

# INTERMODAL EQUIPMENT ANNUAL VEHICLE INSPECTION REPORT

VEHICLE HISTORY RECORD	
FLEET/CHASSIS NUMBER	REPORT NUMBER
	<b>A- 0001001</b>

<input type="checkbox"/> INTERMODAL EQUIPMENT PROVIDER / <input type="checkbox"/> OWNER (✓)	DATE
ADDRESS	VEHICLE IDENTIFICATION (✓) AND COMPLETE <input type="checkbox"/> LIC. PLATE NO. <input type="checkbox"/> VIN <input type="checkbox"/> OTHER
CITY, STATE, ZIP CODE	INSPECTION AGENCY/LOCATION (OPTIONAL)

## VEHICLE COMPONENTS INSPECTED

INSTRUCTIONS: MARK COLUMN ENTRIES TO VERIFY INSPECTION:   X   OK,   X   NEEDS REPAIR,   NA   IF ITEMS DO NOT APPLY, \_\_\_\_\_ REPAIRED DATE

OK	NEEDS REPAIR	REPAIRED DATE	ITEM	OK	NEEDS REPAIR	REPAIRED DATE	ITEM	
<b>BRAKE SYSTEM</b>								
			a. Service Brakes				c. Container securement devices on intermodal equipment - rails or support frames, tiedown bolsters, locking pins, clevises, clamps, and hooks that are cracked, broken, loose, or missing.	
			b. Parking Brake System					
			c. Brake Drums or Rotors					
			d. Brake Hose					
			e. Brake Tubing					
		NA	f. Low Pressure Warning					
		NA	g. Tractor Protection Valve					
		NA	h. Air Compressor					
			i. Electric Brakes					
			j. Hydraulic Brakes					
			k. Vacuum Systems					
<b>COUPLING DEVICES</b>								
			a. Fifth Wheels				<b>SUSPENSION</b>	
			b. Pintle Hooks					
			c. Drawbar/Towbar Eye					
			d. Drawbar/Towbar Tongue				a. Any U-bolt(s), spring hanger(s), or other axle positioning part(s) cracked, broken, loose or missing resulting in shifting of an axle from its normal position.	
			e. Safety Devices					
			f. Saddle-Mounts					
<b>LIGHTING DEVICES</b>								
			All lighting devices and reflectors required by Section 393 shall be operable.					b. Spring Assembly
<b>SAFE LOADING</b>								
			a. Part(s) of vehicle or condition of loading such that the spare tire or any part of the load or dunnage can fall onto the roadway.				c. Torque, Radius or Tracking Components	
			b. Protection against shifting cargo (bolster)					
				List any other condition which may prevent safe operation of this vehicle.				
				_____				
				_____				
				_____				
<b>TIRES</b>								
								<b>FRAME</b>
<b>WHEELS AND RIMS</b>								
								a. Frame Members
								b. Tire and Wheel Clearance
								c. Adjustable Axle Assemblies (Sliding Subframes)
								<b>TIRES</b>
								<b>WHEELS AND RIMS</b>
								a. Lock or Side Ring
								b. Wheels and Rims
								c. Fasteners
								d. Welds

Certification: This vehicle has been inspected and repaired as needed to comply with 49 CFR Part 396, Appendix G.

I meet the inspector qualification requirements in 396.19.  Yes

QUALIFIED INSPECTOR'S NAME (print): \_\_\_\_\_

QUALIFIED INSPECTOR'S SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

## Part 396, Appendix G to Subchapter B – Minimum Periodic Inspection Standards Standards Applicable to Intermodal Chassis

A vehicle does not pass an inspection if it has one of the following defects or deficiencies:

### 1. Brake System.

a. **Service brakes.**—(1) Absence of braking action on any axle required to have brakes upon application of the service brakes (such as missing brakes or brake shoe(s) failing to move upon application of a wedge, S-cam, cam, or disc brake).

(2) Missing or broken mechanical components including: shoes, lining, pads, springs, anchor pins, spiders, cam rollers, push-rods, and air chamber mounting bolts.

(3) Loose brake components including air chambers, spiders, and cam shaft support brackets.

