

Signals Service Schedules / Standard Jobs

ESW-26-01

Applicability
ARTC Network Wide
SMS
Publication Requirement
Internal / External
Primary Source
ARTC Signals Service Schedules
Document Status

Version #	Date Reviewed	Prepared by	Reviewed by	Endorsed	Approved
1.6	May 25	Engineering Services	Stakeholders	Principal Signalling Engineer	Manager Engineering Services 30/05/2025

Amendment Record

Amendment Version #	Date Reviewed	Clause	Description of Amendment
1.0	15 Jan 19		First issue of single document to consolidate all Signals Service Schedules (Ellipse Standard Jobs).
1.1	24 Feb 20	Various	Added S05151, S05191, S05121 and S10021. Minor amendments/corrections throughout.
1.2	Jan 21	various	Added Unistar service schedule, M23A MKIII service schedule, aligned to ellipse and minor changes throughout.
1.3	25 Oct 21	various	Minor updates to align with Ellipse as required by Interstate

© Australian Rail Track Corporation Limited (ARTC)

Disclaimer

This document has been prepared by ARTC for internal use and may not be relied on by any other party without ARTC's prior written consent. Use of this document shall be subject to the terms of the relevant contract with ARTC.

ARTC and its employees shall have no liability to unauthorised users of the information for any loss, damage, cost or expense incurred or arising by reason of an unauthorised user using or relying upon the information in this document, whether caused by error, negligence, omission or misrepresentation in this document.

This document is uncontrolled when printed.

Authorised users of this document should visit ARTC's intranet or extranet (www.artc.com.au) to access the latest version of this document.

ARTC

ESW-26-01

Table of Contents

			business unit and as per audit findings
1.4	12 Oct 22	Various	Added missing service schedules, and other minor updates as identified during the stakeholder consultation.
1.5	07 Mar 24	Various	Included the service schedule for ground-based inspection of LED Signal, minor update to enclosure service schedule (S12011), clarified bell timer inspection, aligned with TMP and other minor changes during the review.
1.6	May 25	Various	Aligned the service schedules of HXP3 and XP4 with other predictors. Noticeboard signage inspection reworded for clarity. Service schedule for existing Epic III track circuits. Separate standard jobs for each crossing type. Other minor editorial changes.



Table of Contents

Table	of Co	untents	.3
1	Intro	duction	.4
	1.1	Purpose	.4
	1.2	Scope	.4
	1.3	Document Owner	.4
	1.4	Responsibilities	.4
	1.5	Parent Procedure	.4
	1.6	Definitions	.4
2	Table	of Service Schedules / Standard Jobs	.5

1 Introduction

1.1 Purpose

The purpose of this work instruction is to consolidate multiple individual Signals Service Schedules (Ellipse Standard Jobs) into one document.

1.2 Scope

This work instruction is a listing of Signals Service Schedules / Standard Jobs which cover the actions required when maintaining a specific item of equipment.

1.3 Document Owner

Manager Engineering Services is the Document Owner. For any query, initial contact to be made at standards@artc.com.au.

1.4 Responsibilities

Signalling standards is responsible for the application of new identifications for new type or classes of equipment. This would normally be undertaken at the time of type approval.

The Signal Maintenance Engineers are responsible for reporting the requirement for new service schedules to the Manager Signalling Standards.

1.5 Parent Procedure

This work instruction supports the parent procedure:

• ESS-26-01 Signals Technical Maintenance Plan.

1.6 Definitions

Definitions relevant to this work instruction are defined in the parent procedure, ESS-26-01 Signals Technical Maintenance Plan.

2 Table of Service Schedules / Standard Jobs

The detailed service schedule / standard job can be accessed by clicking on the standard job number in the table below:

Equipment Class	Equipment Class Description	EGI Code	EGI Description	Standard Job
	Decemption			S01002
SI	Signal SITE	SI0010	Signal Site	<u>S01001</u>
				<u>S01003</u>
CS	Control System	CS0101	Control System Operator Local panel	<u>S01011</u>
		CS0111	Control System Territory phoenix	<u>S01111</u>
				<u>S01112</u>
		CS0112	Control System Territory PTOS	<u>S01121</u>
		CS0113	Control System Territory TMACs	<u>S01131</u>
		CS0114	Control System Territory ATMS	<u>S01141</u>
				<u>S01142</u>
		CS0121	Control System Equipment Monitor 4 Site	N/A
		CS0122	Control System Equipment Monitor Points	N/A
		CS0123	Control System Equipment Monitor WAM	N/A
		CS0124	Control System Equipment Monitor Maintenance Terminals	N/A
ТМ	Telemetry	TM0201	Telemetry FDM	<u>S02011</u>
		TM0202	Telemetry iMAC	<u>S02021</u>
		TM0203	Telemetry Kingfisher 2	<u>S02031</u>
		TM0204	Telemetry Moscad	<u>S02041</u>
		TM0205	Telemetry ICAPs	<u>S02051</u>
		TM0206	Telemetry S2 TDM	<u>S02061</u>
LX	Level Crossings	LX0301	Level Crossing Monitored RX-5 Lights	<u>S03011</u>
				<u>S03012</u>
				<u>S03013</u>
				<u>S03014</u>
		LX0302	Level Crossing Monitored RX-5 Lights &	<u>S03011</u>
			Booms	<u>S03022</u>
				<u>S03023</u>
				<u>S03014</u>
		LX0303	Pedestrian Crossing Monitored RX-12	<u>S03011</u>



Г

Equipment Class	Equipment Class Description	EGI Code	EGI Description	Standard Job
			Lights	<u>S03032</u>
				<u>S03033</u>
				<u>S03014</u>
		LX0304	Pedestrian Crossing Monitored RX-12	<u>S03011</u>
			Lights & Swing Gates	<u>S03042</u>
				<u>S03043</u>
				<u>S03014</u>
				<u>S03015</u>
		LX0305	Level Crossing Monitored Supplementary	<u>S03011</u>
			Lights	<u>S03012</u>
				<u>S03013</u>
				<u>S03014</u>
		LX0311	Level Crossing Not Monitored RX-5 Lights	<u>S03011</u>
				<u>S03112</u>
				<u>S03113</u>
			Level Crossing Not Monitored RX-5 Lights &	<u>S03014</u>
		LX0312		<u>S03011</u>
			Booms	<u>S03122</u>
				<u>S03123</u>
				<u>S03014</u>
		LX0313	Pedestrian Crossing Not Monitored RX-12 Lights	<u>S03011</u>
				<u>S03132</u>
				<u>S03133</u>
				<u>S03014</u>
		LX0314	Pedestrian Crossing Not Monitored RX-12	<u>S03011</u>
			Lights & Swing Gates	<u>S03142</u>
				<u>S03143</u>
				<u>S03014</u>
				<u>S03015</u>
SG	Signal	SG0401	Signal Incandescent	<u>S04011</u>
		SG0402	Signal LED	<u>S04021</u>
				<u>S04022</u>
		SG0411	Signal Mechanical Semaphore	<u>S04111</u>
				<u>S04113</u>

Α	R	Т	С

Equipment Class	Equipment Class Description	EGI Code	EGI Description	Standard Job
NB	Notice Board	NB0001	Noticeboard Mandatory or Hazard	<u>S04211</u>
		NB0002	Noticeboard Advisory	<u>S04211</u>
		NB0003	Noticeboard Level Crossing	<u>S04211</u>
IN	Interlocking	IN0503	Interlocking Relay Miniature Plug in/Large	<u>S05031</u>
			Plug in	<u>S05032</u>
		IN0511	Interlocking CBI Microlok 2	<u>SX5111</u>
				<u>S17000</u>
		IN0512	Interlocking CBI HIMA	<u>S05121</u>
				<u>S17000</u>
		IN0513	Interlocking CBI Westrace 1	<u>S05131</u>
				<u>S17000</u>
		IN0514	Interlocking CBI Westrace 2	<u>S05141</u>
				<u>S17000</u>
		IN0515	Interlocking CBI ElectrologIXS	<u>S05151</u>
				<u>S17000</u>
		IN0516	Interlocking CBI Westlock	<u>S05161</u>
				<u>S05162</u>
				<u>S17000</u>
		IN0517	Interlocking CBI VHLC	<u>S05171</u>
				<u>S17000</u>
		IN0518	Interlocking CBI EC4	<u>S05181</u>
				<u>S17000</u>
		IN0519	Interlocking CBI EC5	<u>S05191</u>
				<u>S17000</u>
		IN0522	Interlocking CBI HD Link	<u>S05221</u>
				<u>S17000</u>
		IN0523	Interlocking CBI SSI	<u>S05231</u>
				<u>S17000</u>
		IN0531	Int. Mech. Cam and Tappet Main Frame	<u>S05311</u>
				<u>S05312</u>
				<u>S05313</u>
				<u>S05314</u>
		IN0532	Int. Mech. Ground Frame	<u>S05321</u>
				<u>S05322</u>



Equipment Class	Equipment Class Description	EGI Code	EGI Description	Standard Job
				<u>S05323</u>
		IN0533	Int. Mech. Rel.	<u>S05331</u>
				<u>S05332</u>
PT	Points	PT0601	Points Combined M Series	<u>S0601L</u>
				<u>S06011</u>
				<u>S06012</u>
				<u>S0601B</u>
		PT0602	Points Combined HW Series	<u>S0601L</u>
				<u>S06021</u>
				<u>S06022</u>
				<u>S0601B</u>
		PT0603	Points Combined KA Series	<u>S0601L</u>
				<u>S06031</u>
				<u>S06032</u>
				<u>S0601B</u>
		PT0604	Points Combined M III Series	<u>S0601L</u>
				<u>S06041</u>
				<u>S06042</u>
				<u>S0601B</u>
		PT0611	Points Derailer M Series	<u>S06111</u>
				<u>S06112</u>
		PT0612	Points Derailer KA Series	<u>S06121</u>
				<u>S06122</u>
		PT0613	Points Derailer 84M Series	<u>S06131</u>
				<u>S06132</u>
		PT0621	Points Clamp lock Hydraulic	<u>S0601L</u>
				<u>S06211</u>
				<u>S06212</u>
				<u>S0601B</u>
		PT0622	Points Clamp lock Vossloh Series	<u>S0601L</u>
				<u>S06221</u>
				<u>S06222</u>
				<u>S0601B</u>
		PT0631	Points Claw lock 84M Series	<u>S0601L</u>



Equipment Class	Equipment Class Description	EGI Code	EGI Description	Standard Job
				<u>S06311</u>
				<u>S06312</u>
				<u>S0601B</u>
		PT0632	Points Claw lock S700 Series	<u>S0601L</u>
				<u>S06321</u>
				<u>S06322</u>
				<u>S0601B</u>
		PT0641	Points Spherolok 84M Series	<u>S0601L</u>
				<u>S06411</u>
				<u>S06412</u>
				<u>S0601B</u>
		PT0642	Points Spherolok S700 Series	<u>S0601L</u>
				<u>S06421</u>
				<u>S06422</u>
				<u>S0601B</u>
		PT0651	Points Mechanical	<u>S0601L</u>
				<u>S06511</u>
				<u>S0601B</u>
		PT0652	Points Mechanical Solar Hydra Series	<u>S0601L</u>
				<u>S06521</u>
				<u>S0601B</u>
		PT0653	Points Mechanical Derailer	<u>S06531</u>
				<u>S0601B</u>
		PT0654	Points Mechanical GRS	<u>S06541</u>
				<u>S0601B</u>
		PT0661	Points Releasing Switch	<u>S06611</u>
				<u>S06612</u>
				<u>S06613</u>
				<u>S0601B</u>
		PT0662	Points Releasing Switch Fortress	<u>S06621</u>
				<u>S06622</u>
				<u>S0601B</u>
		PT0663	Points Switch lock Westinghouse	<u>S06631</u>
				<u>S06632</u>



Α	R	Т	С

Equipment Class	Equipment Class Description	EGI Code	EGI Description	Standard Job
				<u>S0601B</u>
		PT0664	Points Switch lock Westinghouse HLM	<u>S06641</u>
				<u>S06642</u>
				<u>S0601B</u>
		PT0671	Points Unistar HR	<u>_S06711</u>
				<u>S06712</u>
				<u>S0601B</u>
TD	Train Detection	TD0701	Train Detection DC Standard	<u>S07011</u>
				<u>S07012</u>
		TD0702	Train Detection DC Shelf Type	<u>S07011</u>
				<u>S07012</u>
				<u>S05013</u>
		TD0703	Train Detection Westrak / TD4	<u>S07051</u>
				<u>S07052</u>
		TD0711	Train Detection HVI	<u>SX7111</u>
				<u>SX7112</u>
		TD0721	Train Detection AC	<u>S07211</u>
				<u>S07212</u>
				<u>S05013</u>
		TD0731	Train Detection Frequency CSEE	<u>SX7311</u>
				<u>SX7312</u>
		TD0732	Train Detection Frequency ML TI21 Analog	<u>SX7321</u>
				<u>SX7322</u>
		TD0733	Train Detection Frequency ML TI21 Digital	<u>S07331</u>
				<u>SX7332</u>
		TD0734	Train Detection Frequency PSO III	<u>S07341</u>
				<u>S07342</u>
		TD0735	Train Detection Frequency PSO 4000	<u>SX7351</u>
				<u>SX7352</u>
		TD0736	Train Detection Frequency SMTC	<u>SX7361</u>
				<u>S07362</u>
		TD0737	Train Detection Frequency IPITC	<u>SX7371</u>
				<u>SX7372</u>
		TD0738	Train Detection Frequency AFTAC Model 2	<u>S07381</u>

Α	R	Т	С

Equipment Class	Equipment Class Description	EGI Code	EGI Description	Standard Job
				<u>SX7382</u>
		TD0739	Train Detection Frequency FS2500	<u>SX7391</u>
				<u>SX7392</u>
		TD0740	Train Detection Frequency Epic III	<u>SX7401</u>
				<u>SX7402</u>
		TD0741	Train Detection Axle Counter ACS2000	<u>SX7411</u>
		TD0742	Train Detection Axle Counter FADC	<u>SX7421</u>
		TD0751	Train Detection Treadle Mechanical	<u>SX7511</u>
				<u>SX7512</u>
		TD0761	Train Detection Coded Microtrax	<u>SX7611</u>
				<u>SX7612</u>
		TD0762	Train Detection Coded Electrode 4	<u>SX7621</u>
				<u>S07622</u>
		TD0763	Train Detection Coded Electrode 5	<u>S07631</u>
				<u>S07632</u>
		TD0664	Train Detection Coded GEO	<u>S07641</u>
				<u>S07642</u>
		TD0771	Train Detection Predictor (non MON) GCP 3000	<u>S07711</u>
				<u>S07712</u>
				<u>S17000</u>
	TD0772	Train Detection Predictor GCP 3000	<u>S07711</u>	
				<u>S07712</u>
				<u>S17000</u>
		TD0773	Train Detection Predictor (non MON) GCP 4000	<u>S07721</u>
				<u>S07722</u>
				<u>S17000</u>
		TD0774	Track Circuit Predictor GCP 4000	<u>S07721</u>
				<u>S07722</u>
				<u>S17000</u>
		TD0775	Train Detection Predictor HXP-3	<u>S07751</u>
				<u>S07752</u>
				<u>S17000</u>
		TD0776	Train Detection Predictor XP-4	<u>S07761</u>
				<u>S07762</u>



Equipment Class	Equipment Class Description	EGI Code	EGI Description	Standard Job
				<u>S17000</u>
		TD0777	Train Detection Predictor (Non Mon) HXP-3	<u>S07751</u>
				<u>S07752</u>
				<u>S17000</u>
		TD0778	Train Detection Predictor (Non Mon) XP-4	<u>S07761</u>
				<u>S07762</u>
				<u>S17000</u>
		TD0781	Train Detection Gauge Detector TURCK	<u>S07811</u>
		TD0791	Train Detection TPWS	<u>SX7911</u>
				<u>SX7912</u>
ТА	Train Authority	TA0801	TA SysToken Block Train Staff	<u>S08011</u>
	Systems (TA Sys.)		ATMS - AMS Power Supply AC	<u>S08012</u>
	5,	TA0802	ATMS - AMS	<u>S08021</u>
				<u>S08022</u>
				<u>S08023</u>
PO F	Power Supply	PO0901	Power Supply AC	<u>S09011</u>
		PO0902	Power Supply AC Transformed	<u>S09021</u>
				<u>S09022</u>
		PO0911	Power Supply Motor Generator	<u>S09111</u>
				<u>SX9112</u>
		PO0921	Power Supply UPS	<u>S09211</u>
		PO0931	Power Supply DC Batt Backup LX No Mon	<u>S09311</u>
				<u>S09312</u>
		PO0932	Power Supply DC Battery Backup	<u>S09321</u>
				<u>S09312</u>
		PO0933	Power Supply DC Batt Backup LX Mon	<u>S09311</u>
				<u>S09312</u>
		PO0934	Power Supply DC Rectified	<u>S09341</u>
				<u>S09342</u>
		PO0941	Power Supply Solar System	<u>S09411</u>
		PO0951	Power Supply Wind Turbine	<u>S09511</u>
СМ	Communications	CM1001	Comms Vital Radio	<u>S10011</u>
				<u>S10012</u>
		CM1002	Comms Radio Satellite	<u>S10021</u>

Α	R	Т	С

Equipment Class	Equipment Class Description	EGI Code	EGI Description	Standard Job
		CM1003	Comms Non-Vital Radio	S10031
		CM1021	Comms System	<u>S10211</u>
LR	Cable & Line	LR1101	Signalling Cable	<u>S11011</u>
	Route	LR1111	Cable Route	<u>S11111</u>
		LR1121	Aerial & Pole Route	<u>S11211</u>
				<u>S11212</u>
		LR1122	Pole Inspection	<u>S11212</u>
EN	Equipment Enclosures	EN1201	Equipment Enclosures	<u>S12011</u>
ТВ	Trainborne	TB1301	Trainborne ATMS	<u>S13011</u>
EC	Equipment	ECSG01	Signals Kit - Test Instruments	ECSG02
	Calibration			ECSG03
			Maintenance Gauges	<u>S15021</u>
WS	Wayside	WS1601	WSI Slip Detector	<u>S16011</u>
		WS1602	WSI Rockfall Detector	<u>S16021</u>
		WS1603	WSI Weather Station	<u>S16031</u>
		WS1604	Stream Flow Detector	<u>S16041</u>
		WS1605	WSI Pump Station	<u>S16051</u>
		WS1606	WSI Camera	<u>S16061</u>
		WS1611	WSR Hot Box Detector (HBD)	<u>S16111</u>
				<u>S16112</u>
		WS1612	WSR Bearing Acoustic Monitor - (RailBAM)	<u>S16121</u>
		WS1613	WS1613 WSR Dragging Equipment Detector (DED)	
				<u>S16132</u>
		WS1614	WSR Wheel Condition Monitor (WCM)	<u>S16141</u>
		WS1615	WSR Wheel Profile Monitor	<u>S16151</u>
		WS1616	WSR Wheel Noise Detector (Rail SQAD)	<u>S16161</u>
		WS1617	WSR Bogie Monitor (TBOGI)	<u>S16171</u>
		WS1618	WSR Weigh Bridge	<u>S16181</u>
		WS1619	WSR Height Detector	<u>S16191</u>
RW	Right of Way	RW0001	Engineer Inspection	<u>S17011</u>
		RW0001	Signal Sighting -Front of Rail vehicle	<u>S17012</u>



SIGNAL SITE 90 DAY MAINTENANCE

SERVICE SCHEDULE / STANDARD JOB S01002

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

NOTE :

- 1. THE SIGNAL SITE IS A GEOGRAPHICAL AREA IN WHICH MULTIPLE EQUIPMENT IS GROUPED IN 1 WORK ORDER
- 2. IT IS IMPORTANT TO NOTE THE SIGNAL SITE DOES NOT GROUP EVERY SERVICE SCHEDULE INTO THIS SERVICE. ONLY THE 90 DAY FREQUENCY SJS AND ONLY THOSE FOR THE EGIS LISTED BELOW

MAINTENANCE ACTION:

- 3. REVIEW EQUIPMENT FOR THE SIGNAL SITE AND IDENTIFY ANY MISSING EQUIPMENT
- 4. PERFORM THE 90 DAY FREQUECNY SERVICE SCHEDULES / STANDRD JOBS FOR EACH OF THE EGIS / EQUIPMENT BELOW WHERE APPLICABLE
 - PO0911 POWER SUPPLY MOTOR GENERATOR
 - PO0951 POWER SUPPLY WIND TURBINE
 - SG0401 SIGNALS INCANDESCENT
 - TD0702 TD DC SHELF TYPE
 - TD0721 TRAIN DETECTION AC
 - TD0751 TRAIN DETECTION TREADLE
- 5. FOR EACH SERVICE SCHEDULE CONFIRM THE SERVICE SCHEDULE WAS CORRECT FOR THE EQUIPMENT. IF NOT IDENTIFY THE REASON.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE COMPLETED IMMEDIATELY OR RECORDED IN THE ELLIPSE AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNAL SITE 180 DAY MAINTENANCE

SERVICE SCHEDULE / STANDARD JOB S01001

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

NOTE :

- 1. THE SIGNAL SITE IS A GEOGRAPHICAL AREA IN WHICH MULTIPLE EQUIPMENT IS GROUPED IN 1 WORK ORDER
- 2. IT IS IMPORTANT TO NOTE THE SIGNAL SITE DOES NOT GROUP EVERY SERVICE SCHEDULE INTO THIS SERVICE. ONLY THE 180 DAY FREQUENCY SJS AND ONLY THOSE FOR THE EGIS LISTED BELOW AS WELL AS THOSE LISTED IN THE 90 DAY SERVICE SCHEDULE S01001 ARE TO BE COMPLETED IN CONJUNCTION WITH THIS SERVICE

MAINTENANCE ACTION:

- 3. REVIEW EQUIPMENT FOR THE SIGNAL SITE AND IDENTIFY ANY MISSING EQUIPMENT
- 4. PERFORM THE 180 DAY FREQUECNY SERVICE SCHEDULES / STANDRD JOBS FOR EACH OF THE EGIS / EQUIPMENT BELOW WHERE APPLICABLE
 - CM1001 COMMS VITAL RADIO
 - CS0101 CONTROL SYSTEM OPERATOR LOCAL PANEL
 - EN1201 EQUIPMENT ENCLOSURES
 - IN0511 INT. CBI MICROLOK 2
 - IN0512 INT. CBI HIMA
 - IN0513 INT. CBI WESTRACE 1
 - IN0514 INT. CBI WESTRACE 2
 - IN0515 INT. CBI ELECTROLOGIC
 - IN0517 INT. CBI VHLC
 - IN0518 INT. CBI EC4
 - IN0519 INT. CBI EC5
 - IN0522 INT. CBI HD LINK
 - IN0523 INT. CBI SSI
 - PO0902 POWER SUPPLY AC TRANSFORMED
 - PO0921 POWER SUPPLY UPS
 - PO0932 POWER SUPPLY DC BATTERY BACKUP
 - PO0934 POWER SUPPLY DC RECTIFIED
 - PO0941 POWER SUPPLY SOLAR BATTERY
 - SG0402 SIGNALS LED
 - SG0421 SIGNALS NOTICEBOARD SIGNS

ESW-26-01

ARTC

- TD0701 TRAIN DETECTION DC STANDARD
- TD0703 TRAIN DETECTION WESTRACK/TD4
- TD0711 TRAIN DETECTION HVI
- TD0731 TRAIN DETECTION FREQUENCY CSEE
- TD0732 TRAIN DETECTIONFREQUENCY MLTI21 ANALOG
- TD0733 TRAIN DETECTIONFREQUENCY MLT121 DIGITAL
- TD0734 TRAIN DETECTION FREQUENCY PSO III
- TD0735 TRAIN DETECTION FREQUENCY PSO 4000
- TD0736 TRAIN DETECTION FREQUENCY SMTC
- TD0737 TRAIN DETECTION FREQUENCY IPITC
- TD0738 TRAIN DETECTION FREQUENCY AFTAC
- TD0739 TRAIN DETECTION FREQUENCY FS2500
 TD0761 TRAIN DETECTION CODED MICROSCOPY
- TD0761 TRAIN DETECTION CODED MICROTRAX
 TD0762 TRAIN DETECTION CODED SI SOTOCOO
- TD0762 TRAIN DETECTION CODED ELECTROCODE 4
 TD0762 TRAIN DETECTION CODED ELECTROCODE 4
- TD0763 TRAIN DETECTION CODED ELECTROCODE 5
 TD0764 TRAIN DETECTION CODED 250
- TD0764 TRAIN DETECTION CODED GEO
 TD0770 TRAIN DETECTION CODED GEO
- TD0772 TRAIN DETECTION PREDICTOR GCP 3000
- TD0774 TRACK CIRCUIT PREDICTOR GCP 4000
- TD0775 TRACK CIRCUIT PREDICTOR HXP3
- TD0776 TRACK CIRCUIT PREDICTOR XP4
- TM0201 TELEMETRY FDM
- TM0202 TELEMETRY IMAC
- TM0203 TELEMETRY KINGFISHER
- TM0204 TELEMETRY MOSCAD
- TM0205 TELEMETRY ICAPS
- WS1601 WSI SLIP DETECTOR
- WS1602 WSI ROCKFALL DETECTOR
- WS1606 WSI CAMERA
- WS1613 WSR D.E.D.
- WS1619 WSR HEIGHT DETECTOR
- 5. FOR EACH SERVICE SCHEDULE CONFIRM THE SERVICE SCHEDULE WAS CORRECT FOR THE EQU IPMENT. IF NOT IDENTIFY THE REASON.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE COMPLETED IMMEDIATELY OR RECORDED IN THE ELLIPSE AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNAL SITE 360 DAY MAINTENANCE

SERVICE SCHEDULE / STANDARD JOB S01003

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

NOTE :

- 1. THE SIGNAL SITE IS A GEOGRAPHICAL AREA IN WHICH MULTIPLE EQUIPMENT IS GROUPED IN 1 WORK ORDER
- 2. IT IS IMPORTANT TO NOTE THE SIGNAL SITE DOES NOT GROUP EVERY SERVICE SCHEDULE INTO THIS SERVICE. ONLY THE 360 DAY FREQUENCY SJS AND ONLY THOSE FOR THE EGIS LISTED BELOW. AS WELL AS THOSE LISTED IN THE 90 & 180 DAY SERVICE SCHEDULE S01001 & S01002 ARE TO BE COMPLETED IN CONJUNCTION WITH THIS SERVICE

MAINTENANCE ACTION:

- 3. REVIEW EQUIPMENT FOR THE SIGNAL SITE AND IDENTIFY ANY MISSING EQUIPMENT
- 4. PERFORM THE 360 DAY FREQUECNY SERVICE SCHEDULES / STANDRD JOBS FOR EACH OF THE EGIS / EQUIPMENT BELOW WHERE APPLICABLE
 - CM1001 COMMS VITAL RADIO
 - PO0901 POWER SUPPLY AC
 - PO0902 POWER SUPPLY AC TRANSFORMED
 - PO0911 POWER SUPPLY MOTOR GENERATOR
 - PO0932 POWER SUPPLY DC BATTERY BACKUP
 - PO0934 POWER SUPPLY DC RECTIFIED
 - TD0721 TRAIN DETECTION AC
- 5. FOR EACH SERVICE SCHEDULE CONFIRM THE SERVICE SCHEDULE WAS CORRECT FOR THE EQUIPMENT. IF NOT IDENTIFY THE REASON.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE COMPLETED IMMEDIATELY OR RECORDED IN THE ELLIPSE AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS CONTROL SYSTEM OPERATOR LOCAL PANEL SERVICE SCHEDULE / STANDARD JOB S01011

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

- 1. VISUAL INSPECTION OF THE LOCAL CONTROL PANEL
- 2. VISUAL INSPECTION OF LED AND BUTTONS TO ENSURE THAT THERE ARE NO DAMAGE.
- 3. PERFORM FUNCTIONAL SAMPLE CHECK OF LOCAL CONTROL PANEL

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



CONTROL SYSTEM TERRITORY PHOENIX

SERVICE SCHEDULE / STANDARD JOB S01111

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

DPU

- 1. REVIEW HEALTH STATUS OF ONLINE AND OFFLINE DPU FOR ALL DATABASES
- 2. SWAP ONLINE AND OFFLINE DPU'S
- 3. CONFIRM SYSTEM IS OPERATIONAL

CODE SERVER

- 4. REVIEW HEALTH STATUS OF ONLINE AND OFFLINE CODE SERVER FOR ALL DATABASES
- 5. SWAP ONLINE AND OFFLINE CODE SERVER'S
- 6. CONFIRM SYSTEM IS OPERATIONAL

DIVERSITY LINKS

- 7. INITIATE ALL DIVERSITY LINKS FOR ALL TELEMETRY SITES AS PER CTC PROCEDURES
- 8. CHECK THAT ALL LINKS ESTABLISH ON THE DIVERSITY LINK
- 9. MONITOR THE OPERATION OF TELEMETRY ON THE DIVERSITY LINK FOR A PERIOD NOT LESS THAN 2 HOURS
- 10. RESTORE ALL SITES TO THEIR PRIMARY COMMUNICATION BEARERS
- 11. CONFIRM SITES RETURN TO PRIMARY BEARERS AND BACKUP LINKS ARE DISCONNECTED AS REQUIRED
- 12. REPORT ANY DIVERSITY LINKS THAT FAIL TO FUNCTION CORRECTLY TO THE RELEVANT COMMUNICATION BODY

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



CONTROL SYSTEM TERRITORY PHOENIX

SERVICE SCHEDULE / STANDARD JOB S01112

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

DPU

- 1. REVIEW HEALTH STATUS OF ONLINE AND OFFLINE DPU FOR ALL DATABASES
- 2. SWAP ONLINE AND OFFLINE DPU'S
- 3. CONFIRM SYSTEM IS OPERATIONAL

CODE SERVER

- 4. REVIEW HEALTH STATUS OF ONLINE AND OFFLINE CODE SERVER FOR ALL DATABASES
- 5. SWAP ONLINE AND OFFLINE CODE SERVER'S
- 6. CONFIRM SYSTEM IS OPERATIONAL

DIVERSITY LINKS

- 7. INITIATE ALL DIVERSITY LINKS FOR ALL TELEMETRY SITES AS PER CTC PROCEDURES
- 8. CHECK THAT ALL LINKS ESTABLISH ON THE DIVERSITY LINK
- 9. MONITOR THE OPERATION OF TELEMETRY ON THE DIVERSITY LINK FOR A PERIOD NOT LESS THAN 2 HOURS
- 10. RESTORE ALL SITES TO THEIR PRIMARY COMMUNICATION BEARERS
- 11. CONFIRM SITES RETURN TO PRIMARY BEARERS AND BACKUP LINKS ARE DISCONNECTED AS REQUIRED
- 12. REPORT ANY DIVERSITY LINKS THAT FAIL TO FUNCTION CORRECTLY TO THE RELEVANT COMMUNICATION BODY

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS CONTROL SYSTEM TERRITORY PTOS

SERVICE SCHEDULE / STANDARD JOB S01121

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE: PERFORM S01111 WITH THIS SERVICE

DPU

- 1. PERFORM A CONTROLLED SHUTDOWN AND RESTART OF THE OFFLINE DPU
- 2. CHECK THAT THE OFFLINE DPU HAS COMPLETED START UP ACTIONS AND SYNCHRONISED WITH THE ONLINE DPU
- 3. SWAP THE ONLINE AND OFFLINE DPU'S
- 4. CONFIRM THE SYSTEM IS OPERATIONAL
- 5. PERFORM A CONTROLLED SHUT DOWN AND RESTART OF THE NOW OFFLINE DPU
- 6. CHECK THAT THE RESTARTED DPU HAS COMPLETED START UP ACTIONS AND SYNCHRONISED WITH THE ONLINE DPU
- 7. CONFIRM THE SYSTEM IS OPERATIONAL

CODE SERVER

- 8. PERFORM A CONTROLLED SHUTDOWN AND RESTART OF THE OFFLINE CODE SERVER
- 9. CHECK THAT THE OFFLINE DPU HAS COMPLETED STARTUP ACTIONS AND SYNCHRONISED WITH THE ONLINE CODE SERVER
- 10. SWAP THE ONLINE AND OFFLINE CODE SERVER'S
- 11. CONFIRM THE SYSTEM IS OPERATIONAL.
- 12. PERFORM A CONTROLLED SHUTDOWN AND RESTART OF THE NOW OFFLINE CODE SERVER
- 13. CHECK THAT THE RESTARTED CODE SERVER HAS COMPLETED STARTUP ACTIONS AND SYNCHRONISED WITH THE ONLINE CODE SERVER
- 14. CONFIRM THE SYSTEM IS OPERATIONAL



- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



CONTROL SYSTEM TERRITORY TMACS

SERVICE SCHEDULE / STANDARD JOB S01131

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 1. MAINTENANCE ACTIONS ARE BEING PERFORMED BY CONTRACTOR AS PER MASTER SERVICES AGREEMENT BETWEEN ARTC AND 4TEL PTY LTD. MAINTENANCE CONTRACT ARE BEING MANAGED BY OPERATIONAL TECHNOLOGY GROUP.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



CONTROL SYSTEM TERRITORY ATMS

SERVICE SCHEDULE / STANDARD JOB S01141

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

- 1. FOLLOW THE INSTRUCTIONS IN ATMS NCC MAINTENANCE MANUAL UNDER SECTION 8.1.3.1 ARCHIVE AND PURGE OF TCS LOG FILES
- 2. FOLLOW THE INSTRUCTIONS IN ATMS NCC MAINTENANCE MANUAL UNDER SECTION 8.1.3.2 ARCHIVE AMS LOG FILES
- 3. FOLLOW THE INSTRUCTIONS IN ATMS NCC MAINTENANCE MANUAL UNDER SECTION 8.1.3.3 ARCHIVE Trainborne LOG FILES

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



CONTROL SYSTEM TERRITORY ATMS

SERVICE SCHEDULE / STANDARD JOB S01142

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

1. FOLLOW THE INSTRUCTIONS IN ATMS NCC MAINTENANCE MANUAL UNDER SECTION 8.1.5 TCS EQUIPMENT MAINTENANCE

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICALMAINTENANCE PLANS TELEMETRY F.D.M

SERVICE SCHEDULE / STANDARD JOB S02011

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

F.D.M

- 1. INSPECT EQUIPMENT FOR ENVIRONMENTAL CONTAMINATION, CLEAN AS REQUIRED
- 2. REPLACE COMPONENTS ON FAILURE

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TELEMETRY OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TELEMETRY iMAC

SERVICE SCHEDULE / STANDARD JOB S02021

PREPARATION ACTION

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION

iMAC

- 1. INSPECT EQUIPMENT FOR ENVIRONMENTAL CONTAMINATION, CLEAN AS REQUIRED
- 2. TEST EQUIPMENT OPERATING LEVELS (LINE A.C. VOLTS)
- 3. VISUALLY CHECK CONDITION OF ELECTRICAL CONNECTIONS
- 4. INSPECT / CLEAN EQUIPMENT CABINET
- 5. CHECK INDICATIONS ARE SHOWING THE CORRECT PATTERN (L1 AND L2 LAMPS LIT)
- 6. CHECK CONNECTIONS, INCLUDING SIGNALLING INPUTS AND OUTPUTS ARE SECURE, LABELLED AND AS DOCUMENTED
- 7. VISUALLY CHECK EARTHING
- 8. CHECK SURGE PROTECTION (INDICATOR LIT)
- 9. CHECK ERROR RATE BETWEEN EQUIPMENT IS ACCEPTABLE

- 1. RECORD MAINTENANCE ACTION BY COMPLETING THE IMAC HISTORY CARD & CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TELEMETRY OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TELEMETRY KINGFISHER 2

SERVICE SCHEDULE / STANDARD JOB S02031

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

- 1. KINGFISHER VISUALLY CHECK CONDITION OF ELECTRICAL CONNECTIONS
- 2. ENSURE HEALTH OF ALL PORT CONNECTIVITY INCLUDING THE MAIN AND DIVERSITY CHANGEOVER (WHERE APPLICABLE)
- 3. CHECK HEALTH STATUS OF KINFISHER (INCLUDING IO ENABLED, PROCESSING ENABLED AND ALL MODULES ON THE BACKPLANE CAN BE SEEN THROUGH THE TOOL BOX MAINTENANCE FACILITY)
- 4. CHECK CLOCK AND SET OR ADJUST TIME IF REQUIRED
- 5. EXTRACT LOG FROM KINFISHER FOR PREVIOUS 24 HOURS AND REVIEW AND ADDRESS ANY ANOMOLIES
- 6. CHECK HEALTH OF SURGE PROTECTION MODULES AND REPLACE AS REQUIRED
- 7. TEST BATTERY USING BATTERY LOAD TEST METER (MEASURED IN COLD CRANKING AMPS CCA)
- 8. INSPECT / CLEAN EQUIPMENT
- 9. ENSURE THE THERMOCOUPLE IS RESTING UNDER OR IN CLOSE PROXIMITY TO THE NEGATIVE TERMINAL OF THE BATTERY

- 1. RECORD MAINTENANCE ACTION BY COMPLETING THE HISTORY CARD & CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TELEMETRY OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TELEMETRY MOSCAD

SERVICE SCHEDULE / STANDARD JOB S02041

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

VISUAL INSPECTION:

- 1. LOOK FOR ANY SIGNS OF WEAR OR DAMAGE TO THE UNIT INCLUDING SCORCH MARKS, LOOSE TERMINAL SCREWS, DUST/DIRT OR VERMIN. MAKE RECORD OF ANY PROBLEMS AND RECTIFY THEM AS REQUIRED.
- 2. CHECK THE LEDS ON THE FRONT DISPLAY OF THE CPU CARD.
- 3. CHECK THE ERROR CODE IF ANY AND RESOLVE THE ISSUES BY CORRECTIVE ACTIONS. REFER MANUFACTURER'S MANUALS FOR MORE INFORMATION.

- 1. RECORD MAINTENANCE ACTION BY COMPLETING THE HISTORY CARD & CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TELEMETRY OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TELEMETRY ICAPS

SERVICE SCHEDULE / STANDARD JOB S02051

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTIONS:

- 1. VISUAL INSPECTION OF THE RECEIVER ANTENNA FOR WEAR AND DAMAGE.
- 2. VISUAL INSPECTION FOR CONNECTORS, CABLING INSIDE THE LOCATION BOX WHICH CONNECT THE RECEIVER TO THE ANTENNA.
- 3. CHECK CONDITION OF ANTENNA FOR ANY PHYSICAL DAMAGE
- 4. CHECK LOGS FOR ANY ERROR OR ANOMALOUSE LOG ENTRIES.

- 1. RECORD MAINTENANCE ACTION BY COMPLETING THE HISTORY CARD & CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TELEMETRY OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS TELEMETRY S2 TDM

SERVICE SCHEDULE / STANDARD JOB S02061

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT.
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

- 1. VISUALLY CHECK CONDITION OF ELECTRICAL CONNECTIONS
- 2. CHECK HEALTH STATUS OF S2 & THAT LEDS ARE SHOWING THE CORRECT PATTERN
- 3. CHECK CLOCK AND SET OR ADJUST TIME IF REQUIRED
- 4. CHECK HEALTH OF SURGE PROTECTION MODULES AND REPLACE AS REQUIRED
- 5. TEST BATTERY USING BATTERY LOAD TEST METER ((MEASURED IN COLD CRANKING AMPS (CCA))
- 6. INSPECT EQUIPMENT FOR ENVIRONMENTAL CONTAMINATION. CLEAN AS REQUIRED
- 7. INSPECT / CLEAN EQUIPMENT CABINET
- 8. VISUALLY CHECK EARTHING.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST/WORK ORDER
- 2. ENSURE THAT THE TELEMETRY OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE AFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



LEVEL CROSSINGS

SERVICE SCHEDULE / STANDARD JOB S03011

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 1. OBSERVE THE POWER SUPPLY LIGHT IS LIT WHERE FITTED. WHEN THE POWER SUPPLY LIGHT IS NOT LIT, IMMEDIATELY NOTIFY THE TEAM MANAGER AND SIGNALLING STAFF.
- 2. OBSERVE OPERATION OF ALL FLASHING LIGHTS AND SIDE LIGHTS WHERE FITTED.
- 3. OBSERVE OPERATIONS OF BOOMS WHERE FITTED.
- 4. LISTEN FOR BELL OPERATION.
- 5. ON CORRECT OPERATION, SIGN AND DATE LEVEL CROSSINGS TEST RECORD

NOTE – ANY ISSUES SHALL BE ENTERED INTO THE ASSET MANAGEMENT SYSTEM AS DEFECTS AND IF THE INTEGRITY OR OPERATION OF THE LEVEL CROSSING HAS BEEN COMPROMISED ARRANGEMENTS MUST BE MADE TO PROTECT THE CROSSING OR HAVE THE CROSSING PROTECTED BY OTHERS PRIOR TO LEAVING

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. ISSUES RECORDED IN THE AMS AS A CORRECTIVE ACTION FOR SIGNALLING STAFF TO RECTIFY.



LEVEL CROSSING MONITORED RX-5 LIGHTSSERVICE SCHEDULE / STANDARD JOB S03012

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 5. LEVEL CROSSING MONITOR MUST BE SET TO "MAINTENANCE DISABLED"

MAINTENANCE ACTION: (REF: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 AND MANUFACTURER'S SPECIFICATIONS WHERE APPLICABLE)

LIGHTS

- 1. CHECK OPERATION AND FLASH RATE OF ALL FLASHING LAMPS / LEDS DURING OPERATION OF LEVEL CROSSING
- 2. CHECK FOCUS OF THE LIGHTS TO ENSURE THAT THERE ARE NO OBSTRUCTION OR VISIBILITY ISSUES WITH THE STOPPING SIGHT DISTANCE (REFER TO FOCUSING DIAGRAM, ESC-03-01 AND AS1742.7)
- 3. CLEAN EXTERIOR OF ALL ROUNDELS / LENSES OF LEVEL CROSSING

ACTIVE ADVANCE WARNING LIGHTS

4. CHECK THE FUNCTIONING OF THE RAIL SIGNALLING CIRCUITS UP TO THE RAILWAY INTERFACE CONTROL UNIT (RICU) AND ENSURE CORRECT OPERATION OF THE ACTIVE ADVANCE WARNING LIGHTS.

BELLS (WHERE FITTED)

5. CHECK THE BELL STRIKE RATE AND VOLUME DURING OPERATION OF THE LEVEL CROSSING

SIRENS / TONE GENERATOR (WHERE FITTED)

6. CHECK THE SOUND OUTPUT VOLUME DURING OPERATION OF THE LEVEL CROSSING. ADJUST THE VOLUME IF NECESSARY.

GENERAL

- 7. CHECK ADJUSTMENT OF ROTARY CONTACTS FITTED TO MECHANICAL CONTROL LEVERS AND EXAMINE FOR WEAR / DAMAGE (WHERE FITTED)
- 8. CHECK ADJUSTMENT OF SHUNTER'S PUSH BUTTON CONTACTS AND EXAMINE FOR WEAR / DAMAGE (WHERE FITTED)
- 9. CHECK THE SETTING OF THE BELL CUT-OFF NIGHT TIMER RELAY (WHERE FITTED) AND ADJUST TIMERS FOR DAYLIGHT SAVINGS WHEN REQUIRED. INSPECT THE TIMER INSTALLATION DATE, IF ≥ 8 YEARS, THE TIMER NEEDS TO BE REPLACED. IF THE TIMER DOES NOT HAVE AN INSTALLATION DATE, REPLACE THE TIMER AND ENSURE THE TIMER IS LABELLED WITH THE DATE OF INSTALLATION.
- 10. PERFORM ZONAL INSPECTION OF THE GENERAL CONDITION OF THE MONITOR, MODEM AND SECURITY OF MOUNTINGS

LEVEL CROSSING MONITOR (CERBERUS TYPE WHERE FITTED)

11. POWER OFF FOR 10 SECONDS THEN ON TO CONFIRM BATTERY BACKUP IS OPERATIONAL



12. REVIEW A 48 HOUR PERIOD OF THE LOG AND INVESTIGATE ANY ERRORS

LEVEL CROSSING MONITOR (BRODERSON TYPE WHERE FITTED)

13. REMOVE LOCAL POWER, CONFIRM BACKUP BATTERY IS OPERATIONAL THEN RESTORE POWER

14. RESET ALARMS AND FORCE MESSAGE SEND, THEN CONFIRM WITH THE NETWORK CONTROLLER THAT THERE ARE NO ALARMS DISPLAYED AT THE NCC

LEVEL CROSSING MONITOR (SEAR TYPE WHERE FITTED)

15. CHECK DISPLAY LEDS FOR ERRORS CURRENT & HISTORY - INVESTIGATE ANY ANOMOLIES

16. CHECK FOR ALARMS FOLLOWING MAINTENANCE AND CLEAR AS NECESSARY

LEVEL CROSSING MONITOR (HIMA WHERE FITTED)

- 17. CHECK AND RECORD THE HIMA BUS VOLTAGES
- 18. CHECK THERE ARE NO WARNING OR FAULT INDICATIONS ON THE HIMA F35 (AND F1 WHERE PRESENT)
- 19. CHECK THERE ARE NO WARNING OR FAULT INDICATIONS ON THE ROUTER
- 20. TEST THE MRD EARTH DETECTOR
- 21. CHECK TERMINATIONS
- 22. CHECK ALL DIN RAIL EQUIPMENT IS SECURE
- 23. CLEAN THE LOCATION CASE

24. APPLY INSECT SURFACE SPRAY TO THE LOCATION CASE INTERNAL SURFACES

25. INSPECT MRD EARTH CONNECTIONS TO ENSURE INTEGRITY

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY AND RESET THE MONITOR
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

LEVEL CROSSING MONITORED RX-5 LIGHTS

SERVICE SCHEDULE / STANDARD JOB S03013

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 5. LEVEL CROSSING MONITOR MUST BE SET TO "MAINTENANCE DISABLED" FOR APPLICABLE MONITOR

MAINTENANCE ACTIONS: (REFERENCE: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 & AS1742.7)

NOTE: PERFORM SJ - S03012 IN CONJUNCTION WITH THIS SERVICE

FLASHING LIGHTS

- 1. EXAMINE ALL LEVEL CROSSING WARNING LIGHTS FOR ADVERSE EFFECTS OF EXCESSIVE VEGETATION GROWTH ON VISIBILITY
- 2. EXAMINE LAMPS (IN PARTICULAR, GASKETS AND INNER REFLECTIVE SURFACES) FOR CONDITION & INTEGRITY –
- 3. CLEAN ALL LAMPS
- 4. CHECK THAT ROUNDELS ARE UNDAMAGED, THAT LIGHTS ARE SECURELY FASTENED TO THE CROSSARM AND THAT FRONT COVERS ARE PROPERLY CLOSED. IF A DAMAGED ROUNDEL IS FOUND, REPLACE AT THE EARLIEST POSSIBLE OPPORTUNITY. IF THE DAMAGE IS SUFFICIENT TO CAUSE THAT LIGHT UNIT TO DISPLAY EITHER A WHITE OR LIGHT OR LITTLE OR NO LIGHT, REPLACE THE SAME DAY.
- 5. CHECK EACH INCANDESCENT LAMP VOLTAGE AT THE LAMP, WITH THE TEST SWITCH OFF. VOLTAGE AT THE LAMP SHOULD BE BETWEEN 9.4 TO 9.7V. IF VOLTAGE IS OUTSIDE THIS RANGE, ADJUST THE DROPPING RESISTOR. CHECK SHOULD BE MADE AT THE LIGHT IF POSSIBLE WITHOUT REMOVING THE LAMP. IF NOT POSSIBLE, CHECK IS TO BE MADE AT THE TERMINALS IN THE CROSSARM.
- 6. ENSURE FASTENER BETWEEN LAMP AND CROSS ARM IS SECURE
- 7. INSPECT CONDITON OF LAMP CASES, HOODS, BACKGROUNDS AND FIXINGS & ADJUST / REPAIR AS NECESSARY

SIGNAGE

THIS INSPECTION IS INTENDED TO INSPECT THE LEVEL CROSSING SIGNAGES, WHICH ARE ARTC ASSETS.

