TO 00-25-172CL-4

FORMERLY TO 36A12-13-1-131CL-1

CHECKLIST

AIRCRAFT SERVICING WITH USAF R-5, R-9, AND R-11 FUEL SERVICING VEHICLES

(ATOS)

BASIC AND ALL CHANGES HAVE BEEN MERGED
TO MAKE THIS A COMPLETE PUBLICATION

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INTRODUCTION

1-1. INTRODUCTION

This checklist is a step by step guide in abbreviated form for use as a reference to ensure accomplishment of selected tasks by a predetermined sequence procedure. The intent of this checklist is to eliminate the probability of omission of a step in accomplishment of the intended task. The procedures contained herein are presented for use by qualified personnel and are not intended to provide full technical instructions. This checklist provides sequenced procedures for servicing aircraft using USAF fuel servicing vehicles. These instructions will be used by refueling unit operators as an aid to safe and efficient aircraft servicing.

1-2. EMERGENCY SHUTDOWN PROCEDURES

During aircraft servicing, the refueling unit operator will monitor the refueler for fuel leaks, ignition sources and other indications of a possible malfunction. In the event of an emergency, shutdown the unit as follows:

a. Release deadman control.

b. Push engine auxiliary throttle control all the way in.

c. Turn off emergency switch.

d. Close hose reel shut off valve.

e. Close main tank emergency shut off valve.

f. Notify aircraft servicing supervisor, operations expediter and Resource Control Center (RCC), if possible.

g. Evacuate area if instructed by servicing supervisor or fire department personnel.

NOTE

In case of fuel spill other than normal aircraft venting, do not evacuate fuel servicing vehicle until area is declared safe by fire department personnel.

1-3. HAND SIGNALS

a. OK or Transfer Fuel: Hand raised thumb up.

b. Negative or Malfunction or Not Clear: Hand raised - thumb down.

c. Stop or Cut Engine/Power: Movement of either hand across throat.

SECTION II
AIRCRAFT SERVICING

2-1. GENERAL PROCEDURES

a. Stop 25 or more feet from aircraft.

b. Approach upon direction of servicing crew member.

c. Preposition wheel chock and use a spotter when backing toward aircraft.

d. Position vehicle for servicing.

e. Set parking brake, transmission and PTO as required.

f. Shut off radio, if defueling.

g. Chock the unit.

h. Deleted.

i. Bond fuel servicing vehicle to aircraft.

j. Unlock control panel and clear meters, if applicable.

k. Get verification of proper fuel grade, if applicable.

NOTE

Meter rotation with the hose reel valves closed and the selector lever in any mode other than DEFUEL or EVACUATION, indicates a defective defuel control valve. This condition must be reported immediately and the refueler withdrawn from service until the condition is corrected.

WARNING

If movement of the vehicle is indicated when the auxiliary throttle is pulled out, shut down unit by pushing the throttle "in" and placing the emergency switch to "OFF" position.

l. Prepare vehicle for appropriate servicing operation.

WARNING

Servicing crew member shall use no more than one aircraft transfer/booster pump when defueling aircraft with Kovatch R-11 and Oshkosh R-11 fuel servicing vehicles. Failure to follow this guidance may result in overfilling the vehicle cargo tank.

CAUTION

During defueling with Condiesel (1981) R-9, Kovatch R-9, and Oshkosh R-11 (not equipped with the electronically controlled high level shutoff system) fuel servicing vehicles, verify via precheck/pretest that the high level shutoff is operational. For Kovatch R-11 and Oshkosh R-11 (equipped with the electronically controlled high level shutoff system) fuel servicing vehicles, observe that the cargo tank sensor green light is illuminated. For other fuel servicing vehicles, make sure an individual is on top of the vehicle cargo tank to prevent overfill.

NOTE

Defueling in the evacuation mode is not permitted because the fuel is not filtered.

m. Extend hose. Ensure the servicing crew member connects the SPR nozzle to the aircraft, checks that the strainer coupling quick disconnect locking device is properly seated and nozzle is in secure position.

n. Begin pumping operation upon direction of the servicing crew member. Ensure deadman control is activated.

o. Closely monitor control panel during operation.

