



M 12

M12

Locomotive Release from Shop Form

To be completed on every engine released from the Shop

I have reviewed the work packet for locomotive P553 on this date 3-17-12 and take no exception to applicable laws, rules and or MMA standards, policies and standards.



# Service Operations

## THROTTLE 8 OUTBOUND LOAD TESTS

UNIT \_\_\_\_\_

DATE \_\_\_\_\_

Eng RPM (900)	EMD	_____	Lube Oil Pres	_____
Eng RPM (1050)	GE	1045	Water Temp	165
Horsepower		3490	Overspeed Setting	_____
Volts (5.3)	B-23	_____	RACK SETTING	28
Volts (7)	C-30	_____		
Volts (720)	B-39	681		

### THROTTLE #1 STALL TEST

OP Mode	(PWR)	F	
AMPS	(300)	800	
MGA	(1220)	_____	NOT APPLICABLE TO B-23 AND C-30
Charging Rate	(70v)	74	

### 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

## *In-Bound Or Running Electrical*

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

*J. Hart*  
*J. Hart*

## *In-Bound Or Running Mechanical*

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

*OB*  
*OB*  
*OB*  
*OB*  
*OB*  
*OB*

3-17-12 Toilet is drained

Needle Sand  
is fueled



**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 _____			
DID EITHER STARTER GET REPLACED? YES NO			
APPLY A THIN COAT OF THE SAE NO. 10 OIL TO THE FOLLOWING STARTER COMPONENTS			
A. ARMATURE SHAFT SPLINES			
B. CLUTCH ASSEMBLY SPIRAL SPLINES AND MATING GEAR SPLINES			
FRONT AND REAR HEADLIGHTS, DITCH LIGHTS, CAB LIGHTS, GAUGE LIGHTS, NUMBER PLATES, PLATFORM LIGHTS, ENGINE ROOM LIGHTS, INDICATOR LIGHTS			J - Hansel
CHECK CONTROLLER FOR PROPER OPERATION OF REVERSER AND THROTTLE HANDLE LOCKING DEVICES			J - Hansel
CHECK EMERGENCY FUEL SHUT-OFF FROM ALL LOCATIONS			J - Hansel
<b>TRACTION MOTORS AND UNDERFRAME</b>			
INSPECT AXLE GENERATOR AND ENSURE ALL COVER BOLTS ARE IN PLACE AND TIGHT			J - Hansel
CLEAN AND CHECK THE TRACTION MOTOR LEADS, CLAMPS, VERIFY NO LEADS ARE RUBBING ON THE FRAME			J - Hansel
CHANGE ANY TRACTION MOTOR BRUSH WITH LESS THAN 50% LIFE LEFT	20422161(D87)	16	J - Hansel
INSPECT TRACTION MOTOR COVERS AND ENSURE BOLTS ARE IN PLACE AND TIGHT	20426671(D78)	12	J - Hansel
ENSURE TRACTION GROUND WIRES ARE IN PLACE AND PROPERLY SECURED			J - Hansel
CLEAN FACE PLATE ON RADAR TRANSCEIVER			J - Hansel
CHECK M.U. RECEPTACLE AND LIDS. MAKE NECESSARY REPAIRS			J - Hansel
MAKE SURE M.U. CABLES DO NOT FOUL COUPLERS			J - Hansel

**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	<u>375</u>	<u>Left</u>	1 CYL#	<u>380</u>	<u>Right</u>
CYL#2	<u>350</u>		2 CYL#	<u>340</u>	
CYL#3	<u>330</u>		3 CYL#	<u>340</u>	
CYL#4	<u>310</u>		4 CYL#	<u>330</u>	
CYL#5	<u>330</u>		5 CYL#	<u>320</u>	
CYL#6	<u>360</u>		6 CYL#	<u>350</u>	
CYL#7	<u>310</u>		7 CYL#	<u>330</u>	
CYL#8	<u>315</u>		8 CYL#	<u>335</u>	

*cleary/BRAUN*

↓

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)

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)

