown graphically in Fig. 4; thus the need to jack up the aircraft for routine pressure checks is eliminated. Ensure that the ground locking device is removed from the radius rod of each main undercarriage leg before flight. Red indicator flags are attached to these locks which are illustrated in Chap. 1 of this Section. Ensure that the wheel doors of the main undercarriage are in the open position. These doors are spring-loaded to both the open and closed positions and it is possible that they may be inadvertently left in the closed position.

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