WHEN SIGNAL STAFF IS ON SITE FOR INSPECTION OF SIGNALLING SIGNAGES, IF THEY NOTICE ANY ISSUES WITH THE OTHER SIGNAGES, FOR EXAMPLE, PASSIVE SIGNAGES AT LEVEL CROSSINGS AND PEDESTRIAN CROSSINGS, THEY SHOULD REPORT TO THE TRACK AND CIVIL STAFF FOR RECTIFICATION.

IF SIGNALLING STAFF NOTICE ANY ISSUE WITH THE SIGNAGES MAINTAINED BY THE ROAD AUTHORITY, THEY SHALL REPORT TO THE ROAD AUTHORITY (AS PER INTERFACE AGREEMENT) AND RECORD THIS IN THE ENTERPRISE ASSET MANAGEMENT SYSTEM AND CREATE A DEFECT WITH PRIORITY PN.

- 8. EXAMINE TRAIN DRIVERS APPROACH WARNING SIGNS FOR CLARITY AND CONDITION
- 9. EXAMINE ACTIVE LEVEL CROSSING SIGNS, R6-25, W7-2-2 AND R6-9 INSTALLED ON RX-5 ASSEMBLY WHICH ARE MOUNTED ON FLASHING LIGHTS POST OF THE CROSSING.


REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY AND RESET THE MONITOR
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNALLING TECHNICAL MAINTENANCE PLANS

LEVEL CROSSING MONITORED RX-5 LIGHTS & BOOMS

SERVICE SCHEDULE / STANDARD JOB S03022

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 5. LEVEL CROSSING MONITOR MUST BE SET TO "MAINTENANCE DISABLED"

MAINTENANCE ACTION: (REF: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 AND MANUFACTURER'S SPECIFICATIONS WHERE APPLICABLE)

LIGHTS

- 1. CHECK OPERATION AND FLASH RATE OF ALL FLASHING LAMPS / LEDS DURING OPERATION OF LEVEL CROSSING
- 2. CHECK FOCUS OF THE LIGHTS TO ENSURE THAT THERE ARE NO OBSTRUCTION OR VISIBILITY ISSUES WITH THE STOPPING SIGHT DISTANCE (REFER TO FOCUSING DIAGRAM, ESC-03-01 AND AS1742.7)
- 3. CLEAN EXTERIOR OF ALL ROUNDELS / LENSES OF LEVEL CROSSING

ACTIVE ADVANCE WARNING LIGHTS

4. CHECK THE FUNCTIONING OF THE RAIL SIGNALLING CIRCUITS UP TO THE RAILWAY INTERFACE CONTROL UNIT (RICU) AND ENSURE CORRECT OPERATION OF THE ACTIVE ADVANCE WARNING LIGHTS.

BELLS (WHERE FITTED)

5. CHECK THE BELL STRIKE RATE AND VOLUME DURING OPERATION OF THE LEVEL CROSSING

SIRENS / TONE GENERATOR (WHERE FITTED)

6. CHECK THE SOUND OUTPUT VOLUME DURING OPERATION OF THE LEVEL CROSSING. ADJUST THE VOLUME IF NECESSARY.

GENERAL

7. CHECK ADJUSTMENT OF ROTARY CONTACTS FITTED TO MECHANICAL CONTROL LEVERS AND



EXAMINE FOR WEAR / DAMAGE (WHERE FITTED)

- 8. CHECK ADJUSTMENT OF SHUNTER'S PUSH BUTTON CONTACTS AND EXAMINE FOR WEAR / DAMAGE (WHERE FITTED)
- 9. CHECK THE SETTING OF THE BELL CUT-OFF NIGHT TIMER RELAY (WHERE FITTED) AND ADJUST TIMERS FOR DAYLIGHT SAVINGS WHEN REQUIRED. INSPECT THE TIMER INSTALLATION DATE, IF ≥ 8 YEARS, THE TIMER NEEDS TO BE REPLACED. IF THE TIMER DOES NOT HAVE AN INSTALLATION DATE, REPLACE THE TIMER AND ENSURE THE TIMER IS LABELLED WITH THE DATE OF INSTALLATION.
- 10. PERFORM ZONAL INSPECTION OF THE GENERAL CONDITION OF THE MONITOR, MODEM AND SECURITY OF MOUNTINGS
- 11. CHECK THE BOOM BARRIER CONDITION, ASSEMBLY AND FASTENERS. CHECK FOR ANY WEAR OR DAMAGE TO BARRIERS. TAKE APPROPRIATE ACTIONS AS REQUIRED.

ROAD BOOM & MOTOR MECHANISM (WHERE FITTED) - GENERIC TYPE / MANUFACTURE

- 12. CHECK OPERATION OF BOOM AND ENSURE THAT BOOM MOTOR CUTS OUT AT THE FULLY RAISED POSITION AND THAT THE HOLD MECHANISM RETAINS THE BOOM IN THIS POSITION AND ALSO THAT THE BOOM DESCENDS TO THE CORRECT LOWERED POSITION. ADJUST THE MOTOR CUT OUT IF NECESSARY.
- 13. CHECK BOOM MOTOR OPERATION FOR CLUTCH SLIPPAGE
- 14. EXAMINE BOOM MECHANISM GEARS FOR WEAR, CRACKS OR ABNORMALITIES
- 15. GREASE BOOM MECHANISM GEARS
- 16. EXAMINE BOOM MECHANISM CONTACTS FOR CONDITION AND EXAMINE FOR WEAR AND / OR DAMAGE
- 17. CHECK ADJUSTMENT OF BOOM MECHANISM CONTACTS AS PER DESIGN OR STANDARD
- 18. LUBRICATE LEVEL CROSSING MECHANISM AND MOTOR ENSURING OILWAYS ARE CLEAR AND ALL OILING CUP CAPS ARE REFITTED

LEVEL CROSSING MONITOR (CERBERUS TYPE WHERE FITTED)

- 19. POWER OFF FOR 10 SECONDS THEN ON TO CONFIRM BATTERY BACKUP IS OPERATIONAL
- 20. REVIEW A 48 HOUR PERIOD OF THE LOG AND INVESTIGATE ANY ERRORS

LEVEL CROSSING MONITOR (BRODERSON TYPE WHERE FITTED)

- 21. REMOVE LOCAL POWER, CONFIRM BACKUP BATTERY IS OPERATIONAL THEN RESTORE POWER
- 22. RESET ALARMS AND FORCE MESSAGE SEND, THEN CONFIRM WITH THE NETWORK CONTROLLER THAT THERE ARE NO ALARMS DISPLAYED AT THE NCC

LEVEL CROSSING MONITOR (SEAR TYPE WHERE FITTED)

- 23. CHECK DISPLAY LEDS FOR ERRORS CURRENT & HISTORY INVESTIGATE ANY ANOMOLIES
- 24. CHECK FOR ALARMS FOLLOWING MAINTENANCE AND CLEAR AS NECESSARY

LEVEL CROSSING MONITOR (HIMA WHERE FITTED)

- 25. CHECK AND RECORD THE HIMA BUS VOLTAGES
- 26. CHECK THERE ARE NO WARNING OR FAULT INDICATIONS ON THE HIMA F35 (AND F1 WHERE PRESENT)
- 27. CHECK THERE ARE NO WARNING OR FAULT INDICATIONS ON THE ROUTER
- 28. TEST THE MRD EARTH DETECTOR
- 29. CHECK TERMINATIONS
- 30. CHECK ALL DIN RAIL EQUIPMENT IS SECURE
- 31. CLEAN THE LOCATION CASE



- 32. APPLY INSECT SURFACE SPRAY TO THE LOCATION CASE INTERNAL SURFACES
- 33. INSPECT MRD EARTH CONNECTIONS TO ENSURE INTEGRITY

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY AND RESET THE MONITOR
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNALLING TECHNICAL MAINTENANCE PLANS

LEVEL CROSSING MONITORED RX-5 LIGHTS & BOOMS

SERVICE SCHEDULE / STANDARD JOB S03023

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 5. LEVEL CROSSING MONITOR MUST BE SET TO "MAINTENANCE DISABLED" FOR APPLICABLE MONITOR

MAINTENANCE ACTIONS: (REFERENCE: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 & AS1742.7)

NOTE: PERFORM SJ - S03022 IN CONJUNCTION WITH THIS SERVICE

FLASHING LIGHTS

- 1. EXAMINE ALL LEVEL CROSSING WARNING LIGHTS FOR ADVERSE EFFECTS OF EXCESSIVE VEGETATION GROWTH ON VISIBILITY
- 2. EXAMINE LAMPS (IN PARTICULAR, GASKETS AND INNER REFLECTIVE SURFACES) FOR CONDITION & INTEGRITY –
- 3. CLEAN ALL LAMPS
- 4. CHECK THAT ROUNDELS ARE UNDAMAGED, THAT LIGHTS ARE SECURELY FASTENED TO THE CROSSARM AND THAT FRONT COVERS ARE PROPERLY CLOSED. IF A DAMAGED ROUNDEL IS FOUND, REPLACE AT THE EARLIEST POSSIBLE OPPORTUNITY. IF THE DAMAGE IS SUFFICIENT TO CAUSE THAT LIGHT UNIT TO DISPLAY EITHER A WHITE OR LIGHT OR LITTLE OR NO LIGHT, REPLACE THE SAME DAY.
- 5. CHECK EACH INCANDESCENT LAMP VOLTAGE AT THE LAMP, WITH THE TEST SWITCH OFF. VOLTAGE AT THE LAMP SHOULD BE BETWEEN 9.4 TO 9.7V. IF VOLTAGE IS OUTSIDE THIS RANGE, ADJUST THE DROPPING RESISTOR. CHECK SHOULD BE MADE AT THE LIGHT IF POSSIBLE WITHOUT REMOVING THE LAMP. IF NOT POSSIBLE, CHECK IS TO BE MADE AT THE TERMINALS IN THE CROSSARM.
- 6. ENSURE FASTENER BETWEEN LAMP AND CROSS ARM IS SECURE
- 7. INSPECT CONDITON OF LAMP CASES, HOODS, BACKGROUNDS AND FIXINGS & ADJUST / REPAIR AS NECESSARY

SIGNAGE

THIS INSPECTION IS INTENDED TO INSPECT THE LEVEL CROSSING SIGNAGES, WHICH ARE ARTC ASSETS.

WHEN SIGNAL STAFF IS ON SITE FOR INSPECTION OF SIGNALLING SIGNAGES, IF THEY NOTICE ANY ISSUES WITH THE OTHER SIGNAGES, FOR EXAMPLE, PASSIVE SIGNAGES AT LEVEL CROSSINGS AND PEDESTRIAN



CROSSINGS, THEY SHOULD REPORT TO THE TRACK AND CIVIL STAFF FOR RECTIFICATION.

IF SIGNALLING STAFF NOTICE ANY ISSUE WITH THE SIGNAGES MAINTAINED BY THE ROAD AUTHORITY, THEY SHALL REPORT TO THE ROAD AUTHORITY (AS PER INTERFACE AGREEMENT) AND RECORD THIS IN THE ENTERPRISE ASSET MANAGEMENT SYSTEM AND CREATE A DEFECT WITH PRIORITY PN.

- 8. EXAMINE TRAIN DRIVERS APPROACH WARNING SIGNS FOR CLARITY AND CONDITION
- 9. EXAMINE ACTIVE LEVEL CROSSING SIGNS, R6-25, W7-2-2 AND R6-9 INSTALLED ON RX-5 ASSEMBLY WHICH ARE MOUNTED ON FLASHING LIGHTS POST OF THE CROSSING.



10. EXAMINE TRAIN DRIVERS APPROACH WARNING SIGNS AND PREDICTOR SIGNS (WHERE FITTED) FOR CLARITY AND CONDITION.

BELLS (WHERE FITTED)

- 11. EXAMINE BELL OPERATING CONTACT ASSEMBLY FOR CRACKING AROUND FASTENINGS, ENSURE FASTENINGS ARE SECURE
- 12. EXAMINE BELL OPERATING CONTACTS FOR BURNING / DEGRADATION
- 13. EXAMINE THE BELL STRIKER FOR CRACKING
- 14. LUBRICATE THE BELL'S PIVOT POINTS
- 15. EXAMINE INTERIOR AND EXTERIOR OF BELL ASSEMBLY FOR CONTAMINATION, DAMAGE AND ENSURE ALL FASTENINGS ARE SECURE.
- 16. CHECK THAT THE SECURING DEVICES ARE TIGHT
- 17. CHECK THE BELL SOUND LEVEL. IF ANY ISSUES, ADJUST OR REPLACE THE BELL AS REQUIRED

SIREN / TONE GENERATOR (WHERE FITTED)

18. CHECK THAT THE SECURING DEVICES ARE TIGHT

GENERAL

- 19. CHECK OPERATION OF EMERGENCY SWITCHES DURING MANUAL OPERATION OF THE LEVEL CROSSING (WHERE APPLICABLE)
- 20. CHECK THE EMERGENCY SWITCH KEYS REMAIN CAPTIVE WHEN SWITCH IS IN THE "OFF" POSITION
- 21. CHECK THAT THE DOOR OF EMERGENCY SWITCH BOX CANNOT BE CLOSED WITH THE EMEGENCY KEY IN THE KEYSWITCH.
- 22. TEST OPERATION OF THE TEST BOX DOOR SWITCH TO ENSURE POWER SUPPLY INDICATOR (PSI) LAMP GOES OUT WHEN SWITCH IS PUSHED (WHERE APPLICABLE)
- 23. INSPECT CONDITION OF ALL LIGHT POST STRUCTURES FOR CORROSION, CONDITION, SECURITY AND SAFETY

ROAD BOOM & MOTOR MECHANISM (WHERE FITTED) - GENERIC TYPE / MANUFACTURE

- 24. CHECK VISIBILITY OF BOOM AND EXAMINE FOR SIGNS OF DEGRADATION
- 25. EXAMINE BOOM AND LAMP WIRING AND CONDUIT BETWEEN MECHANISM AND BOOM FOR DAMAGE





- ESW-26-01
- 26. CHECK BOOMS DESCEND DELAY TIMER IS SET AT 7 SECONDS (11 SEC FOR "B" DOUBLE OR ROAD TRAIN ROADS)
- 27. CHECK BOOM BARRIER TAKES BETWEEN 10 TO 12 SECONDS TO DESCEND FULLY
- 28. CHECK SECURITY OF COUNTERWEIGHT FIXING
- 29. CHECK THE CONDITION AND LENGTH OF THE BRUSHES IN MOTOR AND THAT THEY ARE FREE MOVING IN THEIR HOLDERS
- 30. CHECK THE CONDITION MOTOR AND COMMUTATOR
- 31. EXAMINE BOOM MOTOR OPERATION FOR ANY BINDING OR TENDENCY TO STICK
- 32. CHECK BOOM MOTOR HOLD CLEAR ASSEMBLY TO TOLERANCES SPECIFIED

LEVEL CROSSING MONITOR (SEAR TYPE WHERE FITTED)

33. CHECK DATE AND TIME - ADJUST IF NECESSARY

LEVEL CROSSING MONITOR (HIMA WHERE FITTED)

- 34. ACTIVATE THE CROSSING, REMOVE THE FEED FOR A SINGLE FLASHING MAST LAMP, ENSURE A LAMP WARNING IS RAISED.
- 35. ACTIVATE THE CROSSING, REMOVE THE FEED FOR 2 LAMPS, ENSURE A LAMP FAULT IS RAISED.
- 36. IF EITHER OF THE ABOVE TESTS FAIL, INFORM THE MANAGER AND IF NECESSARY RECALIBRATE THE SYSTEM.
- 37. REMOVE POWER FROM THE HIMA UNITS FOR 30 SECONDS THEN RESTORE, ENSURE THE HIMA STARTS UP CORRECTLY
- 38. RESTART THE ROUTER, THROUGH SOFTWARE OR BY REMOVING POWER FOR 30 SECONDS, ENSURE CONNECTIVITY IS RESTORED
- 39. REVIEW THE EVENT LOGS FOR THE CROSSING MONITOR AND ROUTER

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY AND RESET THE MONITOR
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNALLING TECHNICAL MAINTENANCE PLANS PEDESTRIAN CROSSING MONITORED RX-12 LIGHTS SERVICE SCHEDULE / STANDARD JOB S03032

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES



4. PERFORM PRE-WORK SAFETY BRIEF

5. LEVEL CROSSING MONITOR MUST BE SET TO "MAINTENANCE DISABLED"

MAINTENANCE ACTION: (REF: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 AND MANUFACTURER'S SPECIFICATIONS WHERE APPLICABLE)

PED LIGHTS

- 1. CHECK OPERATION OF PEDESTRIAN LIGHTS.
- 2. CHECK THAT THERE ARE NO OBSTRUCTION OR VISIBILITY ISSUES WITH THE LIGHTS
- 3. CLEAN EXTERIOR OF ALL LENSES OF PEDESTRIAN CROSSINGS
- 4. CHECK THE LIGHTS ARE OPERATING CORRECTLY AND POINTING TO CORRECT DIRECTION FOR PEDESTRIAN CROSSING.

BELLS (WHERE FITTED)

5. CHECK THE BELL STRIKE RATE AND VOLUME DURING OPERATION OF THE PEDESTRIAN CROSSING

SIRENS / TONE GENERATOR (WHERE FITTED)

6. CHECK THE SOUND OUTPUT VOLUME DURING OPERATION OF THE PEDESTRIAN CROSSING. ADJUST THE VOLUME IF NECESSARY.

GENERAL

- 7. CHECK ADJUSTMENT OF ROTARY CONTACTS FITTED TO MECHANICAL CONTROL LEVERS AND EXAMINE FOR WEAR / DAMAGE (WHERE FITTED)
- 8. CHECK THE SETTING OF THE BELL CUT-OFF NIGHT TIMER RELAY (WHERE FITTED) AND ADJUST TIMERS FOR DAYLIGHT SAVINGS WHEN REQUIRED. INSPECT THE TIMER INSTALLATION DATE, IF ≥ 8 YEARS, THE TIMER NEEDS TO BE REPLACED. IF THE TIMER DOES NOT HAVE AN INSTALLATION DATE, REPLACE THE TIMER AND ENSURE THE TIMER IS LABELLED WITH THE DATE OF INSTALLATION.
- 9. PERFORM ZONAL INSPECTION OF THE GENERAL CONDITION OF THE MONITOR, MODEM AND SECURITY OF MOUNTINGS

LEVEL CROSSING MONITOR (CERBERUS TYPE WHERE FITTED)

- 10. POWER OFF FOR 10 SECONDS THEN ON TO CONFIRM BATTERY BACKUP IS OPERATIONAL
- 11. REVIEW A 48 HOUR PERIOD OF THE LOG AND INVESTIGATE ANY ERRORS

LEVEL CROSSING MONITOR (BRODERSON TYPE WHERE FITTED)

- 12. REMOVE LOCAL POWER, CONFIRM BACKUP BATTERY IS OPERATIONAL THEN RESTORE POWER
- 13. RESET ALARMS AND FORCE MESSAGE SEND, THEN CONFIRM WITH THE NETWORK CONTROLLER THAT THERE ARE NO ALARMS DISPLAYED AT THE NCC

LEVEL CROSSING MONITOR (SEAR TYPE WHERE FITTED)

- 14. CHECK DISPLAY LEDS FOR ERRORS CURRENT & HISTORY INVESTIGATE ANY ANOMOLIES
- 15. CHECK FOR ALARMS FOLLOWING MAINTENANCE AND CLEAR AS NECESSARY

LEVEL CROSSING MONITOR (HIMA WHERE FITTED)

- 16. CHECK AND RECORD THE HIMA BUS VOLTAGES
- 17. CHECK THERE ARE NO WARNING OR FAULT INDICATIONS ON THE HIMA F35 (AND F1 WHERE PRESENT)
- 18. CHECK THERE ARE NO WARNING OR FAULT INDICATIONS ON THE ROUTER
- 19. TEST THE MRD EARTH DETECTOR
- 20. CHECK TERMINATIONS



- 21. CHECK ALL DIN RAIL EQUIPMENT IS SECURE
- 22. CLEAN THE LOCATION CASE
- 23. APPLY INSECT SURFACE SPRAY TO THE LOCATION CASE INTERNAL SURFACES
- 24. INSPECT MRD EARTH CONNECTIONS TO ENSURE INTEGRITY

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY AND RESET THE MONITOR
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

PEDESTRIAN CROSSING MONITORED RX-12 LIGHTS

SERVICE SCHEDULE / STANDARD JOB S03033

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 5. LEVEL CROSSING MONITOR MUST BE SET TO "MAINTENANCE DISABLED" FOR APPLICABLE MONITOR

MAINTENANCE ACTIONS: (REFERENCE: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 & AS1742.7)

NOTE: PERFORM SJ - S03032 IN CONJUNCTION WITH THIS SERVICE

PED LIGHTS

- 1. EXAMINE ALL PEDESTRIAN CROSSING WARNING LIGHTS FOR ADVERSE EFFECTS ON VISIBILITY
- 2. EXAMINE PEDESTRIAN LIGHTS (IN PARTICULAR, GASKETS AND INNER REFLECTIVE SURFACES) FOR CONDITION & INTEGRITY
- 3. CLEAN ALLPEDESTRIAN LIGHTS
- 4. CHECK THAT PEDESTRIAN LIGHTS ARE UNDAMAGED, THAT LIGHTS ARE SECURELY FASTENED AND THAT COVERS ARE PROPERLY CLOSED. IF A DAMAGED LIGHT IS FOUND, REPLACE AT THE EARLIEST POSSIBLE OPPORTUNITY.

SIGNAGE

THIS INSPECTION IS INTENDED TO INSPECT THE LEVEL CROSSING SIGNAGES, WHICH ARE ARTC ASSETS.

WHEN SIGNAL STAFF IS ON SITE, IF THEY NOTICE ANY ISSUES WITH THE OTHER SIGNAGES, FOR EXAMPLE, PASSIVE SIGNAGES AT LEVEL CROSSINGS AND PEDESTRIAN CROSSINGS, THEY SHOULD REPORT TO THE TRACK AND CIVIL STAFF FOR RECTIFICATION.

IF SIGNALLING STAFF NOTICE ANY ISSUE WITH THE SIGNAGES MAINTAINED BY THE ROAD AUTHORITY, THEY SHALL REPORT TO THE ROAD AUTHORITY (AS PER INTERFACE AGREEMENT) AND RECORD THIS IN THE ENTERPRISE ASSET MANAGEMENT SYSTEM AND CREATE A DEFECT WITH PRIORITY PN.

5. INSPECT THE CONDITION OF THE ACTIVE PEDESTRIAN CROSSING FENCING MAZE FOR SIGNS OF DEGRADATION AND SAFETY HAZARDS

BELLS (WHERE FITTED)

- 6. EXAMINE BELL OPERATING CONTACT ASSEMBLY FOR CRACKING AROUND FASTENINGS, ENSURE FASTENINGS ARE SECURE
- 7. EXAMINE BELL OPERATING CONTACTS FOR BURNING / DEGRADATION
- 8. EXAMINE THE BELL STRIKER FOR CRACKING
- 9. LUBRICATE THE BELL'S PIVOT POINTS
- 10. EXAMINE INTERIOR AND EXTERIOR OF BELL ASSEMBLY FOR CONTAMINATION, DAMAGE AND ENSURE ALL FASTENINGS ARE SECURE.
- 11. CHECK THAT THE SECURING DEVICES ARE TIGHT
- 12. CHECK THE BELL SOUND LEVEL. IF ANY ISSUES, ADJUST OR REPLACE THE BELL AS REQUIRED

SIREN / TONE GENERATOR (WHERE FITTED)

13. CHECK THAT THE SECURING DEVICES ARE TIGHT

GENERAL

- 14. CHECK OPERATION OF EMERGENCY SWITCHES DURING MANUAL OPERATION OF THE PEDESTRIAN CROSSING (WHERE APPLICABLE)
- 15. CHECK THE EMERGENCY SWITCH KEYS REMAIN CAPTIVE WHEN SWITCH IS IN THE "OFF" POSITION
- 16. CHECK THAT THE DOOR OF EMERGENCY SWITCH BOX CANNOT BE CLOSED WITH THE EMEGENCY KEY IN THE KEYSWITCH.
- 17. TEST OPERATION OF THE TEST BOX DOOR SWITCH TO ENSURE POWER SUPPLY INDICATOR (PSI) LAMP GOES OUT WHEN SWITCH IS PUSHED (WHERE APPLICABLE)
- 18. INSPECT CONDITION OF ALL LIGHT & BOOM POST STRUCTURES FOR CORROSION, CONDITION, SECURITY AND SAFETY

LEVEL CROSSING MONITOR (SEAR TYPE WHERE FITTED)

- 19. CHECK DATE AND TIME ADJUST IF NECESSARY
- 20. LEVEL CROSSING MONITOR (HIMA WHERE FITTED)
- 21. ACTIVATE THE CROSSING, REMOVE THE FEED FOR A SINGLE FLASHING MAST LAMP, ENSURE A LAMP WARNING IS RAISED.
- 22. ACTIVATE THE CROSSING, REMOVE THE FEED FOR 2 LAMPS, ENSURE A LAMP FAULT IS RAISED.
- 23. IF EITHER OF THE ABOVE TESTS FAIL, INFORM THE MANAGER AND IF NECESSARY RECALIBRATE THE SYSTEM.
- 24. REMOVE POWER FROM THE HIMA UNITS FOR 30 SECONDS THEN RESTORE, ENSURE THE HIMA STARTS UP CORRECTLY
- 25. RESTART THE ROUTER, THROUGH SOFTWARE OR BY REMOVING POWER FOR 30 SECONDS, ENSURE CONNECTIVITY IS RESTORED
- 26. REVIEW THE EVENT LOGS FOR THE CROSSING MONITOR AND ROUTER

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY AND RESET THE MONITOR
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

PEDESTRIAN CROSSING MONITORED RX-12 LIGHTS & SWING GATES

SERVICE SCHEDULE / STANDARD JOB S03042

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 5. LEVEL CROSSING MONITOR MUST BE SET TO "MAINTENANCE DISABLED"

MAINTENANCE ACTION: (REF: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 AND MANUFACTURER'S SPECIFICATIONS WHERE APPLICABLE)

PED LIGHTS

- 1. CHECK OPERATION OF PEDESTRIAN LIGHTS
- 2. CHECK THAT THERE ARE NO OBSTRUCTION OR VISIBILITY ISSUES WITH THE LIGHTS
- 3. CLEAN EXTERIOR OF ALL LENSES OF PEDESTRIAN CROSSINGS
- 4. CHECK THE LIGHTS ARE OPERATING CORRECTLY AND POINTING TO CORRECT DIRECTION FOR PEDESTRIAN CROSSING.

BELLS (WHERE FITTED)

5. CHECK THE BELL STRIKE RATE AND VOLUME DURING OPERATION OF THE PEDESTRIAN CROSSING

SIRENS / TONE GENERATOR (WHERE FITTED)

6. CHECK THE SOUND OUTPUT VOLUME DURING OPERATION OF THE PEDESTRIAN CROSSING. ADJUST THE VOLUME IF NECESSARY.

GENERAL

- 7. CHECK ADJUSTMENT OF ROTARY CONTACTS FITTED TO MECHANICAL CONTROL LEVERS AND EXAMINE FOR WEAR / DAMAGE (WHERE FITTED)
- 8. CHECK THE SETTING OF THE BELL CUT-OFF NIGHT TIMER RELAY (WHERE FITTED) AND ADJUST TIMERS FOR DAYLIGHT SAVINGS WHEN REQUIRED. INSPECT THE TIMER INSTALLATION DATE, IF ≥ 8 YEARS, THE TIMER NEEDS TO BE REPLACED. IF THE TIMER DOES NOT HAVE AN INSTALLATION DATE, REPLACE THE TIMER AND ENSURE THE TIMER IS LABELLED WITH THE DATE OF INSTALLATION.
- 9. PERFORM ZONAL INSPECTION OF THE GENERAL CONDITION OF THE MONITOR, MODEM AND SECURITY OF MOUNTINGS

PEDESTRIAN BOOM & MOTOR MECHANISM (WHERE FITTED) - GRS 2A

- 10. LUBRICATE SHAFT BEARING AND LOCK DOG
- 11. LUBRICATE GEAR TRAIN



- 12. LUBRICATE MOTOR AND HOLD MECHANISM
- 13. INSPECT CONDITION AND OPERATION OF MOTOR COMMUTATOR AND BRUSHES
- 14. INSPECT CONDITION AND OPERATION OF HOLD MECHANISM
- 15. INSPECT CONDITION OF CONTACTS AND OPERATION OF CIRCUIT CONTROLLER
- 16. MAINTAIN PINION CLUTCH
- 17. TEST MOTOR CURRENT
- 18. TEST HOLD MAGNET CURRENT
- 19. CHECK TIGHTNESS OF SCREWS AND NUTS ON MAIN CASE AND BOOM ARM ASSEMBLY
- 20. INSPECT CONDITION OF DOOR SEAL
- 21. CHECK THAT DOOR COVER HASP IS SECURED AND LOCKED
- 22. INSPECT CONDITION OF THE BOOM
- 23. CHECK OPERATION OF BOOM AND ENSURE THAT BOOM MOTOR CUTS OUT AT THE FULLY RAISED POSITION AND THAT THE HOLD MECHANISM RETAINS THE BOOM IN THIS POSITION AND ALSO THAT THE BOOM DESCENDS TO THE CORRECT LOWERED POSITION

PEDESTRIAN SWING GATE MECHANISM (WHERE FITTED) - GENERIC MANUFACTURE

- 24. CHECK OPERATION OF SWING GATE ENSURING APPROPRIATE OPEN AND CLOSE CYCLES ARE COMPLETED
- 25. CHECK OPERATION OF MOTOR / GEARBOX BY ENSURING A SMOOTH, NOISE FREE OPERATION WITH NO LAG BETWEEN MOTOR

OPERATION AND GATE MOVEMENT

26. CHECK SECURITY OF LOCKNUTS FOR PEDESTRIAN GATE LINKAGE TO MOTOR

LEVEL CROSSING MONITOR (CERBERUS TYPE WHERE FITTED)

- 26. POWER OFF FOR 10 SECONDS THEN ON TO CONFIRM BATTERY BACKUP IS OPERATIONAL
- 27. REVIEW A 48 HOUR PERIOD OF THE LOG AND INVESTIGATE ANY ERRORS

LEVEL CROSSING MONITOR (BRODERSON TYPE WHERE FITTED)

- 28. REMOVE LOCAL POWER, CONFIRM BACKUP BATTERY IS OPERATIONAL THEN RESTORE POWER
- 29. RESET ALARMS AND FORCE MESSAGE SEND, THEN CONFIRM WITH THE NETWORK CONTROLLER THAT THERE ARE NO ALARMS DISPLAYED AT THE NCC

LEVEL CROSSING MONITOR (SEAR TYPE WHERE FITTED)

30. CHECK DISPLAY LEDS FOR ERRORS CURRENT & HISTORY - INVESTIGATE ANY ANOMOLIES

31. CHECK FOR ALARMS FOLLOWING MAINTENANCE AND CLEAR AS NECESSARY

LEVEL CROSSING MONITOR (HIMA WHERE FITTED)

- 32. CHECK AND RECORD THE HIMA BUS VOLTAGES
- 33. CHECK THERE ARE NO WARNING OR FAULT INDICATIONS ON THE HIMA F35 (AND F1 WHERE PRESENT)
- 34. CHECK THERE ARE NO WARNING OR FAULT INDICATIONS ON THE ROUTER
- 35. TEST THE MRD EARTH DETECTOR
- **36. CHECK TERMINATIONS**
- 37. CHECK ALL DIN RAIL EQUIPMENT IS SECURE
- 38. CLEAN THE LOCATION CASE
- 39. APPLY INSECT SURFACE SPRAY TO THE LOCATION CASE INTERNAL SURFACES



40. INSPECT MRD EARTH CONNECTIONS TO ENSURE INTEGRITY

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY AND RESET THE MONITOR
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

PEDESTRIAN CROSSING MONITORED RX-12 LIGHTS & SWING GATES

SERVICE SCHEDULE / STANDARD JOB S03043

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 5. LEVEL CROSSING MONITOR MUST BE SET TO "MAINTENANCE DISABLED" FOR APPLICABLE MONITOR

MAINTENANCE ACTIONS: (REFERENCE: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 & AS1742.7)

NOTE: PERFORM SJ - S03042 IN CONJUNCTION WITH THIS SERVICE

PED LIGHTS

- 1. EXAMINE ALL PEDESTRIAN CROSSING WARNING LIGHTS FOR ADVERSE EFFECTS ON VISIBILITY
- 2. EXAMINE PEDESTRIAN LIGHTS (IN PARTICULAR, GASKETS AND INNER REFLECTIVE SURFACES) FOR CONDITION & INTEGRITY –
- 3. CLEAN ALL PEDESTRIAN LIGHTS
- 4. CHECK THAT PEDESTRIAN LIGHTS ARE UNDAMAGED, THAT LIGHTS ARE SECURELY FASTENED THAT COVERS ARE PROPERLY CLOSED. IF A DAMAGED LIGHT IS FOUND, REPLACE AT THE EARLIEST POSSIBLE OPPORTUNITY.

SIGNAGE

THIS INSPECTION IS INTENDED TO INSPECT THE LEVEL CROSSING SIGNAGES, WHICH ARE ARTC ASSETS.

WHEN SIGNAL STAFF IS ON SITE, IF THEY NOTICE ANY ISSUES WITH THE OTHER SIGNAGES, FOR EXAMPLE, PASSIVE SIGNAGES AT LEVEL CROSSINGS AND PEDESTRIAN CROSSINGS, THEY SHOULD REPORT TO THE TRACK AND CIVIL STAFF FOR RECTIFICATION.

IF SIGNALLING STAFF NOTICE ANY ISSUE WITH THE SIGNAGES MAINTAINED BY THE ROAD AUTHORITY, THEY SHALL REPORT TO THE ROAD AUTHORITY (AS PER INTERFACE AGREEMENT) AND RECORD THIS IN THE ENTERPRISE ASSET MANAGEMENT SYSTEM AND CREATE A DEFECT WITH PRIORITY PN.

5. INSPECT THE CONDITION OF THE ACTIVE PEDESTRIAN CROSSING FENCING MAZE FOR SIGNS OF DEGRADATION AND SAFETY HAZARDS

BELLS (WHERE FITTED)

- 6. EXAMINE BELL OPERATING CONTACT ASSEMBLY FOR CRACKING AROUND FASTENINGS, ENSURE FASTENINGS ARE SECURE
- 7. EXAMINE BELL OPERATING CONTACTS FOR BURNING / DEGRADATION
- 8. EXAMINE THE BELL STRIKER FOR CRACKING
- 9. LUBRICATE THE BELL'S PIVOT POINTS
- 10. EXAMINE INTERIOR AND EXTERIOR OF BELL ASSEMBLY FOR CONTAMINATION, DAMAGE AND ENSURE ALL FASTENINGS ARE SECURE.
- 11. CHECK THAT THE SECURING DEVICES ARE TIGHT
- 12. CHECK THE BELL SOUND LEVEL. IF ANY ISSUES, ADJUST OR REPLACE THE BELL AS REQUIRED

SIREN / TONE GENERATOR (WHERE FITTED)

13. CHECK THAT THE SECURING DEVICES ARE TIGHT

GENERAL

- 14. CHECK OPERATION OF EMERGENCY SWITCHES DURING MANUAL OPERATION OF THE LEVEL CROSSING (WHERE APPLICABLE)
- 15. CHECK THE EMERGENCY SWITCH KEYS REMAIN CAPTIVE WHEN SWITCH IS IN THE "OFF" POSITION
- 16. CHECK THAT THE DOOR OF EMERGENCY SWITCH BOX CANNOT BE CLOSED WITH THE EMEGENCY KEY IN THE KEYSWITCH.
- 17. TEST OPERATION OF THE TEST BOX DOOR SWITCH TO ENSURE POWER SUPPLY INDICATOR (PSI) LAMP GOES OUT WHEN SWITCH IS PUSHED (WHERE APPLICABLE)
- 18. INSPECT CONDITION OF ALL LIGHT & BOOM POST STRUCTURES FOR CORROSION, CONDITION, SECURITY AND SAFETY

PEDESTRIAN BOOM & MOTOR MECHANISM (WHERE FITTED) - GRS 2A

19. CHECK VISIBILITY OF BOOM AND EXAMINE FOR SIGNS OF DEGRADATION 20. VISUALLY INSPECT THE BRAKE SHOE AND SPLIT PIN FOR WEAR

PEDESTRIAN SWING GATE MECHANISM (WHERE FITTED) - GENERIC MANUFACTURE

- 21. EXAMINE CONDITION OF GATE DRIVE CONTROL HOUSING AND INTERNAL ITEMS FOR EVIDENCE OF DEGRADATION OR CONTAMINATION
- 22. EXAMINE GATE TURNBUCKLE COUPLING AND PIN / SCREW FOR WEAR
- 23. CHECK SECURITY OF PARALLEL LOCKING BUSH SET SCREWS ON GATE LINKAGE
- 24. CHECK SECURITY OF LOCKNUTS ON GATE LINKAGE TO MOTOR
- 25. LUBRICATE GATE HINGES USING 6MM GREASE NIPPLE ENSURING GREASE FULLY PENETRATES HINGE CONTACT AREA
- 26. TEST THE INDEXED COUPLING BY FORCING THE GATE AGAINST ITS DIRECTION UNTIL THE COUPLING PRODUCES A CLICKING NOISE
- 27. RELEASE THE GATE AND ENSURE IT RETURNS TO ITS PRESET POSITION
- 28. CHECK SECURITY OF PARALLEL LOCKING BUSH SET SCREWS ON GATE LINKAGE
- 29. EXAMINE PEDESTRIAN GATE / EMERGENCY EXIT GATE SIGNAGE BOARD FOR DEGRADATION AND ENSURE WRITING IS LEGIBLE
- 30. EXAMINE GATE TURNBUCKLE COUPLING AND PIN / SCREW FOR WEAR
- 31. LUBRICATE EMERGENCY EGRESS GANTE HINGES
- 32. CHECK OPERATION OF GATE RETURN SPRING BY ENSURING THE GATE FULLY CLOSES AFTER REMOVAL OF POWER FROM THE MOTOR. ADJUST THE SPRING TENSION IF REQUIRED.

LEVEL CROSSING MONITOR (SEAR TYPE WHERE FITTED)

33. CHECK DATE AND TIME - ADJUST IF NECESSARY

LEVEL CROSSING MONITOR (HIMA WHERE FITTED)

- 34. ACTIVATE THE CROSSING, REMOVE THE FEED FOR A SINGLE FLASHING MAST LAMP, ENSURE A LAMP WARNING IS RAISED.
- 35. ACTIVATE THE CROSSING, REMOVE THE FEED FOR 2 LAMPS, ENSURE A LAMP FAULT IS RAISED.
- 36. IF EITHER OF THE ABOVE TESTS FAIL, INFORM THE MANAGER AND IF NECESSARY RECALIBRATE THE SYSTEM.
- 37. REMOVE POWER FROM THE HIMA UNITS FOR 30 SECONDS THEN RESTORE, ENSURE THE HIMA STARTS UP CORRECTLY
- 38. RESTART THE ROUTER, THROUGH SOFTWARE OR BY REMOVING POWER FOR 30 SECONDS, ENSURE CONNECTIVITY IS RESTORED
- 39. REVIEW THE EVENT LOGS FOR THE CROSSING MONITOR AND ROUTER

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY AND RESET THE MONITOR
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A

CORRECTIVE ACTION

6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNALLING TECHNICAL MAINTENANCE PLANS

LEVEL CROSSING NOT MONITORED RX-5 LIGHTS

SERVICE SCHEDULE / STANDARD JOB S03112

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES

4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REF: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 AND MANUFACTURER'S SPECIFICATIONS WHERE APPLICABLE)

LIGHTS

- 1. CHECK OPERATION AND FLASH RATE OF ALL FLASHING LAMPS / LEDS DURING OPERATION OF LEVEL CROSSING
- 2. CHECK FOCUS OF THE LIGHTS TO ENSURE THAT THERE ARE NO OBSTRUCTION OR VISIBILITY ISSUES WITH THE STOPPING SIGHT DISTANCE (REFER TO FOCUSING DIAGRAM, ESC-03-01 AND AS1742.7)
- 3. CLEAN EXTERIOR OF ALL ROUNDELS / LENSES OF LEVEL CROSSING

ACTIVE ADVANCE WARNING LIGHTS

4. CHECK THE FUNCTIONING OF THE RAIL SIGNALLING CIRCUITS UP TO THE RAILWAY INTERFACE CONTROL UNIT (RICU) AND ENSURE CORRECT OPERATION OF THE ACTIVE ADVANCE WARNING LIGHTS.

BELLS (WHERE FITTED)

5. CHECK THE BELL STRIKE RATE AND VOLUME DURING OPERATION OF THE LEVEL CROSSING

SIRENS / TONE GENERATOR (WHERE FITTED)

6. CHECK THE SOUND OUTPUT VOLUME DURING OPERATION OF THE LEVEL CROSSING. ADJUST THE VOLUME IF NECESSARY.

GENERAL

- 7. CHECK ADJUSTMENT OF ROTARY CONTACTS FITTED TO MECHANICAL CONTROL LEVERS AND EXAMINE FOR WEAR / DAMAGE (WHERE FITTED)
- 8. CHECK ADJUSTMENT OF SHUNTER'S PUSH BUTTON CONTACTS AND EXAMINE FOR WEAR / DAMAGE (WHERE FITTED)
- 9. CHECK THE SETTING OF THE BELL CUT-OFF NIGHT TIMER RELAY (WHERE FITTED) AND ADJUST TIMERS FOR DAYLIGHT SAVINGS WHEN REQUIRED. INSPECT THE TIMER INSTALLATION DATE, IF ≥ 8 YEARS, THE TIMER NEEDS TO BE REPLACED. IF THE TIMER DOES NOT HAVE AN INSTALLATION DATE, REPLACE THE TIMER AND ENSURE THE TIMER IS LABELLED WITH THE DATE OF INSTALLATION.
- 10. PERFORM ZONAL INSPECTION OF THE GENERAL CONDITION

ESW-26-01

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY
 - SIGNALLING TECHNICAL MAINTENANCE PLANS

LEVEL CROSSING NOT MONITORED RX-5 LIGHTS

SERVICE SCHEDULE / STANDARD JOB S03113

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTIONS: (REFERENCE: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 & AS1742.7)

NOTE: PERFORM SJ - S03112 IN CONJUNCTION WITH THIS SERVICE

FLASHING LIGHTS

- 1. EXAMINE ALL LEVEL CROSSING WARNING LIGHTS FOR ADVERSE EFFECTS OF EXCESSIVE VEGETATION GROWTH ON VISIBILITY
- 2. EXAMINE LAMPS (IN PARTICULAR, GASKETS AND INNER REFLECTIVE SURFACES) FOR CONDITION & INTEGRITY –
- 3. CLEAN ALL LAMPS
- 4. CHECK THAT ROUNDELS ARE UNDAMAGED, THAT LIGHTS ARE SECURELY FASTENED TO THE CROSSARM AND THAT FRONT COVERS ARE PROPERLY CLOSED. IF A DAMAGED ROUNDEL IS FOUND, REPLACE AT THE EARLIEST POSSIBLE OPPORTUNITY. IF THE DAMAGE IS SUFFICIENT TO CAUSE THAT LIGHT UNIT TO DISPLAY EITHER A WHITE OR LIGHT OR LITTLE OR NO LIGHT, REPLACE THE SAME DAY.
- 5. CHECK EACH INCANDESCENT LAMP VOLTAGE AT THE LAMP, WITH THE TEST SWITCH OFF. VOLTAGE AT THE LAMP SHOULD BE BETWEEN 9.4 TO 9.7V. IF VOLTAGE IS OUTSIDE THIS RANGE, ADJUST THE DROPPING RESISTOR. CHECK SHOULD BE MADE AT THE LIGHT IF POSSIBLE WITHOUT REMOVING THE LAMP. IF NOT POSSIBLE, CHECK IS TO BE MADE AT THE TERMINALS IN THE CROSSARM.
- 6. ENSURE FASTENER BETWEEN LAMP AND CROSS ARM IS SECURE
- 7. INSPECT CONDITON OF LAMP CASES, HOODS, BACKGROUNDS AND FIXINGS & ADJUST / REPAIR AS NECESSARY

SIGNAGE

THIS INSPECTION IS INTENDED TO INSPECT THE LEVEL CROSSING SIGNAGES, WHICH ARE ARTC ASSETS.

WHEN SIGNAL STAFF IS ON SITE FOR INSPECTION OF SIGNALLING SIGNAGES, IF THEY NOTICE ANY ISSUES WITH THE OTHER SIGNAGES, FOR EXAMPLE, PASSIVE SIGNAGES AT LEVEL CROSSINGS AND PEDESTRIAN CROSSINGS, THEY SHOULD REPORT TO THE TRACK AND CIVIL STAFF FOR RECTIFICATION.

IF SIGNALLING STAFF NOTICE ANY ISSUE WITH THE SIGNAGES MAINTAINED BY THE ROAD AUTHORITY, THEY SHALL REPORT TO THE ROAD AUTHORITY (AS PER INTERFACE AGREEMENT) AND RECORD THIS IN THE ENTERPRISE ASSET MANAGEMENT SYSTEM AND CREATE A DEFECT WITH PRIORITY PN.

- 8. EXAMINE TRAIN DRIVERS APPROACH WARNING SIGNS FOR CLARITY AND CONDITION
- 9. EXAMINE ACTIVE LEVEL CROSSING SIGNS, R6-25, W7-2-2 AND R6-9 INSTALLED ON RX-5 ASSEMBLY WHICH ARE MOUNTED ON FLASHING LIGHTS POST OF THE CROSSING.

