ATTACHMENT 1

This table accompanies a Commercial Vehicle Safety Alliance letter dated February 2, 2023, petitioning FMCSA to amend the Federal Motor Carrier Safety Regulations accordingly.

Item	***Excerpts from CVSA North American Standard Out-of-Service Criteria (April 2021 pending edition) corresponding to proposed rules in right hand column***	***Suggested Regulation Number and subpart under Part 393***	***Proposed new regulatory language shown in red, underlined text. Non-underlined text is excerpted from current regulations shown for context***
#1	1. a. 2. Audible Air Leak at Air Chamber. (Example: ruptured diaphragm, loose chamber clamp, etc.) (396.3(a)(1))	Subpart C; new rule 393.48(e)	393.48(e) **Air brakes.** (1) **Air reservoirs properly secured.** Air brake system air reservoir(s) shall not have loose fasteners. (2) **Air compressors.** Air brake system air compressor mounting brackets, braces, and adapters shall remain secured to vehicle with all mounting fasteners present and securely tightened. Air compressor pulley assembly shall remain free of cracks and be tightly secured to the compressor spindle. (3) **Brake System Leaks**. The air brake system shall be free of any audible air leaks.
#2	1. c. Spring Brake Chambers Any non-manufactured holes or cracks in the spring brake housing section of a parking brake. (396.3(a)(1))	Subpart C; new rule 393.41(d)	393.41(d) **Brake chambers.** A brake chamber housing shall have no non-manufactured holes caused by a crack, abrasion or corrosion.
	1. k. Air Loss Rate If an air leak is discovered and either the primary or secondary reservoir pressure is not maintained when: (396.3(a)(1)) (1) Governor is cut-in; (2) Reservoir pressure is between 80 – 90 psi (551 – 620 kPa); (3) Engine is at idle; and, (4) Service brakes are fully applied.	See Item #1	

	1. m. Air Reservoir (Tank) An air reservoir (tank) separated at either end from the attachment point(s) allowing movement of more than 1 inch (25.4 mm) in any direction. (396.3(a)(1))	See Item #1	
	1. n. Air Compressor (Normally to be inspected when readily visible or when conditions indicate compressor problems.) (1) Loose compressor mounting bolts. (396.3(a)(1)) (2) Cracked, broken or loose pulley. (396.3(a)(1)) (3) Cracked or broken mounting brackets, braces, or adapters. (396.3(a)(1))	See item #1	
#3	1.o. Hydraulic Brakes (2) The fluid level in any master cylinder reservoir is less than 1/4 full or below minimum marking. (396.3(a)(1)) **NOTE:** Normally to be inspected when readily visible or problems are apparent. (396.3(a)(1))	Subpart C; new rule 393.48(f)	393.48(f) ***Hydraulic brake system.*** (1) Hydraulic brake system fluid level shall remain above the manufacturer's specified low fluid level in the hydraulic brake reservoir. (2) Brake fluid leaking from any component of the brake system, other than the brake line. (3) The following hydraulic systems shall be operative: (i) Brake power assist unit, (ii) Hydraulic Power brake (HPB); and (iii) Hydraulic Brake backup system.
	1.o. Hydraulic Brakes (6) Any observable leaking hydraulic fluid in the brake system upon full application. (393.45(a) or 396.3(a)(1))	See Item #3	
	1.o. Hydraulic Brakes (8) Brake power assist unit is inoperative. (396.3(a)(1))	See Item #3	

	1.o. <u>Hydraulic Brakes</u> (9) The hydraulic brake backup system is inoperative. (396.3(a)(1))	See item #3	
#4	3. a. <u>Fifth Wheels (Lower Coupler Assembly)</u> (5) Fifth Wheel Plate (a) A crack in the fifth wheel plate (parent metal) extending more than 20% of the distance across the metal in the direction of the crack. (396.3(a)(1)) (b) A crack, or a gap caused by corrosion, that is 1/8 inch (3.2 mm) or more in width. (396.3(a)(1)) (c) A repair weld is cracked. (396.3(a)(1))	Subpart F; amended 393.70(b)(1)[1]	393.70 (b) ***Fifth wheel assemblies*** — (1) ***Mounting*** — (i) ***Lower half*****.** The lower half of a fifth wheel mounted on a truck tractor or converter dolly must be secured to the frame of that vehicle with properly designed brackets, mounting plates or angles and properly tightened bolts of adequate size and grade, or devices that provide equivalent security. The installation shall not cause cracking, warping, or deformation of the frame. The installation must include a device for positively preventing the lower half of the fifth wheel from shifting on the frame to which it is attached. <u>The lower fifth wheel assembly shall remain free of cracks, improper welds, excessive wear, corroded holes and improper movement of component parts.</u> (ii) ***Upper half***. The upper half of a fifth wheel must be fastened to the motor vehicle with at least the same security required for the installation of the lower half on a truck tractor or converter dolly. <u>Relative movement between upper coupler and lower fifth wheel assembly must not exceed 1/2 inch. The king pin shall be securely fixed to the upper coupler of the towed unit.</u>
	3. b. <u>Upper Coupler Assembly:</u> (Including Kingpin) (1) Horizontal movement between the upper and lower fifth wheel halves exceeds 1/2 inch (12.5 mm). (396.3(a)(1)) Kingpin can be moved by hand in any direction. (396.3(a)(1))	See Item #4	