CAUTION

The pump will cavitate when the fuel level in the tank is reduced to approximately 500 gallons. Attempting to pump fuel beyond this point will eliminate the pump prime, prevent hose evacuation and may result in overheating/damage of the pump seal. Shut down the pump immediately when the pump tempo increases indicating a loss of pump prime.

p. Record differential pressure reading if required.

q. Upon completion of fuel servicing operation, stow fuel servicing hoses, bonding wires, and deadman control.

r. Complete accounting forms, ensure identaplate is returned to servicing crew member, and obtain signature.

s. Perform walkaround inspection, stow wheel chock and depart area.

SECTION III
SIMULTANEOUS FUEL SERVICING AND MUNITIONS LOADING, CONCURRENT SERVICING OPERATIONS (CSO)

3-1. INTRODUCTION

This checklist is a step-by-step guide in abbreviated form for use as a reference to ensure accomplishment of selected tasks by a predetermined sequence procedure. The intent of this checklist is to eliminate the probability of omission of a step in the accomplishment of CSO. The procedures contained herein are presented for use by qualified personnel and are not intended to provide full technical instructions. CSO-qualified fuels specialists will have a thorough working knowledge of these precautions, making it unnecessary for a check off of each step.

a. This procedure will be utilized to conduct cold refueling and simultaneous munitions loading.

b. R-5/R-9/R-11 refuelers when equipped with deadman controls are authorized for use in CSO operations.

c. Perform a pressurized serviceability check of the refueling equipment once every 24 hours or when returned to service after maintenance.

(1) Deleted.

(2) Deleted.

(3) Deleted.

3-2. AIRCRAFT SERVICING

a. Unless prepositioned, stop 25 feet or more from aircraft and then approach only upon direction from servicing crew member.

b. Position vehicle for servicing operation; have servicing crew member place wheel chocks; maintain at least a minimum 10-foot distance between refueling unit and aircraft.

c. Set parking brake, transmission and PTO, as required.

d. Deleted.

e. Bond fuel servicing vehicle to aircraft.

f. Unlock control panel and clear meters, if applicable.

g. Get verification of proper fuel grade, if applicable.

CAUTION

Do not change selector valve from one mode or operation to another without returning engine throttle to idle speed.

h. Prepare vehicle for servicing operation.

i. Fuel Servicing Equipment Operator will operate deadman control valve during fuel transfer.

NOTE

The refueling unit operator will be provided with an intercom headset to enable monitoring of the intercom conversation to expedite rapid shutdown of the refueling unit in the event of an emergency. (NUCLEAR ONLY)

j. The servicing crew member will ensure that the coupling quick disconnect is securely engaged after the single point nozzle is secured to-the aircraft.

k. Begin pumping operation upon direction of the servicing crew member.

CAUTION

Be ready to push auxiliary throttle in and shut off emergency switch if any vehicle movement is noted or an unsafe condition or situation develops.

l. During refueling, monitor control panel, aircraft fuel vent outlets, and aircraft servicing supervisor signals; be prepared to shut down equipment in case of leak or other malfunction.

m. Stow fuel servicing equipment and bonding wires after refueling is completed.

n. Complete paper work and obtain signature of servicing crew member on AF Form 1994 after aircraft departs; lock control panel, if applicable.

o. Perform walkaround inspection, stow wheel chock and depart area.

SECTION IV
KC-10/135 HOT DEFUELING WITH R-5/R-9/R-11 FUEL SERVICING VEHICLES

4-1. INTRODUCTION

When performing hot defueling, all members of the fueling team except fire guard will be in contact with each other via the intercom system. This includes the fuel truck operator. Tasks designated by an asterisk (*) will be performed by the fuel servicing equipment operator (2F0X1) and all other tasks will be performed by a servicing crew member. It cannot be over-emphasized that these procedures must be followed in the proper sequence to ensure a safe operation. These procedures are applicable only to R-5, R-9, and R-11 fuel servicing vehicles that have operable automatic high-level cutoffs. Hot Defueling of JP-4 into fuel servicing vehicles is authorized only under emergency conditions or combat situations and is not permitted for normal day-to-day operations.

