

## ENGINE OIL SYSTEM SERVICING

### 1. General

- A. The oil system servicing provisions on the left and right engine are identical.
- B. The oil tank is an integral part of the intermediate case and is sealed at the rear by a cover which provides transfer tube pickup locations and internal passageways for pressure oil.
- C. The oil tank is provided with an oil filler neck, dipstick and cap assembly which can be mounted to either side of the intermediate case front flange. The oil level in the tank is equal to the level in the filler neck and is indicated by the dipstick. Access to the oil filler neck is through the oil access door, located forward and outboard on the upper engine cowling.

### 2. Oil Discoloration

- A. Some synthetic oils may change color in a few hours time. The phenomenon of change in color may generally be interpreted by structural changes in the antioxidant. The change in color is not harmful unless the color change is accompanied by oil sludge formation and viscosity or acidity increase.

### 3. Oil Consumption

- A. The maximum oil consumption rate specified for the engine is 0.5 pound per hour. Engine maintenance is required when oil consumption rate is surpassed. The oil consumption limit allows for some expected increase in service due to possible seal deterioration, high altitude operating environment, etc. Specific oil brands will have minor variations with respect to density. The approximate weight of turbine engine oil is: One U.S. Quart = 1.9 Pounds; One Imperial Quart = 2.3 Pounds This means that to exceed the field limit of 0.5 pounds per hour, oil consumption would have to be in excess of one U.S. quart every four hours or one imperial quart every 4.5 hours.

### 4. Engine Oil System

- A. Used Oil Handling Precautions.

**WARNING: PERSONS WHO HANDLE ENGINE OIL ARE ADVISED TO MINIMIZE SKIN CONTACT WITH USED OIL, AND PROMPTLY REMOVE ANY USED OIL FROM THEIR SKIN. A LABORATORY STUDY, WHILE NOT CONCLUSIVE, FOUND SUBSTANCES WHICH CAUSE CANCER IN HUMANS. THOROUGHLY WASH USED OIL OFF SKIN AS SOON AS POSSIBLE WITH SOAP AND WATER. DO NOT USE KEROSENE, THINNERS OR SOLVENTS TO REMOVE USED ENGINE OIL. IF WATERLESS HAND CLEANER IS USED, ALWAYS APPLY SKIN CREAM AFTER USING.**

- (1) It is essential that the following precautions be practiced.
  - (a) Follow good working practices that minimize the amount of skin exposed and the length of time used oil stays on skin.

- (b) Thoroughly wash used oil off skin as soon as possible with soap and water. A waterless hand cleaner can be used when soap and water are not available. Always apply skin cream after using waterless hand cleaner.
- (c) Wash oil-soaked clothing before wearing it again. Discard oil-soaked shoes.
- (d) Use gloves made from nitrile, Neoprene, Viton or other material that oil cannot penetrate.
- (e) Do not use kerosene, thinners or solvents to remove used engine oil. They remove the skin's natural protective oils and can cause dryness, irritation and possibly more serious toxic effects.
- (f) Do not overuse waterless hand cleaners, soaps or detergents. They can remove the skin's protective barrier oils.
- (g) Do not put oily rags in pockets or tuck them under a belt; this can cause continuous skin contact.
- (h) Do not pour used engine oil on the ground or down drains and sewers; it is a violation of Federal Law (Chapter 40 Code of Federal Regulations Section 110). EPA encourages collection of used motor oil at collection points in compliance with appropriate state and local ordinances.

**CAUTION: USE ONLY APPROVED JET ENGINE OIL WHEN SERVICING THE ENGINE OIL SYSTEM. REFER TO OIL SYSTEM REPLENISHMENT CHART. DO NOT MIX DIFFERENT OILS.**

#### B. Oil Level Check (Refer to Figure 301).

**NOTE:** Check oil level within 10 minutes after shutdown. A minute leak in the integral check valve will allow engine oil to run into the accessory gearbox. When this happens, oil stays in the engine but the oil level will appear low. By checking the oil level within 10 minutes after shutdown, a false reading can be avoided. If a low oil level is found in an engine that has been shut down for more than 10 minutes, it is advisable to motor the engine and recheck the oil level prior to adding oil to the system.

- (1) Open oil access door.
- (2) Unlock filler cap and withdraw attached dipstick.
- (3) Check oil level against marking on dipstick.

#### C. Add Oil.

- (1) Open oil access door.
- (2) Unlock filler cap and withdraw attached dipstick. Refill tank. Refer to Table 3., Engine Oil Replenishment, for approved oil.
- (3) If oil of the same brand (as tank contains) is unavailable, then another oil listed in the replenishment table may be intermixed, when the total quantity added does not exceed two U.S. quarts in any 400 hour period.
- (4) If more than two U.S. quarts of dissimilar oil brands have been intermixed in any 400 hour period, drain and flush oil system; refer to engine maintenance manual.
- (5) If oils of nonapproved brands or of different viscosities are intermixed, drain and flush oil system; refer to engine maintenance manual.

