



US Department of Transportation
 Federal Railroad Administration

Sample Car Inspection Checklist For: S-2044 Appendix G-1
 Safety Appliances for Coil Cars

OMB No. 2130-0565
 FRA F6180.161 K

Inspector(s):	Inspection Location:	Date:	Region:
Builder:	Car Initial and Number:	Car Type:	No. of cars to be Built:
		Builder Job No.	

ITEM	Number - Dimensions - Location - Manner of Application	Appendix Reference	Notes
Hand Brake	Each car shall have at least one AAR-approved vertical-wheel hand brake that complies with MSRP Section E, Standard S-475 and that operates in harmony with the power brake equipment on the car. Total braking force applied to the brake shoes by the hand brake shall comply with the requirements of MSRP Section E, Standard S-401, but in any event shall be not less than that developed by 50 psi brake cylinder pressure. The hand brake wheel and chain drum of vertical-wheel hand brakes shall be arranged so that both will revolve when applying and gradually releasing the hand brake. The hand brake shall be provided with means to prevent application of the brake by turning the brake wheel in a counterclockwise direction.	Appendix G1, 2.1.1	
	The hand brake wheel shall have a nominal diameter of 22 in. The brake wheel shall be of shallow configuration, and shall be of steel or other material of equivalent strength.	Appendix G1, 2.1.2	
	The hub of the hand brake wheel shall be 2 5/8 in. deep with a square tapered fit to the shaft. The taper on the brake wheel hub and shaft shall be 1 in. in 12 in. on each side, or 2 in. in 12 in. total, with the small end of the shaft opening 7/8 in. square. The brake wheel shall be secured to the brake shaft with an American National Standard 7/8–9 heavy hex nut and 3/16 in. x 1 1/2 in. cotter, or their equivalent.	Appendix G1, 2.1.3	
	Location	The hand brake shall be located so that it can be safely operated from the car while the car is in motion and safely operated from the ground while the car is stationary. The hand brake on cars equipped with one brake shall be applied on the B end of the car at the left side. The hand brakes on cars equipped with more than one hand brake shall be located as specified in paragraph 9.0 of the base standard.	Appendix G1, 2.2.1
The center of the hand brake shaft shall be located in the transverse direction not less than 12 in. nor more than 22 in. from the inboard surface of the nearest side handhold and shall be not less than 26 in. above the lowest sill step tread nor more than 46 in. above the highest sill step tread. In addition, the center of the hand brake shaft shall be not more than 65 in. above the top of rail.		Appendix G1, 2.2.2	
The outside face of the hand brake wheel shall be no more than 36 in. in the longitudinal direction from the outside surface of the inboard vertical side handhold. The outside face of the hand brake wheel shall be no more than 16 in. in the longitudinal direction from the inside surface of the outboard vertical leg of the sill step and shall not extend more than 8 in. beyond the striker or end of the center sill, whichever extends farther.		Appendix G1, 2.2.3	



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Manner of Application	Clearance around the rim of the hand brake wheel shall be not less than 4 in. Clearance between the grip portion of the release lever, if used, throughout its range of travel and any part of the car shall be not less than 2 1/2 in.	Appendix G1, 2.2.4	
	If the hand brake application is such that the requirements of paragraph 2.2.4 can be met only with hand brakes having short hand brake release levers or only with long release levers, but not both, the car shall be marked adjacent to the hand brake in 1 1/2 in. high letters "SHORT (LONG) RELEASE LEVER BRAKE ONLY."	Appendix G1, 2.2.5	
	The hand brake housing shall be securely fastened. The hand brake application, including bolt hole pattern, shall conform to MSRP Section E, Standard S-475.	Appendix G1, 2.3.1	
	The hand brake chain shall conform to the requirements of S-475, but in any event shall have a minimum working load of 5,875 lb and minimum proof test of 11,750 lb.	Appendix G1, 2.3.2	
	Hand brake rods shall be of no less than 3/4 in. diameter.	Appendix G1, 2.3.3	
Sill Steps	There shall be four sill steps.	Appendix G1, 3.1	
Dimensions	Sill steps shall conform to the requirements of Standard S-2042. Minimum usable length of tread shall be 14 in.	Appendix G1, 3.2.1	
	Sill steps shall be of steel not less than 1/2 in. thick, shall be not less than 4 in. wide, and shall be provided with a slip-resistant surface.	Appendix G1, 3.2.2	
	Sill steps shall have sufficient treads such that the top tread is not more than 21 in. below the lowest adjacent horizontal side handhold, if the car is so equipped, or, if there are no horizontal side handholds, below the walking surface of the running board. Sill step treads shall be spaced not more than 21 in. apart.	Appendix G1, 3.2.3	
	The clear depth above the entire usable length of all sill step treads shall be not less than 8 in., and the clear width of the lowest sill step tread shall be not less than 6 in. for both loaded and empty conditions with the trucks rotated to simulate the maximum curvature specified for the uncoupled car.	Appendix G1, 3.2.4	