4-2. AIRCRAFT SERVICING

NOTE

Due to the fire hazards associated with hot defueling operations, the preferred distance between aircraft wingtips is 50 feet. However, at those installations where aircraft parking space is limited, therefore not permitting a 50 foot wing tip clearance, the wing tip separation distance can be reduced to a minimum of 35 feet. Whenever a distance of less than 50 feet is maintained between aircraft, wing tips a crash fire rescue vehicle must be at the aircraft during hot defueling operations.

*a. Stop 25 or more feet from aircraft.

*b. Approach upon direction of servicing crew member.

c. Preposition wheel chock and use a spotter when backing toward aircraft.

*d. Position vehicle for servicing.

*e. Set parking brake, transmission and PTO as required.

*f. Shut off radio, if defueling.

g. Chock the unit.

*h. Deleted.

i. Bond fuel servicing vehicle to aircraft.

*j. Get verification of proper fuel grade, if applicable.

*k. Connect defueling hose to bottom loader. Open vehicle loading and vent valves. Leave single point nozzle valve closed.

l. Connect SPR nozzle to aircraft but leave the nozzle valve closed.

*m. Perform intercom check with aircraft servicing supervisor and all members of the fuel servicing team.

n. Start aircraft engine farthest removed from the fuel servicing vehicle (Number 1 or 4 engine.)

o. Open SPR nozzle(s) on the aircraft.

*p. Open SPR nozzle on bottom loader.

q. Start aircraft aerial refueling off-load pumps.

*r. After fuel flow begins from aircraft, coordinate with servicing crew member and perform a bottom loading automatic shut-off valve check.

WARNING

If shut-off valve is inoperative, terminate the operation immediately. Personnel are not authorized on top of the fuel servicing vehicle during hot defueling.

s. Complete the operation.

*t. Stow defueling hose.

*u. Obtain required signatures, perform walkaround inspection, stow wheel chock and depart area.

4-3. EMERGENCY PROCEDURE

In the event of a fire and/or fuel spillage within the hot defueling area, immediately cease operations and evacuate the area.

SECTION V
H-1, H-53, AND H-60 HELICOPTER HOT REFUELING PROCEDURES

5-1. INTRODUCTION.

This section is a step-by-step guide in abbreviated form for use as a reference to ensure accomplishment of selected tasks by a predetermined sequence procedure. The intent of this section is to eliminate the probability of omission of a step in the accomplishment of helicopter hot refueling. The procedures contained herein are presented for use by a 2F0X1 fuels specialist who is certified to hot refuel aircraft in accordance with TO 00-25-172 and MAJCOM directives. This checklist does not provide detailed technical instructions.

a. This procedure will be utilized to conduct hot refueling of H-1, H-53, and H-60 helicopters.

b. Refer to TO 00-25-172, Table 5-2 for approved/authorized single point refueling (SPR) nozzles.

c. Perform a pressurized serviceability check of the refueling equipment once every 24 hours or when returned to service after maintenance.

(1) Deleted.

(2) Deleted.

(3) Deleted.

5-2. AIRCRAFT SERVICING

a. Stop 50 ft or more from aircraft and then approach only upon direction from the servicing crew member. Maintain 25-foot minimum separation from any part of the aircraft.

b. Position vehicle for servicing operation; place wheel chock; maintain maximum distance between refueling unit and aircraft.

c. Set parking brake, transmission and PTO.

d. Secure line badge, headgear and loose items inside pocket.

e. Bond vehicle to aircraft.

f. Ensure that servicing crew member bonds vehicle to aircraft.

g. Unlock control panel and clear meters, if applicable.

h. Get verification of proper fuel grade, if applicable.

i. Prepare vehicle for refueling.