(4) Audible air leak at brake chamber (Example-ruptured diaphragm, loose chamber clamp, etc.).

(5) Readjustment limits. The maximum stroke at which brakes should be readjusted is given below. Any brake  $\frac{1}{4}$ " or more past the readjustment limit or any two brakes less than  $\frac{1}{4}$ " beyond the readjustment limit shall be cause for rejection. Stroke shall be measured with engine off and reservoir pressure of 80 to 90 psi with brakes fully applied.

**BOLT TYPE BRAKE CHAMBER DATA**

Type	Effective area (sq. in.)	Outside dia. (in.)	Maximum stroke at which brakes should be readjusted
A.....	12	6 1/4"	1 3/4"
B.....	24	9 3/4"	1 3/4"
C.....	16	8 1/4"	1 3/4"
D.....	6	5 1/4"	1 3/4"
E.....	9	6 3/4"	1 3/4"
F.....	36	11	2 3/4"
G.....	30	9 3/4"	2

**ROTOCHAMBER DATA**

Type	Effective area (sq. in.)	Outside dia. (in.)	Maximum stroke at which brakes should be readjusted
9.....	9	4 3/4"	1 3/4"
12.....	12	4 3/4"	1 3/4"
16.....	16	5 1/4"	2
20.....	20	5 1/4"	2
24.....	24	6 3/4"	2 1/4"
30.....	30	7 3/4"	2 1/4"
36.....	36	7 3/4"	2 3/4"
50.....	50	8 3/4"	3

**CLAMP TYPE BRAKE CHAMBER DATA**

Type	Effective area (sq. in.)	Outside dia. (in.)	Maximum stroke at which brakes should be readjusted
6.....	6	4 1/4"	1 3/4"
9.....	9	5 1/4"	1 3/4"
12.....	12	5 3/4"	1 3/4"
16.....	16	6 3/4"	1 3/4"
20.....	20	6 3/4"	1 3/4"
24.....	24	7 3/4"	1 3/4"
30.....	30	8 3/4"	2
36.....	36	9	2 1/4"

(\*2" for long stroke design).

**Wedge Brake Data.**—Movement of the scribe mark on the lining shall not exceed  $\frac{1}{8}$  inch.

(6) Brake linings or pads.

(a) Lining or pad is not firmly attached to the shoe;

(b) Saturated with oil, grease, or brake fluid; or

(c) Non-steering axles: Lining with a thickness less than  $\frac{1}{8}$  inch at the shoe center for air drum brakes,  $\frac{1}{16}$  inch or less at the shoe center for hydraulic and electric drum brakes, and less than  $\frac{1}{8}$  inch for air disc brakes.

(d) Steering axles: Lining with a thickness less than  $\frac{1}{8}$  inch at the shoe center for drum brakes, less than  $\frac{1}{8}$  inch for air disc brakes and  $\frac{1}{16}$  inch or less for hydraulic disc and electric brakes.

(7) Missing brake on any axle required to have brakes.

(8) Mismatch across any power unit steering axle of:

(a) Air chamber sizes.

(b) Slack adjuster length.

c. **Parking Brake System.** No brakes on the vehicle or combination are applied upon actuation of the parking brake control, including driveline hand controlled parking brakes.

c. **Brake Drums or Rotors.**

(1) With any external crack or cracks that open upon brake application (do not confuse short hairline heat check cracks with flexural cracks).

(2) Any portion of the drum or rotor

missing or in danger of falling away.

d. **Brake Hose.**

(1) Hose with any damage extending through the outer reinforcement ply. (Rubber impregnated fabric cover is not a reinforcement ply). (Thermoplastic nylon may have braid reinforcement or color difference between cover and inner tube. Exposure of second color is cause for rejection.)

(2) Bulge or swelling when air pressure is applied.

(3) Any audible leaks.

(4) Two hoses improperly joined (such as a splice made by sliding the hose ends over a piece of tubing and clamping the hose to the tube).

(5) Air hose cracked, broken or crimped.

e. **Brake Tubing.**

(1) Any audible leak.

(2) Tubing cracked, damaged by heat, broken or crimped.

i. **Electric Brakes.**

(1) Absence of braking action on any wheel required to have brakes.

