

M03/619



Locomotive Release from Shop Form

To be completed on every engine released from the Shop

I have reviewed the work packet for locomotive 8546 on this date 2-15-12 and take no exception to applicable laws, rules and or MMA standards, policies and standards.

UNIT 8546

DATE 2-15-12

Service Operations

THROTTLE 8 INBOUND LOAD TESTS

Eng RPM (900)	EMD	_____	Lube 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-39	_____		

THROTTLE #1 STALL TEST

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

TL 24T

Throttle 1	(1V)	_____
Throttle 2		_____
Throttle 3		_____
Throttle 4		_____
Throttle 5		_____
Throttle 6		_____
Throttle 7		_____
Throttle 8	(72V)	_____

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 OUTBOUND LOAD TEST SHEETS	
GROUND RELAY-(TEST THREE TIMES TO VERY LOCK-OUT)(DYNAMIC & POWER)	
IF EQUIPPED, VERIFY THE OPERATION OF THE LDVR CAMERA	NA
MECHANICAL	
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 + 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	
TEST OPERATION OF THE FOLLOWING DEVICES:	
A. BELL	
B. SANDERS (FORWARD, REVERSE, EMERGENCY)	
C. RADIATOR SHUTTERS	

Change A/H Sakers November to APRIL 1st

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

Revision Date: 06/26/2010
 Issued By: Tim Scalia

ELECTRICAL IN HOUSE	WORKED BY:
SERVICE THE BATTERIES	<i>[Signature]</i>
VERIFY EVENT RECORDER IS WORKING	<i>[Signature]</i>
CHECK & RECORD THE DATE ON HEAD END DEVICE	-NA-
CLOSELY INSPECT THE HEAD END DEVICE CONNECTOR. ENSURE IT IS TIGHTLY CONNECTED AND NOT CROSS THREADED	-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]</i>
TRACTION MOTORS AND UNDERFRAME	
CHECK THE TRACTION MOTOR LEADS, VERIFY NO LEADS ARE RUBBING ON THE FRAME	<i>[Signature]</i>
INSPECT TRACTION MOTOR COVERS AND ENSURE BOLTS ARE IN PLACE AND TIGHT	<i>[Signature]</i>
CHECK M.U. RECEPTACLE PINS AND LIDS. MAKE NECESSARY REPAIRS	<i>[Signature]</i>
MAKE SURE M.U. CABLES DO NOT FOUL COUPLERS	-NA-

- ✓ CHECKED Tr Brushes - OK *[Signature]*
- ✓ Main Alt-Brushes + slip rings - *[Signature]*
- ✓ Fuel Pump Motor Brushes - *[Signature]*
- ✓ CDC contactors - *[Signature]*

B-23, B-39 -30, 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	clear
SOAK BACK FILTER. EMD ONLY	clear
TURBO SPIN ON FILTER. EMD ONLY	clear
COMPLETE FRA INSPECTION (DAILY INSPECTION CHECKLIST)	clear
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.	clear
INSPECT COUPLERS & DRAFT GEARS. MAKE REPAIRS AS NECESSARY	clear
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	clear
TRUCKS	
INSPECT WICK BOLT SECUREMENT AND REPAIR IF NECESSARY	clear
CHECK SUSPENSION BEARING OIL LEVEL	clear
CHECK JOURNAL BOX OIL LEVEL (FILL TO POINT OF OVERFLOW)	clear
CHECK GEAR CASES AND INSPECT BULL GEAR (ADD 6lbs. OF GEARCASE GREASE)	clear
CHECK OIL FILLED GEAR CASES AND FILL (RECORD USAGE BELOW)	clear
# 1 TRACTION MOTOR: OIL USED <u>OK</u>	clear
# 2 TRACTION MOTOR: OIL USED <u>OK</u>	
# 3 TRACTION MOTOR: OIL USED <u>OK</u>	
# 4 TRACTION MOTOR: OIL USED <u>OK</u>	↓
# 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	clear
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	BRAUN
DRAIN RETENTION TANK	clear
TOILET MAINTENANCE:	
A. INSPECT/REPAIR AS NEEDED TOILET DRAIN VALVE & FLOOR SEALS	
INSPECT CAB SEATS. REPAIR AND LUBRICATE AS REQUIRED	
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 (SEPTEMBER-FEBRUARY)	
WASH LOCOMOTIVE ENGINE/ENGINE ROOM/AND AIR COMPRESSOR ROOM	
WASH THE LOCOMOTIVE	