CAUTION

Do not change selector valve from one mode or operation to another without returning engine throttle to idle speed.

j. Prior to pressuring the hose, servicing crew member must test the strainer coupling quick disconnect locking device for positive engagement and test nozzle to be certain the single point servicing nozzle or closed circuit refueling nozzle cannot be removed from aircraft when valve handle is in the open and lock position.

k. Aircraft servicing supervisor will advise refueling equipment operator of fuel flow pressure restrictions. Aircraft servicing supervisor will operate the deadman control valve during fuel transfer.

l. Begin pumping operation upon direction of the servicing crew member by actuating throttle to increase engine RPM. Pressure will not exceed 25 PSI when hot refueling H-1 and H-60 helicopters unless a pantograph is used.

WARNING

To prevent injury to personnel or damage to equipment, be ready to push auxiliary throttle in and shut off emergency switch if any vehicle movement is noted or an unsafe condition or situation develops.

m. During refueling, monitor control panel and aircraft servicing supervisor signals; be prepared to shut down equipment in case of leak or other malfunction; remove equipment from servicing area immediately after refueling is complete or for repair if safe to do so.

n. Complete paperwork and obtain signature of servicing crew member on AF Form 1994 after aircraft departs; lock control panel, if applicable.

o. Perform walkaround inspection, stow wheel chock and depart area.

SECTION VI
E4-B NATIONAL AIRBORNE OPERATION CENTER (NAOC) AIRCRAFT HOT REFUELING

6-1. INTRODUCTION

This section is a step-by- step guide in abbreviated form for use as a reference to ensure accomplishment of selected tasks by a predetermined sequence procedure. The intent of this section is to eliminate the possibility of omission of a step in the accomplishment of NAOC (E4-B) Hot Refueling. The procedures contained herein are presented for use by qualified personnel and are not intended to provide all technical instructions. Qualified E4-B hot refueling specialists will have a thorough working knowledge of these precautions, making it unnecessary to check off each completed step.

NOTE

- R5/R9/R-11 fuel servicing vehicles with deadman controls will be used for this operation.
- Waiver authority to fuel service without deadman controls may be issued on case-by-case basis by MAJCOM/DO/LG.
- A fuel equipment operator will be positioned at the fuel servicing vehicle and will be on intercom.
- All required headsets will be carried aboard the aircraft for hot refueling operations.

6-2. SAFETY PRECAUTIONS:

Aircraft servicing safety precautions regarding electrical storms, vehicle discrepancies, handling of lighter/matches, bonding, clothing and distance criteria apply. In addition observe the following:

a. Deleted.

b. No external maintenance will be accomplished during fuel servicing.

c. Fuel servicing team will consist of a minimum of seven personnel.

d. Telephone and radio landline may be connected to the aircraft but not connected/disconnected during fuel servicing.

e. Passengers and NAOC personnel may stay on board but are prohibited from exit/entry during fuel servicing.

f. Personnel must remain at least 10 feet from all lower UHF antennas.

WARNING

Severe electrical shock and burn may result when touching equipment/aircraft during HF transmission.

g. When notified by aircraft servicing supervisor of HF transmission, stop fuel flow, reduce RPMs to idle, and lay the deadman control down on ground. Do not touch the skin of the aircraft or other metal objects, including any portion of fuel servicing vehicle(s).

h. Hearing protection will be worn when aircraft engine is operating.

i. Headgear will not be worn in the immediate area of an operating engine.

6-3. LIMITATIONS.

a. Maintenance during fuel servicing is limited to physical replacement of avionics components inside the aircraft.

b. Number three engine will not be operated during hot refueling.

c. Fuel servicing will be accomplished using straight nozzle connected to the SPR on the wing opposite of the operating engine.

d. Major crash fire vehicle must be on scene during hot refueling operations; in addition, one 150 lb dry chemical extinguisher. If the crash fire vehicle departs, fuel flow may continue until fuel servicing vehicle is emptied but fuel flow will not be restarted until the crash fire vehicle returns.