(2) Missing or inoperable breakaway braking device.

j. **Hydraulic Brakes. (Including Power Assist Over Hydraulic and Engine Drive Hydraulic Booster).**

(1) Master cylinder less than  $\frac{1}{4}$  full.

(2) No pedal reserve with engine running except by pumping pedal.

(3) Power assist unit fails to operate.

(4) Seeping or swelling brake hose(s) under application of pressure.

(5) Missing or inoperative check valve.

(6) Has any visually observed leaking hydraulic fluid in the brake system.

(7) Has hydraulic hose(s) abraded (chafed) through outer cover-to-fabric layer.

(8) Fluid lines or connections leaking, restricted, crimped, cracked or broken.

(9) Brake failure or low fluid warning light on and/or inoperative.

k. **Vacuum Systems.** Any vacuum system which:

(1) Has insufficient vacuum reserve to permit one full brake application after engine is shut off.

(2) Has vacuum hose(s) or line(s) restricted, abraded (chafed) through outer cover to cord ply, crimped, cracked, broken or has collapse of vacuum hose(s) when vacuum is applied.

(3) Lacks an operative low-vacuum warning device as required.

2. **Coupling Devices.**

a. **Fifth Wheels.**

(1) Mounting to frame.

(a) Any fasteners missing or ineffective.

(b) Any movement between mounting components.

(c) Any mounting angle iron cracked or broken.

(2) Mounting plates and pivot brackets.

(a) Any fasteners missing or ineffective.

(b) Any welds or parent metal cracked.

(c) More than  $\frac{1}{8}$  inch horizontal movement between pivot bracket pin and bracket.

(d) Pivot bracket pin missing or not secured.

(3) Sliders.

(a) Any latching fasteners missing or ineffective.

(b) Any fore or aft stop missing or not securely attached.

(c) Movement more than  $\frac{1}{8}$  inch between slider bracket and slider base.

(d) Any slider component cracked in parent metal or weld.

(4) Lower coupler.

(a) Horizontal movement between the upper and lower fifth wheel halves exceeds  $\frac{1}{8}$  inch.

(b) Operating handle not in closed or locked position.

(c) Kingpin not properly engaged.

(d) Separation between upper and lower coupler allowing light to show through from side to side.

(e) Cracks in the fifth wheel plate.

**Exceptions:** Cracks in fifth wheel approach ramps and casting shrinkage cracks in the ribs of the body of a cast fifth wheel.

(f) Locking mechanism parts missing, broken, or deformed to the extent the kingpin is not securely held.

b. **Pintle Hooks.**

(1) Mounting to frame.

(a) Any missing or ineffective

fasteners (a fastener is not considered missing if there is an empty hole in the device but no corresponding hole in the frame or vice versa).

(b) Mounting surface cracks extending from point of attachment (e.g., cracks in the frame at mounting bolt holes).

(c) Loose mounting.

(d) Frame cross member providing pintle hook attachment cracked.

(2) Integrity.

(a) Cracks anywhere in pintle hook assembly.

(b) Any welded repairs to the pintle hook.

(c) Any part of the horn section reduced by more than 20%.

(d) Latch insecure.

d. **Drawbar/Towbar Eye.**

(1) Mounting.

(a) Any cracks in attachment welds.

(b) Any missing or ineffective fasteners.

(2) Integrity.

(a) Any cracks.

(b) Any part of the eye reduced by more than 20%.

d. **Drawbar/Towbar Tongue.**

(1) Slider (power or manual).

(a) Ineffective latching mechanism.

(b) Missing or ineffective stop.

(c) Movement of more than  $\frac{1}{4}$  inch between slider and housing.

(d) Any leaking, air or hydraulic cylinders, hoses, or chambers (other than slight oil weeping normal with hydraulic seals).

(2) Integrity.

(a) Any cracks.

(b) Movement of  $\frac{1}{4}$  inch between subframe and drawbar at point of attachment.

e. **Safety Devices.**

(1) Safety devices missing.

(2) Unattached or incapable of secure attachment.

(3) Chains and hooks.

(a) Worn to the extent of a measurable reduction in link cross section.

(b) Improper repairs including welding, wire, small bolts, rope and tape.

