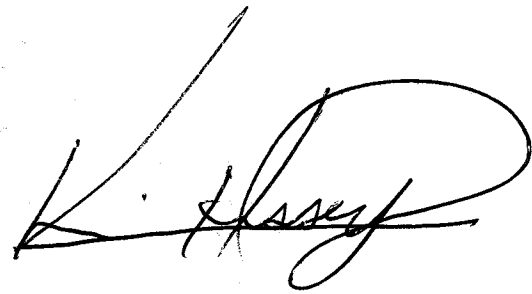




Locomotive Release from Shop Form
To be completed on every engine released from the Shop

I have reviewed the work packet for locomotive 2000 on this date 9-17-11 and take no exception to applicable laws, rules and or MMA standards, policies and standards.

Oil sample 

Cleaned STACK - Jw Black

Service Operations

THROTTLE 8 OUTBOUND LOAD TESTS

UNIT 2000

DATE 9-17-11

Eng RPM (900)	EMD	_____	Lube Oil Pres	_____
Eng RPM (1050)	GE	_____	Water Temp	<u>120°F</u>
Horsepower		<u>2072</u>	Overspeed Setting	<u>OK</u>
Volts (5.3)	B-23	<u>4.8</u>	RACK SETTING	_____
Volts (7)	C-30	_____		
Volts (720)	B-39	_____		

THROTTLE #1 STALL TEST

OP Mode	(PWR)	_____	
AMPS	(300)	_____	
MGA	(1220)	_____	NOT APPLICABLE TO B-23 AND C-30
Charging Rate	(70v)	<u>73.5</u>	

Tested Dynamic Brakes inbound - working OK - [Signature]
meggered on inbound H1-volt - 2MΩ+ @ 1000v - [Signature]

B-23, B-39, C-30, GP-7 MO3 INSPECTION



In-Bound Loadtest Electrical/Mechanical

WORKED BY:

ELECTRICAL

- VERIFY THE OPERATION OF THE 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
- COMPLETE THE IN-BOUND LOAD TEST SHEETS
- GROUND RELAY-(TEST THREE TIMES TO VERY LOCK-OUT)(DYNAMIC & POWER)
- CHECK THE FOLLOWING FOR PROPER OPERATION:
 - A. CREW ALERT
 - B. RADIO AND ANTENNA
 - C. AXLE ALT. SPEEDO
 - D. MU ENGINE SHUTDOWN
 - E. FUEL CUT-OFF
 - F. TEST WARNING DEVICES

[Handwritten signatures and initials in the Electrical section, including "NA" and "D. J. ..."]

MECHANICAL

- CLEAN AND SERVICE TOILET AND RESTROOM
- DRAIN RETENTION TANK
- PROPER LUBRICATION? FUEL LEAKS? CAM ROLLER ROTATION? ETC.
- INSPECT FUEL SYSTEM HOSES AND PIPES FOR LEAKS
- INSPECT COOLING SYSTEM: *using water*
- 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, reservoir is 60 + 0
- PERFORM PENALTY BRAKE TEST
- CHECK FOR CORRECT AIR PRESSURE SETTINGS:
 - A. MAIN RESERVOIR (130 - 140 PSI)
 - B. BRAKE PIPE (90 PSI)
 - C. EQUALIZING RESERVOIR (90 PSI)
 - D. BRAKE CYLINDER (72 - 74 PSI)
 - E. COMPRESSOR CONTROL (130 - 140 PSI +/- 5 PSI) *125 PSI - 138 PSI*
- CHECK FLUID LEVELS BEFORE LOADING:
 - A. ENGINE OIL
 - B. COOLING WATER
 - C. AIR COMPRESSOR OIL
- TEST OPERATION OF THE FOLLOWING DEVICES:
 - A. BELL
 - B. SANDERS (FORWARD, REVERSE, EMERGENCY)
 - C. RADIATOR SHUTTERS

[Handwritten signatures and initials in the Mechanical section, including "NA" and "D. J. ..."]