6-4. VEHICLE:

Accomplish AFTO Form 1807 preoperation inspection of fuel servicing equipment prior to hot refueling operations.

6-5. AIRCRAFT SERVICING:

a. Stop 25 ft from aircraft and approach upon direction of servicing crew member.

b. Position vehicles for servicing operation, ensure servicing crew member prepositions wheel chocks prior to backing toward aircraft and keeps sight of spotter in mirror prior to and during backing operation.

c. When two fuel servicing vehicles are used, maintain 10 ft minimum vehicle separation.

d. Set parking brake, transmission, and PTO.

e. Secure hats, line badge, and other loose items.

f. Bond vehicle to aircraft.

g. Unlock control panel and clear meters, if applicable.

h. Get verification of proper fuel grade, if applicable.

i. Prepare vehicle for fuel servicing, ensure deadman control is activated. The fuel equipment operator maintains the deadman control.

j. Obtain intercom headset from servicing crew member.

k. Start fuel transfer when notified by servicing crew member.

l. Prior to pressuring the hose, servicing crew member must test the strainer coupling quick disconnect locking device for positive engagement and test nozzle to be certain the single point servicing nozzle cannot be removed from aircraft when valve handle is in the open and locked position.

m. Monitor fuel servicing equipment for leaks or other malfunctions.

NOTE

Monitor the flow meter on truck for indication of reverse flow.

n. Shut down fuel flow upon direction of servicing crew member.

o. Stow fuel servicing equipment, prepare paperwork, obtain signatures, perform walkaround inspection, stow wheel chock, and depart area.

SECTION VII
HOT REFUELING PROCEDURES UTILIZING THE R-11 6000 GALLON FUEL SERVICING VEHICLE

7-1. Introduction.

This section is a step-by-step guide for use as a reference by a 2F0X1 fuels specialist who is certified to hot refuel aircraft in accordance with TO 00-25-172 and MAJCOM directives. This checklist is intended to prevent the omission of a sequential task in the accomplishment of authorized hot refueling but does not provide detailed technical instructions. These procedures are to be used in conjunction with the general and emergency aircraft refueling procedures outlined in Sections I and II of this checklist.

a. R-11 fuel servicing vehicle must be equipped with American Petroleum Institute (API) Bulletin 1529, Type C, Grade 2, hardwall aviation servicing hose assemblies with internally expanded forged brass or bar stock body couplings and brass or 300 Series stainless steel serrated ferrules, respectively and single point refueling nozzles listed under the hot refueling column of TO 00-25-172.

b. Perform a pressurized serviceability inspection of the refueling equipment once every 24 hours or when returned to service after maintenance.

7-2. Refueling Site Set Up.

a. Preposition vehicle for fuel servicing operation at designated hot refueling pad allowing for maximum separation between vehicle and aircraft. Wind direction should be a consideration for this portion. Setup truck downwind of the aircraft parking location, if possible.

b. Place chock between rear duals. Extend servicing hose and bonding wire and position along side of the fuel servicing vehicle.

c. Position a 150-pound wheeled fire extinguisher between the fuel servicing vehicle and the refueling supervisor's position. In addition, either a fixed or skid mounted aqueous film forming foam (AFFF) fire suppression system discharging through oscillating nozzles must be on site and operational. An aircraft rescue and fire fighting (ARFF) vehicle may be substituted for the AFFF fire suppression system.

d. Ensure an ARFF vehicle is present before starting hot refueling operations, if an operational AFFF fire suppression system is not available.

e. Secure line badges and other loose items inside pockets.

f. Complete preparation of vehicle for refueling.

g. Aircraft Refueling Supervisor will operate the deadman control valve during fuel transfer.

h. Refueling Supervisor (2A3X3) will provide a safety briefing, including emergency procedures, prior to arrival of first aircraft.

i. Ensure all personnel have proper hearing protection.

7-3. Aircraft Servicing.

