



M 12

Locomotive Release from Shop Form

To be completed on every engine released from the Shop

I have reviewed the work packet for locomotive 8540 on this date 11-08-11 and take no exception to applicable laws, rules and or MMA standards, policies and standards.

DO NOT CHANGE oil filters changed 10-14-11

Fire exhauster ok 11-8-11



Service Operations

UNIT _____

DATE _____

THROTTLE 8 OUTBOUND LOAD TESTS

Eng RPM (900)	EMD	_____	Lube Oil Pres	_____
Eng RPM (1050)	GE	_____	Water Temp	_____
Horsepower		_____	Overspeed Setting	_____
Volts (5.3)	B-23	_____	RACK SETTING	_____
Volts (7)	C-30	_____		
Volts (720)	B-39	_____		

THROTTLE #1 STALL TEST

OP Mode	(PWR)	_____	NOT APPLICABLE TO B-23 AND C-30
AMPS	(300)	_____	
MGA	(1220)	_____	
Charging Rate	(70v)	_____	

TL 24T

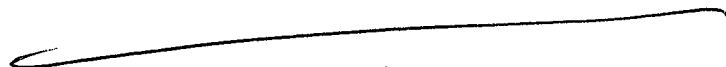
Throttle 1	(1V)	_____
Throttle 2		_____
Throttle 3		_____
Throttle 4		_____
Throttle 5		_____
Throttle 6		_____
Throttle 7		_____
Throttle 8	(72V)	_____



B-23, B-39, C-30, GP-7 M12 MAINTENANCE

<i>In-Bound Or Running Electrical</i>	WORKED BY:
ELECTRICAL	
SWITCH ENGINES DO NOT GET LOAD BOXED ON THE INBOUND, THEY ONLY GET LOAD BOXED ON THE OUTBOUND INSPECTION	
COMPLETE BATTERY MAINTENANCE	
DOWNLOAD & TEST EVENT RECORDER SYSTEM,	
VERIFY COOLING FAN OPERATION	
CHECK INERTAL BLOWER OPERATION	
PERFORM ALL LOCOMOTIVE SELF TEST FUNCTIONS	
B. CHECK FOR AC GROUNDS IN COOLING FAN CIRCUIT WITH TEST LIGHT (30 watt bulb)	
CHECK OPERATION OF GROUND RELAY	
CHECK FOR LOW VOLTAGE GROUNDS (7 watt bulb)	
WHILE IN THROTTLE 3 LOAD TEST, CHECK FOR AC GROUNDS	
CHECK OPERATION OF:	
A. HEATING/AIR CONDITIONING UNIT	
<i>In-Bound Or Running Mechanical</i>	WORKED
CHECK FOR PROPER LUBRICATION AND CAM ROLLER ROTATION	
VISUALLY INSPECT AIR COMPRESSOR FOR WATER, AIR OR OIL LEAKS	
PERFORM MANUAL AIR BRAKE TEST AND PENALTY BRAKE TESTS	
PERFORM AIR BRAKE SELF TEST	
CHECK FOR WATER LEAKS	
CHECK FOR OIL LEAKS	
CHECK FOR FUEL LEAKS	
CHECK FOR EXHAUST LEAKS	
CHECK FOR VERIFY CLEAR STACK	

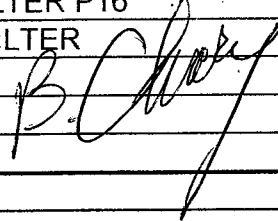
NO INBOUND DONE.



Camfil Farr# 359487000 - Clark# CMAX-14K-38

EMD FILTER CHANGE OUT KIT

Qty ea	CF#	Application
8	400616-1	FUEL LUBE FILTER
1	400616001	Primary Fuel Filter
2	114271-1	FUEL FILTER ELEMENT
1	12233-18	Air Compressor Intake Filter PAMIC FILTER P16
1	114272-1	Air Compressor lube Filter LUBE OIL FILTER
1	352214	Gasket Primary Fuel 8.03"OD
1	352215	Gasket Fuel Strainer 3.52" OD



