

OLYMPUS 201 SERIES

SECTION 20

AIRCRAFT REFUELLING

Introduction

To avoid uneven fuel loading each tank is automatically filled with the same percentage of its total capacity. The refuelling valves are closed by withdrawing the electrical supply from the refuelling valves. The withdrawing mechanism is a moving coil relay. Its 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 moving coil relay. This load pulls the withdrawing contacts together. Therefore when the load from the tank overcomes the load from the SVPP 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 tank must be refuelled first.
  - c. Refuelling pressure must not exceed 50 PSI or at a rate of 150 gpm.
  - d. No more than one push switch is to be operated at any time.
  - e. Flight refuelling master switch - 'OFF'.
  - f. C of G Transfer switches - ensure central and guarded.
  - g. Nitrogen purge switch - 'OFF' and guarded.
  - h. Fuel control console - stowed.
  - j. Jury struts removed.
2. Request 28 volt electrical supply to be 'ON' (Stbd side nose at rear plug).
3. Check individual tank contents and record.
4. Remove blanking caps from refuelling points in Port and Starboard main wheel bays.
5. Earth refuelling vehicles to aircraft near to nose wheel.
6. Connect hoses to aircraft and secure bonding.
7. Operate power pack switch by pulling down refuelling control lever, next to port refuelling connections. This energises the stabilised voltage power pack. (SVPP)
8. Check that the SVPP is ready by a white light coming 'ON' at the base of the refuelling control panel.
9. Select on the SVPP selector the percentage of fuel load required. Check that the output from the SVPP agrees with the selection within plus or minus two percent.

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10. On each refuelling control panel, set the master switches to 'ON' and ensure that they hold in this position.
11. Operate start switches until group ready lights come on, 1 Grp and 2 Grp on Port Panel. 3 Grp and 4 Grp on Stbd Panel. Ensure that only 1 and 2 tank refuelling valves are indicating 'OPEN'.
12. Commence refuelling.
13. As 1 and 2 tanks in each group fill up to correct level, sequence selection changes over to next tank to be refuelled. Switch off group master switch as change occurs.
14. When 1 and 2 tanks on port and stbd sides are full, stop pumping, unstow fuel console, check contents of 1 and 2 tanks to ensure that they agree with percentage selected and that the fuel put in agrees with amount delivered by tanker. Restow Console.
15. Reset master switches, operate start switch until group ready lights come on. Ensure 3 and 4 tank refuelling valves are indicating open.  
NOTE:- due to settling of fuel during fuel contents check, 1 and 2 tanks refuelling valves may be indicating open. Correct this by operating appropriate override switch or commence refuelling to top up.
16. Commence refuelling.
17. Monitor tank sequencing. Check for correct sequencing, only one refuelling valve light in each group and any rapid change from one tank to next.
18. When a/c is filled to correct level, all tank and group lights will be out, master switches will trip off. Stop pumping.
19. Set Power Pack refuelling lever off.
20. Unstow fuel console, check tank contents and amount of fuel indicated received, agrees with amount delivered.
21. Disconnect bowser and bonding. Refit blanking caps and close refuelling doors.

BOMB BAY TANKS

(i) A double-level float switch is fitted in each tank. The bomb bay refuelling panel is in the port wheelbay and carries a master switch and low and high level indicator lights for each tank. With the master switch ON, the refuelling valves open and the indicator lights come on. When the tank is full, the lower float switch should close the refuelling valve and extinguish the green light; if this switch fails to operate, the higher level switch will perform the same function and extinguish the red indicator light, showing that the lower switch is unserviceable. The red light may later go out in addition to the green light on the first tank filled. This does not constitute a fault.

(ii) The main tanks must be refuelled before the bomb bay tanks.

(iii) The bomb bay refuelling master switch must be selected off when refuelling is complete.



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