CAUTION

Ensure the bonding wire is connected prior to single point nozzle hook-up.

a. Upon direction of Refueling Supervisor, first provide the bonding wire and then the servicing hose to the appropriate crew member and assist in hook-up.

b. With the SPR nozzle crank handle in the closed position, check the strainer coupling quick disconnect locking device for positive engagement and prior to pressurizing the hose, be sure the nozzle is securely locked to the aircraft by attempting to remove the nozzle with the nozzle crank handle in the open position.

c. Begin the pumping operation upon direction of the Refueling Supervisor. Increase the fuel servicing vehicle engine speed to the desired pressure level but not to exceed 55 psi at the single point nozzle. (Forty-five psi maximum for F-16 hot refueling.)

d. Monitor the control panel and aircraft servicing supervisor's signals; monitor the overall operation for fuel leaks or other hazards; be prepared to shutdown servicing equipment in the event of a fuel leak or other malfunction.

e. When signaled by the Refueling Supervisor that the aircraft is full, assist the crew member with the hose disconnection and obtain the single point nozzle and grounding wire and stow accordingly.

CAUTION

Be alert to jet blast as aircraft departs area.

f. Using a flash board, ensure the pilot of the departing aircraft is given the quantity of fuel received.

7-4. Hot Refueling of C-130 Using R-11.

a. Emergency Shutdown Procedures.

During aircraft servicing, the refueling unit operator will monitor the refueler for leaks, ignition sources and other indications of a possible malfunction. In the event of an emergency, shutdown the unit as follows:

(1) Turn off emergency switch if vehicle should not be moved.

(2) Close Main Tank shut off valve.

(3) Notify aircraft servicing supervisor, operations expediter and Resource Control Center (RCC), if possible.

(4) Evacuate area.

b. Emergency Aircraft Egress.

(1) Stop fuel flow.

(2) Loadmaster disconnects refueling hose and bond wires.

(3) Loadmaster clearss aircraft for taxi.

(4) Depending upon urgency, fuel truck may/may not have time to move away from aircraft.

NOTE

In case of fuel spill do not evacuate fuel servicing vehicle until area is declared safe by fire department personnel.

c. Hand Signals.

(1) OK or Transfer Fuel: Hand raised thumbs up.

(2) A Negative Flow, Malfunction, or Not Clear: Hand raised thumbs down.

(3) Stop Fuel Flow/Servicing Complete: Hand moving in large circular motion.

(4) Emergency Shutdown: Hand across throat moving continuously.

d. General Procedures.

(1) Preposition refueler clear of the taxiway and await the arrival of the aircraft to be serviced.

(2) Position one 150-pound, Halon 1211 fire extinguisher in the immediate vicinity of the refueler, where it is visible to the de-planing aircrew member.

NOTE

In addition to the one 150-pound Halon fire extinguisher, either a fixed or skid mounted aqueous film forming foam (AFFF) fire suppression system discharging though oscillating nozzles must be on site and operational. An aircraft rescue and fire fighting (ARFF) vehicle may be substituted for the AFFF fire suppression system.

(3) When the aircrew member arrives to retrieve the fire extinguisher, obtain the appropriate fuel billing card/ information, verify the fuel grade to be issued with aircrew member and conduct a safety briefing.

(4) Position servicing vehicle at rear of the aircraft, stopping 50 feet or more from the aircraft and ensure cab windows are closed; then approach only upon direction from the servicing crew member.

(5) Position vehicle for servicing. Ensure unit is not in direct path of prop blast or engine exhaust and has a clear exit.

(6) Set parking brake, transmission and PTO.

(7) Secure line badge, headgear and loose items inside pocket, don dust goggles, gloves and hearing protection prior to exiting the vehicle. Close cab door upon exiting vehicle.

(8) Chock the unit.

(9) Ensure the 150-pound Halon fire extinguisher is positioned between the fuel servicing vehicle and the refueling crew members' position.

(10) Give servicing hose and bonding wire to aircrew member for deployment.

