



Consolidated Chassis Management LLC (CCM)

Maintenance & Repair Procedures Manual

Version 5.0

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Section 1- Introduction

1.0 Purpose of Manual

This manual is to be used in conjunction with the current edition *IICL Guide for Container Chassis Inspection and Maintenance Fourth Edition (IICL Chassis Guide)* to ensure that all equipment managed by Consolidated Chassis Management (CCM) is maintained in a safe, operable manner, and in full compliance with FMCSA standards. It is the purpose of this manual to provide guidance to CCM staff and M&R vendors, on the policies and procedures for repairing and maintaining CCM managed equipment.

1.1 Safety

CCM is dedicated to the safety of its employees, representatives, suppliers, contractors and the general public. It is our objective to ensure that all equipment is repaired and operated in the safest manner possible.

To that end, CCM requires that all parties repairing or causing CCM equipment to be repaired, ensure that all Occupational Safety and Health Administration (OSHA) and state safety requirements and procedures be observed at all times while inspecting and/or repairing equipment.

1.2 CCM SYSTEMATIC MAINTENANCE PROCEDURE

The following procedures are to be followed by CCM staff and M&R vendors to ensure that CCM managed chassis are systematically inspected and repaired as necessary to ensure compliance with applicable FMCSA (49 CFR 393 – 396) regulations. The associated records of all inspections and repairs of the chassis must be retained and communicated to CCM.

M&R VENDORS

Whenever a chassis is repaired, with the exception of chassis tires only or a chassis being repaired through a roadability lane, the M&R vendor must complete a Systematic Maintenance Check ("SMC") to visually inspect the entire chassis for any roadability defects. The inspector will either certify that the chassis does not need any additional repairs, or will identify items that require further repair as guided by the nine component categories below.

1. Brakes, and all components thereof
2. Lights - Lighting devices, lamps, markers, and conspicuity marking material
3. Wheel - Wheels, rims, lugs, tires
4. Air Line - Air line connections, hoses, and couplers

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5. Coupling - King pin upper coupling device
 6. Frame - Rails or support frames
 7. Bolster - Tie down/bolsters front and rear
 8. Fastener - Locking pins, twist locks, clevises, clamps, or hooks
 9. Slider - Sliders or sliding frame lock

Once the SMC is completed and all identified defects, if any, have been repaired, the SMC shall be recorded in the CCM M&R system. By entering the SMC in chassis.com, the vendor is certifying that the chassis meets all FMCSA roadability criteria.

It is incumbent upon the M&R vendors to develop and implement a quality program to ensure that the SMC is performed and all CCM M&R policies and procedures are complied with.

CCM POOL MANAGEMENT

The CCM Pool Manager will audit the repair and inspection records to ensure the SMC is recorded with the repair invoice in the CCM M&R system. The Pool Manager will address repairs invoiced without an SMC with the M&R vendor. This procedure will ensure inspections are properly performed and reported by the M&R vendor.

CCM, or its agents, will conduct field audits of the CCM M&R vendor's compliance with this procedure.

Each month, the Pool Manager will identify all active chassis in the pool that have not had an SMC reported within the last 6 months. The Pool Manager will locate these chassis and after placing a hold on the chassis arrange for an inspection to be performed.

PRE AND POST INSPECTIONS

It is an imperative that CCM Field Inspectors conduct pre and post inspections of chassis, using the Job Order in chassis.com to ensure all damages as noted on the Job Order are:

- Required for the safe operation of the equipment.
- That any damages not noted on the Job Order but are required for the safe operation of the equipment are added to the Job Order in chassis.com
- To ensure that what CCM is being invoiced for on the Job Order has in fact been completed and were required repairs.

Section 2 – Identifying the Need for Repair

2.0 General Inspection Requirements

While the SMC is an essential part of the safe operation of an intermodal chassis, valuable input must also be provided by the driver operating the equipment over the road. Problems appearing from wear, in coupling as well as suspension, tracking, and brakes can often be more readily identified by the driver, therefore, input from the driver is considered essential and must be recorded and fully investigated whenever such a report is provided through a Driver Vehicle Inspection Report (**DVIR**). Please see the DVIR and DVER procedures that are included in this manual.

2.1 Inspection Criteria

All equipment is to be inspected in accordance with applicable U.S. Federal regulations governing chassis including but not limited to **49 CFR 390-396, 571.108 and 571.121**. Repairs are to be to IICL standards for chassis. For a more detailed description of these regulations please refer to the IICL Chassis Guide section 1.3 in its entirety, and the Federal Motor Carrier Safety Regulations (FMCSR). Inspectors and their employers should also be aware of the latest version of the criteria for “Out Of Service” (OOS) as provided by the Commercial Vehicle Safety Alliance (CVSA) and enforced by state police agencies.

This guide provides suggested criteria for determining what is a repairable item and the preferred methods and extent of repair. It should always be remembered, however, that the overriding consideration in all inspections and repair operations is the ensured safe operation of the chassis.

2.2 Definitions of Wear & Damage

Wear damage is one or more defects caused by continuous deterioration in the physical condition of the chassis resulting from normal use. For examples of wear please refer to the ***IICL Chassis Guide Section 4***.

2.3 Determining Repair Worthiness

Any defect, whether caused by damage or wear is to be repaired if it affects the safe operation of the unit. In some occasions of major damage the repairs may be suspended pending the possible scrapping or termination of the chassis.

2.4 Chassis Repair Criteria

The following tables contain a list of components and corrective actions taken. The components are classified as follows:

- Table A – Structure
- Table B – Landing Gear
- Table C – Securing Devices
- Table D – Slider Assemblies
- Table E – Brake System
- Table F – Electrical System
- Table G – Tires
- Table H – Wheel Group
- Table I – Suspension
- Table J – Miscellaneous

NOTE: Items which are required in accordance with FMCSA 49 CFR 393 & 396 and Appendix G to 49 CFR, Chapter III, Subchapter B are indicated in the table with “*”

Also note that while these criteria are largely similar to the IICL Chassis guide, there are some differences with regard to nonstructural high frequency repair items. All criteria are based on the premise that all equipment should be inspected and maintained to FMCSA Standards and repairs made to the standards contained in the current edition of the IICL Container Chassis Manual. However, when a repair is required, it must be completed to IICL criteria.

Table A Structure Criteria (excluding landing gear)

Component	Condition	Action Required
All mainframe components, including crossmembers	* Missing / loose components / fasteners	Repair/replace
	*Cracked, broken, loose, fastenings	Repair/replace
	*Any condition, loaded or empty, that causes frame or body to be in contact with any moving component	Repair/replace as necessary after determination of cause
Kingpin	Cracked/ chipped / distorted. Any movement in any direction; distortion / unusual wear that affects operation	Replace
	Worn Beyond Wear Limits	Replace
Upper Coupler	Broken welds or cuts	Repair
	Cut/torn/cracked components	Repair/replace
	Uneven wear/dished/bulged/or distorted upwards	If power unit fifth wheel cannot engage kingpin, Repair/replace
	Blockage of drain holes	Unblock
	Severe corrosion	Repair/replace

*** Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B**

Table A Structure Criteria (excluding landing gear) (Cont.)

Component	Condition	Action Required
	Any deformation such as a bends, bows, dents, etc.	If damage prevents a container from properly securing to the chassis, would cause damage to the container if left unrepaired, or prevents the chassis from tracking properly, repair/replace
Main rails - main rail gussets	*Cracked/broken welds	Reweld
	*Cut or torn Component	If damage prevents a container from properly securing to the chassis, would cause damage to the container if left unrepaired, or prevents the chassis from tracking properly, repair/replace
	Elongation of hole in web for passage of landing leg shaft	If elongated to more than 5in. (125mm) in diameter or within 1" (25mm) of main rail flange, repair
Bolsters	*Cracked or broken welds	Repair
	*Cut or Torn Component	Repair
	Any deformation such as a bends, bows, dents, etc.	If container cannot be secured to the chassis, Repair
	Severe Corrosion	Repair

* Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR , Chapter III and Subchapter B

Table A Structure Criteria (excluding landing gear) (Cont.)

Component	Condition	Action Required
Bolster gussets	*Cracked/broken welds	If cracks exceed 20% of total weld area or it is felt that component will come off during use, reweld
	*Cut or torn Component	If damage prevents a container from properly securing to the chassis, or would cause damage to the container if left unrepaired, Repair/replace
	Any deformation such as a bends, bows, dents, etc.	If damage prevents a container from properly securing to the chassis, or would cause damage to the container if left unrepaired, Repair/replace
Crossmember	*Cut or torn	Cuts in upper or lower flange that would contact the container and cause damage or extend into the vertical plane of the crossmember, repair/replace
	*Cracked/broken welds in upper or lower flange at main rail or gusset	Repair only in conjunction with FMCSA/FHWA inspection
	Any deformation such as a bends, bows, dents, etc.	If damage prevents a container from properly securing to the chassis, would cause damage to the container if left unrepaired, or disturbs the vertical welds to the main Repair/replace

* Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B

Table A Structure Criteria (excluding landing gear) (Cont.)

Component	Condition	Action Required
Crossmember (cont'd)	Severe Corrosion *Cut Component,	Repair/replace Cuts in upper or lower flange that would contact the container and cause damage repair/replace
Crossmember gussets	*Cracked, Broken welds	If cracks exceed 20% of total weld area or it is felt that component will come off during use, reweld. Minor cracks between crossmember and gusset upper flange are to be repaired only in conjunction with FMCSA/FHWA Inspection.
Under-ride Protection ("ICC bumper")	*Cut component, cracked/broken welds *Missing(if provided originally) or partially removed Any deformation such as a bends, bows, dents, etc.	Repair Repair/Replace Deformed over 2.0 in. (50mm) outside rear plane of unit OR if not within 22in. (560mm) of road service, OR if touching springs/ tires/ any moving component under any condition including loading - repair/replace OR bent inward where vehicle behind cannot see the conspicuity markings

* Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B

Table A Structure Criteria (excluding landing gear) (Cont.)

Component	Condition	Action Required
Light Box	Spring loaded	If in need of repair, weld in place per IICL
	*Torn/cracked/severe corrosion	Repair/replace
	Loose	Resecure
	Bent	If affecting the visibility of the lighting OR the securing of the lighting OR if touching tires or any other moving component under any condition including loading, repair
Mud flaps	*Cut or torn	If cut 3 inches horizontally at the mount bracket - replace
	*Holed	If hole is more than 2in. (50mm) in diameter, replace
	*Loose or missing fasteners	If more than one fastener missing, repair/replace
	Improper length	Repair/replace
Mud flap Bracket	*Cut or torn	If it can no longer properly secure with mud flap without damaging it, repair/replace
	*Cracked or broken welds	Repair
	Any deformation such as a bends, bows, dents, etc.	If deformation causes the mud flap or brackets to touch the tires, or ground, repair/replace
Dock bumpers	Missing(if provided originally) or partially removed	No action

*** Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B**

Table B Landing Leg Criteria

Component	Condition	Action Required
All landing gear Components	*Missing or loose parts or fasteners	Repair/replace
	*Holed, cut, or torn	Replace
	*Cracked/broken weld	Repair/replace
<i>NOTE: Landing leg upper tube can be re-welded to the landing gear mounting plate provided there is no distortion to the leg tube.</i>		
Landing leg brace (diagonal or cross brace)	Any deformation such as a bends, bows, dents, etc.	If deformation causes toeing of legs in any direction, or impairs operation of legs, Replace with 3 inch "C" channel
	*Cracked/kinked	Repair/replace
Landing legs	Uneven height	Repair
	out of alignment	Repair
	Any deformation such as a bends, bows, dents, etc.	If operation is impaired, repair/replace
Gearbox	Inoperable in one and or both gears	Repair/replace
Cross shaft	Any deformation such as a bends, bows, dents, etc.	If operation is impaired, repair/replace

*** Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B**

Table B Landing Leg Criteria (Cont.)