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#5	3. c. Pintle Hooks (1) Loose mounting, missing or ineffective fasteners, or insecure latch. (Semi-Trailer 396.3(a)(1)) (2) Cracks anywhere in the pintle hook assembly, including mounting surface and frame cross member. (Semi-Trailer 396.3(a)(1)) (3) Any welded repairs to the pintle hook assembly. (Semi-Trailer 396.3(a)(1)) (4) Section reduction visible when coupled. (Semi-Trailer 396.3(a)(1))		393.70 (c) ***Towing of full-trailers and semi-trailers*** A full trailer or semi-trailer equipped with a tow-bar or a semi-trailer and a means of attaching the tow-bar or semi-trailer to the towing and towed vehicles must— (1) Be structurally adequate for the weight being drawn; (2) Be properly and securely mounted with no missing or ineffective fasteners or cracks; (3) Provide for adequate articulation at the connection without excessive slack at that location; and (4) Be provided with a locking device that prevents accidental separation of the towed and towing vehicles. The mounting of the trailer hitch (pintle hook or equivalent mechanism) on the towing vehicle must include reinforcement or bracing of the frame sufficient to produce strength and rigidity of the frame to prevent its undue distortion. (5) The pintle hook or equivalent mechanism and the mounting area on the towing vehicle cannot be cracked, have loose or ineffective fasteners or an insecure latch. (6) The pintle assembly and drawbar eye cannot contain any repair welds (7) There can be no visible wear in the drawbar eye or pintle hook horn. (8) A sliding drawbar must not have any missing or ineffective stops, leaks in the hydraulic cylinder or movement of more than 1/4 inch between the slide and the housing.
	3. d. Drawbar Eye (1) Any cracks in attachment welds or drawbar eye. (Semi-Trailer 396.3(a)(1)) (2) Any missing or ineffective fasteners. (Semi-Trailer 396.3(a)(1)) (3) Any welded repairs to the drawbar eye. (Semi-Trailer 396.3(a)(1)) (5) Section reduction visible when coupled. (Semi-Trailer 396.3(a)(1))	See Item #5	

	3. e. <u>Drawbar/Tongue</u> (1) Slider (Power/Manual) (a) Ineffective latching mechanism. (Semi-Trailer 396.3(a)(1)) (b) Missing or ineffective stop. (Semi-Trailer 396.3(a)(1)) (c) Movement of more than 1/4 inch (6.4 mm) between the slider and housing. (Semi-Trailer 396.3(a)(1)) (d) Any leaking air or hydraulic cylinders, hoses or chambers (other than slight oil weeping normal with hydraulic seals). (Semi-Trailer 396.3(a)(1)) (2) Integrity (a) Any cracks. (Semi-Trailer 396.3(a)(1)) (b) Movement of 1/4 inch (6. 4 mm) between sub frame and drawbar at point of attachment. (Semi-Trailer 396.3(a)(1))	See Item #5	
	3. g. <u>Hitch Systems (Excluding Fifth Wheels and Pintle Hooks)</u> Mounting and Integrity (1) Loose mounting, missing or ineffective fasteners, or insecure latch. (Semi-Trailer 396.3(a)(1)) (2) Cracks anywhere in the hitch system, including mounting surface and frame cross member. (Semi-Trailer 396.3(a)(1)) (3) Any welded repairs to the ball, ball-socket, pin or eye. (Semi-Trailer 396.3(a)(1))	See Item #5	

