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appliances are within 3 inches of the required location, except that when cars undergo regular repairs they must then be made to comply with the standards prescribed.

(4) *Manner of application.* Same as specified for "Box and other house cars" (see §231.1(i)(4)).

(g) *Tank-head handholds*—(1) *Number.* Two. (Not required if safety railing runs around ends of tank.)

(2) *Dimensions.* Minimum diameter, five-eighths of an inch, wrought iron or steel. Minimum clearance, 2, preferably 2½, inches.

(3) *Location.* (i) Horizontal, one across each head of tank not less than 30 nor more than 60 inches above platform on running board. Clear length of handholds shall extend to within 6 inches of outer diameter of tank at point of application.

(ii) Carriers are not required to change the location of handholds on cars in service July 7, 1911, except end handholds under end sills, where the appliances are within 3 inches of the required location, except that when cars undergo regular repairs they must then be made to comply with the standards prescribed.

(4) *Manner of application.* Tankhead handholds shall be securely fastened.

(h) *Safety railings*—(1) *Number.* One running around sides and ends of tank or two running full length of tank.

(2) *Dimensions.* Minimum diameter, seven-eighths of an inch, wrought iron or steel. Minimum clearance, 2½ inches.

(3) *Location.* Running full length of tank, not less than 30 nor more than 60 inches above platform or running board.

(4) *Manner of application.* Safety railings shall be securely fastened to tank or tank bands and secured against end shifting.

(i) *Uncoupling levers.* Same as specified for "Box and other house cars" (see §231.1(k)).

(j) *End-ladder clearance.* (1) No part of car above end sills within 30 inches from side of car, except buffer block, brake shaft, brake-shaft brackets, brake wheel, running boards or uncoupling lever shall extend to within 12 inches of a vertical plane parallel with end of car and passing through the in-

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side face of knuckle when closed with coupler horn against the buffer block or end sill, and no other part of end of car or fixtures on same, above end sills, other than exceptions herein noted, shall extend beyond the outer face of buffer block.

(2) Carriers are not required to make changes to secure additional end-ladder clearance on cars in service July 1, 1911, that have 10 or more inches end-ladder clearance, within 30 inches of side of car, until car is shopped for work amounting to practically rebuilding body of car, at which time they must be made to comply with the standards prescribed.

§231.9 Tank cars without end sills.

(a) *Hand brakes*—(1) *Number.* Same as specified for "Box and other house cars" (see §231.1(a)(1)).

(2) *Dimensions.* Same as specified for "Box and other house cars" (see §231.1(a)(2)).

(3) *Location.* Each hand brake shall be so located that it can be safely operated while car is in motion. The brake shaft shall be located on end of car to the left of center.

(4) *Manner of application.* Same as specified for "Box and other house cars" (see §231.1(a)(4)).

(b) *Brake step.* Same as specified for "Box and other house cars" (see §231.1(b)).

(c) *Running boards*—(1) *Number.* One.

(2) *Dimensions.* Minimum width on sides, 10 inches. Minimum width on ends, 6 inches.

(3) *Location.* Continuous around sides and ends of tank.

(4) *Manner of application.* (i) If running boards are applied below center of tank, outside edge of running boards shall extend not less than 7 inches beyond bulge of tank.

(ii) Running boards at ends of car shall be not less than 6 inches from a point vertically above the inside face of knuckle when closed with coupler horn against the buffer block, end sill or back stop.

(iii) Running boards shall be securely fastened to tank or tank bands.

(d) *Sill steps*—(1) *Number.* Four. (If tank has high running boards, making ladders necessary, sill steps must meet ladder requirements.)

(2) *Dimensions.* Same as specified for “Box and other house cars” (see § 231.1(d)(2)).

(3) *Location.* (i) One near each end on each side, flush with outside edge of running board as near end of car as practicable.

(ii) Tread not more than 24, preferably not more than 22, inches above the top of rail.

(iii) Carriers are not required to change the location of handholds on cars in service July 1, 1911, where the appliances are within 3 inches of the required location, except that when cars undergo regular repairs they must then be made to comply with the standards prescribed.

(4) *Manner of application.* (i) Steps exceeding 18 inches in depth shall have an additional tread and be laterally braced.

(ii) Sill steps shall be securely fastened with not less than ½-inch bolts with nuts outside (when possible) and, riveted over, or with ½-inch rivets.

(e) *Side handholds—(1) Number.* Four or more.

(2) *Dimensions.* Same as specified for “Box and other house cars” (see § 231.1(h)(2)).

(3) *Location—(i) Horizontal,* one near each end on each side of car over sill step on running board, not more than 2 inches back from outside edge of running board, projecting downward or outward.

(ii) Where such side handholds are more than 18 inches from end of car, an additional handhold must be placed near each end on each side not more than 30 inches above center line of coupler.

(iii) Clearance of outer end of handhold shall be not more than 12 inches from end of car.

(iv) If safety railings are on tank, four additional vertical handholds shall be applied, one over each sill step on tank.

(v) Carriers are not required to change the location of handholds on cars in service July 1, 1911, except end handholds under end sills, where the appliances are within 3 inches of the required location, except that when cars undergo regular repairs they must then be made to comply with the standards prescribed.

(4) *Manner of application.* Same as specified for “Box and other house cars” (see § 231.1(h)(4)).

(f) *End handholds—(1) Number.* Four.

