

Montreal, Maine, & Atlantic Railway

Locomotive

Unit 8872

Date 4-20-11

3 Month Federal Air Work

Signature

1. Inspect and repair air piping and valves for leaks J. Hertz

2. Test all air gauges with gauge tester and set if required..... J. Hertz

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..... Dave Blank

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..... Dave Blank

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..... Dave Blank

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..... Dave Blank

7. Check all MU valve handles to ensure the locking devices work properly. Lubricate or replace as necessary..... J. Hertz

8. Check knuckle thrower to make sure it opens the knuckle. Lubricate or repair as necessary..... J. Hertz

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

Montreal, Maine and Atlantic Railway

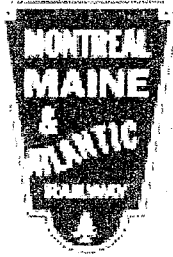
12 Month Airwork

Unit Number 8592

Date 4-20-11

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

Comments:



Locomotive Release from Shop Form

To be completed on every engine released from the Shop

I have reviewed the work packet for locomotive 8592 on this date 4-19-11 and take no exception to applicable laws, rules and or MMA standards, policies and standards.

B-23, B-39, C-3() P-7 M12 MAINTENANCE



In-House Or Dead Mechanical

Part #

Q
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Y

WORKED BY

SECTION 1 (ANNUAL ITEMS)

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

CYL#1	730	CYL#1	350
CYL#2	920	CYL#2	392
CYL#3	330	CYL#3	315
CYL#4	315	CYL#4	345
CYL#5	330	CYL#5	325
CYL#6	310	CYL#6	305
CYL#7	335	CYL#7	310
CYL#8	320	CYL#8	305

Dave Black
F. Hussel

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

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 ERA 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

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 100

2 TRACTION MOTOR: OIL USED 100

3 TRACTION MOTOR: OIL USED 100

4 TRACTION MOTOR: OIL USED 100

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

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

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

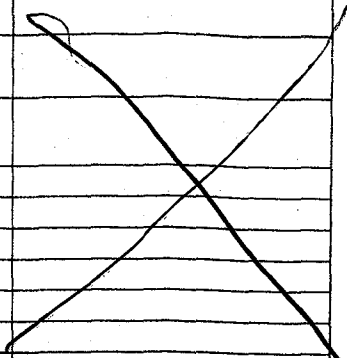
C. INSPECT ROTATION ADJUSTMENT LOCKING PIN. VERIFY THAT THE LOCKING PIN OPERATES (PULL OUT TO RELEASE LOCK) AND THAT THE SEAT ROTATES WHEN UNLOCKED.

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



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B-23, B-39, C), 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	

Change oil Filters 10 BRAUN
 Change air Filters 2 BRAUN
 change fuel Filter 1 BRAUN
 Wick Box OK B. Cleary

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	J. Harts
VERIFY EVENT RECORDER IS WORKING	J. Harts
CHECK & RECORD THE DATE ON HEAD END DEVICE <u>12-4-10</u>	J. Harts
COMPLETE THE HEAD END DEVICE CONNECTOR SHEET	
CHECK THE FOLLOWING EQUIPMENT AND THEIR RELATED GUARDS AND LENSES FOR PROPER OPERATION:	
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	J. Harts
TRACTION MOTORS AND UNDERFRAME	
CHECK THE TRACTION MOTOR LEADS, VERIFY NO LEADS ARE RUBBING ON THE FRAME	J. Harts
INSPECT TRACTION MOTOR COVERS AND ENSURE BOLTS ARE IN PLACE AND TIGHT	J. Harts
CHECK M.U. RECEPTACLE PINS AND LIDS. MAKE NECESSARY REPAIRS	J. Harts
MAKE SURE M.U. CABLES DO NOT FOUL COUPLERS	