Component	Condition	Action Required
Crank handle	Any deformation such as a bends, bows, dents, etc.	If handle cannot be secured to chassis or leg brace OR if the handle is too short to operate landing gear when container is mounted, replace
Crank handle retainer	*Any deformation such as a bends, bows, dents, etc.	If inoperable or missing, repair/replace
Sand shoes/sand pads/wheels	Any deformation such as a bends, bows, dents, etc.	If shoe(or wheel) does not rest firmly on the ground when landing gear is extended and it does not fully support the chassis, repair/replace
	Axle openings elongated or torn	If the hole is enlarged or otherwise distorted where there is risk if the shoe falling off, replace
Sand Shoe Axle	Seized/Ability of the sand shoe to swivel is impaired	If shoe(or wheel) does not rest firmly on the ground when landing gear is extended and it does not fully support the chassis, repair/replace

*** Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B**

Table C Securing Device Criteria

Component	Condition	Action Required
Securing devices (safety devices), including twist locks, locking pins, twist lock collars, springs, twist lock handles and handle retainers(ALL locking devices must be operable)retainers or springs	*Missing component, handles, or retainers	Replace
	*Unattached, inoperable or incapable of secure attachment	Repair
	*Cracked or broken components or welds	Repair
	*Seized or frozen	Repair
	Any deformation such as a bends, bows, dents, etc.	If securement operation is impaired, replace
	Loose fasteners	Repair
	*Bent handles which are not operable and/or protrude beyond the envelope of chassis when in locked position	Repair
	*Any vertical movement of twist locks greater than one (1) inch.	Repair
*Any horizontal movement of twist lock greater than ½ inch from the 90 degree angle when locked	Repair	

*** Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B**

Table D Slider Assembly Criteria

Component	Condition	Action Required
Adjustable Axle Assemblies(sliding sub frames or sliding tandems) - all components	*Missing, unengaged or loose parts or fasteners, including lock pins	Repair/replace
Slider frame	*Cut/torn/cracked/broken	Repair
	Any deformation such as a bends, bows, dents, etc.	If slider operation or securement is impaired, repair
Locking(indexing) pins	*Cracked, chipped, or broken	Repair
	Any deformation such as a bends, bows, dents, etc.	If pins do not engage index holes and a minimum of .25in.(6mm) exclusive of chamfered edge of pin, past face of rails after engagement, repair
Indexing Holes	Elongation	If more than .5 inch in longitudinal travel, repair
	Cracked or deformed around perimeter of hole	Repair
Stops	Cracked, broken, distorted, worn-out	Repair/replace
	cracked or broken weld	Repair
Safety Devices, including lock pins, indexing holes and stops	*Missing or cannot be engaged	Repair/replace
	*Unattached or incapable of attachment	Replace

NOTE: Extendable chassis of adjustable length and or with sliding axle assemblies should be carefully inspected to ensure that the mechanism is in proper working order, that all locking pins are properly engaged and that the flexible airlines and electrical harnesses are properly routed and secured to prevent chaffing , regardless of load before, during or after adjustment of chassis length

*** Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B**

Table E Brake System Criteria

Component	Condition	Action Required
Service brakes	*Absence of braking action on any axle required to have brakes upon application of service brakes	Determine cause and repair/replace components as required to achieve proper braking action
	* Missing Brake	Replace
Parking Brake	*Absence of braking action on vehicle or combination upon actuation of parking brake control, (including driveline hand controlled parking brakes)	Determine cause and repair/replace components as required to achieve proper braking action
All mechanical brake system components, including shoes, return springs, anchor pins, spiders, cam shafts and bushing, rollers, pushrods, air chambers, and all mounting or support brackets and fasteners	• Missing, loose, bent, broken, frozen	• Repair/replace

* Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B

Table E Brake System Criteria (Cont.)

Component	Condition	Action Required
Glad-hands	Cracked broken or leaking	Repair replace
	Twisted, turned or loose	Set to 1 o'clock position
	Clogged leaking or nonfunctional	Repair replace
	*Any audible leak	Repair/replace
	Cracked or damaged by heat	Replace
Glad-hand gaskets	Missing	Replace
	Cut, torn, cracked, burned, folded	If leaking, replace
Antilock brake systems	Missing, loose, bent, broken, frozen	Replace
	*ABS malfunction indicator lamp remaining lit more than 5 seconds, or illuminated at any time while chassis is moving at road speed	Repair
Air Line Tubing	*ABS malfunction indicator lamp does not operate during a bulb check; bulb or lens broken	Repair
	* Crimped collapsed or broken	Repair/replace
	Cut or torn	Repair/replace
	Clogged , leaking or otherwise non functional	Repair/replace
	* Any audible leak	Repair/replace
	*Cracked or heat damaged	Repair/replace

*** Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B**

Table E Brake System Criteria (Cont.)

Component	Condition	Action Required
Air hoses	*Cut or torn	Repair/replace
	*Obstructed, leaking or otherwise nonfunctional	Repair/replace
	* Cracked, crimped or broken	Repair/replace
	* Abraded/chafed through outer reinforcement ply	Repair/replace
	* any bubbling or swelling when charged with air	Repair/replace
	* Any audible leak	Repair/replace
	* Improper connections or previous repairs (use of screw type hose clamps not permitted)	Repair/replace
	* Improperly routed/secured, touching axles or other moving components when chassis is laden or empty	Repair/replace
Relay Valve	*Cracked or broken	Repair/replace
	*Obstructed, leaking or otherwise nonfunctional	Repair/replace
Air Tank(s)	*Puncture of any type (cut, tear etc.)	Replace
	*air leaks at fittings	Repair/replace
	Broken/cracked mounts	Repair
	Loose/missing fasteners	Repair/replace

* Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B

Table E Brake System Criteria (Cont.)

Component	Condition	Action Required
Air/spring brake chamber	* Inoperable	Replace
	* Any audible air leakage	Replace
	Severe Corrosion	Replace

NOTE: Appropriate caution must be observed at all times in the inspection and handling and replacement of spring brake chambers. Under no circumstances should an attempt be made to open a spring brake chamber during inspection

Component	Condition	Action Required
Slack Adjusters	*Cracked, broken, stripped, or otherwise nonfunctional or mismatched (auto slack combined with manual on same axle) See notes below	Repair/replace
	Seized or stiff	Repair/replace
Brake linings/pads and shoes (See note below regarding applicable U.S. Fed Regs)	*Excessive or uneven wear	.25in.(6mm) or less pad/lining thickness at shoe center, replace
	*Cracked/chipped through the thickness of the pad/lining at the shoe edge	Replace
	*Cracked/chipped/broken parallel to the shoe edge	If the crack is more than .0625in. (1.6mm) wide OR more than 1.5in. (38mm) long - replace
	* Lining/pad loose rivets broken/missing	Replace

NOTE: Chassis manufactured after October 20, 1994 *must* have automatic slack adjusters in all braking positions.

NOTE 2: Manual and/or automatic slacks cannot be mixed on the same axle. If chassis is manufactured after October 20, 1994, slacks *must* be automatic.

*** Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B**

Table E Brake System Criteria (Cont.)

Component	Condition	Action Required
Brake linings/pads and shoes (See note below regarding applicable U.S. Fed Regs.) (Cont.)	* Saturated with oil or grease or otherwise contaminated/glazed	Replace
	* Lining separated from the shoe	If more than .0625in (1.6mm) replace
	* Lining has vertical cracks	If the crack extends across the face or through the thickness of the lining, replace
	* Lining has horizontal cracks	If the crack or void exceeds 1/16 th in width OR exceeds 1.5 in. in length, replace
Brake drums	* Cracks on the outer surface that open on application of the brakes	Replace
	* Deep scoring (NOT hairline heat checking)	Replace
	* Any missing sections or in danger of coming off	Replace
NOTE: BRAKE DRUMS ARE NOT TO BE CHECKED FOR WEAR WHILE ON A CHASSIS		
Brake Adjustment	* Any single past the brake readjustment limit by .25in.(6mm) or more	Repair in accordance with the USDOT Readjustment limits
	* Any two brakes on the same chassis that exceed the readjustment limit by any amount	

NOTE: Please refer to IICL Chassis Guide Appendix A, Tables 1, 2, and 3 for more detailed information on US Fed. Requirements regarding brake readjustment and maximum allowable stroke. Stroke is to be measured with power unit engine off and air tank/reservoir pressure of 90PSI with the brakes fully applied. BRAKE REPAIRS ARE TO BE PERFORMED ONLY BY QUALIFIED MECHANICS.

*** Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B**

Table F Electrical System

Component	Condition	Action Required
Receptacle (7way plug)	Missing/loose parts or securements	Repair/replace
	Bent/distorted/missing pins	If not making good secure connection with plug or not providing sufficient contact, repair/replace
	Broken pins /insulation	Repair/replace
	Intermittent/no/faulty ground	Repair/replace
	Corroded	Clean/replace
	*exposed wiring/connections	Repair/replace
Clearance/ marker/ Identification/ stop/turning/running license plate light bulbs and lens	*missing, burned out broken	Repair/replace
	*Insufficient illumination	Repair/replace
Clearance /marker/ Identification/ stop/turning/running license plate light assemblies	*Missing or inoperable	Repair/replace
	*broken or cracked	If damage affects the ability of the component to secure the lens and bulb or the securement of the assembly to the chassis, repair/replace
	Accumulating moisture	Repair/replace
Reflectors	*Broken/chipped, cracked through, missing or broken	Repair/replace (Note: Reflector not required if adjacent light is reflectorized)
Wiring	Short Circuit	Repair
	*Bare cut or frayed insulation	If bare wire is exposed - repair
	Dangling loose	Resecure/repair

Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B

Table F Electrical System (Cont.)

Component	Condition	Action Required
All lighting equipment and reflectors as required in 49 CFR 393 or FMVSS108	* Inoperable for any reason or missing	Repair/replace

Note: detail listing of lighting requirements provided in IICL Chassis guide Appendix B

Table G Tire Criteria

Component	Condition	Action Required
Tires	* Audible or manual detection of air leak OR tire is received with less than 65 psi air pressure	Repair/replace
	*Belt or body ply material is visible through tread or sidewall	Replace
	* Tread depth is 2/32nds in. (2mm) or less at any point measured in a major tread groove	Replace
	* Any tread or sidewall penetration that when probed indicates penetration of belt or cord	Replace
	* Any cut on sidewall or in the tread where the body or belt cord material has been cut, exposed or penetrated	Replace
	*Visible blisters or knots Severe weather checking if more than .25in.(6mm) deep	Replace Replace

*** Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B**

Table G Tire Criteria (cont.)

Component	Condition	Action Required
Tires (Cont.)	*Impact break	Replace
	*Missing	Replace
	*Flat/Slid flat tires	If lowest point of the tire measures 2/32in.(2mm) or less replace
	Adjacent tires with a mismatch in height of more than 3/8 inch	Exchange or replace tires to match heights of tires
	Abnormal/uneven wear	If lowest spot on the tire as measured in a major tread is 2/32in.(2mm) or less replace NOTE: Regardless of variance in tread depth, chassis suspension and alignment should be checked for defects
	Contact of adjacent tires (Kissing)	Determine cause and repair/replace as necessary
	Incompatible tires (mixing radial and bias tires on same axle)	Exchange or replace tires to mate correct types of tires
	Tire contacts the container or any other part of the chassis or the container when loaded or empty	Research cause and repair/replace as necessary
	Over/under inflated per stated specification	Adjust air pressure as appropriate to achieve uniform 90 PSI
	Tires not marked for multi position or trailer use only	Replace

*** Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B**

Table G Tire Criteria (cont.)