Camfil Farr PN 359488000 - Clark# CMAX-09K

GE FILTER CHANGE OUT KIT

Qty ea	CF#	Application

B-23, B-39, C-30, GP-7 M12 MAINTENANCE

CHECK THE FOLLOWING EQUIPMENT AND THEIR RELATED GUARDS AND LENSES FOR PROPER OPERATION:			
INSPECT BOTH STARTER SERIAL NUMBERS. IF ANY STARTER IS WITHIN 3 MONTHS OF BEING 3 YEARS OLD, PLEASE CHANGE THE STARTER. TOP STARTER SN _____ BOTTOM STARTER SN _____			-NA-
DID EITHER STARTER GET REPLACED? YES NO			-NA-
APPLY A THIN COAT OF THE SAE NO. 10 OIL TO THE FOLLOWING STARTER COMPONENTS			-NA-
A. ARMATURE SHAFT SPLINES			-NA-
B. CLUTCH ASSEMBLY SPIRAL SPLINES AND MATING GEAR SPLINES			-NA-
FRONT AND REAR HEADLIGHTS, DITCH LIGHTS, CAB LIGHTS, GAUGE LIGHTS, NUMBER PLATES, PLATFORM LIGHTS, ENGINE ROOM LIGHTS, INDICATOR LIGHTS			J. Mack
CHECK CONTROLLER FOR PROPER OPERATION OF REVERSER AND THROTTLE HANDLE LOCKING DEVICES			D. Stephens
CHECK EMERGENCY FUEL SHUT-OFF FROM ALL LOCATIONS			
TRACTION MOTORS AND UNDERFRAME			
INSPECT AXLE GENERATOR AND ENSURE ALL COVER BOLTS ARE IN PLACE AND TIGHT			J. Black
CLEAN AND CHECK THE TRACTION MOTOR LEADS, CLAMPS, VERIFY NO LEADS ARE RUBBING ON THE FRAME			J. Black
CHANGE ANY TRACTION MOTOR BRUSH WITH LESS THAN 50% LIFE LEFT	20422161(D87) 20426671(D78)	16 12	D. Stephens
INSPECT TRACTION MOTOR COVERS AND ENSURE BOLTS ARE IN PLACE AND TIGHT			D. Stephens
ENSURE TRACTION GROUND WIRES ARE IN PLACE AND PROPERLY SECURED			D. Stephens
CLEAN FACE PLATE ON RADAR TRANSCEIVER			J. Black
CHECK M.U. RECEPTACLE AND LIDS. MAKE NECESSARY REPAIRS			D. Stephens
MAKE SURE M.U. CABLES DO NOT FOUL COUPLERS			

CHECKED MAIN ALT-BRUSHES - D. Stephens 4/3 MAIN ALT-BRUSHES - D. Stephens

CHECKED DYN-BRAKE BLOWER MOTORS - D. Stephens

{ CHECKED ELECTRICAL CABINETS, CONTACTORS }
 { ARC CHUTES, FOR WORN OR SHORTED PARTS }
 CDU-DATE - @ 9-15-11

B-23, B-39, C-30, GP-7 M12 MAINTENANCE



In-House Or Dead Mechanical

Part #

Q
T
Y

WORKED BY

SECTION 1 (ANNUAL ITEMS)

WITH ENGINE WARM, COMPRESSION TEST THE ENGINE AND RECORD READINGS:

CYL#1 _____	CYL#9 _____
CYL#2 _____	CYL#10 _____
CYL#3 _____	CYL#11 _____
CYL#4 _____	CYL#12 _____
CYL#5 _____	CYL#13 _____
CYL#6 _____	CYL#14 _____
CYL#7 _____	CYL#15 _____
CYL#8 _____	CYL#16 _____

NO Batteries

X

WITH ENGINE WARM, PRESSURE TEST COOLING SYSTEM AT 20 PSI AND INSPECT THE ENTIRE COOLING SYSTEM FOR LEAKS

PERFORM CRANKCASE INSPECTION WHILE BARRING THE ENGINE OVER, PAY CAREFUL ATTENTION FOR BROKEN RINGS AND/OR "JUMPING" RODS INDICATING THRUST WASHER WEAR INSPECT PISTON COOLING TUBES (EMD ONLY)

J. Black

TAKE THRUST WASHER SNAP RING READINGS. FILL OUT THRUST WASHER SHEET. (USE JSP-001 FOR GUIDANCE)

INSPECT WATER MANIFOLD SADDLE STRAPS BETWEEN 4&5 AND 12&13 PA'S FOR PROPER SECUREMENT (EMD ONLY)

K. Hussey - D. Black

INSPECT AIR BOX; CLEAN AS NECESSARY

INSPECT TOP DECK COVERS, SEALS AND LATCHES. REPLACE AS NECESSARY

INSPECT TURBOCHARGER EXHAUST SCREEN AND EXPANSION JOINT. IF ANY DEBRIS IS FOUND IN THE TRAP, INVESTIGATE FOR A DROPPED VALVE AND REMOVE TURBO SCREEN AND INSPECT THE TURBO FOR DAMAGES BLADES.