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	<i>J. Harts</i>
CHECK FOR LOW VOLTAGE GROUNDS (7 watt bulb)	<i>J. Harts</i>
WHILE IN THROTTLE 3 LOAD TEST, CHECK FOR AC GROUNDS	
CHECK OPERATION OF:	
A. HEATING	<i>J. Harts</i>
COMPLETE THE IN-BOUND LOAD TEST SHEETS	<i>J. Harts</i>
GROUND RELAY-(TEST THREE TIMES TO VERIFY LOCK-OUT)(DYNAMIC & POWER)	<i>J. Harts</i>
CHECK THE FOLLOWING FOR PROPER OPERATION:	
A. CREW ALERT	<i>J. Harts</i>
B. RADIO AND ANTENNA	<i>J. Harts</i>
C. AXLE ALT. SPEEDO	<i>J. Harts</i>
D. MU ENGINE SHUTDOWN	<i>J. Harts</i>
E. FUEL CUT-OFF	<i>J. Harts</i>
F. TEST WARNING DEVICES	<i>J. Harts</i>
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	<i>Clear</i>
INSPECT COOLING SYSTEM:	<i>Clear</i>
A. CHECK HOSES AND PIPES FOR LEAKS	<i>Clear</i>
CHECK OPERATION OF ENGINE PROTECTION DEVICES:	
A. CRANKCASE PRESSURE	
VISUALLY INSPECT AIR COMPRESSOR FOR WATER, AIR OR OIL LEAKS	<i>BROWN</i>
PERFORM MANUAL AIR BRAKE TEST	
Verify Flow Gauge	NOTE: 120-
130 main reservoir is 64 + or - 3,	130-140 main
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)	
CHECK FLUID LEVELS BEFORE LOADING:	
A: ENGINE OIL	
B: COOLING WATER	
C: AIR COMPRESSOR OIL	<i>BROWN</i>
TEST OPERATION OF THE FOLLOWING DEVICES:	
A. BELL	<i>BROWN</i>
B. SANDERS (FORWARD, REVERSE, EMERGENCY)	
C. RADIATOR SHUTTERS	

Service Operations

THROTTLE 8 OUTBOUND LOAD TESTS

UNIT _____

DATE _____

Eng RPM (900)	EMD	<u> </u>	Lube Oil Pres	<u> </u>
Eng RPM (1050)	GE	<u>1048</u>	Water Temp	<u>166</u>
Horsepower		<u>3700</u>	Overspeed Setting	<u>1040</u>
Volts (5.3)	B-23	<u> </u>	RACK SETTING	<u>23.5</u>
Volts (7)	C-30	<u> </u>		
Volts (720)	B-39	<u>700</u>		

THROTTLE #1 STALL TEST

OP Mode	(PWR)	<u>F</u>	NOT APPLICABLE TO B-23 AND C-30
AMPS	(300)	<u>300</u>	
MGA	(1220)	<u>1230</u>	
Charging Rate	(70v)	<u>74</u>	

LOCOMOTIVE												8592		DATE		4-19-11	
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	2.18	00	34				L#1							0-on 0-1-17/64"			
L#2	4.19	00	35				L#2							1-on 0-1-15/64"			
L#3	2.19	00	36				L#3							2-on 0-1-7/32"			
L#4	2.21	00	34				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	3.19	00	32				R#1							0-on 0-1-1/16"			
R#2	3.19	20	34				R#2							0-on 1-1-1/8"			
R#3	8.21	00	35				R#3							0-on 2-1-1/8"			
R#4	2.20	00	36				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 5-1-7/16"			
														6-on 5-1-31/64"			

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 22-1-7/6"
 6-on 22-1-15/32"
 8-on 22-1-1/2"

FLANGE HEIGHT MEASUREMENT

FLANGE THICKNESS 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"

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"

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"	33"	FRA MAX 6" MIN 3"	5"	FRA MIN 2 1/2"
MMA	MAX 34 1/2" MIN 32 1/2"	32 1/2"	MMA MAX 6" MIN 3 1/2"	4 1/4"	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 1/2" 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 END LOCOMOTIVES USE ONLY ONE 1/2" SHIM END PART NUMBER 8459981 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

Ames

SUPERVISORS SIGNATURE

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. HARTZ

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).