(11) Ensure the servicing crew member bonds vehicle to aircraft.

(12) Prepare vehicle for refueling.

CAUTION

At NO time will the vehicle operator (2F0X1) enter the area directly behind operating aircraft engines.

(13) Prior to pressuring the hose, servicing crew member must test the strainer coupling quick disconnect locking device for positive engagement and test nozzle to be certain

the single point servicing nozzle cannot be removed from aircraft when valve handle is in the open and locked position.

(14) Upon notification from the servicing crew member, activate deadman control and begin pumping operation.

(15) During refueling, monitor control panel and pay close attention to the aircraft servicing crew member at all times for signals; be prepared to shut down equipment in case of leak or other malfunction.

(16) Upon completion of the operation, close all valves, stow hose and bonding cable.

(17) Complete accounting documentation as required.

(18) Perform walk-around inspection and depart the area.

SECTION VIII
CONCURRENT SERVICING OF CARGO AND TRANSPORT AIRCRAFT (WITH OR WITHOUT PASSENGERS ON BOARD)

8-1. INTRODUCTION

This section provides in abbreviated form, procedures for concurrent fuel servicing operations of commercial, contract, and military cargo and passenger aircraft. This section is a step-by-step guide to ensure accomplishment of selected tasks. The intent of this section is to eliminate the probability of a step omission in the accomplishment of an intended task. The procedures contained herein are presented in the shortest, practical form for use by qualified personnel and are not intended to provide full technical instructions. Those tasks preceded by an asterisk are additional steps to be taken when concurrent servicing aircraft with passengers on board.

8-2. EMERGENCY PROCEDURES

In the event of an emergency, shutdown the refueling unit as follows:

a. Release deadman control.

b. Push engine auxiliary throttle control all the way in.

c. Turn off Emergency switch.

d. Close hose reel shutoff valve.

e. Close main tank emergency shutoff valve.

f. Notify aircraft fuel servicing supervisor and Fuels Control Center.

g. Evacuate area, if instructed by fuel servicing supervisor or fire department personnel.

8-3. PREPARATION FOR CONCURRENT SERVICING

a. R-5/R-9/R-11 refuelers when equipped with deadman controls are authorized for use in concurrent servicing operations.

b. Perform a pressurized serviceability check of the refueling equipment when returned to service after maintenance, as required.

c. Make sure the Chief Servicing Supervisor (CSS) notifies the Fire Department at least 15 minutes prior to performing concurrent servicing operations.

*d. If personnel are remaining on board the aircraft, make sure the CSS informs the Fire Department of the number of people involved.

8-4. AIRCRAFT SERVICING

WARNING

Simultaneous fuel and oxygen servicing on an aircraft is not authorized.

CAUTION

C-130, C-141, and C-17 aircraft troop doors and emergency hatches on the right or SPR side of the aircraft must be closed during concurrent servicing operations to isolate the cargo department from the fuel servicing safety zone.

a. Stop 25 feet or more from aircraft and approach only upon direction from ground servicing crew.

b. Set parking brake, place transmission and PTO in appropriate mode, and chock vehicle.

c. Bond fuel servicing vehicle to aircraft.

d. Unlock control panel and clear meters.

e. Get verification of proper fuel grade, if applicable and receive safety briefings from concurrent servicing supervisor.

*f. Establish and maintain voice intercom contact if passengers are on board the aircraft.

g. The Concurrent Servicing Supervisor (CSS) will wear a reflective vest with the letters CSS on the front and back. The CSS is responsible for controlling and monitoring all concurrent servicing operations.

h. During refueling, monitor fuel control panel, aircraft fuel vent outlets, and CSS signals; be prepared to shut down in case of fuel leak or other malfunction.

i. After fuel servicing, complete paperwork, stow hoses and bonding cable.

j. Perform walk-around inspection of refueling vehicle, stow chock and depart area.

SECTION IX
REFUELING IN HARDENED AIRCRAFT SHELTERS (HAS), PROTECTIVE AIRCRAFT SHELTERS (PAS), ALERT SHELTERS AND FLOW-THROUGH REVETMENTS

9-1. Introduction.

