



Inspector(s):	Inspection Location:	Date:	Region:
Builder:	Car Initials & Number:	Car Type:	Cars to be Built:
			Builder Job #

Item	Number - Dimensions - Location - Manner of Application (All brackets used solely to support safety appliances are mechanically fastened per MP&E TB 98-14)	CFR Reference*	Notes
Hand Brake	<p>Except for box and other house cars that comply with either 231.27 or 231.28, each box and other house car shall be equipped to meet the following specifications:</p> <ul style="list-style-type: none"> <input type="checkbox"/> One efficient handbrake which shall operate in harmony with the power brake installed on the car. <input type="checkbox"/> Each such handbrake shall provide the same degree of safety as the design shown on plate A. <input type="checkbox"/> Or provide the same degree of safety as that specified in 231.27. <input type="checkbox"/> The brake shaft shall be not less than 1¼ inches in diameter, of wrought iron or steel without weld. <input type="checkbox"/> The brake wheel may be flat or dished, not less than 15 inches in diameter, of malleable iron, wrought iron, or steel. <input type="checkbox"/> Each handbrake shall be so located that it can be safely operated while car is in motion. <input type="checkbox"/> The brake shaft shall be located on end of car to the left of, and not more than 22 inches from center. <input type="checkbox"/> There shall be not less than four inches clearance around rim of brake wheel. <input type="checkbox"/> Outside edge of brake wheel shall be not less than four inches from a vertical plane parallel with end of car and passing through the inside face of knuckle when closed with coupler horn against the buffer block or end sill. <input type="checkbox"/> Brake chain shall be of not less than ¾, preferably 7/16, inch wrought iron or steel, with a link on the brake rod end of not less than 7/16 inch wrought iron or steel. ¹ <input type="checkbox"/> Brake wheel shall be held in position on brake shaft by a nut on a threaded extended end of brake shaft; said threaded portion shall be not less than three-fourths of an inch in diameter; said nut shall be secured by riveting over or by the use of a lock nut or suitable 	<p>231.1(a)(1)</p> <p>231.1(a)(1)(i)</p> <p>231.1(a)(1)(ii)</p> <p>231.1(a)(2)(i)</p> <p>231.1(a)(2)(ii)</p> <p>231.2(a)(3)(i)</p> <p>231.2(a)(3)(ii)</p> <p>231.1(a)(4)(i)</p> <p>231.1(a)(4)(ii)</p> <p>231.1(a)(4)(vi)</p> <p>231.1(a)(4)(xiii)</p>	
Brake Step	<ul style="list-style-type: none"> <input type="checkbox"/> If brake step is used, it shall be not less than 28 inches in length. <input type="checkbox"/> Outside edge shall be not less than eight inches from face of car and not less than four inches from a vertical plane parallel with end of car and passing through the inside face of knuckle when closed with coupler horn against the buffer block or end sill. <input type="checkbox"/> Brake step shall be supported by not less than two metal braces having a minimum cross-sectional area ¾ x 1½ inches or equivalent, which shall be securely fastened to body of car with not less than ½ inch bolts or rivets. 	<p>231.1(b)</p> <p>231.1(b)(1)</p>	