B-23, B-39, C-??, GP-7 MO3 INSPECTION

MECHANICAL IN HOUSE

WORKED BY:



REVIEW LAB CODE AND PERFORM A COMPLETE AIRBOX/CRANKCASE INSPECTION IF A LAB CODE EXISTS

WITH THE ENGINE WARM, PRESSURE TEST COOLING SYSTEM AT 20 PSI FOR 15 MINUTES AND IF THE PRESSURE ON THE GAUGE DOES NOT DROP, THEN NO FURTHER ACTION IS REQUIRED

CHANGE THE FOLLOWING FILTERS AND ASSOCIATED GASKETS:

FUEL SPIN ON FILTERS. EMD ONLY

SOAK BACK FILTER. EMD ONLY

TURBO SPIN ON FILTER. EMD ONLY

COMPLETE FRA INSPECTION (DAILY INSPECTION CHECKLIST)

CARBODY

INSURE SAND NOZZLES AND HOSES ARE IN PLACE AND SECURED. MAKE SURE THEY ARE ALIGNED WITH WHEEL AND TRACK. INSPECT SAND TRAPS AND REPAIR AS NEEDED.

INSPECT COUPLERS & DRAFT GEARS. MAKE REPAIRS AS NECESSARY

CHECK KNUCKLE CLEARANCE AND KNUCKLE THROWER, MAKE REPAIRS AS NEEDED AND APPLY SPARE KNUCKLES (E AND F TYPE) (2.5")

INSPECT PIN LIFTERS CHECKING FOR PROPER HAND CLEARANCE AND ANTI-CREEP

CHECK SNOWPLOW (IF EQUIPPED) FOR HANDHOLDS AND PROPER DISTANCE

CHECK AUTO BLOWDOWNS FOR PROPER OPERATIONS IN AUTOMATIC MODE

ENSURE SUMP DRAINS ARE OPEN AND FREE OF DEBRIS

Jw Black
Ry - thorp
V. Harg
R. Harg
W. Harg

TRUCKS

INSPECT WICK BOLT SECUREMENT AND REPAIR IF NECESSARY

CHECK SUSPENSION BEARING OIL LEVEL

CHECK JOURNAL BOX OIL LEVEL (FILL TO POINT OF OVERFLOW)

CHECK GEAR CASES AND INSPECT BULL GEAR (ADD 6lbs. OF GEARCASE GREASE)

CHECK OIL FILLED GEAR CASES AND FILL (RECORD USAGE BELOW)

1 TRACTION MOTOR: OIL USED 4 pkgs

2 TRACTION MOTOR: OIL USED "

3 TRACTION MOTOR: OIL USED "

4 TRACTION MOTOR: OIL USED "

5 TRACTION MOTOR: OIL USED _____

6 TRACTION MOTOR: OIL USED _____

Jw Black
J Black
J Black
J Black
J Black
Jw Black

INSPECT ALL BRAKE HANGERS, HEADS, GUIDES AND STRAPS ENSURING BRAKE SHOES ARE IN LINE WITH WHEELS

J Black

CAB

CHECK FIRE EXTINGUISHERS, DATE AND TAG. REPLACE IF USED OR OUT OF DATE.

CHECK CAB SEATS FOR PROPER OPERATION INSURING ALL BOLTS ARE IN PLACE AND TIGHT.

CHECK HANDBRAKE AND INSPECT DATE. MAKE REPAIRS AS NECESSARY

W. Harg
W. Harg
W. Harg

MISC

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:

A. INSPECT/REPAIR AS NEEDED TOILET DRAIN VALVE & FLOOR SEALS

W. Harg
W. Harg
W. Harg
W. Harg

Cab Seat Inspection:

A. INSPECT THE VERTICAL ADJUSTMENT LEVER. VERIFY THAT THE LEVER OPERATES AND THAT THE SEAT PAN ADJUSTS UP AND DOWN AND DOES NOT DROP SUDDENLY.