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

*OK Cleary  
BRAUN*

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

*BRAUN*

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)

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

**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

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

RENEW MICHIANA O RING SEAL AND CLEAN MICHIANA FILTER HOUSING

20409081  
20410471(sw) 1

CLEAN LUBE OIL STRAINERS AND STRAINER BOX, REFRESH OIL

REFERENCE ATTACHED  
FILTER KIT LIST

*OK J. Huts*

*OK J. Huts*

*J. Huts*

*J. Huts*

*J. Huts*

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

SECTION 3		
COMPLETE FRA INSPECTION		
INSPECT ALL TRAINLINE BRAKE VALVES		
COMPLETE WHEEL REPORT SHEET		D Black
CHECK FOR BROKEN COIL SPRINGS & LATERAL PADS		
INSPECT VERTICAL AND YAW DAMPERS FOR LEAKS AND SIGNS OF BUSHING DETERIORATION.		
CHECK AND LUBRICATE COUPLER CARRIER		
INSPECT AND REPLACE BRAKE SHOES AS NECESSARY (40012998)		BROWN
CHECK BRAKE CYLINDER TRAVEL		Cleary
MAKE PIT INSPECTION OF LOCOMOTIVE UNDERCARRIAGE		<u>BROWN</u>
INSPECT WICK BOLT SECUREMENT AND REPAIR IF NECESSARY		
CHECK SUSPENSION BEARING OIL LEVEL		
CHECK JOURNAL BOX OIL LEVEL		
CHECK OIL FILLED GEAR CASES AND FILL		
CHECK GEAR CASES AND INSPECT BULL GEAR (ADD 3lbs. OF GEARCASE GREASE		Cleary
SUSPENSION BEARING BOXES		
TRACTION MOTOR AIR DUCTS		J-Martin
NOSEPADS, BINDERS, PEDESTAL JAWS AND LINERS, ROLLER BEARING BOXES AND BOLTS		
BRAKE CYLINDERS		
INITIAL BY APPROPRIATE TYPE (SWITCHER: 6 in ROAD: 8 in		
ELLIPTIC SPRINGS, HANGERS AND SAFETY STRAPS, BOLSTER WEAR PLATES, BOLSTER		
SUPPORT PADS AND TIE PADS		
INSPECT ALL BRAKE HANGERS, HEADS, GUIDES AND STRAPS INSURING BRAKE SHOES ARE IN		
LINE WITH WHEELS		cleary
INSPECT SIDE BEARINGS AND REPAIR AS NEEDED		
CHECK KNUCKLE CLEARANCE AND KNUCKLE THROWER, MAKE REPAIRS AS NEEDED AND APPLY		
SPARE KNUCKLES (E AND F TYPE)		
INSPECT, TEST, LUBRICATE HAND BRAKE, NOTE SERVICE DATE ON BLUE CARD		J-Martin
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		BROWN
INSPECT CAB SEATS. REPAIR AND LUBRICATE AS REQUIRED	changed seat	Cleary
INSPECT AND REPAIR AS REQUIRED:		BROWN
CAB / CARBODY/DOORS/HINGES/WINDOWS/LATCH SEALS/WEATHER STRIPPING AND		
SEALS/MIRRORS. ALSO LUBRICATE AS NEEDED		cleary
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

serviced air comp - oil - Air -

J-Martin



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.



	<b>LOCOMOTIVE</b> <span style="font-size: 2em; font-family: cursive;">8553</span>	<b>DATE</b> <span style="font-size: 1.5em; font-family: cursive;">8/12/12</span>
--	--	---

	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	
L#1	0-18	0-0	32				L#1							<b>FLANGE THICKNESS MEASUREMENT</b> 0-on 0-1-17/64" 1-on 0-1-15/64" 2-on 0-1-7/32" 3-on 0-1-5/32" 4-on 0-1-7/64" 5-on 0-1-3/64" 6-on 0-1-1/32" 7-on 0-63/64" 8-on 0-15/16"
L#2	0-22	0-0	27				L#2							
L#3	0-22	0-0	25				L#3							
L#4	0-22	0-0	34				L#4							
L#5							L#5							
L#6							L#6							
														<b>OLD GAUGE</b>
														<b>FLANGE HEIGHT MEASUREMENT</b>
R#1	0-19	0-0	31				R#1							0-on 0-1"
R#2	0-21	0-0	27				R#2							0-on 1-1-1/16"
R#3	0-21	0-0	25				R#3							0-on 2-1-1/8"
R#4	4-22	0-0	32				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 6-1-31/64"

