OLYMPUS

SECTION 20.

AIRCRAFT REFUELLING

Introduction

To avoid uneven fuel loading each tank is automatically filled with the same percentage of it's total capacity. The refuelling valves are closed by withdrawing the electrical supply from the refuelling valves The withdrawing mechanism is a moving coil relay. It's operation is as follows; An electrical load is fed to the relay from the stabilised voltage power pack, this load causes the moving coil to move away from the withdrawing contacts. The quantity of fuel in the tank produces an electrical load which is directed to the opposite side of the of the moving coil relay. This load pulls the withdrawing contacts together. Therefore when the load from the tank overcomes the load from the S.V.P.P. the refuelling valve will close.

REFUELLING PROCEDURE

1. Ensure safety precautions are observed. Some of these are:-
   a. Individual tank contents push switches must not be operated during refuelling.
   b. No. 1 and 2 tanks must be refuelled first.
   c. Refuelling pressure must not exceed 50. p.s.i. or at a rate of 150. g.p.m.
   d. Not more than one push button is to be operated at any one time during a fuel contents check.
   e. Electrical bonding to be carried out.
   f. Fire extinguishers required.

2. Four (4) men are required for this operation.
   a. Ensure all engine doors are closed.
   b. Ensure Jury struts are removed.
   c. Base chocks away from all wheels about one inch.
   d. N.C.O. i/c.(crew chief) applies 28 V. to power point at stbd. side of aircraft nose.
   e. Man A. in cockpit checks:-

      Flight refuelling master switch OFF.

      Nitrogen purge switch OFF

      C.of G. transfer switches CENTRAL and guarded.

      Fuel tank pressurisation switch OFF.

      Fuel tank contents and stows the panel, records contents.

   d. Man B. and C. attach hoses to refuelling points in each u/c bay. Also check that the A. coil master switches are ON and that the Bomb Bay tank refuelling master switch is OFF under the port refuelling panel.

   e. N.C.O. i/c. pulls down the refuelling control lever at the port refuelling point to energise the refuelling circuits.This is indicated by a white light coming on at the bottom of each refuelling panel.

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f. N.C.O. i/c. selects the required percentage on the S.V.P.P. after first operating selector over full scale to check for serviceability.

g. Man B and C put ON group master switches, then operate the start switch until the group lights and the lights of the first tank in each group are illuminated.

h. Commence refuelling. The men in the undercarriage bays and the man in the cockpit are to monitor the lights and the gauges.

i. As the first tanks(i.e. 1 and 2 tanks)in each group reach the required percentage and switch off, the group master switch for the particular group is to be switched OFF.

j. Man A carries out a fuel contents check on Nos. 1 and 2 tanks. He checks for correct percentage and that the increase in contents of Nos. 1 and 2 tanks agrees with the ammount delivered by the bowser.

k. Recommence refuelling by Man B and C switching on the group master switches and operating the start switches until the lights for Nos. 3 and 4 tanks are illuminated.

l. Continue refuelling, all the time Man A is moitoring the fuel contents gauges and the lights on the flight refuelling panel. Man B and C monitor the lights on the refuelling panels in each undercarriage bay. Checking that only one light at a time is illuminated in each group and that the lights illuminate in the correct sequence.

Note:- due to settling of the fuel during a fuel contents check, 1 and 2 tanks refuelling valves may be indicating open after reselection of the start switch. Correct this by operation of the appropriate override switch or commence refuelling to top up.

m. When the aircraft is filled to the correct level, all tank and group lights will be out and the group master switches will trip off. Stop pumping.

n. Set the refuelling control lever to off

o. Man A unstows the fuel console and carries out a fuel contents check

p. Disconnect the bowser and bonding. refit the blanking caps and close the refuelling doors.

Replace the Jury struts and wheel chocks.