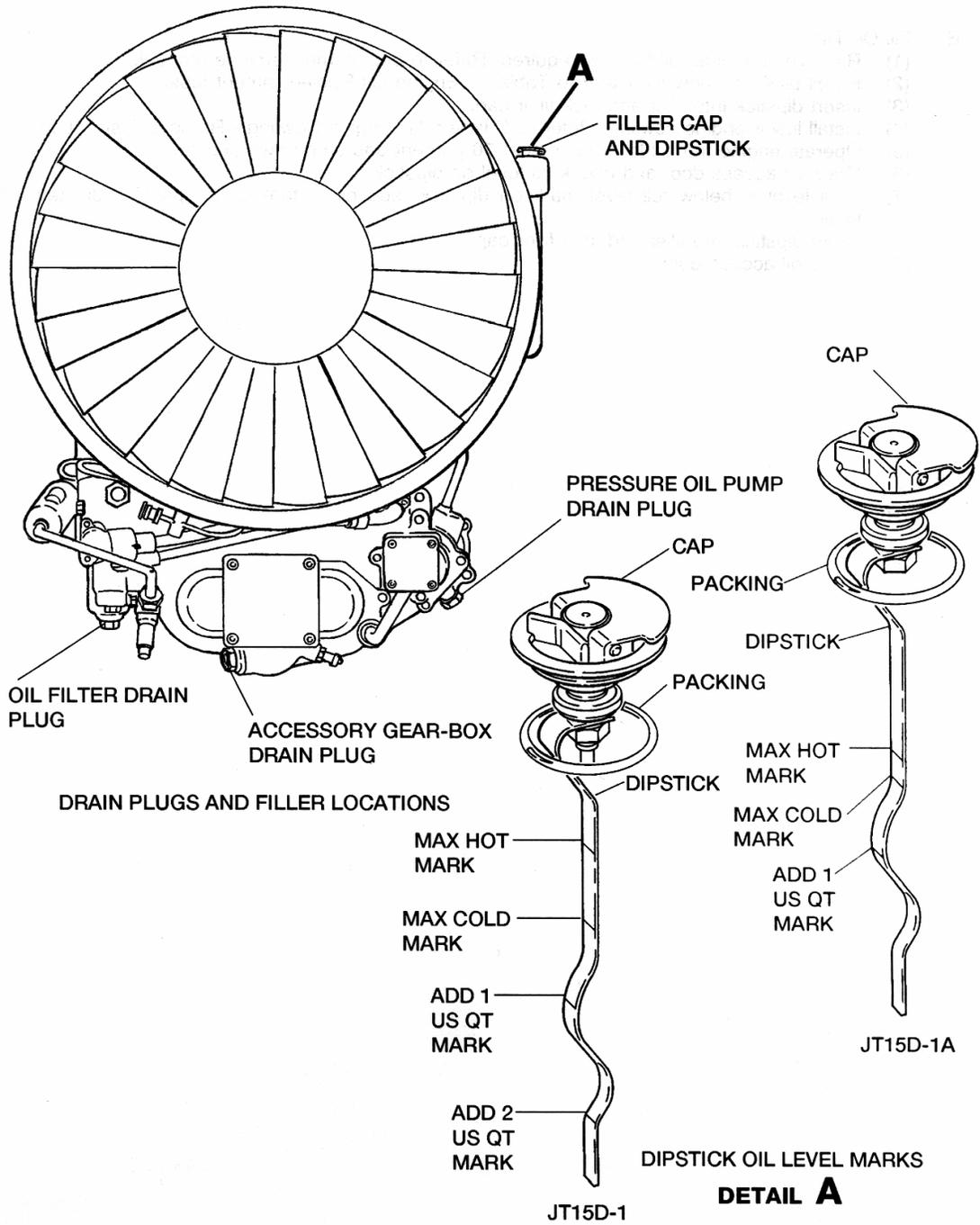
#### D. Drain Oil.

- (1) Oil draining should be accomplished as soon after engine shutdown as practical.

- (2)Open oil access door and remove filler cap and dipstick.
- (3)Remove lower engine cowling. Refer to Chapter 71, Engine Cowling - Removal/Installation. (4) Position drip-pan container under engine.
- (5)Remove drain plugs located on pressure oil pump body, oil filter cover and at bottom of accessory gearbox.
- (6)Allow system to drain completely.
- (7)Install new O-rings on drain plugs; install plugs in engine and tighten. Secure drain plugs with lockwire.

#### E. Fill Oil Tank.

- (1)Remove and clean oil filter as required. Refer to engine maintenance manual.
- (2)Fill oil tank with new oil. Refer to Table 3., Engine Oil Replenishment table.
- (3)Insert dipstick into filler and lock filler cap.
- (4)Install lower engine cowling. Refer to Chapter 71, Engine Cowling - Removal/Installation.
- (5)Operate engine from 2 to 3 minutes at 70 percent and shut down engine.
- (6)Open oil access door and check oil level on dipstick.
- (7) If oil level is below full level mark on dipstick, add oil to tank until dipstick indicates full level.
- (8)Insert dipstick into filler and lock filler cap.
- (9)Close oil access door.



Engine Oil System - Servicing  
Figure 301 (Sheet 1)