#6	4.a. <u>Yoke Ends (Including Slip Yoke, Yoke Shaft, Tube Yoke and End Fitting Yoke)</u> (1) Any visible crack in a yoke end. (396.3(a)(1)) (2) Any yoke mounting hardware loose (with hand pressure only), broken or missing. (396.3(a)(1)) (3) Any horizontal or vertical movement of slip joint yoke shaft of greater than 1/2 inch (12.7 mm), with hand pressure only. (396.3(a)(1)) (4) Any loose, broken or missing end fitting fastener. (Also see item 4.b.(1)) (396.3(a)(1))	Subpart J; new rule[2] 393.210	<u>393.210</u> <u>***Driveline Components.*** Driveline components (including slip yoke, yoke shaft, tube yoke, and end fitting yoke) must remain free of visible cracks or looseness in the axial direction. Mounting hardware must remain secured to vehicle and free of looseness when hand pressure is applied. Slip joint yoke shaft must remain free of horizontal or vertical movement greater than 1/2 inch when hand pressure is applied. Relative movement between opposing yoke ends must remain 1/8 inch or less when hand pressure is applied. Universal joint bearing caps, bolts, and retainer clips must remain in place and properly fastened. Drive shaft at center (or carrier) bearing must exhibit no more than 1/2 inch movement in the vertical direction with hand pressure applied. Center (or carrier) bearing mounting bracket must remain properly fastened and free of cracks. Drive shaft tubes must remain free of cracks. Drive shaft end fittings must be securely and properly fastened to shaft.**
	4. b. <u>Universal Joint</u> (1) Any independent vertical movement between opposing yoke ends greater than 1/8 inch (3.2 mm), with hand pressure only. (396.3(a)(1)) (2) Any missing universal joint bearing cap. (Also see item 4.b.(1)) (396.3(a)(1)) (2) Any missing, broken or loose universal joint bearing cap bolt, bearing strap or retainer bolt. (396.3(a)(1)) (3) Any bearing cap retainer clip is missing. (396.3(a)(1))	See Item #6	

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	4. c. <u>Center Bearing (Carrier Bearing)</u> (1) Any broken or loose center bearing bracket, bracket bolts or mounting hardware. (396.3(a)(1)) (2) Any center bearing bracket crack equaling 505 or more of the original bracket width. (396.3(a)(1)) (3) More than 1/2 inch (12.7 mm) vertical movement (with hand pressure only) of the shaft in the center bearing carrier. (396.3(a)(1))	See Item #6	
	4. d. <u>Driveshaft Tube</u> (1) Any original metal crack in the shaft tube greater than 1/4 inch (6.4 mm) in length. (396.3(a)(1)) (2) Obvious cracked weld at shaft tube end. (396.3(a)(1)) (3) Any shaft tube with obvious twist. (396.3(a)(1))	See Item #6	
#7	7. b. <u>Tire and Wheel Clearance</u> Any condition, including loading that causes the body or frame to be in contact with a tire or any part of the wheel assemblies, at the time of inspection. (396.3(a)(1))	Subpart G; amended rule 393.75(a)	393.75 ***Tires***. (a) No motor vehicle shall be operated on any tire that— (1) Has body ply or belt material exposed through the tread or sidewall, (2) Has any tread or sidewall separation, (3) Is flat or has an audible leak, (4) Has a cut to the extent that the ply or belt material is exposed, <u>(5) Has a rubber coated cord or cured rubber plug in the sidewall,</u> <u>(6) Makes contact with any other tire or any part of the vehicle body, frame, or suspension other than the rim on which it is mounted, or</u> <u>(7) Is used in a dual tire set and contains any solid item (excluding mud and snow) that is lodged between the sidewalls of the dual tire set.</u>

#8	8. a. Liquid Fuels (1) A fuel system with a dripping leak at any point (including refrigeration or heater fuel systems). (396.3(a)(1))	Subpart E; new rule 393.65(f)	393.65(f)(3) Free of liquid fuel leaks.
#9	8. b. Gaseous Fuels (1) CNG or LPG Any fuel leakage from the CNG or LPG system detected visibly, audibly or by smell and verified by either a bubble test using non-ammonia, non-corrosive soap solution or a reading of more than 5000 PPM on a flammable gas detection meter. (396.3(a)(1))	Subpart E; new rule 393.68(d)	393.68(d) **CNG Fuel Leaks.** The CNG fuel system shall remain free of identifiable gaseous leaks verified by a bubble test using non-ammonia, non-corrosive soap solution, or a flammable gas detection meter.
#10	(2) LNG (a) A cloud of water vapor coming from any component of the fuel system. (396.3(a)(1)) **NOTE:** It is normal, particularly in humid conditions, for water vapor to collect around many portions of a LNG fuel system. (396.3(a)(1)) (b) Any fuel leakage from the LNG system detected visibly or audibly and verified by either a bubble test using non-ammonia, non-corrosive soap solution or a reading of more than 5000 PPM on a flammable gas detection meter. (396.3(a)(1)) (c) Dripping liquid that boils or vaporizes in the air. (396.3(a)(1))	Subpart E; new rule 393.69(d)	393.69(d) **LNG Fuel Leaks.** The LNG fuel system shall remain free of identifiable gaseous leaks verified by a bubble test using non-ammonia, non-corrosive soap solution, or a flammable gas detection meter. The LNG fuel system shall remain free of cryogenic liquid fuel leaks.