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 OUTBOUND LOAD TEST SHEETS
- GROUND RELAY-(TEST THREE TIMES TO VERY LOCK-OUT)(DYNAMIC & POWER)
- IF EQUIPPED, VERIFY THE OPERATION OF THE LDVR CAMERA

MECHANICAL

- 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
- NOTE: 120-130-140 main
- 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

UNIT 8546
 DATE 2-15-12

Service Operations

THROTTLE 8 OUTBOUND LOAD TESTS

Eng RPM (900)	EMD	_____	Lube 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-39	_____		

THROTTLE #1 STALL TEST

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

TL 24T

Throttle 1	(1V)	_____
Throttle 2		_____
Throttle 3		_____
Throttle 4		_____
Throttle 5		_____
Throttle 6		_____
Throttle 7		_____
Throttle 8	(72V)	_____

WINTERIZATION	
	Sig. _____
Winterization – All MMA Locomotives. (August - April)	
Inspect front and rear cab door seals replace, as needed (NO TAPE)	<i>clearly</i>
Inspect left and right side window seals replace as needed.	<i>clearly</i>
Inspect Electric cabinet door seals replace as needed.	<i>clearly</i>
Operate Cab Heaters-Check condition of Heater Assembly @ 45o F above Ambient Temperature.	
Operate Window Defrosters-Check condition of Defroster @ 45o F above Ambient Temperature.	
If equipped, test the Auto Dump valve for proper operation.	
Test Manual Water Dump Valves, Proper Handle, Location, Orifice is Open.	
Close Winter/ Summer doors if equipped.	
Check Traction Motor cover gaskets, install as needed.	
Check condition of Cab Door Hinges (Lubricate all Hinges)	<i>clearly</i>
Check condition of Cab Door Locks (Lubricate all Locks)	<i>clearly</i>
Inspect Cab Windows Slider Rail, Adjust Top Rail as needed, Lubricate with Silicone Grease.	<i>clearly</i>
Renew all Wiper Blades.	
Criteria for Door seal Replacement: A. Seal shows signs of Deterioration and or Medium to Heavy Cracking. B. Door seal is Torn or Loose from Door. C. With Door in the fully closed position has noticeable crack between door jam and cab carbody.	
Criteria for Window seal Replacement: A. Seals shows signs of Deterioration and or Medium to Heavy Cracking. B. Seal is Torn or Loose from window seal. C. With windows fully in the closed position there is a gap between window frame and carbody.	

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.

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				62V at switch	Water Added			Battery Replaced-Reason
	Cell 1	Cell 2	Cell 3	Cell 4		Yes	No	Yes	
Battery 1									o
Section A	1280	1300	1280	1300			✓		
Section B	1275	1275W	1275W	1250	✓				
Section C	1280	1275W	1275W	1275	✓				
Section D	1275	1275	1275	1275			✓		

2 Battery Units	Specific Gravity				62V at switch	Water Added			Battery Replaced-Reason
	Cell 1	Cell 2	Cell 3	Cell 4		Yes	No	Yes	
Battery 2									o
Section A	1250	1280	1250	1280			✓		
Section B	1280	1280	1275	1280W	✓				
Section C	1290	1280	1250	1280			✓		
Section D	1275	1280	1275W	1300+			✓		

8 Battery Units	Specific Gravity				62V at switch	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	34.1							
Battery Voltage		33.9						
Cranking Battery Voltage								
Battery Voltage								
Cranking Battery Voltage								

