

# Standards for Aircraft Fuel Servicing & Fuel Safety Training

By: Herman L. Smith III  
Airport Certification Safety Inspector

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Administration



# Presentation Topics

- General Operations
- Fire Extinguishers for Aircraft Fuel Servicing Vehicles or Carts
- Smoking Restrictions
- Emergency Fuel Shutoff Systems
- Bonding
- Open Flames on Aircraft Fuel Servicing Ramps
- Self-Service Fueling
- Product Identification
- Advisory Circular 150/5230-4B
- Part 139 Inspection Photos



# General Operations

- **Allowed to handle fuel:**  
**Only** personnel trained in
  - Safe operation of equipment and fuels they use
  - Operation of emergency controls
  - Procedures to be followed in an emergency
- **Marking of aircraft fueling vehicles**
  - Includes the name of the operator or responsible organization
  - Uses approved, legible signs on *both* sides of the exterior of vehicle

# Fire Extinguisher Placement

- Required on aircraft fuel servicing vehicles or carts
- **Each aircraft fuel servicing tank vehicle** must have two listed fire extinguishers
  - Each must have a rating of at least 20-B:C
  - One must be mounted on each side of the vehicle
- **Hydrant fuel servicing vehicles or carts** must each have one listed extinguisher with a rating of at least 20-B:C

# Fire Extinguisher Requirements

- Extinguishers must:
  - Be readily accessible from the ground.
  - Have contrasting colored paint on the area of the paneling or tank adjacent to or immediately behind the extinguisher(s) on fueling vehicles or carts.

# ABC Fire Extinguisher Requirements

- **ABC multipurpose dry chemical fire extinguishers (ammonium phosphate)**
  - Shall **not** be placed on aircraft fueling vehicles, airport fuel servicing ramps, or aprons, or at airport fuel facilities
  - Multipurpose dry chemical (ammonium phosphate) fire extinguishing agent is known to cause corrosion to aluminum aircraft components

# Smoking Restrictions

- A “**no smoking**” sign shall be posted prominently in the cab of every aircraft fuel servicing vehicle.
- Smoking equipment such as cigarette lighters and ash trays shall not be provided.
- If a vehicle includes smoking equipment when first bought, it must be removed or rendered inoperable.

# Emergency Fuel Shutoff Systems – Part 1

- Each fuel system, shall have means to quickly and completely shut off fuel flow in an emergency.
- The emergency fuel shutoff system shall include **shutoff stations**
  - Placed outside of probable spill areas
  - Placed near the route that normally is used to leave the spill area or to reach the fire extinguishers provided for the protection of the area.

# Emergency Fuel Shutoff Systems – Part 2

- At least one emergency shutoff control station shall be conveniently accessible to each fueling position.
- The emergency fuel shutoff system shall be designed so that operation of a station shuts off fuel flow to all hydrants that have a common exposure.
- Emergency fuel shutoff systems shall be designed so that they shut off the flow of fuel if the operating power fails.

# Emergency Fuel Shutoff Placard Content

- Placard each emergency fuel shutoff station **EMERGENCY FUEL SHUTOFF** in letters at least 50 mm (2 in.) high.
- The method of operation shall be indicated by an arrow or by the word **PUSH** or **PULL**, as appropriate.
- Any action necessary to gain access to the shutoff device (e.g., **BREAK GLASS**) shall be shown clearly.
- Valves used to shut off a hydrant for maintenance purposes shall not have placards that could create confusion in an emergency

# Emergency Fuel Shutoff Placard Lettering, Placement

- Lettering shall be of a color contrasting sharply with the placard background for visibility.
- Placards shall be:
  - Weather resistant
  - Placed at least 2.1 m (7 ft.) above grade
  - Placed so that they can be seen readily from a distance of at least 7.6 m (25 ft.)

# Emergency Fuel Shutoff Access, Testing

- **Access** to emergency fuel shutoff control stations shall be kept clear at all times.
- A **procedure** shall be established to notify the fire department serving the airport in the event of a control station activation.
- **Conduct operation** of emergency fuel shutoff **systems** at least every 6 months.
- Each individual **device** must be checked at least once during every 12-month period.

