

§ 229.129

(b) Cab passageways and compartments shall have adequate illumination.

§ 229.129 Audible warning device.

(a) After August 31, 1980, each lead locomotive shall be provided with an audible warning device that produces a minimum sound level of 96db(A) at 100 feet forward of the locomotive in its direction of travel. The device shall be arranged so that it can be conveniently operated from the engineer's normal position in the cab.

(b) Measurement of the sound level shall be made using a sound level meter conforming, at a minimum, to the requirements of ANSI S1.4-1971, Type 2, and set to an A-weighted slow response. While the locomotive is on level tangent track, the microphone shall be positioned 4 feet above the ground at the center line of the track, and shall be oriented with respect to the sound source in accordance with the manufacturer's recommendations.

(c) A 4dB(A) measurement tolerance is allowable for a given measurement.

§ 229.131 Sanders.

Except for MU locomotives, each locomotive shall be equipped with operable sanders that deposit sand on each rail in front of the first power operated wheel set in the direction of movement.

§ 229.133 Interim locomotive conspicuity measures—auxiliary external lights.

(a) A locomotive at the head of a train or other movement is authorized to be equipped with auxiliary external lights, additional to the headlight required by § 229.125, for the purpose of improved conspicuity. A locomotive that is equipped with auxiliary external lights in conformance with the specifications or performance standards set forth in paragraph (b) of this section on the date of issuance of a final rule that requires additional or other external lights on locomotives for improved conspicuity, as required by section 202(u) of the Federal Railroad Safety Act of 1970, shall be deemed to conform to the requirements of the final rule for four years fol-

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lowing the date of issuance of that final rule.

(b) Each qualifying arrangement of auxiliary external lights shall conform to one of the following descriptions:

(1) *Ditch lights.* (i) Ditch lights shall consist of two white lights, each producing a steady beam of at least 200,000 candela, placed at the front of the locomotive, at least 36 inches above the top of the rail.

(ii) Ditch lights shall be spaced at least 36 inches apart if the vertical distance from the headlight to the horizontal axis of the ditch lights is 60 inches or more.

(iii) Ditch lights shall be spaced at least 60 inches apart if the vertical distance from the headlight to the horizontal axis of the ditch lights is less than 60 inches.

(iv) Ditch lights shall be focused horizontally within 45 degrees of the longitudinal centerline of the locomotive.

(2) *Strobe lights.* (i) Strobe lights shall consist of two white stroboscopic lights, each with "effective intensity," as defined by the Illuminating Engineering Society's Guide for Calculating the Effective Intensity of Flashing Signal Lights (November 1964), of at least 500 candela.

(ii) The flash rate of strobe lights shall be at least 40 flashes per minute and at most 180 flashes per minute.

(iii) Strobe lights shall be placed at the front of the locomotive, at least 48 inches apart, and at least 36 inches above the top of the rail.

(3) *Crossing lights.* (i) Crossing lights shall consist of two white lights, placed at the front of the locomotive, at least 36 inches above the top of the rail.

(ii) Crossing lights shall be spaced at least 36 inches apart if the vertical distance from the headlight to the horizontal axis of the ditch lights is 60 inches or more.

(iii) Crossing lights shall be spaced at least 60 inches apart if the vertical distance from the headlight to the horizontal axis of the ditch lights is less than 60 inches.

(iv) Each crossing light shall produce at least 200,000 candela, either steadily burning or alternately flashing.

(v) The flash rate of crossing lights shall be at least 40 flashes per minute and at most 180 flashes per minute.

(vi) Crossing lights shall be focused horizontally within 15 degrees of the longitudinal centerline of the locomotive.

(4) *Oscillating light.* (i) An oscillating light shall consist of:

(A) One steadily burning white light producing at least 200,000 candela in a moving beam that depicts a circle or a horizontal figure "8" to the front, about the longitudinal centerline of the locomotive; or

(B) Two or more white lights producing at least 200,000 candela each, at one location on the front of the locomotive, that flash alternately with beams within five degrees horizontally to either side of the longitudinal centerline of the locomotive.

(ii) An oscillating light may incorporate a device that automatically extinguishes the white light if display of a light of another color is required to protect the safety of railroad operations.

(c)(1) Any lead locomotive equipped with oscillating lights as described in paragraph (b)(4) that were ordered for installation on that locomotive prior to January 1, 1996, is considered in compliance with § 229.125(d) (1) through (3).

(2) Any lead locomotive equipped with strobe lights as described in paragraph (b)(2) and operated at speeds no greater than 40 miles per hour, is considered in compliance with § 229.125(d) (1) through (3) until the locomotive is retired or rebuilt, whichever comes first.

(3) Any lead locomotive equipped with two white auxiliary lights spaced at least 44 inches apart on at least one axis which was equipped with these auxiliary lights before May 30, 1994, will be considered in compliance with § 229.125(d) (1) through (3) until the locomotive is retired or rebuilt, whichever comes first.

[58 FR 6902, Feb. 3, 1993, as amended at 59 FR 24963, May 13, 1994; 59 FR 39705, Aug. 4, 1994; 61 FR 8887, Mar. 6, 1996]

§ 229.135 Event recorders.

(a) *Duty to equip.* Effective May 5, 1995, and except as provided in para-

graph (b) of this section, any train operated faster than 30 miles per hour shall have an in-service event recorder in the lead locomotive. The presence of the event recorder shall be noted on Form FRA F6180-49A, under the REMARKS section, except that an event recorder designed to allow the locomotive to assume the lead position only if the recorder is properly functioning is not required to have its presence noted on Form FRA F6180-49A. For the purpose of this section, "train" includes a locomotive or group of locomotives with or without cars, and "lead locomotive" means the locomotive from whose cab the crew is operating the train and, when cab control locomotives and/or MU locomotives are coupled together, is the first locomotive proceeding in the direction of movement. The duty to equip the lead locomotive may be met with an event recorder located elsewhere than the lead locomotive provided that such event recorder monitors and records the required data as though it were located in the lead locomotive.

(b) *Response to defective equipment.* A locomotive on which the event recorder has been taken out of service as provided in paragraph (c) of this section may remain as the lead locomotive only until the next calendar-day inspection. A locomotive with an inoperative event recorder is not deemed to be in improper condition, unsafe to operate, or a non-complying locomotive under §§ 229.7 and 229.9, and notwithstanding any other requirements in this chapter, inspection, maintenance, and testing of event recorders is limited to the requirements set forth in § 229.25(e).

(c) *Removal from service.* A railroad may remove an event recorder from service and, if a railroad knows that an event recorder is not monitoring or recording the data specified in § 229.5(g), shall remove the event recorder from service. When a railroad removes an event recorder from service, a qualified person shall cause to be recorded the date the device was removed from service on Form FRA F6180-49A, under the REMARKS section. An event recorder