20402961 1

INSPECT ALL EXHAUST MANIFOLDS, EXPANSION JOINTS AND HEAT SHIELDS FOR DEFECTS AND SECUREMENT.

D. Black

REMOVE AND CLEAN EDUCTOR TUBE AND STACK OUTLET AND REPLACE GASKETS

20434861 1

REMOVE AND CLEAN ENGINE OIL SEPARATOR. REPLACE GASKET (EMD ONLY)

VARIES

VERIFY SOAKBACK PUMP OPERATION AT #16 OIL PAN COVER (EMD ONLY)

PULL MICHIANA TANK AND SUCTION BOX DRAIN (IF CRANKCASE AND AIRBOX PASS INSPECTION) (EMD ONLY)

D. Cleary

INSPECT AFTERCOOLER DUCTS FOR LOOSE/MISSING BOLTS (60 FT LBS)

REPLACE FLEXIBLE COUPLING SEALS IN COOLING AND LUBE OIL SYSTEM

LUBRICATE RADIATOR SHUTTER LINKAGES AND CYLINDERS

REPLACE THE BELL VALVE

20423521 1

INSPECT AIR COMPRESSOR SHAFT COUPLINGS (FOR THOSE UNITS WITH SHAFT DRIVEN AIR COMPRESSORS)

CLEAN AIR COMPRESSOR UNLOADER VALVES AND REPLACE UNLOADER VALVE "O" RINGS

Inspect rocker arms, rocker arm bushings and cam followers

*O. Black
B. Cleary
D. Black
W. Black*

SECTION 2

CHANGE / INSPECT / CLEAN:

CHANGE HVAC FILTERS IF APPLICABLE

INTAKE FILTER (ONLY AFTER HVAC IS WASHED)

REPLACE "BAGGIE" AIR FILTERS AND VISUALLY INSPECT TURBO IMPELLER AND EXAMINE CHAMBER FOR DEBRIS AND CRACKS

*11-8-11
11-8-11*

PRIMARY, SECONDARY FUEL FILTERS & O RING SEALS

FUEL STRAINERS & O RING SEALS

FUEL BY-PASS GAUGE (INSPECT ONLY)

CHANGE SOAKBACK FILTER AND RENEW O RING SEALS

CHANGE TURBO FILTER AND RENEW O RING SEALS

REMOVE PRIMARY LUBE OIL FILTER BYPASS VALVE AND CLEAN

CHANGE ENGINE LUBE OIL FILTERS

REFERENCE ATTACHED
FILTER KIT LIST

*Cleary
Cleary*

*B. Cleary
B. Cleary*

RENEW MICHIANA O RING SEAL AND CLEAN MICHIANA FILTER HOUSING

20409081.
20410471(sw)

