

(3) *Location.* One on rear end of tender and one on front end of locomotive.

(f) *Handrails and steps for headlights.* Switching locomotives with sloping tenders with manhole or headlight located on sloping portion of tender shall be equipped with secure steps and handrail or with platform and handrail leading to such manhole or headlight.

(g) *End-ladder clearance.* No part of locomotive or tender except draft rigging, coupler and attachments, safety chains, buffer block, footboard, brake pipe, signal pipe, steam-heat pipe or arms of uncoupling lever shall extend to within 14 inches of a vertical plane passing through the inside face of knuckle when closed with horn of coupler against buffer block or end sill.

(h) *Couplers.* Locomotives shall be equipped with automatic couplers at rear of tender and front of locomotive.

§ 231.17 Specifications common to all steam locomotives.

(a) *Hand brakes.* (1) Hand brakes will not be required on locomotives nor on tenders when attached to locomotives.

(2) If tenders are detached from locomotives and used in special service, they shall be equipped with efficient hand brakes.

(b) *Running boards*—(1) *Number.* Two.

(2) *Dimensions.* Not less than 10 inches wide. If of wood, not less than 1½ inches in thickness; if of metal, not less than three-sixteenths of an inch, properly supported.

(3) *Location.* One on each side of boiler extending from cab to front end near pilot-beam. (Running boards may be in sections. Flat-top steamchests may form section of running board.)

(4) *Manner of application.* (i) Running boards shall be securely fastened with bolts, rivets, or studs.

(ii) Locomotives having Wootten type boilers with cab located on top of boiler more than 12 inches forward from boiler head shall have suitable running boards running from cab to rear of locomotive, with handrailings not less than 20 nor more than 48 inches above outside edge of running boards, securely fastened with bolts, rivets, or studs.

(c) *Handrails*—(1) *Number.* Two or more.

(2) *Dimensions.* Not less than 1 inch in diameter, wrought iron or steel.

(3) *Location.* One on each side of boiler extending from near cab to near front end of boiler, and extending across front end of boiler, not less than 24 nor more than 66 inches above running board.

(4) *Manner of application.* Handrails shall be securely fastened to boiler.

(d) *Tenders of Vanderbilt type.* (1) Tenders known as the Vanderbilt type shall be equipped with running boards; one on each side of tender not less than 10 inches in width and one on top of tender not less than 48 inches in width, extending from coal space to rear of tender.

(2) There shall be a handrail on each side of top running board, extending from coal space to rear of tank, not less than 1 inch in diameter and not less than 20 inches in height above running board from coal space to manhole.

(3) There shall be a handrail extending from coal space to within 12 inches of rear of tank, attached to each side of tank above side running board not less than 30 nor more than 66 inches above running board.

(4) There shall be one vertical end handhold on each side of Vanderbilt type of tender, located within 8 inches of rear of tank extending from within 8 inches of top of end sill to within 8 inches of side handrail. Post supporting rear end of side running board, if not more than 2 inches in diameter and properly located, may form section of handhold.

(5) An additional horizontal end handhold shall be applied on rear end of all Vanderbilt type of tenders which are not equipped with vestibules. Handhold to be located not less than 30 nor more than 66 inches above top of end sill. Clear length of handhold to be not less than 48 inches.

(6) Ladders shall be applied at forward ends of side running boards.

(e) *Handrails and steps for headlights.* (1) Locomotives having headlights which can not be safely and conveniently reached from pilot-beam or steam chests shall be equipped with secure handrails and steps suitable for the use of men in getting to and from such headlights.

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(2) A suitable metal end or side ladder shall be applied to all tanks more than 48 inches in height, measured from the top of end sill, and securely fastened with bolts or rivets.

(f) *Couplers.* Locomotives shall be equipped with automatic couplers at rear of tender and front of locomotive.

§ 231.18 Cars of special construction.

Cars of construction not covered specifically in the foregoing sections in this part, relative to handholds, sill steps, ladders, hand brakes and running boards may be considered as of special construction, but shall have, as nearly as possible, the same complement of handholds, sill steps, ladders, hand brakes, and running boards as are required for cars of the nearest approximate type.

§ 231.19 Definition of "Right" and "Left."

Right or *Left* refers to side of person when facing end or side of car from ground.

§ 231.20 Variation in size permitted.

To provide for the usual inaccuracies of manufacturing and for wear, where sizes of metal are specified, a total variation of 5 percent below size given is permitted.

§ 231.21 Tank cars without underframes.

(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) *End platforms*—(1) *Number.* Two.

(2) *Dimensions.* Minimum width, ten inches. Minimum thickness, one and three-quarters inches.

(3) *Location.* One on each end extending across car a distance equal to or greater than any other portion of car. Outside edge of end platform shall ex-

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tend not less than seven inches beyond bulge of tank head and safety railing.

(4) *Manner of application.* End platforms shall be securely fastened to the draft sills and be sufficiently rigid to prevent sagging.

(c) *Sill steps.* Same as specified for "Box and other house cars" (see § 231.1(d)).

(d) *End platform safety railing*—(1) *Number.* Two.

(2) *Dimensions.* Minimum of seven-eighths inch diameter, wrought iron or steel, or one and one-quarter inch pipe. Minimum clearance, two and one-half inches.

(3) *Location.* One safety railing at each end of car shall extend horizontally across car not less than thirty-six inches nor more than fifty-four inches above end platform and extend downward within three inches of the end of the platform. The safety railing shall be located not more than six inches from the inside edge of the platform.

(4) *Manner of application.* Safety railings shall be supported at center of car and at each end by extending downward at the ends and attaching to the platform.

(e) *Side railing*—(1) *Number.* Two.

(2) *Dimensions.* One and one-quarter inch pipe. Minimum clearance two and one-half inches.

(3) *Location.* One on each side of car, extending from end platform to end platform at a distance of not less than 51 inches from centerline of car, except that where break in side railing is necessary for side ladder or operating cabinet, the side railing shall be securely attached to such ladder and/or cabinet.

(4) *Manner of application.* Safety railings shall be securely attached to end platforms and supported from the car at intervals not exceeding ten feet.

(f) *Side handholds*—(1) *Number.* Four.

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

(3) *Location.* Four horizontal; one on face of end platform end, over sill step, projecting downward or outward. Clearance of outer end of handhold shall be not more than twelve inches from end of car. Vertical portion of end platform safety railing shall be considered as a side vertical handhold.