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Sill Steps	<input type="checkbox"/> Four sill steps <input type="checkbox"/> Minimum cross-sectional area $\frac{1}{2} \times 1\text{-}\frac{1}{2}$ inches, or equivalent ³ of wrought iron or steel. <input type="checkbox"/> Minimum length of tread, ten inches. <input type="checkbox"/> Minimum clear depth, eight inches. ⁴ <input type="checkbox"/> One near each end of each side of car, so that there shall be not more than 18 inches from end of car to center of tread of sill step. <input type="checkbox"/> Outside edge of tread of step shall be not more than four inches inside of face of side of car. <input type="checkbox"/> Tread shall be not more than 24, inches above the top of rail. <input type="checkbox"/> Sill steps exceeding 21 inches in depth shall have an additional tread. <input type="checkbox"/> Sill steps shall be securely fastened with not less than $\frac{1}{2}$ inch bolts with nuts outside (when possible) and riveted over, or with not less than $\frac{1}{2}$ inch rivets.	231.1(d)(1) 231.1(d)(2) 231.1(d)(3)(i) 231.1(d)(3)(ii) 231.1(d)(3)(iii) 231.1(d)(4)(i) 231.1(d)(4)(ii)	
Ladders	<input type="checkbox"/> Four ladders Minimum clear length of tread: <input type="checkbox"/> Side ladders, 16 inches. <input type="checkbox"/> End ladders, 14 inches. <input type="checkbox"/> Maximum spacing between ladder treads 19 inches. <input type="checkbox"/> Top ladder tread shall be located not more than four inches from top of car. ⁵ <input type="checkbox"/> Spacing of side ladder treads shall be uniform within a limit of two inches from top ladder tread to bottom tread of ladder <input type="checkbox"/> Maximum distance from bottom tread of side ladder to top tread of sill step, 21 inches. <input type="checkbox"/> End ladder treads shall be spaced to coincide with treads of side ladders, a variation of two inches being allowed. Where construction of car will not permit the application of a tread of end ladder to coincide with bottom tread of side ladder, the bottom tread of end ladder must coincide with second tread from bottom of side ladder. <input type="checkbox"/> Iron or steel treads, minimum diameter $\frac{5}{8}$ of an inch. ² <input type="checkbox"/> Minimum clearance of treads, two inches. <input type="checkbox"/> One on each side, not more than eight inches from right end of car; one on each end, not more than eight inches from left side of car; measured from inside edge of ladder stile or clearance of ladder treads to corner of car. <input type="checkbox"/> Metal ladders without stiles near corners of cars shall have foot guards or upward projections not less than two inches in height near inside end of bottom treads. <input type="checkbox"/> Stiles of ladders, projecting two or more inches from face of car, will serve as foot guards. <input type="checkbox"/> Ladders shall be securely fastened with not less than $\frac{1}{2}$ inch bolts with nuts outside (when possible) and riveted over, or with not less than $\frac{1}{2}$ inch rivets.	231.1(e)(1) 231.1(e)(2)(i) 231.2(d)(2) 231.1(e)(2)(iii) 231.1(e)(2)(iv) 231.1(e)(2)(v) 231.1(e)(2)(vii) 231.1(e)(2)(viii) 231.1(e)(3)(i) 231.1(e)(4)(i) 231.1(e)(4)(ii) 231.1(e)(4)(iii)	

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Side Handholds	<input type="checkbox"/> Number ~ Four. (Tread of side ladder is a side handhold.) <input type="checkbox"/> Minimum diameter, $\frac{5}{8}$ of an inch, wrought iron or steel. ² <input type="checkbox"/> Minimum clear length, 16 inches <input type="checkbox"/> Minimum clearance, two inches. <input type="checkbox"/> Horizontal, one near each end on each side of car. Side handholds shall be not less than 24 nor more than 30 inches above center line of coupler, except as provided above, where tread of ladder is a handhold. Clearance of outer end of handhold shall be not more than eight inches from end of car. <input type="checkbox"/> Side handholds shall be securely fastened with not less than $\frac{1}{2}$ inch bolts with nuts outside (when possible) and riveted over, or with not less than $\frac{1}{2}$ inch rivets.	231.1(h)(1) 231.1(h)(2) 231.1(h)(3)(i) 231.1(h)(4)	
Horizontal End Handholds	<input type="checkbox"/> Eight or more, four on each end of car. (Tread of end ladder is an end handhold.) <input type="checkbox"/> Minimum diameter, $\frac{5}{8}$ of an inch, wrought iron or steel. ² <input type="checkbox"/> Minimum clear length, 16 inches, preferably 24 inches. <input type="checkbox"/> A handhold 14 inches in length may be used where it is impossible to use one 16 inches in length. <input type="checkbox"/> Minimum clearance, two inches. <input type="checkbox"/> One near each side on each end of car, not less than 24 nor more than 30 inches above center line of coupler, except as provided above, when tread of end ladder is an end handhold. Clearance of outer end of handhold shall be not more than eight inches from side of car. <input type="checkbox"/> One near each side of each end of car on face of end sill or sheathing over end sill, projecting outward or downward. Clearance of outer end of handhold shall be not more than 16 inches from side of car. <input type="checkbox"/> On each end of cars with platform end sills 6 or more inches in width, measured from end post or siding and extending entirely across end of car, there shall be one additional end handhold not less than 24 inches in length, located near center of car, not less than 30 nor more than 60 inches above platform end sill. <input type="checkbox"/> Horizontal end handholds shall be securely fastened with not less than $\frac{1}{2}$ inch bolts with nuts outside (when possible) and riveted over, or with not less than $\frac{1}{2}$ inch rivets.	231.1(i)(1) 231.1(i)(2)(i) 231.1(i)(2)(ii) 231.1(i)(2)(iii) 231.1(i)(3)(i) 231.1(i)(3)(ii) 231.1(i)(3)(iii) 231.1(i)(4)	
Vertical End Handholds	<input type="checkbox"/> Two on full-width platform end-sill cars, as heretofore described. <input type="checkbox"/> Minimum diameter, $\frac{5}{8}$ of an inch, wrought iron or steel. ² <input type="checkbox"/> Minimum clear length, 18 inches. <input type="checkbox"/> Minimum clearance, two inches. <input type="checkbox"/> One on each end of car opposite ladder, not more than eight inches from side of car; clearance of bottom end of handhold shall be not less than 24 nor more than 30 inches above center line of coupler. <input type="checkbox"/> Vertical end handholds shall be securely fastened with not less than $\frac{1}{2}$ inch bolts with nuts outside (when possible) and riveted over, or with not less than $\frac{1}{2}$ inch rivets.	231.1(j)(1) 231.1(j)(2) 231.1(j)(3)(i) 231.1(j)(4)	

