



Locomotive Release from Shop Form

To be completed on every engine released from the Shop

I have reviewed the work packet for locomotive 23 on this date 8-2-10 and take no exception to applicable laws, rules and or MMA standards, policies and standards.

# Service Operations

UNIT \_\_\_\_\_

DATE \_\_\_\_\_

## THROTTLE 8 INBOUND LOAD TESTS

Eng RPM (900)	EMD	_____	Lube Oil Pres	_____
Eng RPM (1050)	GF	_____	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)	_____	NOT APPLICABLE TO B-23 AND C-30
AMPS	(300)	_____	
MGA	(1220)	_____	
Charging Rate	(70v)	_____	

## TL 24T

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

*NOT DONE*

## 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	<i>Lepton</i>
CHECK FOR LOW VOLTAGE GROUNDS (7 watt bulb)	<i>Lepton</i>
WHILE IN THROTTLE 3 LOAD TEST. CHECK FOR AC GROUNDS	<i>Lepton</i>
CHECK OPERATION OF:	<i>Lepton</i>
A. HEATING	<i>Lepton</i>
COMPLETE THE OUTBOUND LOAD TEST SHEETS	<i>Lepton</i>
GROUND RELAY-(TEST THREE TIMES TO VERY LOCK-OUT)(DYNAMIC & POWER)	<i>Lepton</i>
IF EQUIPPED, VERIFY THE OPERATION OF THE LDVR CAMERA	<i>Lepton</i>
<b>MECHANICAL</b>	
PROPER LUBRICATION? FUEL LEAKS? CAM ROLLER ROTATION? ETC.	<i>D. Black - K. Hussey</i>
INSPECT FUEL SYSTEM HOSES AND PIPES FOR LEAKS	<i>D. Black</i>
INSPECT COOLING SYSTEM:	<i>D. Black</i>
A: CHECK HOSES AND PIPES FOR LEAKS	<i>D. Black, K. Hussey</i>
CHECK OPERATION OF ENGINE PROTECTION DEVICES:	<i>D. Black</i>
A. CRANKCASE PRESSURE	<i>D. Black</i>
VISUALLY INSPECT AIR COMPRESSOR FOR WATER, AIR OR OIL LEAKS	<i>D. Black</i>
PERFORM MANUAL AIR BRAKE TEST	<i>D. Black, K. Hussey</i>
Verify Flow Gauge	NOTE: 120-
130 main reservoir is 64 + or - 3,	130-140 main
reservoir is 60 + o	
PERFORM PENALTY BRAKE TEST	
CHECK FOR CORRECT AIR PRESSURE SETTINGS:	<i>D. Black, K. Hussey</i>
A. MAIN RESERVOIR (130 - 140 PSI)	<i>K. Hussey</i>
B. BRAKE PIPE (90 PSI)	<i>H. Hussey</i>
C. EQUALIZING RESERVOIR (90 PSI)	<i>H. Hussey</i>
D. BRAKE CYLINDER (72 - 74 PSI)	<i>H. Hussey</i>
E. COMPRESSOR CONTROL (130 - 140 PSI +/- 5 PSI)	<i>H. Hussey</i>
CHECK FLUID LEVELS BEFORE LOADING:	<i>H. Hussey</i>
A: ENGINE OIL	<i>D. Black</i>
B: COOLING WATER	<i>D. Black</i>
C: AIR COMPRESSOR OIL	<i>K. Hussey</i>
TEST OPERATION OF THE FOLLOWING DEVICES:	<i>D. Black</i>
A. BELL	<i>D. Black</i>
B. SANDERS (FORWARD, REVERSE, EMERGENCY)	<i>D. Black</i>
C. RADIATOR SHUTTERS	<i>D. Black</i>

**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 _____	
CLOSELY INSPECT THE HEAD END DEVICE CONNECTOR. ENSURE IT IS TIGHTLY CONNECTED AND NOT CROSS THREADED	<i>[Signature]</i>
CHECK THE FOLLOWING EQUIPMENT AND THEIR RELATED GUARDS AND LENSES FOR PROPER OPERATION: <i>Aux. T.M. Gen -</i>	<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>
<b>TRACTION MOTORS AND UNDERFRAME</b>	
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 <i>NO SPARK</i>	<i>[Signature]</i>