B. LUBRICATE PIVOT POINTS

C. INSPECT ROTATION ADJUSTMENT LOCKING PIN. VERIFY THAT THE LOCKING PIN OPERATES (PULL OUT TO RELEASE LOCK) AND THAT THE SEAT ROTATES WHEN UNLOCKED.

D. LUBRICATE THE PIN MECHANISM.

E. SEAT PAN COMPONENTS: INSPECT THE FORE-AFT FINE ADJUSTMENT LEVER.

F. VERIFY THAT THE LEVER SLIDES SIDEWAYS TO UNLOCK SEAT FOR/AFT ADJUSTMENT AND

SEAT SLIDES FORWARD EASILY

W. Harg

B-23, B-39, C-30, GP-7 MO3 INSPECTION

Revision Date: 8/18/2010
 Issued By: Tim Scalia

Electrical in House	WORKED BY:
SERVICE THE BATTERIES AND COMPLETE JSP-010	- DONE -
VERIFY EVENT RECORDER IS WORKING	<i>[Signature]</i>
CHECK & RECORD THE DATE ON HEAD END DEVICE <u>12-4-10</u>	<i>[Signature]</i>
COMPLETE THE HEAD END DEVICE CONNECTOR SHEET	- NA -
CHECK THE FOLLOWING EQUIPMENT AND THEIR RELATED GUARDS AND LENSES FOR PROPER OPERATION:	<i>[Signature]</i>
CHECK ALL GROUND AND STEP LIGHTS, FRONT AND REAR HEADLIGHTS, DITCH LIGHTS, CAB LIGHTS, GAUGE LIGHTS, NUMBER PLATES, PLATFORM LIGHTS, ALL WARNING AND INDICATOR LIGHTS	<i>[Signature] / J. Black</i>
TRACTION MOTORS AND UNDERFRAME	
CHECK THE TRACTION MOTOR LEADS, VERIFY NO LEADS ARE RUBBING ON THE FRAME	<i>[Signature] / J. Black</i>
INSPECT TRACTION MOTOR COVERS AND ENSURE BOLTS ARE IN PLACE AND TIGHT	<i>[Signature] / J. Black</i>
CHECK M.U. RECEPTACLE PINS AND LIDS. MAKE NECESSARY REPAIRS	<i>[Signature]</i>
MAKE SURE M.U. CABLES DO NOT FOUL COUPLERS	<i>[Signature]</i>

(T.M. Leads Rubbing on clamp - T.P.B.
POT softened on Leads - T.P.B.