(4) Cable.

(a) Kinked or broken cable strands.

(b) Improper clamps or clamping.

f. **Saddle-Mounts.**

(1) Method of attachment.

(a) Any missing or ineffective fasteners.

(b) Loose mountings.

(c) Any cracks or breaks in a stress or load bearing member.

(d) Horizontal movement between upper and lower saddle-mount halves exceeds  $\frac{1}{8}$  inch.

5. **Lighting Devices.** All lighting devices and reflectors required by Section 393 shall be operable.

6. **Safe Loading.**

a. Part(s) of vehicle or condition of loading such that the spare tire or any part of the load or dunnage can fall onto the roadway.

b. Protection Against Shifting Cargo—Any vehicle without a front-end structure or equivalent device as required.

c. Container securement devices on intermodal equipment—All devices used to secure an intermodal container to a chassis, including rails or support frames, tie-down bolsters, locking pins, clevises, clamps, and hooks that are cracked, broken, loose, or missing.

8. **Suspension.**

a. Any U-bolt(s), spring hanger(s), or other axle positioning part(s) cracked, broken, loose or missing resulting in shifting of an axle from its normal position. (After a turn, lateral axle displacement is normal with some suspensions. Forward or rearward operation in a straight line will cause the axle to return to alignment).

b. **Spring Assembly.**

(1) Any leaves in a leaf spring assembly broken or missing.

(2) Any broken main leaf in a leaf spring assembly. (Includes assembly with more than one main spring).

(3) Coil spring broken.

(4) Rubber spring missing.

(5) One or more leaves displaced in a manner that could result in contact with a tire, rim, brake drum or frame.

(6) Broken torsion bar spring in a torsion bar suspension.

(7) Deflated air suspension, i.e., system failure, leak, etc.

c. **Torque, Radius or Tracking Components.** Any part of a torque, radius or tracking component assembly or any part used for attaching the same to the vehicle frame or axle that is cracked, loose, broken or missing. (Does not apply to loose bushings in torque or track rods.)

9. **Frame.**

a. **Frame Members.**

(1) Any cracked, broken, loose, or sagging frame member.

(2) Any loose or missing fasteners including fasteners attaching functional component such as engine,

transmission, steering gear, suspension, body parts, and fifth wheel.

b. **Tire and Wheel Clearance.** Any condition, including loading, that causes the body or frame to be in contact with a tire or any part of the wheel assemblies.

c. (1) **Adjustable Axle Assemblies (Sliding Subframes).** Adjustable axle assembly with locking pins missing or not engaged.

10. **Tires.**

(1) With less than  $\frac{1}{8}$  inch tread when measured at any point on a major tread groove.

(2) Has body ply or belt material exposed through the tread or sidewall.

(3) Has any tread or sidewall separation.

(4) Has a cut where the ply or belt material is exposed.

(5) Labeled "Not for Highway Use" or displaying other marking which would exclude use on steering axle.

(6) A tube-type radial tire without radial tube stem markings. These markings include a red band around the tube stem, the word "radial" embossed in metal stems, or the word "radial" molded in rubber stems.

(7) Mixing bias and radial tires on the same axle.

(8) Tire flap protrudes through valve slot in rim and touches stem.

(9) regrooved tire except motor vehicles used solely in urban or suburban service (see exception in 393.75(e)).

(10) Boot, blowout patch or other ply repair.

(11) Weight carried exceeds tire load limit. This includes overloaded tire resulting from low air pressure.

(12) Tire is flat or has noticeable (e.g., can be heard or felt) leak.

(13) Any bus equipped with recapped or retreaded tire(s).

(14) So mounted or inflated that it comes in contact with any part of the vehicle.

b. All tires other than those found on the steering axle of a power unit:

(1) Weight carried exceeds tire load limit. This includes overloaded tire resulting from low air pressure.

(2) Tire is flat or has noticeable (e.g., can be heard or felt) leak.

(3) Has body ply or belt material exposed through the tread or sidewall.

(4) Has any tread or sidewall separation.

(5) Has a cut where ply or belt material is exposed.

(6) So mounted or inflated that it comes in contact with any part of the vehicle. (This includes a tire that contacts its mate.)