R6-25	
TRACKS W7-2-2	
SIGNAL	
RX-5	
10. EXAMINE TRAIN DRIVERS APPROACH WARNING SIGNS AND PREDICTOR SIGNS (WHERE FITTED) FOR CLARITY AND CONDITION.	
BELLS (WHERE FITTED)	
11. EXAMINE BELL OPERATING CONTACT ASSEMBLY FOR CRACKING AROUND FASTENINGS, ENSURE FASTENINGS ARE SECURE	
12. EXAMINE BELL OPERATING CONTACTS FOR BURNING / DEGRADATION	
13. EXAMINE THE BELL STRIKER FOR CRACKING 14. LUBRICATE THE BELL'S DIVOT DOINTS	
15. EXAMINE INTERIOR AND EXTERIOR OF BELL ASSEMBLY FOR CONTAMINATION, DAMAGE AND ENSURE	:
ALL FASTENINGS ARE SECURE.	
16. CHECK THAT THE SECURING DEVICES ARE TIGHT	
17. CHECK THE BELL SOUND LEVEL. IF ANY ISSUES, ADJUST OR REPLACE THE BELL AS REQUIRED	
SIREN / TONE GENERATOR (WHERE FITTED)	
18. CHECK THAT THE SECURING DEVICES ARE TIGHT	
GENERAL	
19. CHECK OPERATION OF EMERGENCY SWITCHES DURING MANUAL OPERATION OF THE LEVEL CROSSING (WHERE APPLICABLE)	
20. CHECK THE EMERGENCY SWITCH KEYS REMAIN CAPTIVE WHEN SWITCH IS IN THE "OFF" POSITION	
21. CHECK THAT THE DOOR OF EMERGENCY SWITCH BOX CANNOT BE CLOSED WITH THE EMEGENCY	
KEY IN THE KEYSWITCH.	
22. TEST OPERATION OF THE TEST BOX DOOR SWITCH TO ENSURE POWER SUPPLY INDICATOR (PSI)	
23. INSPECT CONDITION OF ALL LIGHT & BOOM POST STRUCTURES FOR CORROSION, CONDITION,	
SECURITY AND SAFETY	
REINSTATEMENT ACTION:	
1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER	
2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY	
4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE	
5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A	
CORRECTIVE ACTION	
6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY	



LEVEL CROSSING NOT MONITORED RX-5 LIGHTS & BOOMS

SERVICE SCHEDULE / STANDARD JOB S03122

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REF: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 AND MANUFACTURER'S SPECIFICATIONS WHERE APPLICABLE)

LIGHTS

- 1. CHECK OPERATION AND FLASH RATE OF ALL FLASHING LAMPS / LEDS DURING OPERATION OF LEVEL CROSSING INCLUDING BOOM TIP LIGHT
- 2. CHECK FOCUS OF THE LIGHTS TO ENSURE THAT THERE ARE NO OBSTRUCTION OR VISIBILITY ISSUES WITH THE STOPPING SIGHT DISTANCE (REFER TO FOCUSING DIAGRAM, ESC-03-01 AND AS1742.7)
- 3. CLEAN EXTERIOR OF ALL ROUNDELS / LENSES OF LEVEL CROSSING

ACTIVE ADVANCE WARNING LIGHTS

4. CHECK THE FUNCTIONING OF THE RAIL SIGNALLING CIRCUITS UP TO THE RAILWAY INTERFACE CONTROL UNIT (RICU) AND ENSURE CORRECT OPERATION OF THE ACTIVE ADVANCE WARNING LIGHTS.

BELLS (WHERE FITTED)

5. CHECK THE BELL STRIKE RATE AND VOLUME DURING OPERATION OF THE LEVEL CROSSING

SIRENS / TONE GENERATOR (WHERE FITTED)

6. CHECK THE SOUND OUTPUT VOLUME DURING OPERATION OF THE LEVEL CROSSING. ADJUST THE VOLUME IF NECESSARY.

GENERAL

- 7. CHECK ADJUSTMENT OF ROTARY CONTACTS FITTED TO MECHANICAL CONTROL LEVERS AND EXAMINE FOR WEAR / DAMAGE (WHERE FITTED)
- 8. CHECK ADJUSTMENT OF SHUNTER'S PUSH BUTTON CONTACTS AND EXAMINE FOR WEAR / DAMAGE (WHERE FITTED)
- 9. CHECK THE SETTING OF THE BELL CUT-OFF NIGHT TIMER RELAY (WHERE FITTED) AND ADJUST TIMERS FOR DAYLIGHT SAVINGS WHEN REQUIRED. INSPECT THE TIMER INSTALLATION DATE, IF ≥ 8 YEARS, THE TIMER NEEDS TO BE REPLACED. IF THE TIMER DOES NOT HAVE AN INSTALLATION DATE, REPLACE THE TIMER AND ENSURE THE TIMER IS LABELLED WITH THE DATE OF INSTALLATION.
- 10. PERFORM ZONAL INSPECTION OF THE GENERAL CONDITION
- 11. CHECK THE BOOM BARRIER CONDITION, ASSEMBLY AND FASTENERS. CHECK FOR ANY WEAR OR DAMAGE TO BARRIERS. TAKE APPROPRIATE ACTIONS AS REQUIRED.

ROAD BOOM & MOTOR MECHANISM (WHERE FITTED) - GENERIC TYPE / MANUFACTURE

12. CHECK OPERATION OF BOOM AND ENSURE THAT BOOM MOTOR CUTS OUT AT THE FULLY RAISED POSITION AND THAT THE HOLD MECHANISM RETAINS THE BOOM IN THIS POSITION AND ALSO THAT THE BOOM DESCENDS TO THE CORRECT LOWERED POSITION. ADJUST THE MOTOR CUT OUT IF NECESSARY.



- 13. CHECK BOOM MOTOR OPERATION FOR CLUTCH SLIPPAGE
- 14. EXAMINE BOOM MECHANISM GEARS FOR WEAR, CRACKS OR ABNORMALITIES
- 15. GREASE BOOM MECHANISM GEARS
- 16. EXAMINE BOOM MECHANISM CONTACTS FOR CONDITION AND EXAMINE FOR WEAR AND / OR DAMAGE
- 17. CHECK ADJUSTMENT OF BOOM MECHANISM CONTACTS AS PER DESIGN OR STANDARD
- 18. LUBRICATE LEVEL CROSSING MECHANISM AND MOTOR ENSURING OILWAYS ARE CLEAR AND ALL OILING CUP CAPS ARE REFITTED

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

LEVEL CROSSING NOT MONITORED RX-5 LIGHTS & BOOMS

SERVICE SCHEDULE / STANDARD JOB S03123

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTIONS: (REFERENCE: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 & AS1742.7)

NOTE: PERFORM SJ - S03122 IN CONJUNCTION WITH THIS SERVICE

FLASHING LIGHTS

- 1. EXAMINE ALL LEVEL CROSSING WARNING LIGHTS FOR ADVERSE EFFECTS OF EXCESSIVE VEGETATION GROWTH ON VISIBILITY
- 2. EXAMINE LAMPS (IN PARTICULAR, GASKETS AND INNER REFLECTIVE SURFACES) FOR CONDITION & INTEGRITY –
- 3. CLEAN ALL LAMPS
- 4. CHECK THAT ROUNDELS ARE UNDAMAGED, THAT LIGHTS ARE SECURELY FASTENED TO THE CROSSARM AND THAT FRONT COVERS ARE PROPERLY CLOSED. IF A DAMAGED ROUNDEL IS FOUND, REPLACE AT THE EARLIEST POSSIBLE OPPORTUNITY. IF THE DAMAGE IS SUFFICIENT TO CAUSE THAT LIGHT UNIT TO DISPLAY EITHER A WHITE OR LIGHT OR LITTLE OR NO LIGHT, REPLACE THE SAME DAY.
- 5. CHECK EACH INCANDESCENT LAMP VOLTAGE AT THE LAMP, WITH THE TEST SWITCH OFF. VOLTAGE AT THE LAMP SHOULD BE BETWEEN 9.4 TO 9.7V. IF VOLTAGE IS OUTSIDE THIS RANGE, ADJUST THE DROPPING RESISTOR. CHECK SHOULD BE MADE AT THE LIGHT IF POSSIBLE WITHOUT REMOVING THE LAMP. IF NOT POSSIBLE, CHECK IS TO BE MADE AT THE TERMINALS IN THE CROSSARM.
- 6. ENSURE FASTENER BETWEEN LAMP AND CROSS ARM IS SECURE
- 7. INSPECT CONDITON OF LAMP CASES, HOODS, BACKGROUNDS AND FIXINGS & ADJUST / REPAIR AS NECESSARY

SIGNAGE

THIS INSPECTION IS INTENDED TO INSPECT THE LEVEL CROSSING SIGNAGES, WHICH ARE ARTC ASSETS.

WHEN SIGNAL STAFF IS ON SITE FOR INSPECTION OF SIGNALLING SIGNAGES, IF THEY NOTICE ANY ISSUES WITH THE OTHER SIGNAGES, FOR EXAMPLE, PASSIVE SIGNAGES AT LEVEL CROSSINGS AND PEDESTRIAN CROSSINGS, THEY SHOULD REPORT TO THE TRACK AND CIVIL STAFF FOR RECTIFICATION.

IF SIGNALLING STAFF NOTICE ANY ISSUE WITH THE SIGNAGES MAINTAINED BY THE ROAD AUTHORITY, THEY SHALL REPORT TO THE ROAD AUTHORITY (AS PER INTERFACE AGREEMENT) AND RECORD THIS IN THE ENTERPRISE ASSET MANAGEMENT SYSTEM AND CREATE A DEFECT WITH PRIORITY PN.

- 8. EXAMINE TRAIN DRIVERS APPROACH WARNING SIGNS FOR CLARITY AND CONDITION
- 9. EXAMINE ACTIVE LEVEL CROSSING SIGNS, R6-25, W7-2-2 AND R6-9 INSTALLED ON RX-5 ASSEMBLY WHICH ARE MOUNTED ON FLASHING LIGHTS POST OF THE CROSSING.





10. EXAMINE TRAIN DRIVERS APPROACH WARNING SIGNS AND PREDICTOR SIGNS (WHERE FITTED) FOR CLARITY AND CONDITION.

BELLS (WHERE FITTED)

- 11. EXAMINE BELL OPERATING CONTACT ASSEMBLY FOR CRACKING AROUND FASTENINGS, ENSURE FASTENINGS ARE SECURE
- 12. EXAMINE BELL OPERATING CONTACTS FOR BURNING / DEGRADATION
- 13. EXAMINE THE BELL STRIKER FOR CRACKING
- 14. LUBRICATE THE BELL'S PIVOT POINTS
- 15. EXAMINE INTERIOR AND EXTERIOR OF BELL ASSEMBLY FOR CONTAMINATION, DAMAGE AND ENSURE ALL FASTENINGS ARE SECURE.
- 16. CHECK THAT THE SECURING DEVICES ARE TIGHT
- 17. CHECK THE BELL SOUND LEVEL. IF ANY ISSUES, ADJUST OR REPLACE THE BELL AS REQUIRED

SIREN / TONE GENERATOR (WHERE FITTED)

18. CHECK THAT THE SECURING DEVICES ARE TIGHT

GENERAL

- 19. CHECK OPERATION OF EMERGENCY SWITCHES DURING MANUAL OPERATION OF THE LEVEL CROSSING (WHERE APPLICABLE)
- 20. CHECK THE EMERGENCY SWITCH KEYS REMAIN CAPTIVE WHEN SWITCH IS IN THE "OFF" POSITION
- 21. CHECK THAT THE DOOR OF EMERGENCY SWITCH BOX CANNOT BE CLOSED WITH THE EMEGENCY KEY IN THE KEYSWITCH.
- 22. TEST OPERATION OF THE TEST BOX DOOR SWITCH TO ENSURE POWER SUPPLY INDICATOR (PSI) LAMP GOES OUT WHEN SWITCH IS PUSHED (WHERE APPLICABLE)
- 23. INSPECT CONDITION OF ALL LIGHT & BOOM POST STRUCTURES FOR CORROSION, CONDITION, SECURITY AND SAFETY

ROAD BOOM & MOTOR MECHANISM (WHERE FITTED) - GENERIC TYPE / MANUFACTURE

- 24. CHECK VISIBILITY OF BOOM AND EXAMINE FOR SIGNS OF DEGRADATION
- 25. EXAMINE BOOM AND LAMP WIRING AND CONDUIT BETWEEN MECHANISM AND BOOM FOR DAMAGE
- 26. CHECK BOOMS DESCEND DELAY TIMER IS SET AT 7 SECONDS (11 SEC FOR "B" DOUBLE OR ROAD TRAIN ROADS)
- 27. CHECK BOOM BARRIER TAKES BETWEEN 10 TO 12 SECONDS TO DESCEND FULLY
- 28. CHECK SECURITY OF COUNTERWEIGHT FIXING
- 29. CHECK THE CONDITION AND LENGTH OF THE BRUSHES IN MOTOR AND THAT THEY ARE FREE MOVING IN THEIR HOLDERS
- 30. CHECK THE CONDITION MOTOR AND COMMUTATOR
- 31. EXAMINE BOOM MOTOR OPERATION FOR ANY BINDING OR TENDENCY TO STICK

CHECK BOOM MOTOR HOLD CLEAR ASSEMBLY TO TOLERANCES SPECIFIED

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS PEDESTRIAN CROSSING NOT MONITORED RX-12 LIGHTS

SERVICE SCHEDULE / STANDARD JOB S03132

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REF: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 AND MANUFACTURER'S SPECIFICATIONS WHERE APPLICABLE)

PED LIGHTS

- 1. CHECK OPERATION OF PEDESTRIAN LIGHTS
- 2. CHECK THAT THERE ARE NO OBSTRUCTION OR VISIBILITY ISSUES WITH THE LIGHTS
- 3. CLEAN EXTERIOR OF ALL LENSES OF PEDESTRIAN CROSSINGS
- 4. CHECK THE LIGHTS ARE OPERATING CORRECTLY AND POINTING TO CORRECT DIRECTION FOR PEDESTRIAN CROSSING.

BELLS (WHERE FITTED)

5. CHECK THE BELL STRIKE RATE AND VOLUME DURING OPERATION OF THE PEDESTRIAN CROSSING

SIRENS / TONE GENERATOR (WHERE FITTED)

6. CHECK THE SOUND OUTPUT VOLUME DURING OPERATION OF THE PEDESTRIAN CROSSING. ADJUST THE VOLUME IF NECESSARY.

GENERAL

- 7. CHECK ADJUSTMENT OF ROTARY CONTACTS FITTED TO MECHANICAL CONTROL LEVERS AND EXAMINE FOR WEAR / DAMAGE (WHERE FITTED)
- 8. CHECK THE SETTING OF THE BELL CUT-OFF NIGHT TIMER RELAY (WHERE FITTED) AND ADJUST TIMERS FOR DAYLIGHT SAVINGS WHEN REQUIRED. INSPECT THE TIMER INSTALLATION DATE, IF ≥ 8 YEARS, THE TIMER NEEDS TO BE REPLACED. IF THE TIMER DOES NOT HAVE AN INSTALLATION DATE, REPLACE THE TIMER AND ENSURE THE TIMER IS LABELLED WITH THE DATE OF INSTALLATION.
- 9. PERFORM ZONAL INSPECTION OF THE GENERAL CONDITION

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

PEDESTRIAN CROSSING NOT MONITORED RX-12 LIGHTS

SERVICE SCHEDULE / STANDARD JOB S03133

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTIONS: (REFERENCE: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 & AS1742.7)

NOTE: PERFORM SJ - S03132 IN CONJUNCTION WITH THIS SERVICE

PED LIGHTS

- 1. EXAMINE ALL PEDESTRIAN LIGHTS FOR ADVERSE EFFECTS ON VISIBILITY
- 2. EXAMINE PEDESTRIAN LIGHTS (IN PARTICULAR, GASKETS AND INNER REFLECTIVE SURFACES) FOR CONDITION & INTEGRITY
- 3. CLEAN ALL PEDESTRIAN LIGHTS
- 4. CHECK THAT PEDESTRIAN LIGHTS ARE UNDAMAGED, THAT LIGHTS ARE SECURELY FASTENED AND THAT COVERS ARE PROPERLY CLOSED. IF A DAMAGED LIGHT IS FOUND, REPLACE AT THE EARLIEST POSSIBLE OPPORTUNITY.

SIGNAGE

THIS INSPECTION IS INTENDED TO INSPECT THE LEVEL CROSSING SIGNAGES, WHICH ARE ARTC ASSETS.

WHEN SIGNAL STAFF IS ON SITE, IF THEY NOTICE ANY ISSUES WITH THE OTHER SIGNAGES, FOR EXAMPLE, PASSIVE SIGNAGES AT LEVEL CROSSINGS AND PEDESTRIAN CROSSINGS, THEY SHOULD REPORT TO THE TRACK AND CIVIL STAFF FOR RECTIFICATION.

IF SIGNALLING STAFF NOTICE ANY ISSUE WITH THE SIGNAGES MAINTAINED BY THE ROAD AUTHORITY, THEY SHALL REPORT TO THE ROAD AUTHORITY (AS PER INTERFACE AGREEMENT) AND RECORD THIS IN THE ENTERPRISE ASSET MANAGEMENT SYSTEM AND CREATE A DEFECT WITH PRIORITY PN.

5. INSPECT THE CONDITION OF ACTIVE PEDESTRIAN CROSSING FENCING MAZE FOR SIGNS OF DEGRADATION AND SAFETY HAZARD

BELLS (WHERE FITTED)

- 6. EXAMINE BELL OPERATING CONTACT ASSEMBLY FOR CRACKING AROUND FASTENINGS, ENSURE FASTENINGS ARE SECURE
- 7. EXAMINE BELL OPERATING CONTACTS FOR BURNING / DEGRADATION
- 8. EXAMINE THE BELL STRIKER FOR CRACKING
- 9. LUBRICATE THE BELL'S PIVOT POINTS
- 10. EXAMINE INTERIOR AND EXTERIOR OF BELL ASSEMBLY FOR CONTAMINATION, DAMAGE AND ENSURE ALL FASTENINGS ARE SECURE.
- 11. CHECK THAT THE SECURING DEVICES ARE TIGHT
- 12. CHECK THE BELL SOUND LEVEL. IF ANY ISSUES, ADJUST OR REPLACE THE BELL AS REQUI

SIREN / TONE GENERATOR (WHERE FITTED)

13. CHECK THAT THE SECURING DEVICES ARE TIGHT

GENERAL

- 14. CHECK OPERATION OF EMERGENCY SWITCHES DURING MANUAL OPERATION OF THE LEVEL CROSSING (WHERE APPLICABLE)
- 15. CHECK THE EMERGENCY SWITCH KEYS REMAIN CAPTIVE WHEN SWITCH IS IN THE "OFF" POSITION 16. CHECK THAT THE DOOR OF EMERGENCY SWITCH BOX CANNOT BE CLOSED WITH THE EMEGENCY KEY



IN THE KEYSWITCH.

- 17. TEST OPERATION OF THE TEST BOX DOOR SWITCH TO ENSURE POWER SUPPLY INDICATOR (PSI) LAMP GOES OUT WHEN SWITCH IS PUSHED (WHERE APPLICABLE)
- 18. INSPECT CONDITION OF ALL LIGHT POST STRUCTURES FOR CORROSION, CONDITION, SECURITY AND SAFETY

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



PEDESTRIAN CROSSING NOT MONITORED RX-12 LIGHTS & SWING GATES

SERVICE SCHEDULE / STANDARD JOB S03142

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REF: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 AND MANUFACTURER'S SPECIFICATIONS WHERE APPLICABLE)

PED LIGHTS

- 1. CHECK OPERATION OF PEDESTRIAN LIGHTS
- 2. CHECK THAT THERE ARE NO OBSTRUCTION OR VISIBILITY ISSUES WITH THE LIGHTS
- 3. CLEAN EXTERIOR OF ALL LENSES OF PEDESTRIAN CROSSINGS
- 4. CHECK THE LIGHTS ARE OPERATING CORRECTLY AND POINTING TO CORRECT DIRECTION FOR PEDESTRIAN CROSSING.

BELLS (WHERE FITTED)

5. CHECK THE BELL STRIKE RATE AND VOLUME DURING OPERATION OF THE PEDESTRIAN CROSSING

SIRENS / TONE GENERATOR (WHERE FITTED)

6. CHECK THE SOUND OUTPUT VOLUME DURING OPERATION OF THE PEDESTRIAN CROSSING. ADJUST THE VOLUME IF NECESSARY.

GENERAL

- 7. CHECK ADJUSTMENT OF ROTARY CONTACTS FITTED TO MECHANICAL CONTROL LEVERS AND EXAMINE FOR WEAR / DAMAGE (WHERE FITTED)
- 8. CHECK THE SETTING OF THE BELL CUT-OFF NIGHT TIMER RELAY (WHERE FITTED) AND ADJUST TIMERS FOR DAYLIGHT SAVINGS WHEN REQUIRED. INSPECT THE TIMER INSTALLATION DATE, IF ≥ 8 YEARS, THE TIMER NEEDS TO BE REPLACED. IF THE TIMER DOES NOT HAVE AN INSTALLATION DATE, REPLACE THE TIMER AND ENSURE THE TIMER IS LABELLED WITH THE DATE OF INSTALLATION.
- 9. PERFORM ZONAL INSPECTION OF THE GENERAL CONDITION

PEDESTRIAN BOOM & MOTOR MECHANISM (WHERE FITTED) - GRS 2A

- 10. LUBRICATE SHAFT BEARING AND LOCK DOG
- 11. LUBRICATE GEAR TRAIN
- 12. LUBRICATE MOTOR AND HOLD MECHANISM
- 13. INSPECT CONDITION AND OPERATION OF MOTOR COMMUTATOR AND BRUSHES
- 14. INSPECT CONDITION AND OPERATION OF HOLD MECHANISM
- 15. INSPECT CONDITION OF CONTACTS AND OPERATION OF CIRCUIT CONTROLLER
- 16. MAINTAIN PINION CLUTCH
- 17. TEST MOTOR CURRENT
- 18. TEST HOLD MAGNET CURRENT



- 19. CHECK TIGHTNESS OF SCREWS AND NUTS ON MAIN CASE AND BOOM ARM ASSEMBLY
- 20. INSPECT CONDITION OF DOOR SEAL
- 21. CHECK THAT DOOR COVER HASP IS SECURED AND LOCKED
- 22. INSPECT CONDITION OF THE BOOM
- 23. CHECK OPERATION OF BOOM AND ENSURE THAT BOOM MOTOR CUTS OUT AT THE FULLY RAISED POSITION AND THAT THE HOLD MECHANISM RETAINS THE BOOM IN THIS POSITION AND ALSO THAT THE BOOM DESCENDS TO THE CORRECT LOWERED POSITION

PEDESTRIAN SWING GATE MECHANISM (WHERE FITTED) - GENERIC MANUFACTURE

- 24. CHECK OPERATION OF SWING GATE ENSURING APPROPRIATE OPEN AND CLOSE CYCLES ARE COMPLETED
- 25. CHECK OPERATION OF MOTOR / GEARBOX BY ENSURING A SMOOTH, NOISE FREE OPERATION WITH NO LAG BETWEEN MOTOR

OPERATION AND GATE MOVEMENT

26. CHECK SECURITY OF LOCKNUTS FOR PEDESTRIAN GATE LINKAGE TO MOTOR

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

PEDESTRIAN CROSSING NOT MONITORED RX-12 LIGHTS & SWING GATES

SERVICE SCHEDULE / STANDARD JOB S03143

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTIONS: (REFERENCE: LEVEL CROSSING MANUALS SMS 02, ESM-03-01, ESC-03-01 & AS1742.7)

NOTE: PERFORM SJ - S03142 IN CONJUNCTION WITH THIS SERVICE

PED LIGHTS

- 1. EXAMINE ALL PEDESTRIAN FOR ADVERSE EFFECTS ON VISIBILITY
- 2. EXAMINE PEDESTRIAN LIGHTS (IN PARTICULAR, GASKETS AND INNER REFLECTIVE SURFACES) FOR CONDITION & INTEGRITY –
- 3. CLEAN ALL PEDESTRIAN LIGHTS
- 4. CHECK THAT PEDESTRIAN LIGHTS ARE UNDAMAGED, THAT LIGHTS ARE SECURELY FASTENED AND THAT COVERS ARE PROPERLY CLOSED. IF A DAMAGED LIGHT IS FOUND, REPLACE AT THE EARLIEST POSSIBLE OPPORTUNITY.

SIGNAGE

THIS INSPECTION IS INTENDED TO INSPECT THE LEVEL CROSSING SIGNAGES, WHICH ARE ARTC ASSETS.

WHEN SIGNAL STAFF IS ON SITE, IF THEY NOTICE ANY ISSUES WITH THE OTHER SIGNAGES, FOR EXAMPLE, PASSIVE SIGNAGES AT LEVEL CROSSINGS AND PEDESTRIAN CROSSINGS, THEY SHOULD REPORT TO THE TRACK AND CIVIL STAFF FOR RECTIFICATION.

IF SIGNALLING STAFF NOTICE ANY ISSUE WITH THE SIGNAGES MAINTAINED BY THE ROAD AUTHORITY, THEY SHALL REPORT TO THE ROAD AUTHORITY (AS PER INTERFACE AGREEMENT) AND RECORD THIS IN THE ENTERPRISE ASSET MANAGEMENT SYSTEM AND CREATE A DEFECT WITH PRIORITY PN.

5. INSPECT THE CONDITION OF THE ACTIVE PEDESTRIAN CROSSING FENCING MAZE FOR SIGNS OF DEGRADATION AND SAFETY HAZARDS

BELLS (WHERE FITTED)

- 6. EXAMINE BELL OPERATING CONTACT ASSEMBLY FOR CRACKING AROUND FASTENINGS, ENSURE FASTENINGS ARE SECURE
- 7. EXAMINE BELL OPERATING CONTACTS FOR BURNING / DEGRADATION
- 8. EXAMINE THE BELL STRIKER FOR CRACKING
- 9. LUBRICATE THE BELL'S PIVOT POINTS
- 10. EXAMINE INTERIOR AND EXTERIOR OF BELL ASSEMBLY FOR CONTAMINATION, DAMAGE AND ENSURE ALL FASTENINGS ARE SECURE.
- 11. CHECK THAT THE SECURING DEVICES ARE TIGHT
- 12. CHECK THE BELL SOUND LEVEL. IF ANY ISSUES, ADJUST OR REPLACE THE BELL AS REQUIRED

SIREN / TONE GENERATOR (WHERE FITTED)

13. CHECK THAT THE SECURING DEVICES ARE TIGHT

GENERAL

- 14. CHECK OPERATION OF EMERGENCY SWITCHES DURING MANUAL OPERATION OF THE PEDESTRIAN CROSSING
- 15. CHECK THE EMERGENCY SWITCH KEYS REMAIN CAPTIVE WHEN SWITCH IS IN THE "OFF" POSITION
- 16. CHECK THAT THE DOOR OF EMERGENCY SWITCH BOX CANNOT BE CLOSED WITH THE EMEGENCY KEY



IN THE KEYSWITCH.

- 17. TEST OPERATION OF THE TEST BOX DOOR SWITCH TO ENSURE POWER SUPPLY INDICATOR (PSI) LAMP GOES OUT WHEN SWITCH IS PUSHED (WHERE APPLICABLE)
- 18. INSPECT CONDITION OF ALL LIGHT POST STRUCTURES FOR CORROSION, CONDITION, SECURITY AND SAFETY

PEDESTRIAN BOOM & MOTOR MECHANISM (WHERE FITTED) - GRS 2A

19. VISUALLY INSPECT THE BRAKE SHOE AND SPLIT PIN FOR WEAR

PEDESTRIAN SWING GATE MECHANISM (WHERE FITTED) - GENERIC MANUFACTURE

- 20. EXAMINE CONDITION OF GATE DRIVE CONTROL HOUSING AND INTERNAL ITEMS FOR EVIDENCE OF DEGRADATION OR CONTAMINATION
- 21. EXAMINE GATE TURNBUCKLE COUPLING AND PIN / SCREW FOR WEAR
- 22. CHECK SECURITY OF PARALLEL LOCKING BUSH SET SCREWS ON GATE LINKAGE
- 23. CHECK SECURITY OF LOCKNUTS ON GATE LINKAGE TO MOTOR
- 24. LUBRICATE GATE HINGES USING 6MM GREASE NIPPLE ENSURING GREASE FULLY PENETRATES HINGE CONTACT AREA
- 25. TEST THE INDEXED COUPLING BY FORCING THE GATE AGAINST ITS DIRECTION UNTIL THE COUPLING PRODUCES A CLICKING NOISE
- 26. RELEASE THE GATE AND ENSURE IT RETURNS TO ITS PRESET POSITION
- 27. CHECK SECURITY OF PARALLEL LOCKING BUSH SET SCREWS ON GATE LINKAGE
- 28. EXAMINE PEDESTRIAN GATE / EMERGENCY EXIT GATE SIGNAGE BOARD FOR DEGRADATION AND ENSURE WRITING IS LEGIBLE
- 29. EXAMINE GATE TURNBUCKLE COUPLING AND PIN / SCREW FOR WEAR
- 30. LUBRICATE EMERGENCY EGRESS GANTE HINGES
- 31. CHECK OPERATION OF GATE RETURN SPRING BY ENSURING THE GATE FULLY CLOSES AFTER REMOVAL OF POWER FROM THE MOTOR. ADJUST THE SPRING TENSION IF REQUIRED.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNALLING TECHNICAL MAINTENANCE PLANS LEVEL CROSSINGS SERVICE SCHEDULE / STANDARD JOB S03014
 PREPARATION ACTION: ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES PERFORM PRE-WORK SAFETY BRIEF LEVEL CROSSING MONITOR MUST BE SET TO "MAINTENANCE DISABLED"
MAINTENANCE ACTIONS: (REFER: LEVEL CROSSING MANUALS SMS' 02, ESM-03-01, ESC-03-01 & ESM-00-01)
 NOTE: THE FOLLOWING CHECKLIST IS TO BE USED BY SIGNAL ENGINEERS DURING SURVEILLANCE INSPECTIONS OF LEVEL CROSSING INSTALLATIONS TO GAUGE OPERATION IS IN ACCORDANCE WITH STANDARDS AND WORK QUALITY BY MAINTENANCE STAFF LIGHTS INCANDESCENT OR LED TYPE 2. CHECK OPERATION, ALIGNMENT AND PERFORMANCE OF ALL WARNING LIGHTS INCLUDING PEDESTRIAN AND LIGHTS WHERE FITTED (ESC-03-01 AND ESM-03-01 LEVEL CROSSING) 3. AUDIBLE WARNING BELLS / SIRENS WHERE FITTED 4. CHECK BELL / SIREN OUTPUT 5. CHECK BELL OPERATING TIMES AS PER CIRCUIT BOOK IF FITTED WITH BELL TIMER 6. BOOMS INCLUDING PEDESTRIAN WHERE FITTED 4. INSPECT BOOM AND / OR GATE MECHANISMS 7. CHECK OPERATION OF BOOMS AND GATES LEVEL CROSSING MONITOR 8. INSPECT MONITOR & MODEM MOUNTING (SMS02 CERBERUS MANUAL) 9. REVIEW LOG AND INVESTIGATE ANY FRRORS
GENERAL THE SIGNAGE INSPECTION INTENDS TO INSPECT THE LEVEL CROSSING SIGNAGES WHICH ARE ARTC
ASSETS. WHEN SIGNAL STAFF IS ON SITE FOR INSPECTION OF SIGNALLING SIGNAGES, IF THEY NOTICE ANY ISSUES WITH THE OTHER SIGNAGES, FOR EXAMPLE, PASSIVE SIGNAGES AT LEVEL CROSSINGS AND PEDESTRIAN CROSSINGS, THEY SHOULD REPORT TO THE TRACK AND CIVIL STAFF FOR RECTIFICATION.
IF SIGNALLING STAFF NOTICE ANY ISSUE WITH THE SIGNAGES MAINTAINED BY THE ROAD AUTHORITY, THEY SHALL REPORT TO THE ROAD AUTHORITY (AS PER INTERFACE AGREEMENT) AND RECORD THIS IN THE ENTERPRISE ASSET MANAGEMENT SYSTEM AND CREATE A DEFECT WITH PRIORITY PN.
 INSPECT PHYSICAL CONDITION OF LEVEL CROSSING AND LOCATION EXAMINE ACTIVE LEVEL CROSSING SIGNS, R6-25, W7-2-2 AND R6-9 INSTALLED ON RX-5 ASSEMBLY WHICH ARE MOUNTED ON FLASHING LIGHTS POST OF THE CROSSINGAND RECORD ANY DEFECT IN ELLIPSE. ADVANCED WARNING LIGHTS ARE MAINTAINED BY ROAD AUTHORITY. WHERE FITTED, CHECK THE FUNCTIONING OF THE RAIL SIGNALLING CIRCUITS UP TO THE RAILWAY INTERFACE CONTROL UNIT (RICU) AND ENSURE CORRECT OPERATION OF THE ACTIVE ADVANCE WARNING LIGHTS INSPECT TRAIN DRIVER WARNING SIGNS FOR CLARITY AND CONDITIONS.
 ASSESS THE ENVIRONMENTAL SAFETY ASPECTS OF THE SITE WITH CONSIDERATION FOR CHANGES AT THE LOCATION IN RESPECT OF ROAD ALTERATIONS, OBSTRUCTIONS IN SIGHTING THE WARNING LIGHTS, SUITABILITY OF BELLS & SIRENS, ROAD & PEDESTRIAN TRAFFIC PATTERNS, ETC INSPECT CONDITION OF EMERGENCY / TEST BOX, SWITCH AND KEYS CHECK DOCUMENTATION CIRCUIT BOOKS, TRACK CARDS, LAST MAINTAINED DATE INSPECT TELEPHONE IF FITTED AND TEST OPERATION



- 18. ENTER ALL TEST & INSPECTION RESULTS ON THE MAINTENANCE HISTORY CARD ESM0301F-01.
- 19. ASSESS STANDARD OF MAINTENANCE, ADDRESS ISSUES WITH THE MAINTENANCE STAFF AND TEAM MANAGER
- 20. ENSURE CORRECT OPERATION OF RELAYS AND DIRECTION STICKS (ESM-05-11 VITAL SIGNALLING RELAYS)
- 21. PREPARE THE REPORT OF SURVEILLANCE INSPECTION AND LIST ALL KNOWN CONDITIONS IN THE ELLIPSE IDENTIFIED IN SURVEILLANCE INSPECTION.

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY AND RESET THE MONITOR
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNALLING TECHNICAL MAINTENANCE PLANS

LEVEL CROSSINGS

SERVICE SCHEDULE / STANDARD JOB S03015



PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 5. LEVEL CROSSING MONITOR MUST BE SET TO "MAINTENANCE DISABLED"

MAINTENANCE ACTION:

(REFERENCE: MANUFACTURER'S SPECIFICATION)

PERFORM S03012 & S03013 IN CONJUNCTION WITH THIS SERVICE

PEDESTRIAN SWING GATE MECHANISM (WHERE FITTED) - GENERIC MANUFACTURE

1. REPLACE ALL CAPACITORS IN THE DRIVE CONTROL

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE LEVEL CROSSING PROTECTION OPERATES CORRECTLY AND RESET THE MONITOR
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNAL INCANDESC SERVICE SCHEDULE / STANDARD JOB S04 PREPARATION ACTION:	ENT 011
SERVICE SCHEDULE / STANDARD JOB S04	011
PREPARATION ACTION:	011
PREPARATION ACTION:	
PREPARATION ACTION:	
1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK	
2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT	
3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES	
I ENS (REE MANUEACTURER'S MANUALS & SMP 31)	
1. CHECK FOR CORRECT ORIENTATION OF SIGNAL LENSES	
2. INSPECT AND REPLACE CRACKED OR DAMAGED LENSES	
3. CLEAN ALL LENSES - OUTSIDE AND INSIDE AS NECESSARY	
LAMPS (REF MANUFACTURER'S MANUALS & SMP 31)	
4. CHECK THAT LAMPS ARE SECURE IN LAMP HOLDER	
5. CHECK THAT FILAMENTS ARE WORKING (PRIMARY AND SECONDARY WHERE APPLICABLE)	
6. REPLACE LAMP (IF MAIN FILAMENT IS DEFECTIVE OR IF SINGLE FILAMENT TYPE APPROACH LIT 4	
YRLY OR IF PERMANENTLY LIT 9 MTHLY)	
NOTE: REFER TO THE EQUIPMENT HISTORY CARD RECORD TO DETERMINE THE NEXT DUE DATE	
7. WHEN CHANGING LAMPS, CHECK THE CENTRE PIN RETAINING NUT (WHERE FITTED) IS KEPT AT IT	3
OUTER LIMIT AND CANNOT COME INTO CONTACT WITH THE LAMP HOLDER	
8. ENSURE THE LAMP CONTACT AREA IS CLEANED AND PIN SPRING IS CHECKED AND TENTIONED	
ELECTRICAL (REF MANUFACTURER'S MANUALS & SMP 31)	
9. CHECK WIRING AND TIGHTNESS OF ELECTRICAL CONNECTIONS	
10. TEST VOLTAGE AT LAMP SOCKET TERMINALS WHENEVER LAMP GLOBES ARE CHANGED	
11. TEST OPERATION OF FILAMENT CHANGEOVER RELAY WHERE TEST FACILITY FITTED	
12. FUNCTION TEST ALL SIGNAL ASPECTS	
13. CHECK ADJUSTMENT OF PUSH BUTTON/SWITCH CONTACTS AND EXAMINE FOR WEAR / DAMAGE	
/CORROSION (WHERE FITTED)	
14. EXAMINE POST STRUCTURE AND BASE FOR DAMAGE, CORROSION, EROSION, SURROUNDING	
GROUND HOLES AND UNDERMINING OF THE BASE	
LAMP CASE / STRUCTURE (REF MANUFACTURER'S MANUALS & SMP 31)	
15. INSPECT CONDITION OF LAMP CASE DOOR SEAL	
16. INSPECT LAMP CASE AND HOODS FOR STRUCTURAL DAMAGE	
17. CHECK TIGHTNESS OF LAMP CASE AND HOOD FASTENINGS	
18. CHECK TIGHTNESS OF ALL SIGNAL MOUNTING FASTENINGS	
19. INSPECT SIGNAL FOR EXTERNAL LIGHT SOURCE PRODUCING FALSE (PHANTOM) INDICATIONS	
20. INSPECT CONDITION OF ACCESS STRUCTURE FOR SECURITY AND SAFETY	
21. CLEAN NAMEPLATE AND / OR MARKER PLATE AS NECESSARY	
22. PAINT HOOD/S AND BACKGROUND AS NECESSARY	
23. EXAMINE SIGNAL POST STRUCTURE AND BASE FOR DAMAGE, CORROSION, EROSION, SURROUND	NG
GROUND HOLES AND UNDERMINING	
24. CLEAN INSIDE LAMP CASE AND TREAT LAMP CASE FOR VERMIN AS NECESSARY	
20. TREAT SIGNAL POST AND FITTINGS FOR RUST AND CONTAMINATION AS NECESSARY	
REPEAT ITEMS 1 TO 25 ABOVE FOR THE FOLLOWING IF ATTACHED TO THE SIGNAL	
MARKER LIGHT OR/AND SINGLE LIGHT SUBSIDIARY SIGNAL AND/OR A LIGHT	
STENCIL ROUTE INDICATOR	
MULTILAMP ROUTE INDICATOR	
RUNNING TURNOUT SIGNAL	

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SIGNAL OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

ESW-26-01

SIGNALLING TECHNICAL MAINTENANCE PLANS SIGNAL LED SERVICE SCHEDULE / STANDARD JOB S04021

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE: THIS IS A GROUND BASED INSPECTION OF THE LED SIGNAL HEAD, POST AND STRUCTURE. - NO CLIMBING OF THE STRUTURE IS REQUIRED EXCEPT FOR REPAIR OR REPLACEMENT OF COMPONENTS.

ENSURE ACCESS AND SAFETY EQUIPMENT ASSESSED AS FIT FOR USE IF IT IS NECESSARY TO ASCEND THE STRUCTURE TO PERFORM THE CORRECTIVE WORK.

LENSES

(REF MANUFACTURER'S MANUALS)

 FROM GROUND LEVEL, CHECK THAT LENSES ARE FITTED CORRECTLY, NOT CRACKED OR DEGRADED. EXAMINE LENSES FOR GRAFFITI AND EXCESSIVE BUILD-UP OF DIRT, DUST AND SPIDER WEBS. REFIT OR REPLACE LENSES IF REQUIRED. REMOVE BUILD-UP OF DIRT, DUST AND SPIDER WEBS AS NECESSARY.

ELECTRICAL

(REF MANUFACTURER'S MANUALS)

- 2. CHECK THAT AT LEAST 80% OF LED'S IN THE ARRAY ARE ILLUMINATED (REPLACE AS NECESSARY)
- 3. CHECK ADJUSTMENT AND OPERATION OF PUSH BUTTON/SWITCH CONTACTS AND EXAMINE FOR WEAR / DAMAGE /CORROSION (WHERE FITTED)

SIGNAL STRUCTURE

(REF MANUFACTURER'S MANUALS)

- 4. CONDUCT A GENERAL VISUAL EXAMINATION OF THE SIGNAL POST / SIGNAL GANTRY STRUCTURE AND FOUNDATIONS FOR EVIDENCE OF OBVIOUS DAMAGE AND DEFECTS. REPORT FOR FURTHER ASSESSMENT OR REPAIR AS REQUIRED.
- 5. TREAT SIGNAL POST AND FITTINGS FOR RUST AND CONTAMINATION AS NECESSARY.
- 6. INSPECT THE CONDITION OF THE ACCESS STRUCTURE (WHERE APPLICABLE) FOR SECURITY AND SAFETY
- 7. CHECK/TIGHTEN ELECTRICAL CONNECTIONS AND CLEAN INSIDE SIGNAL BASE OR WIRING TERMINATION UNIT AND TREAT FOR INSECTS AND VERMIN AS NECESSARY (WHERE ACCESSIBLE).

NAMEPLATES AND SIGNAGE

8. EXAMINE THE SIGNAL NAME PLATE AND ANY ASSOCIATED SIGNAGE FOR GRAFFITI, BUILD-UP OF DIRT, DEGRADATION, OR LOSS OF LEGIBILITY. CLEAN, REPAIR OR REPLACE AS REQUIRED.

SIGNAL HEAD CASES, HOODS, AND BACKGROUNDS

- 9. EXAMINE THE SIGNAL HEAD CASE, HOODS AND BACKGROUND FOR STRUCTURAL DAMAGE, GRAFFITI OR OTHER DEFECTS. REPAIR, REPAINT OR REPLACE AS REQUIRED.
- 10. VISUALLY CHECK THE SECURITY OF THE SIGNAL HEAD CASE AND HOOD FASTENINGS

11.

SIGNAL SIGHTING

(REF ESC-07-01)

- 12. CHECK SIGNAL SIGHTING (LONG RANGE AND SHORT RANGE IN ACCORDANCE WITH ESC-07-01 and ESD-08-01.)
- 13. CHECK THAT THERE ARE NO OBSTRUCTIONS OR INTERFERENCE TO GOOD SIGHTING OF THE SIGNAL ASPECTS (E.G. VEGETATION, BACKGROUND LIGHTS, WAITING ROOM AWNINGS, ETC)



MAINTAIN IF ATTACHED TO SIGNAL

REPEAT ITEMS 1 TO 12 ABOVE FOR THE FOLLOWING IF ATTACHED TO THE SIGNAL

MARKER LIGHT

STENCIL ROUTE INDICATOR

MULTI-LAMP ROUTE INDICATOR

RUNNING TURNOUT SIGNAL

SINGLE LIGHT SUBSIDIARY SIGNAL

MULTI-LAMP THEATRE

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SIGNAL OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE AFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNALLING TECHNICAL MAINTENANCE PLANS SIGNAL LED SERVICE SCHEDULE / STANDARD JOB S04022

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

PERFORM S04021 IN CONJUNCTION WITH THIS SERVICE

LAMP CASE / STRUCTURE

(REF MANUFACTURER'S MANUALS)

- 1. INSPECT CONDITION OF LAMP CASE DOOR SEAL (IF ACCESSIBLE)
- 2. CHECK SECURITY OF ALL SIGNAL MOUNTING FASTENINGS
- 3. VISUALLY CHECK THE LAMP CASE, HOOD, NAME PLATES, SIGNAGE, SIGNAL STRUCTURE FASTENINGS FOR EVIDENCE OF ANY DAMAGE, DEGRADATION OR MISSING FASTENING. REPLACE THE FASTENING AS NECESSARY.
- 4. CLEAN INSIDE LAMP CASE AND TREAT LAMPCASE FOR VERMIN AS NECESSARY (WHERE ACCESSIBLE)
- 5. INSPECT CONDITION OF ACCESS STRUCTURE (WHERE APPLICABLE) FOR SECURITY AND SAFETY
- 6. TREAT SIGNAL POST AND FITTINGS FOR RUST AND CONTAMINATION AS NECESSARY

PRINTED CIRCUIT BOARDS

- (REF MANUFACTURER'S MANUALS)
- 7. CHECK THAT PRINTED CIRCUIT BOARDS ARE SECURE (WHERE ACCESSIBLE)
- 8. BRUSH DUST OFF THE REAR OF THE PRINTED CIRCUIT BOARDS WHERE ACCESSIBLE & IF NECESSARY ELECTRICAL (REF MANUFACTURER'S MANUALS)
- 9. CHECK WIRING AND TIGHTNESS OF ELECTRICAL CONNECTIONS (IF ACCESSIBLE)
- 10. CHECK CONDITION OF INDUCTION CAPACITORS (WHERE FITTED & ACCESSIBLE)
- 11. CHECK CONDITON OF SURGE PROTECTION (WHERE FITTED & ACCESSIBLE)
- 12. CHECK VOLTAGE AT THE LED TERMINAL BASE.

