



UNITED STATES MARINE CORPS
MARINE CORPS AIR FACILITY
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AFO 10340.2C
AF 143-6
31 Jan 94

AIR FACILITY ORDER 10340.2C

From: Commanding Officer
To: Distribution List

Subj: STANDARD OPERATING PROCEDURES FOR REFUELING/DEFUELING OF
AIRCRAFT

Ref: (a) NAVAIR 00-80T-109

Encl: (1) Procedures for Refueling Aircraft
(2) Procedures for Defueling Aircraft
(3) Aircraft Defueling Certificate
(4) Emergency Fuel Spill Procedures

1. Purpose. To amplify the procedures contained in the reference and establish local instructions and procedures governing aircraft refueling and defueling.

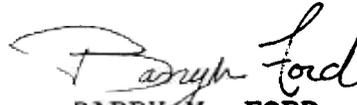
2. Cancellation. AFO 10340.2B and AFO 10340.6A.

3. Information

a. Enclosure (1) contains procedures to be followed for refueling of aircraft aboard the Air Facility. Enclosure (2) provides instructions for defueling of aircraft aboard the Air Facility. Enclosure (3) is a sample Aircraft Defueling Certificate. Enclosure (4) provides procedures to be followed in the event of a fuel spill.

b. The instructions provided in the enclosures are designed to ensure that the refueling/defueling operations are conducted in a safe manner, and must be strictly adhered to.

4. Action. All personnel involved in refueling/defueling of aircraft will be familiar with all applicable portions of this Order and will ensure strict compliance with the same.


BARRY M. FORD

DISTRIBUTION: B less AF 144-4
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PROCEDURES FOR REFUELING AIRCRAFT

1. Duties and Responsibilities

a. Refueler Operator Personnel. Refueling personnel are primarily responsible for the safety and performance of refueling and defueling.

Refueler operator duties are:

- (a) Spot the equipment
- (b) Ground and bond equipment and aircraft
- (c) Check the area for ignition sources.
- (d) Operate refueling equipment.
- (e) Control filling rate
- (f) Secure equipment upon completion

Refueler operator responsibilities are:

- (a) Reading meters
- (b) Completing necessary forms
- (c) Notifying CFR prior to defueling operations (if required).

b. Aircraft Personnel. Aircraft personnel shall be concerned primarily with the operations associated directly with the aircraft. Specifically, aircraft personnel shall be responsible for the safety and performance of all operations which require entrance into the aircraft or operation of aircraft equipment.

Aircraft personnel shall:

- (a) Ensure that all aircraft electrical and radar equipment is off (see paragraph 1b(2) below).
- (b) Ensure that the fuel delivered is that required for the aircraft.
- (c) Ensure that no repairs are conducted during refueling.

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(d) Ensure that the aircraft is grounded and bonded.

(2) The requirement that all electrical equipment is off covers those aircraft not equipped for pressure refueling. Pressure refueling requires that electrical current be available for testing the operation of the automatic fuel shut-off valves and gauging system during refueling operations. The operation of the aircraft electrical system is the responsibility of the aircraft crew chief or his representative.

2. Operating Procedures. These procedures assume that there are two refueler personnel for each refueler, in which case one refueler operator will be designated as the fuel operator and one as a nozzle operator. In the event that there is only one refueler operator available, the refueler operator shall be the fuel operator and a member of the aircraft crew shall perform the duties assigned to the nozzle operator. The use of an aircraft crew member to perform the duties of the nozzle operator does not relieve the aircraft crew of the responsibility for performing those other duties assigned to the aircraft crew by this Order.

a. Two-way radios will be turned off within 75 feet of the aircraft which is to be refueled.

b. The refueler will be parked as far away from the aircraft to be fueled as the hose will permit, and positioned parallel to or headed away from the aircraft with the driver's side toward the aircraft. There must be no obstructions in front of the refueler to prevent its being driven away from the aircraft in case of an emergency.