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	1275	1275	1275	1275		✓		
Section B	1275	1275	1275	1275		✓		
Section C	1275	1275	1275	1275		✓		
Section D	1275	1275	1275	1275		✓		

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	1275	1275	1275	1275		✓		
Section B	1275	1275	1275	1275		✓		
Section C	1275	1275	1275	1275		✓		
Section D	1275	1275	1275	1275		✓		

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	33.4	33.4						

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

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

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

Unit: 8592

Date: 4-19-11

DEFECTS FOUND DURING INSPECTION

DEFECT <u>Rear Pilot Cutting edge is Bent and weld broke on right side</u>	INSPECTED BY: <u>Amer</u>
REPAIR <u>Welded pilot Back to plow and welded brake at the bottom of the pilot</u>	CORRECTED BY: <u>Amer</u>

DEFECT <u>R-3 wheel has a high flange. a reading <u>(8.21)</u> * flange needs to be cut. (cutting head is in place)</u>	INSPECTED BY: <u>Amer</u>
REPAIR _____	CORRECTED BY: _____

DEFECT <u>R-2 wheel has a flange reading of <u>(0-2)</u></u>	INSPECTED BY: <u>Amer</u>
REPAIR _____	CORRECTED BY: _____

DEFECT <u>changed all Brakes Shoer</u>	INSPECTED BY: <u>Amer</u>
REPAIR <u>Replaced all brake shoer.</u>	CORRECTED BY: <u>Amer</u>

DEFECT <u>Support box bolt missing #2 motor</u>	INSPECTED BY: <u>BC</u>
REPAIR <u>put bolt in</u>	CORRECTED BY: <u>DB BC</u>

Unit: _____

Date: _____

DEFECTS FOUND DURING INSPECTION

DEFECT #1 motor 2 Gear case bolts missing 1 was broke off 1 missing	INSPECTED BY: BC
REPAIR 2 new gear case bolts welded pipe on to remove old bolt and replaced with new (had to take ^{gear} box off	CORRECTED BY: DB BC

DEFECT Rear M.V. Recr. cover broken	INSPECTED BY: JH
REPAIR Changed cover	CORRECTED BY: JH

DEFECT Rear Safety Chain not hooked to post	INSPECTED BY: JH
REPAIR Reconnected with pull apart ring	CORRECTED BY: JH

DEFECT air box bolt head snapped off air box to turbo	INSPECTED BY: BRAN
REPAIR Drilled Retyped - Fixed - new Bolt	CORRECTED BY: J. Anderson

DEFECT Front knuckle thpaw B/O	INSPECTED BY: J.H
REPAIR replace	CORRECTED BY: J.H

Report Date: 04-20-2011
Locomotive 8592

Data Removed on 04-19-11

SPEED (MPH)	OK
TRACTION MOTOR CURRENT	OK
BRAKE PIPE PRESSURE	OK
INDEPENDENT BRAKE	OK
END-OF-TRAIN PSI	Never above 20.
EP BRAKE REQUESTED	Never ON/ACTIVE
THROTTLE	Dynamic Brake never reported. Stop never reported. Low Idle never reported.
REVERSE	OK
EIE	OK
PCS	OK
HORN	OK
EOT MOVING	Never ON/ACTIVE
EOT MSG. JUST RX	Never ON/ACTIVE
EOT LIGHT	Never ON/ACTIVE
EP OPERATING MODE	Never ON/ACTIVE
EP PENALTY BRAKE	Never ON/ACTIVE
EP ENGINEER EMERGENCY	Never ON/ACTIVE

Manufacturer is QEI Version # S45E
Serial Number is 0204050051
Customer is ----

Data was removed on - 12:39:57 on 04/19/11
Last Downloaded on - 09:47:00 on 01/26/11
Battery was installed on - 04/21/04
Locomotive Number is - 8592

Downloaded by - jh
Location - derby
Train - 232
Wheel Size Entry - 40
Wheel Size used by program:
Circumference = 125.7 Diameter = 40.0
No memo present.

Wheel size used for printout is 125.66

QDP Version V