MAINTAIN IF ATTACHED TO SIGNAL

REPEAT ABOVE ITEMS FOR THE FOLLOWING IF ATTACHED TO THE SIGNAL

MARKER LIGHT

STENCIL ROUTE INDICATOR

MULTI-LAMP ROUTE INDICATOR

RUNNING TURNOUT SIGNAL

SINGLE LIGHT SUBSIDIARY SIGNAL

MULTI-LAMP THEATRE

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SIGNAL OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE AFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY
SIGNALLING TECHNICAL MAINTENANCE PLANS SIGNAL MECHANICAL SEMAPHORE SERVICE SCHEDULE / STANDARD JOB S04111

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: SIGNAL WIRE RUN

- 1. INSPECT WIRE, CHAINS AND LINKS FOR WEAR OR DAMAGE
- 2. INSPECT WIRE RUN FOR OBSTRUCTIONS OR POTENTIAL JAMMING
- 3. INSPECT PULLEY STAKES TO ENSURE CORRECT ALIGNMENT
- 4. INSPECT PULLEYS TO ENSURE FREE OPERATION
- 5. INSPECT CONDITION OF CONNECTING PINS AND SPLIT PINS
- 6. LUBRICATE SIGNAL WIRE PULLEY WHEELS
- 7. CHECK SIGNAL WIRE ADJUSTMENT

MECHANICAL DRIVE

- 8. CHECK THAT ALL COMPONENTS ARE SECURELY FASTENED TO POST
- 9. INSPECT CONDITION OF ALL CONNECTING RODS
- 10. LUBRICATE BEARINGS AND PIVOT POINTS
- 11. INSPECT CONDITION OF CONNECTING PINS AND SPLIT PINS

ARM SPECTACLE ASSEMBLY

- 12. INSPECT AND REPLACE CRACKED OR DAMAGED SPECTACLES
- 13. CLEAN SIGNAL SPECTACLES
- 14. INSPECT ARM FOR DEFECTS OR DAMAGE, CLEAN AS REQUIRED

ELECTRICAL (WHERE FITTED)

- 15. INSPECT AND CLEAN ROTARY CONTACTS
- 16. TEST ROTARY CONTACT ADJUSTMENT (WRONG REPEATER INDICATION TO BE DISPLAYED WHEN SIGNAL ARM LOWERED MORE THAN 3 DEGREES)
- 17. CHECK TIGHTNESS OF ELECTRICAL CONNECTIONS
- 18. CLEAN CONTACT INSULATION BLOCKS AND SEGMENT INSULATION
- 19. INSPECT CONDITION OF ELECTRICAL WIRING
- 20. INSPECT AND TEST REPEATER BATTERY

SIGNAL LIGHTING

- 21. CHECK THAT LAMPS ARE SECURE IN HOLDER
- 22. CHECK THAT BOTH FILAMENTS ARE WORKING WHERE APPLICABLE
- 23. TEST VOLTAGE AT LAMP SOCKET TERMINALS WHENEVER LAMP GLOBES ARE CHANGED

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SIGNAL OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNAL MECHANICAL SEMAPHORE

SERVICE SCHEDULE – STANDARD JOB S04113

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

SIGNAL POST

- 1. INSPECT STRUCTURE, LADDER, LANDINGS, GALLERY RINGS, ETC, FOR EVIDENCE OF DEFECTS, RUST OR DECAY
- 2. TEST BORE WOODEN SIGNAL POST (IF FITTED)
- 3. INSPECT CONDITION OF ALL SECURING DEVICES

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SIGNAL OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNAL NOTICEBOARD SIGNS

SERVICE SCHEDULE / STANDARD JOB S04211

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

- 1. ENSURE THE NOTICE BOARD/SIGNAGE IS CLEAN
- 2. ENSURE THE REFLECTIVE MATERIAL IS EFECTIVE AND IN GOOD ORDER
- 3. ENSURE THE WORDING ON THE NOTICE BOARD/SIGNAGE IS LEGIBLE
- 4. ENSURE THE NOTICE BOARD/SIGNAGE IS NOT OBSTRUCTED BY VEGETATION, ETC
- 5. ENSURE THE NOTICE BOARD/SIGNAGE AND POST ARE STRAIGHT
- 6. ENSURE THE MOUNTING POST IS SECURE
- 7. CHECK SIGHTING AND CONDITION OF THE SIGN
 - **NOTE:** SIGNAGES/NOTICEBOARDS WHICH PROVIDE INSTRUCTIONS TO THE DRIVER OF A TRAIN IN LIEU OF FIXED OR HAND SIGNALS TO EFFECTIVELY LIMIT OR CONTROL THE MOVEMENT OF A TRAIN SHOULD BE INSPECTED AS PART OF THIS SERVICE SCHEDULE. SIGNAL STAFF MAY REQUIRE TO REFER THE SIGNALLING PLAN. SIGNS BELOW ARE REQUIRED TO BE INSPECTED.ABSOLUTE SIGNAL SIGN
 - ARRIVAL CLEARING
 - AXLE COUNTER SIGN
 - BEGIN/END SIGNAL LIGHT INDICATION
 - BLOCK JOINT
 - BLOCK POINT
 - CATCH POINTS SIGN
 - DRIVERS NOTICEBOARD
 - LANDMARK
 - LEVEL CROSSING APPROACH RAIL
 - LEVEL CROSSING APPROACH PREDICTOR
 - NETWORK CONTROL BOUNDARY
 - POINTS INDICATOR
 - POINTS AUTO NORMALISING
 - SHUNT LIMIT SIGN
 - STOP SIGN



- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 4. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKING - RELAYS MINIATURE PLUG IN / LARGE PLUG IN

SERVICE SCHEDULE / STANDARD JOB S05031

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REF ESM-05-11)

- 1. INSPECT RELAYS FOR EVIDENCE OF OVERHEATING
- 2. INSPECT FOR EVIDENCE OF PLASTIC COVER FOULING CONTACT ASSEMBLY
- 3. INSPECT FOR EVIDENCE OF CONTACT ASSEMBLY MISALIGNMENT
- 4. INSPECT FOR EVIDENCEOF DETERIORATION OF COMPONENT PLATING
- 5. INSPECT FOR EVIDENCE OF FOREIGN MATERIAL INSIDE RELAY CASE
- 6. INSPECT TO ENSURE THAT ALL CIRCLIPS AND SPLIT PINS ARE SECURE
- 7. INSPECT CONTACT FOR EVIDENCE OF BURNING OR PITTING
- 8. MONITOR OPERATION OF RELAY. ENSURE CLEAN PICK AND DROP AWAY (WHEREVER PRACTICAL)

REINSTATEMENT ACTION

NOTE: - THIS INSPECTION IS TO BE CARRIED OUT VISUALLY WITHOUT REMOVING THE RELAY FROM ITS BASE THE RELAY IS ONLY TO BE REMOVED FOR MORE THOROUGH EXAMINATION IF THERE IS VISIBLE EVIDENCE OF DEFECT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE RELAY OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKING - RELAYS MINIATURE PLUG IN / LARGE PLUG IN

SERVICE SCHEDULE / STANDARD JOB S05032

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE: S05031 IS TO BE PERFORMED WITH THIS SERVICE

1. TEST TIME LIMIT FUNCTION WHERE APPLICABLE

(REF ESM-05-11)

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE RELAY OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKING CBI MICROLOK 2

SERVICE SCHEDULE / STANDARD JOB SX5111

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

MICROLOK II

- 1. CLEAN THE OUTSIDE OF THE CARDFILE/ENCLOSURE USING A CLEAN, LINT-FREE CLOTH.
- 2. INSPECT THE CARDFILE/ENCLOSURE FOR DENTS AND SCRATCHES. WHEN DENTS ARE FOUND, INSPECT FOR INTERNAL DAMAGE.
- 3. ENSURE ALL CARDS AND PERIPHERAL MODULES ARE FIRMLY HOME IN CARD FILE AND SECURELY FASTENED.
- 4. ENSURE EMC SHIELDING, I.E. FRONT BLANKING PLATES AND REAR PLUG COUPLER PROTECTION COVER ARE ALL INSTALLED
- 5. CHECK THE BACK-UP BATTERY TERMINAL VOLTAGE BY SWITCHING OFF THE PRIMARY SUPPLY TO THE BATTERY CHARGER. TO START-UP MICOLOK II, IT SHALL NOT BE LESS THAN 11.5 Vdc AND TO MAINTAIN MICROLOK II IN OPERATION IT SHALL NOT BE LESS THAN 9.8 Vdc. PERFORM THIS CHECK ONLY WHEN THERE IS NO TRAIN AROUND AND IT IS NOT LIKELY TO IMPACT ON THE TRAIN OPERATION.
- 6. CHECK CLOCK TIME & ADJUST AS NECESSARY
- 7. VISUALLY CHECK ALL WIRING TERMINATIONS
- 8. INSPECT MICROLOK, CARDFILE, REAR PLUG COUPLER AND CONNECTORS FOR SIGNS OF VERMIN AND ANTS.
- 9. CONFIRM CORRECT OPERATION OF CBI WORKSTATION AND / OR MAINTENANCE PC (WHERE APPLICABLE)
- 10. RECORD MICROLOK SUPPLY VOLTAGES AND LOCATION SUPPLY VOLTAGE
- 11. CHECK ALL POWER INPUT AND SIGNAL SUPPLY LEADS FOR FRAYED OR DISCOLOURED INSULATION AND LOOSE CONNECTIONS. ALSO, CHECK ALL LIGHTNING ARRESTOR/VOLTAGE SUPPRESSOR DEVICES FOR ANY SIGNS OF PHYSICAL DEGRADATION.
- 12. DOWNLOAD & REVIEW ERROR/EVENT LOGS & DATA LOGS FOR THE SINCE LAST MAINTENANCE VISIT & ADDRESS ANY ANOMOLIES
- 13. MAINTAIN MICROTRAX CARDS IF PRESENT

(REF S07611 AND S07612)

8.



- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



DATA VERIFICATION

SERVICE SCHEDULE / STANDARD JOB S17000

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

- 1. DOWNLOAD AND CONFIRM DATA IS AS PER LASTEST DESIGN
- 2. ENSURE DATA IS STORED IN APPROPRIATE SYSTEM.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SERVICE SCHEDULE / STANDARD JOB S05121

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 5. VISUAL INSPECTION:

CHECK WHETHER THE COMPACT SYSTEMS ARE SECURELY FASTENED TO THE DIN RAIL.

CHECK THE MODULES SCREWS FOR FIRM CONNECTION, TIGHTEN IF NECESSARY

CHECK THE DATA CABLES FOR FIRM CONNECTION, INCLUDING TO THE COMMUNICATION CABLE

CHECK THE FANS FOR PROPER FUNCTION

CHECK CDU-1 UNIT THAT HEALTH INDICATOR AND 5V PWR INDICATOR ARE LIT.

6. POWER SUPPLY TEST

CHECK THE 230VAC/24VDC POWER SUPPLY FOR COMPLIANCE WITH TOLERANCES AND RECORD THE VOLTAGE

CHECK THE 24VDC DISTRIBUTION

CHECK THE REDUNDANT POWER SUPPLY FOR PROPER FUNCTION IF ANY

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKING CBI WESTRACE 1

SERVICE SCHEDULE / STANDARD JOB S05131

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

- 1. ENSURE ALL CARDS ARE FIRMLY HOME IN CARD FILE
- 2. VISUALLY CHECK ALL WIRING TERMINATIONS
- 3. CHECK EVENT LOGGER FOR CORRECT OPERATION AND CLOCK TIME (WHERE APPLICABLE)
- 4. RECORD WESTRACE SUPPLY VOLTAGE AND LOCATION SUPPLY VOLTAGE
- 5. DOWNLOAD & REVIEW ERROR / EVENT LOGS & DATA LOGS FOR THE PREVIOUS HOUR & ADDRESS ANY ANOMOLIES
- 6. FOR AREAS WITH COLD STANDBY WESTRACE (WHERE APPLICABLE) SWITCH OVER TO STANDBY AND CONFIRM CORRECT OPERATION OF WESTRACE AND EVENT LOGGER

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKING CBI WESTRACE 2

SERVICE SCHEDULE / STANDARD JOB S05141

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE ELECTRICAL AND SIGNALLING WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 5. REMEMBER TO STOP AND THINK

MAINTENANCE ACTION:

VISUAL INSPECTIONS

- 1. ENSURE ALL MODULES ARE FIRMLY HOME IN CARD FILE, ALL SCREWS ON BACKPLANE ARE TIGHT
- 2. VISUALLY CHECK ALL WIRING TERMINATIONS AND PLUGS ON BACKPLANE FOR LOOSENESS OR DEFECTIVE CONNECTIONS
- 3. VISUALLY CHECK ALL EARTHING FOR LOOSENESS OR DEFECTIVE CONNECTIONS
- 4. ENSURE 24V LEDS ARE LIT ON ALL MODULES
- 5. ENSURE FAULT LED IS OFF ON ALL MODULES
- 6. ENSURE ACTIVE LED IS LIT GREEN ON ALL MODULES

MAINTENANCE TERMINAL

- 7. CHECK EVENT LOGGER FOR CORRECT OPERATION
- 8. CHECK DATE AND TIME ON PROCESSER MODULES ARE CORRECT WHEN COMPAIRED TO MOVILOA
- 9. REVIEW EVENT LOG AND ACTION ALARMS

POWER SUPPLY

- 10. RECORD MAIN SUPPLY VOLTAGE AND LOCATION SUPPLY VOLTAGES
- 11. RECORD WESTRACE MODULE SUPPLY VOLTAGES AND CONFIRM THEY ARE WITHIN ACCEPTED TOLERANCES AS PER SECTION 4 OF MANUFACTURER'S MANUAL
- 12. CHECK EARTH LEAKAGE VOLTAGES ON MODULE SUPPLIES
- 13. INSPECT FAULT INDICATION STATUS ON ALL SURGE ARRESTORS

OTHER ACTIONS

- 14. ENSURE SUPPLY VOLTAVE LEDS ARE LIT GREEN FOR ALL MODULES OTHER ACTIONS CONTINUED
- 15. ENSURE PROCESSER MODULE DISPLAYS ARE CLEAR
- 16. ENSURE "SMB A" AND "SMB B" LEDS ARE FLASHING GREEN ON ALL IO MODULES
- 17. ENSURE "SMB A" AND "SMB B" LEDS (AND "SMB C" AND "SMB D" IF CONFIGURED) ARE FLASHING GREEN ON ALL PROCESSER MODULES
- 18. ENSURE "PROC", "RUN", "A", "B" AND "D" LEDS ARE FLASHING GREEN ON ALL PROCESSER MODULES
- 19. ENSURE "PROC", "READY", "A" AND "B" LEDS ARE FLASHING GREEN ON ALL PROCESSER MODULES
- 20. ENSURE "ETHERNET" AND "LINK" STATUS LED "A" (AND "B" IF USED) ARE LIT GREEN ON ALL PROCESSER MODULES
- 21. ENSURE "ETHERNET" AND "ACTIVITY" STATUS LED "A" (AND "B" IF USED) ARE FLASHING YELLOW ON ALL PROCESSER MODULES

WHERE HOT STANDBY MODULES ARE INSTALLED:

22. ENSURE "STANDYBY OK" IS LIT GREEN IN BOTH MODULES



- 23. ENSURE "PM-PM" AND "LINK" STATUS LEDS ARE LIT GREEN ON BOTH MODULES
- 24. ENSURE "PM-PM" AND "ACTIVITY" STATUS LEDS ARE FLASHING YELLOW ON BOTH MODULES
- 25. CHANGEOVER THE PRIMARY MODULE TO THE SECONDARY MODULE, ENSURE THAT THE SECONDARY PROCESSER MODULE STAYS ONLINE FOR 10 MINUTES BEFORE SWITCHING BACK TO PRIMARY PROCESSOR MODULE

- 1. RESULTS OF READINGS ARE TO BE RECORDED ON EQUIPMENT HISTORY CARDS
- 2. ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER BE NOTIFIED AND TO INVESTIGATE AND PROVIDE INSTRUCTIONS
- 3. WHERE REPAIRS OR ADJUSTMENTS ARE REQUIRED THEY ARE TO BE EFFECTED IMMEDIATELY IF PRACTICAL AND RECORDED IN THE WORKS MANAGEMENT SYSTEM AS COMPLETED
- 4. WHERE REPAIRS OR ADJUSTMENTS ARE REQUIRED BUT IT IS NOT PRACTICAL TO COMPLETE IMMEDIATELY THEY ARE TO BE RECORDED IN THE WORKS MANAGEMENT SYSTEM WITH AN APPROPRIATE PRIORITY, IF THE REPAIR OR ADJUSTMENT IS CRITICAL TO THE SAFE OPERATION OF THE SYSTEM THEN THE EQUIPMENT SHALL ALSO BE BOOKED OUT OF SERVICE
- 5. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 6. ALL REPLACEMENT OF EQUIPMENT MODULES (FAILED OR OTHERWISE) TO BE RECORDED IN ELLIPSE AS COMPLETED
- 7. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST /WORK ORDER
- 8. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKING CBI ELECTROLOGIXS

SERVICE SCHEDULE / STANDARD JOB S05151

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

ELECTROLOGIXS

- 1 CHECK CDU-1 UNIT THAT HEALTH INDICATOR AND 5V PWR INDICATOR ARE LIT.
- 2. ENSURE ALL CARDS ARE FIRMLY HOME IN CARD FILE
- 3. CHECK CLOCK TIME & ADJUST AS NECESSARY
- 4. VISUALLY CHECK ALL WIRING TERMINATIONS
- 5. CONFIRM CORRECT OPERATION OF CBI WORKSTATION AND / OR MAINTENANCE PC (WHERE APPLICABLE)
- 6. RECORD ELECTROLOGIXS SUPPLY VOLTAGES AND LOCATION SUPPLY VOLTAGE. CHECK VOLTAGE BETWEEN 5V AND COM. VOLTAGE SHOULD BE BETWEEN 4.94 V AND 5.46 V. IF VOLTAGE IS NOT WITHIN TOLERANCE, REPLACE THE CPS MODULE.
- 7. DOWNLOAD & REVIEW ERROR/EVENT LOGS & DATA LOGS FOR THE PREVIOUS HOUR & ADDRESS ANY ANOMOLIES
- 8. MAINTAIN ELECTROCODE CARDS IF PRESENT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKING CBI WESTLOCK

SERVICE SCHEDULE / STANDARD JOB S05161

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. REMEMBER TO TAKE 5

MAINTENANCE ACTION:

- 1. CHECK AND INVESTIGATE ANY ALARMS OR FAULTS ON THE TECHNICIANS WORKSTATION(TW) (DAILY)
- 2. USE THE KEYBOARD VIDEO DISPLAY AND MOUSE (KVM) TO ACCESS THE COMPUTER SYSTEM GATEWAY (CSG) UTILITY SOFTWARE AND CHECK FOR ALARM OR FAULTS ON BOTH COMPUTER SYSTEM GATEWAYS (CSGs)
- 3. CHECK AND RECTIFY FAULT OR ALARMS ON CENTRAL INTERLOCKING PROCESSOR (CIP), TRACKSIDE INTERFACE PROCESSOR (TIF), COMPUTER SYSTEM GATEWAY COMPUTER, NETWORK SWITCHES, S2 SCANNERS OR ANY OTHER EQUIPMENT
- 4. CHECK CORRECT OPERATION OF COOLING FANS IN ALL FAN COOLED EQUIPMENT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES, SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKING CBI WESTLOCK

SERVICE SCHEDULE / STANDARD JOB S05162

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. REMEMBER TO TAKE 5

MAINTENANCE ACTION:

- 1. ENSURE ALL MODULES ARE FIRMLY HOME IN THE WESTLOCK BACKPLANE
- 2. VISUALLY CHECK ALL WIRING AND TERMINATIONS
- 3. RECORD THE WESTLOCK SUPPLY VOLTAGE AND LOCATION SUPPLY VOLTAGE, CHECK AND RECORD WESTLOCK UPS
- 4. CHECK THE INTERLOCKING LOGS FOR PREVIOUS DAY USING THE TECHNICIAN WORKSTATION(TW) AND REPLAY COMPUTER
- 5. TEST ALL CLIPPITTS AND INSPECT ALL LIGHTNING/SURGE PROTECTION EQUIPMENT
- 6. MAINTAIN / CLEAN KEYBOARDS / TERMINALS

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES, SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKING CBI VHLC

SERVICE SCHEDULE / STANDARD JOB S05171

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. REMEMBER TO TAKE 5

MAINTENANCE ACTION

VHLC CABINET:

- 1. MAKE SURE ALL MODULES ARE FULLY SEATED IN THE VHLC CABINET
- 2. VERIFY THAT ALL SERIAL INTERFACE MODULES ARE SECURED TO THE SIM(SERIAL INTERFACE MODULE) ON THE REAR OF THE VHLC CABINET
- 3. VERIFY THAT THE GREEN HEALTH LED IS ILLUMINATED ON ALL MODULES
- 4. VERIFY MODEM TRANSMIT AUDIO LEVEL
- 5. USING A VOLTMETER, CHECK VOLTAGE ACROSS TP1 AND TP2 ON THE VITAL LOGIC PROCESSOR MODULE

VHLC CONNECTORS:

- 6. VERIFY THAT ALL I/O MODULE CONNECTORS ARE SECURELY FASTENED TO REAR OF CHASSIS
- 7. VERIFY THAT ALL SERIAL CABLES ARE SECURELY FASTENED TO THE SERIAL MODULES ON REAR OF THE VHLC CHASSIS
- 8. VERIFY THAT ALL SERIAL INTERFACE MODULE CONFIGURATION JUMPERS ARE PUSHED FULLY ON TERMINALS
- 9. VERIFY THAT ALL SSM (SITE SPECIFIC MODULE) ARE PUSHED FULLY ON TERMINALS

VISUAL INSPECTION:

- 10. VERIFY ALL EPROMS FULLY SEATED IN THEIR SOCKETS
- 11. CHECK FOR FOREIGH MATERIAL SUCH AS METAL, DUST, INSPECTS ETC. IN VHLC CABINES
- 12. VERIFY THERE IS NO VISIBLE DAMAGE TO MODULES OR EXTERNAL CABLES
- 13. CHECK FOR BURN MARKS OR DARK SPORTS ON MODULES. THESE ARE SIGNS OF LIGHTNING DAMAGE OR OVERHEATING MODULES. REPLACE AS NECESSARY.
- 14. VERIFY EUIPMENT COVERS ARE PROPERLY INSTALLED
- 15. VERIFY SYSTEM VENITNATION HOLES ARE UNCOVERED AND UNCLOGGED. CLEAN IF NECESSARY.
- 16. CHECK FOR BURN MARKS ON I/O CABLES AND RACK WIRING. REPAIR AS NECESSARY.



- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES, SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKING CBI EC4

SERVICE SCHEDULE / STANDARD JOB S05181

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. REMEMBER TO TAKE 5

MAINTENANCE ACTION:

- 1. ENSURE ALL CARDS ARE FIRMLY HOME IN CARD FILE
- 2. CHECK CLOCK TIME & ADJUST AS NECESSARY
- 3. VISUALLY CHECK ALL WIRING TERMINATIONS
- 4. CONFIRM CORRECT OPERATION OF CBI WORKSTATION AND / OR MAINTENANCE PC (WHERE APPLICABLE)
- 5. RECORD SUPPLY VOLTAGES AND LOCATION SUPPLY VOLTAGE. IF VOLTAGE IS NOT WITHIN TOLERANCE, REPLACE THE CPS MODULE.
- 6. DOWNLOAD & REVIEW ERROR/EVENT LOGS & DATA LOGS FOR THE PREVIOUS HOUR & ADDRESS ANY ANOMOLIES
- 7. MAINTAIN ELECTROCODE CARDS IF PRESENT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES, SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKING CBI EC5

SERVICE SCHEDULE / STANDARD JOB S05191

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

- 1. CHECK CDU-1 UNIT THAT HEALTH INDICATOR AND 5V PWR INDICATOR ARE LIT.
- 2. ENSURE ALL CARDS ARE FIRMLY HOME IN CARD FILE
- 3. CHECK CLOCK TIME & ADJUST AS NECESSARY
- 4. VISUALLY CHECK ALL WIRING TERMINATIONS
- 5. CONFIRM CORRECT OPERATION OF CBI WORKSTATION AND / OR MAINTENANCE PC (WHERE APPLICABLE)
- 6. RECORD EC5 SUPPLY VOLTAGES AND LOCATION SUPPLY VOLTAGE. CHECK VOLTAGE BETWEEN 5V AND COM. VOLTAGE SHOULD BE BETWEEN 4.94 V AND 5.46 V. IF VOLTAGE IS NOT WITHIN TOLERANCE, REPLACE THE CPS MODULE.
- 7. DOWNLOAD & REVIEW ERROR/EVENT LOGS & DATA LOGS FOR THE PREVIOUS HOUR & ADDRESS ANY ANOMOLIES
- 8. MAINTAIN ELECTROCODE CARDS IF PRESENT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKING CBI HD LINK

SERVICE SCHEDULE / STANDARD JOB S05221

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTIONS:

- 1. CHECK FOR DAMAGED HARDWARE OR LOOSE CONNECTION, BROKEN OR CORRODED WIRING, SIGNS OF OVERHEATING AND BUILD-UP OF DUST OR FOREIGN MATERIAL.
- 2. MAKE SURE THAT ALL BOARDS ARE PROPERLY SEATED IN THE MODULE COVERS ARE PROPERLY SECURED.
- 3. CHECK THE FRONT PANEL INDICATIONS FOR ANY SPECIFIC FAULT PRESENT IF ANY. TROUBLESHOOT THE FAULT AS PER MANUFACTURER'S MANUALS.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKING CBI SSI

SERVICE SCHEDULE / STANDARD JOB S05231

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. REMEMBER TO TAKE 5

MAINTENANCE ACTION:

- 1. TAKE DATA LINK LINE MEASUREMENTS
- 2. ENSURE ALL TFM PLUG COUPLERS ARE FIRMLY HOME
- 3. VISUALLY CHECK ALL TFM WIRING AND TERMINATIONS
- 4. CHECK THE INDICATIONS ON THE FRONT OF THE TFM TO ENSURE ITS CORRECT OPERATION

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES, SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS INTERLOCKINGS MECHANICAL CAM AND TAPPET MAIN FRAME

SERVICE SCHEDULE / STANDARD JOB S05311

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

ELECTRIC LOCK (UNPROVEN)

- 1. CHECK THAT ELECTRIC LOCK IS SECURELY FIXED TO SUPPORTING STRUCTURE
- 2. CHECK THAT ALL PIVOT PINS ARE SECURE AND THAT SPLIT PINS ARE IN PLACE
- 3. LUBRICATE PIVOT PINS AS REQUIRED
- 4. CHECK AIR GAP BETWEEN ARMATURE AND POLE FACE
- 5. CHECK THAT LOCKING DOG DROPS CLEANLY INTO TAPPET HOLE AND DOES NOT LEDGE
- 6. CHECK THAT TAPPET JAW BOLTS ARE IN PLACE AND TIGHT
- 7. INSPECT AND CLEAN CONTACT INSULATION BLOCKS
- 8. INSPECT CONDITION OF THE LOCK DROP CONTACTS, CLEAN OR REPLACE AS NECESSARY
- 9. CHECK LOCK DROP CONTACTS ARE CORRECTLY ADJUSTED

FLOORPLATE CONTACT

- 10. CLEAN FOREIGN MATERIAL FROM VICINITY OF FLOORPLATE CONTACT TRIGGER
- 11. CHECK THAT FLOOR PLATE TRIGGER OPERATES FREELY
- 12. CHECK THAT FLOOR PLATE CONTACTS ARE CLEAN AND CORRECTLY ADJUSTED

ROTARY CONTACT ASSEMBLY

- 13. LUBRICATE ROTARY BEARINGS AND COUPLINGS
- 14. CHECK TIGHTNESS OF ROTARY CONNECTING AND HOUSING BOLTS
- 15. CHECK THAT CONTACTS ARE CLEAN AND CORRECTLY ADJUSTED
- 16. INSPECT CONTACT SEGMENTS FOR WEAR AND THAT SEGMENTS ARE CLEAN AND SECURELY FIXED TO ROTARY CYLINDER
- 17. INSPECT AND CLEAN CONTACT INSULATION BLOCKS AND SEGMENT CYLINDER
- 18. INSPECT CONDITION OF WIRING AND CONNECTIONS

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINTS & INTERLOCKING OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKINGS MECHANICAL CAM AND TAPPET MAIN FRAME

SERVICE SCHEDULE / STANDARD JOB S05312

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

LEVER

- 1. INSPECT CATCH ROD ASSEMBLY AND CHECK SECURING DEVICES FOR TIGHTNESS & WEAR
- 2. INSPECT CONDITION OF PIVOT PINS & LUBRICATE AS NECESSARY
- 3. CHECK CATCH ROD OPERATION FOR WEAR AND CORRECT ADJUSTMENT
- 4. INSPECT LEVER CONNECTIONS AND CHECK ALL SECURING DEVICES FOR TIGHTNESS

DRIVE CRANKS

- 5. INSPECT CONDITION OF DRIVE CRANKS & CONNECTING PINS & BUSHES & APPLY LUBRICANT
- 6. CHECK THAT DRIVE CRANKS ARE SECURELY FASTENED TO SUPPORT STRUCTURE
- 7. CHECK FOR MOVEMENT OF SUPPORT STRUCTURE

SIGNAL WHEELS

- 8. CLEAN AND LUBRICATE WHEELS
- 9. CHECK THAT SIGNAL WHEELS ARE SECURELY FASTENED TO SUPPORT STRUCTURE
- 10. CHECK FOR MOVEMENT OF SUPPORT STRUCTURE
- 11. INSPECT CONDTION OF WHEELS & CONNECTING PINS & REPAIR OR REPLACE AS NECESSARY

ANNETT LOCKS

12. CHECK OPERATION & CLEAN & / OR LUBRICATE AS NECESSARY

ANNETT KEYS

13. INSPECT FOR DAMAGE

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINTS & INTERLOCKING OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKINGS MECHANICAL CAM AND TAPPET MAIN FRAME

SERVICE SCHEDULE / STANDARD JOB S05313

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

FRAME

- 1. INSPECT FRAME AND FLOOR PLATE FOR CRACKS OR DAMAGE
- 2. CHECK TIGHTNESS OF BEARING CAP AND SECURING DEVICES & LUBRICATE MOVING COMPONENTS & BEARINGS
- 3. CHECK TIGHTNESS OF ALL SECURING DEVICES & REPLACE AS NECESSARY
- 4. CLEAN OUT WELL CAVITY AREA AS NECESSARY
- 5. INSPECT PIVOT PINS FOR WEAR & LUBRICATE

LEVER

- 6. INSPECT CATCHROD ASSEMBLY AND CHECK SECURING DEVICES FOR TIGHTNESS & WEAR
- 7. INSPECT CATCHROD BLOCK & FLOORPLATE BOX FOR WEAR
- 8. CHECK CATCHROD OPERATION FOR WEAR & CORRECT ADJUSTMENT & LUBRICATE PIVOT PINS
- 9. LUBRICATE LEVER BEARINGS AND CHECK TIGHTNESS OF BEARING BOLTS
- 10. INSPECT LEVER CONNECTIONS AND CHECK ALL SECURING DEVICES FOR TIGHTNESS

LOCKING

- 11. CLEAN AND LUBRICATE TAPPETS AND SLIDES
- 12. CHECK FOR EXCESSIVE WEAR OF THE LOCKS & TAPPETS
- 13. CHECK FOR JAMMING OF THE LOCKS
- 14. CHECK SECURITY OF LOCKS
- 15. CHECK THAT ALL LOCKING COVERS ARE SECURELY FASTENED

ANNETT LOCKS

- 16. CLEAN AND LUBRICATE
- 17. INSPECT AND TEST ANNETT LOCK AND WARDS

ANNETT KEYS (INCLUDING LOOSE KEYS)

18. INSPECT FOR DAMAGE AND TEST WARDS

19. CHECK INSCRIPTION

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINTS & INTERLOCKING OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION



5.	DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY		
	SIGNALLING TECHNICAL MAINTENANCE PLANS		
	INTERLOCKINGS MECHANICAL CAM AND TAPPET MAIN FRAME		
	SERVICE SCHEDULE / STANDARD JOB S05314		
PRE	PREPARATION ACTION:		
1.	ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK		
2.	OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT		
3.	OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES		
4.	PERFORM PRE-WORK SAFETY BRIEF		
MA	MAINTENANCE ACTION:		
1.	TEST COMPLETE INTERLOCKING (REF ESM-05-01)		
REI	INSTATEMENT ACTION:		
1.	RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER		
2.	ENSURE THAT THE POINTS & INTERLOCKING OPERATES CORRECTLY		
3.	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE		
4.	REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION		
5.	DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY		



SIGNALLING TECHNICAL MAINTENANCE PLANS INTERLOCKINGS MECHANICAL GROUND FRAME

SERVICE SCHEDULE / STANDARD JOB S05321

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

(REF SMS 04)

LEVER FRAME

- 1. OPERATE GROUND FRAME CHECKING FOR JAMMING OF THE LEVER OR EXCESSIVE LOAD ON THE LEVER
- 2. CHECK CATCHROD FOR CORRECT OPERATION & ADJUSTMENT
- 3. CHECK INSCRIPTION PLATES ARE FITTED & LEGIBLE

OPERATORS "FORTRESS TYPE" LOCK (WHERE FITTED)

- 1. CHECK FOR CORRECT OPERATION, ENSURE NO TENDANCY TO BIND LUBRICATE IF NECESSARY USE DRY GRAPHITE POWDER ONLY
- 2. INSPECT FOR DAMAGE & SECURITY OF FASTENINGS

ANNETT LOCK (WHERE FITTED)

- 3. CHECK FOR CORRECT OPERATION, ENSURE NOT TENDANCY TO BIND
- 4. CLEAN AND LUBRICATE
- 5. CHECK ESCUTCHEON COVER FITTED AND OPERATIONAL
- 6. INSPECT ANNETT KEY FOR DAMAGE, ESPECIALLY THE WARDING

LOCKING

- 7. CLEAN AND LUBRICATE TAPPETS AND SLIDES
- 8. CHECK THAT ALL LOCKING COVERS ARE SECURELY FASTENED

ELECTRIC LOCK (WHERE FITTED)

- 9. CHECK THAT ELECTRIC LOCK IS SECURELY FIXED TO THE SUPPORTING STRUCTURE
- 10. CHECK THAT ALL PIVOT PINS ARE SECURE AND SPLIT PINS ARE IN PLACE
- 11. LUBRICATE PIVOT PINS AS REQUIRED
- 12. TEST GAP BETWEEN ARMATURE AND POLE FACE
- 13. CHECK THAT LOCKING DOG DROPS CLEANLY INTO TAPPET HOLE AND NOT LEDGING
- 14. CHECK THAT TAPPET AND JAW BOLTS ARE IN PLACE AND TIGHT
- 15. CHECK THAT ELECTRIC LOCK CONTACTS ARE CLEAN AND CORRECTLY ADJUSTED
- 16. INSPECT AND CLEAN CONTACT INSULATION BLOCK



FLOOR PLATE CONTACT (WHERE FITTED)

- 17. CLEAN FOREIGN MATERIAL FROM VICINITY OF FLOORPLATE CONTACT TRIGGER
- 18. CHECK THAT FLOORPLATE TRIGGER OPERATES FREELY
- 19. CHECK THAT FLOORPLATE CONTACTS ARE CLEAN AND CORRECTLY ADJUSTED

ROTARY CONTACT ASSEMBLY (WHERE FITTED)

- 20. LUBRICATE ROTARY BEARINGS AND COUPLINGS
- 21. CHECK TIGHTNESS OF CONNECTIONS AND MOUNTING BOLTS
- 22. CHECK THAT CONTACTS ARE CLEAN AND CORRECTLY ADJUSTED
- 23. INSPECT CONTACT SEGMENTS FOR WEAR AND THAT SEGMENTS ARE CLEAN AND SECURELY FIXED TO ROTARY CYLINDER
- 24. INSPECT AND CLEAN CONTACT INSULATION BLOCKS AND SEGMENT CYLINDER
- 25. INSPECT CONDITION OF WIRING AND CONNECTIONS

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1.
- ENSURE THAT THE POINTS & INTERLOCKING OPERATES CORRECTLY 2.
- 3. ENSURE MASTER KEY, ANNETT KEY, KEY STAFF, LOOSE KEY OR OPERATORS KEY (AS APPLICABLE) IS REMOVED FROM THE FRAME
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 4.
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

ARTC

	SIGNALLING TECHNICAL MAINTENANCE PLANS		
	INTERLOCKINGS MECHANICAL GROUND FRAME		
	SERVICE SCHEDULE / STANDARD JOB S05322		
PREPARATION ACTION:			
1. 2.	ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT		
3. ⊿	OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES PERFORM PRE-WORK SAFETY BRIEF		
 MAII	NTENANCE ACTION: (REFERENCE SMS 04)		
PERFORM S05321 IN CONJUNCTION WITH THIS SERVICE			
FRAME			
1.	INSPECT CONDITION, STABILITY & SECURITY OF GROUND FRAME MOUNTING, SUBFRAME & SUPPORTING FORMATION		
2.	INSPECT FRAME AND FLOORPLATE FOR CRACKS OR DAMAGE		
3.	CHECK TIGHTNESS OF BEARING CAP AND SECURING DEVICES & LUBRICATE MOVING COMPONENTS & BEARINGS		
4.	CHECK TIGHTNESS OF ALL SECURING DEVICES & REPLACE AS NECESSARY		
LEV	ER		
5.	INSPECT CATCHROD ASSEMBLY AND CHECK SECURING BOLTS FOR TIGHTNESS & WEAR		
6.	INSPECT CATCHROD BLOCK AND FLOORPLATE BOX FOR WEAR		
7.	CHECK CATCHROD OPERATION FOR WEAR & CORRECT ADJUSTMENT & LUBRICATE PIVOT PINS		
8.	LUBRICATE LEVER BEARINGS AND CHECK TIGHTNESS OF BEARING BOLTS		
9.	INSPECT LEVER CONNECTIONS AND CHECK ALL SECURING BOLTS FOR TIGHTNESS		
LOCKING			
10.	CLEAN AND LUBRICATE TAPPETS AND SLIDES		
11.	CHECK FOR EXCESSIVE WEAR OF THE LOCKS & TAPPETS		
12.	INSPECT SECURITY OF THE LOCKS		
13.	CHECK THAT ALL LOCKING COVERS ARE SECURELY FASTENED		
ANN	ETT LOCKS (WHERE FITTED)		
14.	INSPECT AND TEST ANNETT LOCK AND WARDS		
ANN	ETT KEYS (INCLUDING LOOSE KEYS AS APPLICABLE)		
15.	INSPECT FOR DAMAGE AND TEST WARDS		
16.	CHECK INSCRIPTION		
OPE	ERATORS "FORTRESS TYPE" LOCK (WHERE FITTED)		
17.	INSPECT WARDING PINS ARE IN PLACE AND CHECK THEIR EFFECTIVENESS		
REIN 1.	ISTATEMENT ACTION: RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER		
2. 3.	ENSURE THAT THE POINTS & INTERLOCKING OPERATES CORRECTLY ENSURE MASTER KEY, ANNETT KEY, KEY STAFF, LOOSE KEY OR OPERATORS KEY (AS APPLICABLE) IS REMOVED FROM THE FRAME		
4. 5.	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION		
6.	DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY		



SIGNALLING TECHNICAL MAINTENANCE PLANS INTERLOCKINGS MECHANICAL GROUND FRAME SERVICE SCHEDULE / STANDARD JOB S05323

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

1. TEST COMPLETE INTERLOCKING

(REF ESM-05-01, ESS-26-01 & SMS 04)

NOTE: SIGNAL ENGINEER WILL BE REQUIRED IF THERE ARE MORE THAN 4 LEVERS.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINTS & INTERLOCKING OPERATES CORRECTLY
- 3. ENSURE MASTER KEY, ANNETT KEY, KEY STAFF, LOOSE KEY OR OPERATORS KEY (AS APPLICABLE) IS REMOVED FROM THE FRAME
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKINGS MECHANICAL RELEASE

SCHEDULE / STANDARD JOB S05331

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

RELEASING LOCK CASE

(REF ESS-26-01)

(REF ESS-26-01)

(REF ESS-26-01)

(REF ESS-26-01)

- 1. INSPECT FOR DAMAGE OR ENVIRONMENTAL CONTAMINATION
- 2. CHECK THAT S.L LOCK SECURING DOOR IS FUNCTIONAL
- 3. ENSURE THAT PADLOCK SECURING FRONT PLATE IS FUNCTIONAL
- 4. CHECK THAT DOOR AND HANDLE INTERLOCK IS EFFECTIVE

CIRCUIT CONTROLLER

- 5. INSPECT CONDITION OF CONTACTS CLEAN AS REQUIRED
- 6. CHECK CONTACT / CONTACT DRIVE ADJUSTMENT

ELECTRICAL WIRING AND CONNECTIONS

7. VISUALLY CHECK CONDITION OF ELECTRICAL CONNECTIONS AND WIRING

ANNETT LOCK

INSPECT FOR DAMAGE

ANNETT KEY

8

9. INSPECT FOR DAMAGE OR WEAR

INTERLOCKING MECHANISM

- 10. CHECK OPERATION OF MECHANISM
- 11. LUBRICATE MOVING PARTS

HALF PILOT STAFF (IF APPLICABLE)

12. INSPECT FOR DAMAGE OR WEAR

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE MECHANISM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



INTERLOCKING MECHANICAL RELEASE

SERVICE SCHEDULE / STANDARD JOB S05332

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- PERFORM PRE-WORK SAFETY BRIEF 4

MAINTENANCE ACTION:

TEST LOCKING

(REF MANUAL ESM-05-01)

- TEST ANNETT LOCK FACE TO GAUGE 1.
- 2. TEST ANNETT KEY OR HALF PILOT STAFF TO GAUGE

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1.
- 2. ENSURE THAT THE MECHANISM OPERATES CORRECTLY
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY 5.

	SIGNALLING TECHNICAL MAINTENANCE PLANS			
	POINTS ALL TIPES			
	SERVICE SCHEDULE / STANDARD JOB S0601L			
PRE	ARATION ACTION:			
1.	ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK			
2.	JBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT			
3.	JBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES			
4.				
1.	UBRICATE SWITCH SUDE PLATES (SWITCH SUDE PLATE LUBRICATION MAY NOT BE NECESSARY IF			
	SWITCH BOLLERS ARE FITTED)			
2	CLEAN (REMOVING ANY EXCESS OF DI UBRICANT & DEBRIS) & LUBRICATE WHERE FITTED POINTS			
	BACKDRIVE AND POINTS SPRING ASSISTOR			
3.	/OSSLOH ONLY - CLEAN (REMOVING ANY EXCESS OLD LUBRICANT & DEBRIS) & LUBRICATE THE			
	ENGAGEMENT & DISENGAGEMENT FACES OF THE VCC AND VPM COMPONENTS			
4.	CLAW LOCKS ONLY - CLEAN (REMOVING ANY EXCESS OLD LUBRICANT & DEBRIS) & LUBRICATE THE			
	ENGAGEMENT & DISENGAGEMENT FACES OF THE CLAW TAIL, OPERATING BAR NOTCHES, LOCK			
	FACES, CLAW LOCK KEYWAY			
5.	CATCH POINT (WHERE APPLICABLE) - CLEAN & LUBRICATE THE ANTI-ROLL BRACKET SKID PLATE			
ZON	LINSPECTION			
NOT	: A ZONAL INSPECTION IS ESSENTIALLY A VISUAL & AUDIBLE INSPECTION OF THE SWITCH, DRIVE			
	RODDING & MOTOR DRIVE OPERATION			
6.	CONDUCT A ZONAL EXAMINATION OF THE DRIVE RODDING, BACK DRIVE & SWITCHES AND SWITCH			
	VULLERS TO ENSURE THAT THERE IS NO EVIDENCE OF OBSTRUCTION (FOREIGN MATERIAL),			
7	THE CK THAT THE MOTOR MECHANISM FASTENINGS ARE SECURE & THEY DO NOT MOVE DURING			
1.	POINT OPERATION			
8	CHECK THAT ALL EASTENINGS AND SECURING PINS FOR THE DRIVE RODDING ARE IN PLACE &			
0.	SECURE			
9.	CLAW LOCKS AND SPHERO LOCKS ONLY - CHECK THAT ALL CLAW LOCK AND SPHERO LOCK PIN			
	RETAINING DEVICES ARE IN PLACE & SECURE			
10.	POINTS NUMBER AND POINTS N AND R SIGNS SHOULD BE INSPECTED.			
11.	DBSERVE POINT OPERATON UNDER POWER FROM NORMAL TO REVERSE & REVERSE TO NORMAL			
	RECTIFY OR REPORT ANY ANOMALIES DETECTED):			
	a. LISTEN FOR ANY UNUSUAL SOUNDS WHEN THE POINT SWITCHES ARE OPPERATED			
	b. CHECK THAT THE SWITCH OPERATION IS THE NORMAL SPEED & IS SMOOTH			
	c. CHECK THAT THE SWITCH (TIP TO HEAL) DRIVES UP AGAINST THE STOCK AT THE SAME			
	d. CLAWLOCKS AND SPHERO LOCKS ONLY - CHECK THAT THE CLAW / SPHERO LOCK IS			
DEI				
2	INSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY			
3	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE			
4.	REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A			
	CORRECTIVE ACTION			
5.	DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY			

POINTS - NOT COMMISSIONNED/SELDOM USED/BOOKED OUT OF USE

SERVICE SCHEDULE / STANDARD JOB S0601B

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE: THIS STANDARD JOB TO BE PERFORMED ONLY FOR POINT MACHINES WHICH ARE BOOKED OUT OF USE OR NOT COMMISSIONED.

MAINTENANCE STAFF TO ENSURE THE STATUS OF THE POINT MACHINE ARE CHANGED TO 'BOOKED OUT MAINTAIN' (NM) IF POINT MACHINES ARE BEING BOOKED OUT FOR MAINTNEANANCE OR NOT IN SERVICE. THIS STANDARD JOB IS REQUIRED TO BE ACTIVATED AND OTHER NOT APPLICABLE SJS TURNED OFF.

MAINTENANCE STAFF TO ENSURE THE STATUS OF THE POINT MACHINE ARE CHANGED TO IN SERVICE (IS) IF REMOVED FROM BOOKED OUT OR POINT MACHINES ARE COMMISSIONED.