Component	Condition	Action Required
Valve Stems	Pinched, cut, kinked, flattened, crushed where stem is leaking air , impedes air flow, or will not seat a valve cap	Replace
	Clogged/obstructed	Clean and install new valve cap
Valve caps	Missing or broken	Replace with pressure caps only
	Improperly mated parts	Replace
	* Cracked/broken	Replace
	*Bent Flange away from bead more than 3/8"	Replace
	*Bent Flange away from bead less than 3/8" in more than two places	Replace
	*Bent flange TOWARDS bead regardless of depth	Replace
	*Bent or deformation of web or base	Replace
	*Improper seat or gap between lock ring and rim for the circumference of the rim	Replace
	*Any cracks to welds in rim or lock ring	Replace
	*Lock ring gap exceeds 1/2"	Replace
	Heavy rust, corrosion or pitting	Replace
	Warped / distorted/ bent to expose bead, compromise the seal, or integrity of the tire or present a hazard	Replace
	Elongated bolt holes (Budd and Hub Piloted rims)	Replace
Any welded repairs on a rim or lock ring	Replace	
Mismatched types	Replace as required	
Valve stem locators MISSING	Replace	
Rim spacer	Distorted or crushed	Replace
	Improper tire clearance	replace

* Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B

Table H Wheel Group Criteria

Component	Condition	Action Required
Wheels	* Cracked or broken	Replace
	* Elongated bolt holes	Replace
Fasteners	Broken/missing stripped, loose bent mismatched or otherwise ineffectual	Replace
Hubcaps (Oil Bath)	Cut/cracked/ broken	Replace
	*Leaking oil	Check gaskets and plug and repair/replace as necessary
	Oil level low	Add as required and check for leaks
Inner hubs (oil bath)	Low oil level	Add as required and check for leaks
	*Leaking inner seal	Evidence of fresh moist leakage, replace
	Contaminated Oil	Drain all oil from hub, clean components as necessary and replace
Hubcaps (grease)	Cut/torn/ cracked/broken/warped	Replace
	*Leaking grease	Replace
	Contaminated grease	Remove, clean & inspect bearing and hub, repair/replace as necessary and repack
Bearings & Races	Cracked/pitted/worn/burned/scored	Replace

* Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B

Table I Suspension Criteria

Component	Condition	Action Required
All Components	*Missing/ Loose components or fasteners	Repair/replace
	*Welds cracked/broken	Repair
	*Cut/torn/cracked/broken/ inoperative	Replace
	Heat Dots that turn black	Inspect and repair as required per CCM Heat Dot Procedure
Radius Rods (All - fixed or adjustable)	Any visible bend/bow/dent/etc. affecting the operation or alignment of the chassis	Replace/re-align
	Worn Bushings	Replace
Adjustable Radius Rods	Stripped threads	Replace
Axles	Any visible bend/bow/dent/deformation affecting the operation or alignment of the chassis	Repair/replace
	Spindles bent/burned/ out of round (IPR)	Repair/replace
Springs	Distorted/worn out	Repair/replace
	*Broken/missing	Repair/replace
	*Inoperable	Repair/replace
Spring Hangers & Equalizers	Worn Bushings	Replace bushings
	Bends/bows/dents/ major deformities	If axle alignment or suspension operation is affected, repair/replace

* Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B

Table I Suspension Criteria (Cont.)

Component	Condition	Action Required
Spring hangers and all other axle positioning components	* Cracked/bent/broken/missing/loose (possible cause of axle shifting from set operating position)	Repair/replace
	Severe corrosion	Replace
Leaf springs	*Any broken leaf (applies to all designs regardless of amount of leaves included in assembly)	Replace
	* Any missing leaf(multi-leaf units)	Replace
	* Any leaves displaced or shifted that results in contact with a tire, rim, wheel, brake drum or frame	Repair/replace
Seats & U bolts,	*Loose/ broken/ stripped/missing/cracked	Replace
Any component part of the tracking/suspension assembly or any associated fasteners	* Cracked/broken/ loose/stripped or missing	Repair/replace

NOTE: Whenever any work is done to the undercarriage of a chassis, check the torque of all fasteners. Use the decal that should be affixed to the side of the chassis for correct torque. Also, check (and repair if necessary) the alignment after any work to spring hangers, springs, radius rods, etc. that could affect the tracking of the chassis.

* Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B

Table J Miscellaneous

Component	Condition	Action Required
Coupling Devices i.e. pintle hook assembly	* Cracks	Replace
	* any previous welded repairs to the Pintle hook	Replace
	* Pintle hook horn with a loss of 20% or more of original thickness	Replace
Coupling Devices i.e. mounting of pintle hook assembly to frame	* Latch Insecure	Repair
	* Missing/stripped/improper fasteners	Replace
	* Cracks on mounting surface extending from point of attachment	Replace
Coupling Devices i.e. frame crossmember providing pintle hook attachment	* Loose mounting	Repair
	*Cracked	Replace
All Conspicuity Markings are required by 49CFR393 or FMVSS 108	Broken Welds	Repair
	*Missing, cut or damaged with more than 50% missing or non-reflective. Missing at ICC Bumper horizontal bar.	Replace
Owner's marks and ID	worn/defaced/ missing/illegible	Repair/replace
Foreign markings	If present	Remove
	Holed/torn/missing/loose/Non watertight	Repair/replace
Registration Holder	Distorted/bent	If documents cannot be inserted or removed or will not allow the Cover to close securely and in a water tight fashion - repair/replace
	Registration	Expired/illegible/missing/invalid
License plate mounting	loose missing improper securement	replace
License plate	Expired/missing/illegible/invalid	Contact owner for replacement

*** Items included in inspection requirements of U.S. FMCSA 49 CFR 393 and 396, Appendix G to 49 CFR, Chapter III and Subchapter B**

Section 4 – Chassis Induction Procedures

4.1 Chassis Induction Procedure

4.1.1 Chassis Induction Report (CIR) Requirement

All Chassis accepted into a Pool shall have a Chassis Induction Report (CIR) completed and filed with CCM before the earlier of 120 days from the date of acceptance or the FMCSA expiration date. A copy of the CIR can be found on CCM's website, <http://www.ccmpool.com>. Copies of all CIRs will be maintained by CCM for as long as a chassis is active in the pool.

4.1.2 Chassis Stencil

Once all required repairs and the CIR form successful have been completed, chassis will be stenciled in a contrasting color with letters denoting the Pool designation (such as "GCCP") measuring 4 inches in height on the side rails and 2 inches in height on the front and rear bolsters. NOTE: if present any pre-existing IEP markings are to be removed or painted over in matching paint prior to remarking with new IEP designation

4.1.3 FMCSA Inspection

Chassis having an FMCSA inspection set to expire within 90 days of induction survey will require a full FMCSA inspection in addition to the CIR. If FMCSA Inspection is required, cost to be billed to equipment provider.

4.1.4 FMCSA Expiration Date Stencil

All Chassis must have the FMCSA expiration date (month and year) stenciled on the front bolster, i.e., "FMCSA DUE 12 16" if space permits or "DUE 12 16" if not, using a contrasting 2" stencil.

4.1.5 CIR Verification

CCM may audit the vendor to verify that the CIR was performed, that all necessary repairs have been made, and that the Chassis meets all requirements for Pool use.

4.2 Chassis Excluded from Pool

4.2.1 CIR or FMCSA Failed Inspection

A Chassis that fails a CIR or FMCSA inspection shall not be admitted into service until all defects are repaired and the Chassis meets all Pool and FMCSA standards.

4.2.2 Unapproved Chassis Type

In the event that a vendor performs a CIR on a chassis type or specific unit not approved for use in the Pool, the vendor will not be paid for such transaction. Any pool stencil applied mistakenly due to completion of a CIR on a chassis type not approved for Pool use will be removed by painting over such

stencil with a matching paint color, at no cost to the pool. The Pool Manager shall delete said Chassis from the fleet file and notify the Contributor to remove the Chassis.

4.2.3 Minimum Maintenance Acceptance Criteria for Chassis in Pool Operations

Chassis exhibiting any of the conditions listed below as discovered during the initial acceptance inspection will not be accepted into the pool.

4.2.3.1 Corrosion

Any chassis with excessive corrosion/deterioration (rust through and/or rust jacking) to one or more primary component. Primary components to include:

- Bolsters
- Main rails
- Bogie rail
- Coupler plate assembly
- Suspension components

4.2.3.2 Design

Chassis with the following designs will not be allowed in the pool:

- Chassis with Non west coast axle settings
- Three or four hole hub cap axles
- Old style suspensions with Cast hangers
- Chassis with more than 3 leaf springs
- Flush back, non-sliding 23 foot chassis
- Chassis with worn brakes, regardless of type
- Chassis with four single stage brake chambers (no spring brakes)
- Forty foot chassis with main rails of less than 12 inches in height
- 20 Foot chassis with main rails of 10 inches high or less
- Chassis with gooseneck rails exceeding six inches in height
- Open faced or "C" channel front bolsters
- Chassis with small capacity single tank brake system
- Chassis with square axles and/or screw on type hubcaps

4.2.3.3 Other Considerations

- Chassis with other design and / or manufacturing defects as may be determined
- Chassis with major damages not deemed economically feasible to repair
- Total Loss chassis
- Any chassis presently in the pool with any of the above conditions/specifications shall be de-cooped upon identification of the requirement of any major structural repair

4.3 Chassis moving between pools

If a member is moving a chassis between CCM operated pools (i.e. from SACP to M CCP), cooping into the new pool requires only a CIR, inspection, removal of old pool markings, and stenciling on the chassis of the new IEP markings.

Section 5 – Chassis Removal Procedure (Decooping)

Termination or Move to another Pool

CCM will authorize a survey to be performed on each unit to determine the condition of the unit. Policy will be, unless otherwise directed by CCM:

- A CIR (Decoop form) will be completed detailing the condition of the chassis at the time of decooping.
- Unless otherwise directed by the Contributor, components will be repaired as required to bring the chassis to FMCSA compliance. *If tires have to be replaced, recaps should be used in lieu of OEM tires.*
- Pool markings will be removed from the chassis.
- CCM Staff will remove the chassis from GIER as the pool is no longer IEP.
- CCM will advise the equipment owner that the chassis has been prepared for removal from the fleet

Sale or Scrap Chassis

Chassis being removed from the pools for sale or scrap are NOT to be brought to FMCSA compliance, unless specifically requested by the owner. Sale and scrap chassis are usually sold or scrapped in “as is, where is” condition.

Once a chassis owner declares a chassis as either sale or scrap, a CIR should be completed, pool markings removed and the chassis decooped from the pool. CCM staff will ensure chassis is removed from GIER as the pool is no longer the IEP.

Section 6 – Tire Procedures

6.1 Tire Specifications

CCM establishes tire specifications and negotiates prices for tires with various tire suppliers. For this reason, repair vendors should only buy tires from authorized CCM tire suppliers. Purchasing tires outside of the established CCM tire supply network should be avoided. In emergency situations, with the written permission of the pool manager, tires may be purchased locally. All locally purchased tires must meet the following specifications

6.1.1 Recap Information.

- Only pre-cure capped tires are acceptable.

- 12PR load range F casings or better.
- Highway tread – 11/32” depth or better required
- Must comply with all USDOT regulations regarding recapped tires, including but not limited to those regarding markings; current recapper must stamp DOT on sidewall, including date stamp adjacent to the MFG DOT code

6.1.2 OEM Tire Information

- Acceptable brands are Leopard, New Pride, West Lake, Security, Super Cargo
- All tires must be a minimum of 14PR rated “TRAILER SERVICE ONLY”
- All tires must be a minimum of K speed rating
- All coding as required by DOT shall be molded contiguously onto one side of the tire

6.1.3 CCM Tire Tube Handling and Inspection Criteria

One of the leading causes of tube damage is mishandling during the removal and installation processes. This is particularly true in facilities that employ tire machines for removing the tires from the rims. Unless proper care is taken to protect the valve stem during these operations, they can be severely bent or sheared off by the machine during use. To ensure that damage to the valve stem is minimized, it is recommended that:

- The valve core should be removed from the stem to allow evacuation of all air from the tube. The use of a tube deflator is highly recommended
- Valve stems should be pushed inside the rim stem slot and behind the flap prior to dismounting of the tire to ensure that it is not pinched between the rim and separator arm during operation

6.1.3.1 Tube Inspection – Flat Repairs

All tubes are to be inspected prior to reinstallation in either repaired or replacement tires. Please advise all M&R repair vendors, and all parties performing tire mounting and dismounting that the following specifications on tube and flap repairs apply.

Tube Inspection

Tubes are to be inspected and if in good condition and clean of debris are to be patched and reused wherever possible. The following criteria should be employed when determining whether or not to reuse tubes

- All tubes must be visually inspected for major obvious defects such as:
 - Tears/cuts/chaffing in the tube material at the base of the valve stem
 - Proper sizing - i.e. 10.00X20 tubes **not** 9.00x20 tubes
 - **Severely** folded tubes (indicates excessive tube growth)
 - **Minor** folds in tubes are not to be considered damage and should be tested to determine if there is excessive porosity in the material or if the material is overly stretched and weakened.
- No more than 2 patches allowed per tube.
- Valve stems should be straightened to as close to original angle as possible
- No kinked, oblong or stripped or flattened valve stems are allowed.

