



U.S. Department
of Transportation
**Federal Aviation
Administration**

Advisory Circular^{10A}

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Subject: ANTI-MISFUELING DEVICES:
THEIR AVAILABILITY AND USE

Date: 10/5/84
Initiated by: AWS-340

AC No: 20-122
Change:

1. PURPOSE. This advisory circular (AC) explains the benefits of fitting reciprocating engine-powered general aviation aircraft with anti-misfueling devices and the fitting of fuel dispensing equipment with special fuel hose nozzle spouts.

2. RELATED FEDERAL AVIATION REGULATIONS (FAR) SECTIONS AND ADVISORY CIRCULARS. Sections 23.1557, 25.1557, 27.1557, 29.1557, 43.3, 43.5, 43.7, 43.9, 91.3(a), 91.5, and 139.51(b); AC 00-34A, Aircraft Ground Handling and Servicing; AC 20-43C, Aircraft Fuel Control; AC 20-116, Marking Aircraft Fuel Filler Openings With Color Coded Decals; and AC 150/5230-4, Aircraft Fuel Storage, Handling, and Dispensing on Airports.

3. BACKGROUND.

a. Aviation statistics indicate that the use of improper fuel has caused or contributed to an inordinate number of accidents and incidents. Most of these have involved single-engine general aviation aircraft (and some multiengine) that were misfueled with jet or turbine engine fuel instead of gasoline which these aircraft use. Misfueling a reciprocating engine-powered aircraft with jet or turbine engine fuel can and has produced catastrophic results when engines failed during the critical takeoff phase of flight.

b. A specification developed by the General Aviation Manufacturers Association (GAMA Specification No. 3 issued on July 1, 1982) provides a standard color coded decal to be affixed adjacent to aircraft fuel tank filler openings with corresponding color decal bands to be affixed to refuelers' fuel hoses. Both decals were designed to alert servicing personnel as to the proper fuel to be used.

c. The National Air Transportation Association (NATA) and GAMA are cooperating in an additional effort which will significantly mitigate the chances of misfueling. Fuel tank filler openings in reciprocating engine-powered aircraft may be equipped with pilot-installed adapter rings reducing the opening size from 3" to 2.3" in diameter. Jet or turbine engine fuel nozzle assemblies will be equipped with spouts with a minimum diameter of 2.6", thereby reducing the probability of introducing jet or turbine engine fuel nozzles into the filler openings of aircraft requiring gasoline.

4. DISCUSSION.

a. The down-size adapter rings are being made available through the aircraft manufacturers (OEMs). Individual OEMs have developed, or are developing, service information for each conversion kit to ensure proper type and installation. This information must be strictly adhered to. Owners and operators of reciprocating engine-powered aircraft should seriously consider

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equipping each fuel tank filler opening with these adapters since safety will be significantly enhanced and in some cases the cost is being defrayed by insurance companies. Check with your aircraft manufacturer or insurance company to determine their participation. New aircraft, off the assembly line, will be equipped with down-size filler openings prior to delivery.

b. Fuel tank filler opening adapters may be installed by pilots, only when accomplished in accordance with OEM service information. Consistent with FAR Section 43.3(g), the fuel tank filler opening adapters may be installed by at least a certificated pilot. The installations must be approved for return to service under FAR Section 43.7, and recorded as required by FAR Section 43.9(a).

c. Fixed base operators (FBOs) and other aviation fuel suppliers should equip jet fueling equipment (i.e., trucks, islands, pumps, etc.) with the up-size spouts, available through normal distribution channels. They too should check with their insurers.

d. Airport owners should amend their airport operations manual to encourage FBOs and other fuel suppliers to meet the new size specifications for jet fuel nozzle spouts, and to do so within a specified time period.

e. For more information, interested parties should contact the manufacturer of their aircraft or General Aviation Manufacturers Association, 1400 K Street N.W., Suite 801, Washington, D.C. 20005, telephone (202) 393-1500; or National Air Transportation Association, 4226 King Street, Alexandria, Virginia 22302, telephone (703) 845-9000.



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