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not employ any pumps, filters, or other components subject to degradation or failure which may adversely affect fuel pressure at the engine;

(22) A means to indicate to the flightcrew the failure of any fuel pump installed to show compliance with § 29.955;

(23) Warning or caution devices to signal to the flightcrew when ferromagnetic particles are detected by the chip detector required by § 29.1337(e); and

(24) For auxiliary power units, an individual indicator, warning or caution device, or other means to advise the flightcrew that limits are being exceeded, if exceeding these limits can be hazardous, for—

- (i) Gas temperature;
- (ii) Oil pressure; and
- (iii) Rotor speed.

(25) For rotorcraft for which a 30-second/2-minute OEI power rating is requested, a means must be provided to alert the pilot when the engine is at the 30-second and 2-minute OEI power levels, when the event begins, and when the time interval expires.

(26) For each turbine engine utilizing 30-second/2-minute OEI power, a device or system must be provided for use by ground personnel which—

- (i) Automatically records each usage and duration of power at the 30-second and 2-minute OEI levels;
- (ii) Permits retrieval of the recorded data;
- (iii) Can be reset only by ground maintenance personnel; and
- (iv) Has a means to verify proper operation of the system or device.

(b) For category A rotorcraft—

(1) An individual oil pressure indicator for each engine, and either an independent warning device for each engine or a master warning device for the engines with means for isolating the individual warning circuit from the master warning device;

(2) An independent fuel pressure warning device for each engine or a master warning device for all engines with provision for isolating the individual warning device from the master warning device; and

(3) Fire warning indicators.

(c) For category B rotorcraft—

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(1) An individual oil pressure indicator for each engine; and

(2) Fire warning indicators, when fire detection is required.

[Doc. No. 5084, 29 FR 16150, Dec. 3, 1964, as amended by Amdt. 29-3, 33 FR 970, Jan. 26, 1968; Amdt. 29-10, 39 FR 35463, Oct. 1, 1974; Amdt. 29-26, 53 FR 34219, Sept. 2, 1988; Amdt. 29-34, 59 FR 47768, Sept. 16, 1994; Amdt. 29-40, 61 FR 21908, May 10, 1996; 61 FR 43952, Aug. 27, 1996]

§ 29.1307 Miscellaneous equipment.

The following is required miscellaneous equipment:

(a) An approved seat for each occupant.

(b) A master switch arrangement for electrical circuits other than ignition.

(c) Hand fire extinguishers.

(d) A windshield wiper or equivalent device for each pilot station.

(e) A two-way radio communication system.

[Amdt. 29-12, 41 FR 55473, Dec. 20, 1976]

§ 29.1309 Equipment, systems, and installations.

(a) The equipment, systems, and installations whose functioning is required by this subchapter must be designed and installed to ensure that they perform their intended functions under any foreseeable operating condition.

(b) The rotorcraft systems and associated components, considered separately and in relation to other systems, must be designed so that—

(1) For Category B rotorcraft, the equipment, systems, and installations must be designed to prevent hazards to the rotorcraft if they malfunction or fail; or

(2) For Category A rotorcraft—

(i) The occurrence of any failure condition which would prevent the continued safe flight and landing of the rotorcraft is extremely improbable; and

(ii) The occurrence of any other failure conditions which would reduce the capability of the rotorcraft or the ability of the crew to cope with adverse operating conditions is improbable.

(c) Warning information must be provided to alert the crew to unsafe system operating conditions and to enable them to take appropriate corrective