

MO-3

Locomotive Release from Shop Form

To be completed on every engine released from the Shop

I have reviewed the work packet for locomotive 3603 on this date 11-21-12 and take no exception to applicable laws, rules and or MMA standards, policies and standards.

Charged Michiana  
Charged Eng Air Filter  
Charged Fuel Filter

} JP Bourde

Greased Cooling Fan  
Drive shaft  
Aux. blower

} JP Bourde

oil sample taken — JP Bourde



UNIT 3603

# Service Operations

DATE 11-21-12

## THROTTLE # INBOUND LOAD TESTS

Eng RPM (900)	EMD	_____	Lube Oil Pres	_____
Eng RPM (1050)	GE	_____	Water Temp	_____
Horsepower		<u>2290 JM/RS</u>	Overspeed Setting	_____
Volts (5.3)	B-23	_____	RACK SETTING	_____
Volts (7)	C-30	<u>5.4</u>		
Volts (720)	B-39	_____		


## THROTTLE #1 STALL TEST

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

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

<i>In-Bound Loadtest Electrical/Mechanical</i>		WORKED BY:
<b>ELECTRICAL</b>		
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		
<b>MECHANICAL</b>		
CLEAN AND SERVICE TOILET AND RESTROOM		<i>[Signature]</i>
DRAIN RETENTION TANK		<i>[Signature]</i>
PROPER LUBRICATION? FUEL LEAKS? CAM ROLLER ROTATION? ETC.		<i>[Signature]</i>
INSPECT FUEL SYSTEM HOSES AND PIPES FOR LEAKS		<i>[Signature]</i>
INSPECT COOLING SYSTEM:		<i>[Signature]</i>
A: CHECK HOSES AND PIPES FOR LEAKS		<i>[Signature]</i>
CHECK OPERATION OF ENGINE PROTECTION DEVICES:		
A. CRANKCASE PRESSURE		
VISUALLY INSPECT AIR COMPRESSOR FOR WATER, AIR OR OIL LEAKS		<i>[Signature]</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		
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**Revision Date: 8/18/2010  
Issued By: Tim Scalia

		WORKED BY:
	<b>Electrical in House</b>	
SERVICE THE BATTERIES AND COMPLETE JSP-010		<i>P. Capra</i>
VERIFY EVENT RECORDER IS WORKING		<i>P. Capra</i>
CHECK & RECORD THE DATE ON HEAD END DEVICE <u>4-18-12</u>		<i>P. Capra</i>
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		<i>P. Capra</i>
<b>TRACTION MOTORS AND UNDERFRAME</b>		
CHECK THE TRACTION MOTOR LEADS, VERIFY NO LEADS ARE RUBBING ON THE FRAME		
INSPECT TRACTION MOTOR COVERS AND ENSURE BOLTS ARE IN PLACE AND TIGHT		
CHECK M.U. RECEPTACLE PINS AND LIDS. MAKE NECESSARY REPAIRS		<i>P. Capra</i>
MAKE SURE M.U. CABLES DO NOT FOUL COUPLERS		<i>P. Capra</i>

## B-23, B-39, C-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
- 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

#### 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	3pkgs	6500
# 2 TRACTION MOTOR: OIL USED	cc	cc
# 3 TRACTION MOTOR: OIL USED	cc	cc
# 4 TRACTION MOTOR: OIL USED	cc	cc
# 5 TRACTION MOTOR: OIL USED	cc	cc
# 6 TRACTION MOTOR: OIL USED	cc	cc

- 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 FOR/AFT EASILY

**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.	DWC
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 KNOW. 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.	
<b>SEAT PART NUMBERS:</b> 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	✓
<b>INSPECT AND REPAIR AS REQUIRED:</b>	
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	

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	1250	1250	1250	1250		✓		NO
Section B						✓		
Section C	↓	↓	↓	↓		✓		↓
Section D	↓	↓	↓	↓		✓		↓

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	1250	1250	1250	1250		✓		NO
Section B						✓		
Section C	↓	↓	↓	↓		✓		↓
Section D	↓	↓	↓	↓		✓		↓

8 Battery Units	Specific Gravity				Water Added			Battery Replaced-Reason
	Cell 1	Cell 2	Cell 3	Cell 4	Yes	No	Yes	
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	34.4v	34.8v						
	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								

