

M03



365-
14
7460

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

I have reviewed the work packet for locomotive 3000 on this date 8-24-12 and take no exception to applicable laws, rules and or MMA standards, policies and standards.

UNIT _____

DATE _____

Service Operations

THROTTLE 8 OUTBOUND LOAD TESTS

Eng RPM (500)	B-10	_____	Lube Oil Pres	_____
Eng RPM (1050)	C-1	_____	Water Temp	_____
Horsepower		_____	Overspeed Setting	_____
Volts (5.3)	B-23	_____	BACK SETTING	_____
Volts (7)	C-30	_____		
Volts (720)	B-39	_____		

THROTTLE #1 STALL TEST

Oil No. (1)	_____	
AMPS (300)	_____	
MGA (1200)	_____	NOT APPLICABLE TO B-23 AND C-30
Charging Rate (70v)	_____	

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

<i>In-Bound Loadtest Electrical/Mechanical</i>		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		
MECHANICAL		
CLEAN AND SERVICE TOILET AND RESTROOM		<i>J med</i>
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		<i>J McHugh</i>
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)	
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		<i>J McHugh</i> <i>J McHugh</i> <i>J McHugh</i>
B: COOLING WATER		
C: AIR COMPRESSOR OIL		
TEST OPERATION OF THE FOLLOWING DEVICES:		
A. BELL		
B. SANDERS (FORWARD, REVERSE, EMERGENCY)		
C. RADIATOR SHUTTERS		

Charged
Fuel sock filter
Compressor Air Intake Filters
Compressor oil filter
Michiana Filters

8-24-12
JAM
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JAM
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B-23, B-39, C-20, 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

J Mahoney
J Mahoney

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 _____

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 _____

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

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

J Mahoney
J Mahoney
D. Ryan

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

D. Ryan
J Mahoney
J Mahoney

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

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

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

	WORKED BY:
Electrical in House	[Signature]
SERVICE THE BATTERIES AND COMPLETE JSP-010	[Signature]
VERIFY EVENT RECORDER IS WORKING	[Signature]
CHECK & RECORD THE DATE ON HEAD END DEVICE <u>7-16-13</u>	[Signature]
COMPLETE THE HEAD END DEVICE CONNECTOR SHEET	[Signature]
CHECK THE FOLLOWING EQUIPMENT AND THEIR RELATED GUARDS AND LENSES FOR PROPER OPERATION:	[Signature]
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	[Signature]
<p style="text-align: center;">TRACTION MOTORS AND UNDERFRAME</p>	[Signature]
CHECK THE TRACTION MOTOR LEADS, VERIFY NO LEADS ARE RUBBING ON THE FRAME	[Signature]
INSPECT TRACTION MOTOR COVERS AND ENSURE BOLTS ARE IN PLACE AND TIGHT	[Signature]
CHECK M.U. RECEPTACLE PINS AND LIDS. MAKE NECESSARY REPAIRS	[Signature]
MAKE SURE M.U. CABLES DO NOT FOUL COUPLERS	[Signature]

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.	<i>J. McHale</i>
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.	↓
<p>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</p>	
INSPECT AND REPAIR AS REQUIRED:	
A. CAB / CARBODY/DOORS/HINGES/WINDOWS/LATCH SEALS/WEATHER STRIPPING AND SEALS/MIRRORS. ALSO LUBRICATE/CHANGE AS NEEDED	<i>J. McHale</i>
A. CLEAN THE CAB, WINDOWS, AND EQUIPMENT	
COMPLETE WINTERIZATION SHEET (AUGUST - APRIL)	
WASH LOCOMOTIVE ENGINE/ENGINE ROOM/AND AIR COMPRESSOR ROOM	
WASH THE LOCOMOTIVE	

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

<i>Out Bound Loadtest Electrical/Mechanical</i>		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		
MECHANICAL		
CLEAN AND SERVICE TOILET AND RESTROOM		<i>J.M.</i>
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		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)		
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		

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

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A. BELL		
B. SANDERS (FORWARD, REVERSE, EMERGENCY)		
C. RADIATOR SHUTTERS		

UNIT _____

DATE _____

Service Operations

THROTTLE 8 OUTBOUND LOAD TESTS

Eng RPM (900)	B-23	_____	Tube 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-30	_____		

THROTTLE #1 STALL TEST

HP Motor	(120v)	_____		
AMPS	(300)	_____		
MGA	(1220)	_____	NOT APPLICABLE TO B-23 AND C-30	
Charging Rate	(70v)	_____		