c. After parking the refueler, the fuel operator will set the handbrake, ensuring that it is fully applied, place the transmission in neutral, and turn off lights and any other non-essential electrical equipment. THE VEHICLE WILL NOT BE CHOCKED.

d. The fuel operator will check with the aircraft crew representative to ensure that the fuel in the refueler is the type required for the aircraft.

e. The fuel operator and nozzle operator shall check to ensure that no ignition sources are within a hundred feet of the aircraft, and that the refueler is at least 100 feet from any operating airborne radar equipment and 300 feet from operating ground radar equipment.

f. The fuel operator will sample the fuel and, if requested, will present the sample to the aircraft pilot or crew chief.

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g. Before beginning the refueling operation, the fuel operator shall check with the crew chief to ensure that all aircraft electrical equipment is turned off and that no repair work is being done on the aircraft.

h. The nozzle operator and fuel operator will check the aircraft and the refueling truck to ensure that both are grounded by bare metal contact the proper grounding receptacles (pad eye tie downs are not proper grounding points.)

i. The nozzle operator shall be certain that the aircraft and refueler have been properly grounded by connecting the refueler static cable to the aircraft.

j. After unloading and laying out the fuel hose, in evacuated condition, the nozzle operator shall be sure that the hose nozzle is brought in contact with some metal part of the plane remote from the fuel tanks to be certain that no differential in static exists.

k. ALL OF THE ABOVE STEPS SHALL BE TAKEN BEFORE THE AIRCRAFT FUEL TANKS ARE OPENED.

l. The nozzle operator shall bond the nozzle bonding wire to the aircraft and shall open the fill cap of only one aircraft fuel tank. This cap shall be replaced immediately after the tank is filled and before removing the cap of any other tank. An exception to this rule may be made for dual fueling equipment with necessary trained personnel available.

m. An aircraft crewmember will stand by at the refueling point while static clamps are being attached and while fueling is in operation. The crewmember will be equipped with a portable fire extinguisher, and a second fire extinguisher will be readily available.

n. The fuel operator shall first record the meter readings, and then open the emergency valve and all other valves as necessary. The fuel operator shall ensure that the automatic drain line valves are open.

o. At the signal of the nozzle operator at the aircraft, the fuel operator shall press the Deadman Control to begin refueling. The fuel operator will stand by the refueler truck during the entire refueling operation.

(1) If, during the refueling operation, the automatic water drain valve should open and eject water, the refueling operation shall stop. The refueler will be taken immediately to the refueler parking area for a complete investigation.

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(2) If, during the refueling operation, a leak is observed at the refueler truck or between the refueler truck and the aircraft, the refueling operation will immediately stop in order to remedy the condition.

p. The nozzle operator shall finish filling the tank, keeping the fuel nozzle in contact with the metal part of the plane at all times. The nozzle operator shall avoid filling the tank completely full, but shall leave the prescribed outage in each tank.

(1) The Deadman Control must always be controlled by hand so that the flow of the fuel may be instantly stopped when the hand pressure is released.

(2) The Deadman Control shall never be blocked open.

q. When the refueling operation is completed, all refueler equipment shall be secured and properly stored in the reverse order of the above steps, with the grounding wire being removed last.

ENCLOSURE (1)

PROCEDURES FOR DEFUELING AIRCRAFT

1. Information

a. From time to time, fuel handling personnel must remove fuel from aircraft. This defueling operation must be completed before major maintenance is performed on an aircraft, or in the event of the delivery of the wrong type or contaminated fuel.

b. The procedures and equipment used to defuel aircraft are very similar to those used for refueling operations; however, defueling equipment usually has the capability of removing the fuel faster than the aircraft can release it, requiring extreme caution in defueling in order to avoid damaging aircraft tanks.

c. The hazards involved in defueling are just as great as those involved in refueling. All personnel involved in defueling operations must be extremely safety conscious and strictly follow these procedures in order to avoid serious injury or property damage.

