

JSP-010 (BATTERY MAINTENANCE AND QUALIFICATION)

JOB SPECIFIC PROCESS

Locomotive Type: ALL MODELS

Valid for Road Numbers: (All Models)

8541

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.

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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.

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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.

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

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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.

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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

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

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

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

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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

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12. Apply approved protective coating to connections after terminals are cleaned and dried

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13. Add water as required (Add water to bottom of filler neck).

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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	1300	1300	✓			
Section B	1300	1300	1300	1300	✓			
Section C	1275	1300	1300	1300	✓			
Section D	1250	1300	1300	1300	✓			

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	1250	✓			
Section B	1275	1275	1250	1250	✓			
Section C	1275	1275	1250	1250	✓			
Section D	1275	1275	1275	1250	✓			

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	35.1	34.9						
Battery Voltage	33.7	33.9						
Cranking Battery Voltage	24.2	25.2						
Battery Voltage	22.9	33.7						
Cranking Battery Voltage	23.8	25.1						



Quantum Desktop Playback
Data Scan Report

Report Date: 10-04-2010
Locomotive 8541

Data Removed on 10-04-10

SPEED (MPH)	OK
TRACTION MOTOR CURRENT	OK
BRAKE PIPE PRESSURE	Never above 20.
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



Quantum Desktop Playback

Manufacturer is QEI Version # S45E
Serial Number is 0204070094
Customer is MMAR

Data was removed on - 11:09:59 on 10/04/10
Last Downloaded on - 09:38:00 on 08/05/10
Battery was installed on - 06/29/04
Locomotive Number is - 8541

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