



# ADVISORY CIRCULAR

**CAA-AC-AWS026  
November 2022**

## REFUELLING PROCEDURES AND FACILITIES

### 1.0 PURPOSE

This Advisory Circular (AC) is issued to give information and guidance on regulatory requirements and general basic refuelling procedures and facilities.

### 2.0 REFERENCE

- a) Regulation 42(b) of the Civil Aviation (Airworthiness of Aircraft) Regulations, 2022
- b) Regulations 65, 73, 109, 117 and Schedule 7 of the Civil Aviation (Air Operator Certification and Administration) Regulation, 2022.

### 3.0 OBJECTIVE

3.0.1 The objective of this Advisory Circular is to guide the Operator with the required procedures for handling and dispensing of aircraft fuels.

3.0.2 The following must be included in the Operations manual (Refueling):

- a) Dispensing equipment procedures.
- b) Electrostatic protection procedures.
- c) Contamination protection procedures; and
- d) Related record keeping procedures.

3.0.3 The Operations Manual Part A, Chapter 8 of the operator must also include procedures for vendors and contractors concerning the refueling procedures and facilities. It should also establish standards for refueling facilities and the

applicant's overall responsibility for conducting the operations within established industry standards.

## **4.0 FUELS**

### **4.1 Aviation Gasoline (AVGAS)**

The naming system for AVGAS grades is printed on all containers in white letters and numbers on a red background.

The naming system for the grades of aviation gasoline is derived from the general term "AVGAS" followed by the grade marking. The grades are identified by their performance numbers, as recognized by all military and commercial specifications (e.g., 80, 100LL, and 100).

Storage containers are also marked with a circular band around the piping, the color of which matches the dye in the AVGAS flowing through the line. The dyes are:

- 4.1.1 Red for AVGAS 80,
- 4.1.2 Blue for AVGAS 100LL,
- 4.1.3 Green for AVGAS 100.

The minimum recommended width of the circular band is 4-inches. If the pipeline is painted in the color of the AVGAS, then no banding is needed.

### **4.2 Jet Fuels**

The classifications of aviation turbine fuels are universally referred to as "jet fuels." The naming system for the jet fuel is printed on all containers in white letters on a black background to distinguish it from aviation gasoline.

Examples of jet fuel storage container markings include the following:

- 4.2.1 **Jet A fuel** containers are marked with a single 4-inch wide (minimum) black band around the piping;
- 4.2.2 **Jet A-1** fuel containers are marked with two 4-inch wide (minimum) black bands; and
- 4.2.3 **Jet B-1** fuel containers are marked with three 4-inch wide (minimum) yellow bands.

## **5.0 COORDINATION DURING FUEL FIRM INSPECTIONS**

Inspections of contract fueling facilities where the Authority does not have geographic responsibility must be coordinated with the Operator.

## **6.0 PROCEDURES**

6.0.1 The operations manual Part A indicates whether services will be performed by the operator or contracted out. The manual defines the following:

- a) Lines of authority and responsibilities.
- b) The training program.

6.0.2 The manual should contain procedures for the following:

- a) Inspection of incoming fuels;
- b) Elimination of fuel contamination;
- c) Use of dispensing equipment;
- d) Refueling and defueling, by specific make and model of aircraft;
- e) Protection from fire (including electrostatic protection); and
- f) Supervising and protecting passengers during refueling.

6.0.3 The manual should also include procedures for record retention and ongoing inspections of the following:

- a) Fuel (checks, etc.)
- b) Storage facilities and dispensing equipment
- c) Filters
- d) Safety equipment
- e) Training programs for servicing personnel
- f) Individual training records; and
- g) Vendors (in accordance with applicant's program)

## **7.0 Facilities**

7.0.1 The following should be in place.

- a) Personnel training requirements are documented and current;
- b) Training is conducted according to the Training curriculum;
- c) Piping is marked and color-coded to identify fuel type and grade; and
- d) Control/cutoff valves are clearly marked with instructions for emergency use (e.g., on/off).

7.0.2 The fuel farm/storage area provides for the following:

- a) Proper security (fenced and posted);
- b) Proper display of “Flammable” and “No Smoking” signs; and markings to identify type/grade of fuel

7.0.3 The equipment should include the following:

- a) A positive low point sump; and
- b) Adequate fire extinguishers.

7.0.4 The fuel filters/filter separators contain, at a minimum, the following:

- a) An inlet strainer;
- b) Inflow and outflow filter/separators sized to match maximum pump flow capacity;
- c) Differential pressure check system;
- d) Positive water defense system;
- e) Sump drain with outlet located to facilitate capture of outflow; and
- f) Fuel sampling (Millipore or equivalent) fittings downstream of all filters and filter/separators.

7.0.5 The hoses, nozzles, and outflow connectors are:

- a) Specifically designed and tested for delivery of aviation fuels;
- b) Controlled by spring-loaded, non-bypassable automatic (deadman) fuel flow cutoff valves;
- c) Equipped with dust cap or other feature that will minimize contaminant introduction into fuel/system;
- d) Equipped with non-bypassable 100 mesh nozzle/connector screens; and color coded to identify fuel type.

7.0.6 The electrical equipment, switches, and wiring will be of a type or design approved for use in hazardous locations (explosion proof, e.g., free of exposed conductors, contacts, switches, connectors, motors).

7.0.7 The grounding and bonding equipment ensures that piping, filters, tanks, and electrical components are electrically bonded together and interconnected to an adequate electrical ground. The system should have ground wires, bonding wires, and clamps adequate to facilitate prompt, definite electrical ground connection between the bowser/pit/cabinet, grounding system, and aircraft being fueled.

7.0.8 Fuel tenders and fueling pits should have the following:

- a) Appropriate markings displayed (e.g., “DANGER,” “FLAMMABLE,” “NO SMOKING,” fuel grade, standard hazardous material placard, filter due dates, and emergency fuel shutoff);
- b) Appropriately placed fire extinguishers; and
- c) Air filter/spark arrestor and a leak-free exhaust system terminating in a standard baffled original equipment type muffler, if equipped with internal combustion engine.



---

**Uganda Civil Aviation Authority**