- Tube protectors are to be salvaged and reused wherever possible.
- All replacement tubes are to be of 100% Butyl rubber only. All natural rubber tubes are not allowed
- All tubes purchased or returned to CCM **MUST** be accompanied by a sealing metal valve cap
- When rebuilding the tire, paper (for example a piece of a manila envelope) is to be installed over the valve stem so it is visible from outside the rim which will confirm the tire was broken down and repaired.

NOTE: Due to the unavailability of testing equipment, repair vendors are not allowed to repair tubes for reuse. Only recappers are allowed to test and repair tubes. Any damaged tube identified by the repair vendor is to be replaced – not repaired

6.1.3.2 - Flap Information Criteria for inspection and reuse of tire flaps are as follows

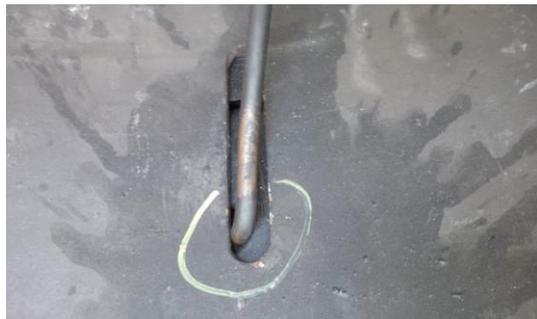
- Flaps may be reused provided they are not
 - Cut
 - Torn
 - Doubled
 - Otherwise present a hazard to the tube and stem.

NOTE: particular attention is to be paid to the condition of the valve stem reinforcement area. Any flap exhibiting abrasion and cracking in the stem reinforcement area or signs of stress are to be replaced. All flaps must be checked for reinforcement in the stem area. Flaps that do not have a sufficient stem reinforcement area such or are not accompanied by an approved metal stem protector plate in good condition are to be replaced as illustrated below:



All replacement flaps must have a (4) inch reinforcement in the stem area to properly protect the tube
Mounting Tires

1. Care must be taken to ensure that the tube is properly positioned in the valve stem slot.
 - a. Stems that come out of the slot at an angle are not acceptable
 - b. Stems should not be in contact with the rim. Following are examples of unacceptable mounting



Bent or damaged flap protection plates are to be removed from service and are not to be reused. Note examples of damaged or improperly mounted protectors above and following



Valve stems must be pulled all the way through the flap to prevent pinching. If equipped with a valve stem protector plates, the plates must be in good condition and the protector **MUST** be properly aligned with the rim and properly installed as illustrated below



6.1.3.3 Tube Inspection – Vendor Mounted Tires

All recap tires ordered by CCM arrive with the tube and flap pre-installed and filled with 3-7lbs of air. In order to prevent unnecessary re-handling of 1000 x 20 recap tires delivered to the M&R vendors with tube/flap installed, CCM requires the M&R vendor to check the tube to ensure it is not flat prior to the installation of a mounted set. In order to do this, CCM recommends what we call the ‘Football’ test or ‘Step’ test prior to mounting the tire on a rim. This will help prevent tires with bad tubes from being installed on chassis.

How to Conduct the Test

FOOTBALL TEST

- Hold the tire upright and feel the flap.
- Apply pressure to the flap. If the flap stays firm, like a football would feel, then the tube should be good. If there is any give in the flap, it feels spongy, do not use the tire. Set it aside and return it to the tire supplier. The tire supplier will install another tube.

STEP TEST

- The Step test is basically the same thing as the Football test, but instead of holding the tire and feeling it, the mechanic should step on the flap and ensure the tube is firm.
- As in the Football test, if the tube feels spongy, do not use the tire. Set it aside and return it to the tire supplier.

M&R VENDOR

The M&R vendor should address tube failures directly with the tire supplier. The Pool should not be invoiced by the M&R vendor for defective tubes under these circumstances. However, the Pool Manager or his designate must be notified by the M&R vendor weekly of the count of tires returned to the tire supplier for this reason. This will allow the pool to monitor its tire supplier to ensure they are performing their tube test properly. The report to the PM should include:

- Count of tires returned
- Date tires were returned

LOCAL POOL MANAGEMENT

Local pool management will provide a running report monthly to Marty Summers, Corporate M&R with copy to Jim Reo showing the number of tires returned to each tire supplier due to a flat tube. Report should be submitted by the 10th of the following month.

6.2 Tire replacement Criteria

The following are the criteria to be employed in the determination of when to replace a tire:

6.2.1 Cut To Cord

Tire cuts that do not expose or penetrate one or more ply of fabric are operational and should not be removed from service. If the cord cannot be seen or felt with a dull instrument inserted into the deepest part of the cut, the tire is serviceable and should not be removed.

6.2.2 Slid Flat Tires

Tires that have 2/32" or less tread remaining when measured in a major (inner) channel at its lowest point are to be removed. There is no consideration given for tread variance. Tread variance is not a reason to replace tires. Slid flat tires are to be replaced only when the lowest area of remaining tread is at or below 2/32". If adjacent tires have been slid to a point where both tires have a variance of more than 4/32", the tires are to be rotated 90 - 180° so that the flat spots are not adjacent, but the tires should not be replaced.

6.2.3 Incompatible Tires

Bias ply tires and radial tires are not compatible on the same axle. In these situations, the tires must be changed. A bias tube tire (10.00 X 20) and a bias tubeless tire (11.00 X 22.5) are compatible. Tube and tubeless tires can be run on the same side of the same axle provided they are properly mated according to size (overall diameter)

6.2.4 Mismatched Tires

Tire diameters vary by manufacturer even though they are supposedly of the same size. While we have taken precautions to ensure the OEM'S we purchase are of the same diameter (within allowable variance) mechanics should always be cautious to ensure all tires are properly mated when mounted on a chassis in dual application. Tires that are not mated properly will inevitably lead to the failure of one or more tires by creating an overweight situation on the taller of the tires. The maximum allowable variance for mating tires in a dual application is 3/8 inch.

6.2.5 Run Flat tires

Tires that have been run to destruction by operation with low or no air pressure. These tires are

identified by the blue coloring of the rubber, burned smell, shredding of the casing, collapsed side walls, or in the case of tube type tires, the absence of a valve stem at the time of interchange

6.2.6 Cap Separation

Any tires where the cap has lost adhesion and loses tread rubber at the buff line must be replaced regardless of the amount of tread lost.

6.2.7 Ply Separation

Any tire where the rubber has separated at the belt or where the cord body shows signs of separation must be replaced. These tires may be identified by bubbles or bulges in the sidewall or tread, loss of rubber in tread area to or below breaker plies

6.2.8 Channel Crack

There is a great deal of confusion over what extent of channel cracking is acceptable and what extent of channel cracking requires replacement. It is important to ensure that all parties are clear on these standards to ensure that we are not removing tires prematurely while still removing those tires that are defective and require replacement. The key consideration in determining when to remove a tire from service is evidence of the exposure of cord. If the cord is plainly visible or can be felt when probed with a dull instrument the tire must be removed.



NOTE: Neither the length of the split nor the number of splits is of consideration. The sole consideration on whether the tire is to be removed from service is the depth of the splits. Splits in the channels of the

tire should be carefully probed to determine if there is cord evident. If the cord is evident either visually or it can be felt with a probe, the tire should be removed from service. Any tire where the cord cannot be felt or seen visually is to be left on the chassis.

6.2.9 Oxidation / Weather Checking

If the sidewall of the tire exhibits excessive cracking as a result of excessive age or exposure to chemicals it should be replaced. Excessive cracking or checking is defined as cracking that exceeds 1/4 inch in depth or exposes cord body.

6.3 Tire Marking

All tires removed from service for any reason must have the **chassis number and tire position** legibly marked on the tire. This information is vital to the determination of potential mechanical problems with the chassis as well as a necessary support to claims for tire damage. In addition to the chassis number and tire position it is essential that the damage or reason for tire change be identified on every tire removed from service. The damaged area should be circled and the AAR reason code for the damage written on the sidewall of the tire in paint stick. AAR Reason codes to be used for this purpose are as follows

Cause	Code	Cause	Code
Slick Tread	09	Flat Tire	16
Separated Cap	10	Channel Crack/Weather Check	17
Blister/Bulge	11	Rotted	22
Run Flat	13	Warranty	28
Cut/Torn	14	Slid Flat	34
Worn Out	15		

6.4 Repairable Tires

Due to the ever increasing prices of both OEM and recap tires it is essential that any tire that meets minimum service levels be repaired wherever possible and returned to service instead of being buffed and retreaded. As a guide to ensure that any tire that can be returned to service without recapping is, the following serviceability standard should be employed by all concerned when performing tire inspections and determining action to be taken with tires removed from service.

- Lowest tread remaining on the tire is 5/32 inch
- No visible cuts **through** cord body
- No major damage to bead
- No visible damage to the liner of the tire

The following damages should be repaired where tires exhibit all of the characteristics described above

- Puncture to the crown area of not more than 1/4inch, no more than 4 punctures per tire, no closer than 12" apart
- Cut **to** the cord but **not** through the cord may be filled with cushion gum, cured, and buffed

In order to ensure proper billing for repaired tires vs. recapped tires, tires repaired as described above should be accumulated and returned to a single repair vendor as selected by pool management.

6.5 Tire Airing Program (TAP)

The Tire Airing program is designed to ensure tires are properly aired in accordance with all tire manufacturer specifications and State and Federal regulations.

6.5.1 Acceptable Range of Tire PSI. Tires will be aired in accordance with manufacturers max load requirements, unless otherwise specified by CCM Corporate M&R. An acceptable range is +/- 5 PSI of the PSI required for that Pool. Tires outside this range will be considered as unacceptable.

6.5.2 Required Tire Airing.

Tires will be aired to the required PSI whenever any of the following occurs:

- At the time of an FMCSA annual safety inspection, regardless of when tires were previously aired. Also the TAP Form must be completed and inserted into the document holder of the chassis along with the FMCSA document.
- At a driver's request on an outbound move. The vendor will complete the TAP Form. Driver must sign the work order showing he requested the tire airing.

6.6 Replacement Tire Program – General Overview

6.6.1 Tire Mark Up (for inventory handling)

Tire Mark Up of 10% on recaps and 8% on OEM tires when vendors purchase tires from the pool tire vendor and install those tires on CCM operated pool chassis.

6.6.2 Invoicing and Usage. Invoices for all tire purchases are to be paid within 30 days of issuance. Late payments made after 30 days may be subject to penalties and could result in the vendor losing CCM M&R business.

RECAP and OEM tires purchased from CCM suppliers cannot be used on any equipment other than CCM operated chassis. Casings and/or recap tires are the property of CCM and cannot be used on anything other than CCM operated equipment. There are NO exceptions to this policy.

6.6.3 Tire Ordering Procedures

6.6.3.1 Tire Inventory. M&R vendors are required to have a sufficient number of tires in inventory at all times (recommended at least one to two weeks supply) to ensure the needs of the chassis pools

managed by CCM are met. An M&R vendor should never run out of tires. When an M&R vendor finds he is running low on tires, he will email the tire vendor, with CCM in copy, and order tires for his inventory. The M&R vendor will issue a Purchase Order to the tire supplier. Unless otherwise directed by CCM, the M&R vendor will always order recap tires as a first priority. If the recap tire vendor does not have enough recaps to fill the order, the M&R vendor may purchase OEM tires to complete the balance of his order, at the direction of the pool manager.

6.6.4 M&R Vendor Reporting Requirements & Responsibilities. In order to receive the Tire Mark Up, the M&R vendors must provide the following:

- Reordering tires from the tire vendors as required to maintain adequate inventory levels
- Receiving all OEM and recap tires on behalf of the CCM
- Provide count of adjustment/rejected tires being returned to recapper broken down by brand.
- Possible adjustments should be in a separate pile and a separate pick up ticket is required.
- Count of tires being returned to recapper for disposition.
- All tires removed from service must be marked in compliance with section 6.3 above
- Check quality of tires received, advise count and report to the pool manager any returned tires that fail a quality check
- Provide the CCM Tire Log each week to CCM. The log should include the chassis number, on and off tire DOT number, position of the tire, Why Made Code, brand and any other data as deemed necessary by CCM.