2. Requests for Defueling Aircraft

a. Before responding to a request for defueling, the fuel service dispatcher will complete the Aircraft Defueling Certificate (Enclosure (3)) with the following information (obtained from the requester):

Aircraft Bureau Number.

Reason for the defueling.

(3) Whether or not, from a fuel standpoint, the aircraft could be released for flight.

(4) Whether or not the fuel onboard contains dye.

(5) The estimated number of gallons to be removed from the aircraft.

(6) Authorizing official (must appear on a predetermined list on file with the Headquarters Squadron Accounting Section and Fuel Delivery Section).

b. The fuel operator will obtain the signature of the authorizing person at the scene of the aircraft prior to commencement of defueling operations.

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3. General Information

a. The procedures outlined in this enclosure will be strictly followed when defueling aircraft. These procedures assume that there will be two operating personnel for each defueler, one designated as the operator and the other as the assistant operator.

b. In the event there is only one person available, that person shall be the defueler operator and one member of the aircraft crew shall perform the duties of the assistant operator. The use of an aircraft crew member to perform the duties of assistant operator does not relieve the aircraft crew of the responsibility for performing those their duties assigned to aircraft personnel in this Order.

c. An aircraft crew member equipped with a Halon fire extinguisher will stand by during the entire defueling operation, with a second fire extinguisher readily available.

d. The designated defueler will never be used to refuel aircraft or to transfer fuel to a refueler.

e. Crash/Fire/Rescue will be notified prior to defueling any aircraft.

4. Defueling Procedures

a. Prior to any aircraft defueling operation, a fuel sample will be drawn from the aircraft and thoroughly tested for water and/or sediment contamination. When deemed that the fuel in the aircraft is clean, the defueling operation will commence, using the appropriate defueling vehicle. For clean fuel which is suitable for reissue, the defueler kit attached to the 5000 gallon refuelers will be used for defueling. Contaminated fuel, dyed fuel, AVGAS and all unknown product defuelings will be accomplished with the designated defueler truck.

b. Defueling of all aircraft will be accomplished on the southwest portion of the aircraft parking ramp, west of Taxiway 3 on the Compass Rose, and the same safety regulations as required for refueling aircraft from trucks will be followed. If it is absolutely necessary to defuel an aircraft within the hangar, defueler personnel must obtain permission from the Commanding Officer, Marine Corps Air Facility, the main hangar doors will be opened, and all shop doors leading into the hangar will be closed. The defueler operator should be certain that the aircraft is located away from all possible ignition sources; if not, defueling must be delayed until the aircraft is moved or the ignition sources are eliminated.

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c. The following steps must be completed prior to opening any aircraft or defueler tanks. Extreme caution shall be taken to ensure that the nozzle tube does not damage the aircraft tank bottom.

(1) The operator shall park the defueler as far from the aircraft as possible, parallel to or headed away from the aircraft, and positioned so that it may be quickly moved in the event of a fire. There must be no obstructions in front of the defueler to prevent its being driven away in an emergency, and the wheels will be turned away from the direction of any other aircraft.

(2) After parking the defueler, the operator will set the hand brake, ensuring that it is fully applied, ensure that the transmission is in neutral, and turn off all lights and electrical equipment. THE VEHICLE WILL NOT BE CHOCKED.

(3) The operator will check with the aircraft crew representative to ensure that all aircraft electrical equipment is turned off and that no repair work is being done on the aircraft.

(4) The operator shall recheck the area to ensure that no ignition sources are within 100 feet of the aircraft, and will then prepare the defueler for operation.

(5) The assistant operator shall be certain that the aircraft and defueler have been properly grounded by connecting the bonding cable attachment on the defueler truck to a bare metallic part of the aircraft landing gear.

