

DESCRIPTION AND MAINTENANCE INSTRUCTIONS
CLEANING INSTRUCTIONS
FOR REPAIRING, PACKING, SHIPPING AND STORAGE
OF AIRCRAFT REMOVABLE FUEL AND OIL CELLS

(This EO replaces EO 05-1-2AY dated 18 Aug 60)

PURPOSE

1 Fuel cells and containers improperly cleaned are a potential fire hazard and a menace to life, if the proper ratio of oxygen and fuel fumes are present within the cell or containers. However, cleaning in itself is not sufficient action to preserve the materials during handling shipping and storage, therefore certain inhibiting action is required. The purpose of this EO is to acquaint RCAF personnel with the safest, efficient and most economical practices in the handling of fuel cells.

GENERAL

2 To ensure the safety of all concerned with the handling of fuel cells and also to ensure that the maximum expected performance is received from these items the instructions in the ensuing paragraphs are mandatory.

CAUTION

The contents of EO 00-80-4/7 are to be read before proceeding with the instructions contained in this EO, and the safety precautions observed at all times.

METAL FUEL TANKS REMOVABLE

3 **CLEANING** - The following method is to be observed for cleaning non-integral metal fuel tanks prior to repair or returning to supply section.

- (a) A ground wire is to be attached securing the tank to a suitable grounding post.
- (b) The tank is to be completely drained by opening the drain fitting in the sump. All inspection covers are to be removed and the remaining fuel or oil drained through the openings. Residue which remains in the tank is to be removed by a suitable suction pump.
- (c) The tank is to be inverted, grounded and placed on suitable trestles in an area that will allow free circulation of air around the tank. The area selected should not be in the vicinity of other equipment which could ignite vapour escaping from the tank.
- (d) The tank is to be flushed with hot water admitted at the lowest possible point and allowed to overflow at the top, thus removing deposits of combustible material adhering to the inside of the tank. The tank will be flushed for the minimum period of three hours for fuel tanks and one hour for oil or alcohol tanks. These flushing instructions are not applicable to CF104 external and internal tanks.
- (e) CF104 metal tanks are to be cleaned/purged with varsol 3-GP-8 followed by forced air drying.

METAL FUEL TANKS REMOVABLE (Cont'd)

REPAIR

4 If repairs are to be accomplished at the unit the tank is to be steamed for a minimum period of 3 hours prior to welding or being subjected to an open flame.

CAUTION

Before steaming is carried out on CF104 metal tanks, remove all accessories subject to damage such as booster pumps, contents transmitters, level float valves and switches.

PACKING

5 Tanks are to be packed in the re-usable containers provided. If re-usable containers are not available suitable containers are to be manufactured and packing shall be in accordance with existing instructions CAP 16, Vol. 3.

SHIPPING

6 Prior to returning fuel tanks to the supply section it is the responsibility of the section returning to ensure the tanks have been properly cleaned in accordance with the paragraph 3(d) of this EO. CF104 metal tanks are to be cleaned as per paragraph 3(e). Marking and shipping of containers will be in accordance with CAP 16, Vol. 3.

STORAGE

7 When tanks are removed from the aircraft for storage they are to be placed in tank containers or provided with proper trestles. They are to be drained and cleaned as per paragraph 3. On completion of cleaning process the interior of the tank is to be sprayed with SAE 10W oil and all openings blanked off. Tanks should be stored in a well ventilated area away from any type of fire hazard such as electric motors, electrical control panels etc.

REMOVABLE RUBBER FUEL AND OIL CELLS - SELF SEALING AND NON-SELF SEALING CLEANING

8 Clean fuel and oil cells inside and outside to remove any oil or foreign substances. Cleaning may be accomplished by using a solution of soap paste (33C/684) and hot water not exceeding 200°F. After cleaning, remove all soap residue with clean hot water not to exceed 200°F. If the above is not available clean by hand using detergent 33C/667 mixed with warm water. Rinse with warm water.

REPAIRING

9 Clean as per paragraph 8 above. Repair instructions are contained in EO 05-1-3/14.

PACKING

10 Shall be in accordance with CAP 16, Vol. 3.

STORAGE

11 Provide adequate protected storage for non-metallic fuel cells, observing the following precautions.

- (a) Cells are of rubber and must not be exposed to direct sunlight.
- (b) Cells should be packed in special containers. Do not remove cells from containers except as required for inspection and installation.

STORAGE (Cont'd)

- (c) Stacking of containers is permissible but do not allow partial or complete collapse of the lower containers or cells.
- (d) Do not place cells, whether in or out of containers near heaters or hot pipes.
- (e) Whenever a rubber cell has been in service and filled with fuel, spray, paint or slush the interior surfaces of the cell with engine oil SAE 10W (34A/35) prior to storage and within ten days of the removal of fuel from the cell. Do not permit excessive amounts of oil to remain in the cell. Where repairs are required on a cell, accomplish prior to oiling. After initial oiling, re-oil interior surfaces of cells at intervals of two months. When the cells are to be put back into service, flush the oil out with cleaner (33C/182). After the first and each subsequent oiling, mark cells with a tag containing the following information: "Interior sprayed (or painted or slushed) with oil date".
- (f) When removing cells from storage for installation, use the oldest cells first.

SHIPPING

12 Prior to returning rubber fuel tanks to the supply section, it is the responsibility of the section returning to ensure:

- (a) The tank is cleaned as per para. 8.
- (b) The tank interior surfaces are sprayed with SAE 10W (34A/35) engine oil as detailed in para. 11(e). Marking and shipping of containers will be in accordance with CAP 16, Vol. 3.

REMOVABLE NYLON PLIOCEL FUEL CELLS

CLEANING

13 Clean nylon fuel cells by moistening a lint free cloth with methyl ethyl Ketone (33C/520) or acetone (33C/417). Either of these solvents will remove any residual matter left by the fuel.

REPAIRING

14 Clean as per para. 13 above. Repair instructions are contained in EO 05-1-3/14.

PACKING

15 Prior to packing fog the interior of the cell with a solution of equal parts of water and glycerine (14B/43). If spray equipment is not convenient, apply with a lint free cloth moistened in the solution.

STORAGE

16 If a nylon fuel cell is to remain without fuel for a period exceeding seven days, spray the interior as outlined in para. 15 above.

SHIPPING

17 Prior to returning nylon fuel cells to the supply section. it is the responsibility of the section returning to ensure:-

- (a) The tank is cleaned as per para. 13.
- (b) The tank interior surfaces are coated with the water and glycerin solution outlined in para. 15.
- (c) Marking and shipping of containers is in accordance with CAP 16, Vol. 3.

ISSUED ON AUTHORITY OF THE CHIEF OF THE AIR STAFF

Prepared by:
AMC/SAMO/CEng1