B-23, B-39, C-30, GP-7 MO3 INSPECTION

G. IF THE SEAT MOVEMENT IS IMPEDED, REMOVE SEAT CUSHION AND INSPECT SEAT PAN ROLLER TRACK FOR DEBRIS, MALFUNCTION, OR LACK OF LUBRICATION.	
H. INSPECT SEAT RAILS AND REPLACE IF DAMAGED OR WORN BEYOND PROVIDING SECURE, STABLE MOUNTING OF SEAT.	
I. INSPECT THE FORE/AFT SEAT POSITIONING TRACK. INSPECT THE SEAT RAILS AND REPLACE IF DAMAGED OR WORN BEYOND PROVIDING SECURE, STABLE MOUNTING OF SEAT.	
J. LUBRICATE THE SEAT RAILS WITH SILICONE LUBRICANT.	
K. INSPECT THE BACKREST RAKE ADJUSTMENT KNOB. VERIFY THAT THE KNOB ROTATES EASILY TO ADJUST BACKREST ANGLE.	
L. INSPECT KNOB FOR CRACKS OR SPLITS AND THAT IT IS SECURELY FASTENED.	
M. INSPECT GEAR MECHANISM FOR ANY WEAR OR DAMAGE.	
N. ENSURE THAT THE BACKREST MECHANICAL STOP IS INTACT AND FUNCTIONS AS INTENDED-- PREVENTS THE SEAT BACKREST FROM RECLINING BEYOND APPROXIMATELY 45 DEGREES BACKWARDS FROM A VERTICAL POSITION.	
O. INSPECT THE LUMBAR SUPPORT ADJUSTMENT LEVER. VERIFY THAT THE ADJUSTMENT LEVER OPERATES EASILY TO ADJUST THE LUMBAR SUPPORT.	
P. VERIFY ALL ARMREST FASTENERS ARE SECURE. REPLACE ANY MISSING OR STRIPPED OUT FASTENERS.	
Q. INSPECT ARMREST SWIVEL FASTENERS. ENSURE SWIVEL FASTENER IS SECURE ON EACH ARMREST SUCH THAT THE ARMREST IS WITHOUT SIDE TO SIDE MOVEMENT. ARMREST SHOULD SWIVEL TO VERTICAL. ARMREST SHOULD NOT DROP DOWN PAST IT'S ORIGINAL STOP.	
R. INSPECT SEAT FABRIC ON SEAT PAN AND BACKREST. INSPECT FOR RIPS, TEARS, OR HOLES. SEAT PAN OR BACKREST COMPONENT MAY BE REPLACED IF THERE IS AN EXCESSIVE RIP, TEAR, OR HOLE.	
SEAT PART NUMBERS: Cab Seat, Freight with arms: 2043511 Cab Seat Mid Back: 20425731 Wall Mounted Pedestal: 20435541 Trunion Pedestal Assembly: 20425721 Seat Pedestal Rail Left Side 65": 20422211 Seat Pedestal Rail Right Side 46": 20422221	
INSPECT AND REPAIR AS REQUIRED:	
A. CAB / CARBODY/DOORS/HINGES/WINDOWS/LATCH SEALS/WEATHER STRIPPING AND SEALS/MIRRORS. ALSO LUBRICATE/CHANGE 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	fuel tank only

B-23, B-39, C-30, GP-7 MO3 INSPECTION



Out Bound Loadtest Electrical/Mechanical

WORKED BY:

ELECTRICAL

- VERIFY THE OPERATION OF THE 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
- COMPLETE THE IN-BOUND LOAD TEST SHEETS
- GROUND RELAY-(TEST THREE TIMES TO VERY LOCK-OUT)(DYNAMIC & POWER)
- CHECK THE FOLLOWING FOR PROPER OPERATION:
 - A. CREW ALERT
 - B. RADIO AND ANTENNA
 - C. AXLE ALT. SPEEDO
 - D. MU ENGINE SHUTDOWN
 - E. FUEL CUT-OFF
 - F. TEST WARNING DEVICES

[Handwritten signatures and initials in the right column, corresponding to the electrical tasks.]

MECHANICAL

- CLEAN AND SERVICE TOILET AND RESTROOM
- DRAIN RETENTION TANK
- 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
130 main reservoir is 64 + or - 3,
reservoir is 60 + o
- PERFORM PENALTY BRAKE TEST
- CHECK FOR CORRECT AIR PRESSURE SETTINGS:
 - A. MAIN RESERVOIR (130 - 140 PSI)
 - B. BRAKE PIPE (90 PSI)
 - C. EQUALIZING RESERVOIR (90 PSI)
 - D. BRAKE CYLINDER (72 - 74 PSI)
 - E. COMPRESSOR CONTROL (130 - 140 PSI +/-5 PSI)
- CHECK FLUID LEVELS BEFORE LOADING:
 - A. ENGINE OIL
 - B. COOLING WATER
 - C. AIR COMPRESSOR OIL
- TEST OPERATION OF THE FOLLOWING DEVICES:
 - A. BELL
 - B. SANDERS (FORWARD, REVERSE, EMERGENCY)
 - C. RADIATOR SHUTTERS

[Handwritten signature and initials in the right column, corresponding to the mechanical tasks.]