(7) Is marked "Not for highway use" or otherwise marked and having like meaning.

(8) With less than  $\frac{1}{8}$  inch tread when measured at any point on a major tread groove.

11. **Wheels and Rims.**

a. **Lock or Side Ring.** Bent, broken, cracked, improperly seated, sprung or mismatched ring(s).

b. **Wheels and rims.** Cracked or broken or has elongated bolt holes.

c. **Fasteners (both spoke and disc wheels).** Any loose, missing, broken, cracked, stripped or otherwise ineffective fasteners.

d. **Welds.**

(1) Any cracks in welds attaching disc wheel disc to rim.

(2) Any crack in welds attaching tubeless demountable rim to adapter.

(3) Any welded repair on aluminum wheel(s) on a steering axle.

(4) Any welded repair other than disc to rim attachment on steel disc wheel(s) mounted on the steering axle.

Comparison of Appendix G, and the new North American Uniform Driver-Vehicle Inspection Procedure (North American Commercial Vehicle Critical

Safety Inspection Items and Out-Of-Service Criteria)

The vehicle portion of the FHWA's North American Uniform Driver-Vehicle Inspection Procedure (NAUD-VIP) requirements, CVSA's North American Commercial Vehicle Critical Safety Inspection Items and Out-Of-Service Criteria and Appendix G of subchapter B are similar documents and follow the same inspection procedures. The same items are required to be inspected by each document. FHWA's and CVSA's out-of-service criteria are intended to be used in random roadside inspections to identify critical vehicle inspection items and provide criteria for placing a vehicle(s) out-of-service. A vehicle(s) is placed out-of-service only when by reason of its mechanical condition or loading it is determined to be so imminently hazardous as to likely cause an accident or breakdown, or when such condition(s) would likely contribute to loss of control of the vehicle(s) by the driver. A certain amount of flexibility is given to the inspecting official whether to place the vehicle out-of-service at the inspection site or if it would be less hazardous to allow the vehicle to proceed to a repair facility for repair. The distance to the repair facility must not exceed 25 miles. The roadside type of inspection, however, does not necessarily mean that a vehicle has to be defect-free in order to continue in service.

In contrast, the Appendix G inspection procedure requires that all items required to be inspected are in proper adjustment, are not defective and function properly prior to the vehicle being placed in service.

Differences Between the Out-of-Service Criteria & FHWA's Annual Inspection

1. **Brake System.**

The Appendix G criteria rejects vehicles with any defective brakes, any air leaks, etc. The out-of-service criteria allows 20% defective brakes on non-steering axles and a certain latitude on air leaks before placing a vehicle out-of-service.

2. **Coupling Devices.**

Appendix G rejects vehicles with any fifth wheel mounting fastener missing or ineffective. The out-of-service criteria allows up to 20% missing or ineffective fasteners on frame mountings and pivot bracket mountings and 25% on slider latching fasteners. The out-of-service criteria also allows some latitude on cracked welds.

5. **Lighting Devices.**

Appendix G requires all lighting devices required by Section 393 to be operable at all times. The out-of-service criteria only requires one stop light and functioning turn signals on the rear most vehicle of a combination vehicle to be operable at all times. In addition one operative head lamp and tail lamp are required during the hours of darkness.

6. **Safe Loading.**

Same for both Appendix G and the out-of-service criteria.

8. **Suspension.**

Appendix G follows the new requirements of § 393.207 which does not allow any broken leaves in a leaf spring assembly. The out-of-service criteria allows up to 25% broken or missing leaves before being placed out-of-service.

9. **Frame.**

The out-of-service criteria allows a certain latitude in frame cracks before placing a vehicle out-of-service.

Appendix G follows the new requirements of 393.201 which does not allow any frame cracks.

10. **Tires.**

Appendix G follows the requirements of 393.75 which requires a tire tread depth of  $\frac{1}{8}$  inch on power unit steering axles and  $\frac{1}{16}$  inch on all other axles. The out-of-service criteria only requires  $\frac{1}{8}$  inch tire tread depth on power unit steering axles and  $\frac{1}{16}$  inch on all other axles.

11. **Wheel and Rims.**