	LOCOMOTIVE 8546	DATE 2-15-12
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	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	
L#1	017	00	41				L#1							FLANGE THICKNESS MEASUREMENT 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	622	00	38				L#2							
L#3	522	00	38				L#3							
L#4	019	00	46				L#4							
L#5							L#5							
L#6							L#6							
													OLD GAUGE	
														FLANGE THICKNESS MEASUREMENT 0-on 0-1" 0-on 1-1-1/16" 0-on 2-1-1/8" 0-on 3-1-3/16" 0-on 4-1-1/4" 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 6-1-31/64"
R#1	019	00	41				R#1							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 22-1-7/16" 6-on 22-1-15/32" 8-on 22-1-1/2"
R#2	222	00	38				R#2							
R#3	019	00	39				R#3							
R#4	019	00	40				R#4							
R#5							R#5							
R#6							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

side bearing
 RF 1/8 LF 1/4
 RR 1/4 LR 1/4

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 1/4"	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 1/2"	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

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"

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"	5 1/2"	FRA MIN 2 1/2"
MMA	MAX 34 1/2" MIN 32 1/2"	MMA	MAX 6" MIN 3 1/2"	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)

- 1/4" 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 1/4" 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
 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 845981 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

SUPERVISORS SIGNATURE

MONTREAL, MAINE & ATLANTIC RAILWAY



Locomotive Work Report — 5001A

Locomotive Work Report 5001A must be retained on locomotive until the locomotive enters a mechanical facility. When defects are discovered the RTC must be notified and a copy of the 5001A must be faxed to the Dispatchers Office at the end of each tour of duty.

Items 1, 2, 3, 4, and 5 must always be filled out by the Engineer for each trip or power consist change, even if no defects are discovered.

1. Locomotives
Initial Number
- A. _____
B. _____
C. _____
D. _____
E. _____
F. _____
G. _____

2. Train Number _____ Dispatched From _____ Date _____
3. Brake Pipe Pressure _____ LBS. Main Reservoir Pressure _____ LBS. CDU Number _____
4. Conditions of Radio - Good - Reported - Not Equipped Loco. Number _____ Serial Number _____
5. Condition of Speed Indicator - Unit Number _____ Accurate or _____ MPH. Slow - Fast at _____ MPH

Letter of Loco.	Title	MPH	Ampge	Letter of Loco.	Letter of Loco.
<input type="checkbox"/>	Trips Low Oil Button			<input type="checkbox"/>	Trips Low Oil Button
<input type="checkbox"/>	Trips Low Water Button			<input type="checkbox"/>	Trips Low Water Button
<input type="checkbox"/>	Trips Engine Overspeed			<input type="checkbox"/>	Trips Engine Overspeed
<input type="checkbox"/>	Trips Crankcase Button			<input type="checkbox"/>	Trips Crankcase Button
<input type="checkbox"/>	Cranks But Won't Start			<input type="checkbox"/>	Cranks But Won't Start
<input type="checkbox"/>	Low Governor Oil			<input type="checkbox"/>	Low Governor Oil
<input type="checkbox"/>	Died No Apparent Reason			<input type="checkbox"/>	Died No Apparent Reason
<input type="checkbox"/>	Hot Engine Shutdown			<input type="checkbox"/>	Hot Engine Shutdown
<input type="checkbox"/>	Won't Crank			<input type="checkbox"/>	Won't Crank
<input type="checkbox"/>	Hunting			<input type="checkbox"/>	Hunting
<input type="checkbox"/>	Wheel Slip Continuous			<input type="checkbox"/>	Wheel Slip Continuous
<input type="checkbox"/>	Wheel Slip Intermittent			<input type="checkbox"/>	Wheel Slip Intermittent
<input type="checkbox"/>	Tripping Ground Relay			<input type="checkbox"/>	Tripping Ground Relay
<input type="checkbox"/>	Not Making Transition			<input type="checkbox"/>	Not Making Transition
<input type="checkbox"/>	Loading Problems			<input type="checkbox"/>	Loading Problems
<input type="checkbox"/>	Not Loading			<input type="checkbox"/>	Not Loading
<input type="checkbox"/>	During Transition			<input type="checkbox"/>	During Transition
<input type="checkbox"/>	After Transition			<input type="checkbox"/>	After Transition
<input type="checkbox"/>	Engine Drops Load			<input type="checkbox"/>	Engine Drops Load
<input type="checkbox"/>	Engine Partial Loading			<input type="checkbox"/>	Engine Partial Loading
<input type="checkbox"/>	Traction Motor			<input type="checkbox"/>	Traction Motor
<input type="checkbox"/>	#1 Traction Motor Cut Out			<input type="checkbox"/>	#1 Traction Motor Cut Out
<input type="checkbox"/>	#2 Traction Motor Cut Out			<input type="checkbox"/>	#2 Traction Motor Cut Out
<input type="checkbox"/>	#3 Traction Motor Cut Out			<input type="checkbox"/>	#3 Traction Motor Cut Out
<input type="checkbox"/>	#4 Traction Motor Cut Out			<input type="checkbox"/>	#4 Traction Motor Cut Out
<input type="checkbox"/>	Headlight Front			<input type="checkbox"/>	Headlight Front
<input type="checkbox"/>	Headlight Rear			<input type="checkbox"/>	Headlight Rear
<input type="checkbox"/>	Ditch Lights Front			<input type="checkbox"/>	Ditch Lights Front
<input type="checkbox"/>	Ditch Lights Rear			<input type="checkbox"/>	Ditch Lights Rear