MONTREAL, MAINE, & ATLANTIC RAILWAY  
BRUSH RECORD

UNIT # 3603

EA 1171-12

MAIN ALTERNATOR

POS	1	2	3	4	B	W
9						
10						
11	OK					
12						
1						
2						

SIGNATURE *[Signature]*

NO. 1 TRACTION MOTOR

POS	1	2	3	B	W
3					
6	OK				
9					
12					

SIGNATURE *[Signature]*

NO. 2 TRACTION MOTOR

POS	1	2	3	B	W
3					
6	OK				
9					
12					

SIGNATURE *[Signature]*

AUXILIARY GENERATOR

POS	1	2	3	B	W
2					
4	OK				
8					
10					

SIGNATURE *[Signature]*

NO. 3 TRACTION MOTOR

POS	1	2	3	B	W
3					
6	OK				
9					
12					

SIGNATURE *[Signature]*

NO. 4 TRACTION MOTOR

POS	1	2	3	B	W
3					
6	OK				
9					
12					

SIGNATURE *[Signature]*

EXCITER GENERATOR

POS	1	2	3	B	W
2					
4	OK				
8					
10					

SIGNATURE *[Signature]*

NO. 5 TRACTION MOTOR

POS	1	2	3	B	W
3					
6	OK				
9					
12					

SIGNATURE *[Signature]*

NO. 6 TRACTION MOTOR

POS	1	2	3	B	W
3					
6	OK				
9					
12					

SIGNATURE *[Signature]*

DYNAMIC BRAKING BLOWER MOTORS

FRONT

POS	1	3	W
2			
4	OK		
8			
10			

SIGNATURE *[Signature]*

REAR

POS	1	B	W
2			
4	OK		
8			
10			

SIGNATURE *[Signature]*

FUEL PUMP MOTOR

POS	1	B	W
3			
9	OK		

SIGNATURE *[Signature]*



**WINTERIZATION**

	Signature
Winterization - All MMA Locomotives. (August - April)	
Inspect front and rear cab door seals replace, as needed (NO TAPE)	<i>[Signature]</i>
Inspect left and right side window seals replace as needed.	<i>[Signature]</i>
Inspect Electric cabinet door seals replace as needed.	
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.	<i>[Signature]</i>
Close Winter/ Summer doors if equipped.	<i>[Signature]</i>
Check Traction Motor cover gaskets, install as needed.	<i>[Signature]</i>
Check condition of Cab Door Hinges (Lubricate all Hinges)	<i>[Signature]</i>
Check condition of Cab Door Locks (Lubricate all Locks)	<i>[Signature]</i>
Inspect Cab Windows Slider Rail, Adjust Top Rail as needed, Lubricate with Silicone Grease.	
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.	



Montreal, Maine, & Atlantic Railway  
Locomotive

Unit 3603

Date 11-21-12

3 Month Federal Air Work

Signature

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

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

Montreal, Maine, & Atlantic Railway  
Mechanical Department

Unit Number. 3603

Date 11-21-12

1. Inspect traction motor wicks and report action

#1.	OK	OK	...
#2.			...
#3.			...
#4.			...
#5.			...
#6.			...

*J.W. Black*

New gaskets - J. Black  
Safety wire plugs - J. Black  
INSTALL Bolt locks - J. Black

<b>LOCOMOTIVE</b> <i>3003</i>										<b>DATE</b> <i>11-21-12</i>	
----------------------------------	--	--	--	--	--	--	--	--	--	--------------------------------	--

	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	0-19	00	20				L#1							<b>FLANGE THICKNESS MEASUREMENT</b> 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	0-19	00	24				L#2							
L#3	0-21	00	26				L#3							
L#4	0-19	00	28				L#4							
L#5	0-19	00	24				L#5							
L#6	0-20	00	28				L#6							
<b>OLD GAUGE</b>														
R#1	0-19	0-0	20				R#1							<b>FLANGE HEIGHT MEASUREMENT</b> 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#2	0-20	00	24				R#2							
R#3	0-20	00	26				R#3							
R#4	0-19	00	28				R#4							
R#5	0-18	00	24				R#5							
R#6	0-21	00	28				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

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 1/2"	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"

**LOCOMOTIVE RAIL CLEARANCE**

COUPLER HEIGHT		PILOT HEIGHT		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	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"	4 1/4		

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)

1/2" 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 3/4" 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 8455981 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

*[Signature]*

SUPERVISORS SIGNATURE

*[Signature]*

Unit: 3603

Date: 11-21-12

### DEFECTS FOUND DURING INSPECTION

DEFECT <u>Fire ext in Eng Room out dated</u>	INSPECTED BY: <u>JPL</u>
REPAIR <u>Replaced</u>	CORRECTED BY: <u>JPL</u>

DEFECT <u>Tub drain plugged in Eng Room</u>	INSPECTED BY: <u>JPL</u>
REPAIR <u>unplugged</u>	CORRECTED <u>JPL</u>

DEFECT <u>2 Running Lights out</u>	INSPECTED BY: <u>DKC</u>
REPAIR <u>Replace bulbs</u>	CORRECTED BY: <u>DKC</u>

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 \_\_\_\_\_







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

<i>Out Bound Loadtest Electrical/Mechanical</i>		WORKED BY:
<b>ELECTRICAL</b>		
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		
<b>MECHANICAL</b>		
CLEAN AND SERVICE TOILET AND RESTROOM		<i>M. B. White</i>
DRAIN RETENTION TANK		<i>M. B. White</i>
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, reservoir is 60 + o	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		



# Service Operations

UNIT \_\_\_\_\_

DATE \_\_\_\_\_

## 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)	_____	



## Quantum Desktop Playback

Manufacturer is QEI    Version # S45E  
Serial Number is 0208040020  
Customer is MMA

Data was removed on        - 07:48:35 on 11/21/12  
Last Downloaded on        - 07:14:00 on 08/20/12  
Battery was installed on    - 04/02/08  
Locomotive Number is      - 3603

Downloaded by    -    P. Conlogue  
Location         -    Derby  
Train            -    1234  
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



Quantum Desktop Playback  
Data Scan Report

Report Date: 11-21-2012  
Locomotive 3603

Data Removed on 11-21-12

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	Stop never reported. Low Idle never reported. Notch 1 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