§ 29.1301 Fire extinguishing system materials.

(a) No materials in any fire extinguishing system may react chemically with any extinguishing agent so as to create a hazard.

(b) Each system component in an engine compartment must be fireproof.

§ 29.1203 Fire detector systems.

(a) For each turbine engine powered rotorcraft and Category A reciprocating engine powered rotorcraft, and for each Category B reciprocating engine powered rotorcraft with engines of more than 900 cubic inches displacement, there must be approved, quick-acting fire detectors in designated fire zones and in the combustor, turbine, and tailpipe sections of turbine installations (whether or not such sections are designated fire zones) in numbers and locations ensuring prompt detection of fire in those zones.

(b) Each fire detector must be constructed and installed to withstand any vibration, inertia, and other loads to which it would be subjected in operation.

(c) No fire detector may be affected by any oil, water, other fluids, or fumes that might be present.

(d) There must be means to allow crewmembers to check, in flight, the functioning of each fire detector system electrical circuit.

(e) The writing and other components of each fire detector system in an engine compartment must be at least fire resistant.

(f) No fire detector system component for any fire zone may pass through another fire zone, unless—

(1) It is protected against the possibility of false warnings resulting from fires in zones through which it passes; or

(2) The zones involved are simultaneously protected by the same detector and extinguishing systems.

§ 29.1305 Powerplant instruments.

The following are required powerplant instruments:

(a) For each rotorcraft—

(1) A carburetor air temperature indicator for each reciprocating engine;

(2) A cylinder head temperature indicator for each air-cooled reciprocating engine, and a coolant temperature indicator for each liquid-cooled reciprocating engine;

(3) A fuel quantity indicator for each fuel tank;

(4) A low fuel quantity warning device for each fuel tank which feeds an engine. This device must—

(i) Provide a warning to the crew when approximately 10 minutes of usable fuel remains in the tank; and

(ii) Be independent of the normal fuel quantity indicating system.

(5) A manifold pressure indicator, for each reciprocating engine of the altitude type;

(6) An oil pressure indicator for each pressure-lubricated gearbox;

(7) An oil pressure warning device for each pressure-lubricated gearbox to indicate when the oil pressure falls below a safe value;

(8) An oil quantity indicator for each oil tank and each rotor drive gearbox, if lubricant is self-contained;

(9) An oil temperature indicator for each engine;

(10) An oil temperature warning device to indicate unsafe oil temperatures in each main rotor drive gearbox, including gearboxes necessary for rotor phasing;

(11) A gas temperature indicator for each turbine engine;

(12) A gas producer rotor tachometer for each turbine engine;

(13) A tachometer for each engine that, if combined with the applicable instrument required by paragraph (a)(14) of this section, indicates rotor r.p.m. during autorotation.

(b) For Category A rotorcraft, a speed warning device when $V_{NE}$ is less than the speed at which unmistakable over-speed warning is provided by other pilot cues. The speed warning device must give effective aural warning (differing distinctively from aural warnings used for other purposes) to the pilots whenever the indicated speed exceeds $V_{NE}$ plus 3 knots and must operate satisfactorily throughout the approved range of altitudes and temperatures.

(Secs. 313(a), 601, 603, 604, and 605 of the Federal Aviation Act of 1958 (49 U.S.C. 1354(a), 1421, 1423, 1424, and 1425); and sec. 6(c), Dept. of Transportation Act (49 U.S.C. 1655(c)))