B-23, B-39, 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

~~WASH~~ 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 *600 3 Bags*

# 2 TRACTION MOTOR: OIL USED *Bear grease "*

# 3 TRACTION MOTOR: OIL USED *Bear grease "*

# 4 TRACTION MOTOR: OIL USED *600 "*

# 5 TRACTION MOTOR: OIL USED

# 6 TRACTION MOTOR: OIL USED *X*

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

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

*Kim Hussey*

*Kim Hussey*

*Kim Hussey*

*D. Black*

*D. Black*

*D. Black*

*D. Black*

*D. Black*

*D. Black*

*D. Black*

*D. Black*

*D. Black*

*D. Black*

*D. Black*

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*D. Black*

*D. Black*

*D. Black*

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*D. Black*

*D. Black*

*D. Black*

*D. Black*

*D. Black*

*D. Black*

*D. Black*

*D. Black*

*D. Black*

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

### Out-Bound Loadtest Electrical/Mechanical

	WORKED BY:
<b>ELECTRICAL</b>	
VERIFY THE OPERATION OF THE GROUND RELAY	<i>W. Kelly</i> <i>W. Kelly</i> <i>W. Kelly</i> <i>W. Kelly</i> <i>W. Kelly</i>
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 <span style="margin-left: 100px;"><i>not Done</i></span>	<i>W. Kelly</i> <hr/> <i>W. Kelly</i>
GROUND RELAY-(TEST THREE TIMES TO VERY LOCK-OUT)(DYNAMIC & POWER)	
IF EQUIPPED, VERIFY THE OPERATION OF THE LDVR CAMERA	
<b>MECHANICAL</b>	
PROPER LUBRICATION? FUEL LEAKS? CAM ROLLER ROTATION? ETC.	<i>King Stupse</i> <i>P. Black</i> <i>D. Black</i> <i>W. Kelly</i> <i>W. Kelly</i> <i>D. Black</i>
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 + 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	

# Service Operations

## THROTTLE 8 OUTBOUND LOAD TESTS

UNIT \_\_\_\_\_

DATE \_\_\_\_\_

Eng RPM (900)	FMD	_____	Lube Oil Pres	_____
Eng RPM (1050)	GI	_____	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)	_____	<i>Not Done</i> NOT APPLICABLE TO B-23 AND C-30
AMPS	(300)	_____	
MGA	(1220)	_____	
Charging Rate	(70v)	_____	

TL 24T

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

*Have to load Box*

WINTERIZATION	
	Signature
Winterization – All MMA Locomotives. (August - April)	
Inspect front and rear cab door seals replace, as needed (NO TAPE)	
Inspect left and right side window seals replace as needed.	
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.	
Close Winter/ Summer doors if equipped.	
Check Traction Motor cover gaskets, install as needed.	
Check condition of Cab Door Hinges (Lubricate all Hinges)	
Check condition of Cab Door Locks (Lubricate all Locks)	
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.	

~~NOT DONE~~



Unit: 23

Date: 8-2-10

### DEFECTS FOUND DURING INSPECTION

DEFECT <u>C6 bad bench shoes</u>	INSPECTED BY: <u>D. Black</u>
REPAIR <u>change shoe</u>	CORRECTED BY: <u>D. Black</u>

DEFECT <u>R#1-2 pedestal liners broke</u>	INSPECTED BY: <u>D. Black</u>
REPAIR <u>replace pedestal liners</u>	CORRECTED BY: <u>D. Black</u>

DEFECT <u>Bad gauge on air compressor</u>	INSPECTED BY: <u>D. Black</u>
REPAIR <u>change gauge</u>	CORRECTED BY: <u>D. Black</u>

DEFECT <u>air compressor room lot of sand on floor</u>	INSPECTED BY: <u>D. Black</u>
REPAIR <u>clean compressor room</u>	CORRECTED BY: <u>D. Black</u>

DEFECT _____	INSPECTED BY: _____
REPAIR _____	CORRECTED BY: _____

## Description of Work Performed

Locomotive ID

23

Time Started

7:00

Time Finished

8:08

K. Hussey, D. Black

put sand and unit, did 34 months air work  
checked water treatment

changed a bad brake shoe

replace #1,2 pedestal liners

clean cab

wash engine room

wash outside of unit

# Description of Work Performed

Locomotive ID

Time Started

Time Finished

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



LOCOMOTIVE										DATE		
23										8-2-10		
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	4-22	0-0	2 8/16			L#1						0-on-0 - 1-17/64"
L#2	6-22	0-0	2 7/16			L#2						1-on-0 - 1-15/64"
L#3	4-22	0-0	2 7/16			L#3						2-on-0 - 1-7/32"
L#4	2-20	0-0	2 7/16			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"
R#1	2-22	0-0	2 8/16			R#1						6-on-0 - 1-1/32"
R#2	3-22	0-0	2 5/16			R#2						7-on-0 - 63/64"
R#3	5-22	0-0	2 1/4			R#3						8-on-0 - 15/16"
R#4	4-22	0-2	3 1/4			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

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"

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 1/2"

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"

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"	32	MAX 6" MIN 3"	4 3/4	FRA MIN 2 1/2"
MMA	MAX 34 1/2" MIN 32 1/2"	32 1/2	MAX 6" MIN 3 1/2"	4 1/2	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.  
 1/8" IS THE MAXIMUM VARIATION ALLOWED, IN WHEEL DIAMETER, BETWEEN ANY 2 WHEELS IN THE SAME TRUCK WITH SHIMS APPLIED  
 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:  
 9 TO 4 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 TPIUED NOTE: ON EMD LOCOMOTIVES USE ONLY ONE 1/4" SHIM EMD PART NUMBER 8455981 SHELLED TREAD AND FLAT SPOTS MUST BE TPIUED OR CHANGED WHEN FOUND ON PERIODIC OR UNSCHEDULED MAINTENANCE. KC'S CONDEMNING LIMITS FOR SHELLED TREAD ON A SERVICE TRACK ARE SHELLED SPOT 1" OR GREATER IN LENGTH OR ONE SHELLED SPOT WITH A DEPTH OF 1/4" OR MORE.

EMPLOYEES SIGNATURE

*D. Black*

SUPERVISORS SIGNATURE