NOTE: 120-130-140 main



UNIT 2000
 DATE 9-24-11

Service Operations

THROTTLE 8 OUTBOUND LOAD TESTS

Eng RPM (900)	EMD	_____	Lube Oil Pres	_____
Eng RPM (1050)	GE	_____	Water Temp	<u>120°F</u>
Horsepower		<u>2144.61</u>	Overspeed Setting	<u>OK</u>
Volts (5.3)	B-23	<u>5.07</u>	RACK SETTING	_____
Volts (7)	C-30	_____		
Volts (720)	B-39	_____		

THROTTLE #1 STALL TEST

OP Mode	(PWR)	_____	
AMPS	(300)	_____	
MGA	(1220)	_____	NOT APPLICABLE TO B-23 AND C-30
Charging Rate	(70v)	<u>73.3V</u>	

LOCOMOTIVE 2000										DATE 9-19-11				
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	0-22	0-0	1.8				CUT → L#1	0-20	0-0	1.8				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	0-20	0-0	1.13											
L#3	0-21	0-0	2.2											
L#4	0-21	0-0	1.7											
L#5														
L#6														
R#1	0-20	0-0	1.8											
R#2	0-21	0-0	1.13											
R#3	0-21	0-0	2.2											
R#4	0-21	0-0	1.17											
R#5														
R#6														

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

see defect sheet

FLANGE HEIGHT MEASUREMENT
 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"

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 1/2"

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"

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)

- 3/4" IS THE MAXIMUM VARIATION ALLOWED, IN WHEEL DIAMETER, BETWEEN ANY 2 WHEELS IN THE SAME TRUCK WITHOUT SHIMS.
- 1 1/4" IS THE MAXIMUM VARIATION ALLOWED, IN WHEEL DIAMETER, BETWEEN ANY 2 WHEELS IN THE SAME TRUCK WITH SHIMS APPLIED.
- 1 1/2" 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 1/2" OR MORE.

EMPLOYEES SIGNATURE

[Signature]

SUPERVISORS SIGNATURE

[Signature]

Montreal, Maine, & Atlantic Railway
Locomotive

Unit 2000

Date 9-19-11

3 Month Federal Air Work

Signature

1. Inspect and repair air piping and valves for leaks K. Hasey
2. Test all air gauges with gauge tester and set if required..... K. Hasey
3. With full brake pipe pressure, make a 20lb. reduction, move the cutoff valve to "OUT" position and move the lead - dead valve to "DEAD" position. Brakes must remain applied for 5 minutes..... K. Hasey
4. Cover each trainline hose coupling with hand and test for leakage through valve, then apply blank dummy couplings to the trainline hoses on each end of the unit and open trainline valves. Make a 20lb. reduction with the Automatic, move the cutoff valve to "OUT" position and check for brake pipe leakage. Leakage shall not exceed 5 lb. per minute..... K. Hasey
5. Reduce main reservoir pressure to 85 lbs. by draining #2 main reservoir.(*). Check cab gauge for leakage from main reservoirs and piping for 3 minutes. Leakage must not exceed an average of 3 lb. per minute during the test..... K. Hasey
6. Drain #1 main reservoir (*) completely and test check valve between reservoirs. Pressure should remain on the main reservoir gauge in the cab as #1 main reservoir is drained..... K. Hasey
7. Check all MU valve handles to ensure the locking devices work properly. Lubricate or replace as necessary..... K. Hasey
8. Check knuckle thrower to make sure it opens the knuckle. Lubricate or repair as necessary..... K. Hasey

Note (*) #1 reservoir is without the check valve. # 2 is with the check valve.

Make all ^{brake piston} O/I K. Hasey

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.