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Location	One sill step shall be applied near each end of each side of the car. The sill steps shall be located in the longitudinal direction such that the inside face of neither vertical leg of the sill step extends more than 2 in. into the space between the vertical side handholds or the space between the vertical handhold supports, whichever space is smaller.	Appendix G1, 3.3.1	
	In the transverse direction, the outside edge of any sill step tread shall be not more than 6 in. inboard or outboard of the inside surface of the adjacent side handholds. In addition, the outside edge of any sill step tread shall be not more than 4 in. inboard of any car structure below the adjacent side handholds in the area between the side handholds. With the exception of the side handholds and their supports, no part of the car below 66 in. above the top of the rail shall extend farther than 6 in. outboard of the outboard edge of the lowest sill step tread.	Appendix G1, 3.3.2	
	The lowest tread shall be not more than 20 in. above the top of rail.	Appendix G1, 3.3.3	
Manner of Application	Sill steps shall be securely fastened.	Appendix G1, 3.4	
Side Handholds	There shall be not less than eight side handholds, two at each corner.	Appendix G1, 4.1	
Dimensions	Handholds shall be of steel not less than 3/4 in. diameter or pipe of 1 1/4 in. nominal pipe size with Schedule 40 minimum wall thickness. Handhold material shall conform to the requirements of Standard S-224. Minimum clear length shall be 16 in. Minimum clearance shall be 2 in., preferably 2 1/2 in.	Appendix G1, 4.2.1	
	Side handholds shall have an uninterrupted span between the upper and lower clearance points.	Appendix G1, 4.2.2	
	Horizontal side handholds below the end platform, if the car is so equipped, shall have foot guards or upward projections not less than 2 in. in height at both ends.	Appendix G1, 4.2.3	
	When applied, elective vertical handholds adjacent to the outboard vertical side handholds shall conform to the requirements of Standard S-224, shall be of steel not less than 3/4 in. diameter, shall have clearance not less than 2 in., preferably 2 1/2 in., and shall have clear length not less than 8 in.	Appendix G1, 4.2.4	
Location	Two vertical handholds, one at either end of each sill step, shall be applied.	Appendix G1, 4.3.1	
	The inside surface of the outboard vertical handhold shall be not more than 14 in. from the inside surface of the nearest end handhold. At corners of the car where a hand brake is located, the 14 in. limit shall be measured to the end handhold at the opposite side of the car from the hand brake. The clear opening between the surfaces of the vertical handholds and their supports shall be not less than 18 in. The width over the outside surfaces of the vertical handholds shall be not more than 30 in.	Appendix G1, 4.3.2	



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	<p>The clearance points of the bottom end of the vertical handholds shall be not more than 42 in. above the top of rail, and the clearance points of the top end shall be not less than 33 in. above the walking surface of the end platform.</p> <p>If the car is equipped with horizontal side handholds, spacing between horizontal side handholds and from the highest horizontal side handhold to the walking surface of the end platform shall be not more than 19 in.</p> <p>If car is equipped with horizontal side handholds, the outboard clearance points of the handholds shall be not more than 2 in. inboard of the inside surface of the outboard vertical leg of the sill step, and the inboard clearance points of the handholds shall be not more than 2 in. outboard of the inside surface of the inboard vertical leg of the sill step. The requirements of this paragraph do not apply to cars built prior to January 1, 2017.</p>	<p>Appendix G1, 4.3.3</p> <p>Appendix G1, 4.3.4</p> <p>Appendix G1, 4.3.5</p>	
Manner of Application	Side handholds shall be securely fastened.	Appendix G1, 4.4	
End Handholds	There shall be four end handholds.	Appendix G1, 5.1	
Dimensions	Handholds shall be of steel not less than 3/4 in. diameter and shall conform to the requirements of Standard S-224. Minimum clear length shall be 16 in. Minimum clearance shall be 2 in., preferably 2 1/2 in.	Appendix G1, 5.2	
Location	<p>The end handholds shall be oriented horizontally, one near each side of each end of the car on the face of the end sill.</p> <p>The clearance points of the outer end of the end handholds shall be not more than 16 in. from the inside surface of the nearest side handhold.</p> <p>Unless protected by a guard around the chain, handholds shall have not less than 5 in. clearance from the hand brake chain throughout the entire range of chain travel. Guards shall be provided around hand brake shock retarders, if used, that are closer to the handhold than 5 in. The requirement for guards around shock retarders does not apply to cars built prior to January 1, 2017.</p> <p>End handholds shall not extend more than 8 in. beyond the striker or end of the center sill.</p> <p>The end handholds shall be not more than 45 in. above the top of rail.</p>	<p>Appendix G1, 5.3.1</p> <p>Appendix G1, 5.3.2</p> <p>Appendix G1, 5.3.3</p> <p>Appendix G1, 5.3.4</p> <p>Appendix G1, 5.3.5</p>	