1

CLEAN LUBE OIL STRAINERS AND STRAINER BOX, REFRESH OIL

*NEW SALEM FILTERS
NEW CAB FILTERS*

*11-8-11 Cleary
11-8-11 Cleary*

B-23, B-39, C-30, GP-7 M12 MAINTENANCE

SECTION 3		
COMPLETE FRA INSPECTION		
INSPECT ALL TRAINLINE BRAKE VALVES		
COMPLETE WHEEL REPORT SHEET		<i>J. Black</i>
CHECK FOR BROKEN COIL SPRINGS & LATERAL PADS		<i>J. Black</i>
INSPECT VERTICAL AND YAW DAMPERS FOR LEAKS AND SIGNS OF BUSHING DETERIORATION.		
CHECK AND LUBRICATE COUPLER CARRIER		<i>J. Black</i>
INSPECT AND REPLACE BRAKE SHOES AS NECESSARY (40012998)		<i>J. Black</i>
CHECK BRAKE CYLINDER TRAVEL		<i>J. Black</i>
MAKE PIT INSPECTION OF LOCOMOTIVE UNDERCARRIAGE		<i>J. Black</i>
INSPECT WICK BOLT SECUREMENT AND REPAIR IF NECESSARY		<i>J. Black</i>
CHECK SUSPENSION BEARING OIL LEVEL		<i>J. Black</i>
CHECK JOURNAL BOX OIL LEVEL		<i>J. Black</i>
CHECK OIL FILLED GEAR CASES AND FILL <i>ADDED 4ozs EACH</i>		<i>J. Black</i>
CHECK GEAR CASES AND INSPECT BULL GEAR (ADD 3lbs. OF GEARCASE GREASE)		<i>J. Black</i>
SUSPENSION BEARING BOXES		<i>J. Black</i>
TRACTION MOTOR AIR DUCTS		<i>J. Black</i>
NOSEPADS, BINDERS, PEDESTAL JAWS AND LINERS, ROLLER BEARING BOXES AND BOLTS		<i>J. Black</i>
BRAKE CYLINDERS		<i>J. Black</i>
INITIAL BY APPROPRIATE TYPE (SWITCHER: 6 In ROAD: 8 In <i>X</i>)		<i>J. Black</i>
ELLIPTIC SPRINGS, HANGERS AND SAFETY STRAPS, BOLSTER WEAR PLATES, BOLSTER SUPPORT PADS AND TIE PADS		<i>J. Black</i>
INSPECT ALL BRAKE HANGERS, HEADS, GUIDES AND STRAPS INSURING BRAKE SHOES ARE IN LINE WITH WHEELS		<i>J. Black</i>
INSPECT SIDE BEARINGS AND REPAIR AS NEEDED		<i>J. Black</i>
CHECK KNUCKLE CLEARANCE AND KNUCKLE THROWER, MAKE REPAIRS AS NEEDED AND APPLY SPARE KNUCKLES (E AND F TYPE)		<i>J. Black</i>
INSPECT, TEST, LUBRICATE HAND BRAKE, NOTE SERVICE DATE ON BLUE CARD		<i>D. Black</i>
SECTION 4		
IN ACCORDANCE WITH FRA 229.23. VERIFY AIR GAUGES (+/- 3PSI) CALIBRATE AT +/- 1PSI, REQUIRES 130 PSI MR		
CHECK ALL FLUID LEVELS, ENGINE OIL, COOLING WATER, AIR COMPRESSOR OIL		
DRAIN RETENTION TANK		
TOILET MAINTENANCE:		
INSPECT/REPAIR AS NEEDED TOILET DRAIN VALVE & FLOOR SEALS		
INSPECT CAB SEATS. REPAIR AND LUBRICATE AS REQUIRED		<i>Ceary</i>
INSPECT AND REPAIR AS REQUIRED:		
CAB / CARBODY/DOORS/HINGES/WINDOWS/LATCH SEALS/WEATHER STRIPPING AND SEALS/MIRRORS. ALSO LUBRICATE AS NEEDED		
A. CLEAN THE CAB, WINDOWS, AND EQUIPMENT		
COMPLETE WINTERIZATION SHEET (AUGUST - APRIL)		
WASH LOCOMOTIVE ENGINE/ENGINE ROOM/AND AIR COMPRESSOR ROOM		
WASH THE LOCOMOTIVE		
TOTAL TASK TIME		minutes
		hours



B-23, B-39, C-30, GP-7 M12 MAINTENANCE

LOCOMOTIVE INSPECTION REPORT AIR99		SIGNATURE
	RECORDED DATE	(STENCIL DATE)
26 INDEPENDENT BRAKE VALVE		
26 C AUTOMATIC BRAKE VALVE		
HB5D RELAY AIR VALVE (NOTE IF		
26 F CONTROL VALVE		
A-1 CHARGING VALVE		
P-2-A PENALTY BRAKE APPLICATION		
F-1 SELECTOR VALVE (NOTE IF NOT		
MU2A VALVE		
J-1 RELAY AIR VALVE		
J-1.6-16 RELAY AIR VALVE		
QUICK RELEASE PORTION		
#8 VENT ENGINEER'S SIDE (NOTE IF		
#8 VENT FIREMAN'S SIDE (NOTE IF		
MAIN RESERVOIR POP VALVE Check		
CHANGE ALL MAIN RESERVOIR AND DIRT COLLECTOR ELEMENTS		

The equipment above is to be changed out every 24 months. If the date dictates it needs changed, please change it.

LOCOMOTIVE
8346

DATE
11-08-11

Start Readings					Has Shims		END READING					Has Shims		OLD GAUGE
	Flange Height	Flange Thickness	Rim Thickness	Witness Groove	YES	NO		Flange Height	Flange Thickness	Rim Thickness	Witness Groove	YES	NO	FLANGE THICKNESS MEASUREMENT
L#1	<i>0-18</i>	<i>0-0</i>	<i>42</i>				L#1							0-on 0-1-17/64"
L#2	<i>3-22</i>	<i>0-0</i>	<i>36</i>				L#2							1-on 0-1-15/64"
L#3	<i>0-19</i>	<i>0-0</i>	<i>40</i>				L#3							2-on 0-1-7/32"
L#4	<i>0-19</i>	<i>0-0</i>	<i>48</i>				L#4							3-on 0-1-5/32"
L#5							L#5							4-on 0-1-7/64"
L#6							L#6							5-on 0-1-3/64"
														6-on 0-1-1/32"
														7-on 0-63/64"
														8-on 0-15/16"
R#1	<i>0-19</i>	<i>0-0</i>	<i>42</i>				R#1							0-on 0-1"
R#2	<i>0-22</i>	<i>0-0</i>	<i>36</i>				R#2							0-on 1-1-1/16"
R#3	<i>0-19</i>	<i>0-0</i>	<i>40</i>				R#3							0-on 2-1-1/8"
R#4	<i>0-19</i>	<i>0-0</i>	<i>48</i>				R#4							0-on 3-1-3/16"
R#5							R#5							0-on 4-1-1/4"
R#6							R#6							0-on 5-1-5/16"
														0-on 6-1-3/8"
														2-on 6-1-13/32"
														4-on 6-1-7/16"
														6-on 6-1-1/2"