LOCOMOTIVE										DATE				
3000										8-24-12				
Start Readings				Has Shims		END READING				Has Shims		OLD GAUGE		
L#1	Flange Height	Flange Thickness	Rim Thickness	Witness Groove	YES	NO	L#1	Flange Height	Flange Thickness	Rim Thickness	Witness Groove	YES	NO	FLANGE THICKNESS MEASUREMENT
L#1	0.18	0.0	41				L#1							1-on-1--1-7/8"
L#2	0.18	0.0	40				L#2							1-on-2--1-15/16"
L#3	0.20	0.0	48				L#3							2-on-0--1-1/2"
L#4	0.20	0.0	47				L#4							3-on-0--1-13/32"
L#5	0.20	0.0	56				L#5							4-on-0--1-7/8"
L#6	0.21	0.0	46				L#6							5-on-0--1-13/32"
														6-on-0--1-13/32"
														7-on-0--1-13/32"
														8-on-0--1-13/32"
R#1	0.18	0.0	42				R#1							1-on-0--1"
R#2	0.17	0.0	39				R#2							0-on-1--1-1/16"
R#3	0.20	0.0	48				R#3							0-on-2--1-1/8"
R#4	0.20	0.0	47				R#4							0-on-3--1-3/16"
R#5	0.20	0.0	56				R#5							0-on-4--1-1/4"
R#6	0.20	0.0	46				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--1-3/16"

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 1/2" 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 1/2"	MMA 1/4"

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 1/4"	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"	FRA MAX 6" MIN 3"	4 1/2"	FRA MIN 30" MMA MIN 30" FRA MAX 50" MMA MAX 50"	FRA MIN 2 1/2" MMA MIN 3"
MMA	MAX 34 1/2" MIN 32 1/2"	MMA MAX 6" MIN 3 1/2"	5"		

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
- 1/4" 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

- 1 TO 3 DIAMETER DIFFERENCE: NO SHIMS REQUIRED 6 TO 10 DIAMETER DIFFERENCE: ADD APPROPRIATE SHIMS TO BOTH BOXES ON BOTH SIDES OVER 10 IN DIAMETER DIFFERENCE: REQUIRED WHEEL CHANGE OR TRIED
- NOTE: ON END LIFT OFFTILES: USE ONLY ONE 1/2" SHIM END PART NUMBER 3455281. SHELLED TREAD AND FLAT SPOTS MUST BE TRUED OR CHANGED WHEN FOUND ON PERIODIC OR UNDISBURLED MAINTENANCE AND CORRECTING LIMITS FOR SHELLED TREAD ON A SERVICE TRAY
- ONE SHELLED SPOT 1" OR GREATER IN LENGTH
- ONE SHELLED SPOT WITH A DEPTH OF 1/4" OR MORE

EMPLOYEES SIGNATURE

J. McHugh

SUPERVISORS SIGNATURE

Maine, Maine & Atlantic Railway
Locomotive

No. 300

Date 8-28-12

F. Mond. Federal Air Worn.

Signature

1. Inspect and repair air piping and valves for leaks PWC
2. Test all air gauges with gauge tester and set if required..... PWC
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..... PWC
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..... PWC
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..... PWC
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..... PWC
7. Check all MU valve handles to ensure the locking devices work properly. Lubricate or replace as necessary..... PWC
8. Check knuckle thrower to make sure it opens the knuckle. Lubricate or repair as necessary..... PWC

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

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.

DAVID STUPAKEWICZ

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 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).

DAVID STUPAKEWICZ

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.

[Handwritten signatures]

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
Battery 1	Cell 1	Cell 2	Cell 3	Cell 4	Yes	No	Yes	o
Section A	1.22	1.18	1.22	1.22		✓		
Section B	1.250	1.250	1.275	1.225		✓		
Section C	1.250	1.225	1.275	1.250		✓		
Section D	1.275	1.260	1.250	1.250		✓		

2 Battery Units	Specific Gravity				Water Added			Battery Replaced-Reason
Battery 2	Cell 1	Cell 2	Cell 3	Cell 4	Yes	No	Yes	o
Section A	1.22	1.22	1.22	1.22		✓		
Section B	1.275	1.250	1.250	1.230		✓		
Section C	1.250	1.230	1.260	1.250		✓		
Section D	1.250	1.230	1.250	1.230		✓		

8 Battery Units	Specific Gravity				Water Added			Battery Replaced-Reason
	Cell 1	Cell 2	Cell 3	Cell 4	Yes	No	Yes	o
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	33.2V							
Battery Voltage	33.1V							
Cranking Battery Voltage	66.4V							
Battery Voltage								
Cranking Battery Voltage								

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: _____ _____

Unit: _____

Date: _____

DEFECTS FOUND DURING INSPECTION

DEFECT <u>Fuel Line has hole in it.</u>	INSPECTED BY: <u>DWR</u>
REPAIR <u>was Fixed Fuel Line</u>	CORRECTED BY: <u>DWR</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: _____

Description of Work Performed

Locomotive ID _____

Time Started _____

Time Finished _____