

FUELING PROCEDURES

[135.23]

NOTE: For additional guidance, reference the Air Methods Fuel Quality Control Manual and the Air Methods Training manual. Medical Personnel that have completed the Air Methods Refueling Training can perform the “Trained Medical Person/ Personnel” functions in this section; they may also refuel the aircraft if the engines are shut down.

It shall be the responsibility of the Pilot-in-Command to check the amount of fuel and correlate this amount with the total fuel as reported by the servicing agent and as indicated by the fuel gauges and by a visual tank check when tank openings can be readily reached. Additionally, he/she must confirm, by color and tank marking, that the fuel is of the correct grade and obtain a fuel sample as outlined in the Aircraft Flight Manual.

When receiving fuel services away from home, the Pilot-in-Command will supervise the refueling process and will verify that the proper grade of fuel is being dispensed for the aircraft. Pilots should provide extra vigilance at facilities where both turbine (jet) fuel and gasoline are dispensed to ensure the appropriate fuel is utilized.

The flow of jet type fuel creates more static electricity than other types of fuel; therefore extreme caution must be used during this potentially dangerous operation.

During the refueling of an aircraft, the concentration of fuel vapor in the area surrounding the aircraft varies with the wind velocity and the rate of fueling. These invisible vapors are too often ignored, are heavier than air, and tend to settle and spread. It should be remembered that when fuel is pumped into the aircraft tanks, it displaces an equal volume of vapor, which is discharged into the atmosphere. When sufficient vapor accumulates so that an odor is present, conditions are good for a fire and explosion. Most importantly, concentrations are dangerously increased by fuel spills. Spills are the greatest hazard. All that is needed is a source of ignition, such as a static discharge, lighting of a cigarette, or the pilot light of a gas heater nearby. Therefore, the Pilot-in Command will protect the aircraft and persons by observing procedures to minimize fuel contamination, protection against fire, prevent spillage and other potential hazards.

Safety Precautions (All Refueling)

- No smoking and no flames or fires shall be permitted within 50 feet of an aircraft while refueling.
- In the event of spillage, all pumps and electrical equipment will be shut down. Refueling may be restarted after spillage has been removed.
- Line personnel will remove any loose objects from their person that could possibly enter a fuel or oil service port.
- Fire extinguisher will be available.
- The aircraft will be grounded for all refueling operations and engines shut down, except where authorized in this chapter, see “Rapid Refueling with Rotors Turning.”
- Strobe Lights should be turned off and radio transmissions restricted until fueling is completed.
- The refueling unit/truck will remain outside the rotor arc.
- Refueling operations shall not be conducted during periods of active thunderstorms and detected lightning, within 5 miles of the fueling operations.
- **Aircraft maintenance is not allowed during refueling, including servicing of oxygen, LOX or batteries.**
- Aircraft ground-power units should be located as far away from the fueling point as practicable and neither connected or disconnected during fueling.
- Electric tools, such as drills or buffers, shall not be used in or near the aircraft during refueling.
- Aircraft radios, portable radios, or cell phones shall not be operated in the vicinity of any aircraft refueling operation.
- Use caution in removing the fuel tank cap and place the tank cap where it will not get contaminated.
- Make sure the nozzle is properly bonded to the aircraft and placed in the filler neck.
- Don't block the nozzle trigger in the open position unless the nozzle is of the type that shuts off automatically and then only use the system provided on the nozzle handle.

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FUELING PROCEDURES (continued)

- Never leave the nozzle unattended.
- Make frequent visual checks of the amount of fuel in the tank and take extreme care to prevent spills and over-filling of the tanks.
- Upon completion of the refueling, close the filler cap properly, disconnect all grounding and bonding cables, remove the hose and cables from the vicinity of the aircraft.
- If an aircraft fuel apparatus or spilled fuel catches fire, engage all fuel shut-offs. Notify the Fire Department immediately. If possible and without endangering self or others, fight the fire with all means available.

Additional Procedures for Fueling with Patient Onboard. (Cold Refueling)

- The PIC will conduct an exit briefing before exiting the aircraft.
- A Trained Medical Person with a fire extinguisher, will remain onboard the aircraft with the patient. The patient will be prepared for rapid evacuation.
- The second Trained Medical Person will position himself/herself, with a fire extinguisher (if available) in a position that will allow monitoring of the refueling operation and the onboard attendant simultaneously, so as to be able to coordinate emergency evacuation / fire fighting assistance as necessary.