(6) To be certain that no static differential exists, the assistant operator shall bring the suction hose nozzle in contact with some metal part of the aircraft. The nozzle bonding wire shall also be connected to the aircraft.

d. After the above steps are completed, the assistant operator will remove the fill cap of the first aircraft fuel tank compartment. This cap will be replaced immediately after the fuel has been removed and before removing the cap of any other tank.

e. The defueling operation will begin on the signal of the assistant operator, who will remain near the aircraft fuel tank during the entire operation.

f. The assistant operator will watch the unloading operation at all times and will signal the defueler operator to stop the operation when the tank is empty.

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g. Final draining of liquid remaining in the aircraft fuel tanks shall be accomplished with hose connected from the tank drain into grounded and vented drains or containers. It is imperative that all tank fill caps be replaced before any of the grounding or bonding wires are removed. After all of the aircraft fuel tanks have been emptied, the assistant operator shall disconnect the nozzle bonding wire from the aircraft, then disconnect the bonding cable attachment of the defueler truck from the landing gear of the aircraft and the ground.

h. When the operation is completed, the operator and assistant operator will replace all equipment and secure the operation.

5. Responsibility of Aircraft Personnel. Aircraft personnel will be concerned primarily with the operations associated directly with the aircraft. They shall ensure that all aircraft electrical and radar equipment is off, that no repairs are conducted during defueling and that the aircraft is grounded and bonded. Specifically, aircraft personnel are responsible for:

a. The safety and performance of all operations which require entrance into aircraft or operation of aircraft equipment.

b. Standing by during the entire operation with a Halon portable fire extinguisher, with a second extinguisher nearby use in the event of an emergency.

c. Performance of the assistant operator duties described above when the defueler crew consists of one individual.

ENCLOSURE 2)

AIRCRAFT DEFUELING CERTIFICATE

AIRCRAFT DEFUELING CERTIFICATE		
PART I [to be completed by person authorizing the defuel operation (person's name shall be on file with the fuel officer).]		
I CERTIFY THAT THE AVGAS/TURBINE FUEL (cross out one) TO BE DEFUELED FROM AIRCRAFT NUMBER _____:		
<input type="checkbox"/>	WOULD NOT PREVENT THE RELEASING OF THIS AIRCRAFT FOR FLIGHT.	
<input type="checkbox"/>	IS SUSPECT OF CONTAMINATION WITH _____	
<input type="checkbox"/>	CONTAINS DYE BUT WOULD NOT PREVENT THE RELEASING OF THIS AIRCRAFT FOR FLIGHT. REISSUE DYED FUEL TO AIRCRAFT NUMBERS _____ AND _____.	
THE ESTIMATED GALLONS TO BE DEFUELED ARE: _____		
THE REASON FOR DEFUELING IS: _____		

_____	_____	_____
Signature	Title	Date
PART II [to be completed by operator after completion of defueling operation.]		
METER READING: _____		
VOLUME OF FUEL REMOVED FROM AIRCRAFT: _____		

_____	_____	_____
Signature	Title	Date

ENCLOSURE (3)

EMERGENCY FUEL SPILL PROCEDURES

1. The duty refueler is responsible for initial response to a fuel spill aboard the Air Facility, and will coordinate his/her efforts through the Air Facility Crash Fire Rescue section (CFR) and the MCCDC fire department. The following steps are to be followed:

a. The duty refueler will shut down all refueling/defueling operations and contain the spill as much as possible, ensuring that all water drains in the immediate area are covered and that the source of the fuel spill is secured.

b. The duty refueler will notify CFR via radio immediately, and notify the Aircraft Refueling Officer and the Hazardous Materials Officer as soon as feasible.

c. If there is a large spill or fuel goes down a drain, the Air Facility Hazardous Materials Officer will notify MCCDC officials.

2. The HMX-1 White side refueler shall follow the above steps. In addition, the refueler will notify the HMX-1 Hazardous Materials Officer.

3. A detailed emergency spill control plan is located in each refueler and defueler truck.