WEAR LIMITS FOR ROAD & SWITCH LOCOMOTIVES - MINIMUM DAILY REQUIREMENTS

FRA 1 1/2"	MMA 1 7/16"	Flange Height
FRA 7/8"	MMA 15/16"	Flange Thickness
FRA 1"	MMA 1 1/16"	Rim Thickness
FRA 5/16"	MMA 1/4"	Tread Wear

FLANGE HEIGHT MEASUREMENT

WEAR LIMITS - ROAD & SWITCH LOCOS - MIN. 92 DAY REQ

WEAR LIMITS - PASSENGER LOCOS - MIN 92 DAY REQ

Flange Height	Flange THICKNESS	Rim THICKNESS	Tread WEAR	Flange HEIGHT	Flange THICKNESS	Rim THICKNESS	Tread WEAR
FRA 1 1/2"	FRA 7/8"	FRA 1"	FRA 5/16"	FRA 1 1/2"	FRA 7/8"	FRA 1"	FRA 5/16"
MMA 1 7/16"	MMA 1 1/32"	MMA 1 1/8"	MMA 1/4"	MMA 1 7/16"	MMA 1"	MMA 1 1/4"	MMA 1/4"

NEW GAUGE

0-on 17-1-1/16"
0-on 18-1-1/8"
0-on 19-1-3/16"
0-on 20-1-1/4"
0-on 21-1-5/16"
0-on 22-1-3/8"
2-on 22-1-13/32"
4-on 22-1-7/16"
6-on 22-1-15/32"
8-on 22-1-1/2"

CONVERSION CHART FOR WHEEL DIAMETER

8= 37"	15= 37 7/8"	22= 38 1/4"	29= 39 5/8"	36= 40 1/2"
9= 37 1/8"	16= 38"	23= 38 7/8"	30= 39 3/4"	37= 40 5/8"
10= 37 1/4"	17= 38 1/8"	24= 39"	31= 39 7/8"	38= 40 3/4"
11= 37 3/8"	18= 38 1/4"	25= 39 1/8"	32= 40"	39= 40 7/8"
12= 37 1/2"	19= 38 3/8"	26= 39 1/4"	33= 40 1/8"	40= 41"
13= 37 5/8"	20= 38 1/2"	27= 39 3/8"	34= 40 1/4"	41= 41 1/8"
14= 37 3/4"	21= 38 5/8"	28= 39 1/2"	35= 40 3/8"	42= 41 1/4"

FLANGE THICKNESS MEASUREMENT

LOCOMOTIVE RAIL CLEARANCE

COUPLER HEIGHT		FRONT		PILOT HEIGHT		FRONT		HEIGHT OF HORIZONTAL END HANDHOLD OR UNCOUPLING LEVER IF USED AS HORIZONTAL HANDHOLD		LOCO RAIL CLEARANCE	
FRA	MAX 34 1/2" MIN 31 1/2"	<i>33 1/2"</i>	FRA	MAX 6" MIN 3"	<i>5"</i>	FRA MIN 30" MMA MIN 30"	FRA MAX 50" MMA MAX 50"	FRA MIN 2 1/2"	MMA MIN 3"	7-on 0-63/64"	8-on 0-15/16"
MMA	MAX 34 1/2" MIN 32 1/2"	<i>32"</i>	MMA	MAX 6" MIN 3 1/2"	<i>4 1/2"</i>						

WHEEL DIAMETER MEASUREMENTS ARE TAKEN FROM THE TOP OF THE WITNESS GROOVE. 40" DIAMETER WHEELS WITNESS GROOVE = 36"

42" DIAMETER WHEEL WITNESS GROOVE = 38"

WHEEL MATCHING STANDARDS FOR 6 AXLE LOCOMOTIVES (FRA & MMA STANDARDS ARE THE SAME)

- 1/4" IS THE MAXIMUM VARIATION ALLOWED, IN WHEEL DIAMETER, BETWEEN ANY 2 WHEELS IN THE SAME TRUCK WITHOUT SHIMS.
- 1/2" IS THE MAXIMUM VARIATION ALLOWED, IN WHEEL DIAMETER, BETWEEN ANY 2 WHEELS IN THE SAME TRUCK WITH SHIMS APPLIED.
- 1 1/4" IS THE MAXIMUM VARIATION ALLOWED, IN WHEEL DIAMETER, BETWEEN ANY 2 WHEELS ON DIFFERENT TRUCKS.

