Chapter 12 VACUUM SYSTEM

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LIST OF ILLUSTRATIONS

DESCRIPTION AND OPERATION

Introduction

1. A partial vacuum equal to approximately 4½ in. of mercury is applied to an artificial horizon and a turn and slip indicator on each pilot's flying instrument panel and to the low-level bombsight in the nose of the aircraft. When Mod.873 is embodied the vacuum is also applied to the bomb-sight computor. Provision is made to use the other of the two pumps of the system, in the event of failure of one of them, for operating the relevant flying instruments.

VACUUM PUMPS

2. In each inboard nacelle a vacuum pump, Type B3X Mk.2, is mounted on the accessories gearbox. At the suction inlet of each pump is a suction relief valve, Ref.No.37J/102. The outlet from each pump is piped to an oil separator, Type 218F/2, near the top of the forward face of the firewall, and the separated oil is piped into the accessories gearbox.

PIPING SYSTEM (fig.1)

3. The inlet pipe to each suction relief valve and pump is led inboard to the fuselage along the forward face of the front spar and thence to the flight engineer's panel. There they are coupled to two of the four unions at the rear of a change-over cock. From the remaining two unions of the cock, one pipe is led to the associated flying instruments on the pilot's panel. A small bore pipe branches from this pipe, forward of the engineer's panel, and is connected to a suction gauge above the change-over cock handle. The other pipe from the cock is connected to the low-level bomb-sighting head in the nose. When Mod.873 is embodied, a T-piece is fitted in the line between the cock and the sighting head, the branch from this T-piece leading to the computor of a No.1 bombsight installation.

CHANGE-OVER COCK

4. A semi-circular label, fitted to the panel over the handle of the cock, is inscribed EMERGENCY at the left-hand side and NORMAL at the right-hand side. When the handle is set at NORMAL, the port pump operates the bomb-sighting head; the starboard pump is connected to the flight instruments and the gauge indicates the suction developed by the latter pump. When the handle is turned to EMERGENCY in the event of the failure of the starboard pump or piping, the connections are reversed and the associated flight instruments are driven by the port pump.

SERVICING

PUMP AND RELIEF VALVE

5. Dismantling and servicing of the pump and suction relief valve are described in A.P.4303Z, Vol.1, Sect.9, Chap.2.

LEAKAGE TESTS

6. Leakage testing is carried out by disconnecting the pipes from the instruments and bombsight (and bombsight computor - post Mod.873) and blanking them off, before applying a test pressure of 10 p.s.i. and noting any leakage. Use a solution of soap and water, if necessary, to locate a leak and clean it off thoroughly after the leak has been rectified. Then re-connect the instruments and bombsight (and bombsight computor - post Mod.873).

REMOVAL AND ASSEMBLY

TESTING AND RE-ASSEMBLY OF COMPONENTS

7. When any component or pipe has been removed and subsequently replaced or refitted, leakage testing must be carried out as described under SERVICING.

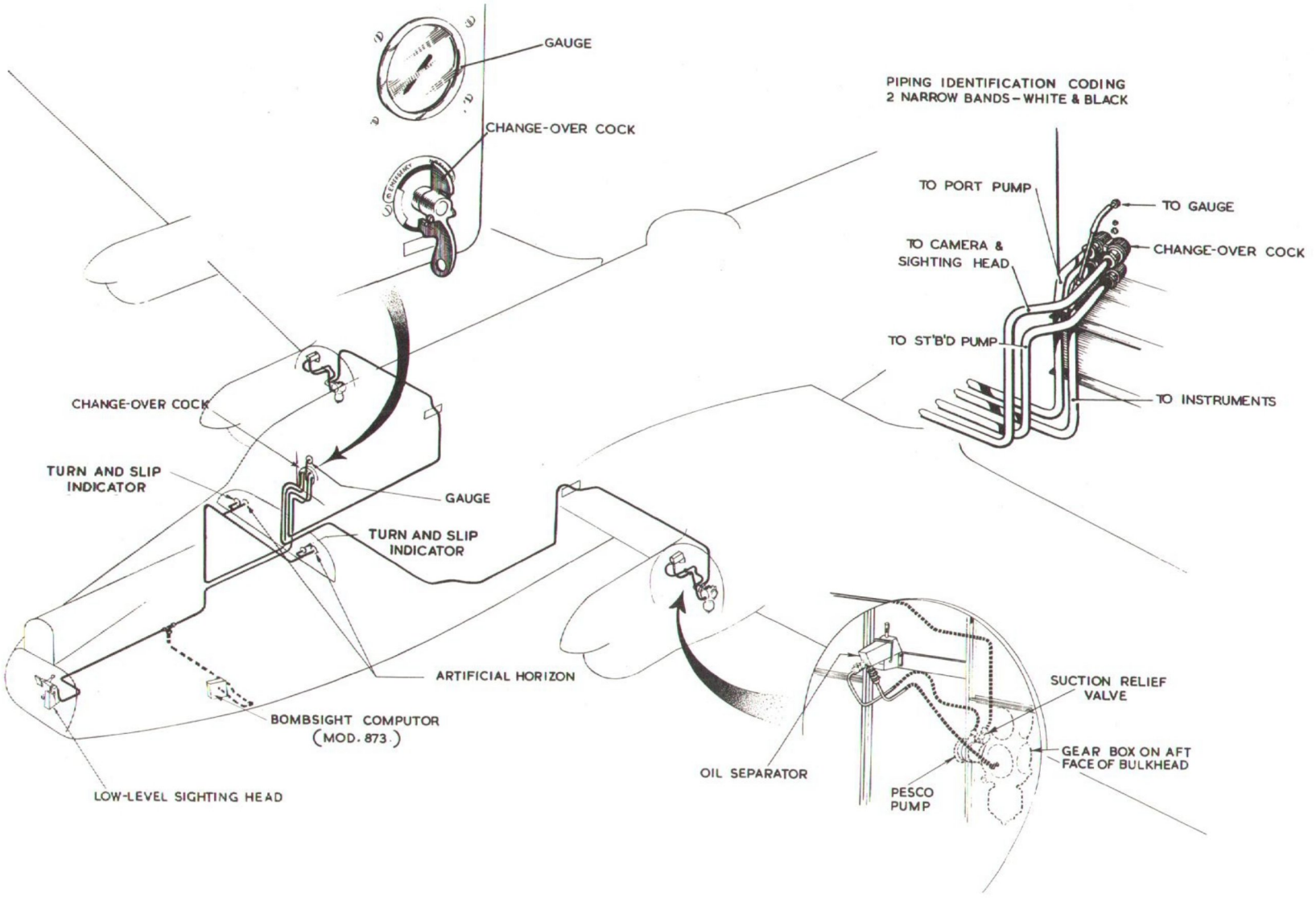

Fig. 1. Vacuum system

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