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Manner of Application	End handholds shall be securely fastened.	Appendix G1, 5.4	
Running Boards at Ends of Car	There shall be two transverse running boards, one at each end of the car.	Appendix G1, 6.1	
Dimensions	Transverse running boards shall comply with the requirements of Standard S-226. The running board material shall have uniform slip-resistant surfaces and shall be of construction to provide sufficient clear opening to permit elimination of accumulated snow and ice. Transverse running boards shall be not less than 18 in. wide.	Appendix G1, 6.2	
Location	The gap between the transverse edges of transverse running boards at vertical side handholds and the nearest surfaces of the vertical handholds or their supports, whichever limits the clear opening between the vertical handholds or their supports, shall not exceed 4 in.	Appendix G1, 6.3.1	
	The ends of transverse running boards shall not be outboard of, and shall be not more than 2 in. inboard from, the outside surface of the sides of the car directly below the running board ends.	Appendix G1, 6.3.2	
Manner of Application	Transverse running boards shall be securely fastened with not less than 3/8 in. diameter fasteners.	Appendix G1, 6.4	
Clearance at End of Car	No part of the car above the end sill more than 30 in. from the longitudinal centerline of the car, except the hand brake wheel, hand brake shaft, bell crank, sheave wheel, end running board, or horizontal end handholds, shall extend beyond the striker or end of the center sill with the draft gear or cushioning device (if used) at full buff. No other part of the car end or fixtures on the end above the end sill and less than 84 in. above the walking surface of the end platform, other than the exceptions herein noted, shall extend beyond the outer face of the striker or end of the center sill.	Appendix G1, 7.0	
Running Boards at Sides of Cars	When running boards are applied to the sides of the car, they shall be applied to both sides.	Appendix G1, 8.1	



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Dimensions	Side-running boards shall comply with the requirements of Standard S-226. The running board material shall have uniform slip-resistant surfaces and shall be of construction to provide sufficient clear opening to permit elimination of accumulated snow and ice. Side running boards shall be not less than 10 in. wide.	Appendix G1, 8.2.1	
	Side running boards shall be continuous and shall not be cut at any point, except that the length may be made up of several sections secured to mounting brackets.	Appendix G1, 8.2.2	
Location	Side running boards shall extend from end walkway to end walkway.	Appendix G1, 8.3	
Manner of Application	Side running boards shall be securely fastened with not less than 3/8 in. diameter fasteners.	Appendix G1, 8.4	
Uncoupling Devices	There shall be a minimum of two uncoupling devices that conform to the requirements of the base standard.	Appendix G1, 9.0	



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Handholds on Removable Coil Cover	When handholds are applied to removable covers, they shall be of steel not less than 3/4 in. diameter and shall conform to the requirements of Standard S-224. Minimum clear length shall be 16 in. Minimum clearance shall be 2 in., preferably 2 1/2 in. Handholds shall be securely fastened to the covers.	Appendix G1, 10.0	
Stenciling	Car initial, numbers and built date stenciled on the car.	49 CFR Part 215.301	
Reflectorization.	Reflectorization must meet all requirements. Attached Drawing	49 CFR Part 224	
Coupler Height	Verify coupler height 31½ inch minimum, 34½ inch maximum.	49 CFR Part 231.31(a)(1)	
Power Brakes	Except for cars equipped with nominal 12-inch stroke (8 ½ and 10-inch diameters) brake cylinders, all cars shall have a legible decal, stencil, or sticker affixed to the car or shall be equipped with a badge plate displaying the permissible brake cylinder piston travel range for the car at Class I brake tests and the length at which the piston travel renders the brake ineffective, if different from Class I brake test limits. The decal, stencil, sticker, or badge plate shall be located so that it may be easily read and understood by a person positioned safely beside the car. All equipment ordered on or after August 1, 2002, or placed in service for the first time on or after April 1, 2004, shall have train brake systems designed so that an inspector can observe from a safe position either the piston travel, an accurate indicator which shows piston travel, or any other means by which the brake system is actuated. The design shall not require the inspector to place himself or herself on, under, or between components of the equipment to observe brake actuation or release.	49 CFR Part 232. 103	
SCT	A single car air brake test shall be performed on each new car prior to placing or using the car in revenue service.	49 CFR Part 232.305	

Miscellaneous

Check for any sharp or protruding objects or areas on the equipment that may create a safety concern or personal injury.

Check for potential pinch points at all safety appliance arrangements.

Digital Photos

General Arrangement Photo Sheet ~ No Deviations Noted (six photos minimum, A & B ends, each corner at 45 degree angle)

Deviation Photo Sheet ~ As many photos as necessary to fully depict, document and illustrate deviations of S-2044 Appendix G1 or CFR Parts(e.g. 215, 224 & 232)