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

**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"

**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 1/2"	MMA 1 7/16"	MMA 1"	MMA 1 1/2"	MMA 1/2"

**CONVERSION CHART FOR WHEEL DIAMETER**

8= 37"	15= 37 7/8"	22= 38 3/4"	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"

**NEW GAUGE**

0-on 0-1-17/64"  
 1-on 0-1-15/64"  
 2-on 0-1-7/32"  
 3-on 0-1-5/32"  
 4-on 0-1-7/64"  
 5-on 0-1-3/64"  
 6-on 0-1-1/32"  
 7-on 0-63/64"  
 8-on 0-15/16"

**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"	FRA	MAX 6" MIN 3"	FRA MIN 30"	FRA MIN 2 1/2"
MMA	MAX 34 1/2" MIN 32 1/2"	MMA	MAX 6" MIN 3 1/2"	MMA MIN 30" FRA MAX 50" MMA MAX 50"	MMA MIN 3"

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

*D. B. Brook*

SUPERVISORS SIGNATURE

*Drained water from wick boxes  
 Greased Traction motors gear  
 Filled wick boxes*

*BRAUN  
 Cleary*

WINTERIZATION	
Winterization - All MMA Locomotives. (August - April)	Signature
Inspect front and rear cab door seals replace, as needed (NO TAPE)	
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.	
Check condition of Cab Door Hinges (Lubricate all Hinges)	
Check condition of Cab Door Locks (Lubricate all Locks)	
Inspect Cab Windows Slider Rail, Adjust Top Rail as needed, Lubricate with Silicone Grease.	
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>	
<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>	

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



### Out Bound Loadtest Electrical/Mechanical

WORKED BY:

<b>ELECTRICAL</b>	
VERIFY THE OPERATION OF THE GROUND RELAY	✓ J. [Signature]
CHECK FOR LOW VOLTAGE GROUNDS (7 watt bulb)	✓ J. [Signature]
WHILE IN THROTTLE 3 LOAD TEST, CHECK FOR AC GROUNDS	✓
CHECK OPERATION OF:	✓
A. HEATING	✓ J. [Signature]
COMPLETE THE IN-BOUND LOAD TEST SHEETS	✓ J. [Signature]
GROUND RELAY-(TEST THREE TIMES TO VERY LOCK-OUT)(DYNAMIC & POWER)	✓ J. [Signature]
CHECK THE FOLLOWING FOR PROPER OPERATION:	
A. CREW ALERT	✓ J. [Signature]
B. RADIO AND ANTENNA	✓ J. [Signature]
C. AXLE ALT. SPEEDO	✓ J. [Signature]
D. MU ENGINE SHUTDOWN	✓ J. [Signature]
E. FUEL CUT-OFF	✓ J. [Signature]
F. TEST WARNING DEVICES	✓ J. [Signature]
<b>MECHANICAL</b>	
CLEAN AND SERVICE TOILET AND RESTROOM	clear
DRAIN RETENTION TANK	
PROPER LUBRICATION? FUEL LEAKS? CAM ROLLER ROTATION? ETC.	
INSPECT FUEL SYSTEM HOSES AND PIPES FOR LEAKS	BR Ann
INSPECT COOLING SYSTEM:	clear
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	BR Ann
PERFORM MANUAL AIR BRAKE TEST	
Verify Flow Gauge	NOTE: 120-130-140 main
130 main reservoir is 64 + or - 3, reservoir is 60 + 0	
PERFORM PENALTY BRAKE TEST	✓ J. [Signature]
CHECK FOR CORRECT AIR PRESSURE SETTINGS:	
A. MAIN RESERVOIR (130 - 140 PSI)	✓ J. [Signature]
B. BRAKE PIPE (90 PSI)	✓ J. [Signature]
C. EQUALIZING RESERVOIR (90 PSI)	✓ J. [Signature]
D. BRAKE CYLINDER (72 - 74 PSI)	✓ J. [Signature]
E. COMPRESSOR CONTROL (130 - 140 PSI +/-5 PSI)	✓ J. [Signature]
CHECK FLUID LEVELS BEFORE LOADING:	
A: ENGINE OIL	✓ J. [Signature]
B: COOLING WATER	✓ J. [Signature]
C: AIR COMPRESSOR OIL	✓ J. [Signature]
TEST OPERATION OF THE FOLLOWING DEVICES:	
A. BELL	✓ J. [Signature]
B. SANDERS (FORWARD, REVERSE, EMERGENCY)	✓ J. [Signature]
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.	J. Hat
<b>Battery Qualification/Maintenance</b>	
2. <b>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.</b>	
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)	
<p><b>Note 1:</b> the sheet below is set up for 2 or 8 batteries as some units have 8 batteries.</p> <p><b>Note 2:</b> 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.</p>	
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 exit, 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).	
<b>Battery Cranking Voltage Test</b>	
14. Close battery knife switch, and circuit breakers.	
15. Open the injector toggle switch, on EUI units to prevent unit from starting.	
<p><b>NOTE: Battery cranking voltage readings do not need to be taken on Air Start Locomotives.</b></p>	