# Bonding – Part 1

- Before making any fueling connection to the aircraft, the fueling equipment shall be bonded to the aircraft by use of a cable.
- Bonding provides a conductive path to equalize the electrical potential between the fueling equipment and the aircraft.
- The bond shall be maintained until fueling connections have been removed. That lets separated charges that could be generated during the fueling operation reunite.
- Grounding *during* aircraft fueling is not allowed.

# Bonding - Part 2

- Bonding and fueling connections shall be disconnected in the reverse order of connection

- **Reference:**

If anyone has questions about bonding, direct them to:

**Annex A section A.5.4 of NFPA 407**

# Open Flames on Aircraft Fuel Servicing Ramps

- Entrances to fueling areas shall be posted with “**No Smoking**” signs.
- Open flames on aircraft fuel servicing ramps or aprons within 15 m. (50 ft.) of any aircraft fuel servicing operation or fueling equipment shall be prohibited.
- The authority having jurisdiction can establish other locations where open flames and open-flame devices shall not be permitted.

# Limits on Open Flames on Aircraft Fuel Servicing Ramps – Part 1

“Open flames and lighted open-flame devices” shall include, but not be limited to:

- Lighted cigarettes
- Cigars
- Pipes
- Exposed flame heaters
- Liquid, solid, or gaseous devices, including portable and wheeled gasoline or kerosene heaters

# Limits on Open Flames on Aircraft Fuel Servicing Ramps – Part 2

- Heat-producing, welding, or cutting devices and blowtorches
- Flare pots or other open-flame lights
- Other:
  - Personnel shall not carry lighters or matches on their person while engaged in fuel servicing operations.
  - Lighters or matches shall not be permitted on or in fueling equipment.

# Self-Service Fueling

Occupancy of the aircraft during self-service fueling shall be prohibited



# Product Identification

Each aircraft fuel servicing vehicle or cart shall have a sign:

- On each side and the rear to identify the product
- With letters at least 75 mm (3 in.) high
- With lettering color that contrasts sharply with the sign background for visibility
- That includes the word **FLAMMABLE** and the name of the product carried, such as **JET A**, **JET B**, **GASOLINE**, or **AVGAS**

# Aircraft Fuel Storage, Handling, Training, and Dispensing on Airports

**Reference:**

**Advisory Circular 150/5230-4B**



# Fuel Safety Training – Part 1

- **14 CFR §139.321** sets forth the requirements for fuel safety training at certificated airports.
- Types of training for employees of agents handling aviation fuel:
  - Supervisory training
  - Line service fuel safety training.
- Training performed under the supervisory training program must be obtained by completing a FAA authorized Supervisory Fuel Safety training course.

# Fuel Safety Training – Part 2

- Line service fuel safety training for *other* employees may be provided by a supervisor who has completed the supervisory course or an authorized fuel safety training program.
- Chapter 2, section 2 of the AC lists required elements for Supervisory and Line Service fuel safety training.

# Fuel Safety Training – Part 3

- Each student must receive hands-on training in the proper use of hand held fire extinguishers.
- Companies listed in the Addendum must provide this training or highlight the requirement for the student to receive this training from their local fire department or other local qualified source.

# Fuel Safety Training – Part 4

- **Hands-on fire extinguisher training**, if not provided concurrently with the supervisory and/or line service training course in fire safety, must be completed within 60 days of completion of the supervisory training course in fire safety.
- Line service personnel completing an online or offsite course must have documentation of **onsite** training conducted by the tenant fueling agent's trained supervisor.

# Fuel Safety Training Certificates

- Certificates must differentiate between supervisor training and line service training.
- Chapter 4 sections 3a,b of the AC list required wording for Supervisor and Line training certificates.

# Actual Part 139 inspection photos

The following slides show actual photos taken during Part 139 inspections in 2012 and 2013







**EMERGENCY SHUT OFF FUEL**

FLUID DYNAMICS, INC. 800-929-0524

**SHUT OFF**

**PULL**

**FIRE EXTINGUISHED**























EMERGENCY

FUEL

SHUT-OFF

SWITCH