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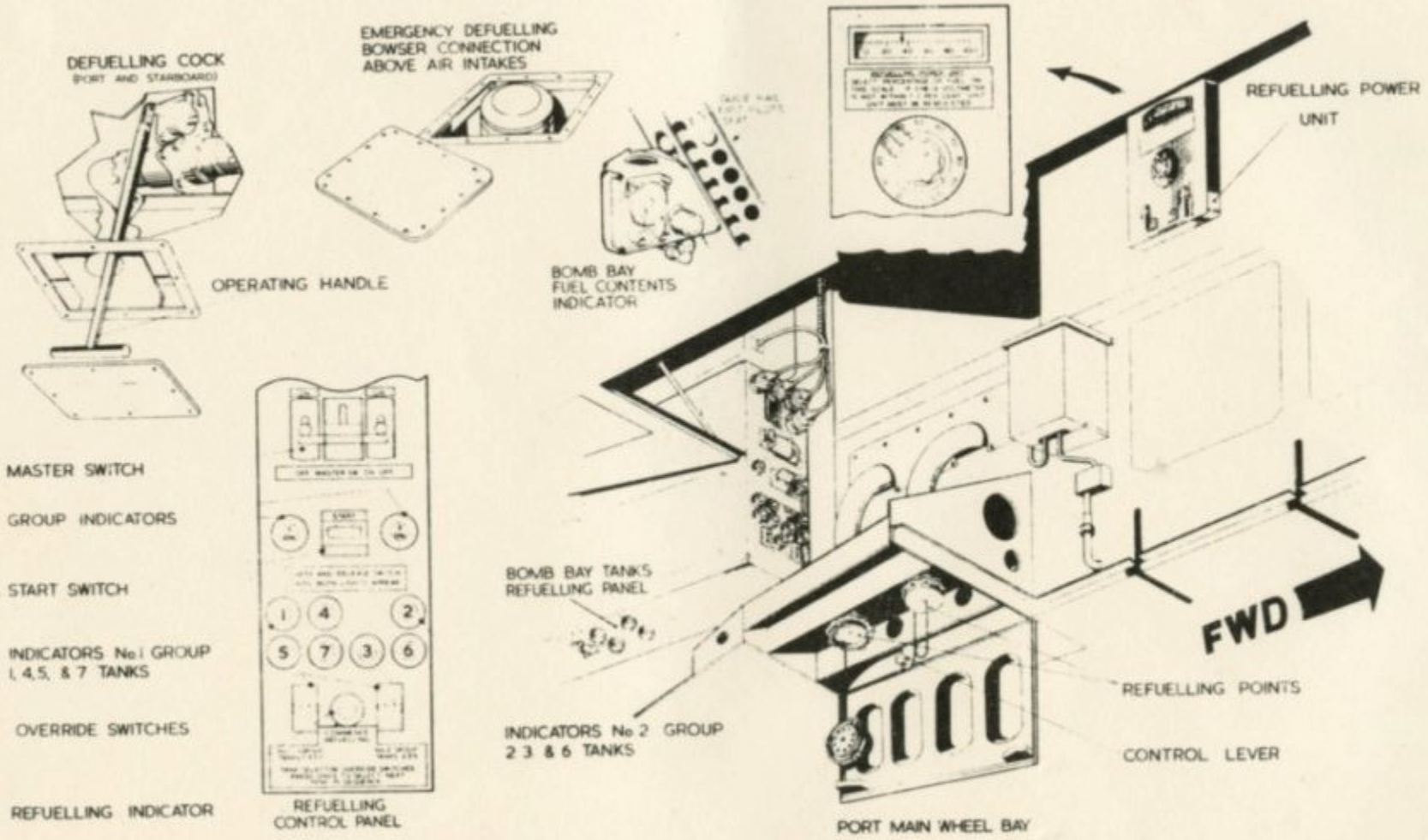
SECTION 20
REFUELLING

Bomb Bay Tanks

The refuelling master switch and four indicator lamps, are green and one red for each tank, are mounted on the base of the main system refuelling panel situated in the port main undercarriage bay. The green indicators register low level and the red high level. When the master switch is placed to the 'ON' position, an electrical supply is fed to the fuel level switches in each tank which, if the tanks are not full, will energise the refuelling valves to the OPEN position and illuminate all the indicator lamps. As the capacity of each tank reaches the full position, during refuelling, the low-level contact of the fuel level switch will open to de-energise one side of the refuelling valve to partially close the valve and extinguish the low-level indicator lamp. Fuel will continue to enter the tank at a reduced rate until the high level contact of the fuel level switch opens to de-energise the other half of the refuelling valve to completely close the valve and extinguish the high-level indicator lamp. The bomb bay tanks can only be refuelled from the refuelling point in the port main undercarriage bay. Care must be taken during refuelling bomb bay tanks to ensure that the rear tank does not fill at a faster rate than the front tank.

The bomb bay tank refuelling master switch MUST be put to the off position when refuelling is complete.

The main tanks must be refuelled before the bomb bay tanks.



GROUND REFUELLING (COMPONENTS)