- 1. VISUAL CHECK OF STRECHER BARS AND RODDINGS.
- 2. ENSURE OPERATING MECHANISM ARE MECHANICALLY SECURED AND FACING POINT LOCK IS ENGAGED.
- 3. ENSURE FACING POINT LOCK PLUNGER IS SECURED IF MECHANICAL POINT MACHINE IS INSTALLED.
- 4. ENSURE CLOSED SWITCH IS SECURED WITH POINT CLIP AND SPIKED.
- 5. ENSURE PADLOCK USED IS OF CORRECT TYPE.
- 6. ENSURE OPEN SWITCH IS SECURED.
- 7. ENSURE DETECTION OF OPEN AND CLOSED SWITHCES ARE WORKING CORRECTLY.
- 8. ENSURE THE SWITCH IS HELD WITH TOLERANCE OF THE STOCK RAIL.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 4. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POINTS ELECTRIC M70 / M3A / M23A SERIES / (EXCLUDING 84M SERIES)

SERVICE SCHEDULE / STANDARD JOB S06011

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REF: ESM-06-01 AND THE MANUFACTURER'S MANUALS)

NOTE: PERFORM S0601L WITH THIS SERVICE

GENERAL

- 1. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT
- 2. LUBRICATE SLIDE CHAIRS AS REQUIRED

POINTS MECHANISM

- 3. CHECK ADJUSTMENT & TEST OPERATION
- 4. INSPECT LINKAGES FOR WEAR & LUBRICATE
- 5. CHECK OPERATION FOR ABNORMAL SOUNDS IN POINTS MOTORS
- 6. LUBRICATE DRIVE TRAIN
- 7. EXAMINE TIE PLATE INSULATION PIECES
- 8. CHECK MECHANISM SECURELY FASTENED DOWN BY HOLDING BOLTS
- 9. CHECK OPERATION OF MOTOR CUT OUT OPERATED BY THE ESML / EOL CRANK HANDLE & INDEXING & / OR WARDING OF THE CRANK HANDLE & INDEX PLATE DETECTOR ASSEMBLY INTERNAL

CONTACT DRIVE

10. LUBRICATE & INSPECT FOR WEAR / DAMAGE

DETECTOR SLIDES & CONTACT ADJUSTMENT

11. CHECK ADJUSTMENT

ELECTRICAL CONNECTIONS

12. CHECK CONNECTIONS FOR TIGHTNESS

DETECTOR WIRING DEFECTIVE

13. VISUAL EXAMINATION

FACING POINT LOCK

14. CHECK ADJUSTMENT

EXTENSION IRONS

15. INSPECT CONDITION CHECK TIGHTNESS /REPLACE BOLT & NUT IF LOOSE EXAMINE RODDING INSULATION



LOCK CONNECTING RODS

16. INSPECT CONDITION CHECK TIGHTNESS / REPLACE BOLT & NUT IF LOOSE EXAMINE RODDING INSULATION

F.P.L CONTACT WIRING

17. VISUAL EXAMINATION

LOCK SLIDES

18. VISUALLY CHECK LOCKING SLIDES WITH FPL TEST

(CHECK FOR ROUNDING OF THE LOCK FACE)

TIES / FASTENINGS/BALLAST

19. VISUAL EXAMINATION / REPORT CONDITION TO CIVIL

STOCKRAIL / SWITCH / SWITCH STOP

20. VISUAL EXAMINATION / REPORT CONDITION TO CIVIL

POINT STRETCHER BARS

- 21. CHECK ADJUSTMENT
- 22. INSPECT CONDITION
- 23. CHECK TIGHTNESS / REPLACE BOLT & NUT IF LOOSE
- 24. EXAMINE INSULATION PIECES

DERAILER & CROWDER (WHERE FITTED)

25. PERFORM SERVICE FOR DERAILER & CROWDER S06531

TRACK CIRCUIT PARALLEL BONDING

26. INSPECT THE CONDITION OF ANY PARALLEL BONDING ON THE TURNOUT

PUSH BUTTON

- 27. CHECK ADJUSTMENT OF PUSH BUTTON/SWITCH CONTACTS AND EXAMINE FOR WEAR / DAMAGE /CORROSION (WHERE FITTED)
- 28. EXAMINE POST STRUCTURE AND BASE FOR DAMAGE, CORROSION, EROSION, SURROUNDING GROUND HOLES AND UNDERMINING OF THE BASE

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY


SIGNALLING TECHNICAL MAINTENANCE PLANS POINTS ELECTRIC M70 / M3A / M23A SERIES / (EXCLUDING 84M SERIES) SERVICE SCHEDULE / STANDARD JOB S06012 **PREPARATION ACTION:** 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 4 PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: (REF: ESM-06-01 AND MANUFACTURER'S MANUALS) NOTE: PERFORM S0601L & S06011 WITH THIS SERVICE POINTS MECHANISM **INSPECT GEAR BOX & LUBRICATE AS NECESSARY** 1. **CLUTCH MECHANISM** 2 TEST CLUTCH ADJUSTMENT **ESML MECHANISM & ENCLOSURE (WHERE FITTED)** 3. CHECK CONDITION / TEST OPERATION (VERIFY DETECTION OPENED CIRCUITED WHEN ESML KEY TURNED FOR REMOVAL) (REF SPECIAL INSTRUCTION) PERFORM S05331 FOR EMERGENCY RELEASING LOCK 4 **EOL MECHANISM & ENCLOSURE (WHERE FITTED)** INSPECT CONDITION OF THE EOL MECHANISM & KEY & MOTOR INDEX FOR CORRECT OPERATION OF 5. THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS, WARDS & WARD PINS - REPLACE AS NECESSARY 6. CLEAN ENCLOSURE, ENSURE SEALS AND SECURITY DEVICES ARE SERVICEABLE **REINSTATEMENT ACTION:** RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY 2. 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION

5. DISPOSE OF ALL COMPONENT, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POINTS ELECTRIC G.E.C. HW SERIES

SERVICE SCHEDULE / STANDARD JOB S06021

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REF ESM-06-01 AND MANUFACTURER'S MANUALS)

NOTE: PERFORM S0601L WITH THIS SCHEDULE

GENERAL

- 1. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT
- 2. LUBRICATE SLIDE CHAIRS AS REQUIRED

POINTS MECHANISM

- 3. CHECK ADJUSTMENT & TEST OPERATION
- 4. INSPECT LINKAGES FOR WEAR & LUBRICATE
- 5. CHECK OPERATION FOR ABNORMAL SOUNDS IN POINTS MOTORS
- 6. LUBRICATE DRIVE TRAIN
- 7. EXAMINE TIE PLATE INSULATION PIECES
- 8. EXAMINE MOTOR OPERATING CONTACTS
- 9. CHECK MECHANISM SECURELY FASTENED DOWN BY HOLDING BOLTS
- 10. CHECK OPERATION OF MOTOR CUT OUT OPERATED BY THE ESML / EOL CRANK HANDLE & INDEXING & / OR WARDING OF THE CRANK HANDLE & INDEX PLATE

DETECTOR ASSEMBLY INTERNAL

CONTACT DRIVE

11. LUBRICATE & INSPECT FOR WEAR / DAMAGE

DETECTOR SLIDES & CONTACT ADJUSTMENT

- 12. CHECK ADJUSTMENT
- 13. EXAMINE DETECTOR CONTACTS

ELECTRICAL CONNECTIONS

14. CHECK CONNECTIONS FOR TIGHTNESS

DETECTOR WIRING DEFECTIVE

15. VISUAL EXAMINATION

FACING POINT LOCK

16. CHECK ADJUSTMENT WITH FPL GAUGE



EXTENSION IRONS

17. INSPECT CONDITION CHECK TIGHTNESS /REPLACE BOLT & NUT IF LOOSE EXAMINE RODDING INSULATION

LOCK CONNECTING RODS

18. INSPECT CONDITION CHECK TIGHTNESS /REPLACE BOLT & NUT IF LOOSE EXAMINE RODDING INSULATION

F.P.L CONTACT WIRING

19. VISUAL EXAMINATION

LOCK SLIDES

20. VISUALLY CHECK LOCKING SLIDES WITH FPL TEST

TIES / FASTENINGS/BALLAST

21. VISUAL EXAMINATION / REPORT CONDITION TO CIVIL

STOCKRAIL / SWITCH / SWITCH STOP

22. VISUAL EXAMINATION / REPORT CONDITION TO CIVIL

POINT STRETCHER BARS

- 23. CHECK ADJUSTMENT
- 24. INSPECT CONDITION
- 25. CHECK TIGHTNESS /REPLACE BOLT & NUT IF LOOSE
- 26. EXAMINE INSULATION PIECES

DERAILER & CROWDER (WHERE FITTED)

27. PERFORM SERVICE FOR DERAILER & CROWDER S06531

TRACK CIRCUIT PARALLEL BONDING

28. INSPECT THE CONDITION OF ANY PARALLEL BONDING ON THE TURNOUT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



REF MANUFACTURER'S MANUAL)

POINTS ELECTRIC G.E.C. HW SERIES

SERVICE SCHEDULE / STANDARD JOB S06022

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE: PERFORM S0601L & S06021 WITH THIS SCHEDULE

POINTS MECHANISM

1. INSPECT GEAR BOX & LUBRICATE AS NECESSARY

CLUTCH MECHANISM

2. TEST CLUTCH ADJUSTMENT

FACING POINT LOCK

3. VALIDATE FACING POINT LOCK SLIDES LOCKING GAP

ESML MECHANISM & ENCLOSURE (WHERE FITTED)

- 4. CHECK CONDITION / TEST OPERATION (VERIFY DETECTION OPENED CIRCUITED WHEN ESML KEY TURNED FOR REMOVAL) (REF SPECIAL INSTRUCTION)
- 5. PERFORM S05331 FOR EMERGENCY RELEASING LOCK

EOL MECHANISM & ENCLOSURE (WHERE FITTED)

- 6. INSPECT CONDITION OF THE EOL MECHANISM & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS, WARDS & WARD PINS - REPLACE AS NECESSARY
- 7. CLEAN ENCLOSURE, ENSURE SEALS AND SECURITY DEVICES ARE SERVICEABLE

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS POINTS ELECTRIC NIPPON KA 1200 A, KA 1211B, KA 1211C, KA1401C SERVICE SCHEDULE / STANDARD JOB S06031 **PREPARATION ACTION:** 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 4 PERFORM PRE-WORK SAFETY BRIEF **MAINTENANCE ACTION:** (REF: ESM-06-01 AND MANUFACTURER'S MANUAL) NOTE: PERFORM S0601L WITH THIS SERVICE GENERAL 1. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT 2. LUBRICATE SLIDE CHAIRS AS REQUIRED POINTS MECHANISM 3. CHECK ADJUSTMENT & TEST OPERATION 4. INSPECT LINKAGES FOR WEAR & LUBRICATE 5. CHECK OPERATION FOR ABNORMAL SOUNDS IN POINTS MOTOR) 6. LUBRICATE DRIVE TRAIN 7. EXAMINE TIE PLATE INSULATION PIECES 8. CHECK OPERATION OF MOTOR CUT OUT OPERATED BY THE ESML / EOL CRANK HANDLE & INDEXING & / OR WARDING OF THE CRANK HANDLE & INDEX PLATE DETECTOR ASSEMBLY INTERNAL CONTACT DRIVE 9. LUBRICATE & INSPECT FOR WEAR / DAMAGE **10. DETECTOR SLIDES & CONTACT ADJUSTMENT 11. CHECK ADJUSTMENT ELECTRICAL CONNECTIONS** 12. CHECK CONNECTIONS FOR TIGHTNESS DETECTOR WIRING DEFECTIVE 13. VISUAL EXAMINATION FACING POINT LOCK 14. CHECK ADJUSTMENT **EXTENSION IRONS** 15. INSPECT CONDITION CHECK TIGHTNESS / REPLACE BOLT & NUT IF LOOSE EXAMINE RODDING



INSULATION

LOCK CONNECTING RODS

16. INSPECT CONDITION CHECK TIGHTNESS / REPLACE BOLT & NUT IF LOOSE EXAMINE RODDING INSULATION

F.P.L CONTACT WIRING

17. VISUAL EXAMINATION

ELECTRIC MOTOR

- 18. INSPECT ADJUST AND CLEAN MOTOR CONTACTS
- 19. LUBRICATE MOTOR BEARINGS
- 20. CHECK BEARINGS FOR NOISE OR SLACKNESS
- 21. INSPECT BRUSHES FOR WEAR AND SEATING
- 22. INSPECT AND CLEAN COMMUTATOR

TIES / FASTENINGS/BALLAST

23. VISUAL EXAMINATION / REPORT CONDITION TO CIVIL

STOCKRAIL/SWITCH STOP

24. VISUAL EXAMINATION / REPORT CONDITION TO CIVIL

POINT STRETCHER BARS

- 25. CHECK ADJUSTMENT
- 26. INSPECT CONDITION
- 27. CHECK TIGHTNESS /REPLACE BOLT & NUT IF LOOSE
- 28. EXAMINE INSULATION PIECES

DERAILER & CROWDER (WHERE FITTED)

29. PERFORM SERVICE FOR DERAILER & CROWDER S06531

TRACK CIRCUIT PARALLEL BONDING

30. INSPECT THE CONDITION AND ENSURE CONTINUITY OF ANY PARALLEL BONDING

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



	SIG	NALLING TECHNICAL MAINTENANCE PLANS			
	POINTS ELECTRIC NIPPO	DN KA 1200 A, KA 1211B, KA 1211C, KA1401C			
	SI	ERVICE SCHEDULE / STANDARD JOB S06032			
PRE	PREPARATION ACTION:				
1.	ADVISE NETWORK CONROLLER BEFORE COMMENCING W	ORK			
2.	OBSERVE THE REQUIREMENTS OF THE SAFE WORK METH	IOD STATEMENT			
3.	OBSERVE THE APPROPRIATE NETWORK RULES AND PROC	CEDURES			
4.	PERFORM PRE-WORK SAFETY BRIEF				
MAI	NTENANCE ACTION:	(REF: MANUFACTURER'S MANUALS)			
ΝΟΤ	E: PERFORM S0601L AND S06032 WITH THIS SERVICE				
POI	NTS MECHANISM				
1.	INSPECT GEAR BOX & LUBRICATE AS NECESSARY				
2.	TEST MOTOR CUT-OUT TIMER				
CLL	ITCH MECHANISM				
3.	TEST CLUTCH ADJUSTMENT				
LOC	K SLIDES				
4.	VISUALLY CHECK LOCKING SLIDES	(CHECK FOR ROUNDING OF THE LOCK FACE)			
ESN	IL MECHANISM & ENCLOSURE (WHERE FITTED)				
5.	CHECK CONDITION / TEST OPERATION (VERIFY DETECTION TURNED FOR REMOVAL)	N OPENED CIRCUITED WHEN ESML KEY (REF SPECIAL INSTRUCTION)			
6.	PERFORM S05331 FOR EMERGENCY RELEASING LOCK				
EOL	MECHANISM & ENCLOSURE (WHERE FITTED)				
7.	INSPECT CONDITION OF THE EOL MECHANISM & KEY & MC THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR WARD PINS - REPLACE AS NECESSARY	OTOR INDEX FOR CORRECT OPERATION OF OF THE LOCKING COMPONENTS, WARDS &			
8.	CLEAN ENCLOSURE, ENSURE SEALS AND SECURITY DEVIC	CES ARE SERVICEABLE			
REI	ISTATEMENT ACTION:				
1.	RECORD MAINTENANCE ACTION BY CLOSING OFF THE MS	T / WORK ORDER			
2.	ENSURE THAT THE POINT DRIVE SYSTEM OPERATES COR	RECTLY			
3.	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE	ACTION IS COMPLETE			
4.	REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMED CORRECTIVE ACTION	IATELY OR RECORDED IN THE WMS AS A			
5.	DISPOSE OF ALL COMPONENTS. BATTERIES SOILED RAGS	. PAPERS. ETC APPROPRIATELY			



POINTS ELECTRIC M23A MK III

SERVICE SCHEDULE / STANDARD JOB S06041

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

(REF: ESM-06-01 AND THE

MANUFACTURER'S MANUALS)

NOTE: PERFORM S0601L WITH THIS SERVICE

GENERAL

- 1. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT
- 2. LUBRICATE SLIDE CHAIRS AS REQUIRED

POINTS MECHANISM

- 3. CHECK ADJUSTMENT & TEST OPERATION
- 4. INSPECT LINKAGES FOR WEAR & LUBRICATE
- 5. CHECK OPERATION FOR ABNORMAL SOUNDS IN POINTS MOTORS
- 6. LUBRICATE DRIVE TRAIN
- 7. EXAMINE TIE PLATE INSULATION PIECES
- 8. CHECK MECHANISM SECURELY FASTENED DOWN BY HOLDING BOLTS
- 9. CHECK OPERATION OF MOTOR CUT OUT OPERATED BY THE ESML / EOL CRANK HANDLE & INDEXING & / OR WARDING OF THE CRANK HANDLE & INDEX PLATE DETECTOR ASSEMBLY INTERNAL

CONTACT DRIVE

10. LUBRICATE & INSPECT FOR WEAR / DAMAGE

DETECTOR SLIDES & CONTACT ADJUSTMENT

- 11. CHECK ADJUSTMENT
- 12. CHECK ADJUSTMENT OF THE MID SWITCH DETECTOR WHERE FITTED

ELECTRICAL CONNECTIONS

13. CHECK CONNECTIONS FOR TIGHTNESS

DETECTOR WIRING DEFECTIVE

14. VISUAL EXAMINATION

FACING POINT LOCK

15. CHECK ADJUSTMENT

EXTENSION IRONS

16. INSPECT CONDITION CHECK TIGHTNESS /REPLACE BOLT & NUT IF LOOSE EXAMINE RODDING INSULATION



LOCK CONNECTING RODS

17. INSPECT CONDITION CHECK TIGHTNESS / REPLACE BOLT & NUT IF LOOSE EXAMINE RODDING INSULATION

F.P.L CONTACT WIRING

18. VISUAL EXAMINATION

LOCK SLIDES

19. VISUALLY CHECK LOCKING SLIDES WITH FPL TEST (CHECK FOR ROUNDING OF THE LOCK FACE)

TIES / FASTENINGS/BALLAST

20. VISUAL EXAMINATION / REPORT CONDITION TO CIVIL

STOCKRAIL / SWITCH / SWITCH STOP

21. VISUAL EXAMINATION / REPORT CONDITION TO CIVIL

POINT STRETCHER BARS

- 22. CHECK ADJUSTMENT
- 23. INSPECT CONDITION
- 24. CHECK TIGHTNESS /REPLACE BOLT & NUT IF LOOSE
- 25. EXAMINE INSULATION PIECES

DERAILER & CROWDER (WHERE FITTED)

26. PERFORM SERVICE FOR DERAILER & CROWDER S06531

TRACK CIRCUIT PARALLEL BONDING

27. INSPECT THE CONDITION OF ANY PARALLEL BONDING ON THE TURNOUT

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNALLING TECHNICAL MAINTENANCE PLANS

POINTS ELECTRIC M23A MK III

SERVICE SCHEDULE / STANDARD JOB S06042

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT



3.	OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES	
4.	PERFORM PRE-WORK SAFETY BRIEF	
MAINTENANCE ACTION: (REF: ESM-06-01 AND THE MANUFACTURER'S MANUALS) NOTE: PERFORM S0601L & S06041 WITH THIS SERVICE POINTS MECHANISM Content of the service		
1.	INSPECT GEAR BOX & LUBRICATE AS NECESSARY	
CLUTCH MECHANISM		
2.	TEST CLUTCH ADJUSTMENT	
ESML MECHANISM & ENCLOSURE (WHERE FITTED)		
3.	CHECK CONDITION / TEST OPERATION (VERIFY DETECTION OPENED CIRCUITED WHEN ESML KEY TURNED FOR REMOVAL)	
4.	PERFORM S05331 FOR EMERGENCY RELEASING LOCK	
EOL MECHANISM & ENCLOSURE (WHERE FITTED)		
5.	INSPECT CONDITION OF THE EOL MECHANISM & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS, WARDS & WARD PINS - REPLACE AS NECESSARY	
6.	CLEAN ENCLOSURE, ENSURE SEALS AND SECURITY DEVICES ARE SERVICEABLE	
REINSTATEMENT ACTION:		
	1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER	
2.	ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY	
3.	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE	
4.	REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION	

5. DISPOSE OF ALL COMPONENT, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNALLING TECHNICAL MAINTENANCE PLANS

POINTS DERAILER M70 / M3A / M23A SERIES / (EXCLUDING 84M SERIES)

SERVICE SCHEDULE / STANDARD JOB S06111

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT.
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF



MAINTENANCE ACTION

PERFORM S0601L IN CONJUNCTION WITH THIS SERVICE. REF ESM-06-01 AND MANUFACTURER'S MANUALS)

POINTS MECHANISM

- 1. CHECK ADJUSTMENT & TEST OPERATION
- 2. INSPECT LINKAGES FOR WEAR & LUBRICATE
- 3. CHECK OPERATION FOR ABNORMAL SOUNDS IN POINTS MOTORS
- 4. LUBRICATE DRIVE TRAIN
- 5. EXAMINE TIE PLATE INSULATION PIECES
- 6. CHECK MECHANISM SECURELY FASTENED DOWN BY HOLDING BOLTS
- 7. CHECK OPERATION OF MOTOR CUT OUT OPERATED BY THE ESML / EOL CRANK HANDLE & INDEXING & / OR WARDING OF THE CRANK HANDLE & INDEX PLATE DETECTOR ASSEMBLY INTERNAL CONTACT DRIVE
- 8. LUBRICATE & INSPECT FOR WEAR / DAMAGE, DETECTOR SLIDES & CONTACT ADJUSTMENT
- 9. CHECK ADJUSTMENT ELECTRICAL CONNECTIONS
- 10. CHECK CONNECTIONS FOR TIGHTNESS DETECTOR WIRING DEFECTIVE
- 11. VISUAL EXAMINATION FACING POINT LOCK
- 12. CHECK ADJUSTMENT

TRACK CONDITION

13. INSPECT CONDITION OF BALLAST & FORMATION ALLOWS FOR CORRECT OPERATION OF THE DERAILER & CROWDER

STOCKRAIL

- 14. INSPECT STOCKRAIL FOR RAIL OVER RUN THAT MIGHT PREVENT THE DERAILER & CROWDER SITTING CORRECTLY
- 15. CHECK THAT STOCKRAIL IS SECURELY FASTENED TO TIMBERS / BEARERS & THAT IT IS SITTING FIRMLY ON THE TIMBERS / BEARERS
- 16. INSPECT FOR EXCESSIVE LATERAL ROAD MOVEMENT

DRIVE RODDING (WHERE APPLICABLE)

- 17. INSPECT CHANNEL RODDING RUN FOR OBSTRUCTIONS OR DAMAGE OR SERIOUS DEGRADATION BY RUST
- 18. CHECK "A" FRAME BLOCKS ARE STABLE AND NOT LIFTING
- 19. CHECK ALLIGNMENT OF THE RODDING RUN & THAT IT IS NOT CREATING EXCESSIVE FRICTION THROUGH CONTACT ON THE "A" FRAMES, ETC
- 20. CHECK CHANNEL RODDING CONNECTIONS FOR TIGHTNESS
- 21. INSPECT A FRAME CARRIERS FOR WEAR OR DAMAGE
- 22. INSPECT "A" FRAMES & CHECK THAT ALL BOLTS & FERRULES ARE FITTED & ARE TIGHT
- 23. CHECK THAT CRANKS AND COMPENSATORS ARE STABLE & SECURELY FASTENED TO SUPPORTS
- 24. INSPECT CRANKS AND COMPENSATORS FOR WEAR AND LUBRICATE
- 25. INSPECT CONNECTING PINS AND BUSHES FOR WEAR AND LUBRICATE
- 26. TEST FOR LOST MOTION IN CHANNEL RODDING RUN

DERAILER & CROWDER (REF: MANUFACTURER'S HANDBOOK FOR D150 DERAIL & C150 CROWDER)

- 27. INSPECT THE CROWDER & DERAILER EQUIPMENT FOR DEFECTS OR DAMAGE
- 28. CHECK THE TWO MOUNTING TIMBERS / BEARERS ARE SQUARE TO THE TRACK
- 29. INSPECT THE PACKING PIECES, WHERE FITTED, AND ENSURE THEY ARE IN SECURE AND IN GOOD CONDITION
- 30. INSPECT THE SPLIT PINS, PINS AND BUSHES AND ASSOCIATED LINKAGES ARE SECURE AND NOT WORN
- 31. LUBRICATE ALL PINS ON BOTH THE DRAILER AND CROWDER
- 32. INSPECT CONDITION OF GREASED SURFACES FOR CONTAMINATION OR DEGRADATION OF THE GREASE CLEAN SURFACES & REGREASE
- 33. CHECK FOR CORRECT OPERATION OF THE DERAIL AND CROWDER & ENSURE THAT:
 - a. THE DERAIL BLOCK FULLY COVERS THE HEAD OF THE RAIL
 - b. THE DERAIL BLOCK DROPS NEATLY ONTH OTHE HEAD OF THE RAIL AT THE END OF ITS STROKE

c. THE GUIDE BEARLING SIT EVENLY ON THE FRONT SEAT AND HOLD DOWN BAR RESPECTIVELY (REF HANDBOOK FIG 4.6, 4.7 & 4.8)

d. THE CROWDER SITS FLUSH WITH THE TOP OF THE RAIL HEAD

POINT MOTOR MACHINE

34. OPERATE THE MACHINE AND INSPECT FOR EVIDENCE OF EXCESSIVE MOVEMENT AT THE POINT MACHINE MOUNTING, RETENSION MOUNTING BOLTS AS NECESSARY OR ARRANGE FOR THE BEARER/S TO BE REPLACED IF FOUND TO BE DEFECTIVE



- 35. CHECK THE POINT MACHINE BASEPLATE TO BEARER MOUNTING BY INSPECTING FOR EVIDENCE OF MOVEMENT OF THE POINT MACHINE BASEPLATE WHEN THE POINT MACHINE IS OPERATED. RETENSION FASTENINGS AS REQUIRED AND INSPECT INTEGRITY OF THE BEARERS
- 36. INSPECT THE CONDITION OF THE MOTOR CUT-OUT SWITCH ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING. REPLACE AS NECESSARY
- 37. INSPECT THE CONDITION OF THE DETECTOR CONTACT ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING. REPLACE AS NECESSARY
- 38. INSPECT THE CONDITION OF THE MOTOR CONTROL CONTACT ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING. REPLACE AS NECESSARY
- CHECK OPERATION & INSPECT CONDITION OF THE EOL MECHANISM (WHERE FITTED) & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING 39. COMPONENTS, WARDS & WARD PINS - REPLACE AS NECESSARY

MACHINE & POINT NUMBER & POINT ORIENTATION SIGNAGE

- 40. CHECK POINT IDENTIFICATION NUMBERS AND N & R PLATES AFFIXED TO BEARERS ARE SECURE AND CLEARLY **VISIBI F**
- 41. CHECK POINT IDENTIFICATION NUMBER FITTED TO THE POINT MACHINE LID IS SECURE AND CLEARLY VISIBLE

TRACK CIRCUIT PARALLEL BONDING

42. INSPECT THE CONDITION OF ANY PARALLEL BONDING ON THE TURNOUT

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST/WORKORDER 1.
- ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY 2
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A 4 CORRECTIVE ACTION
- 5 DISPOSE OF ALL COMPONENTS , BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POINTS DERAILER M70 / M3A / M23A SERIES / (EXCLUDING 84M SERIES)

SERVICE SCHEDULE / STANDARD JOB S06112

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

REF: ESM-06-01 AND MANUFACTURER'S MANUALS)

NOTE: PERFORM S06111 WITH THIS SERVICE POINTS MECHANISM

1. INSPECT GEAR BOX & LUBRICATE AS NECESSARY

CLUTCH MECHANISM

2. TEST CLUTCH ADJUSTMENT

ESML MECHANISM & ENCLOSURE (WHERE FITTED)

- 3. CHECK CONDITION / TEST OPERATION (VERIFY DETECTION OPENED CIRCUITED WHEN ESML KEY TURNED FOR REMOVAL)
- 4. PERFORM S05331 FOR EMERGENCY RELEASING LOCK

EOL MECHANISM & ENCLOSURE (WHERE FITTED)

- 5. INSPECT CONDITION OF THE EOL MECHANISM & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS, WARDS & WARD PINS - REPLACE AS NECESSARY
- 6. CHECK POINT IDENTIFICATION NUMBER FITTED TO THE DOOR IS SECURE AND CLEARLY VISIBLE
- 7. CHECK POINT LAYOUT DIAGRAM AND DETECTOR LIGHTS ARE CLEARLY VISIBLE AND OPERATIONAL (WHERE FITTED)
- 8. CHECK WIND "N" POINT ENDS SIGN IS FITTED AND CLEARLY VISIBLE
- 9. CLEAN ENCLOSURE, ENSURE SEALS AND SECURITY DEVICES ARE SERVICEABLE

GENERAL

- 10. INSPECT THE DETECTOR ROD TO SWITCH RAIL ELECTRICAL INSULATION FOR EVIDENCE OF DEGREDATION.
- 11. INSPECT THE OPERATING BAR ELECTRICAL INSULATION FOR EVIDENCE OF DEGRADATION
- 12. EXAMINE THE ELECTRICAL INSULATION BETWEEN ALL TIE PLATES FOR EVIDENCE OF DEGREDATION & REPLACE IF NECESSARY



- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POINTS DERAILER NIPPON KA 1200 A, KA 1211B, KA 1211C, KA1401C

SERVICE SCHEDULE / STANDARD JOB S06121

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT.
- OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 3.
- PERFORM PRE-WORK SAFETY BRIEF 4.

MAINTENANCE ACTION

PERFORM S0601L IN CONJUNCTION WITH THIS SERVICE. REF MANUFACTURER'S MANUALS)

POINTS MECHANISM

- CHECK ADJUSTMENT & TEST OPERATION 1.
- 2. **INSPECT LINKAGES FOR WEAR & LUBRICATE**
- CHECK OPERATION FOR ABNORMAL SOUNDS IN POINTS MOTOR 3.
- 4 LUBRICATE DRIVE TRAIN
- EXAMINE TIE PLATE INSULATION PIECES 5.
- CHECK OPERATION OF MOTOR CUT OUT OPERATED BY THE ESML / EOL CRANK HANDLE & INDEXING & / OR 6. WARDING OF THE CRANK HANDLE & INDEX PLATE

DETECTOR ASSEMBLY INTERNAL CONTACT DRIVE

- LUBRICATE & INSPECT FOR WEAR / DAMAGE 7.
- DETECTOR SLIDES & CONTACT ADJUSTMENT 8
- 9. CHECK ADJUSTMENT

ELECTRICAL CONNECTIONS

10. CHECK CONNECTIONS FOR TIGHTNESS

DETECTOR WIRING DEFECTIVE

11. VISUAL EXAMINATION

FACING POINT LOCK

CHECK ADJUSTMENT)

F.P.L CONTACT WIRING

- 13. VISUAL EXAMINATION ELECTRIC MOTOR
- 14. INSPECT ADJUST AND CLEAN MOTOR CONTACTS
- **15. LUBRICATE MOTOR BEARINGS**
- 16. CHECK BEARINGS FOR NOISE OR SLACKNESS
- 17. INSPECT BRUSHES FOR WEAR AND SEATING
- 18. INSPECT AND CLEAN COMMUTATOR

TRACK CONDITION

19. INSPECT CONDITION OF BALLAST & FORMATION ALLOWS FOR CORRECT OPERATION OF THE DERAILER & CROWDER

STOCKRAIL

- 20. INSPECT STOCKRAIL FOR RAIL OVER RUN THAT MIGHT PREVENT THE DERAILER & CROWDER SITTING CORRECTLY
- 21. CHECK THAT STOCKRAIL IS SECURELY FASTENED TO TIMBERS / BEARERS & THAT IT IS SITTING FIRMLY ON THE TIMBERS / BEARERS
- 22. INSPECT FOR EXCESSIVE LATERAL ROAD MOVEMENT

DRIVE RODDING (WHERE APPLICABLE)

- 23. INSPECT CHANNEL RODDING RUN FOR OBSTRUCTIONS OR DAMAGE OR SERIOUS DEGRADATION BY RUST
- 24. CHECK "A" FRAME BLOCKS ARE STABLE AND NOT LIFTING
- 25. CHECK ALLIGNMENT OF THE RODDING RUN & THAT IT IS NOT CREATING EXCESSIVE FRICTION THROUGH CONTACT ON THE "A" FRAMES, ETC
- 26. CHECK CHANNEL RODDING CONNECTIONS FOR TIGHTNESS
- 27. INSPECT A FRAME CARRIERS FOR WEAR OR DAMAGE

ARTC

28. INSPECT "A" FRAMES & CHECK THAT ALL BOLTS & FERRULES ARE FITTED & ARE TIGHT

- 29. CHECK THAT CRANKS AND COMPENSATORS ARE STABLE & SECURELY FASTENED TO SUPPORTS
- 30. INSPECT CRANKS AND COMPENSATORS FOR WEAR AND LUBRICATE
- 31. INSPECT CONNECTING PINS AND BUSHES FOR WEAR AND LUBRICATE
- 32. TEST FOR LOST MOTION IN CHANNEL RODDING RUN

DERAILER & CROWDER (REF: MANUFACTURER'S HANDBOOK FOR D150 DERAIL & C150 CROWDER)

- 33. INSPECT THE CROWDER & DERAILER EQUIPMENT FOR DEFECTS OR DAMAGE
- 34. CHECK THE TWO MOUNTING TIMBERS / BEARERS ARE SQUARE TO THE TRACK
- 35. INSPECT THE PACKING PIECES, WHERE FITTED, AND ENSURE THEY ARE IN SECURE AND IN GOOD CONDITION
- 36. INSPECT THE SPLIT PINS, PINS AND BUSHES AND ASSOCIATED LINKAGES ARE SECURE AND NOT WORN
- 37. LUBRICATE ALL PINS ON BOTH THE DRAILER AND CROWDER
- 38. INSPECT CONDITION OF GREASED SURFACES FOR CONTAMINATION OR DEGRADATION OF THE GREASE CLEAN SURFACES & REGREASE
- 39. CHECK FOR CORRECT OPERATION OF THE DERAIL AND CROWDER & ENSURE THAT:
 - a. THE DERAIL BLOCK FULLY COVERS THE HEAD OF THE RAIL
 - b. THE DERAIL BLOCK DROPS NEATLY ONTH OTHE HEAD OF THE RAIL AT THE END OF ITS STROKE

c. THE GUIDE BEARLING SIT EVENLY ON THE FRONT SEAT AND HOLD DOWN BAR RESPECTIVELY (REF HANDBOOK FIG 4.6, 4.7 & 4.8)

d. THE CROWDER SITS FLUSH WITH THE TOP OF THE RAIL HEAD

POINT MOTOR MACHINE

- 40. OPERATE THE MACHINE AND INSPECT FOR EVIDENCE OF EXCESSIVE MOVEMENT AT THE POINT MACHINE MOUNTING, RETENSION MOUNTING BOLTS AS NECESSARY OR ARRANGE FOR THE BEARER/S TO BE REPLACED IF FOUND TO BE DEFECTIVE
- 41. CHECK THE POINT MACHINE BASEPLATE TO BEARER MOUNTING BY INSPECTING FOR EVIDENCE OF MOVEMENT OF THE POINT MACHINE BASEPLATE WHEN THE POINT MACHINE IS OPERATED. RETENSION FASTENINGS AS REQUIRED AND INSPECT INTEGRITY OF THE BEARERS
- 42. INSPECT THE CONDITION OF THE MOTOR CUT-OUT SWITCH ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING. REPLACE AS NECESSARY
- 43. INSPECT THE CONDITION OF THE DETECTOR CONTACT ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING. REPLACE AS NECESSARY
- 44. INSPECT THE CONDITION OF THE MOTOR CONTROL CONTACT ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING. REPLACE AS NECESSARY
- 45. CHECK OPERATION & INSPECT CONDITION OF THE EOL MECHANISM (WHERE FITTED) & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS, WARDS & WARD PINS - REPLACE AS NECESSARY

MACHINE & POINT NUMBER & POINT ORIENTATION SIGNAGE

- 46. CHECK POINT IDENTIFICATION NUMBERS AND N & R PLATES AFFIXED TO BEARERS ARE SECURE AND CLEARLY VISIBLE
- 47. CHECK POINT IDENTIFICATION NUMBER FITTED TO THE POINT MACHINE LID IS SECURE AND CLEARLY VISIBLE

TRACK CIRCUIT PARALLEL BONDING

48. INSPECT THE CONDITION OF ANY PARALLEL BONDING ON THE TURNOUT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST/WORKORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS ,BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POINTS DERAILER NIPPON KA 1200 A, KA 1211B, KA 1211C, KA1401C

SERVICE SCHEDULE / STANDARD JOB S06122

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

(REF: ESM-06-01 AND MANUFACTURER'S MANUALS)

NOTE: PERFORM S06121 WITH THIS SERVICE

POINTS MECHANISM

- 1. INSPECT GEAR BOX & LUBRICATE AS NECESSARY
- 2. TEST MOTOR CUT-OUT TIMER

CLUTCH MECHANISM

3. TEST CLUTCH ADJUSTMENT

LOCK SLIDES

4. VISUALLY CHECK LOCKING SLIDES

ESML MECHANISM & ENCLOSURE (WHERE FITTED)

- 5. CHECK CONDITION / TEST OPERATION (VERIFY DETECTION OPENED CIRCUITED WHEN ESML KEY TURNED FOR REMOVAL)
- 6. PERFORM S05331 FOR EMERGENCY RELEASING LOCK

EOL MECHANISM & ENCLOSURE (WHERE FITTED)

- 7. INSPECT CONDITION OF THE EOL MECHANISM & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS, WARDS & WARD PINS - REPLACE AS NECESSARY
- 8. CHECK POINT IDENTIFICATION NUMBER FITTED TO THE DOOR IS SECURE AND CLEARLY VISIBLE
- 9. CHECK POINT LAYOUT DIAGRAM AND DETECTOR LIGHTS ARE CLEARLY VISIBLE AND OPERATIONAL (WHERE FITTED)
- 10. CHECK WIND "N" POINT ENDS SIGN IS FITTED AND CLEARLY VISIBLE
- 11. CLEAN ENCLOSURE, ENSURE SEALS AND SECURITY DEVICES ARE SERVICEABLE

GENERAL

- 12. INSPECT THE DETECTOR ROD TO SWITCH RAIL ELECTRICAL INSULATION FOR EVIDENCE OF DEGREDATION.
- 13. INSPECT THE OPERATING BAR ELECTRICAL INSULATION FOR EVIDENCE OF DEGRADATION
- 14. EXAMINE THE ELECTRICAL INSULATION BETWEEN ALL TIE PLATES FOR EVIDENCE OF DEGREDATION & REPLACE IF NECESSARY



- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

POINTS DERAILER 84M SERIES

SERVICE SCHEDULE / STANDARD JOB S06131

PREPARATION ACTION:

- ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK 1.
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT.
- OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 3.
- PERFORM PRE-WORK SAFETY BRIEF 4.

MAINTENANCE ACTION

(REFERENCE: ESM-06-01 & MANUFACTURERS MANUAL)

PERFORM S0601L IN CONJUNCTION WITH THIS SERVICE.

LUBRICATION OF OPERATING MECHANISM

- LUBRICATE THE SELECTOR LEVER BEARING 1.
- LUBRICATE THE HAND THROW LEVER BEARING 2.
- INSPECT THE SELECTOR LEVER CLUTCH DISENGAGEMENT MECHANISM FOR RESIDUAL LUBRICANT, 3. LUBRICATE THE MECHANISM IF REQUIRED TAKING CARE NOT TO CONTAMINATE THE CLUTCH DISCS WITH
- LUBRICANT INSPECT THE POINT MACHINE GEARS FOR RESIDUAL LUBRICANT & LUBRICATE AS NECESSARY 4
- 5. LUBRICATE THE DETECTOR ROLLER ASSEMBLY PIVOT POINTS
- LUBRICATE THE DETECTOR ROLLER AXLES 6.
- 7. LUBRICATE THE THROW BAR & BUSHES & THE DETECTOR SLIDES & BEARINGS

TRACK CONDITION

INSPECT CONDITION OF BALLAST & FORMATION ALLOWS FOR CORRECT OPERATION OF THE DERAILER & 8 CROWDER

STOCKRAIL

- 9 INSPECT STOCKRAIL FOR RAIL OVER RUN THAT MIGHT PREVENT THE DERAILER & CROWDER SITTING CORRECTLY
- 10. CHECK THAT STOCKRAIL IS SECURELY FASTENED TO TIMBERS / BEARERS & THAT IT IS SITTING FIRMLY ON THE TIMBERS / BEARERS
- 11. INSPECT FOR EXCESSIVE LATERAL ROAD MOVEMENT

DRIVE RODDING (WHERE APPLICABLE)

- 12. INSPECT CHANNEL RODDING RUN FOR OBSTRUCTIONS OR DAMAGE OR SERIOUS DEGRADATION BY RUST
- 13. CHECK "A" FRAME BLOCKS ARE STABLE AND NOT LIFTING
- 14. CHECK ALLIGNMENT OF THE RODDING RUN & THAT IT IS NOT CREATING EXCESSIVE FRICTION THROUGH CONTACT ON THE "A" FRAMES, ETC
- 15. CHECK CHANNEL RODDING CONNECTIONS FOR TIGHTNESS
- 16. INSPECT A FRAME CARRIERS FOR WEAR OR DAMAGE
- 17. INSPECT "A" FRAMES & CHECK THAT ALL BOLTS & FERRULES ARE FITTED & ARE TIGHT
- 18. CHECK THAT CRANKS AND COMPENSATORS ARE STABLE & SECURELY FASTENED TO SUPPORTS
- 19. INSPECT CRANKS AND COMPENSATORS FOR WEAR AND LUBRICATE
- 20. INSPECT CONNECTING PINS AND BUSHES FOR WEAR AND LUBRICATE
- 21. TEST FOR LOST MOTION IN CHANNEL RODDING RUN

DERAILER & CROWDER (REF: MANUFACTURER'S HANDBOOK FOR D150 DERAIL & C150 CROWDER)

- 22. INSPECT THE CROWDER & DERAILER EQUIPMENT FOR DEFECTS OR DAMAGE
- 23. CHECK THE TWO MOUNTING TIMBERS / BEARERS ARE SQUARE TO THE TRACK
- 24. INSPECT THE PACKING PIECES, WHERE FITTED, AND ENSURE THEY ARE IN SECURE AND IN GOOD CONDITION
- 25. INSPECT THE SPLIT PINS, PINS AND BUSHES AND ASSOCIATED LINKAGES ARE SECURE AND NOT WORN
- 26. LUBRICATE ALL PINS ON BOTH THE DRAILER AND CROWDER
- INSPECT CONDITION OF GREASED SURFACES FOR CONTAMINATION OR DEGRADATION OF THE GREASE -27.
- **CLEAN SURFACES & REGREASE**
- 28. CHECK FOR CORRECT OPERATION OF THE DERAIL AND CROWDER & ENSURE THAT:
- 29. a. THE DERAIL BLOCK FULLY COVERS THE HEAD OF THE RAIL
- 30. b. THE DERAIL BLOCK DROPS NEATLY ONTH OTHE HEAD OF THE RAIL AT THE END OF ITS STROKE 31.
 - c. THE GUIDE BEARLING SIT EVENLY ON THE FRONT SEAT AND HOLD DOWN BAR RESPECTIVELY
- d. THE CROWDER SITS FLUSH WITH THE TOP OF THE RAIL HEAD 32.

POINT MOTOR MACHINE



- 33. OPERATE THE MACHINE AND INSPECT FOR EVIDENCE OF EXCESSIVE MOVEMENT AT THE POINT MACHINE MOUNTING, RETENSION MOUNTING BOLTS AS NECESSARY OR ARRANGE FOR THE BEARER/S TO BE REPLACED IF FOUND TO BE DEFECTIVE
- 34. CHECK THE POINT MACHINE BASEPLATE TO BEARER MOUNTING BY INSPECTING FOR EVIDENCE OF MOVEMENT OF THE POINT MACHINE BASEPLATE WHEN THE POINT MACHINE IS OPERATED. RETENSION FASTENINGS AS REQUIRED AND INSPECT INTEGRITY OF THE BEARERS
- 35. INSPECT THE CONDITION OF THE MOTOR CUT-OUT SWITCH ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING. REPLACE AS NECESSARY
- 36. INSPECT THE CONDITION OF THE DETECTOR CONTACT ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING. REPLACE AS NECESSARY
- INSPECT THE CONDITION OF THE MOTOR CONTROL CONTACT ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING. REPLACE AS NECESSARY
- 38. CHECK OPERATION & INSPECT CONDITION OF THE EOL MECHANISM (WHERE FITTED) & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS, WARDS & WARD PINS - REPLACE AS NECESSARY

MACHINE & POINT NUMBER & POINT ORIENTATION SIGNAGE

- 39. CHECK POINT IDENTIFICATION NUMBERS AND N & R PLATES AFFIXED TO BEARERS ARE SECURE AND CLEARLY VISIBLE
- 40. CHECK POINT IDENTIFICATION NUMBER FITTED TO THE POINT MACHINE LID IS SECURE AND CLEARLY VISIBLE

TRACK CIRCUIT PARALLEL BONDING

41. INSPECT THE CONDITION OF ANY PARALLEL BONDING ON THE TURNOUT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST/WORKORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS ,BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

POINTS DERAILER 84M SERIES

SERVICE SCHEDULE / STANDARD JOB S06132

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT.
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

(REFERENCE: ESM-06-01 AND MANUFACTURER'S MANUALS)

PERFORM S06131 IN CONJUNCTION WITH THIS SERVICE

MOTOR MECHANISM

- 1. CHECK BEARINGS FOR UNUSUAL NOISE
- 2. CHECK THE FRICTION SNUBBER EFFECTIVENESS BY CONFIRMING THAT THE INTERMEDIATE GEAR FOR THE POINT MACHINE (MOTOR DRIVEN GEAR) SHOWS EVIDENCE OF PRELOAD. REPAIR SNUBBER AS REQUIRED
- 3. TEST THE POINT MACHINE CUT-OUT TIMER FUNCTION BY PERFORMING THE OBSTRUCTION TEST. FOR NON-CBI/PBI INSTALLTIONS REPLACE THE DEFECTIVE TIMER IF NECESSARY OR IF CBI/PBI REPORT THE DEFECTIVE FUNCTION TO THE MAINTENANCE ENGINEER
- 4. TEST OVERLOAD CLUTCH TORQUE SETTING WITH LOAD CELL IS BETWEEN 4.5kN & 5.5kN., REPAIR, ADJUST REPLACE AS NECESSARY
- 5. EXAMINE THE POINT MACHINE COVER SEAL FOR EVIDENCE OF DEGREDATION REPLACE AS NECESSARY
- 6. LUBRICATE ALL MOVING PARTS WITHIN MACHINE
- 7. INSPECT CONDITION OF GEARS AND LINKAGES
- 8. INSPECT CONDITION OF ALL ELECTRICAL WIRING
- 9. CHECK TIGHTNESS OF ALL ELECTRICAL CONNECTIONS
- 10. CHECK OPERATION OF MOTOR CUT OUT OPERATED BY THE ESML / EOL CRANK HANDLE & INDEXING & / OR WARDING OF THE CRANK HANDLE & INDEX PLATE
- 11. INSPECT THE CONDITION OF THE MOTOR CUT-OUT SWITCH ASSEMBLY FOR EVIDENCE OF DEGRADATION OF THE CONTACTS OR HOUSING & REPLACE AS NECESSARY
- 12. INSPECT THE CONDITION OF THE DETECTOR CONTACTS & HOUSING FOR EVIDENCE OF DEGRADATION & REPLACE AS NECESSARY
- 13. EXAMINE THE DETECTOR SLIDES & BEARINGS TO ENSURE THAT THERE IS NO EXCESSIVE VERTICAL OR LATERAL MOVEMENT OF THE SLIDES, REPLACE EXCESSIVELY WORN SLIDES & BEARINGS
- 14. INSPECT THE CONDITION OF THE MOTOR CONTROL CONTACT ASSEMBLY & HOUSING FOR EVIDENCE OF DEGRADATION & REPLACE AS NECESSARY
- 15. CHECK THAT ALL LOCK PIN RETAINING DEVICES ARE IN PLACE & SECURE
- 16. CHECK THE OPERATION OF THE HAND THROW LEVER / SELECTOR INTERLOCKNIG, REPAIR OR REPLACE AS NECESSARY
- 17. CLEAN INTERIOR OF POINT MACHINE

EOL MECHANISM & ENCLOSURE (WHERE FITTED)

- 18. INSPECT CONDITION OF THE EOL MECHANISM & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS, WARDS & WARD PINS -REPLACE AS NECESSARY
- 19. CHECK POINT IDENTIFICATION NUMBER FITTED TO THE DOOR IS SECURE AND CLEARLY VISIBLE
- 20. CHECK POINT LAYOUT DIAGRAM AND DETECTOR LIGHTS ARE CLEARLY VISIBLE AND OPERATIONAL (WHERE FITTED)
- 21. CHECK WIND "N" POINT ENDS SIGN IS FITTED AND CLEARLY VISIBLE
- 22. CLEAN ENCLOSURE, ENSURE SEALS AND SECURITY DEVICES ARE SERVICEABLE

GENERAL

- 23. INSPECT THE DETECTOR ROD TO SWITCH RAIL ELECTRICAL INSULATION FOR EVIDENCE OF DEGRADATION
- 24. INSPECT THE OPERATING BAR ELECTRICAL INSULATION FOR EVIDENCE OF DEGRADATION
- 25. EXAMINE THE ELECTRICAL INSULATION BETWEEN ALL TIE PLATES FOR EVIDENCE OF DEGRADATION & REPLACE IF NECESSARY

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST/WORKORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A



CORRECTIVE ACTION

5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



	5	SIGNALLING TECHNICAL MAINTENANCE PLANS
		POINTS CLAMP LOCK
		SERVICE SCHEDULE / STANDARD JOB S06211
PRE	EPARATION ACTION:	
1.	ADVISE NETWORK CONROLLER BEFORE COMMENCING	WORK
2.	OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT	
3.	OBSERVE THE APPROPRIATE NETWORK RULES AND PR	ROCEDURES
4.	PERFORM PRE-WORK SAFETY BRIEF	
MAI	INTENANCE ACTION:	
GEN	NERAL	
1.	CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT	FPOINT MOVEMENT (REF RAIL POINT CLAMP LOCK MANUAL)
2.	LUBRICATE SLIDE CHAIRS AS REQUIRED	(REF RAIL POINT CLAMP LOCK MANUAL)
CL	AMP LOCK	
3.	CLEAN EXPOSED PARTS OF ALL WORKING SURFACES O LOCK ARM, FIXED CAM, ADJUSTABLE CAM, LOCKING PIECE AND CAM FOLLOWERS	ON THE (REF RAIL POINT CLAMP LOCK MANUAL)
4.	LUBRICATE ALL WORKING SURFACES MENTIONED IN IT AND THE LOCK ARM PIVOT AT THE POSITIONS SHOWN IN THE RAIL POINT CLAMP LOCK MANUAL	EM 3, (REF RAIL POINT CLAMP LOCK MANUAL)
NO	TE: LUBRICATION SHOULD NOT BE CARRIED OUT ON TH MANUAL	IE CAM (REF RAIL POINT CLAMP LOCK
FOL	LOWER PIVOT OR THE DRIVE LOCK SLIDE/DRIVE LOCK I	BRACKET COUPLING
5.	LUBRICATE THE DRIVE LOCK SLIDE, LOCK ARM, DETECT	FOR (REF RAIL POINT CLAMP LOCK MANUAL)
6.	BLADE, LOCKING PIECE AND LOCK ARM FOR BOTH POS SHOWN IN RAIL POINT CLAMP LOCK MANUAL (SECTION	ITIONS OF THE POINTS AT THE POSITIONS 3)
7.	APPLY OIL LIGHTLY TO THE HAND PUMP MECHANISM, A WHERE APPLICABLE TO GUIDES, PIVOTS AND JOINTS O	ND (REF RAIL POINT CLAMP LOCK MANUAL) F MANUAL SELECTION MECHANISM
FA		
8.	TEST FACING POINT LOCK	(REF RAIL POINT CLAMP LOCK MANUAL)
REI	NSTATEMENT ACTION:	
1.	RECORD MAINTENANCE ACTION BY CLOSING OFF THE I	MST / WORK ORDER
2.	ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CO	DRRECTLY
3.	ADVISE THE NETWORK CONTROLLER THAT MAINTENAN	ICE ACTION IS COMPLETE
4.	REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMI CORRECTIVE ACTION	EDIATELY OR RECORDED IN THE WMS AS A
5.	DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RA	GS, PAPERS, ETC APPROPRIATELY



POINTS CLAMP LOCK

SERVICE SCHEDULE / STANDARD JOB S06212

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

GENERAL

REF ESM-06-01 AND MANUFACTURER'S MANUALS)

- 1. OBSERVE POINT OPERATION
- 2. CHECK FOR SLUGGISH OPERATION OR UNUSUAL SOUNDS
- 3. CHECK SECURITY OF ALL BOLTS, NUTS AND PINS ETC
- 4. EXAMINE POINTS FOR DEFECTS AND DAMAGE
- 5. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT
- 6. LUBRICATE SLIDE CHAIRS AS REQUIRED

TRACK CIRCUIT PARALLEL BONDING

7. INSPECT THE CONDITION OF ANY PARALLEL BONDING ON THE TURNOUT

TRACK STABILITY

8. CHECK FOR EXCESSIVE ROAD MOVEMENT (PUMPING)

STOCKRAIL

- 9. INSPECT STOCKRAIL FOR RAIL OVERFLOW
- 10. CHECK THAT STOCKRAIL IS SECURELY FASTENED TO TIMBERS / BEAMS
- 11. INSPECT FOR LATERAL OR LONGITUDINAL MOVEMENT

SWITCH

- 12. INSPECT SWITCH FOR DAMAGE
- 13. CHECK SWITCH LONGITUDINAL MOVEMENT
- 14. CHECK FIT OF SWITCH AGAINST STOCKRAIL
- 15. CHECK CONDITION OF HEEL BLOCKS (LOOSE HEEL SWITCHES ONLY)

16. CHECK SWITCH TRAVEL

CLAMP LOCK



- 17. EXAMINE CLAMP LOCK BODY FOR FATIGUE CRACKING
- 18. EXAMINE LOCK AND DETECTOR MECHANISM ASSEMBLIES LOCK ARM BRACKET ASSEMBLIES, TURNED PIVOT PINS FIXING BOLTS, SPLIT PINS
- 19. FOR BOTH POSITIONS OF THE POINTS WIPE AND EXAMINE EXPOSED PORTION OF THE DRIVE LOCK SLIDE AND SLIDEWAYS
- 20. WITH THE POINTS LOCKED, CHECK THAT THE LOCK ARM AND DETECTION BLADE ARE FREE TO SLIDE ON THE PIVOT PIN, THE TEST SHOULD BE CARRIED OUT ON THE OPEN SWITCH SIDE, NOT THE CLOSED AND LOCKED SWITCH
- 22. EXAMINE TERMINAL OR PLUG COUPLER AND MICRO-SWITCH ASSEMBLIES, CLEAN AND PROTECT TERMINALS AS NECESSARY
- 23. REPEAT ITEMS 1 TO 10 FOR OPPOSITE SWITCH
- 24. CHECK SWITCH AND STOCK RAIL DURING NORMAL POWER OPERATION AND ENSURE TIMER SHUTS OFF MOTOR CIRCUIT AFTER APPROXIMATELY 10 SECONDS)
- 25. CHECK THAT THE CAM FOLLOWER TAPPET SCREWS SHOWN IN RAIL POINT CLAMP LOCK MANUAL (SECTION 3) PROTRUDE NO MORE THAN 25 MM, IF TAPPET SCREW PROTRUDES MORE THAN 25 MM AND OPEN SWITCH DETECTION IS DIFFICULT TO MAINTAIN, THEN THE LOCK BODY SHOULD BE CHANGED, 25 MM MANUAL AND OPEN SWITCH DETECTION IS DIFFICULT TO MAINTAIN, THEN THE LOCK BODY SHOULD **BE CHANGED**

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



1.