NOTE: WHEN FIGURING THE DIFFERENCE IN WHEEL DIAMETER, TO DETERMINE IF SHIMS ARE REQUIRED, YOU MUST USE THE AVERAGE WHEEL DIAMETER FIGURES

REMEMBER THIS RULE:

0 TO 5 DIAMETER DIFFERENCE NO SHIMS REQUIRED 6 TO 10 DIAMETER DIFFERENCE ADD APPROPRIATE SHIMS TO BOTH BOXES ON BOTH SIDES OVER 10 IN DIAMETER DIFFERENCE REQUIRES WHEEL CHANGE OR TRUED NOTE: ON EMD LOCOMOTIVES USE ONLY ONE 1/2" SHIM EMD PART NUMBER 8455981 SHELLED TREAD AND FLAT SPOTS MUST BE TRUED OR CHANGED WHEN FOUND ON PERIODIC OR UNSCHEDULED MAINTENANCE. KCS CONDEMNING LIMITS FOR SHELLED TREAD ON A SERVICE TRACK: • ONE SHELLED SPOT 1" OR GREATER IN LENGTH • ONE SHELLED SPOT WITH A DEPTH OF 1/4" OR MORE.

EMPLOYEES SIGNATURE

J.W. Black

SUPERVISORS SIGNATURE

All Wicks (✓) NEW GASKETS, ReBilled w/oil - J. Black

WINTERIZATION

WINTERIZATION	Signature
Winterization - All MMA Locomotives. (August - April)	
Inspect front and rear cab door seals replace, as needed (NO TAPE)	B. Clear
Inspect left and right side window seals replace as needed.	
Inspect Electric cabinet door seals replace as needed.	
Operate Cab Heaters-Check condition of Heater Assembly @ 45o F above Ambient Temperature.	
Operate Window Defrosters-Check condition of Defroster @ 45o F above Ambient Temperature.	
If equipped, test the Auto Dump valve for proper operation.	
Test Manual Water Dump Valves, Proper Handle, Location, Orifice is Open.	
Close Winter/ Summer doors if equipped.	
Check Traction Motor cover gaskets, install as needed.	D. B.
Check condition of Cab Door Hinges (Lubricate all Hinges)	D.B.
Check condition of Cab Door Locks (Lubricate all Locks)	D.B.
Inspect Cab Windows Slider Rail, Adjust Top Rail as needed, Lubricate with Silicone Grease.	D.B.
Renew all Wiper Blades.	
<p>Criteria for Door seal Replacement:</p> <p>A. Seal shows signs of Deterioration and or Medium to Heavy Cracking.</p> <p>B. Door seal is Torn or Loose from Door.</p> <p>C. With Door in the fully closed position has noticeable crack between door jam and cab carbody.</p>	D.B.
<p>Criteria for Window seal Replacement:</p> <p>A. Seals shows signs of Deterioration and or Medium to Heavy Cracking.</p> <p>B. Seal is Torn or Loose from window seal.</p> <p>C. With windows fully in the closed position there is a gap between window frame and carbody.</p>	D.B.,

B-23, B-39, C-30, GP-7 MO6 INSPECTION



Out Bound Loadtest Electrical/Mechanical

WORKED BY:

ELECTRICAL		WORKED BY:
VERIFY THE OPERATION OF THE GROUND RELAY		J. KAS
CHECK FOR LOW VOLTAGE GROUNDS (7 watt bulb)		J. KAS
WHILE IN THROTTLE 3 LOAD TEST, CHECK FOR AC GROUNDS		J. KAS
CHECK OPERATION OF:		
A. HEATING		J. KAS
COMPLETE THE IN-BOUND LOAD TEST SHEETS		J. KAS
GROUND RELAY-(TEST THREE TIMES TO VERY LOCK-OUT)(DYNAMIC & POWER)		J. KAS
CHECK THE FOLLOWING FOR PROPER OPERATION:		
A. CREW ALERT		J. KAS
B. RADIO AND ANTENNA		J. KAS
C. AXLE ALT. SPEEDO		J. KAS
D. MU ENGINE SHUTDOWN		J. KAS
E. FUEL CUT-OFF		J. KAS
F. TEST WARNING DEVICES		J. KAS
MECHANICAL		
CLEAN AND SERVICE TOILET AND RESTROOM		
DRAIN RETENTION TANK		J. KAS
PROPER LUBRICATION? FUEL LEAKS? CAM ROLLER ROTATION? ETC.		
INSPECT FUEL SYSTEM HOSES AND PIPES FOR LEAKS		
INSPECT COOLING SYSTEM:		
A: CHECK HOSES AND PIPES FOR LEAKS		
CHECK OPERATION OF ENGINE PROTECTION DEVICES:		
A. CRANKCASE PRESSURE		
VISUALLY INSPECT AIR COMPRESSOR FOR WATER, AIR OR OIL LEAKS		
PERFORM MANUAL AIR BRAKE TEST		
Verify Flow Gauge	NOTE: 120-	
130 main reservoir is 64 + or - 3,	130-140 main	
reservoir is 60 + o		
PERFORM PENALTY BRAKE TEST		
CHECK FOR CORRECT AIR PRESSURE SETTINGS:		
A. MAIN RESERVOIR (130 - 140 PSI)		J. KAS
B. BRAKE PIPE (90 PSI)		J. KAS
C. EQUALIZING RESERVOIR (90 PSI)		J. KAS
D. BRAKE CYLINDER (72 - 74 PSI)		J. KAS
E. COMPRESSOR CONTROL (130 - 140 PSI +/-5 PSI)		J. KAS
CHECK FLUID LEVELS BEFORE LOADING:		
A: ENGINE OIL		
B: COOLING WATER		
C: AIR COMPRESSOR OIL	NEW OIL	Cleary 11-8-11
TEST OPERATION OF THE FOLLOWING DEVICES:		
A. BELL		
B. SANDERS (FORWARD, REVERSE, EMERGENCY)		
C. RADIATOR SHUTTERS		

JSP-010 (BATTERY MAINTENANCE AND QUALIFICATION)

JOB SPECIFIC PROCESS

Locomotive Type: ALL MODELS

Valid for Road Numbers: (All Models)

Overview: This job process sheet will assist with the maintenance and qualification of batteries.

SPECIAL TOOLS OR EQUIPMENT:

SEQUENCE OF JOB STEPS

Please print your name,
NO signatures

1. Ensure the locomotive is shutdown, discharged, all of the circuit breakers are open and the battery knife switch is open.

Battery Qualification/Maintenance

2. **NOTE: If batteries are dead, connect the charger until the charge rate falls below 10 amps to determine state of charge. Readings under 20 V are suspect for units with just 2 batteries.**

3. Insert hose stem into battery cell and squeeze bulb.

4. Release pressure until enough acid solution is drawn into the tube allowing the float to float freely. Be sure float does not touch rubber stopper at the top of the tube.

5. The float reading at the water line is the uncorrected charge level of the battery.

6. Read and record the specific gravity of all 16 pilot cells. "record readings below": acceptable range is 1.225 – 1.300 (if out of this range notify tech support)

Note 1: the sheet below is set up for 2 or 8 batteries as some units have 8 batteries.

Note 2: accurate readings cannot be obtained if water has recently been added to cells. Differences of 50 points or more between readings in battery cells may indicate pending battery failure.

*Used
Batteries
need
charging*

7. Based on the above specific gravity readings, do any batteries need replaced? Remember, if the unit came in with already dead batteries, an attempt to charge the batteries must be made before taking the specific gravity readings. YES

8. Return acid to cell from which it was drawn.

9. Be sure all vent plugs are replaced and tight.

10. With Unit shut down measure the voltage reading across each battery at the terminals, record readings on the chart below.

11. Make a general check of the battery as to proper blocking, clean and tight connections at all points, and any unusual appearance or condition. If any unusual appearance or conditions exist, like corrosion, clean with scotch-brite buffer or wire br

12. Apply approved protective coating to connections after terminals are cleaned and dried

13. Add water as required (Add water to bottom of filler neck).

Battery Cranking Voltage Test

14. Close battery knife switch, and circuit breakers.

15. Open the injector toggle switch, on EUI units to prevent unit from starting.

NOTE: Battery cranking voltage readings do not need to be taken on Air Start Locomotives.

16. On MUI engines, pull the Governor button and hold back the Lay-shaft while cranking the engine over to prevent unit from starting.