#11	10. b. Steering Column (4) Telescopic steering column does not lock into position. (396.3(a)(1)) (5) Tilt steering column does not lock in at least one position. (396.3(a)(1))	Subpart J; amended rule 393.209(c) See Item #11	393.209(c) ***Steering column.*** The steering column must be securely fastened. (1) Telescoping steering columns shall remain capable of locking into fixed length position or positions. (2) Tilting steering columns shall remain capable of locking into fixed angle position or positions.
#12	10. c. Front Axle Beam and All Steering Components other than Steering Column (Including Hub) (1) Any crack(s). (396.3(a)(1)) (2) Any obvious welded repair(s). (396.3(a)(1))	Subpart J; amended rule 393.207(a)	393.207(a) ***Axles***. No axle positioning part shall be cracked, broken, loose, missing or repaired by welding. All axles must be in proper alignment.
#13	10. d. Steering Gear Box (Including Rack and Pinion) (3) Any obvious welded repair(s). (396.3(a)(1))	Subpart J; amended rule 393.209(d)	393.209(d) ***Steering system***. Universal joints and ball-and-socket joints shall not be worn, faulty, or repaired by welding. The steering gear box shall not have loose or missing mounting bolts or cracks or welded repairs in the gear box or mounting brackets. The pitman arm on the steering gear output shaft shall not be loose or repaired by welding. Drag link and connecting rods shall not be cracked or welded or have non-manufactured holes due to wear. Steering system fasteners or threaded joints shall not be loose or missing. Steering wheels shall turn freely through the limit of travel in both directions.
	10. e. Pitman Arm (2) Any obvious welded repair(s). (396.3(a)(1))	See Item #13	
	10. h. Tie Rods and Drag Links (1) Loose clamp(s) or clamp bolt(s) on tie rods or drag links. (396.3(a)(1))	See Item #13	

	(2) Any looseness in any threaded joint. (396.3(a)(1)) (4) When a drag link is so worn to cause a non-manufactured hole. (396.3(a)(1))	See Item #13 See Item #13	
	10. i. <u>Nuts</u> Loose or missing on tie rods, pitman arm, drag link, steering arm, or tie rod arm. (396.3(a)(1))	See Item #13	
#14	10. k. <u>C-Dolly</u> (1) Missing or inoperable steering locks. (396.3(a)(1)) (2) Steering not centered in the "zero" locked position. (396.3(a)(1))	Subpart J; new rule 393.201(f)	<u>393.201(f) ***C-dolly.*** C-dolly must include steering locks. Steering locks shall be locked in the center position</u>.
#15	11. e. <u>Adjustable Axles(s)/Sliding Trailer Suspension System</u> (1) More than one-fourth of the locking pins or locking pin holes that are in use meet any of the following conditions: (b) A locking-pin hole measures more than 1 inch (25 mm) larger than its original size. (396.3(a)(1)) (c) The material from the hole in use to an adjacent hole, or the material from the hole in use to the edge of the rail, is torn or split. (396.3(a)(1))	Subpart J; amended rule 393.207(b)[3]	393.207(b) ***Adjustable axles***. <u>(1)</u> Adjustable axle assemblies shall not have locking pins missing or disengaged. <u>(2) Locking pin holes shall not be enlarged or elongated more than 1 inch greater than the manufactured locking pin hole diameter.</u> <u>(3) Material adjacent to locking pin holes shall remain free of cracks.</u> <u>(4) Slider-guides and hold down brackets cannot be missing or disengaged.</u> <u>(5) Undercarriage body rail and its attachment welds or fasteners cannot be loose or cracked.</u>