6.6.5 CCM Responsibilities and Reporting Requirements. It is the responsibility of CCM to:

- Assist vendors with the tire suppliers for service levels on delivery and removal of tires
- Review tire supplier casing reports to maximize the use of recapped tires
- Perform inspections of casings at vendors locations
- Audit of the tire supplier to ensure specifications are being met
- Identify recovery level of casings
- Ensure adjustments are received at no cost to the pool and report to CCM Corporate M&R monthly on adjustments/rejections by supplier.
- Reconcile tire prices charged to the pool by vendor to actual purchase price charged by the pool. Cost to the pool should be actual cost of tire (OEM and/or recap) plus Markup.

6.6.6 Recapper Reporting Requirements. In order to determine the effectiveness of the tire program and identify potential mishandling of equipment, recappers must provide the pool manager and CCM management a report monthly providing an analysis of the casings picked up by location. The report should contain the following information categorized as follows:

- **Tires Delivered** – To include all tires delivered to a location, OEM (if applicable), Cap and casing (if applicable), recap or repaired.
- **Adjustments** – To include all recapped tires found to have failed due to defect in material or workmanship while in use regardless of recapper

-
- **Salvage** – To include all tires picked up that, while not capable for CCM use, may be recapped for other customers
 - **Repaired Tires** – To include all tires that had required repairs only and were returned to service without recapping

6.7 TIRE SAFETY

The proper handling of tire and rims is an important safety matter that affects everyone involved in the maintenance and management of the equipment as well as the general public. In accordance with CCM's concern for the safety of all, please note the following and attached procedures to be observed for safe handling and installation of tires on chassis in service with the pools. All vendors should review these procedures and include a review of tire safety procedures in your regular audit and safety processes. Please note that for further information on this subject we recommend that vendors visit the link below from the Accuride Corporation web site and review their on-line safety manual. The link is:

http://www.accuridecorp.com/files/2012/10/Accuride-Wheels-Rim_Wheel-Safety-and-Service-Manual-ACC7-0002-Rev-4-06-22-12.pdf.

Please also note that all repair vendors should observe all OSHA and DOT guidelines regarding the safe handling of tires and two piece rims.

6.7.1 Used Rim Inspection Procedure

6.7.1.1 – General

- This procedure is only applicable to 7.5 x 20 two piece open demountable truck trailer rims.
- All inspections are to be performed by qualified mechanics and / or personnel.
- Always follow Industry safety procedures, including but not limited to eye and ear protection.
- Follow ALL OSHA (Occupational Safety and Health Administration) safety procedures for tire and rim handling and rim to lock-ring matching.
- Follow ALL TMC (Technology and Maintenance Council) recommended practices for out of service conditions. This procedure and its contents are in accordance with TMC recommended practice #RP-222-B
- This procedure should be done ONLY to rims that have a 100% deflated tire (removed valve core) or the rim is dismantled from the tire. ***NEVER check a rim while mounted with an inflated tire.***

6.7.1.2 Rim Inspection Process:

6.7.1.2.1 Do a complete visual check of the rim.

If any of the following exist, remove the rim from service and scrap. (**Note: Special attention should be given to the circumference of the rim base at the lock-ring seat**)

- Bent flange AWAY from bead beyond 3/8".
- No more than 2 bends per rim
- Bent flange TOWARDS bead
- Bent web or base or disk
- Rim and lock-ring have heavy rust, corrosion, or pitting,
- Any deformation, cracks, welds, or repairs to rim, disk or lock-ring.
- Lock-rings which are round, bent out of shape, or worn and no longer fit properly.
- Unable to read identification marks.
- Gap or improper seat between lock-ring and rim shoulder for the circumference of the rim.
- Missing, welded, or altered valve stem locators

6.7.1.2.2 - Do a physical check of the rim with a "chipping" hammer:

- Strike the rim with the pointed side of the hammer around the perimeter of the rim base.
- Alternate strikes along the width of the rim base.
- Give special attention to strikes on the lock-ring side of the rim base.
- The sound of each strike should be "deep and hard".
- If any of the following occurs, remove the rim from service and discard:
 1. Strikes have improper or unusual sound.
 2. Excessive rust chips from striking.
 3. Fractures, punctures, or dents occur during striking.

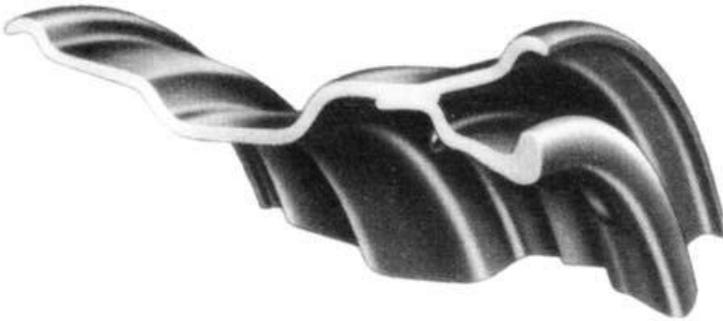
NOTE: *If a rim has borderline inspection results, or is questionable in anyway whatsoever, remove from service and scrap.*

6.8 – Wheel Installation

There are two types of hubs and rims used in the Fleet managed by CCM. The most predominant of these is the demountable rim used with the spoke or "Dayton" style hub. These hubs are identifiable by the 5 spokes where the demountable rims are attached to the chassis and the use of 5 lug nuts to secure the tires to the chassis.

The second is the Hub piloted disk wheel assemblies. These are easily identifiable as they employ 10 lug nuts to secure the solid disk rims to the wheel hub.

There are many differences between the Disk wheels and the demountable rims currently used. In order to ensure that all are clear on the differences in rims, please note the following depictions of both types, demountable rims and disk wheels



Demountable Tubeless rim (1100X22.5)



Demountable Multi-piece Tube type rim



Tubeless Disk Wheel

The 4 most notable differences which we must be concerned with are

1. There is no need for a spacer when using disk wheels – the shape of the wheel itself provides proper clearance between the dual mount tires
2. Disk wheels employ swivel nuts instead of the traditional clamps and lug nuts employed on demountable rims. **NOTE:** these nuts are not interchangeable. Attempting to use traditional lug nuts from demountable rims on a disk wheels will cause damage to the nut, stud and possibly to the wheels(s) and hub.
3. There are twice the number of lug nuts employed on Disk wheels (10) than there are in demountable rims (5)

4. Disk Wheel requires more than twice the torque of demountable rims. Where the required torque of demountable rims is **200 – 260 ft-lbs** the required torque for proper installation of disk wheels is **450 – 500 ft-lbs**.

The two types of wheels are vastly different and are not interchangeable. For this reason all parties need to be able to readily identify the difference in the two technologies and understand the proper procedure for maintaining both

6.8.1 Prior to Mounting

Prior to mounting any tire to any rim or rim/tire assembly to any hub the following must always be checked

1. Inspect tire assembly to ensure:
 - a. Rim is not damaged
 - b. Rim and lock ring are properly matched (multi-piece rims only)
 - c. Lock ring is properly seated on rim (multi-piece rims only)
 - d. Tires are properly mated
2. Inspect condition of adjacent components:
 - a. Ensure mounting surfaces of cast spoke wheel and hub ramps are:
 - i. Not damaged
 - ii. Not worn
 - iii. Not rusted
 - b. Inspect all studs and nuts to ensure they are not:
 - i. Stripped
 - ii. Worn
 - iii. Same size and type (demountable rims)
 - iv. Swivel flanges move freely(hub piloted wheels)
 - c. Inspect all clamps to ensure they are not worn and are of the same type, length, and are matched (Demountable rims)
 - d. Inspect spacers to ensure that they are of the proper width and are not distorted cut or cracked (Demountable rims)
3. Replace any damaged components. **DO NOT** bend, heat, weld, or braze on any of the components. Note: on hub piloted wheels if one stud is bad replace bad stud **and** the adjacent studs on either side of the bad stud. If more than one stud is bad, replace all 10 studs

6.8.2 Servicing Multi-piece Demountable Rim on Spoke (Dayton) Hubs

When changing tires or repairing flats the following procedures should be followed at all times

NOTE: Tires mounted on multi-piece rims must always be completely deflated prior to handling either on or off a vehicle. Both tires on a wheel are to be completely deflated prior to any attempt to remove the tire assemblies from the vehicle

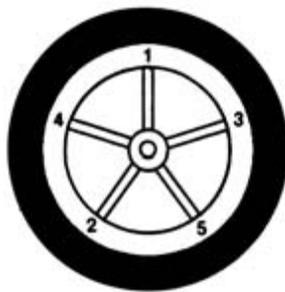
Prior to Mounting (Source – Accuride Manual)

4. Inspect tire assembly to ensure that
 - a. Rim is not damaged

- b. Rim and lock ring are properly matched (multi-piece rims only)
 - c. Lock ring is properly seated on rim (multi-piece rims only)
 - d. Tires are properly mated
 - e. There is no rust or excessive paint build up on the rim (Hub piloted disk wheel)
5. Inspect condition of adjacent components
- a. Ensure that mounting surfaces of cast spoke wheel are
 - i. Not damaged
 - ii. Not worn
 - iii. Not rusted
 - b. Inspect all studs and nuts to ensure they are not
 - i. Stripped
 - ii. Worn
 - iii. Same size and type
 - c. Inspect all clamps to ensure they are not worn and are of the same type, length, and are matched
 - d. Inspect spacers to ensure that they are of the proper width and are not distorted cut or cracked
6. Replace any damaged components. **DO NOT** bend, heat, weld, or braze on any of the components.

Mounting Dual Tire Assemblies – Demountable Rims

1. Place inside rim over spoke wheel and position as far back on the hub as possible ensuring that the valve stem locators are positioned between hub spokes.
2. Place spacer band over hub and slide as far back as possible. Caution should be taken to ensure that the spacer is positioned evenly and is not cocked on the hub. When correctly positioned, the spacer ring should be snug against the spokes and flush against the gutter edge of the inside tire rim all the way around.
3. Place the outer tire rim assembly in position ensuring that the valve stem locators are positioned between the hub spokes and is flush against the spacer band.
4. Align valve stem locators between spokes and secure clamps and nuts evenly in position. **Snug** up all nuts using the minimal torque possible in the sequence shown in the following diagram.



“Star” Pattern
For Torquing Five hubs

5. **NOTE: DO NOT** tighten nuts fully.
6. After the tires have been properly centered on the spoke hub and the lugs and clamps are properly seated, tighten the nuts a quarter turn at a time using the “star” sequence until all nuts are tightened to 200-260 ft.-lbs. of torque. Installation in this manner will allow the rims to properly align themselves on the mounting surfaces of the cast spoke wheel. **DO NOT OVER TORQUE.**

NOTES

1. There are two types of wheel clamps or cleats. They tighten completely differently and therefore should not be mixed on the same wheel.
 - a. Heel-less cleats do not contact the rim. These clamps should not be over-torqued to force them to contact the hub.
 - b. Heel-type cleats are designed to contact the wheel hub when properly torqued. If the cleat touches the wheel hub before 80% of recommended torque is achieved, the assembly needs to be checked to ensure that the proper studs, clamps, and rim spacers are in use. When checking tire/wheel installations attention should always be paid to the following
 - i. All clamps are of the same type. Under no circumstances are heel-less and heel-type clamps to be used on the same wheel.
 - ii. All clamps are seated properly.
 1. All heel-type clamps should be flush against the hub. If they are not all flush against the hub, the wheels need to be removed and reinstalled and the studs cleats and spacer need to be checked for damage , miss-match or wear
 2. All heel-less clamps are roughly the same distance from the wheel hub. If they are not the same distance , the wheels need to be removed and reinstalled and the studs, cleats, and spacer need to be checked for damage , miss-match or wear

6.8.3 Servicing Hub Piloted Disk wheels

In of 2015 CCM began accepting some new production chassis equipped with Hub Piloted wheels. Since this equipment is vastly different from the demountable rims that are predominant in the fleet it is the purpose of this document to provide a quick reference to the installation of hub piloted disk wheels.

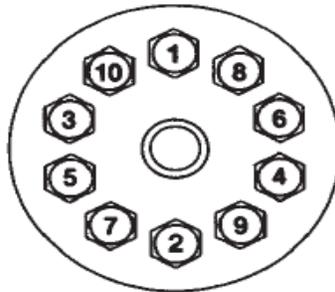
The shape of the hub piloted disk wheel makes the need for spacers between the tires unnecessary.