(2) *Dimensions.* Same as specified for “Box and other house cars” (see § 231.1(i)(2)).

(3) *Location.* (i) Horizontal, one near each side on each end of car on running board, not more than 2 inches back from edge of running board projecting downward or outward, or on end of tank not more than 30 inches above center line of coupler.

(ii) Carriers are not required to change the location of handholds on cars in service July 1, 1911, except end handholds under end sills, where the appliances are within 3 inches of the required location, except that when cars undergo regular repairs they must then be made to comply with the standards prescribed.

(4) *Manner of application.* Same as specified for “Box and other house cars” (see § 231.1(i)(4)).

(g) *Safety railings—(1) Number.* One.

(2) *Dimensions.* Minimum diameter, seven-eighths of an inch, wrought iron or steel. Minimum clearance, 2½ inches.

(3) *Location.* Safety railings shall be continuous around sides and ends of car, not less than 30 nor more than 60 inches above running board.

(4) *Manner of application.* Safety railings shall be securely fastened to tank or tank bands, and secured against end shifting.

(h) *Uncoupling levers—(1) Number.* Same as specified for “Box and other house cars” (see § 231.1(k)(1)).

(2) *Dimensions.* Same as specified for “Box and other house cars” (see § 231.1(k)(2)), except that minimum length of uncoupling lever shall be 42 inches, measured from center line of end of car to handle of lever.

(3) *Location.* Same as specified for “Box and other house cars” (see § 231.1(k)(3)), except that uncoupling lever shall be not more than 30 inches above center line of coupler.

(i) *End-ladder clearance.* (1) No part of car above buffer block within 30 inches from side of car, except brake shaft, brake-shaft brackets, brake wheel or uncoupling lever shall extend to within 12 inches of a vertical plane parallel

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with end of car and passing through the inside face of knuckle when closed with coupler horn against the buffer block or back stop, and no other part of end of car or fixtures on same, above buffer block, other than exceptions herein noted, shall extend beyond the face of buffer block.

(2) Carriers are not required to make changes to secure additional end-ladder clearance on cars in service July 1, 1911, that have 10 or more inches end-ladder clearance, within 30 inches of side of car, until car is shopped for work amounting to practically rebuilding body of car, at which time they must be made to comply with the standards prescribed.

§ 231.10 Caboose cars with platforms.

NOTE: a. The term “bottom of car” as used in § 231.10 is construed to mean “bottom of side-sill or sheathing over side-sill.”

b. The term “corner of car” as used in § 231.10 is construed to mean the “line at inner edge of platform formed by the intersection of the side and end of car.”

(a) *Hand brakes*—(1) *Number*. (i) Each caboose car shall be equipped with an efficient hand brake which shall operate in harmony with the power brake thereon.

(ii) The hand brake may be of any efficient design, but must provide the same degree of safety as the design shown on plate A.

(2) *Dimensions*. Same as specified for “Box and other house cars” (see § 231.1(a)(2)).

(3) *Location*. (i) Each hand brake shall be so located that it can be safely operated while car is in motion.

(ii) The brake shaft on caboose cars with platforms shall be located on platform to the left of center.

(iii) Carriers are not required to change the brakes from right to left side on steel or steel-underframe cars with platform end sills, in service July 1, 1911, except when such appliances are renewed, at which time they must be made to comply with the standards prescribed.

(4) *Manner of application*. Same as specified for “Box and other house cars” (see § 231.1(a)(4)).

(b) *Running boards*—(1) *Number*. One longitudinal running board.

(2) *Dimensions*. Same as specified for “Box and other house cars” (see § 231.1(c)(2)).

(3) *Location*. (i) Full length of car, center of roof. (On caboose cars with cupolas, longitudinal running boards shall extend from cupola to ends of roof.)

(ii) Outside - metal - roof - cars shall have latitudinal extensions leading to ladder locations.

(4) *Manner of application*. Same as specified for “Box and other house cars” (see § 231.1(c)(4)). See note below.

(c) *Ladders*—(1) *Number*. Two.

(2) *Dimensions*. None specified.

(3) *Location*. One on each end.

(4) *Manner of application*. Same as (see § 231.1(e)(4)). See note below.

(d) *Roof handholds*—(1) *Number*. One over each ladder. Where stiles of ladders extend 12 inches or more above roof, no other roof handholds are required.

(2) *Dimensions*. Same as specified for “Box and other house cars” (see § 231.1(g)(2)).

(3) *Location*. (i) On roof of caboose in line with and running parallel to treads of ladder, not less than 8 nor more than 15 inches from edge of roof.

(ii) Carriers are not required to change the location of handholds on cars in service July 1, 1911, except end handholds under end sills, where the appliances are within 3 inches of the required location, except that when cars undergo regular repairs they must then be made to comply with the standards prescribed.

(4) *Manner of application*. Same as specified for “Box and other house cars” (see § 231.1(g)(4)). See note below.

(e) *Cupola handholds*—(1) *Number*. One or more.

(2) *Dimensions*. Minimum diameter, five-eighths of an inch, wrought iron or steel. Minimum clearance, 2, preferably 2½ inches.

(3) *Location*. (i) One continuous handhold extending around top of cupola not more than 3 inches from edge of cupola roof.

(ii) Four right-angle handholds, one at each corner, not less than 16 inches in clear length from point of angle, may take the place of the one continuous handhold specified, if locations coincide.