This section provides precautions and restrictions when refueling aircraft inside a shelter or FTR using an R-9 or R-11 fuel truck. Positioning a truck near or inside a shelter can create significant space and clearance limitations. In most cases, the truck is outside the shelter or FTR, but in some critical wartime or training scenarios, it is necessary to place the truck inside the shelter or FTR, and, in the case of a HAS/PAS, with the shelter doors closed. The general and emergency aircraft refueling procedures in Sections I and II will apply to shelter/FTR operations. However, some clearance requirements will be changed as described below.

9-2. Emergency Procedures.

In addition to those procedures in Sections I and II, if a fuel spill or fire occurs in a HAS/PAS, open the shelter doors.

9-3. Truck/Shelter Clearances.

Trucks will always be parked outside FTRs with the hose extended its full length. Fuel servicing vehicles can be positioned inside or outside of shelters. When positioned inside the shelters, trucks will be backed into the shelter on the right or left side of the aircraft. Except during nose-in or double-stuff conditions, the nearest part of the fuel-servicing vehicle must not be closer then three feet from the shelter wall or door. (R-11 fuel servicing vehicles are exempt from the minimum three feet clearance requirements for nose-in, nose-out, and double-stuff conditions.) Whether one or more aircraft are parked within a HAS/PAS, the FSSZ must be strictly enforced during servicing operations.

9-4. Restrictions.

When servicing inside a HAS/PAS/FTR, the following applies:

a. Aircraft may utilize CSO procedures for simultaneous operations. MDS specific technical order procedures for aircraft reconfiguration, servicing, inspections, and munitions loading/unloading will be followed. Only those activities specifically authorized in aircraft technical orders will be performed in conjunction with aircraft servicing. Servicing operations inside shelters/FTR present a greater degree of risk than the same operations conducted outside on open ramp.

NOTE

The adjacent aircraft parking criteria does not apply to FTR since the revetment wall minimizes the probability of spreading fire or explosion.

b. The fuel servicing safety zone criteria shall be complied with. Refueling will not start until all nonessential personnel and equipment have been removed from the area. During servicing operations, restrictions will be placed on the entry of nonessential personnel or equipment into the servicing area. During CSOs powered support equipment, i.e., munitions loaders/jammers, may pass underneath aircraft fuel vent outlets but must not stop or be parked under fuel vent outlets during fuel servicing portions of CSOs.

c. A communications system or portable radio must be available and operational.

d. Fire protection equipment requirements shall be available as specified in TO 00-25-172. Operations will cease during any fuel spill and will not resume until the spill has been removed or neutralized and the area has been determined safe.

e. All powered vehicles or equipment not involved in the servicing operation shall be shut down and parked in an area that will not obstruct the operation. When powered

support equipment is required for the fuel servicing operations, the equipment shall be positioned outside the shelter when possible. If the equipment cannot be positioned outside, it may be positioned inside; however, all aircraft entry doors must remain open.

f. The fueling supervisor shall be prepared for immediate removal of the refueling equipment where rapid evacuation and/or alert reaction may be required.

CAUTION

Refueler vehicle engine should not be operated more than 20 minutes when aircraft entry doors are closed. When aircraft entry doors are closed, the shelter aircraft can be refueled inside a completely closed shelter. Crew members conducting in-shelter refueling with shelter doors completely closed should be limited to four refuelings per duty day and should have at least a sixty-minute period of low or no fuel vapor exposure between refueling aircraft in a closed shelter.

g. Shelter doors will remain open during fuel servicing. However, HAS/PAS doors can be closed only when all of the following apply:

(1) Exercise/contingency/wartime situation

(2) Aircraft engines not running (cold fuel operation)

(3) Fuel servicing equipment is inside the shelter

h. Fuel servicing vehicles will not be backed into shelters until a chock is placed to stop the vehicle in case of brake failure and a spotter is in position to direct movement.