18. Based on the cranking voltages, is any battery suspect of needing replaced? YES NO

2 Battery Units	Specific Gravity				Water Added			Battery Replaced-Reason
	Cell 1	Cell 2	Cell 3	Cell 4	Yes	No	Yes	
Battery 1								o
Section A								
Section B								
Section C								
Section D								

2 Battery Units	Specific Gravity				Water Added			Battery Replaced-Reason
	Cell 1	Cell 2	Cell 3	Cell 4	Yes	No	Yes	
Battery 2								o
Section A								
Section B								
Section C								
Section D								

8 Battery Units	Specific Gravity				Water Added			Battery Replaced-Reason
	Cell 1	Cell 2	Cell 3	Cell 4	Yes	No	Yes	
Battery 1								
Battery 2								
Battery 3								
Battery 4								
Battery 5								
Battery 6								
Battery 7								
Battery 8								

BATTERY CRANKING VOLTAGE CHART

	Battery 1	Battery 2	Battery 3	Battery 4	Battery 5	Battery 6	Battery 7	Battery 8
Battery Voltage								
Battery Voltage								
Cranking Battery Voltage								
Battery Voltage								
Cranking Battery Voltage								

REVISED: 8/18/2010



**MMA RAILWAY
MECHANICAL DEPARTMENT
MODIFICATIONS**

UNIT _____

DATE _____

ELECTRICIAN / MACHINIST

SIGNATURES

1. DYNAMIC BRAKE HOLDING FEATURE

2. CHECK BATTERY CONNECTIONS AND RECOAT LUGS

3. SINGLE MAN BRAKE TEST

Service Operations

THROTTLE 8 INBOUND LOAD TESTS

UNIT _____

DATE _____

Eng RPM (900)	EMD	<u> </u>	Lube Oil Pres	<u> </u>
Eng RPM (1050)	GE	<u>1045</u>	Water Temp	<u>166</u>
Horsepower		<u>374</u>	Overspeed Setting	<u> </u>
Volts (5.3)	B-23	<u> </u>	RACK SETTING	<u>23.5</u> <i>D. Black</i>
Volts (7)	C-30	<u> </u>		<i>K. Hurry</i>
Volts (720)	B-39	<u>705</u>		

THROTTLE #1 STALL TEST

OP Mode	(PWR)	<u>F</u>	
AMPS	(300)	<u>300</u>	
MGA	(1220)	<u>3786</u>	NOT APPLICABLE TO B-23 AND C-30
Charging Rate	(70v)	<u>75</u>	

TL 24T

Throttle 1	(1V)	<u>12.2</u>
Throttle 2		<u>21.6</u>
Throttle 3		<u>34.5</u>
Throttle 4		<u>43.6</u>
Throttle 5		<u>51.0</u>
Throttle 6		<u>60.1</u>
Throttle 7		<u>69.9</u>
Throttle 8	(72V)	<u>72.0</u>

Description of Work Performed

Locomotive ID _____ Time Started _____ Time Finished _____

#8546

Note: - Can't do Comp test on
cyl. - No Batteries

Unit: 8546

Date: 11-9-11

DEFECTS FOUND DURING INSPECTION

DEFECT <u>Pin #25 Rear MV receptacle B.O.</u>	INSPECTED BY: <u>[Signature]</u>
REPAIR <u>C/O Pin #25 on Rear MV receptacle</u>	CORRECTED BY: <u>[Signature]</u>

DEFECT <u>Rear number light out B/O socket</u>	INSPECTED BY: <u>J.H.</u>
REPAIR <u>R+R socket</u>	CORRECTED BY: <u>J.H.</u>

DEFECT <u>Used Batteries installed, need TO Be charged and retested</u>	INSPECTED BY: <u>J.H.</u>
REPAIR	CORRECTED BY:

DEFECT <u>Rear sand box rusted/leaking</u>	INSPECTED BY: <u>J.H.</u>
REPAIR <u>Patched Rear boxes</u>	CORRECTED BY: <u>JH/KH</u>

DEFECT	INSPECTED BY:
REPAIR	CORRECTED BY:

Unit: _____

Date: _____

DEFECTS FOUND DURING INSPECTION

DEFECT _____ _____ _____	INSPECTED BY: _____ _____
REPAIR _____ _____ _____	CORRECTED BY: _____ _____

DEFECT _____ _____ _____	INSPECTED BY: _____ _____
REPAIR _____ _____ _____	CORRECTED BY: _____ _____

DEFECT _____ _____ _____	INSPECTED BY: _____ _____
REPAIR _____ _____ _____	CORRECTED BY: _____ _____

DEFECT _____ _____ _____	INSPECTED BY: _____ _____
REPAIR _____ _____ _____	CORRECTED BY: _____ _____

DEFECT _____ _____ _____	INSPECTED BY: _____ _____
REPAIR _____ _____ _____	CORRECTED BY: _____ _____