

Manufacturer is QEI Version # S45E

Serial Number is 0204110402

Customer is MMAR

Data was removed on - 13:20:54 on 11/17/10

Last Downloaded on - 22:12:00 on 11/11/10

Battery was installed on - 11/12/04

Locomotive Number is - 8525

Downloaded by - P.Conlogue

Location - Derby

Train - 345

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

# 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.

*Paul Coulogne*

### 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.**

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

*P. Coulogne*

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.

*P. Coulogne*

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

*P. Coulogne*

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.

*P. Coulogne*

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 NO**

*P. Coulogne*

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

*P. Coulogne*

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

*P. Coulogne*

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

*P. Coulogne*

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

*P. Coulogne*

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).

*P. Coulogne*

### Battery Cranking Voltage Test

14. Close battery knife switch, and circuit breakers.

*P. Coulogne*

15. Open the injector toggle switch, on EU1 units to prevent unit from starting.

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**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								0
Section A	12.50	12.25	12.50	12.75	✓			
Section B	12.50	12.25	12.50	12.50	✓			
Section C	12.50	12.50	12.50	12.75	✓			
Section D	12.50	12.75	12.75	12.50	✓			

2 Battery Units	Specific Gravity				Water Added			Battery Replaced-Reason
	Cell 1	Cell 2	Cell 3	Cell 4	Yes	No	Yes	
Battery 2								0
Section A	12.75	12.50	12.75	12.75	✓			
Section B	12.50	12.50	12.75	12.75	✓			
Section C	12.75	12.50	12.50	12.50	✓			
Section D	12.75	12.75	12.50	12.75	✓			

8 Battery Units	Specific Gravity				Water Added			Battery Replaced-Reason
	Cell 1	Cell 2	Cell 3	Cell 4	Yes	No	Yes	
Battery 1								0
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	33.47	34.69						
Battery Voltage								
Cranking Battery Voltage								
Battery Voltage								
Cranking Battery Voltage								

Montreal, Maine, & Atlantic Railway  
Locomotive

Unit 8525

Date 11-18-10

3 Month Federal Air Work

Signature

1. Inspect and repair air piping and valves for leaks ..... DWC
2. Test all air gauges with gauge tester and set if required..... TPG
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..... DWC
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..... PC
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.