space so that venting is effective under all normal flight conditions. Each vent must minimize the probability of stoppage by dirt or ice.

(b) The venting system must be designed to minimize spillage of fuel through the vents to an ignition source in the event of a rollover during landing, ground operation, or a survivable impact.

[Doc. No. 5074, 29 FR 15695, Nov. 24, 1964, as amended by Amdt. 27–23, 53 FR 34213, Sept. 2, 1988; Amdt. 27–30, 59 FR 50387, Oct. 3, 1994; Amdt. 27–35, 63 FR 43285, Aug. 12, 1998]

§ 27.977 Fuel tank outlet.

(a) There must be a fuel stainer for the fuel tank outlet or for the booster pump. This strainer must—

(1) For reciprocating engine powered rotorcraft, have 8 to 16 meshes per inch; and

(2) For turbine engine powered rotorcraft, prevent the passage of any object that could restrict fuel flow or damage any fuel system component.

(b) The clear area of each fuel tank outlet strainer must be at least five times the area of the outlet line.

(c) The diameter of each strainer must be at least that of the fuel tank outlet.

(d) Each finger strainer must be accessible for inspection and cleaning.

[Amdt. 27–11, 41 FR 55470, Dec. 20, 1976]

Fuel System Components

§ 27.991 Fuel pumps.

Compliance with §27.955 may not be jeopardized by failure of—

(a) Any one pump except pumps that are approved and installed as parts of a type certificated engine; or

(b) Any component required for pump operation except, for engine driven pumps, the engine served by that pump.

[Amdt. 27–23, 53 FR 34213, Sept. 2, 1988]

§ 27.993 Fuel system lines and fittings.

(a) Each fuel line must be installed and supported to prevent excessive vibration and to withstand loads due to fuel pressure and accelerated flight conditions.

(b) Each fuel line connected to components of the rotorcraft between which relative motion could exist must have provisions for flexibility.

(c) Flexible hose must be approved.

(d) Each flexible connection in fuel lines that may be under pressure or subjected to axial loading must use flexible hose assemblies.

(e) No flexible hose that might be adversely affected by high temperatures may be used where excessive temperatures will exist during operation or after engine shutdown.

[Doc. No. 5074, 29 FR 15695, Nov. 24, 1964, as amended by Amdt. 27–2, 33 FR 964, Jan. 26, 1968]

§ 27.995 Fuel valves.

(a) There must be a positive, quick-acting valve to shut off fuel to each engine individually.

(b) The control for this valve must be within easy reach of appropriate crewmembers.

(c) Where there is more than one source of fuel supply there must be means for independent feeding from each source.

(d) No shutoff valve may be on the engine side of any firewall.

§ 27.997 Fuel strainer or filter.

There must be a fuel strainer or filter between the fuel tank outlet and the inlet of the first fuel system component which is susceptible to fuel contamination, including but not limited to the fuel metering device or an engine positive displacement pump, whichever is nearer the fuel tank outlet. This fuel strainer or filter must—

(a) Be accessible for draining and cleaning and must incorporate a screen or element which is easily removable;

(b) Have a sediment trap and drain except that it need not have a drain if the strainer or filter is easily removable for drain purposes;

(c) Be mounted so that its weight is not supported by the connecting lines or by the inlet or outlet connections of the strainer or filter itself, unless adequate strength margins under all loading conditions are provided in the lines and connections; and

(d) Provide a means to remove from the fuel any contaminant which would jeopardize the flow of fuel through rotorcraft or engine fuel system components required for proper rotorcraft