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Uncoupling Levers	<ul style="list-style-type: none"> <input type="checkbox"/> Two uncoupling levers. <input type="checkbox"/> May be either single or double, and of any efficient design. <input type="checkbox"/> Handles of uncoupling levers, except those shown on Plate B or of similar designs, shall be not more than six inches from side of car. <i>(Plate B is the primary application you will see)</i> <input type="checkbox"/> Uncoupling levers of design shown on plate B and of similar designs shall conform to the following prescribed limits: <ul style="list-style-type: none"> <input type="checkbox"/> Handles shall be not more than 12 inches from sides of car. Center lift arms shall be not less than 7 inches long. <input type="checkbox"/> Center of eye at end of center lift arm shall be not more than 3 ½ inches beyond center of eye of uncoupling pin of coupler when horn of coupler is against the buffer block or end sill. (See plate B.) <input type="checkbox"/> End of handles shall extend not less than four inches below bottom of end sill or shall be so constructed as to give a minimum clearance of two inches around handle. Minimum drop of handles shall be 12 inches; maximum, 15 inches overall (see Plate B). <input type="checkbox"/> One on each end of car. When single lever is used, it shall be placed on left side of end of car. 	231.1(k)(1) 231.1(k)(2)(i) 231.1(k)(2)(ii) 231.1(k)(2)(iii) 231.1(k)(2)(iv) 231.1(k)(2)(v) 231.1(k)(3)	
End Ladder Clearance	No part of car above end sills within 30 inches from side of car, except buffer block, brake shaft, brake wheel, brake step, or uncoupling lever shall extend to within 12 inches of a vertical plane parallel with end of car and passing through the inside 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.	231.2(i)(1)	

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Other CFR Sections	<input type="checkbox"/> Inspect all components to ensure compliance with the regulations. <input type="checkbox"/> Ensure all brake components are located so that an inspection can be safely conducted without an inspector placing himself in a precarious or unsafe position, <i>(TB MP&E 98-32)</i> .		
Misc.	<input type="checkbox"/> Check for any sharp or protruding objects or areas on the equipment that may create a safety concern or personal injury. <input type="checkbox"/> Check for potential pinch points at all safety appliance arrangements. <input type="checkbox"/> Check to ensure that all brackets used solely to support a safety appliance are mechanically fastened. The use of weld on brackets is prohibited. <input type="checkbox"/> Check to ensure compliance with all applicable federal regulations . <input type="checkbox"/> Verify coupler height 31½ inch minimum, 34½ inch maximum.	231.31(a)(1)	
Digital Photos	<input type="checkbox"/> General Arrangement Photo Sheet ~ No Deviations Noted (6 photos minimum, A & B ends, each corner at 45 degree angle) <input type="checkbox"/> Deviation Photo Sheet ~ Deviations Noted: As many photos as necessary to fully depict, document and illustrate CFR deviations (e.g. 215, 229, 231 & 232)		

* The CFR reference sections noted throughout the check list refers to the *actual* regulatory requirement.

Footnotes:

- 1 TB MP&E 98-53 ...3/8 inch alloy chain and 1/2 inch steel alloy chain currently being used by new car manufacturers exceed the specifications.
- 2 TB MP&E 98-18 Ladder treads, handholds of circular cross-section, 13/16 inch diameter and sill steps, 5/8 inch thick and 2 inches wide, when constructed of 6061-T6 aluminum alloy exceeds the current Federal Railroad Administration's requirements.
- 3 Equivalent must meet or exceed the cross sectional area the result of which may not be less than 3/4 inch.
- 4 TB MP&E 98-13 Clear depth means a vertical space the width of, and above the sill step material or strap and should be clear and unobstructed for 8 inches
- 5 Variance allowed due to construction of car. Note exception on F6180.4.

IMPORTANT NOTE: Equipment that is not adequately addressed in Part 231. For examples: There are no ladder requirements in §§231.29 or 231.30. However, if additional safety appliances are used on *any type of equipment*, (i.e., §231.18 Cars of special construction), they must meet the dimension, location, and a manner of application requirements. This logic holds true regardless of the equipment inspected. When applying §231.6 during a sample-car inspection on an auto rack, you will encounter components not mentioned in that section such as ladders, stenciling, end ladder clearance, etc. These additional components must meet the appropriate requirements. If there is any doubt, consult your regional specialist.

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