1. Inspect the pilot ramps for grooves, damage, and wear
2. Ensure one pilot pad is located at 12 o'clock (top) position
3. Ensure that the drum is fully mounted as far back on the pilot ramps as possible
4. Wire brush the hub surface to remove any rust buildup and clean surface with high air pressure
5. Install inner wheel over pilot ramps
6. Align hand holes in outer wheel to match hand holes in inner wheel ensuring that valve stems are 180° from each other

7. Place two drops of SEA 30 oil on the swivel flange of each lug nut and two drops on the threads of each stud
8. Hand tighten all lug nuts using the proper nut tightening sequence
9. Using a torque wrench and following the proper nut tightening sequence, tighten all nuts to 50ft/lbs.
10. Using the proper nut tightening sequence, tighten all lug nuts to **450 – 500 ft./lbs.**

It should be noted that major damage to the rims, studs and possibly the hub can occur due to failure to torque the wheels in the proper sequence. For your guidance please note that the following sequence should be used at all times when mounting disk wheels

Nut Tightening Sequence



Attention needs to be paid to the style of disk wheel being installed/changed. There are several different styles of disk wheels and they are not all compatible. Particular attention needs to be paid to the number of hand holes present in the wheel. A wheel with 2 hand holes for example is not compatible with a disk wheel with 5 hand holes. Care must be taken to ensure that the number of hand holes is matched in dual wheel installations. It is also important to remember to align the hand holes in the inner and outer disk wheels in order to allow proper access to the valve stems for airing.

6.8.4 Quality Control

Wherever possible, CCM M&R surveyors should spot check wheel lug nut torque with a torque wrench. When checking torque, M&R surveyors should set their torque wrenches to 200ft-lbs(demountable rims) or 450 ft-lbs (hub piloted wheels) and check torque in a star pattern on each wheel. In pools locations where CCM personnel are not allowed to check the torque, repair vendors may be used to perform this function provided they are in the presence of the CCM M&R surveyor. M&R repair vendors will be allowed to charge **.2mhr** per wheel for this function using the repair code **KLU-TQ**. Repair codes have been set up in chassis.com.

NOTE: All lug nuts on wheels equipped with demountable rims must be torqued to **between 200 – 260ft/lbs**. All lug nuts on Hub piloted Disk wheels need to be torqued to **450 – 500 ft./lbs**. If not within

the prescribed range under or over, all the lugs on the affected wheel must be re-torqued to specification.

Frozen lug nuts and sheared studs are indicative of over torquing. This usually happens when one lug nut is tightened all the way down and then the rest of the lug nuts are tightened. When tightening the opposite lugs an over-torque situation is placed on the first nut tightened. Where ever these conditions are identified the procedures of the previous tire vendors should be examined to ensure that they are properly torquing the lugs.

If the vendors are not installing tires properly they should be billed for all cost involved with stud/nut/clamp replacement or if under torqued, re-torquing the lug nuts as required. Emphasis should be made to ensure that all mounting deficiencies are addressed with the offending repair vendor and corrective action taken.

For more information on proper wheel inspection and installation we strongly recommend that you download the Accuride Rim/Wheel Safety and Service Manual available at Accuridecorp.com. For your convenience a link to this document has been provided below

[Accuride-Wheels-Safety-Service-Manual](#)

Particular attention should be paid to sections XII and XV of this manual.

Section 7.0 Repair Management/Auto Approval Limits

Since the equipment is contributed to CCM from various members, it is important to remember that each of the contributing parties has their own unique set of requirements on how to handle the maintenance of their heavily damaged equipment and older units with advanced deterioration. Due to these differences, it is essential that the amounts and type of repairs are monitored, and the input of the contributor be sought in determining whether a heavily damaged or deteriorated unit is to be repaired, or removed from the pool.

Approval Limits

Due to the operational variances of each pool, the approval limits as well as the time allowed for contributor approval varies from pool to pool.

NOTE: Application of the approval limits are at the discretion of CCM and are subject to modification or elimination. Application of approval limits are also subject to modification or elimination based on

individual vendor performance. Always check with CCM to determine the applicable approval limits for a particular vendor within a pool

Section 8.0 Damage Recovery

In order to contain M&R costs, and proactively prevent the damage from reoccurring, efforts must be made to identify the causes of damage and to recover the cost of repair wherever possible. To this end the following procedure is recommended.

All equipment entering a facility is subject to an inspection either physically or by OCR or AGS.

Any damage to the chassis discovered during this inspection that was not evident at the time of pick-up is to be invoiced to the handling carrier unless occasioned by normal wear and tear or latent defect of the vehicle or component thereof.

Note – Under the **UIIA Interchange Agreement Section 3.c.1 and 2** billing of damages to the motor carrier must also include an invoice by an M&R vendor to the Line/Pool as proof of repair. UIIA covers the number of calendar days an invoice may be submitted for both manned and Automated Gate System facilities.

When billing for damages, all billing must contain a copy of the receiving interchange or images (AGV/OCR) with damages noted as well as a copy of the original repair invoice (or electronic equivalent) showing repairs were completed.

Terminal Handling Damage

Damages that occur after the receipt of the equipment into a facility is the responsibility of the facility operator unless the identity of the handling party responsible for the damage can be positively identified. Each Pool may have a specific procedure for each terminal.

Definition of Terminal Responsibility

The items listed below are damage items that, if not noted on the in-gate interchange, need to be researched and if necessary invoiced to the appropriate party:

- Major damage to main rails and bolsters that affects ability to secure a container or tracking of the unit.
- Major damage to the landing gear that affects the load bearing capacity of the equipment, i.e. legs bent sideways or forward or backwards and/or a destroyed gearbox.

-
- Stacking damage to slack adjusters, brake chambers, crossmembers, pushrods, S-cams, electrical harness and/or airlines and hoses.
 - Airline/electrical line spring holders.
 - Handling Damage during normal operations including bent or missing pin locks or twist locks, bent under-ride protector (ICC bumper) and/or missing glad hands.
 - Tires cut through one or more ply of cord on tread or sidewall, slid flat tires and/or tires missing.
 - Missing components

Assignment of responsibility

- Once damage has been identified, pool manager will examine all available documentation
 - Interchange/J1
 - Load orders
 - Stacking orders (if applicable)
 - Pictures
 - Customs inspection orders

After reviewing all available documentation the pool manager should assign responsibility for the damages if the source of the damage can be clearly identified.

It should also be noted that in the case of water terminals, terminal handling and cut tires may be billable to the stevedore using the chassis for vessel work. If adjacent equipment identified as having caused the damage OR if the damaged unit was used in a stevedoring operation, the stevedore should be billed not the terminal.

Any damages noted on the interchange should be billed to the appropriate motor carrier handling the equipment at the time of damage.

Notification

Once the damage has been properly researched, and cause identified, terminal/ramp manager is to be presented the accumulated supporting documentation and pictures and provided an opportunity to inspect the unit to verify damages, subject to the terms of license and access agreements.

Billing

Ramp manager will issue J2 for the damages or will make arrangements for the terminal operator to have the damages corrected. If a J2 is issued, the original J2 must accompany the repair order and all supporting documentation when billed.

If the Terminal operator is instructed to make repairs, repairs must meet minimum IICL repair criteria. Copies of all repair orders must be provided to CCM and appropriate IEP for inclusion in FMCSA required Maintenance Record.

Section 9 Proper Wheel End Maintenance Procedure (DAYTON WHEELS)

In order to ensure proper maintenance of wheel end assemblies, the following procedures must be followed at all times whenever a wheel end assembly is to be removed or worked on in any way.

REMOVE AND REFIT WHEEL ASSEMBLY

Remove the jam nut, washer and adjusting nut.

Remove the outer bearing.

Pull Wheel.

Remove wheel seal and inner bearing.

Discard the old wheel seal.

Clean bearings in a parts washer. **NOTE: Keep the bearings separate if you are washing bearings at the same time. The same bearing must go back into the same wheel. Allow the parts to dry completely.**

Once clean, check the bearings for the following conditions:

- Roller ends are worn
- Rib is worn
- Roller cage is damaged
- Roller ends and Ribs are scored
- Bearing is discolored
- Cage, Cup, Cone or Rollers are grooved
- Races or Rollers are bruised with deep indentations
- Races or Rollers are etched
- Races or Rollers are spalled (chips or scales)
- Races or rollers are gouged or nicked
- Races or rollers are brindled (indentations)
- Races or Rollers are cracked.

Inspect the cups, while still in the wheel, for the same issues.

If any of the above conditions exist, replace the bearing and cup as a set.

Clean the axle spindle with a solvent cleaner. Hand dry. Inspect the spindle for damages before applying a light coat of grease.

Inspect the brakes and other wheel end components for wear or defects. If there are any defects in the brake lining or if there is less than 50% brake lining remaining, replace the brakes at this time. Brake hardware kits should include Heavy Duty Springs.

Clean out all of the old lubricant from the hub. Wipe the hub cavity clean.

Pack the hub cavity with **Shell Gadus S3 V220C Grease**. **NOTE: This is the only acceptable grease.**

Pack grease all around the interior of the hub cavity up to the smallest diameter of the bearing cups.

Grease the cleaned bearings. This should be done with a grease packer to ensure complete and even penetration.

Install inner bearing/cup and seal.

STEMCO SEAL is specified, either Voyager or Guardian. If these parts are not available, contact CCM for replacement part.

Install the wheel hub onto the axle.

Install outer bearing.

Push the wheel assembly and turn at the same time to make sure that the wheel is on correctly.

WHEEL END BEARING ADJUSTMENT

It is critical that this procedure is done properly and a **TORQUE WRENCH MUST** be used.

Install the adjusting nut with the pin facing outward.

Tighten the adjusting nut to 200 lb./ft. (Using a torque wrench) while rotating the wheel in both directions.

Loosen the nut one complete turn and then re-torque to 50 lb./ft. while rotating the wheel.

Back off ¼ turn.

Install the lock washer. If the pin and washer hole do not align try flipping the washer around. If necessary, you may need to slightly adjust the parts to align them.

Install the Jam Nut. Torque to between 200 - 300 lb./ft.

Check the wheel end for play using a dial indicator. If within .001" and .005" proceed.

Clean and apply a light coat of grease to the inner surface of the hub cap and the adjusting nut. Apply new hub cap gasket.

Verify that all remnants from the old gasket are removed and the gasket mounting surface is clean.

Re-install hubcap using new lock washers.

Torque hubcap bolts snugly to 12 to 16 ft. lbs.

Do not over tighten.

Check that the brakes are properly adjusted.

Clean the work area including the hub, wheel, rim, etc. of any old grease.

For: POSITIVE BEARING ADJUSTMENTS and CASTELLATED NUTS, Please refer to the Meritor Manual, Sections 10 and 11.

For other types of axles please refer to your Meritor Maintenance Manual 14, Trailer Axles or contact equipment owner.

Section 10 VARIOUS CCM M&R POLICIES

10.1 Brakes and Wheels

When worn or broken brake shoes are replaced on one side of an axle, the brake shoes on the opposite side of the same axle can remain provided they have 50% or more wear remaining. If less than 50% remain on the opposite side, then replace both sides.

When a damaged or worn wheel is replaced on one side of an axle, the wheel on the other side of the same axle is not to be replaced unless it is worn, cracked, or damaged.

10.2 Light Replacement

All lights, including stop/tail and marker lights, are to be replaced with flange mounted sealed beam lights. **Grommet mounted lights are not allowed as replacement parts on CCM managed chassis.**

Flange mounted lights must have a minimum of three fasteners. Fasteners are to be aluminum POP rivets.

10.3 FMCSA Inspection and Brake Certifications

All mechanics performing FMCSA Periodic Annual inspections and/or performing any brake work on chassis must be certified to make those inspections/repairs per FMCSA regulations. M&R vendors must complete both the Annual Vehicle Inspector certification (page 52 hereof) and the Brake Inspector certification (page 53 hereof) for each mechanic it employs or utilizes to make those repairs. A copy of the form is to be kept at the vendor's facility and another given to the pool manager. The pool manager will keep the forms and will check to ensure only mechanics certified to make brake repairs or FMCSA Periodic Annual inspections are performing those tasks.