2. 3

4

1.

2

3.

4

5.

6. 7.

8

9

19.

SIGNALLING TECHNICAL MAINTENANCE PLANS

POINTS ELECTRIC VOSSLOH COGIFER MCEM91 (FOR CONVENTIONAL, TANGENTIAL TURNOUTS, **CROSSINGS AND SNX)** SERVICE SCHEDULE / STANDARD JOB S06221 **PREPARATION ACTION:** ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES PERFORM PRE-WORK SAFETY BRIEF (REF: ESM-06-01 AND VOSSLOH COGIFER **MAINTENANCE ACTION:** MAINTENANCE MANUAL) PERFORM S0601L IN CONJUNCTION WITH THIS SERVICE GENERAL CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT INBEARER.CHECK CHANNELS FOR FOREIGN OBJECTS (BALLAST, COAL ETC.) **POINT MACHINE** CHECK SECURITY OF ALL BOLTS, NUTS AND PINS CHECK EOL MECHANISM AND ITS OPERATION. (WHERE FITTED) TRACK CONDITION INSPECT CONDITION OF BALLAST CHECK FOR EXCESSIVE ROAD MOVEMENT INSPECT CONDITION OF THE RAIL CHAIRS & TIES (FASTENERS) CHECKING FOR BROKEN OR LOOSE COMPONENTS INSPECT CONDITION OF THE POINT BEARERS (TIMBERS) **STOCKRAIL** INSPECT STOCKRAIL FOR RAIL OVER RUN CHECK THAT STOCKRAIL IS SECURELY FASTENED TO TIMBERS (OR BEAMS) 11. INSPECT FOR LATERAL OR LONGITUDINAL (EXCEEDING 15MM) ROAD MOVEMENT SWITCH 12. INSPECT SWITCH FOR DAMAGE OR RAIL OVER RUN 13. CHECK FIT OF SWITCH TO STOCK RAIL 14. CHECK SWITCH TRAVEL 15. INSPECT THE DETECTOR RODS COUPLING, INSULATED BUSH & COUPLING TO SWITCH RAIL FASTENER FOR EVIDENCE OF EXCESSIVE WEAR 16. INSPECT THE WING RAIL / POINT RAIL GAUGE FACE FOR RAIL HEAD OVERFLOW GREATER THAN 1.5mm ADJACENT TO THE SWITCH RAIL 17. INSPECT FOR EVIDENCE OF LOOSE LOCK NUTS & FASTENERS ON THE DETECTION LINKAGES STRETCHER BAR 18. CHECK THE CONDITON OF STRETCHER BAR ENSURING NO LOOSENESS BETWEEN THE STRETCHER BAR AND THE SWITCH BLADES CROSSING LUBRICATE THE SLIDING INTERFACE BETWEEN THE LOCKING PLATE CLAMP PLATE & THE



UNDERSIDE OF THE WING RAIL 20. LUBRICATE THE POINT RAIL / SPLICE RAIL SAFETY CLAMP SLIDING SURFACES 21. INSPECT THE CROSSING FOR BUILD UP OF BALLAST OR FOREIGN MATERIAL THAT COULD OBSTRUCT THE SWING NOSE. REMOVE AS NECESSARY 22. CHECK FOR EVIDENCE OF EXCESSIVE PUMPING OF THE SWING NOSE UNDER TRAIN LOAD 23. CHECK THE "TOP" ALIGNMENT OF THE SWINGNOSE TO ENSURE THERE IS NO EXCESSIVE CHANGE IN TOP 24. INSPECT SWITCH FOR DAMAGE ESPECIALLY THE TIP & OVERFLOW OF THE HEAD 400 TO 1000mm FROM THE TIP VCC (REFERENCE: ESM-06-01 AND THE MANUFACTURER'S MANUAL) 25. CHECK FOR WEAR AND CHECK THE ADJUSTMENT OF COMPLETE VCC AND RELEVANT DETECTOR CHECK FOR WEAR AND CHECK ADJUSTMENT OF ELECTRICAL CONTACT CAMS 27. CHECK FOR WELDING OF THE VCC DETECTOR CONTACTS 28. LUBRICATE THE VCC AND THE DETECTOR WITH GREASE 29. CHECK THAT THE STABILIZER IS EFFECTIVE BY TRYING TO PUSH THE ROLLER CHECK AND CLEAN <C>-ARM ASSEMBLY AND PARTICULARLY THE <C>-HEAD 31. CHECK THE HAMMER HEAD BOLTS FIXING <C>-ARM ASSEMBLY ONTO THE SWITCH BLADE: CHECK THAT THE CLEARANCE BETWEEN OUTER DIAMETERS OF SPRING WASHERS IS BETWEEN 0.5 AND 1mm 32. CHECK THAT THE UNDERSIDE OF THE ARM IS IN CONTACT WITH THE PLASTIC SLEEVE 33. CHECK IF THE PLASTIC SLEEVE IS IN GOOD CONDITION (IF WEAR DEEPER THAN 1mm, REPLACED) 34. CHECK WEAR OF THE <C>-HEAD PAD, IF THE PAD PROJECTS BY LESS THAN 0.5mm, REPLACE 35. CHECK CONDITION OF <C>-HEAD PAD, IFCHAMFERS HAVE DISAPPEARED, REPLACE 36. CHECK FOR WEAR OF THE LOCKING PIECE 37. CHECK FOR WEAR OF THE AXLE LINKING THE <C> WITH THE HAND 38. CHECK THAT THE <C>-HEAD COMPLETELY OVERLAPS LOCKING PIECE WHEN VCC IS BEING LOCKED CHECK THE BALANCE OF THE LOCKING STROKES (+/- 3mm) 40. CHECK THE CONDITION OF INSULATING BUSH THAT IS INSERTED IN THE CONTROL ARM (IF WEAR IS OVER 1mm. REPLACE VPM (REFERENCE: ESM-06-01 AND THE MANUFACTURER'S MANUAL) 41. CHECK FOR WEAR AND ADJUSTMENT OF THE COMPLETE VPM AND ASSOCIATED DETECTOR 42. CHECK FOR WEAR AND THE ADJUSTMENT OF THE ELECTRICAL CONTACT CAMS 43. CHECK FOR NON-WELDING OF VPM DETECTOR CONTACTS 44. LUBRICATE THE VPM AND DETECTOR WITH GREASE 45. INSPECT THE CONDITON OF THE STABILIZER 46. CHECK THE CONDITION OF THE 3-ARM LOCKING BRACKET TRACK CIRCUIT PARALLEL BONDING 47. INSPECT THE CONDITION OF ANY PARALLEL BONDING ON THE TURNOUT **REINSTATEMENT ACTION:** RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1. 2 ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A 4 CORRECTIVE ACTION

5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE **POINTS ELECTRIC** VOSSLOH COGIFER MCEM91 (for CONVENTIONAL, TANGENTIAL TURNOUTS, CROSSINGS AND SNX) SERVICE SCHEDULE / STANDARD JOB S06222 **PREPARATION ACTION:** ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK 1. 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 3 OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 4. PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: (REF: MANUFACTURER'S MANUALS)MAINTENANCE MANUAL) 1. PERFORM S0601L & S06221 IN CONJUNCTION WITH THIS SERVICE MOTOR 2. CHECK BEARINGS FOR NOISE OR SLACKNESS **BRAKE-LEVER** 3. CHECK AND ADJUST THE GAP BETWEEN THE WASHER AND SELF-LOCKING NUT THIS GAP SHOULD BE 1-2mm 4. CHECK FOR WEAR OF THE BRAKE PAD MECHANISM 5. LUBRICATE ALL MOVING PARTS WITHIN MACHINE INSPECT CONDITION OF GEAR BOX AND LINKAGES FOR WEAR AND LOOSE FITTINGS 6. 7. INSPECT CONDITION OF TORQUE LIMITER CHECK EOL MECHANISM AND ITS OPERATION (WHERE FITTED) 8. PAULVE ROD DRIVEN DETECTOR CHECK FOR WEAR AND THE ADJUSTMENT OF THE PAULVE ROD DRIVEN DETECTOR ASSEMBLY 9. CHECK FOR WEAR AND THE ADJUSTMENT OF ELECTRICAL CONTACT CAMS 11. CHECK FOR WELDING OF THE PAULVE DETECTOR CONTACTS **BACK DRIVE** 12. CHECK SECURITY OF CRANKS AND BASE PLATES **DRIVING ROD** 13. INSPECT CONDITION OF DRIVING ROD **2TE-CONNECTING ROD** 14. INSPECT CONDITION OF CONNECTING ROD GENERAL 15. CHECK TIGHTNESS OF ALL ELECTRICAL CONNECTIONS 16. INSPECT CONDITION OF ALL ELECTRICAL WIRING



- 17. CHECK OPERATION OF CHANGEOVER SWITCH AND MANUAL/MOTOR CONTACTS
- 18. CLEAN AND GREASE INTERIOR OF POINT MACHINE
- 19. INSPECT THE DETECTOR ROD TO SWITCH RAIL ELECTRICAL INSULATION FOR EVIDENCE OF DEGRADATION
- 20. INSPECT THE OPERATING BAR ELECTRICAL INSULATION FOR EVIDENCE OF DEGRADATION
- 21. CHECK FOR CORRECT TRACK GAUGE AT THE TIP OF THE SWITCHES, REPORT SIGNIFICANT DEVIATIONS TO THE WORK GROUP LEADER OR TEAM LEADER OR MANAGER

EOL MECHANISM & ENCLOSURE (WHERE FITTED)

- 22. INSPECT CONDITION OF THE EOL MECHANISM & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS, WARDS & WARD PINS – REPLACE AS NECESSARY
- 23. CLEAN ENCLOSURE, ENSURE SEALS AND SECURITY DEVICES ARE SERVICEABLE

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



Г

	SIGNALLING TECHNICAL MAINTENANCE PLANS	
	POINTS CLAW LOCK & WSA D84M ELECTRIC DRIVE	
	VAE OR PRE-TANGENTIAL OR CONVENTIONAL SWITCHES, CROSSINGS OR SWING NOSE CROSSINGS	
	SERVICE SCHEDULE / STANDARD JOB S06311	
PR	EPARATION ACTION:	
1.	ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK	
2.	OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT	
3.	OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES	
4.	PERFORM PRE-WORK SAFETY BRIEF	
MA	INTENANCE ACTION: (REFERENCE: ESM-06-01 and SMS 06 CLAW LOCK MAINTENANCE MANUAL)	
PEI	RFORM S0601L IN CONJUNCTION WITH THIS SERVICE	
LUI	BRICATION OF OPERATING MECHANISM(REFERENCE SMS 06 SECTIONS 7, 8 & 10)	
5.	LUBRICATE THE CLAW PIN BY APPLICATION OF GREASE TO THE GREASE NIPPLE	
1.	LUBRICATE THE SELECTOR LEVER BEARING	
2.	LUBRICATE THE HAND THROW LEVER BEARING	
3.	INSPECT THE SELECTOR LEVER CLUTCH DISENGAGEMENT MECHANISM FOR RESIDUAL LUBRICANT, LUBRICATE THE MECHANISM IF REQUIRED TAKING CARE NOT TO CONTAMINATE THE CLUTCH DISCS WITH LUBRICANT	
4.	INSPECT THE POINT MACHINE GEARS FOR RESIDUAL LUBRICANT & LUBRICATE AS NECESSARY	
5.	LUBRICATE THE DETECTOR ROLLER ASSEMBLY PIVOT POINTS	
6.	LUBRICATE THE DETECTOR ROLLER AXLES	
7.	LUBRICATE THE THROW BAR & BUSHES & THE DETECTOR SLIDES & BEARINGS	
PO	INTS ASSEMBLY & OPERATING MECHANISM (REFERENCE SMS 06 SECTIONS 2, 7, 8 & 10)	
8.	INSPECT THE TURNOUT FOR BUILD UP OF BALLAST & FOREIGN MATERIAL THAT MAY OBSTRUCT THE SWITCH RAIL, SWING NOSE, THROW BAR, DROP LUG, COUPLING BAR, COUPLING BAR BRACKET, OPERATING BAR, DETECTION RODS, BACK DRIVE CRANKS & OPERATING BAR (IF FITTED), REMOVE AS NECESSARY	
9.	INSPECT CONDITION OF THE RAIL CHAIRS & TIES (FASTENERS) CHECKING FOR BROKEN OR LOOSE COMPONENTS	
10.	FOR CONVENTIONAL SWITCHES – EXAMINE FOR LOOSE OR BROKEN STOCK RAIL TO RAIL CHAIR FASTENERS (SWITCH STUDS)	
11.	INSPECT CONDITION OF THE POINT BEARERS (TIMBERS) & FASTENERS SECURED – REPORT DEFECTS TO TEAM MANAGER	
12.	INSPECT THE DETECTOR RODS COUPLING, INSULATED BUSH & COUPLING TO SWITCH RAIL FASTENER FOR EVIDENCE OF EXCESSIVE WEAR	
13.	INSPECT THE CLAW & OPERATING BAR FOR EVIDENCE OF MISALIGNMENT IN THE CLAW LOCK & RECTIFY AS REQUIRED	



- 14. INSPECT THE STOCK RAIL / WING RAIL / POINT RAIL GAUGE FACE FOR RAIL HEAD OVERFLOW GREATER THAN 1.5mm ADJACENT TO THE SWITCH
- 15. INSPECT STOCK RAIL FOR LATERAL OR LONGITUDINAL (EXCEEDING 15MM) ROAD MOVEMENT REPORT ANY EXCESSES TO TEAM MANAGER
- 16. CHECK FOR EVIDENCE OF EXCESSIVE PUMPING OF THE TURNOUT / SWING NOSE UNDER TRAIN LOAD
- 17. CHECK THE "TOP" ALIGNMENT OF THE TURNOUT/SWING NOSE TO ENSURE THERE IS NO EXCESSIVE DIP OR HOLLOW REPORT ANY EXCESSES TO TEAM MANAGER
- 18. INSPECT SWITCH FOR DAMAGE ESPECIALLY THE TIP & OVERFLOW OF THE HEAD 400 TO 1000mm FROM THE TIP – REPORT DEFECT TO MANAGER
- 19. CHECK FIT OF SWITCH TO STOCKRAIL RECTIFY OR REPORT DEFECT
- 20. CHECK SWITCH OPENING AT THE TIP AND FLANGEWAY CLEARANCE AT THE BACK OF THE SWITCH RAIL
- 21. INSPECT FOR EVIDENCE OF LOOSE LOCK NUTS & FASTENERS ON THE DETECTION LINKAGES
- 22. INSPECT FOR LOOSE FASTENERS & LOCK NUTS (DEVICES) ON THE POINT DRIVE LINKAGES & INCLUDING THROW BAR, DROP LUG, COUPLING BAR, COUPLING BAR BRACKET, OPERATING BAR AND WHERE FITTED THE BACKDRIVE CRANKS, BASEPLATES & OPERATING BAR
- 23. INSPECT THE CLAW LOCK & BRACKET FOR EVIDENCE OF FRACTURES PAYING PARTICULAR ATTENTION TO THE LOCK FACES
- 24. INSPECT THE CLAW LOCK & BRACKET FOR EVIDENCE OF LOOSE FASTENERS & LOCK NUTS (LOCKING DEVICES)
- 25. INSPECT FOR LOOSE OR BROKEN TIE PLATE TO RAIL BRACE FASTENERS, RETENSION OR RENEW AS NECESSARY
- 26. CHECK THE SWITCH RAIL TO RAIL CHAIR SEAT CLEARANCE, IF EXCESSIVE OR INSUFFICIENT THE SWITCH ROLLER TENSION MAY BE ADJUSTED TO ACHIEVE THE CORRECT CLEARANCE AS PER MANUFACTURER'S MANUALS (APPLIES TO SWITCHES FITTED WITH SWITCH ROLLERS ONLY)
- 27. CHECK THE SWITCH IS BEARING & SLIDING EVENLY ON ALL RAIL SLIDE CHAIRS, REPORT TO CIVIL IF MORE THAN HALF ARE NOT BEARING CORRECTLY (APPLIES TO SWITCHES NOT FITTED WITH ROLLERS)
- 28. CHECK THE SECURITY OF THE SWITCH ROLLER (WHERE FITTED) MOUNTINGS, RETENSION OR RENEW FASTENINGS AS NECESSARY
- 29. EXAMINE BACKDRIVES, WHERE FITTED, FOR CORRECT ADJUSTMENT, WEAR IN CRANK BEARINGS, PINS AND JAWS, SECURITY OF BOLTS TO PLATES AND BEAMS (SLEEPERS), SECURITY OF PINS AND LOCKNUTS AT ADJUSTABLE CONNECTIONS
- 30. CHECK SPRING ASSISTER (WHERE FITTED) FOR CORRECT OPERATION AND AJUSTMENT AND LUBRICATE THE MECHANISM
- 31. VAE CROSSING LUBRICATE THE SLIDING INTERFACE BETWEEN THE LOCKING PLATE CLAMP PLATE & THE UNDERSIDE OF THE WING RAIL
- 32. LUBRICATE THE POINT (BLADE) RAIL / SPLICE RAIL SLIDING JOINT
- 33. VAE CROSSING LUBRICATE THE POINT RAIL / SPLICE RAIL SAFETY CLAMP SLIDING SURFACES

POINT MOTOR MACHINE

(REFERENCE SMS 06 SECTIONS 10)

- 34. OPERATE THE MACHINE AND INSPECT FOR EVIDENCE OF EXCESSIVE MOVEMENT AT THE POINT MACHINE MOUNTING, RETENSION MOUNTING BOLTS AS NECESSARY OR ARRANGE FOR THE BEARER/S TO BE REPLACED IF FOUND TO BE DEFECTIVE
- 35. CHECK THE POINT MACHINE BASE PLATE TO BEARER MOUNTING BY INSPECTING FOR EVIDENCE OF



MOVEMENT OF THE POINT MACHINE BASEPLATE WHEN THE POINT MACHINE IS OPERATED, RETENSION FASTENINGS AS REQUIRED AND INSPECT INTEGRITY OF THE BEARERS

- 36. INSPECT THE CONDITION OF THE MOTOR CUT-OUT SWITCH ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING, REPLACE AS NECESSARY
- 37. INSPECT THE CONDITION OF THE DETECTOR CONTACT ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING, REPLACE AS NECESSARY
- 38. INSPECT THE CONDITION OF THE MOTOR CONTROL CONTACT ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING, REPLACE AS NECESSARY
- 39. CHECK OPERATION & INSPECT CONDITION OF THE EOL MECHANISM (WHERE FITTED) & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS, WARDS & WARD PINS – REPLACE AS NECESSARY

FACING POINT LOCK (CLAW LOCK) ADJUSTMENT (REFERENCE ESM-06-01 AND SMS 06 SECTIONS 2 & 4)

- 40. PERFORM FACING POINT LOCK TEST, ENSURE THE OPERATING BAR DOES NOT COMPLETE ITS STROKE & THE CLAW DOES NOT LOCK WITH THE 4.8 OBSTRUCTION GAUGE INSERTED BETWEEN THE SWITCH & STOCK RAIL, ADJUST OR REPAIR IF NECESSARY TO ENSURE THAT THE CLAW ENGAGES THE LOCK WITH THE OBSTRUCTION GAUGE SET AT BETWEEN 1.6MM & 3.2MM
- 41. CHECK SWITCH RAIL IN THE NORMAL AND REVERSE LOCKED POSITION TO ENSURE THAT IT CANNOT STAND OPEN MORE THAN 4.0MM, EXAMINE FOR THE CAUSE OF SETTING DRIFT AND REPAIR AS REQUIRED, RE-SET THE LOCKED POSITION OF THE SWITCH RAIL IF REQUIRED.

POINT DETECTION ADJUSTMENT

(REFERENCE ESM-06-01 AND SMS 06 SECTION 5)

- 42. CHECK THE DETECTION SETTINGS FOR THE CLOSED & OPEN SWITCH POSITIONS, CLOSED SWITCH SETTING MUST ENSURE THE DETECTOR CONTACTS ARE JUST OPEN WITH A SWITCH OPENING OF 4.0MM, OPEN SWITCH SETTING MUST ENSURE THE DETECTOR CONTACTS OPEN AT LEAST 25MM BEFORE THE LOCKED CLAW IS RELEASED BY THE COUPLING BAR, DETERMINE CAUSE FOR ANY LOSS OF CORRECT ADJUSTMENT, REPAIR AS NECESSARY, THEN READJUST DETECTION AS NECESSARY
- 43. REPEAT TASK FOR BACK DRIVE WHERE FITTED
- 44. MACHINE & POINT NUMBER & POINT ORIENTATION SIGNAGE
- 45. CHECK POINT IDENTIFICATION NUMBERS AND N & R PLATES AFFIXED TO BEARERS ARE SECURE AND CLEARLY VISIBLE
- 46. CHECK POINT IDENTIFICATION NUMBER FITTED TO THE POINT MACHINE LID IS SECURE AND CLEARLY VISIBLE

TRACK CIRCUIT PARALLEL BONDING

47. INSPECT THE CONDITION OF ANY PARALLEL BONDING ON THE TURNOUT

PUSH BUTTON

- 48. CHECK ADJUSTMENT OF PUSH BUTTON/SWITCH CONTACTS AND EXAMINE FOR WEAR / DAMAGE /CORROSION (WHERE FITTED)
- 49. EXAMINE POST STRUCTURE AND BASE FOR DAMAGE, CORROSION, EROSION, SURROUNDING GROUND HOLES AND UNDERMINING OF THE BASE



- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

ARTC

	SIGNALLING TECHNICAL MAIN	TENANCE PLANS
	POINTS CLAW LOCK & WSA D84M	ELECTRIC DRIVE
	VAE OR PRE-TANGENTIAL OR CONVENTIONAL SWITCHES, CROSSINGS OR SWING N	OSE CROSSINGS
	SERVICE SCHEDULE / STAND	ARD JOB S06312
	PREPARATION ACTION:	
2.	2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT	
3.	3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES	
4.	4. PERFORM PRE-WORK SAFETY BRIEF	
MAI	MAINTENANCE ACTION: (REFERENCE: ESM-06-01 a	and SMS 06
DEE		E MANOAL)
PER	PERFORM SUBUIL & SUB311 IN CONJUNCTION WITH THIS SERVICE	
MO'	MOTOR MECHANISM (REFERENCE SMS 06 SEC	TIONS 10)
6.	6. CHECK THE FRICTION SNUBBER EFFECTIVENESS BY CONFIRMING THAT THE INTERM	EDIATE GEAR
	FOR THE POINT MACHINE (MOTOR DRIVEN GEAR) SHOWS EVIDENCE OF PRELOAD, R	EPAIR SNUBBER
7.	AS REQUIRED 7. TEST THE POINT MACHINE CUT-OUT TIMER FUNCTION BY PERFORMING THE OBSTRU	CTION TEST.
	FOR NON-CBI / PBI INSTALLTIONS REPLACE THE DEFECTIVE TIMER IF NECESSARY OF	R IF CBI / PBI
8	REPORT THE DEFECTIVE FUNCTION TO THE MAINTENANCE ENGINEER	5kn REDAIR
0.	ADJUST REPLACE AS NECESSARY	
9.	9. TEST THE FORCE REQUIRED TO OPERATE THE SWING NOSE, IF IT EXCEEDS 3.0Kn RE	PORT TO CIVIL
10.	TOR RECTIFICATION 10. EXAMINE THE POINT MACHINE COVER SEAL FOR EVIDENCE OF DEGRADATION – REPI	LACE AS
	NECESSARY	
11.	11. LUBRICATE ALL MOVING PARTS WITHIN MACHINE	
13.	13. INSPECT CONDITION OF ALL ELECTRICAL WIRING	
14.	14. CHECK TIGHTNESS OF ALL ELECTRICAL CONNECTIONS	
15.	15. CHECK OPERATION OF MOTOR CUT OUT OPERATED BY THE ESML / EOL CRANK HANL & / OR WARDING OF THE CRANK HANDLE & INDEX PLATE	JLE & INDEXING
16.	16. INSPECT THE CONDITION OF THE MOTOR CUT-OUT SWITCH ASSEMBLY FOR EVIDENCE	E OF
17	DEGRADATION OF THE CONTACTS OR HOUSING & REPLACE AS NECESSARY	OF
17.	DEGRADATION & REPLACE AS NECESSARY	
18.	18. EXAMINE THE DETECTOR SLIDES & BEARINGS TO ENSURE THAT THERE IS NO EXCES	SIVE VERTICAL
19.	19. INSPECT THE CONDITION OF THE MOTOR CONTROL CONTACT ASSEMBLY & HOUSING	FOR EVIDENCE
	OF DEGRADATION & REPLACE AS NECESSARY	
20.	20. CHECK THAT ALL LOCK PIN RETAINING DEVICES ARE IN PLACE & SECURE 21. CHECK THE OPERATION OF THE HAND THROW LEVER / SELECTOR INTERLOCKNIG RI	
21.	REPLACE AS NECESSARY	
22.	22. CLEAN INTERIOR OF POINT MACHINE	
CLA	CLAW LOCK MECHANISM (REFERENCE SMS 06 SEC	TIONS 7 & 8)
23.	 INSPECT THE OPRATING BAR / CLAW TAIL ENGAGEMENT & DISENGAGEMENT FACES I WEAR 	FOR EXCESSIVE
24.	24. INSPECT THE ELECRICAL INSULATION FOR THE OPERATING BAR FOR EVIDENCE OF D	DEGRADATION &
25	REPLACE AS NECESSARY	
29.	REPLACE AS NECESSARY	JENESS OF FII,
26.	26. INSPECT THE CLAW PIN SLOT (OR ECCENTRIC BUSH) IN THE CLAW BRACKET FOR EX	CESSIVE
27	LUGALISED WEAR, REPLACE AS NECESSARY 27. I UBRICATE THE CLAW PIN & ECCENTRIC BUSH SLOT IN THE CLAW BRACKET (CLEAN)	& REMOVE
21.	EXCESSIVE OLD LUBRICANT FIRST)	
28.	28. INSPECT THE ANTI ROLL BAR (WHERE FITTED) FOR EVIDENCE OF RUBBING AGAINST	THE SWITCH

	RAIL, REPLACE OR RETENSION FASTENERS AS NECESSARY
29.	INSPECT THE ANTI ROLL BAR (WHERE FITTED) SLIDE ARRANGEMENT FOR EVIDENCE OF EXCESS
	WEAR THAT COULD CAUSE THE ANTI-ROLL BAR TO SAG, INSTALL NEW INSULATION KIT IF
	NECESSARY
30.	INSPECT THE ELECTRICAL INSULATIONS FOR THE ANTI ROLL BAR (WHERE FITTED) FOR EVIDENCE OF
	DEGRADATION & REPLACE AS NECESSARY
31	INSPECT THE ANTI BOLL BAR (WHERE FITTED) SLIDE ARRANGEMENT FOR EVIDENCE OF LOOSE
01.	
30	
52.	
22	RUDDING AGAINST THE SWITCH RAIL, REFLACE OR RETENSION PASTEINERS AS NECESSART
33 .	INSPECT THE ANTI ROLE DRACKET SKID PLATE (FOR CATCH POINTS WHERE FITTED) FOR EVIDENCE
	OF EXCESS WEAR THAT COULD CAUSE THE SWITCH RAIL TO STAND OPEN, SHIM OR REPLACE THE
~ 1	SKID PLATE IF NECESSARY
34.	CHECK THAT THE ANTI-ROLL BRACKET SKID PLATE (FOR CATCH POINTS WHERE FITTED) IS NOT
	LOOSE, IF FOUND TO BE LOOSE THEN REMOVE ALL LOOSE FASTENERS & REFIT WITH NEW
~ -	COUNTERSUNK SOCKET SCREWS & 242 LOCITIE
35.	CONVENTIONAL POINTS – RENEW THE CLAW PIN RETAINING SPLIT PIN
36.	CONVENTIONAL POINTS – EXAMINE THE CLAW PIN NYLOC NUT TO ENSURE IT IS FITTED & TENSIONED
	AGAINST THE COUPLING BAR & REPLACE ANY LOOSE NYLOC NUTS
EOI	
27	
57.	THE INTEDLOCKING MECHANISM BIT & EVCESSIVE WEAD OF THE LOCKING COMPONENTS, WADD'S
	WADD DING DEDIACEAS NECESSARY
20	WARD FINS - REFLACE AS RECEIDENT
20.	CHECK POINT LAVOUT DIACRAM AND REFERENCE LOUTE ARE CLEARLY VISIDLE AND OPERATIONAL
39.	(MULTER)
40	
40.	CHECK WIND N POINT ENDS SIGN IS FITTED AND CLEARLY VISIBLE
41.	CLEAN ENCLOSURE, ENSURE SEALS AND SECURITY DEVICES ARE SERVICEABLE
GEN	ERAL (REFERENCE SMS 06)
42.	CHECK FOR CORRECT TRACK GAUGE AT THE TIP OF THE SWITCHES. REPORT SIGNIFICANT
	DEVIATIONS TO THE WORK GROUP LEADER OR TEAM LEADER OR MANGER
43.	INSPECT THE DETECTOR ROD TO SWITCH RAIL ELECTRICAL INSULATION FOR EVIDENCE OF
	DEGRADATION
44	INSPECT THE OPERATING BAR ELECTRICAL INSULATION FOR EVIDENCE OF DEGRADATION
45	EXAMINE THE ELECTRICAL INSULATION BETWEEN ALL TIE PLATES FOR EVIDENCE OF DEGRADATION
40.	& REPLACE IF NECESSARY
REIN	
1	RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
2	ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
∠. २	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
J.	
4.	
5	
IJ.	DISFUSE OF ALL CONFORMENTS, DATTERIES SOILED RAGS, FAFERS, ETC AFFROPRIATELT



POINTS CLAW LOCK S700 SERIES

SERVICE SCHEDULE / STANDARD JOB S06321

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION (REFERENCE: ESM-06-01 and SMS-06 CLAW LOCK MAINTENANCE MANUAL)

PERFORM SS 0631L IN CONJUNCTION WITH THIS SERVICE.

LUBRICATION OF OPERATING MECHANISM

(Reference SMS 06 Sections 7, 8 & 10)

- 1. LUBRICATE THE CLAW PIN BY APPLICATION OF GREASE TO THE GREASE NIPPLE
- 2. LUBRICATE THE SELECTOR LEVER BEARING
- 3. LUBRICATE THE HAND THROW LEVER BEARING
- 4. INSPECT THE SELECTOR LEVER CLUTCH DISENGAGEMENT MECHANISM FOR RESIDUAL LUBRICANT, LUBRICATE THE MECHANISM IF REQUIRED TAKING CARE NOT TO CONTAMINATE THE CLUTCH DISCS WITH LUBRICANT
- 5. INSPECT THE POINT MACHINE GEARS FOR RESIDUAL LUBRICANT & LUBRICATE AS NECESSARY
- 6. LUBRICATE THE DETECTOR ROLLER ASSEMBLY PIVOT POINTS
- 7. LUBRICATE THE DETECTOR ROLLER AXLES
- 8. LUBRICATE THE THROW BAR & BUSHES & THE DETECTOR SLIDES & BEARINGS

FACING POINT LOCK (CLAW LOCK) ADJUSTMENT

IMENT(REFERENCE ESM-06-01, SMS 06 SECTIONS 2 & 4

AND MANUFACTURER'S MANUALS)

- 9. PERFORM FACING POINT LOCK TEST, ENSURE THE OPERATING BAR DOES NOT COMPLETE ITS STROKE & THE CLAW DOES NOT LOCK WITH THE 4.8 OBSTRUCTION GAUGE INSERTED BETWEEN THE SWITCH & STOCK RAIL, ADJUST OR REPAIR IF NECESSARY TO ENSURE THAT THE CLAW ENGAGES THE LOCK WITH THE OBSTRUCTION GAUGE SET AT 1.6-3.2MM
- 10. CHECK SWITCH RAIL IN THE NORMAL AND REVERSE LOCKED POSITION TO ENSURE THAT IT CANNOT STAND OPEN MORE THAN 4.0MM, EXAMINE FOR THE CAUSE OF SETTING DRIFT AND REPAIR AS REQUIRED, RE-SET THE LOCKED POSITION OF THE SWITCH RAIL IF REQUIRED.

POINT DETECTION ADJUSTMENT (REFERENCE ESM-06-01 AND SMS 06 SECTION 5) 11. CHECK THE DETECTION SETTINGS FOR THE CLOSED & OPEN SWITCH POSITIONS, CLOSED SWITCH SETTING MUST ENSURE THE DETECTOR CONTACTS ARE JUST OPEN WITH A SWITCH OPENING OF 4.0MM, OPEN SWITCH SETTING MUST ENSURE THE DETECTOR CONTACTS OPEN AT LEAST 25MM BEFORE THE LOCKED CLAW IS RELEASED BY THE COUPLING BAR, DETERMINE CAUSE FOR ANY LOSS OF CORRECT ADJUSTMENT, REPAIR AS NECESSARY, THEN READJUST DETECTION AS NECESSARY 12. REPEAT TASK FOR BACK DRIVE WHERE FITTED

MACHINE & POINT NUMBER & POINT ORIENTATION SIGNAGE

- 13. CHECK POINT IDENTIFICATION NUMBERS AND N & R PLATES AFFIXED TO BEARERS ARE SECURE AND CLEARLY VISIBLE
- 14. CHECK POINT IDENTIFICATION NUMBER FITTED TO THE POINT MACHINE LID IS SECURE AND CLEARLY VISIBLE
POINTS ASSEMBLY & OPERATING MECHANISM

NECESSARY. 16. INSPECT CONDITION OF THE RAIL CHAIRS & TIES (FASTENERS) CHECKING FOR BROKEN OR LOOSE COMPONENTS 17. FOR CONVENTIONAL SWITCHES – EXAMINE FOR LOOSE OR BROKEN STOCK RAIL TO RAIL CHAIR FASTENERS (SWITCH STUDS) 18. INSPECT CONDITION OF THE POINT BEARERS (TIMBERS) & FASTENERS SECURED - REPORT DEFECTS TO TEAM MANAGER 19. INSPECT THE DETECTOR RODS COUPLING, INSULATED BUSH & COUPLING TO SWITCH RAIL FASTENER FOR EVIDENCE OF EXCESSIVE WEAR 20. INSPECT THE CLAW, CLAW & OPERATING BAR FOR EVIDENCE OF MISALIGNMENT IN THE CLAW LOCK & RECTIFY AS REQUIRED. 21. INSPECT THE STOCK RAIL/WING RAIL/POINT RAIL GAUGE FACE FOR RAIL HEAD OVERFLOW GREATER THAN 1.5MM ADJACENT TO THE SWITCH 22. INSPECT STOCK RAIL FOR LATERAL OR LONGITUDINAL (EXCEEDING 15MM) ROAD MOVEMENT -REPORT ANY EXCESSES TO TEAM MANAGER 23. CHECK FOR EVIDENCE OF EXCESSIVE PUMPING OF THE TURNOUT/SWING NOSE UNDER TRAIN LOAD 24. CHECK THE "TOP" ALIGNMENT OF THE TURNOUT/SWING NOSE TO ENSURE THERE IS NO EXCESSIVE DIP OR HOLLOW - REPORT ANY EXCESSES TO TEAM MANAGER 25. INSPECT SWITCH FOR DAMAGE ESPECIALLY THE TIP & OVERFLOW OF THE HEAD 400 TO 1000MM FROM THE TIP - REPORT DEFECT TO MANAGER 26. CHECK FIT OF SWITCH TO STOCKRAIL - RECTIFY OR REPORT DEFECT 27. CHECK SWITCH OPENING AT THE TIP AND FLANGEWAY CLEARANCE AT THE BACK OF THE SWITCH RAIL 28. INSPECT FOR EVIDENCE OF LOOSE LOCK NUTS & FASTENERS ON THE DETECTION LINKAGES 29. INSPECT FOR LOOSE FASTENERS & LOCK NUTS (DEVICES) ON THE POINT DRIVE LINKAGES & INCLUDING THROW BAR, DROP LUG, COUPLING BAR, COUPLING BAR BRACKET, OPERATING BAR AND WHERE FITTED THE BACK-DRIVE CRANKS, BASEPLATES & OPERATING BAR 30. INSPECT THE CLAW LOCK & BRACKET FOR EVIDENCE OF FRACTURES PAYING PARTICULAR ATTENTION TO THE LOCK FACES 31. INSPECT THE CLAW LOCK & BRACKET FOR EVIDENCE OF LOOSE FASTENERS & LOCK NUTS (LOCKING DEVICES) 32. INSPECT FOR LOOSE OR BROKEN TIE PLATE TO RAIL BRACE FASTENERS, RETENSION OR RENEW AS NECESSARY 33. CHECK THE SWITCH RAIL TO RAIL CHAIR SEAT CLEARANCE, IF EXCESSIVE OR INSUFFICIENT THE SWITCH ROLLER TENSION MAY BE ADJUSTED TO ACHIEVE THE CORRECT CLEARANCE AS PER

15. INSPECT THE TURNOUT FOR BUILD UP OF BALLAST & FOREIGN MATERIAL THAT MAY OBSTRUCT THE SWITCH RAIL, SWING NOSE, THROW BAR, DROP LUG, COUPLING BAR, COUPLING BAR BRACKET, OPERATING BAR, DETECTION RODS, BACK DRIVE CRANKS & OPERATING BAR (IF FITTED). REMOVE AS

- MANUFACTURER'S MANUALS (APPLIES TO SWITCHES FITTED WITH SWITCH ROLLERS ONLY) 34. CHECK THE SWITCH IS BEARING & SLIDING EVENLY ON ALL RAIL SLIDE CHAIRS, REPORT TO CIVIL IF MORE THAN HALF ARE NOT BEARING CORRECTLY (APPLIES TO SWITCHES NOT FITTED WITH ROLLERS)
- 35. CHECK THE SECURITY OF THE SWITCH ROLLER (WHERE FITTED) MOUNTINGS, RETENSION OR RENEW FASTENINGS AS NECESSARY



- 36. EXAMINE BACKDRIVES, WHERE FITTED, FOR CORRECT ADJUSTMENT, WEAR IN CRANK BEARINGS, PINS AND JAWS, SECURITY OF BOLTS TO PLATES AND BEAMS (SLEEPERS), SECURITY OF PINS AND LOCKNUTS AT ADJUSTABLE CONNECTIONS
- 37. CHECK SPRING ASSISTER (WHERE FITTED) FOR CORRECT OPERATION AND AJUSTMENT AND LUBRICATE THE MECHANISM.
- 38. VAE CROSSING LUBRICATE THE SLIDING INTERFACE BETWEEN THE LOCKING PLATE CLAMP PLATE & THE UNDERSIDE OF THE WING RAIL
- 39. LUBRICATE THE POINT (BLADE) RAIL / SPLICE RAIL SLIDING JOINT
- 40. VAE CROSSING LUBRICATE THE POINT RAIL / SPLICE RAIL SAFETY CLAMP SLIDING SURFACES

POINT MOTOR MACHINE

- 41. INSPECT FOR EVIDENCE OF FLOGGING OR EXCESSIVE MOVEMENT AT THE POINT MACHINE MOUNTING, RETENTION MOUNTING BOLTS AS NECESSARY OR ARRANGE FOR THE BEARER/S TO BE REPLACED IF FOUND TO BE DEFECTIVE
- 42. CHECK THE POINT MACHINE BASEPLATE TO BEARER MOUNTING BY INSPECTING FOR EVIDENCE OF MOVEMENT OF THE POINT MACHINE BASEPLATE WHEN THE POINT MACHINE IS OPERATED. RETENSION FASTENINGS AS REQUIRED AND INSPECT INTEGRITY OF THE BEARERS
- 43. LUBRICATE THE GUIDE RAILS
- 44. GREASE THE DETECTOR SLIDES ACCESSABLE SURFACES WITH SLIDES IN OR OUT
- 45. OIL THE SURFACE BETWEEN THE DETECTOR SLIDE THROUGH THE OIL HOLE
- 46. OIL THE CONNECTING BOLTS
- 47. GREASE THE GUIDE RAILS
- 48. REFILL THE GREASE CHAMBERS IN THE GUIDE SLEEVE
- 49. SATURATE THE FELT RINGS AT THE BEARING SURFACES AT THE ROCKERS WITH OIL
- 50. CHECK CONDITION OF ELECTRICAL HARNESS

TRACK CIRCUIT PARALLEL BONDING

51. INSPECT THE CONDITION OF ANY PARALLEL BONDING ON THE TURNOUT

GENERAL

52. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POINTS CLAW LOCK S700 SERIES

SERVICE SCHEDULE / STANDARD JOB S06322

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT.
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION (REFERENCE: ESM-06-01 and SMS-06 CLAW LOCK MAINTENANCE MANUAL)

PERFORM S0601L & S06321 IN CONJUNCTION WITH THIS SERVICE.

MOTOR MECHANISM

- 1. CHECK BEARINGS FOR UNUSUAL NOISE
- 2. EXAMINE THE POINT MACHINE COVER SEAL FOR EVIDENCE OF DEGRADATION REPLACE AS NECESSARY
- 3. LUBRICATE ALL MOVING PARTS WITHIN MACHINE
- 4. INSPECT CONDITION OF GEARS AND LINKAGES
- 5. INSPECT CONDITION OF ALL ELECTRICAL WIRING
- 6. CHECK TIGHTNESS OF ALL ELECTRICAL CONNECTIONS
- 7. INSPECT THE CONDITION OF ALL MOTOR CUT-OUT SWITCH ASSEMBLY FOR EVIDENCE OF DEGRADATION OF THE CONTACTS OR HOUSING & REPLACE AS NECESSARY
- 8. INSPECT THE CONDITION OF THE DETECTOR CONTACTS & HOUSING FOR EVIDENCE OF DEGRADATION & REPLACE AS NECESSARY
- 9. INSPECT THE CONDITION OF THE MOTOR CONTROL CONTACT ASSEMBLY & HOUSING FOR EVIDENCE OF DEGRADATION & REPLACE AS NECESSARY
- 10. CHECK THE OPERATION OF THE ESML / EOL SELECTOR INTERLOCKING. REPAIR OR REPLACE AS NECESSARY
- 11. CLEAN INTERIOR OF POINT MACHINE
- 12. CHECK FASTENING BOLTS OF END POSITION DETECTOR AND BASE PLATES AND TIGHTEN
- 13. CHECK CONDITION OF THE DETECTOR RODS
- 14. LUBRICATE WITH GREASE THE DETECTOR RODS
- 15. LUBRICATE THE COVERLOCK AND CHECK THE MOVEMENTCHECK THAT ALL LOCK PIN RETAINING DEVICES ARE IN PLACE & SECURE
- 16. GREASE DETECTOR RODS BOLTS
- 17. CHECK THAT THE MECHANISM IS SECURLEY FASTENED AND ALL HOLD DOWN BOLTS ARE IN PLACE AND TIGHT
- 18. LUBRICATE WITH GREASE
 - a. THROW BAR
 - b. BALL SPINDLE
 - c. GEAR WHEELS, KEEP AND DETECTOR SLIDES
- 19. OIL THE SHIFTING PLATE

CLAW LOCK MECHANISM

(Reference SMS 06 Sections 7 & 8)

- 20. INSPECT THE OPRATING BAR / CLAW TAIL ENGAGEMENT & DISENGAGEMENT FACES FOR EXCESSIVE WEAR
- 21. INSPECT THE ELECRICAL INSULATION FOR THE OPERATING BAR FOR EVIDENCE OF DEGRADATION & REPLACE AS NECESSARY
- 22. INSPECT CLAW PIN & RETAINING DEVICE FOR EVIDENCE OF EXCESSIVE WEAR & LOOSENESS OF FIT, REPLACE AS NECESSARY
- 23. INSPECT THE CLAW PIN SLOT (OR ECCENTRIC BUSH) IN THE CLAW BRACKET FOR EXCESSIVE LOCALISED

WEAR, REPLACE AS NECESSARY

- 24. LUBRICATE THE CLAW PIN & ECCENTRIC BUSH SLOT IN THE CLAW BRACKET (CLEAN & REMOVE EXCESSIVE OLD LUBRICANT FIRST)
- 25. INSPECT THE ANTI ROLL BAR (WHERE FITTED) FOR EVIDENCE OF RUBBING AGAINST THE SWITCH RAIL, REPLACE OR RETENSION FASTENERS AS NECESSARY
- 26. INSPECT THE ANTI ROLL BAR (WHERE FITTED) SLIDE ARRANGEMENT FOR EVIDENCE OF EXCESS WEAR THAT COULD CAUSE THE ANTI-ROLL BAR TO SAG, INSTALL NEW INSULATION KIT IF NECESSARY
- 27. INSPECT THE ELECTRICAL INSULATIONS FOR THE ANTI ROLL BAR (WHERE FITTED) FOR EVIDENCE OF **DEGRADATION & REPLACE AS NECESSARY**
- 28. INSPECT THE ANTI ROLL BAR (WHERE FITTED) SLIDE ARRANGEMENT FOR EVIDENCE OF LOOSE FASTENINGS, RETENSION OR REPLACE AS NECESSARY
- 29. INSPECT THE ANTI ROLL BRACKET (FOR CATCH POINTS WHERE FITTED) FOR EVIDENCE OF RUBBING AGAINST THE SWITCH RAIL, REPLACE OR RETENSION FASTENERS AS NECESSARY
- 30. INSPECT THE ANTI ROLL BRACKET SKID PLATE (FOR CATCH POINTS WHERE FITTED) FOR EVIDENCE OF EXCESS WEAR THAT COULD CAUSE THE SWITCH RAIL TO STAND OPEN. SHIM OR REPLACE THE SKID PLATE IF NECESSARY
- 31. CHECK THAT THE ANTI-ROLL BRACKET SKID PLATE (FOR CATCH POINTS WHERE FITTED) IS NOT LOOSE. IF FOUND TO BE LOOSE THEN REMOVE ALL LOOSE FASTENERS & REFIT WITH NEW COUNTERSUNK SOCKET SCREWS & 242 LOCTITE
- 32. CONVENTIONAL POINTS RENEW THE CLAW PIN RETAINING SPLIT PIN
- 33. CONVENTIONAL POINTS EXAMINE THE CLAW PIN NYLOC NUT TO ENSURE IT IS FITTED & TENSIONED AGAINST THE COUPLING BAR & REPLACE ANY LOOSE NYLOC NUTS.