Rapid Refueling with Rotors Turning without Medical Personnel or Passengers

- The aircraft will be grounded for all refueling operations.
- Aircraft power will be reduced to ground idle or a reduced power setting as specified in the Rotorcraft Flight Manual, controls positively locked or friction applied to prevent movement. Force trim shall be on (if installed), autopilot turned off (if installed), and the rotor disc level.
- The pilot may go beyond the rotor arc of the aircraft to retrieve the fuel nozzle, grounding cables or secure the previously mentioned items.
- Fire extinguisher will be accessible near fueling port.
- If an aircraft fuel apparatus or spilled fuel catches fire, engage all fuel shut-offs, shut down the aircraft if possible. Notify the Fire Department immediately. If possible and without endangering self or others, fight the fire with all means available.

Rapid Refueling with Rotors Turning with Medical Personnel

- Aircraft power will be reduced to ground idle or a reduced power setting as specified in the Aircraft Flight Manual, controls positively locked or friction applied to prevent movement. Force trim shall be on (if installed), autopilot turned off (if installed), and the rotor disc level.
- The pilot may go 30 feet beyond the rotor arc of the aircraft to retrieve the fuel nozzle, grounding cables or secure the previously mentioned items.
- All Medical Personnel will exit the aircraft. One Trained Medical Person will position himself / herself, with a fire extinguisher in a position that will allow monitoring of the refueling operation, to lend fire fighting assistance as necessary. The other Trained Medical Person will act as tail rotor guard.
- A Fire extinguisher will be accessible near fueling port.
- Fuel Truck will be placed a minimum of 30 feet beyond the rotor arc.
- If an aircraft fuel apparatus or spilled fuel catches fire, engage all fuel shut-offs, shut down the aircraft if possible. Notify the Fire Department immediately. If possible and without endangering self or others, fight the fire with all means available.

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FUELING PROCEDURES (continued)

Rapid Refueling with Rotors Turning with Medical Personnel and Patient

It is Air Methods policy that no one should be onboard the aircraft during refueling, with the following exception: on rare occasions it may become necessary while en route to a hospital with a critically ill or injured patient to stop for fuel. In this case refueling with the patient onboard is permitted. The patient will be prepared for rapid evacuation and attended by a Trained Medical Person. It should be emphasized that the Pilot-in-Command will make every reasonable effort in his flight planning to avoid fueling with a patient onboard. The refueling may be done by FBO refueling personnel. The PIC may brief a medical crewmember on supervising the refueling personnel during rapid refueling at an FBO. Refueling information for a specific aircraft make and model can be found in the appropriate Aircraft Flight Manual and must be adhered to.

- The PIC will conduct an exit briefing before allowing the Trained Medical Personnel to exit the helicopter.
- The Trained Medical Personnel will exit the helicopter and post in a position that will allow them to guard the tail rotor and monitor the pilot.
- The PIC will conduct an exit briefing before exiting the aircraft.
- Engine/rotor RPM shall be set to the lowest appropriate setting, the force trim shall be on (if installed), the **autopilot turned off** (if installed) and the rotor disc level.
- A Trained Medical Person with a fire extinguisher, will remain onboard the aircraft with the patient. The patient will be prepared for rapid evacuation.
- The second Trained Medical Person will position himself/herself, with a fire extinguisher (if available) in a position that will allow monitoring of the refueling operation and the onboard attendant simultaneously, so as to be able to coordinate emergency evacuation / fire fighting assistance as necessary.
- Fuel Truck will be placed a minimum of 30 feet beyond the rotor arc.
- If an aircraft fuel apparatus or spilled fuel catches fire, engage all fuel shut-offs, shut down and evacuate the aircraft. Notify the Fire Department immediately. If possible and without endangering self or others, fight the fire with all means available.

FUEL SUMPING – ALL-AIRCRAFT

Aircraft will be sumped in accordance with the approved Rotorcraft/Airplane Flight Manual. The aircraft may be sumped by either the pilot or mechanic, but the Pilot retains the responsibility.

If no specific guidance is provided in the RFM/AFM, then the following guidance will be followed:

At the beginning of each shift the pilot conducting the preflight will perform the following:

- Aircraft fuel system: SUMP to collect a fuel sample and check for proper type and contaminants.
- If fuel sample is contaminated, contact maintenance for further guidance.

NOTE: For all Aircraft the two most recent fuel samples will be kept:

After required periods, fuel samples shall be discarded appropriately.

Pilots occasionally take on fuel from FBO's or other sources for which a letter of compliance has not been received. Be sure the fuel being pumped into your aircraft is clean and free of water. Pilots shall perform either a clear and bright test or white bucket test on the fuel prior to it being dispensed into the aircraft. Section 4-1 and 4-2 of the Fuel Quality Control Manual describes the procedures to be used for these tests. Pilots shall be familiar with and comply with the procedures. Pilots will document when a fuel quality check is performed by noting "FQC" in the remarks block of the Daily Flight Log on the same positioning leg.