10.4 Risk Management Hold

10.4.1 When a chassis is placed on Risk Management Hold, CCM will notify an M&R vendor by e-mail.

10.4.2 Immediately upon notification by CCM to an M&R Vendor that a chassis has been placed on Accident Hold:

10.4.2.1 Upon locating and capturing the subject chassis, the M&R vendor shall confirm same in writing to a CCM Risk Hold Contact (as per below) and coordinate with CCM as to the location where the chassis will be held. Hold locations must be sufficiently secure such that access to the chassis is restricted to authorized personnel only.

10.4.2.2 The chassis shall not be operated, estimated for repairs, repaired or otherwise altered.

10.4.2.3 The chassis shall not be inspected by anyone without prior approval from a CCM Risk Hold Contact. The M&R vendor should refer any requests to inspect the chassis to CCM.

10.4.2.4 The M&R vendor shall keep the chassis quarantined until otherwise directed by CCM.

10.4.3 In the event an M&R vendor discovers any defect or damage to a chassis that suggests a chassis may have been involved in an accident or collision, the M&R vendor shall notify a CCM Risk Hold Contact (as specified below) and place the chassis on Risk Management Hold as per the above pending further instruction from CCM.

10.4.4 CCM Risk Hold contacts by Pool:

Pool **E-Mail**

MWCP: MWCPRiskHold@ccmpool.com

SACP: SACPRiskHold@ccmpool.com

DCCP: DCCPRiskHold@ccmpool.com

MCCP: MCCPRiskHold@ccmpool.com

GCCP: GCCPRiskHold@ccmpool.com

COCP: COCPRiskHold@ccmpool.com

Section 11 CCM AUDIT SAFETY CHECKS

Below is a list of some common safety violations for which everyone should be on lookout when performing audits. The absence of finding such violations does not mean the repairer / facility is safe, just that they were not found. Failure to spot these items does not constitute CCM endorsement or certification of vendors practices.

- Inadequate / inappropriate protective clothing for workers including shoes, hard hats, gloves and protective glasses
- Difficulty being seen – lack of reflective vests
- Mechanic’s failure to chock chassis wheels when working underneath

-
- Precariously lifting container high off bolster while working on bolster / pin / lock
 - Using a box or crate to support a chassis / axle as opposed to proper jack stands
 - Not caging tires when airing, not airing safely with extension chucks, standing in front of tire when airing, not having auto-pressure shutoff, transporting and handling fully-inflated tires
 - Failing to inspect rim lock rings, failing to read markings and match lock rings & rim bases, OR using heavily corroded, damaged, dented, bent rims and lock rings
 - Not caging spring brakes – attempting to adjust spring break clamps – taking spring brakes apart
 - Smoking near combustibles
 - Standing in water when welding or using electrical tools
 - Crawling into stacks of chassis for inspection or repair – for any purpose
 - Walking in between or behind mounted containers/chassis, especially when there are tractors / hostlers operating backing into the chassis or adjacent chassis
 - Not yielding to container handlers / forklifts / hostlers - you can see them better than they are able to see you
 - Walking underneath a container being repositioned or standing under a straddle carrier with or without a container.

CCM and the pool managers reserve the right and will conduct audits of the M&R vendors for compliance with this manual. It is incumbent upon the M&R vendors to develop and implement a quality program of self-audits to ensure these policies and procedures are followed.

Section 12 M&R Vendor Self Audit Process

All M&R Vendors working on CCM managed chassis are required to control quality and safety through self-audits of work performed on CCM equipment. Self-audits are the best way to ensure quality control and 100% involvement is required. Vendors will not be penalized for poor self-audit results. Vendor is expected to fix any problems uncovered in their own audits. Vendors must train and/or discipline mechanics to ensure improvement and maintain the highest level of quality. The purpose of the self-audit is to ensure that CCM audits and post-inspections are positive. Poor results found during CCM audits could likely result in penalties or sanctions, including possible cancellation of the M&R Vendor Agreement. Poor results found by CCM will certainly result in a requirement for heavier management involvement and increased self-audits. Poor CCM audits are avoidable through a quality self-audit program.

1. Vendor Management to observe conditions in their shops, facilities or assigned ramps for safety compliance, part supplies, proper tools & equipment and quality of repairs.
2. Vendor Management to perform post-inspections on an adequate quantity of mechanics' work orders or repair estimates in order to ensure chassis are being repaired properly and charges to the pool are accurate. CCM may specify how many inspections

are required, based upon CCM's audit results of the vendor. A minimum of 10% of the work orders require a Supervisor's signature, including Roadability and mounted chassis areas. This Supervisor is responsible for the work completed by mechanics under his supervision.

3. Vendor Management to keep records of each chassis inspection and provide a summary report to CCM monthly reports. More detailed records may be required depending upon CCM's audit results of the vendor. CCM may specify more detailed records needed such as photos, invoice copies, work order copies, etc.
4. Vendor Management shall maintain their inspection details and use the Chassis Audit Inspection form provided by CCM. Depending upon CCM's audit results, vendor may be required to maintain specific forms to demonstrate full quality control is in place.
5. Vendor management to conduct post-inspections in conjunction with the self-audit process. Included at the end of this document is a form developed by CCM that details the severity of violations. It shows which are OOS violations, citations or CCM requirements and includes the FMCSR section for each type of repair. It is recommended that mechanics and supervisors all have a copy of this form with them when conducting audits or inspections on CCM equipment.
6. All Wheel End Repairs require a supervisor's verification that work was completed properly. The mechanic and supervisor must sign the work order to confirm verification and the mechanic's and supervisor's name must be included on the invoice (comment section).
7. Any sub-par audits should be maintained in the mechanic's personal file as well as any training or disciplinary actions.

Section 13 DVER RECEIPT PROCEDURE

The following procedure will be used when a DVER is received from IANA or the Motor Carrier (MC), given to CCM and finally to the M&R vendor (MRV) for resolution. In all instances the designated person for each pool must receive the DVER. Under no circumstances will CCM allow a MC to turn a DVER in to an MRV or attempt to turn one in at an unmanned gate.

SCENARIO 1

DVER IS RECEIVED FROM IANA TO THE IEP

1. Driver receives a DVER during a roadside inspection.
2. IANA receives the DVER from the issuing authority.
3. IANA forwards to the proper IEP.
4. CCM staff will query the CMS system to check the latest location of the chassis.
 - a. If unit still shows on the street, CCM will set an alert in the CMS system to be notified when unit is returned.

b. If on terminal, Pool will notify MRV (Maintenance Repair Vendor) to place unit OOS and on hold.

5. Once alert is received, or if unit has already returned to a CCM location, CCM staff will forward MRV at current location of the chassis an email request, using the attached template, to inspect, repair, and report repair date to requesting CCM staff.

6. After repair completion, MRV will ensure unit is released from hold and chassis is tagged with an Available / Green tag signifying OK to use. MRV will also need to release from gate hold if unit is at a rail facility.

7. CCM Staff will ensure unit is released from hold.

8. MRV will attach a copy of the DVER to their invoice in chassis.com. If the unit was repaired prior to the MRV being notified of the DVER, the MRV will respond by forwarding a copy of their invoice for the DVER repairs to the CCM staff.

9. CCM will notify the issuing agency that repairs were completed and submit the required documentation.

10. CCM will keep a registry of ALL DVER's received on a spreadsheet. The spreadsheet will show the following information:

- a. DOT number
- b. Inspection
- c. Date
- d. Company Name
- e. Report number
- f. Carrier Name
- g. County/ city
- h. Location
- i. Violation
- k. Violation (yes/no)
- l. Total violations
- m. OOS (yes/no)
- n. Repair
- o. Date of repair
- p. Invoice #
- q. Repair amount
- r. Repair Vendor
- s. Date sent to authority

SCENARIO 2

DVER IS RECEIVED FROM MC TO THE IEP

1. Driver receives a DVER during a roadside inspection.
2. Driver gives the DVER to his dispatcher.
3. Dispatcher forwards DVER to the CCM pool location within 24 hours of his receipt of DVER.
4. CCM staff will check DOT # to verify unit is a CCM unit and then verify if DVER has been received from IANA.
 - a. If DVER has been received from IANA, CCM staff will discard the DVER from the MC.
 - b. If DVER has not been received from IANA, CCM staff will revert to process in Scenario 1, starting at point #4.

SCENARIO 3 DVER IS RECEIVED WITH NO DEFECTS

In the event a “NO DEFECT” DVER is received from IANA or a Motor Carrier, etc., that NO DEFECT DVER is to be kept on file at the CCM office and not discarded.

Section 14 Procedure for Clearing Driver Vehicle Inspection Reports (DVIRs)

Identified below are scenarios where equipment enters a terminal, has a DVIR with a reported defect (RCD) and the procedures that CCM staff require of the Terminal Operator and M&R Vendor.

The Terminal Operator may or may not have the capability to place units OOS (apply gate holds). These procedures will address all options. M&R Vendors and Terminal Operators should communicate with CCM to confirm which scenario applies to their operation.

CCM has designated specific M&R Vendors to act upon addressing any Roadability Component Defect (RCD) reported via a Driver Vehicle Inspection Report. M&R Vendors are assumed to be registered in the designated M&R system with its preferred method (i.e. email or EDI) to receive notices of DVIRs with defects (RCDs).

FOR MOTOR CARRIERS

Motor Carriers should instruct their drivers to turn in DVIR’s with defects. This will help CCM properly maintain the equipment. Drivers should be especially cognizant of defects they discover to brakes or wheel alignment and should report these defects without hesitation when entering a facility.

NOTE: A MC CANNOT BE ISSUED A THIRD PARTY INVOICE BASED ON DAMAGES SUBMITTED ON A DVIR. THIRD PARTY INVOICES TO MC’S MUST FOLLOW UIIA GUIDELINES.

WHAT IS REQUIRED TO CLEAR A DVIR

DVIR’S can be cleared using one of the following scenarios:

1. MRV completes the repairs as noted on a DVIR. Unit must be released **ASAP**, but no longer than 24 hours of repair completion. Units can be released in two ways – manually, or through chassis.com.

- a. Repair completion of a work order in chassis.com that includes an SMC will release the DVIR automatically. However, “Roadability” and “tire only” work orders do NOT include an SMC, and therefore will NOT automatically release the DVIR.
 - b. Manual releases of the DVIR must include either the work order# or vendor reference number.
2. All repairs made pursuant to a DVIR shall be completed in chassis.com using the Repair Type “DVIR”.

SCENARIO 1:

DVIR IS DELIVERED ELECTRONICALLY TO THE TERMINAL OPERATOR TO PUT THE CHASSIS OOS IN ITS TERMINAL OPERATING SYSTEM

1. MRV will receive message from DRS (Driver Reporting system) that unit is being returned to terminal with RCD on DVIR.
2. MRV will coordinate with Terminal Operator to advise when unit is received and location of unit on terminal.
 - a. MRV will locate chassis and place RED OOS sticker on the bolster or in the 7 way plug.
3. MRV will inspect and repair RCD damages or note that repairs are not required.
 - a. If MRV cannot find damages to repair from the DVIR, MRV will perform an SMC inspection report indicating the same, and enter the inspection and charges into chassis.com using the “DVIR” Repair Type.
 - b. MRV will also ensure the entire chassis is acceptable per the CCM Systematic Maintenance procedure.
 - c. If the cost to repair the chassis is higher than the MRV auto limit, the MRV has to obtain approval for the repair from CCM.
 - d. All repairs, once completed, are to be entered into the designated M&R system using the Repair Type “DVIR”. All DVIR repairs are to be given top billing priority and entered into chassis.com ahead of all other standard work.
4. MRV will remove the OOS sticker and replace with a GREEN ‘OK’ or available sticker.
5. MRV will advise Terminal Operator to make unit available in TOS, if required.