EOL MECHANISM & ENCLOSURE (Where Fitted)

- 34. INSPECT CONDITION OF THE EOL MECHANISM & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS, WARDS & WARD PINS -REPLACE AS NECESSARY
- 35. CHECK POINT IDENTIFICATION NUMBER FITTED TO THE DOOR IS SECURE AND CLEARLY VISIBLE
- 36. CHECK POINT LAYOUT DIAGRAM AND DETECTOR LIGHTS ARE CLEARLY VISIBLE AND OPERATIONAL (WHERE FITTED)
- 37. CHECK WIND "N" POINT ENDS SIGN IS FITTED AND CLEARLY VISIBLE
- 38. CLEAN ENCLOSURE, ENSURE SEALS AND SECURITY DEVICES ARE SERVICEABLE

GENERAL

- (Reference SMS 06) 39. CHECK FOR CORRECT TRACK GAUGE AT THE TIP OF THE SWITCHES. REPORT SIGNIFICANT DEVIATIONS TO THE TEAM LEADER OR MANGER
- 40. INSPECT THE DETECTOR ROD TO SWITCH RAIL ELECTRICAL INSULATION FOR EVIDENCE OF DEGRADATION.
- 41. INSPECT THE OPERATING BAR ELECTRICAL INSULATION FOR EVIDENCE OF DEGRADATION
- 42. EXAMINE THE ELECTRICAL INSULATION BETWEEN ALL TIE PLATES FOR EVIDENCE OF DEGRADATION & REPLACE IF NECESSARY

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST/WORKORDER 1.
- ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY 2.
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A 4. CORRECTIVE ACTION
- DISPOSE OF ALL COMPONENTS , BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY 5.



SIGNALLING MAINTENANCE PLANS

POINTS SPHERO LOCK & D84M ELECTRIC DRIVE

VAE OR PRE - CONVENTIONAL, TANGENTIAL TURNOUTS, CROSSINGS AND SNX

SERVICE SCHEDULE / STANDARD JOB NO S06411

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

(REFERENCE: ESM-06-01 & MANUFACTURER'S MANUALS)

PERFORM S0601L IN CONJUNCTION WITH THIS SERVICE

LUBRICATION OF OPERATING MECHANISM

- 1. LUBRICATE THE SELECTOR LEVER BEARING
- 2. LUBRICATE THE HAND THROW LEVER BEARING
- 3. INSPECT THE SELECTOR LEVER CLUTCH DISENGAGEMENT MECHANISM FOR RESIDUAL LUBRICANT, LUBRICATE THE MECHANISM IF REQUIRED TAKING CARE NOT TO CONTAMINATE THE CLUTCH DISCS WITH LUBRICANT
- 4. INSPECT THE POINT MACHINE GEARS FOR RESIDUAL LUBRICANT & LUBRICATE AS NECESSARY
- 5. LUBRICATE THE DETECTOR ROLLER ASSEMBLY PIVOT POINTS
- 6. LUBRICATE THE DETECTOR ROLLER AXLES
- 7. LUBRICATE THE THROW BAR & BUSHES & THE DETECTOR SLIDES & BEARINGS

POINTS ASSEMBLY & OPERATING MECHANISM

- 8. INSPECT THE TURNOUT FOR BUILD UP OF BALLAST & FOREIGN MATERIAL THAT MAY OBSTRUCT THE SWITCH RAIL, SWING NOSE, THROW BAR, DROP LUG, COUPLING BAR, COUPLING BAR BRACKET, OPERATING BAR, DETECTION RODS, BACK DRIVE CRANKS & OPERATING BAR (IF FITTED), REMOVE AS NECESSARY
- 9. INSPECT CONDITION OF THE RAIL CHAIRS & TIES (FASTENERS) CHECKING FOR BROKEN OR LOOSE COMPONENTS
- 10. FOR CONVENTIONAL SWITCHES EXAMINE FOR LOOSE OR BROKEN STOCK RAIL TO RAIL CHAIR FASTENERS (SWITCH STUDS)
- 11. INSPECT CONDITION OF THE POINT BEARERS (TIMBERS) & FASTENERS SECURED
- 12. INSPECT THE DETECTOR RODS COUPLING, INSULATED BUSH & COUPLING TO SWITCH RAIL FASTENER FOR EVIDENCE OF EXCESSIVE WEAR
- 13. INSPECT THE STOCK RAIL / WING RAIL/ POINT RAIL GAUGE FACE FOR RAIL HEAD OVERFLOW GREATER THAN 1.5MM ADJACENT TO THE SWITCH
- 14. INSPECT STOCK RAIL FOR LATERAL OR LONGITUDINAL MOVEMENT (EXCEEDING 15MM)
- 15. CHECK FOR EVIDENCE OF EXCESSIVE PUMPING OF THE TURNOUT / SWING NOSE UNDER TRAIN LOAD
- 16. CHECK THE "TOP" ALIGNMENT OF THE TURNOUT / SWING NOSE TO ENSURE THERE IS NO EXCESSIVE DIP OR HOLLOW
- 17. INSPECT SWITCH FOR DAMAGE ESPECIALLY THE TIP & OVERFLOW OF THE HEAD 400 TO 1000MM FROM THE TIP
- 18. CHECK FIT OF SWITCH TO STOCKRAIL RECTIFY OR RECORD DEFECT
- 19. CHECK SWITCH OPENING AT THE TIP AND FLANGEWAY CLEARANCE AT THE BACK OF THE SWITCH RAIL



- 20. INSPECT FOR EVIDENCE OF LOOSE LOCK NUTS & FASTENERS ON THE DETECTION LINKAGES
- 21. INSPECT FOR LOOSE FASTENERS & LOCK NUTS (DEVICES) ON THE POINT DRIVE LINKAGES & INCLUDING THROW BAR, DROP LUG, COUPLING BAR, COUPLING BAR BRACKET, OPERATING BAR AND WHERE FITTED THE BACKDRIVE CRANKS, BASEPLATES & OPERATING BAR
- 22. INSPECT FOR LOOSE OR BROKEN TIE PLATE TO RAIL BRACE FASTENERS, RETENSION OR RENEW AS NECESSARY
- 23. CHECK THE SWITCH RAIL TO RAIL CHAIR SEAT CLEARANCE, IF EXCESSIVE OR INSUFFICIENT THE SWITCH ROLLER TENSION MAY BE ADJUSTED TO ACHIEVE THE CORRECT CLEARANCE AS PER MANUFACTURER'S MANUALS (APPLIES TO SWITCHES FITTED WITH SWITCH ROLLERS ONLY)
- 24. CHECK THE SWITCH IS BEARING & SLIDING EVENLY ON ALL RAIL SLIDE CHAIRS, REPORT TO CIVIL IF MORE THAN HALF ARE NOT BEARING CORRECTLY (APPLIES TO SWITCHES NOT FITTED WITH ROLLERS)
- 25. CHECK THE SECURITY OF THE SWITCH ROLLER (WHERE FITTED) MOUNTINGS, RETENSION OR RENEW FASTENINGS AS NECESSARY
- 26. EXAMINE BACKDRIVES, WHERE FITTED, FOR CORRECT ADJUSTMENT, WEAR IN CRANK BEARINGS, PINS AND JAWS, SECURITY OF BOLTS TO PLATES AND BEAMS (SLEEPERS), SECURITY OF PINS AND LOCKNUTS AT ADJUSTABLE CONNECTIONS
- 27. CHECK SPRING ASSISTER (WHERE FITTED) FOR CORRECT OPERATION AND AJUSTMENT AND LUBRICATE THE MECHANISM.
- 28. VAE CROSSING LUBRICATE THE SLIDING INTERFACE BETWEEN THE LOCKING PLATE CLAMP PLATE & THE UNDERSIDE OF THE WING RAIL
- 29. LUBRICATE THE POINT (BLADE) RAIL / SPLICE RAIL SLIDING JOINT
- 30. VAE CROSSING LUBRICATE THE POINT RAIL / SPLICE RAIL SAFETY CLAMP SLIDING SURFACES

SPHERO LOCK OPERATING MECHANISM

- 31. CHECK SWITCH SLIDE PLATES & SPHERO LOCK DRIVE FOR OBSTRUCTIONS & CONTAMINATION, CLEAN & LUBRICATE SWITCH SLIDE PLATES
- 32. CHECK MECHANISM AND SECURITY OF ALL FASTENINGS
- 33. CHECK GAP BETWEEN PRESSURE HEAD AND BLADE BRACKET
- 34. CHECK ELECTRICAL INSULATIONS
- 35. INSPECT AND CLEAN LOCKING TUBES
- 36. LUBRICATE THE SPHERO LOCK THREADS PUMP 2 GRAM OF SHELL ALVANIA EPB2 GREASE INTO SPHERO LOCK THREADS LIGHTLY WITH THE SPHERO LOCK LOCKED IN BOTH POSITIONS, ONLY USE THE RECOMMENDED GREASE, OPERATE POINTS 4 TO 5 TIMES AFTER GREASING
- 37. CHECK SECURITY OF BLADE SUPPORT BRACKET LOCKING TAB AND M20 NUTS ON BLADE BRACKET
- 38. CHECK SECURITY OF BLADE SUPPORT BRACKET CONNECTION BOLTS AND SPLIT PIN
- 39. ENSURE GAP BETWEEN PRESSURE HEAD AND BLADE SUPPORT BRACKET IS BETWEEN 1-3 MM
- 40. INSPECT THE BLADE SUPPORT BRACKET CONNECTION BOLT'S ELECTRICAL INSULATIONS FOR DETERIORATION
- 41. ENSURE M20 NUTS SECURING THE STOCK RAIL SUPPORT BRACKET ONTO THE STOCK RAIL ARE TIGHT
- 42. STOCK RAIL SUPPORT BRACKET ENSURE THAT THE M20 NUTS SECURING THE SPHERO LOCK BRACKET ONTO FIRST BRACKET ARE TIGHT
- 43. STOCK RAIL SUPPORT BRACKET ENSURE SPLIT PIN IS SECURELY FITTED
- 44. CHECK ELECTRICAL INSULATIONS STOCK RAIL SUPPORT BRACKET ARE SECURE
- 45. CHECK ELECTRICAL INSULATIONS STOCK RAIL SUPPORT BRACKET ARE NOT BRITTLE OR DAMAGED AND ARE FREE OF CONDUCTING MATERIAL E.G. METAL FLAKES
- 46. CHECK THAT ALL LOCK PIN RETAINING DEVICES ARE IN PLACE & SECURE
- 47. CLEAN TUBES OF ALL FOREIGN MATTER FROM THE LOCKING TUBES
- 48. INSPECT THE LOCKING TUBES FOR DAMAGE



49.	INSPECT THE LOCKING TUBES FOR DENTS	
50.	INSPECT THE LOCKING TUBES FOR DEEP SCRATCHES	
51.	INSPECT THE LOCKING TUBES FOR SIGNS OF WIPERS AND SEALS WEEPING	
POINT MOTOR MACHINE		
52.	OPERATE THE MACHINE AND INSPECT FOR EVIDENCE OF EXCESSIVE MOVEMENT AT THE POINT MACHINE MOUNTING, RETENSION MOUNTING BOLTS AS NECESSARY OR ARRANGE FOR THE BEARERS TO BE REPLACED IF FOUND TO BE DEFECTIVE	
53.	CHECK THE POINT MACHINE BASEPLATE TO BEARER MOUNTING BY INSPECTING FOR EVIDENCE OF MOVEMENT OF THE POINT MACHINE BASEPLATE WHEN THE POINT MACHINE IS OPERATED, RETENSION FASTENINGS AS REQUIRED AND INSPECT INTEGRITY OF THE BEARERS	
54.	INSPECT THE CONDITION OF THE MOTOR CUT-OUT SWITCH ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING, REPLACE AS NECESSARY	
55.	INSPECT THE CONDITION OF THE DETECTOR CONTACT ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING, REPLACE AS NECESSARY	
56.	INSPECT THE CONDITION OF THE MOTOR CONTROL CONTACT ASSEMBLY FOR EVIDENCE OF BURNING OR DEGRADATION OF THE CONTACTS OR DEGRADATION OF THE HOUSING, REPLACE AS NECESSARY	
57.	CHECK OPERATION & INSPECT CONDITION OF THE EOL MECHANISM (WHERE FITTED) & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS, WARDS & WARD PINS – REPLACE AS NECESSARY	
LOCK & POINT DETECTION ADJUSTMENT		
58.	CONDUCT A ZONAL EXAMINATION OF THE SPHERO LOCK TO ENSURE THAT THERE IS NO EVIDENCE OF DAMAGE OR DEGRADATION THAT COULD PREVENT THE SWITCH RAIL FROM LOCKING AND MAINTAINING ITS LOCKED POSITION. IF REQUIRED, REPAIR / REPLACE DAMAGED COMPONENTS	
59.	CHECK THE DETECTION SETTINGS FOR LOSS OF ADJUSTMENT. DETERMINE THE CAUSE OF ANY LOSS OF ADJUSTMENT REQUIRED AND REPAIR AS REQUIRED. ADJUST DETECTION AS REQUIRED	
60.	INSERT A 3.2 MM GAUGE BETWEEN THE SWITCH RAIL AND STOCK RAIL, ENSURE THAT THE SPHERO LOCK DOES NOT LOCK, THE OPERATING BAR DOES NOT COMPLETE ITS STROKE, IF THE SPHERO LOCK LOCKS AND THE OPERATING BAR DOES COMPLETE ITS STROKE REPAIR OR REPLACE AS REQUIRED, ADJUST THE SPHERO LOCK ASSEMBLY AS REQUIRED	
61.	INSERT A 1.6 MM GAUGE BETWEEN THE SWITCH RAIL AND STOCK RAIL, ENSURE THAT THE SPHERO LOCK LOCKS AND THE OPERATING BAR COMPLETES ITS STROKE. IF THE SPHERO LOCK DOES NOT LOCK AND THE OPERATING BAR DOES NOT COMPLETE ITS STOKE REPAIR OR REPLACE AS REQUIRED, ADJUST THE SPHERO LOCK ASSEMBLY AS REQUIRED	
MACHINE & POINT NUMBER & POINT ORIENTATION SIGNAGE		
62.	CHECK POINT IDENTIFICATION NUMBERS AND N & R PLATES AFFIXED TO BEARERS ARE SECURE AND CLEARLY VISIBLE	
63.	CHECK POINT IDENTIFICATION NUMBER FITTED TO THE POINT MACHINE LID IS SECURE AND CLEARLY VISIBLE	
TRA	CK CIRCUIT PARALLEL BONDING	
64.	INSPECT THE CONDITION OF ANY PARALLEL BONDING ON THE TURNOUT	
GEN	IERAL	
<mark>65.</mark>	CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT	
REINSTATEMENT ACTION:		
1.	RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER	
2.	ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY	
3.	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE	
4.	REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION	

5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POINTS SPHERO LOCK & D84M ELECTRIC DRIVE

VAE OR PRE - CONVENTIONAL, TANGENTIAL TURNOUTS, CROSSINGS AND SNX

SERVICE SCHEDULE / STANDARD JOB S06412

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

(REFERENCE: ESM-06-01 & MANUFACTURER'S MANUALS)

PERFORM S0601L & S06411 IN CONJUNCTION WITH THIS SERVICE

MOTOR MECHANISM

- 1. CHECK BEARINGS FOR UNUSUAL NOISE
- 2. CHECK THE FRICTION SNUBBER EFFECTIVENESS BY CONFIRMING THAT THE INTERMEDIATE GEAR FOR THE POINT MACHINE (MOTOR DRIVEN GEAR) SHOWS EVIDENCE OF PRELOAD, REPAIR SNUBBER AS REQUIRED
- 3. TEST THE POINT MACHINE CUT-OUT TIMER FUNCTION BY PERFORMING THE OBSTRUCTION TEST, FOR NON-CBI / PBI INSTALLTIONS REPLACE THE DEFECTIVE TIMER IF NECESSARY OR IF CBI / PBI REPORT THE DEFECTIVE FUNCTION TO THE MAINTENANCE ENGINEER
- 4. TEST OVERLOAD CLUTCH TORQUE SETTING WITH LOAD CELL IS BETWEEN 4.5Kn & 5.5Kn, REPAIR, ADJUST REPLACE AS NECESSARY
- 5. TEST THE FORCE REQUIRED TO OPERATE THE SWING NOSE, IF IT EXCEEDS 3.0Kn REPORT TO CIVIL FOR RECTIFICATION
- 6. EXAMINE THE POINT MACHINE COVER SEAL FOR EVIDENCE OF DEGREDATION REPLACE AS NECESSARY
- 7. LUBRICATE ALL MOVING PARTS WITHIN MACHINE
- 8. INSPECT CONDITION OF GEARS AND LINKAGES
- 9. INSPECT CONDITION OF ALL ELECTRICAL WIRING
- 10. CHECK TIGHTNESS OF ALL ELECTRICAL CONNECTIONS
- 11. CHECK OPERATION OF MOTOR CUT OUT OPERATED BY THE ESML / EOL CRANK HANDLE & INDEXING & / OR WARDING OF THE CRANK HANDLE & INDEX PLATE
- 12. INSPECT THE CONDITION OF THE MOTOR CUT-OUT SWITCH ASSEMBLY FOR EVIDENCE OF DEGREDATION OF THE CONTACTS OR HOUSING & REPLACE AS NECESSARY
- 13. INSPECT THE CONDITION OF THE DETECTOR CONTACTS & HOUSING FOR EVIDENCE OF DEGREDATION & REPLACE AS NECESSARY
- 14. EXAMINE THE DETECTOR SLIDES & BEARINGS TO ENSURE THAT THERE IS NO EXCESSIVE VERTICAL OR LATERAL MOVEMENT OF THE SLIDES. REPLACE EXCESSIVELY WORN SLIDES & BEARINGS
- 15. INSPECT THE CONDITION OF THE MOTOR CONTROL CONTACT ASSEMBLY & HOUSING FOR EVIDENCE



	OF DEGREDATION & REPLACE AS NECESSARY	
16.	CHECK THAT ALL LOCK PIN RETAINING DEVICES ARE IN PLACE & SECURE	
17.	CHECK THE OPERATION OF THE HAND THROW LEVER / SELECTOR INTERLOCKNIG, REPAIR OR REPLACE AS NECESSARY	
18.	CLEAN INTERIOR OF POINT MACHINE	
EOL MECHANISM		
19.	INSPECT CONDITION OF THE EOL MECHANISM & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS & WARDS & WARD PINS, REPLACE AS NECESSARY	
20.	CHECK POINT IDENTIFICATION NUMBER FITTED TO THE DOOR IS SECURE AND CLEARLY VISIBLE	
21.	CHECK POINT LAYOUT DIAGRAM AND DETECTOR LIGHTS ARE CLEARLY VISIBLE AND OPERATIONAL (WHERE FITTED)	
22.	CHECK WIND "N" POINT ENDS SIGN IS FITTED AND CLEARLY VISIBLE	
23.	CLEAN ENCLOSURE, ENSURE SEALS AND SECURITY DEVICES ARE SERVICEABLE	
GENERAL		
24.	CHECK FOR CORRECT TRACK GAUGE AT THE TIP OF THE SWITCHES. REPORT SIGNIFICANT DEVIATIONS TO THE WORK GROUPD LEADER OR TEAM LEADER OR MANGER	
25.	INSPECT THE DETECTOR ROD TO SWITCH RAIL ELECTRICAL INSULATION FOR EVIDENCE OF DEGREDATION	
26.	INSPECT THE OPERATING BAR ELECTRICAL INSULATION FOR EVIDENCE OF DEGRADATION	
27.	EXAMINE THE ELECTRICAL INSULATION BETWEEN ALL TIE PLATES FOR EVIDENCE OF DEGREDATION & REPLACE IF NECESSARY	
REINSTATEMENT ACTION:		
1.	RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER	
2.	ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY	
3.	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE	

- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POINTS SPHERO LOCK & S700K ELECTRIC DRIVE

VAE OR PRE – CONVENTIONAL, TANGENTIAL TURNOUTS, CROSSINGS and SNX

SERVICE SCHEDULE / STANDARD JOB S06421

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REFERENCE: ESM-06-01 AND MANUFACTURER'S MANUALS)

PERFORM S0601L IN CONJUNCTION WITH THIS SERVICE

POINTS ASSEMBLY & OPERATING MECHANISM

- 1. INSPECT THE TURNOUT FOR BUILD UP OF BALLAST & FOREIGN MATERIAL THAT MAY OBSTRUCT THE SWITCH RAIL, SWING NOSE, THROW BAR, DROP LUG, COUPLING BAR, COUPLING BAR BRACKET, OPERATING BAR, DETECTION RODS, BACK DRIVE CRANKS & OPERATING BAR (IF FITTED), REMOVE AS NECESSARY
- 2. INSPECT CONDITION OF THE RAIL CHAIRS & TIES (FASTENERS) CHECKING FOR BROKEN OR LOOSE COMPONENTS
- 3. FOR CONVENTIONAL SWITCHES EXAMINE FOR LOOSE OR BROKEN STOCK RAIL TO RAIL CHAIR FASTENERS (SWITCH STUDS)
- 4. INSPECT CONDITION OF THE POINT BEARERS (TIMBERS) & FASTENERS SECURED REPORT DEFECTS TO TEAM MANAGER
- 5. INSPECT THE DETECTOR RODS COUPLING, INSULATED BUSH & COUPLING TO SWITCH RAIL FASTENER FOR EVIDENCE OF EXCESSIVE WEAR
- 6. INSPECT THE STOCK RAIL/WING RAIL/POINT RAIL GAUGE FACE FOR RAIL HEAD OVERFLOW GREATER THAN 1.5MM ADJACENT TO THE SWITCH
- 7. INSPECT STOCK RAIL FOR LATERAL OR LONGITUDINAL (EXCEEDING 15MM) ROAD MOVEMENT REPORT ANY EXCESSES TO TEAM MANAGER
- 8. CHECK FOR EVIDENCE OF EXCESSIVE PUMPING OF THE TURNOUT/SWING NOSE UNDER TRAIN LOAD
- 9. CHECK THE "TOP" ALIGNMENT OF THE TURNOUT/SWING NOSE TO ENSURE THERE IS NO EXCESSIVE DIP OR HOLLOW REPORT ANY EXCESSES TO TEAM MANAGER
- 10. INSPECT SWITCH FOR DAMAGE ESPECIALLY THE TIP & OVERFLOW OF THE HEAD 400 TO 1000MM FROM THE TIP REPORT DEFECT TO MANAGER
- 11. CHECK FIT OF SWITCH TO STOCKRAIL RECTIFY OR REPORT DEFECT
- 12. CHECK SWITCH OPENING AT THE TIP AND FLANGEWAY CLEARANCE AT THE BACK OF THE SWITCH RAIL
- 13. INSPECT FOR EVIDENCE OF LOOSE LOCK NUTS & FASTENERS ON THE DETECTION LINKAGES
- 14. INSPECT FOR LOOSE FASTENERS & LOCK NUTS (DEVICES) ON THE POINT DRIVE LINKAGES & INCLUDING THROW BAR, DROP LUG, COUPLING BAR, COUPLING BAR BRACKET, OPERATING



BAR AND WHERE FITTED THE BACK-DRIVE CRANKS, BASEPLATES & OPERATING BAR

- 15. INSPECT FOR LOOSE OR BROKEN TIE PLATE TO RAIL BRACE FASTENERS, RETENSION OR RENEW AS NECESSARY
- 16. CHECK THE SWITCH RAIL TO RAIL CHAIR SEAT CLEARANCE, IF EXCESSIVE OR INSUFFICIENT THE SWITCH ROLLER TENSION MAY BE ADJUSTED TO ACHIEVE THE CORRECT CLEARANCE AS PER MANUFACTURER'S MANUALS (APPLIES TO SWITCHES FITTED WITH SWITCH ROLLERS ONLY)
- 17. CHECK THE SWITCH IS BEARING & SLIDING EVENLY ON ALL RAIL SLIDE CHAIRS, REPORT TO CIVIL IF MORE THAN HALF ARE NOT BEARING CORRECTLY (APPLIES TO SWITCHES NOT FITTED WITH ROLLERS)
- 18. CHECK THE SECURITY OF THE SWITCH ROLLER (WHERE FITTED) MOUNTINGS, RETENSION OR RENEW FASTENINGS AS NECESSARY
- 19. EXAMINE BACKDRIVES, WHERE FITTED, FOR CORRECT ADJUSTMENT, WEAR IN CRANK BEARINGS, PINS AND JAWS, SECURITY OF BOLTS TO PLATES AND BEAMS (SLEEPERS), SECURITY OF PINS AND LOCKNUTS AT ADJUSTABLE CONNECTIONS
- 20. CHECK SPRING ASSISTER (WHERE FITTED) FOR CORRECT OPERATION AND AJUSTMENT AND LUBRICATE THE MECHANISM.
- 21. VAE CROSSING LUBRICATE THE SLIDING INTERFACE BETWEEN THE LOCKING PLATE CLAMP PLATE & THE UNDERSIDE OF THE WING RAIL
- 22. LUBRICATE THE POINT (BLADE) RAIL / SPLICE RAIL SLIDING JOINT
- 23. VAE CROSSING LUBRICATE THE POINT RAIL / SPLICE RAIL SAFETY CLAMP SLIDING SURFACES

SPHERO LOCK OPERATING MECHANISM

- 24. CHECK SWITCH SLIDE PLATES & SPHERO LOCK DRIVE FOR OBSTRUCTIONS & CONTAMINATION, CLEAN & LUBRICATE SWITCH SLIDE PLATES
- 25. CHECK MECHANISM AND SECURITY OF ALL FASTENINGS
- 26. CHECK ELECTRICAL INSULATIONS
- 27. LUBRICATE THE SPHERO LOCK THREADS PUMP 2 GRAM OF SHELL ALVANIA EPB2 GREASE INTO SPHERO LOCK THREADS LIGHTLY WITH THE SPHERO LOCK LOCKED IN BOTH POSITIONS, ONLY USE THE RECOMMENDEDGREASE. OPERATE POINTS 4 TO 5 TIMES AFTER GREASING
- 28. CHECK SECURITY OF BLADE SUPPORT BRACKET LOCKING TAB AND M20 NUTS ON BLADE BRACKET
- 29. CHECK SECURITY OF BLADE SUPPORT BRACKET CONNECTION BOLTS AND SPLIT PIN
- 30. ENSURE GAP BETWEEN PRESSURE HEAD AND BLADE SUPPORT BRACKET IS BETWEEN 1-3 MM
- 31. INSPECT THE BLADE SUPPORT BRACKET CONNECTION BOLT'S ELECTRICAL INSULATIONS FOR DETERIORATION
- 32. ENSURE M20 NUTS SECURING THE STOCK RAIL SUPPORT BRACKET ONTO THE STOCK RAIL ARE TIGHT
- 33. STOCK RAIL SUPPORT BRACKET ENSURE THAT THE M20 NUTS SECURING THE SPHERO LOCK BRACKET ONTO FIRST BRACKET ARE TIGHT
- 34. STOCK RAIL SUPPORT BRACKET ENSURE SPLIT PIN IS SECURELY FITTED
- 35. CHECK ELECTRICAL INSULATIONS STOCK RAIL SUPPORT BRACKET ARE SECURE
- 36. CHECK ELECTRICAL INSULATIONS STOCK RAIL SUPPORT BRACKET ARE NOT BRITTLE OR DAMAGED AND ARE FREE OF CONDUCTING MATERIAL E.G. METAL FLAKES
- 37. CHECK THAT ALL LOCK PIN RETAINING DEVICES ARE IN PLACE & SECURE



- 38. CLEAN TUBES OF ALL FOREIGN MATTER FROM THE LOCKING TUBES
- 39. INSPECT THE LOCKING TUBES FOR DAMAGE
- 40. INSPECT THE LOCKING TUBES FOR DENTS
- 41. INSPECT THE LOCKING TUBES FOR DEEP SCRATCHES
- 42. INSPECT THE LOCKING TUBES FOR SIGNS OF WIPERS AND SEALS WEEPING

POINT MECHANISM

- 43. INSPECT FOR EVIDENCE OF FLOGGING OR EXCESSIVE MOVEMENT AT THE POINT MACHINE MOUNTING, RETENTION MOUNTING BOLTS AS NECESSARY
- 44. LUBRICATE THE GUIDE RAILS
- 45. GREASE THE DETECTOR SLIDES ACCESSABLE SURFACES WITH SLIDES IN OR OUT
- 46. OIL THE SURFACE BETWEEN THE DETECTOR SLIDE THROUGH THE OIL HOLE
- 47. GREASE THE GUIDE RAILS
- 48. OIL THE CONNECTING BOLTS
- 49. REFILL THE GREASE CHAMBERS IN THE GUIDE SLEEVE
- 50. SATURATE THE FELT RINGS AT THE BEARING SURFACES AT THE ROCKERS WITH OIL
- 51. CHECK CONDITION OF ELECTRICAL HARNESS

LOCK & POINT DETECTION ADJUSTMENT

- 52. CONDUCT A ZONAL EXAMINATION OF THE SPHERO LOCK TO ENSURE THAT THERE IS NO EVIDENCE OF DAMAGE OR DEGRADATION THAT COULD PREVENT THE SWITCH RAIL FROM LOCKING AND MAINTAINING ITS LOCKED POSITION, IF REQUIRED, REPAIR / REPLACE DAMAGED COMPONENTS
- 53. CHECK THE DETECTION SETTINGS FOR LOSS OF ADJUSTMENT, DETERMINE THE CAUSE OF ANY LOSS OF ADJUSTMENT REQUIRED. AND REPAIR AS REQUIRED, ADJUST DETECTION AS REQUIRED
- 54. INSERT A 3.2 MM GAUGE BETWEEN THE SWITCH RAIL AND STOCK RAIL. ENSURE THAT THE SPHERO LOCK DOES NOT LOCK, THE OPERATING BAR DOES NOT COMPLETE ITS STROKE, IF THE SPHERO LOCK LOCKS AND THE OPERATING BAR DOES COMPLETE ITS STROKE REPAIR OR REPLACE AS REQUIRED, ADJUST THE SPHERO LOCK ASSEMBLY AS REQUIRED
- 55. INSERT A 1.6 MM GAUGE BETWEEN THE SWITCH RAIL AND STOCK RAIL, ENSURE THAT THE SPHERO LOCK LOCKS AND THE OPERATING BAR COMPLETES ITS STROKE, IF THE SPHERO LOCK DOES NOT LOCK AND THE OPERATING BAR DOES NOT COMPLETE ITS STROKE, REPAIR OR REPLACE AS REQUIRED, ADJUST THE SPHERO LOCK ASSEMBLY AS REQUIRED

MACHINE & POINT NUMBER & POINT ORIENTATION SIGNAGE

- 56. CHECK POINT IDENTIFICATION NUMBERS AND N & R PLATES AFFIXED TO BEARERS ARE SECURE AND CLEARLY VISIBLE
- 57. CHECK POINT IDENTIFICATION NUMBER FITTED TO THE POINT MACHINE LID IS SECURE AND CLEARLY VISIBLE

TRACK CIRCUIT PARALLEL BONDING

58. INSPECT THE CONDITION OF ANY PARALLEL BONDING ON THE TURNOUT

GENERAL

59. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT **REINSTATEMENT ACTION:**



- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POINTS SPHERO LOCK & S700K ELECTRIC DRIVE

VAE OR PRE – CONVENTIONAL, TANGENTIAL TURNOUTS, CROSSINGS and SNX

SERVICE SCHEDULE / STANDARD JOB S06422

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REFERENCE: ESM-06-01 AND MANUFACTUER'S MANUALS)

PERFORM S0601L & S06421 IN CONJUNCTION WITH THIS SERVICE

MOTOR MECHANISM

- 1. CHECK BEARINGS FOR UNUSUAL NOISE
- 2. EXAMINE THE POINT MACHINE COVER SEAL FOR EVIDENCE OF DEGRADATION REPLACE AS NECESSARY
- 3. LUBRICATE ALL MOVING PARTS WITHIN MACHINE
- 4. INSPECT CONDITION OF GEARS AND LINKAGES
- 5. INSPECT CONDITION OF ALL ELECTRICAL WIRING
- 6. CHECK TIGHTNESS OF ALL ELECTRICAL CONNECTIONS
- 7. INSPECT THE CONDITION OF THE MOTOR CUT-OUT SWITCH ASSEMBLY FOR EVIDENCE OF DEGRADATION OF THE CONTACTS OR HOUSING & REPLACE AS NECESSARY
- 8. INSPECT THE CONDITION OF THE DETECTOR CONTACTS & HOUSING FOR EVIDENCE OF DEGRADATION & REPLACE AS NECESSARY
- 9. INSPECT THE CONDITION OF THE MOTOR CONTROL CONTACT ASSEMBLY & HOUSING FOR EVIDENCE OF DEGRADATION & REPLACE AS NECESSARY
- 10. CHECK THE OPERATION OF THE ESML / EOL SELECTOR INTERLOCKING. REPAIR OR REPLACE AS NECESSARY
- 11. CLEAN INTERIOR OF POINT MACHINE
- 12. CHECK FASTENING BOLTS OF END POSITION DETECTOR AND BASE PLATES AND TIGHTEN
- 13. CHECK CONDITION OF THE DETECTOR RODS
- 14. LUBRICATE WITH GREASE THE DETECTOR RODS
- 15. LUBRICATE THE COVERLOCK AND CHECK THE MOVEMENT
- 16. GREASE DETECTOR RODS BOLTS
- 17. CHECK THAT THE MECHANISM IS SECURLEY FASTENED AND ALL HOLD DOWN BOLTS ARE IN PLACE AND TIGHT
- 18. LUBRICATE WITH GREASE
 - a. THROW BAR





- b. BALL SPINDLE
- c. GEAR WHEELS. KEEP AND DETECTOR SLIDES
- 19. OIL THE SHIFTING PLATE

EOL MECHANISM

- 20. INSPECT CONDITION OF THE EOL MECHANISM & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS & WARDS & WARD PINS, REPLACE AS NECESSARY
- 21. CHECK POINT IDENTIFICATION NUMBER FITTED TO THE DOOR IS SECURE AND CLEARLY VISIBLE
- 22. CHECK POINT LAYOUT DIAGRAM AND DETECTOR LIGHTS ARE CLEARLY VISIBLE AND OPERATIONAL (WHERE FITTED)
- 23. CHECK WIND "N" POINT ENDS SIGN IS FITTED AND CLEARLY VISIBLE

GENERAL

- 24. CHECK FOR CORRECT TRACK GAUGE AT THE TIP OF THE SWITCHES, REPORT SIGNIFICANT DEVIATIONS TO THE WORK GROUP LEADER OR TEAM LEADER OR MANAGER
- 25. INSPECT THE DETECTOR ROD TO SWITCH RAIL ELECTRICAL INSULATION FOR EVIDENCE OF DEGRADATION
- 26. INSPECT THE OPERATING BAR ELECTRICAL INSULATION FOR EVIDENCE OF DEGRADATION
- 27. EXAMINE THE ELECTRICAL INSULATION BETWEEN ALL TIE PLATES FOR EVIDENCE OF DEGRADATION & REPLACE IF NECESSARY

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1.
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POINTS MECHANICAL

SERVICE SCHEDULE / STANDARD JOB S06511

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

(REFERENCE: ESM-06-01 AND SMS 04)

POINTS GENERAL

- 1. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT
- 2. OBSERVE POINT OPERATION

TRACK CONDITION

- 3. INSPECT CONDITION OF BALLAST & PROFILE
- 4. CHECK FOR ROAD MOVEMENT

STOCKRAIL

- 5. INSPECT STOCKRAIL FOR RAIL OVERFLOW
- 6. CHECK THAT STOCKRAIL IS SECURELY FASTENED TO TIMBERS
- 7. INSPECT FOR LATERAL OR LONGITUDINAL ROAD MOVEMENT

SWITCH

- 8. INSPECT SWITCH FOR DAMAGE OR OVERFLOW
- 9. CHECK FIT OF SWITCH TO STOCKRAIL
- 10. CHECK HEEL BLOCK (WHERE APPLICABLE) FOR EXCESSIVE WEAR, LOOSE OR MISSING BOLTS AND CORRECT ADJUSTMENT
- 11. CHECK TRACK GAUGE AT POINT OF SWITCH
- 12. CHECK SWITCH FOR CORRECT TRAVEL & OPENING (OPEN SWITCH BETWEEN 90MM AND 135MM DEPENDENT ON TYPE)
- 13. CHECK FLANGEWAY CLEARANCE (BEHIND OPEN SWITCH) IS GREATER THAN 50MM
- 14. CLEAN SWITCH PLATES AND APPLY SWITCH PLATE LUBRICANT
- 15. CHECK SWITCH ROLLERS (WHERE FITTED) FOR CORRECT ADJUSTMENT AS PER MANUFACTURER'S MANUALS, SECURITY & OPERATION & APPLY LUBRICANT AS REQUIRED

MECHANICAL DRIVE

- 16. LUBRICATE ALL PIVOT POINTS
- 17. INSPECT CONDITION & SECURITY OF ALL DRIVE LINKAGES
- 18. INSPECT POINT STRETCHER BARS & CLIPS FOR WEAR & DAMAGE
- 19. CHECK TIGHTNESS OF STRETCHER BAR SECURING BOLTS



(REFERENCE ESM-06-01 AND SMS-04)

POINTS RODDING

- 20. INSPECT RODDING RUN FOR SERIOUS DEGRADATION BY RUST, DAMAGE OR OBSTRUCTIONS, CLEAR **VEGETATION GROWTH**
- 21. CHECK ALLIGNMENT OF THE RODDING RUN & THAT IT IS NOT CREATING EXCESSIVE FRICTION THROUGH CONTACT ON THE "A" FRAMES, ETC.
- 22. INSPECT "A" FRAME CARRIERS FOR WEAR OR DAMAGE
- 23. CHECK "A" FRAME BLOCKS ARE STABLE AND NOT LIFTING
- 24. INSPECT "A" FRAMES & CHECK THAT ALL BOLTS & FERRULES ARE FITTED & ARE TIGHT
- 25. INSPECT CRANKS AND COMPENSATORS FOR WEAR AND LUBRICATE
- 26. INSPECT CONNECTING PINS. BUSHES AND JOINTS FOR WEAR & ARE SECURE & APPLY LUBRICANT
- 27. CHECK RODDING CONNECTIONS & BOLTS ARE TIGHT
- 28. CHECK THAT CRANKS AND COMPENSATORS ARE STABLE & SECURELY FASTENED TO SUPPORTS
- 29. TEST FOR EXCESSIVE LOST MOTION IN RODDING RUN (CORRECT AS NECESSARY)

FACING POINT LOCK (WHERE FITTED)

- 30. CHECK THAT PLUNGER CASTING IS SECURELY MOUNTED TO THE TIMBERS
- 31. CLEAN AND LUBRICATE PLUNGER
- 32. CHECK PLUNGER TRAVEL AND ENSURE THAT DETECTOR CONTACT ARE MADE & CLEARANCE IS BETWEEN 15MM & 25MM
- 33. INSPECT FOR WEAR AND LUBRICATE CONNECTING PINS AND BUSHES
- 34. INSPECT FOR WEAR AND LUBRICATE PLUNGER DRIVE CRANK
- 35. TEST FACING POINT LOCK (FAILS 3.2MM SWITCH OPENING)
- NOTE: ADVISE SIGNAL ENGINEER IF THE FPL ADJUSTMENT IS GREATER THAN 4.8MM BETWEEN SERVICES

EMERGENY CROSSOVERS (WHERE APPLICABLE)

36. CHECK SWITCH SPIKE, POINT CLIPS AND XL LOCKS ARE FITTED & CORRECTLY INSTALLED & SECURE

OTHER SUPLEMENTARY EQUIPMENT (WHERE FITTED)

MECHANICAL POINT INDICATOR (TOW OR REVOLVING DISC TYPE WHERE FITTED) (REFERENCE ESM-04-01)

NOTE ALSO INCLUDES POINT SETTING INDICATOR WHERE FITTED)

- 37. INSPECT CONDITION OF MOUNTING STRUCTURE, SECURING DEVICES, POST & PROTECTIVE COATINGS
- 38. INSPECT CONDITION OF INDICATOR DISPLAY FACES
- 39. INSPECT CONDITION OF ALL CONNECTING RODS
- 40. INSPECT CONDITION OF CONNECTING PINS AND SPLIT PINS
- 41. INSPECT CONDITION OF CRANKS
- 42. LUBRICATE BEARINGS AND PIVOT POINTS
- 43. OBSERVE OPERATION ENSURING OPERATION IS SMOOTH & THERE IS NO TENDANCY TO BIND
- 44. CHECK CORRECT ADJUSTMENT OF INDICATOR WHEN OPERATED
- 45. REVOLVING DISC TYPE:
 - a. INSPECT CONDITION OF LAMP CASE & SECURING DEVICES



(REFERENCE ESM-06-01 and SMS 04)

(REFERENCE ESM-06-01 and SMS 04)

- b. CHECK THAT LAMP HOLDER & LAMP ARE SECURE
- c. CHECK LAMP FILAMENTS
- d. INSPECT& REPLACE CRACKED OR DAMAGED LENSES/ SPECTACLES
- e. CLEAN LENSES/ SPECTACLES
- f. CHECK TIGHTNESS OF ALL ELECTRICAL CONNECTIONS (WHERE APPLICABLE)
- g. INSPECT CONDITION OF ALL ELECTRICAL WIRING (WHERE APPLICABLE)

DERAILER & CROWDER (WHERE FITTED)

47. PERFORM S06531

BOLT LOCK (WHERE FITTED)

- 48. CHECK PLUNGER ADJUSTMENT
- 49. TEST BOLT LOCK
- 50. CHECK BOLT LOCK IS SECURELY MOUNTED TO ITS SUPPORTS
- 51. CHECK SECURITY AND TIGHTNESS OF BOLTS AND CONNECTING PINS
- 52. LUBRICATE SLIDES, PINS AND BUSHES

DETECTOR ELECTRICAL (WHERE FITTED)

- 53. INSPECT CONDITION AND CLEAN CONTACTS AS REQUIRED
- 54. INSPECT DETECTOR DRIVE AND CONNECTING LINKAGES FOR WEAR
- 55. TEST ADJUSTMENT OF DETECTOR, ADJUST AS REQUIRED

DETECTOR MECHANICAL (WHERE FITTED)

- 56. TEST ADJUSTMENT OF DETECTOR (SIGNAL SLIDE JUST CLEAR AT 3.2MM)
- 57. INSPECT DETECTOR DRIVE AND CONNECTING LIINKAGES FOR WEAR
- 58. CLEAN AND LUBRICATE DETECTOR SLIDES
- 59. CHECK SIGNAL WIRE ADJUSTMENT

EMERGENCY RELEASING LOCK (WHERE FITTED)

- 60. CHECK CONDITON / TEST OPERATION (VERIFY DETECTION OPENED CIRCUITED WHEN KEY TURNED FOR REMOVAL) (REF SPECIAL INSTRUCTION)
- 61. PERFORM S05331 FOR EMERGENCY RELEASING LOCK

GENERAL (ELECTRICAL WIRING)

- 62. CHECK TIGHTNESS OF ALL ELECTRICAL CONNECTIONS (WHERE APPLICABLE)
- 63. INSPECT CONDITION OF ALL ELECTRICAL WIRING (WHERE APPLICABLE)

TRACK CIRCUIT PARALLEL OR SERIES PARALLEL BONDING (TRACK CIRCUITED AREAS)

64. CHECK PARALLEL OR SERIES PARALLEL BONDING IS PRESENT AND IN GOOD CONDITON

GENERAL

65. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINTS & ASSOCIATED EQUIPMENT OPERATE CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A



CORRECTIVE ACTION

5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNALLING TECHNICAL MAINTENANCE PLANS

POINTS SOLAR HYDRA SERIES

SERVICE SCHEDULE / STANDARD JOB S06521

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT.
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

PERFORM SS 0601L IN CONJUNCTION WITH THIS SERVICE

POINTS ASSEMBLY & OPERATING MECHANISM

- 1. CHECK MECHANISM AND SECURITY OF ALL FASTENINGS
- 2. INSPECT THE TURNOUT FOR BUILD UP OF BALLAST & FOREIGN MATERIAL THAT MAY OBSTRUCT THE SWITCH RAIL. REMOVE AS NECESSARY
- 3. INSPECT CONDITION OF THE POINT BEARERS (TIMBERS) & FASTENERS SECURED
- 4. INSPECT CONDITION OF ALL POINT RODDING. CHECK TIGHTNESS/REPLACE BOLT & NUT IF LOOSE. EXAMINE INSULATION PIECES WHERE FITTED