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	(2) More than 25% of the slider-guide/hold-down brackets are missing or disengaged. (396.3(a)(1))	See Item #15	
	(3) The sliding suspension attachment member (undercarriage body rail) on either side exhibits a crack of any length in more than 50% of its attachment welds. (396.3(a)(1))	See Item #15	
	(4) A sliding suspension member's (undercarriage body rail) attachment welds are cracked completely through along a 4 foot (1.2 m) continuous length of the body rail. (396.3(a)(1))	See Item #15	
	(5) A sliding suspension attachment member (undercarriage body rail) is cracked completely through along a 4 foot (1.2 m) continuous length. (396.3(a)(1))	See Item #15	
	(6) The sliding suspension attachment member (undercarriage body rail) attachment fasteners are missing along a 4 foot (1.2 m) continuous length of the body rail. (396.3(a)(1))	See Item #15	
	(7) The sliding suspension attachment member (undercarriage body rail) on either side exhibits 50% or more of attachment fasteners missing. (396.3(a)(1))	See Item #15	
#16	12. a. <u>Any Tire on Any Front Steering Axle(s) of a Power Unit</u> (4) Labeled "Not For Highway Use" or carrying other markings that indicate excluded use on steering axles. (396.3(a)(1))	Subpart G; new rule 393.75(j)	<u>393.75(j) ***No bus, truck, or truck tractor*** *shall be operated* with a front tire labeled "Not For Highway Use."</u>
	(6) Presence of rubber coated cord or cured rubber plug in the sidewall. (396.3(a)(1))	See Item #7	
	(8) So mounted or inflated that it comes in contact with any part of the vehicle. (396.3(a)(1))	See Item #7	

	12. b. All Tires Other Than Those Found on the Front Steering Axle(s) of a Powered Unit (3) So mounted or inflated that it comes in contact with any part of the vehicle. (396.3(a)(1)) (10) Presence of rubber coated cord or cured rubber plug in the sidewall. (396.3(a)(1))	See Item #7 See Item #7	
#17	14. h. Welds [in wheels] (3) Any welded repair on any aluminum wheel(s). (396.3(a)(1)) (4) Any welded repair other than disc to rim attachment on steel disc wheel(s). (396.3(a)(1))	Subpart J; amended rule 393.205	393.205 ***Wheels***. (a) Wheels and rims shall not be cracked or broken. (b) Stud or bolt holes on wheels shall not be elongated (out of round). (c) Nuts or bolts shall not be missing or loose. (d) Aluminum wheels shall not be repair welded. Steel disc wheels shall not be repair welded other than disc to rim attachment.
	14. i. Hubs (1) When any bearing (hub) cap, plug or filler plug is missing or broken allowing an open view into hub assembly. (396.3(a)(1)) (2) Smoking from wheel hub assembly due to bearing failure. (396.3(a)(1))	Subpart J; new rule 393.211	393.211 ***Hub assemblies***. Hub assemblies shall be maintained to prevent loss of lubrication and sealed to prevent bearing failure.
#18	16. b. Electrical Cables and Systems in Engine and Battery Compartments (3) Broken or unsecured mounting of electrical components. (396.3(a)(1))	Subpart B; amended rule 393.28 and 393.30	393.28 ***Wiring systems***. Electrical wiring shall be installed and maintained to conform to SAE J1292—Automobile, Truck, Truck-Tractor, Trailer, and Motor Coach Wiring, October 1981, except the jumper cable plug and receptacle need not conform to SAE J560. The reference to SAE J1292 shall not be construed to require circuit protection on trailers. Electrical cables and components in engine compartments or battery compartments within passenger carrying vehicles shall be securely mounted. (See § 393.7(b) for information on the incorporation by reference and availability of this document.) 393.30 ***Battery Installation*.** Every storage battery on every vehicle shall be secured from becoming dislodged and, unless located in the engine

			compartment, shall be covered by a fixed part of the motor vehicle or protected by a removable cover or enclosure. Removable covers or enclosures shall be substantial and shall be securely latched or fastened. The storage battery compartment and adjacent metal parts which might corrode by reason of battery leakage shall be painted or coated with an acid-resisting paint or coating and shall have openings to provide ample battery ventilation and drainage. Wherever the cable to the starting motor passes through a metal compartment, the cable shall be protected against grounding by an acid and waterproof insulating bushing. Wherever a battery and a fuel tank are both placed under the driver's seat, they shall be partitioned from each other, and each compartment shall be provided with an independent cover, ventilation, and drainage.