SCENARIO 2

DVIR IS DELIVERED TO THE M&R VENDOR TO PUT THE CHASSIS OOS

1. When possible, the unit should be placed in OOS status by the MRV directly into the TOS.
2. MRV will locate unit, place a RED OOS sticker on the front bolster or on the 7 way plug.
3. MRV will inspect and repair RCD damages or note that repairs are not required.
 - a. If MRV cannot find damages to repair from the DVIR, he will generate an inspection report indicating the same, and enter the inspection into the designated M&R system using the “DVIR” Repair Type.
 - b. MRV will also ensure the entire chassis is acceptable per the CCM Systematic Maintenance procedure.

c. If the cost to repair the chassis is higher than the MRV auto limit, the MRV has to obtain approval for the repair from CCM.

d. All repairs, once completed, are to be entered into chassis.com using the Repair Type "DVIR". All DVIR repairs are to be given top billing priority and entered into chassis.com ahead of all other standard work.

4. MRV will remove the OOS sticker and replace with a GREEN 'OK' or available sticker.

5. MRV will advise Terminal Operator to make unit available in TOS, if required.

CCM POOL MANAGERS AND M&R MANAGERS

CCM managers must ensure DVIR's are cleared from the designated M&R system within seven (7) days (one week) of receiving notification of a DVIR with RCD's. When using chassis.com as the designated M&R system, follow the guidelines below:

1. Log in to the designated M&R system DVIR screen.

a. Enter "Date From" going back several months (to the beginning of the pool using the designated M&R system) to ensure all open DVIR's are captured.

b. Enter "Defects" – YES; and "Release" – NO

c. Under "Inspection Type", Click - End of Trip DVIR

d. Click "Search".

e. Click "EXCEL" to move open DVIR's to an EXCEL spreadsheet.

2. With the cursor on Line 1, click Data, then Filter, to sort data.

3. Once the data is sorted, proceed with each location to find open DVIR's. ***The designated M&R system will have to be checked against the DVIR date for any repairs performed after the date of the DVIR.***

4. Once a repair is found that should clear a DVIR, ensure the M&R vendor clears the DVIR using the "DVIR" repair type.

5. CCM staff also must check to see if any DVIRs cleared as "outgate" before unit was inspected. If any are located, CCM staff must:

a. Create an alert in the system to be notified of next ingate.

b. Capture the unit, inspect, and repair as normal.

c. CCM will have to manually release the DVIR, if still open, showing unit as repaired.

6. CCM staff can clear a DVIR by going to the DVIR screen in the designated M&R system. From there click DVIR then Release DVIR. Enter the DVIR number from the spreadsheet and click Search. Once the DVIR is found, check it on the far left and enter a reason for clearing the DVIR on the far right. Click release and the DVIR will clear.

7. Sometimes multiple DVIRs are created for the same chassis, but the MRV only gets notice of one. CCM staff needs to ensure all the multiple DVIRs for the chassis are released.

CCM management should view the Open DVIR report sent weekly from corporate and advise the facility MRVs of receipt of same. CCM management should ensure MRV repairs the chassis and clears the DVIR as soon as possible.

Section 15 FMCSA Inspections

The FMCSA inspection is the annually required inspection of all over the road commercial equipment to ensure that it is in safe operating condition for use on interstate highways. This inspection must be performed by qualified inspectors only and all inspectors must have certification on file. **Under no circumstances are untrained personnel to be allowed to perform FMCSA inspections on CCM managed equipment.** The entire purpose of this inspection is to identify latent defects in the equipment that may cause a collision. For this reason it is imperative that only well qualified mechanics perform these inspections and properly record all conditions observed.

FMCSA Forms

The form that CCM uses to record FMCSA inspections is designed to allow the recording of both its current condition and what defects have been corrected to bring the unit to **49CFR part 396 and Appendix G subpart B** requirements. With this in mind it is important that the form be completely and correctly filled out. In this section we will present a guide to the proper completion of a CCM FMCSA inspection form

The first thing all parties must keep in mind is that this is a **legal document**. For this reason all information entered **MUST** be legible. Illegible entries will result in violations and possible legal penalties for all parties including the mechanic performing the inspection.

Header

The header contains the basic information on the chassis itself. This is necessary for matching with the license with the VIN number and matches the inspection form to the particular chassis. Required information in this section includes

1. Chassis number – all alpha and numeric characters as listed on the chassis
2. VIN # - all 17 alpha and numeric characters are required. **NOTE Partial numbers are unacceptable**
3. Owner – the owner as listed on the registration
4. License Plate – all alpha and numeric characters as posted on the plate attached to the chassis
5. Expiration – the date the plate on the chassis expires
6. State Registered – the two alpha abbreviation for the plate attached to the chassis
7. Manufacturer – the original manufacturer as stated on the VIN plate attached to the chassis
8. Manufacture year – the date the chassis was originally built as stated on the VIN plate
9. Remanufacture date – if the unit was remanufactured there will be either a second VIN plate or a modified single VIN plate that will list the company that did the remanufacture and the date the unit was remanufactured. **Record only the year the unit was remanufactured**
10. Size /Type – Please circle the size and type of unit that matches the unit being inspected

Component/System

This section of the form is designed to record both the current condition of the equipment and any repairs required and made to the unit to bring it back into compliance. This is where most mechanics

and repair vendors begin filling out the form improperly. It is common practice by mechanics to do the inspection, repair any items required then fill out the paperwork with OK listed for all items. In the eyes of the DOT this is highly suspect and in most cases leads to a more lengthy detailed inspection.

The form that CCM employs to record FMCSA inspections is designed to allow the recording of **both** the components current condition and what defects have been corrected. As such it is preferred that the mechanic use the form as part of his initial inspection of the unit. As each component is inspected the appropriate box denoting either **OK** or **DEFECT** is checked. Defects identified should be listed in the column marked "**Description of Defect/Repair**". After the complete inspection has been performed, the sheet can then be used as a check sheet to ensure that all defects identified are corrected by the mechanic. As each defect is corrected the mechanic checks off the repair column indicating that the repair has been performed. **NOTE:** Completing the form in this manner is the method prescribed by the FMCSA.

Using the form as described above is also advantageous for the repair vendor and the mechanic. By doing the complete inspection and using the form as a check sheet for the repairs

- The mechanic is less likely to miss a repair that he noted on his initial inspection but did not write down.
- Allows mechanic to be more productive by eliminating them starting on a unit only to discover major suspension or brake work after they have already worked lights and twist locks.
- Allows repair vendor to better organize work.
- Minimizes the need for supplemental repair orders as additional work is identified.

Problem areas

The following is a list of particular areas to watch when completing FMCSA inspections:

- Some vendors may have a practice of noting 1 ½" for the stroke of all 4 wheels. This is not acceptable. Brake stroke must be accurately recorded to the 1/8th inch when the **final** brake stroke measurement is listed in the spaces provided. **NOTE:** If the brakes were readjusted at the time of inspection, a notation needs to be entered in the space provided on the brake stroke line stating "Brakes readjusted"
- There are a considerable number of completed inspections where:
 - The registration was missing
 - The registration had been tampered with (someone wrote the unit number on it by hand)
 - The registration was totally illegibleAll of these conditions are violations and must be addressed i.e. replace the registration in conjunction with the FMCSA inspection
- ABS systems – Previous audits of CCM chassis have at times found the following ABS system issues
 - Indicator light not functioning

- Indicator light flashing but not noted
- Improper light replacement
 - Non ABS embossed light
 - No ABS decal adjacent to the light

All repair vendors and mechanics need to be reminded that these inspection documents are legal documents. By signing the inspection form the mechanic is completing an affidavit that he has inspected and repaired the unit as necessary to bring it into compliance with **49CFR part 396 and Appendix G subpart B**. Falsification of this document is considered fraud and is subject to fines and/or civil penalties.

ANNUAL VEHICLE INSPECTION – INSPECTOR CERTIFICATION

M&R VENDOR: _____ DATE: _____

LOCATION: _____

City, state zip _____

Name of Inspector: _____ Employee ID: _____

396.19 Inspector Qualifications

It shall be the M&R vendor's responsibility to ensure that the individual(s) performing an annual inspection under 396.17 is qualified as follows:

1. Understands the inspection criteria set forth in 49 CFR Part 393 and Appendix G of this subchapter and can identify defective components.
2. Is knowledgeable of and has mastered the methods, procedures, tools and equipment used when performing an inspection; and
3. Is capable of performing an inspection by reason of experience, training, or both as follows:

I AM QUALIFIED TO PERFORM AN ANNUAL INSPECTION OF INTERMODAL EQUIPMENT BASED ON THE FOLLOWING:

(Check and complete the appropriate sections)

____ a). Successfully completed a State or Federal sponsored training program or has a certificate from a State which qualifies this person to perform Intermodal equipment safety inspections.

Name for Program/Certificate _____ Date _____

Location _____

OR

____ b). Have a combination of training or experience totaling at least one (1) year. Training and/or experience may consist of:

1. ____ Participation in a truck manufacturer sponsored training program or similar commercial training program designed to train students in truck operations and maintenance.

Name of Program _____ How Long? ____ Mo ____ Yrs.

OR

2. ____ Experience as a mechanic or inspector working on Intermodal Equipment;

Name of M&R Vendor for which you worked _____ Total Mo/Yrs. _____

OR

3. ____ Experience as a mechanic or inspector in truck/chassis maintenance at a commercial garage, leasing company or similar facility;

Name of Facility: _____ Total Mo/Yrs. _____

OR

4. Experience as a commercial inspector for a State or Federal agency.

Name of Government Agency _____ Total Mo/Yrs. _____

Signature of Inspector _____ Date _____

I hereby certify that the mechanic/inspector mentioned above meets the requirements for a qualified inspector to perform the annual vehicle Inspection in compliance with the US Department of Transportation regulations for qualified inspectors.

Name of Owner/Supervisor (Print) _____

Signature of Owner/Supervisor _____ Date _____

BRAKE INSPECTOR CERTIFICATION

M&R VENDOR: _____ DATE: _____

LOCATION: _____

NAME OF BRAKE INSPECTOR (PLEASE PRINT): _____

396.25 Qualifications of brake inspectors:

(a) Intermodal Equipment Providers (IEP) must ensure that all inspections, maintenance, repairs or service to the brakes of its Intermodal equipment are performed in compliance with the requirements of this section.

(b) For the purpose of this section, a brake inspector means any employee of an M&R vendor working on Intermodal equipment who is responsible for ensuring all brake inspections, maintenance, service, or repairs to any Intermodal equipment subject to the IEP's control, meet the applicable Federal standards.

(c) No IEP may require or permit any person who does not meet the minimum brake inspector qualifications of paragraph (d) of this section to be responsible for the inspection, maintenance, service or repair of any brakes on its Intermodal equipment.

(d) The IEP must ensure that each brake inspector is qualified.

I am a qualified Brake Inspector based on the following:

1. I understand the brake service or inspection task to be accomplished and can perform that task, and
2. I am knowledgeable of and have mastered the methods, procedures, tools, and equipment used when performing an assigned brake service or inspection task; and
3. I am capable of performing the assigned brake service or inspection by reason of experience, training or both as follows:

- a. I have successfully completed an apprenticeship program sponsored by a State, Federal agency or labor union, or a training program approved by a State or Federal agency, or have a certificate from a State, which qualifies me to perform the assigned brake service or inspection task.

Name of Program/Certificate: _____

OR

- b. I have brake-related training or experience or a combination thereof totaling at least **ONE YEAR**. Such training or experience shall consist of:

- i. Participation in a training program sponsored by a brake or vehicle manufacturer or a similar commercial training program designed to train students in brake maintenance or inspection similar to the assigned brake service or inspection tasks:

Name of Program/Certificate: _____ How Long? ____ Mo ____ Yrs.

OR

- ii. Experience performing brake maintenance or inspection similar to the assigned brake service or inspection task in a M&R vendor maintenance program:

Name of Employer _____ How Long? ____ Mo ____ Yrs.

OR

- iii. Experience performing brake maintenance or inspection similar to the assigned brake service or inspection task at a commercial garage, fleet leasing company or similar facility:

Name of Employer _____ How Long? ____ Mo ____ Yrs.

Signature of Brake Inspector: _____ Date: _____

Signature of Company Rep: _____ Date: _____

Acknowledgements

This manual contains the procedures and policies of CCM in force at the time of publication. By signing below, you acknowledge that you have read, understand, and agree to comply with the policies and procedures contained herein.

Repair Vendor

CCM

Company Name

LOCATION

Title

Title

Name(Print)

Name(Print)

Signature

Signature

X _____

X _____