Loco	Repairs Needed	Reported By	Repaired By

Signature of Employee

Signature of Employee

J. E. Young Jr.

Item	Defects Noted	Repaired By	Type of Repair
1	Had 2 #2 traction motor		
2	Flashovers at M.P. 635		
3	+ M.P. 42.7		
4	Both Reset ok?		
5			

Calendar Day Inspection Made By: _____

MONTREAL, MAINE & ATLANTIC RAILWAY

Calendar Day Inspection

5001B

Must be Completed for Each Locomotive

Loco. MMA 8546 Location No. Me. Jct Date 2-13-12 Time _____



Original - Keep on file at off duty location

Part 2 (Copy) - Leave on Locomotive

Unit: 8546

Date: 2-15-12

DEFECTS FOUND DURING INSPECTION

DEFECT <u>Trm #2 Booked for flash-over fault - signs of heated operation @ 6 o'clock brush holder - bolts missing from brushes on 12 o'clock brush holder -</u>	INSPECTED BY: 
REPAIR <u>cleaned heat residue from brush holder at 6 o'clock position removed checked bottom covers checked for missing brush bolts replaced missing brush bolts and closed in motor.</u>	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 _____ _____ _____	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: _____ _____

Description of Work Performed

Locomotive ID _____	Time Started _____	Time Finished _____	

Description of Work Performed

Locomotive ID

Time Started

Time Finished

Employee Signature _____ Form to fill out completely and Signature must be legible.

UNIT #	DESCRIPTION	PART #	QUANTITY	INSTALLED	AWP

LOCOMOTIVE											DATE			
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							L#1							0-on 0-1-17/64"
L#2							L#2							1-on 0-1-15/64"
L#3							L#3							2-on 0-1-7/32"
L#4							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 0-1-1/64"
														8-on 0-1-1/16"
R#1							R#1							FLANGE HEIGHT MEASUREMENT
R#2							R#2							0-on 0-1"
R#3							R#3							0-on 1-1-1/16"
R#4							R#4							0-on 2-1-1/8"
R#5							R#5							0-on 3-1-3/16"
R#6							R#6							0-on 4-1-1/4"
														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 6-1-31/64"

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

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 1/4"	MMA 1/4"

CONVERSION CHART FOR WHEEL DIAMETER

8= 37"	15= 37 7/8"	22= 38 1/4"	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 1/2"	25= 39 1/8"	32= 40"	39= 40 7/8"
12= 37 1/2"	19= 38 3/8"	26= 39 1/2"	33= 40 1/8"	40= 41"
13= 37 5/8"	20= 38 1/2"	27= 39 3/8"	34= 40 1/2"	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"	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"		

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 0-1-1/64"
 8-on 0-1-1/16"

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

9 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 8435981 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

SUPERVISORS SIGNATURE