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	1.222	1.222	1.222	1.222		✓		
Section B	1.222	1.222	1.222	1.222		✓		
Section C	1.222	1.222	1.222	1.222		✓		
Section D	1.222	1.222	1.222	1.222		✓		

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	1.222	1.222	1.222	1.222		✓		
Section B	1.222	1.222	1.222	1.222		✓		
Section C	1.222	1.222	1.222	1.222		✓		
Section D	1.222	1.222	1.222	1.222		✓		

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	33.0	33.3						
Battery Voltage	33.0							
Cranking Battery Voltage								
Battery Voltage								
Cranking Battery Voltage								

Battery voltage # 1 - 33.0
 # 2 - 33.3

Unit: 2000

Date: 9-17-11

DEFECTS FOUND DURING INSPECTION

DEFECT <u>Event Recorder is not reading Reverse signal</u>	INSPECTED BY: <u>[Signature]</u>
REPAIR _____	CORRECTED BY: _____

DEFECT <u>Sanders plugged - good air flow -</u>	INSPECTED BY: <u>[Signature]</u>
REPAIR <u>Unplugged R-F Sanders Replaced Hose clamps</u>	CORRECTED BY: <u>[Signature]</u>

DEFECT <u>Bolt loose on HP cyl. on compressor water plate (Eng. side)</u>	INSPECTED BY: <u>TPG</u>
REPAIR <u>Replaced bolt</u>	CORRECTED BY: <u>[Signature]</u>

DEFECT <u>Eng. Fr. wiper loose - All afloat</u>	INSPECTED BY: <u>TPG</u>
REPAIR <u>Replaced wiper motor TEST OK</u>	CORRECTED BY: <u>[Signature]</u>

DEFECT <u>Bell works part time</u>	INSPECTED BY: <u>TPG</u>
REPAIR <u>check Bell works - OK 9-23-11</u>	CORRECTED BY: <u>[Signature]</u>

DEFECT: WATER SIGHT GLASS STAINED FROM CARBON - TPGoodie
 REPAIR: REPLACED SIGHT GLASS 16" - TPGoodie

DEFECT: R-1, L-1 cyl water leaks -
 Squeezing unit - R-5 Low compression -

Unit: _____

Date: _____

DEFECTS FOUND DURING INSPECTION

DEFECT	Cab Roof has been booked for leaking in cab	INSPECTED BY:	T.P.G.
REPAIR	found leak around antenna <u>SEALED</u>	CORRECTED BY:	J. Black

DEFECT	L-1 wheel high flange 0-2-2	INSPECTED BY:	K. Hussey
REPAIR	CUT wheel too - 0-2-2	CORRECTED BY:	K. Hussey

DEFECT	SAND HOSE EXT MISSING R-4 SAND PIPE	INSPECTED BY:	J. Black
REPAIR	Replaced sand nozzle	CORRECTED BY:	J. Black

DEFECT	AXLE DUST SEAL MISSING #1 T.M.	INSPECTED BY:	J. Black
REPAIR	Replaced DUST SEAL & clamp	CORRECTED BY:	J. Black

DEFECT	R-5 cyl. not responding to rack test compression test done - 230psi	INSPECTED BY:	K. Hussey
REPAIR	Changed power assembly and Rod, piston	CORRECTED BY:	KH/DB.

F.S. conductor seat not level - Adjusted - J. Black
 Eng. seat bad pivot bolts - Replaced 2 bolts - J.P. Goodie
 Fr. Cab door hinge pin bad - Replaced pin - J.P. Goodie

Description of Work Performed

Locomotive ID _____

Time Started _____

Time Finished _____

2000 -
UNIT USING WATER.

9-23-11

JB / KH

- ① found L-1, R-1 cyl. water leaking inside cyl.
- ② L-5, R-5 bent Rod L-5 changed Both Rods, pistons, cyles.
- ③ changed Both pistons L-1, R-1 changed Both power assembly.

Shot off on oil Drain Band ordrue. stripped
& changed valve on Drain pipe.
washed fuel TANK off.

Radiator cap will not hold pressure.
changed Rad cap w/ NEW