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	1225							
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	1225							
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								o
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	33.7	33.7						
Battery Voltage								
Cranking Battery Voltage								
Battery Voltage								
Cranking Battery Voltage								
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

\_\_\_\_\_

Montreal, Maine and Atlantic Railway  
12 Month Airwork

Unit Number 8553

Date 3-20-2012

1. Test resistance of Electrical Equipment to Ground:
  - a. Hi Voltage System..... J. ~~Hot~~
  - b. Low Voltage System..... J. ~~Hot~~
  - c. A/C System..... J. ~~Hot~~
2. Check Fire Extinguisher..... Cleary
3. Lubricate Brake Pistons.....
4. Measure slack in draft gears & record: Front \_\_\_\_\_ Rear \_\_\_\_\_
5. Change Main Reservoir Relief Valve.....
6. Remove and clean Salem Filters..... BRAUN
7. Remove and clean Dirt Filter..... J. ~~Hot~~
8. Check Compressor on/off pressures..... J. ~~Hot~~
9. Check Brake Pipe pressures (90lbs.)..... J. ~~Hot~~
10. Check Brake Cylinder Pressure with Auto Application..... J. ~~Hot~~
11. Check Independent Brake Pressure..... J. ~~Hot~~
12. Cut out Compressor Unloader and test Main Reservoir Relief Valve.  
(Should pop @ 155psi)..... J. ~~Hot~~
13. Inspect and test Hand Brake..... Cleary
14. Change Air Compressor oil and Filter (wipe out base)..... J. ~~Hot~~
15. Inspect Air Compressor Rod Bolts, Brgs., and Oil Pump..... J. ~~Hot~~
16. Check Oil pressure @ idle and record.....
17. Change Oil in Dash 7:
  - a. Alternator.....
  - b. Fan Drive.....
18. Check Engine Adjustments.....
19. Clean Air Boxes.....
20. Clean Diode Bank in Dash 8's # 23..... J. ~~Hot~~

Comments:

# Description of Work Performed

Locomotive ID 8553 Time Started \_\_\_\_\_ Time Finished \_\_\_\_\_

change both salem filters



Unit: \_\_\_\_\_

Date: \_\_\_\_\_

### DEFECTS FOUND DURING INSPECTION

DEFECT <u>Engineers seat b/o</u>	INSPECTED BY: <u>J. Martin</u>
REPAIR <u>Replaced seat and mains</u>	CORRECTED BY: <u>J. Martin</u>

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

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

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

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