POINT MECHANISM

- 1. INSPECT FOR EVIDENCE OF FLOGGING OR EXCESSIVE MOVEMENT AT THE POINT MACHINE MOUNTING, RETENTION MOUNTING BOLTS AS NECESSARY
- 2. VISUALLY INSPECT THE MECHANICAL SIGNAL FLAG AND ENSURE THAT IT MOVES PROPERLY TO MATCH THE ACTUAL RAIL SWITCH POSITION. ADJUST AS REQUIRED
- 3. VISUALLY INSPECT THE LEVEL AND CONDITION OF HYDRAULIC FLUID. INSPECT FOR HYDRAULIC LEAKS, HYDRAULIC HOSE DISTRESS, CHAFING. REFILL AS INSTRUCTED IN THE 3000LP MAINTENANCE MANUAL
- 4. VISUALLY INSPECT THE CONDITION OF THE ACUATOR CYLINDER SEALS
- 5. VISUALLY INSPECT THE MECHANICAL ARTICULATION HARDWARE FOR EVIDENCE OF WEAR, DISTORTION OR CRACKING.
- 6. VISUALLY INSPECT THE SPRING ASSEMBLY FOR EVIDENCE OF MECHANICAL STRESS, CRACKING OR DISTROTION
- 7. VISUALLY INSPECT SPRING ATTACHMENT HARDWARE AND CLEVIS
- 8. VISUALLY INSPECT THE CONDITION OF THE SHOULDER BOLT BY VIEWING BETWEEN SPRING COILS. ENSURE THAT THE SHOULDER BOLT IS SECURE.
- 9. APPLY GREASE TO MANUFACTURERS RECOMMENDED LOCATIONS AS PER THE 3000LP MAINTENANCE MANUAL
- 10. VISUALLY INSPECT THE CONDITION OF THE BATTERY. INSPECT FOR EVIDENCE OF CRACKING, LEAKING, TERMINAL CORROSION OR OTHER DISTRESS. CHECK BATTERY VOLTAGE IS 12V DC TO 12.4V DC.
- 11. INSPECT ELECTRICAL WIRING FOR EVIDENCE OF INSULATION DEGRADATION, STRESSED TERMINALS OR OTHER DAMAGE.
- 12. CHECK SOLAR ARAY FOR DAMAGE OR CONTAMINATION. CLEAN IF REQUIRED
- 13. USING HYPER-TERMINAL READ THE SWITCH MACHINE TOTAL CYCLES AND CONFIRM THEY DO NOT EXCEED LIFE LIMITED COMPONENT CONSTRAINTS AS PER 3000LP MAINTENANCE MANUAL

POINT ADJUSTMENT

1. CORRECTLY DISABLE THE SWITCH MACHINE,

- 2. CENTRE THE SWITCH MACHINE USING THE MANUAL HAND PUMP AND THE CENTERING BLOCK INSTALLED ON THE SWITCH MACHINE ACTUATOR, ENSURE THAT THE CENTER OF SWITCH MACHINE TRAVEL CORRESPONDS TO THE CENTER OF TRAVEL OF THE RAIL SWITCH
- 3. CHECK AND ADJUST THE GAP INDICATION PROXIMITY SENSOR TRIP POINT
- 4. CONDUCT THE AUTO-RETURN LOGIC CHECK. USING AN OBSTRUCTION BLOCK THE POINTS ENSURE THE POINTS DO NOT REACH THEIR COMMANDED POSITION AND RETURN TO THEIR ORIGINAL POSITION
- 5. CONDUCT A NORMAL THROW CHECK IN EITHER DIRECTION.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST/WORKORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE AFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

ARTC

SIGNALLING TECHNICAL MAINTENANCE PLANS

DERAILER - D150 (INCLUDING CROWDER C150 WHERE APPLICABLE)

SERVICE SCHEDULE / STANDARD JOB S06531

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REFERENCE MANUFACTURER'S MANUAL)

NOTE: MAINTENANCE IS TO BE PERFORMED (PACKAGED) WITH GROUND FRAME MAINTENANCE

TRACK CONDITION

14. INSPECT CONDITION OF BALLAST & FORMATION ALLOWS FOR CORRECT OPERATION OF THE DERAILER & CROWDER

STOCKRAIL

- 15. INSPECT STOCKRAIL FOR RAIL OVER RUN THAT MIGHT PREVENT THE DERAILER & CROWDER SITTING CORRECTLY
- 16. CHECK THAT STOCKRAIL IS SECURELY FASTENED TO TIMBERS / BEARERS & THAT IT IS SITTING FIRMLY ON THE TIMBERS / BEARERS
- 17. INSPECT FOR EXCESSIVE LATERAL ROAD MOVEMENT

DRIVE RODDING

- 18. INSPECT CHANNEL RODDING RUN FOR OBSTRUCTIONS OR DAMAGE OR SERIOUS DEGRADATION BY RUST
- 19. CHECK "A" FRAME BLOCKS ARE STABLE AND NOT LIFTING
- 20. CHECK ALLIGNMENT OF THE RODDING RUN & THAT IT IS NOT CREATING EXCESSIVE FRICTION THROUGH CONTACT ON THE "A" FRAMES, ETC
- 21. CHECK CHANNEL RODDING CONNECTIONS FOR TIGHTNESS
- 22. INSPECT A FRAME CARRIERS FOR WEAR OR DAMAGE
- 23. INSPECT "A" FRAMES & CHECK THAT ALL BOLTS & FERRULES ARE FITTED & ARE TIGHT
- 24. CHECK THAT CRANKS AND COMPENSATORS ARE STABLE & SECURELY FASTENED TO SUPPORTS
- 25. INSPECT CRANKS AND COMPENSATORS FOR WEAR AND LUBRICATE
- 26. INSPECT CONNECTING PINS AND BUSHES FOR WEAR AND LUBRICATE
- 27. TEST FOR LOST MOTION IN CHANNEL RODDING RUN

DERAILER (INCL CROWDER WHERE FITTED)

(REF: MANUFACTURER'S HANDBOOK FOR D150 DERAIL & C150 CROWDER)

- 28. INSPECT THE CROWDER & DERAILER EQUIPMENT FOR DEFECTS OR DAMAGE
- 29. CHECK THE TWO MOUNTING TIMBERS / BEARERS ARE SQUARE TO THE TRACK



- 30. INSPECT THE PACKING PIECES, WHERE FITTED, AND ENSURE THEY ARE IN SECURE AND IN GOOD CONDITION
- 31. INSPECT THE SPLIT PINS, PINS AND BUSHES AND ASSOCIATED LINKAGES ARE SECURE AND NOT WORN
- 32. LUBRICATE ALL PINS ON BOTH THE DRAILER AND CROWDER
- 33. INSPECT CONDITION OF GREASED SURFACES FOR CONTAMINATION OR DEGRADATION OF THE GREASE CLEAN SURFACES & REGREASE
- 34. CHECK FOR CORRECT OPERATION OF THE DERAIL AND CROWDER & ENSURE THAT:
 - a. THE DERAIL BLOCK FULLY COVERS THE HEAD OF THE RAIL
 - b. THE DERAIL BLOCK DROPS NEATLY ONTH OTHE HEAD OF THE RAIL AT THE END OF ITS STROKE
 - c. THE GUIDE BEARLING SIT EVENLY ON THE FRONT SEAT AND HOLD DOWN BAR RESPECTIVELY (REF HANDBOOK FIG 4.6, 4.7 & 4.8)
 - d. THE CROWDER SITS FLUSH WITH THE TOP OF THE RAIL HEAD

DETECTOR ELECTRICAL (WHERE FITTED)

- 35. CHECK SECURITY OF MOUNTING AND FASTENINGS
- 36. INSPECT DETECTOR DRIVE AND CONNECTING LIINKAGES FOR WEAR AND SECURITY
- 37. INSPECT CONDITION AND CLEAN CONTACTS AS REQUIRED
- 38. TEST ADJUSTMENT OF DETECTOR, ADJUST AS REQUIRED
- 39. CHECK CONDITION AND SECURITY OF ALL WIRING AND CONNECTIONS

ELECTRICAL WIRING

- 40. CHECK TIGHTNESS OF ALL ELECTRICAL CONNECTIONS (WHERE APPLICABLE)
- 41. INSPECT CONDITION OF ALL ELECTRICAL WIRING (WHERE APPLICABLE)

GENERAL

42. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE DERAILER (& CROWDER & DETECTOR WHERE APPLICABLE) OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

ARTC

SIGNALLING TECHNICAL MAINTENANCE PLANS

POINTS MECHANICAL GRS

SERVICE SCHEDULE / STANDARD JOB S06541

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF



MAINTENANCE ACTION: MAINTENANCE ACTION: (REFERENCE: ESM-06-01, SMS 04 AND MANUFACTURER'S MANUALS)

PERFORM S0601L IN CONJUNCTION WITH THIS SERVICE

POINTS GENERAL

- 1. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT
- 2. OBSERVE POINT OPERATION

TRACK CONDITION

- 3. INSPECT CONDITION OF BALLAST & PROFILE
- 4. CHECK FOR ROAD MOVEMENT

STOCKRAIL

- 5. INSPECT STOCKRAIL FOR RAIL OVERFLOW
- 6. CHECK THAT STOCKRAIL IS SECURELY FASTENED TO TIMBERS
- 7. INSPECT FOR LATERAL OR LONGITUDINAL ROAD MOVEMENT

SWITCH

- 8. INSPECT SWITCH FOR DAMAGE OR OVERFLOW
- 9. CHECK FIT OF SWITCH TO STOCKRAIL
- 10. CHECK HEEL BLOCK (WHERE APPLICABLE) FOR EXCESSIVE WEAR, LOOSE OR MISSING BOLTS AND CORRECT ADJUSTMENT
- 11. CHECK TRACK GAUGE AT POINT OF SWITCH
- 12. CHECK SWITCH FOR CORRECT TRAVEL & OPENING (OPEN SWITCH BETWEEN 90MM AND 135MM DEPENDENT ON TYPE)
- 13. CHECK FLANGEWAY CLEARANCE (BEHIND OPEN SWITCH) IS GREATER THAN 50MM
- 14. CLEAN SWITCH PLATES AND APPLY SWITCH PLATE LUBRICANT
- 15. CHECK SWITCH ROLLERS (WHERE FITTED) FOR CORRECT ADJUSTMENT, SECURITY & OPERATION & APPLY LUBRICANT AS REQUIRED

MECHANICAL DRIVE

- 16. LUBRICATE ALL PIVOT POINTS
- 17. INSPECT CONDITION & SECURITY OF ALL DRIVE LINKAGES
- 18. INSPECT POINT STRETCHER BARS & CLIPS FOR WEAR & DAMAGE
- 19. CHECK TIGHTNESS OF STRETCHER BAR SECURING BOLTS



POINTS RODDING

- 20. INSPECT RODDING RUN FOR SERIOUS DEGRADATION BY RUST, DAMAGE OR OBSTRUCTIONS, CLEAR **VEGETATION GROWTH**
- 21. CHECK ALLIGNMENT OF THE RODDING RUN & THAT IT IS NOT CREATING EXCESSIVE FRICTION THROUGH CONTACT ON THE "A" FRAMES, ETC.
- 22. INSPECT "A" FRAME CARRIERS FOR WEAR OR DAMAGE
- 23. CHECK "A" FRAME BLOCKS ARE STABLE AND NOT LIFTING
- 24. INSPECT "A" FRAMES & CHECK THAT ALL BOLTS & FERRULES ARE FITTED & ARE TIGHT
- 25. INSPECT CRANKS AND COMPENSATORS FOR WEAR AND LUBRICATE
- 26. INSPECT CONNECTING PINS, BUSHES AND JOINTS FOR WEAR & ARE SECURE & APPLY LUBRICANT
- 27. CHECK RODDING CONNECTIONS & BOLTS ARE TIGHT
- 28. CHECK THAT CRANKS AND COMPENSATORS ARE STABLE & SECURELY FASTENED TO SUPPORTS
- 29. TEST FOR EXCESSIVE LOST MOTION IN RODDING RUN (CORRECT AS NECESSARY)

GENERAL

30. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE DERAILER (& CROWDER & DETECTOR WHERE APPLICABLE) OPERATES CORRECTLY
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
 - 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

2. 3.

4.

1.

4

9

SIGNALLING TECHNICALMAINTENANCE PLANS **RELEASING SWITCH** SERVICE SCHEDULE / STANDARD JOB S06611 PREPARATION ACTION: 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES PERFORM PRE-WORK SAFETY BRIEF **MAINTENANCE ACTION: RELEASING SWITCH CASE** INSPECT FOR DAMAGE OR ENVIRONMENTAL CONTAMINATION 2. CHECK THAT S.L LOCK SECURING DOOR IS FUNCTIONAL 3. ENSURE THAT PADLOCK SECURING FRONT PLATE IS FUNCTIONAL CHECK THAT DOOR AND HANDLE INTERLOCK IS EFECTIVE CIRCUIT CONTROLLER 5. INSPECT CONDITION OF CONTACTS CLEAN AS REQUIRED 6. CHECK THAT CONTACT SEGMENTS ARE SECURELY FIXED TO DRUM 7. CHECK CONTACT / CONTACT DRIVE ADJUSTMENT PUSHBUTTON 8. CHECK OPERATION AND ADJUSTMENT OF PUSHROD INSPECT CONDITION OF CONTACTS CLEAN AS REQUIRED 10. CHECK CONTACT ADJUSTMENT ELECTRIC LOCK 11. CHECK THAT LOCK DROPS AWAY FREELY (REF ESS-26-01) 12. CHECK ADJUSTMENT OF LOCK DROP CONTACTS (REF ESS-26-01) 13. CHECK THAT LOCK DOG ENTERS LOCK NOTCH / HOLE FREELY (REF ESS-26-01) 14. CHECK THAT AIR GAP SPACER PIECES ARE SECURELY IN PLACE (WHERE APPLICABLE) GENERAL 15. OBTAIN RELEASE AND CHECK OPERATION OF RELEASING SWITCH. ENSURE THAT KEY DOES NOT GET RELEASE WITHOUT REEASE BEING GRANTED BY CONTROLLER. 16. CHECK OPERATION OF RELEASING SWITCH TO REVERSE POSITION 17. CHECK CONDITION OF ELECTRICAL CONNECTIONS AND WIRING



- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE RELEASING SWITCH OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



RELEASING SWITCH

SERVICE SCHEDULE / STANDARD JOB S06612

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

PERFORM S06611 IN CONJUNCTION WITH THIS TASK

ANNETT LOCK

- INSPECT FOR DAMAGE 1.
- CHECK THAT KEY CANNOT BE WITHDRAWN WITHOUT OBTAINING RELEASE 2.

ANNETT KEY

3. INSPECT FOR DAMAGE

INTERLOCKING MECHANISM

- CHECK OPERATION OF MECHANISM 4.
- LUBRICATE MOVING PARTS 5.

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1.
- 2. ENSURE THAT THE RELEASING SWITCH OPERATES CORRECTLY
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY 5.



RELEASING SWITCH

SERVICE SCHEDULE / STANDARD JOB S06613

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- PERFORM PRE-WORK SAFETY BRIEF 4.

MAINTENANCE ACTION:

TEST LOCKING

(REF ESM-05-01)

- TEST ANNETT LOCK FACE TO GAUGE 1.
- TEST ANNETT KEY TO GAUGE 2.

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1
- 2. ENSURE THAT THE RELEASING SWITCH OPERATES CORRECTLY
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNALLING TECHNICAL MAINTENANCE PLANS RELEASING SWITCH FORTRESS TYPE SERVICE SCHEDULE / STANDARD JOB S06621

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

RELEASING SWITCH CASE

- 1. INSPECT FOR DAMAGE OR ENVIRONMENTAL CONTAMINATION
- 2. CHECK THE SEAL FOR THE ENCLOSURE DOOR
- 3. CHECK THE SECURITY OF THE DOOR I.E. HASP, STAPPLE AND PAD LOCK
- 4. CHECK THAT DOOR AND HANDLE INTERLOCK IS EFFECTIVE

PUSHBUTTON

5. CHECK OPERATION OF PUSH BUTTON RELEASE

FORTRESS LOCK

- 6. INSPECT FOR DAMAGE
- 7. CHECK THAT KEY CANNOT BE WITHDRAWN WITHOUT OBTAINING RELEASE

FORTRESS KEY

- 8. VISUAL INSPECTION AND CHECK FOR DAMAGE
- 9. LUBRICATE THE KEY WITH GRAPHITE POWDER AS REQUIRED I.E. ONLY IF IT IS FOUND TO BE BINDING

INTERLOCKING MECHANISM

- 10. CHECK OPERATION OF MECHANISM AND INSPECT FOR DAMAGE
- 11. CHECK SECURITY OF MECHANISM FASTENINGS

POST AND MOUNTING

12. CHECK THE CONDITION AND SECURITY OF THE POST AND MOUNTINGS

PHONE (WHERE FITTED)

13. PERFORM RELEVANT SS/SJ FOR SIGNAL PHONE – MAGNETO OR COMMON BATTERY TYPE AS APPROPRIATE

GENERAL

- 14. OBTAIN RELEASE AND CHECK OPERATION OF RELEASING SWITCH AND RELEASING LED/LAMP. ENSURE THAT KEY DOES NOT GET RELEASE WITHOUT REEASE BEING GRANTED BY CONTROLLER.
- 15. CHECK OPERATION OF RELEASING SWITCH TO REVERSE POSITION
- 16. CHECK CONDITION OF ELECTRICAL CONNECTIONS AND WIRING
- 17. CHECK THAT DETECTION IS BROKEN WITH THE RELEASE TAKEN (USE MULTIMETER)

NOTE 1:DO NOT APPLY GRAPHITE LUBRICANT INSIDE THE MECHANISM

NOTE 2: DO NOT LUBRICATE THE STAINLESS STEEL HINGES

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE RELEASING SWITCH OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



RELEASING SWITCH FORTRESS

SERVICE SCHEDULE / STANDARD JOB S06622

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

TEST LOCKING

(REF ESM-25-01)

- 1. TEST FORTRESS LOCK FACE TO GAUGE
- 2. TEST FORTRESS KEY TO GAUGE

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE RELEASING SWITCH OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POINTS SWITCHLOCK WESTINGHOUSE

SERVICE SCHEDULE / STANDARD JOB S06631

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTEANCE ACTIONS: (REFERENCE: ESM-06-01 AND MANUFACTURER'S MANUAL)

PERFORM S0601L IN CONJUNCTION WITH THIS SERVICE

- 1. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT
- 2. VISUAL INSPECTION OF FIXING, BOLTS AND CHECK FOR TIGHTNESS OF FASTENERS ETC.
- 3. LUBRICATION OF CHAIRS, PIVOT POINTS AND MECHANISM
- 4. CHECK THE BLADES ARE CLOSING CORRECTLY AGAINST STOCK RAIL AND PERFORM ANY ADJUSTMENT IF REQUIRED
- 5. CHECK THE INDICATOR WORKS CORRECTLY
- 6. INSPECT RODDING RUN FOR SERIOUS DEGRADATION BY RUST, DAMAGE OR OBSTRUCTIONS
- 7. INSPECT POINT STRETCHER BAR AND CLIPS FOR WEAR AND DAMAGE

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE RELEASING SWITCH OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POINTS SWITCHLOCK WESTINGHOUSE

SERVICE SCHEDULE / STANDARD JOB S06632

PREPARATION ACTION:

- ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 1.
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- PERFORM PRE-WORK SAFETY BRIEF 4.

MAINTEANCE ACTIONS (REFERENCE: ESM-06-01 AND MANUFACTURER'S MANUALS)

PERFORM S06631 IN CONJUCTION WITH THIS SERVICE

- 1. PEROFRM DETAILED VISUAL INSPECTION OF SWITCHLOCK FOR ANY DAMAGE INCLUDING RODDING, STOCKRAIL.
- 2. INSPECT THE CONDITION AND CLEAN CONTATCTS OF DETECTION AS REQUIRED
- 3. INSPECT DETECTOR DRIVE AND CONNECTING LINKAGES FOR WEAR
- 4. TEST AND ADJUSTMENT OF DETECTOR AS REQUIRED
- 5. PERFORM FUNCTION TEST FOR CORRECT OPERATION OF SWITCHLOCK AND DETECTION.

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1.
- 2. ENSURE THAT THE RELEASING SWITCH OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POINTS SWITCHLOCK WESTINGHOUSE HLM

SERVICE SCHEDULE / STANDARD JOB S06641

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REFERENCE: ESM-06-01 AND MANUFACTURER'S MANUALS)

PERFORM S0601L IN CONJUNCTION WITH THIS SERVICE

- 1. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT
- 2. VISUAL INSPECTION OF FIXING, BOLTS AND CHECK FOR TIGHTNESS OF FASTENERS ETC.
- 3. LUBRICATION OF CHAIRS, PIVOT POINTS AND MECHANISM
- 4. CHECK THE BLADES ARE CLOSING CORRECTLY AGAINST STOCK RAIL AND PERFORM ANY ADJUSTMENT IF REQUIRED
- 5. CHECK THE INDICATOR WORKS CORRECTLY
- 6. INSPECT RODDING RUN FOR SERIOUS DEGRADATION BY RUST, DAMAGE OR OBSTRUCTIONS
- 7. INSPECT POINT STRETCHER BAR AND CLIPS FOR WEAR AND DAMAGE

HLM UNITS:

- 8. LUBRICATE THE HLM
- 9. CHECK AND ADJUST THE DETECTION
- 10. CHECK AND ADJUST LOCK
- 11. CHECK CONDITION OF SWITCH CONTACTS AND REPLACED SWITCHES IF NECESSARY

- 1. SOILED RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE RELEASING SWITCH OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES RAGS, PAPERS, ETC APPROPRIATELY



POINTS SWITCHLOCK WESTINGHOUSE HLM

SERVICE SCHEDULE / STANDARD JOB S06642

PREPARATION ACTION:

- ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 1.
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- PERFORM PRE-WORK SAFETY BRIEF 4.

MAINTNANCE ACTION: (REFERENCE MANUFACTURER'S MANUAL)

PERFORM S06641 IN CONJUCTION WITH THIS SERVICE

- 1. PEROFRM DETAILED VISUAL INSPECTION OF SWITCHLOCK AND HLM FOR ANY DAMAGE.
- 2. INSPECT THE CONDITION AND CLEAN CONTATCTS OF DETECTION AS REQUIRED
- 3. INSPECT DETECTOR DRIVE AND CONNECTING LINKAGES FOR WEAR
- 4. TEST AND ADJUSTMENT OF DETECTOR AS REQUIRED
- 5. PERFORM FUNCTION TEST FOR CORRECT OPERATION OF SWITCHLOCK AND HLM.

- SOILED RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1
- 2. ENSURE THAT THE RELEASING SWITCH OPERATES CORRECTLY
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- DISPOSE OF ALL COMPONENTS, BATTERIES RAGS, PAPERS, ETC APPROPRIATELY 5.


POINTS UNISTAR HR

SERVICE SCHEDULE / STANDARD JOB S06711

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REFERENCE: MANUFACTURER'S MANUALS) PERFORM S0601L IN CONJUNCTION WITH THIS SERVICE

POINTS:

REFER MANUFACTUIRER'S MANUAL FOR ALL MAINTENANCE TASK AS REQUIRED

VISUAL INSPECTION:

- 1. INSPECT THE TURNOUT AND POINT MACHINE LABEL.
- 2. INSPECT THE DRIVE AND DETECTOR RODS FOR CLEANLINESS AND MECHANICAL DAMAGE. DRIVE AND DETECTOR RODS ARE NOT TO BE LUBRICATED
- 3. INSPECT CONNECTING PARTS FOR VISIBLE DAMAGE OR ABRASION.
- 4. INSPECT THE MACHINE IS DRY AND CLEAN INSIDE
- 5. CHECK FOR VISIBLE DAMAGE ON MECHANICAL PARTS
- 6. CHECK AND NOTICE ANY ABNORMAL NOISE DURING SWITCHING OF THE MACHINE
- 7. CHECK THE CLOSURE OF THE COVER FOR DLD UNIT, HYDRAULIC UNIT AND MANUAL HYDRAULIC PUMP.
- 8. CHECK SECURITY OF THE POWER CABLE AND TIGHTNESS OF THE CABLE ENTRY
- 9. CHECK TIGHTNESS OF THE CONNECTING CABLES AT THE DLD-UNIT AND HYDRAULIC UNIT.
- 10. CHECK THE CORRECT WORKING OF THE INTEGRATED PRESSURE HEADS (COMPENSATOR) ON THE CONNECTING PARTS.
- 11. CHECK WHETHER MANUAL HYDRAULIC PUMP IS SWITCHING IN BOTH DIRECTION SMOOTHLY AND EFFICIENTLY.
- 12. CHECK ALL PAINT SAFETY INDICATORS IN DLD AND HYDRAULIC UNITS ARE CORRECTLY INSTALLED AS PER MANUAL.
- 13. CHECK CABLES AND HYDRAULIC HOSES FOR DAMAGE AND ARE NOT LYING AGAINST ANY MOVABLE PARTS OR COVER. CHECK FIXING OF THE CABLES AND HOSES.
- 14. CHECK ALL CONNECTING PARTS AND SWITCH BOLTS ARE CORRECTLY MOUNTED AND FIXED.
- 15. INSPECT THE TURNOUT FOR BUILD UP OF BALLAST & FOREIGN MATERIAL THAT MAY OBSTRUCT THE SWITCH RAIL, SWING NOSE & POINT RODDING. REMOVE AS NECESSARY
- 16. INSPECT CONDITION OF THE RAIL CHAIRS & TIES (FASTENERS) CHECKING FOR BROKEN OR LOOSE COMPONENTS.
- 17. FOR CONVENTIONAL SWITCHES EXAMINE FOR LOOSE OR BROKEN STOCK RAIL TO RAIL CHAIR FASTENERS (SWITCH STUDS)



- 18. INSPECT CONDITION OF THE POINT BEARERS (TIMBERS) & FASTENERS SECURED
- 19. INSPECT THE STOCK RAIL / WING RAIL/ POINT RAIL GAUGE FACE FOR RAIL HEAD OVERFLOW GREATER THAN 1.5MM ADJACENT TO THE SWITCH
- 20. INSPECT STOCK RAIL FOR LATERAL OR LONGITUDINAL MOVEMENT (EXCEEDING 15MM)
- 21. CHECK FOR EVIDENCE OF EXCESSIVE PUMPING OF THE TURNOUT / SWING NOSE UNDER TRAIN LOAD
- 22. CHECK THE "TOP" ALIGNMENT OF THE TURNOUT / SWING NOSE TO ENSURE THERE IS NO EXCESSIVE DIP OR HOLLOW
- 23. INSPECT SWITCH FOR DAMAGE ESPECIALLY THE TIP & OVERFLOW OF THE HEAD 400 TO 1000MM FROM THE TIP
- 24. CHECK FIT OF SWITCH TO STOCKRAIL RECTIFY OR RECORD DEFECT VISUAL EXAMINATION / REPORT CONDITION TO CIVIL
- 25. INSPECT FOR LOOSE OR BROKEN TIE PLATE TO RAIL BRACE FASTENERS, RETENSION OR RENEW AS NECESSARY
- 26. CHECK THE SWITCH RAIL TO RAIL CHAIR SEAT CLEARANCE, IF EXCESSIVE OR INSUFFICIENT THE SWITCH ROLLER TENSION MAY BE ADJUSTED TO ACHIEVE THE CORRECT CLEARANCE AS PER MANUFACTURER MANUAL (APPLIES TO SWITCHES FITTED WITH SWITCH ROLLERS ONLY)
- 27. CHECK THE SWITCH IS BEARING & SLIDING EVENLY ON ALL RAIL SLIDE CHAIRS, REPORT TO CIVIL IF MORE THAN HALF ARE NOT BEARING CORRECTLY (APPLIES TO SWITCHES NOT FITTED WITH ROLLERS)
- 28. CHECK THE SECURITY OF THE SWITCH ROLLER (WHERE FITTED) MOUNTINGS, RETENSION OR RENEW FASTENINGS AS NECESSARY19. CHECK SWITCH OPENING AT THE TIP AND FLANGEWAY CLEARANCE AT THE BACK OF THE SWITCH RAIL

DRIVE, LOCKING AND DETECTION UNIT:

- 29. CHECK WHETHER DLD UNITS IS SECURELY FIXED
- 30. INSERT A 2MM GAUGE BETWEEN THE SWITCH RAIL AND STOCK RAIL. ENSURE THAT DRIVE ROD COMPLETE ITS STROKE AND MACHINE GETS LOCKED. IF MACHINE DOES NOT LOCK REPAIR OR REPLACE AS REQUIRED.
- 31. INSERT A 3.25MM GAUGE BETWEEN THE SWITCH RAIL AND STOCK RAIL. ENSURE THAT DRIVE ROD DOES NOT COMPLETE ITS STROKE AND MACHINE DOES NOT GETS LOCKED. IF MACHINE DOES LOCK REPAIR OR REPLACE AS REQUIRED.
- 32. CHECK THE DETECTOR BAR ADJUSTMENT IS ALIGNED WITH THE CENTRE WITNESS MARK. ADJUST AS REQUIRED.
- 33. CHECK THE OVERLAPPING OF THE PRISMS IN THE CORRESPONDING END POSITION. CHECK THE CUP SPRING PACKAGES FOR THE SELF-HOLDING LOCKING OF THE LOCKING PLATE.
- 34. CHECK THE FLANGEWAY CLEARANCE AT THE SWITCH AND AT THE BACK DRIVE IF INSTALLED.
- 35. TEST THE TENSION SPRING FOR THE DETECTION BAR IS FUNCTIONAL.

HYDRAULIC- UNIT:

- 36. CHECK THE OIL LEVEL THROUGH OIL SIGHT GLASS ON THE SIDE OF THE TANK (MAX LEVEL OF OIL IS THE MIDDLE OF THE SIGHT GLASS)
- 37. CHECK ALL HYDRAULIC CONNECTIONS ARE DRY AND FREE OF OIL.
- 38. CHECK THAT HYDRAULIC UNIT CLEAN AND DRY INSIDE.
- 39. VISIBLE CHECK OF THE HOSES IN THE CONNECTION TRAY AND CHANNEL



HAND OPERATION:

40. CHECK THE CUT-OFF SWITCH OPERATION IS EFFECTIVE OR NOT.

41. ACCESS THE LEVEL FROM THE POINT MACHINE AND OPERATE THE PUMP MANUALLY AND ENSURE SMOOTH OPERATION OF THE POINT.

TRACK CIRCUIT PARALLEL BONDING

42. INSPECT THE CONDITION OF ANY PARALLEL BONDING ON THE TURNOUT

PUSH BUTTON

- 43. CHECK ADJUSTMENT OF PUSH BUTTON/SWITCH CONTACTS AND EXAMINE FOR WEAR / DAMAGE /CORROSION (WHERE FITTED)
- 44. EXAMINE POST STRUCTURE AND BASE FOR DAMAGE, CORROSION, EROSION, SURROUNDING GROUND HOLES AND UNDERMINING OF THE BASE

GENERAL

45. CLEAR ALL FOREIGN MATERIAL WHICH MAY OBSTRUCT POINT MOVEMENT

46. LUBRICATE MACHINE RODS AND CHAIRS AS REQUIRED

REINSTATEMENT ACTION:

- 6. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 7. ENSURE THAT THE POINTS & ASSOCIATED EQUIPMENT OPERATE CORRECTLY
- 8. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 9. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 10. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POINTS UNISTAR HR

SERVICE SCHEDULE / STANDARD JOB S06712

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REFERENCE: MANUFACTURER'S MANUALS)

PERFORM S06711 IN CONJUNCTION WITH THIS SERVICE

POINTS:

REFER UNISTAR MANUAL FOR ALL MAINTENANCE TASK AS REQUIRED

DRIVE, LOCKING AND DETECTION UNIT:

1. CLEAN AND LIGHTLY LUBRICATE HEAD OF DETECTOR BAR, LOCKING PLATE, PRISMS AND THE GUIDANCE OF THE BAR CONTROLLER

HYDRAULIC- UNIT:

- 2. CHECK THE HYDRAULIC PRESSURE OF THE POINT MACHINE. IT SHOULD BE 55 ± 5 BAR. IF NOT ADJUST THE PRESSURE AS REQUIRED AS PER MANUFACTURER'S MANUAL. NOTE DOWN THE ACTION PERFORMED.
- 3. OPEN THE OVERPRESSURE VALVES BY BLOCKING OF THE ACTUATION? (NO OIL LEAKS SHOULD BE VISIBLE)

EOL MECHANISM & ENCLOSURE (WHERE FITTED)

4. INSPECT CONDITION OF THE EOL MECHANISM & KEY & MOTOR INDEX FOR CORRECT OPERATION OF THE INTERLOCKING MECHANISM, FIT & EXCESSIVE WEAR OF THE LOCKING COMPONENTS & WARDS & WARD PINS, REPLACE AS NECESSARY

5. CHECK POINT IDENTIFICATION NUMBER FITTED TO THE DOOR IS SECURE AND CLEARLY VISIBLE

6. CHECK POINT LAYOUT DIAGRAM AND DETECTOR LIGHTS ARE CLEARLY VISIBLE AND OPERATIONAL (WHERE FITTED)

7. CHECK WIND "N" POINT ENDS SIGN IS FITTED AND CLEARLY VISIBLE

8. CLEAN ENCLOSURE, ENSURE SEALS AND SECURITY DEVICES ARE SERVICEABLE

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINTS & ASSOCIATED EQUIPMENT OPERATE CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

ARTC

SIGNALLING TECHNICAL MAINTENANCE PLANS
TRACK CIRCUITS D.C
SERVICE SCHEDULE / STANDARD JOB S07011
PREPARATION ACTION: 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 4. PERFORM PRE-WORK SAFETY BRIEF
MAINTENANCE ACTION:
TRACK RELAY (REF ESM-05-11, ESM-07-02 AND ESM-07-04)
2. PERFORM VISUAL NSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED INCLDUING FOREIGH MATERIAL LIKE ANTS ETC:
3. DC SHELF – S05021
4. MINATURE PLUG IN – S05031
5. LARGE PLUG IN – S05041
6. CHECK AND RECORD RELAY INPUT VOLTS
BALLAST CONDITION
7. INSPECT GENERAL CONDITION OF BALLAST
INSULATED RAIL JOINT
8. INSPECT CONDITION OF INSULATED JOINTS
9. CHECK FOR FORIEGIN OBJECTS THAT MAY CAUSE SHORT CIRCUIT
TRACK CONNECTIONS
10. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES
11. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT
12. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS
TRACK CIRCUIT
13. TEST TRACK CIRCUIT POLARITY
GENERAL
14. INSPECT CONDITION OF ALL ELECTRICAL CONNECTIONS AND WIRING
15. CHECK FOR RUST / SAND CONTAMINATION ON RAIL 16. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) 17. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE)
REINSTATEMENT ACTION:
RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE

ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER



- 1. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 4. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

ARTC

	SIGNALLING TECHNICAL MAINTENANCE PLANS
	TRACK CIRCUITS D.C
	SERVICE SCHEDULE / STANDARD JOB S07012
PRE	PARATION ACTION:
1.	ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
2.	OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
3.	OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
4.	PERFORM PRE-WORK SAFETY BRIEF
MAI	NTENANCE ACTION:
ΝΟΤ	E: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END
PER	FORM S07011 IN CONJUNCTION WITH THIS SERVICE.
TRA	CK CIRCUIT TESTS (REF ESM-07-02)
1.	TEST TRACK CIRCUIT OPERATING PARAMETERS AS PER TRACK HISTORY CARD AND RECORD (TESTING SHOULD COMMENCE AT TX END)
2.	CARRY OUT A FIXED SHUNT TEST AT ALL EXTREMITIES AND MID TRACK
3.	TEST TRACK RELAY AND CHECK RELAY VOLTAGE WHEN FEED FUSE REMOVED
4.	CHECK POLARITY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS
5.	TEST LIGHTING PROTECTION AND TEST EARTH
6.	VISUAL EXAMINATION TERMINAL STUDS (TRACKSIDE UNIT)
7.	CHECK CONDITION ALL ELECTRICAL CONNECTIONS
8.	INSPECT TRACK CIRCUIT BALLAST CONDITION
REI	ISTATEMENT ACTION:
RES ADJ ENG THA	ULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT USTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL INEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE T THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS
1.	RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
2.	ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
3.	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
4.	REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
5.	DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



RELAY OVERHAUL

SERVICE SCHEDULE / STANDARD JOB S05013

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4 PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

RELAY CHANGE OUT

1. RELAY OVERHAUL PROGRAMME (UNPROVED SHELF RELAYS ONLY) (REF ESM-05-11)

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3
- REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A 4. CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRACK CIRCUITS WESTRAK / TD4

SERVICE SCHEDULE / STANDARD JOB S07051

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF



MAINTENANCE ACTION:

REF ESM—05-11,ESM -07-02 AND MANUFACTURER'S MANUALS)

TRACK RELAY

- 2. PERFORM VISUAL INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED INCLDUING INSPECT FOR VISULA DAMAGE AND SIGNS OF VERMIN DAMANGE.
- 3. DC SHELF S05021
- 4. MINATURE PLUG IN S05031
- 5. LARGE PLUG IN S05041
- 6. CHECK AND RECORD RELAY INPUT VOLTS

BALLAST CONDITION

7. INSPECT GENERAL CONDITION OF BALLAST

INSULATED RAIL JOINT

- 8. INSPECT CONDITION OF INSULATED JOINTS
- 9. CHECK FOR FORIEGIN OBJECTS THAT MAY CAUSE SHORT CIRCUIT

TRACK CONNECTIONS

- 10. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES
- 11. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT
- 12. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS
- 13. TRACK CAPACITOR
- 14. INSPECT FOR DAMAGE TO CAPACITOR UNIT
- 15. INSPECT CAPACITOR LEADS TO ENSURE NO DAMAGE IS PRESENT
- 16. INSPECT CAPACITOR RAIL CONNECTIONS HAVE NIL DEFECTS AND ARE TIGHT AND SECURE.

TRACK CIRCUIT

17. TEST TRACK CIRCUIT POLARITY

GENERAL

- 18. INSPECT CONDITION OF ALL ELECTRICAL CONNECTIONS AND WIRING
- 19. CHECK FOR RUST / SAND CONTAMINATION ON RAIL
- 20. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS)
- 21. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE)

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS **TRACK CIRCUITS WESTRAK / TD4** SERVICE SCHEDULE / STANDARD JOB S07052 **PREPARATION ACTION:** 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 2. 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 4. PERFORM PRE-WORK SAFETY BRIEF **MAINTENANCE ACTION:** NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END PERFORM S07051 IN CONJUNCTION WITH THIS SERVICE. **TRACK CIRCUIT TESTS** (REF ESM-07-02) 1. TEST TRACK CIRCUIT OPERATING PARAMETERS AS PER TRACK HISTORY CARD AND RECORD (TESTING SHOULD COMMENCE AT TX END) 2. CARRY OUT A FIXED SHUNT TEST AT ALL EXTREMITIES AND MID TRACK 3. TEST TRACK RELAY AND CHECK RELAY VOLTAGE WHEN FEED FUSE REMOVED 4. CHECK POLARITY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS 5. TEST LIGHTING PROTECTION AND TEST EARTH VISUAL EXAMINATION TERMINAL STUDS (TRACKSIDE UNIT) 6. 7. CHECK CONDITION ALL ELECTRICAL CONNECTIONS INSPECT TRACK CIRCUIT BALLAST CONDITION 8. **REINSTATEMENT ACTION:**

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



	SIGNALLING TECHNICAL MAINTENANCE PLAN		
	TRACK CIRCUITS JEUMONT SINGLE RAIL (ALSO APPLIES TO DOUBLE RAIL VERSION)		
	SERVICE SCHEDULE / STANDARD JOB SX7111		
PRE	PARATION ACTION:		
1.	ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK		
2.	OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT		
3.	OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES		
4.	PERFORM PRE-WORK SAFETY BRIEF		
MAI	NTENANCE ACTION: REF MANUAL ESM-07-02, ESM-05-11 & SMS 11)		
REC	EIVER		
1.	CHECK AND RECORD RX INPUT VOLTS		
2.	INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE		
TRA	ANSMITTER		
3.	INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE		
POV			
4.	INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE		
BAL	LAST CONDITION (RX & TX ENDS)		
5.	INSPECT BALLAST CONDITION - INVESTIGATE TO DETERMINE THE EXTENT OF ANY UNSATISFACTORY		
	CONDITION & REPORT TO THE WORK GROUP LEADER & TEAM MANAGER, SIGNS OF BALLAST		
	RECONDITIONING SHOULD TRIGGER A FULL PARAMETER TEST TO ENSURE THE TRACK IS NOT OVER		
	ENERGISED		
INSU	JLATED RAIL JOINT (RX & TX ENDS)		
6.	INSPECT CONDITION OF INSULATED JOINTS		
7.	CHECK FOR FORIEGIN OBJECTS THAT MAY CAUSE SHORT CIRCUIT		
TRA	CK CONNECTIONS (RX & TX ENDS)		
8.	INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES		
9.	INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT		
10.	INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS		
TRA	CK CIRCUIT (RX & TX ENDS)		
11.	CHECK FOR RUST / SAND CONTAMINATION ON RAIL (PARTICULARLY SIDING WHERE APPLICABLE)		
MAT	ICHING TRANSFORMER		
12.	INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE		
13.	CHECK AND RECORD TRACK VOLTAGE		
14.	DUST / CLEAN ENCLOSURE, CHECK SECURITY AND TREAT FOR VERMIN AS NECESSARY		
15.	CHECK HOUSING CONDITION AND SECURITY		
16.	CHECK FOR VERMIN AND TREAT AS NECESSARY		
17.	CHECK CONDITION OF SURGE LIGHTING PROTECTION EQUIMENT & EARTHING & TEST THE ARRESTOR		
REL	AY		
18.	CHECK FOR ANY DAMAGE TO THE RELAY CONTACTS, PIGTAILS AND TERMINALS, WIRING OR RELAY HOUSING AND GLASS		
19.	CHECK FOR ANY EVIDENCE OF OVERHEATING, SUCH AS BURNING OR SMOKING, FROM THE RELAY OR CONNECTED WIRING		
20.	CHECK FOR ANY EVIDENCE OF PLASTIC COVER FOULING CONTACT ASSEMBLY AND CONTACT ASSEMBLY MISALIGNMENT		
21.	ENSURE THAT ALL CIRCLIPS AND SPLIT PINTS ARE SECURE		
22.	CHECK FOR ACCUMULATION OF PARTICULATE, SUCH AS DIRT, ON THE RELAY TOP. CLEAN AS REQUIRED		
23.	CHECK THE TIGHTNESS OF RELAY TERMINALS		



- 24. VISUALLY INSPECT THE MONITOR OPERATION OF THE RELAY ENERGISED AND DE-ENERGISED AND ENSURE CLEAN PICK AND DROP AWAY. THIS SHALL BE DONE BY VISUALLY INSPECTING CONTACTS AND NOTING ANY DAMAGE, DEPOSIT OR EROSION VISIBLE.
- 25. CHECK FOR ANY EVIDENCE OF DETERIORATION OF COMPONENT PLATING AND FOREGN PARTICLES INSIDE THE RELAY CASE
- 26. TEST AND CHECK RELAY FOR CONTACT LIFT FOR A GAP BETWEEN THE CONTACT AND CONTACT **KEEPER**
- 27. IF THERE IS HEAVY WEAR (HOLE IN THE CARBON CONTACT) AND DAG ON SILVER CONTACT OR DAG ON SILVER CONTACT WITH NO CONTACT LIFT, PLEASE REPLACE THE RELAYS.
- 28. IF THERE IS A SIGN OF WEAR MEDIUM WEAT AND THERE IS DAG ON THE SILVER CONTACT WITH THE CONTACT LIFT, SIGNAL ENGINER SHOULD BE NOTIFIED FOR FURTHER REVIEW AND POSSIBLE REPLACEMENT AS REQUIRED.

29. .

RAILS

30. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) (REFER ESM-07-02 & ESM-07-04)

31. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE)

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A 4 CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

ARTC

SIGNALLING TECHNICAL MAINTENANCE PLANS

TRAIN DETECTION HVI

SERVICE SCHEDULE / STANDARD JOB SX7112

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END PERFORM S07111 IN CONJUNCTION WITH THIS SERVICE

TRACK CIRCUIT TESTS

(REF ESM-07-02 & SMS 11)

- 1. TEST TRACK CIRCUIT OPERATING PARAMETERS (TESTING SHOULD COMMENCE AT TX END)
- 2. CARRY OUT A FIXED SHUNT TEST AT ALL EXTREMETIES ESPECIALLY CLEARANCE POINTS
- 3. TEST TRACK RELAY AND CHECK RELAY VOLTAGE WHEN FEED FUSE REMOVED (ZERO FEED TEST)

TRACK CIRCUIT INSPECTION TASKS

- 4. EXAMIN CONDITION OF TERMINAL STUDS (TRACKSIDE UNIT)
- 5. CHECK CONDITION ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS
- 6. INSPECT TRACK CIRCUIT BALLAST CONDITION FOR FULL LENGTH OF TRACK CIRCUIT
- 7. CHECK TRACK CIRCUIT INSULATION ALONG THE FULL LENGTH OF ANY BRIDGE STRUCTURES LOCATED ALONG THE LENGTH OF THE TRACK CIRCUIT

REINSTATEMENT ACTION:

RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS

1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER



- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

PREPARATION ACTION: ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT OBSERVE THE APPOPRIATE NETWORK RULES AND PROCEDURES PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: OTTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END TRACK CIRCUIT PARAMETERS (REF MANUAL ESM-07-02, ESM-07-04 AND ESM-05-11) (DECK AND RECORD VOLTAGE ON RELAY CONTROL COILS (CHECK POLARITY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS TRANSFORMER (NEPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR (NSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONNECTIONS TO TAILS AND CONDITION OF CABLES (NSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES (NSPECT CONNECTIONS TO RAILS AND SLEEPERS TRACK INSULATED JOINTS (NSPECT CONNECTIONS TO RAILS AND SLEEPERS TRACK INSULATED JOINTS (NSPECT CONDITION OF INSULATED JOINTS (NSPECT CONNITIAL FOREING SHORT CIRCUITS ON TRACK CIRCUIT (NSPECT CONDITION OF BALLAST (NSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT (NSPECT CONDITION OF BALLAST (NSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT (NSPECT CONDITION OF BALLAST (NSPECT CONDITION OF BALLAST (NSPECT CONDITION OF BALLAST (NSPECT CONDITION OF THE FOLLOWING RELAYS WHERE INSTALLED: (NSPECT CONDITIO	SIGNALLING TECHNICAL MAINTENANCE PLANS			
SERVICE SCHEDULE / STANDARD JOB S07211 PREPARATION ACTION: ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK BOSSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT BOSSERVE THE REPORTRATE NETWORK RULES AND PROCEDURES PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END TRACK CIRCUIT PARAMETERS (REF MANUAL ESM-07-02, ESM-07-04 AND ESM-05-11) CHECK AND RECORD VOLTAGE ON RELAY CONTROL COILS CHECK ONDERTIFY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS TRANSFORMER INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONCETIONS INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONNECTIONS INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT INSPECT CONDICTION OF INSULATED JOINTS INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FORE ON TRACK CIRCUIT SON TRACK CIRCUIT INSPECT CONDITION OF LALLAST TRACK BELLAST TRACK BELLAST TRACK ARELY INTER FOR MINATEMENT FOR UNACCONTAMINATION (PARTICULARLY SIDINGS)	TRAIN DETECTION AC			
PREPARATION ACTION: ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES PREPORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END TRACK CIRCUIT PARAMETERS (REF MAINUALESM-07-02, ESM-07-04 AND ESM-05-11) (CHECK AND RECORD VOLTAGE ON RELAY CONTROL COLIS (CHECK POLARITY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS TRANSFORMER I. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR I. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONNECTIONS I. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES I. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES I. INSPECT CONNECTIONS TO RAILS AND SLEEPERS TRACK INSULATION/BONDING I. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR ODENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR DOTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR DOTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR DOTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR DOTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR DOTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR DOTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR DOTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR DOTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR DOTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT I. INSPECT FOR TONTON OF BALLAST I. INSPECT TRAC CONDITION OF BALLAST I. INSPECT FOR TRACK CIRCU				
PREPARATION ACTION: 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 3. OBSERVE THE APPORPHATE NETWORK RULES AND PROCEDURES 4. PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END TRACK CIRCUIT PARAMETERS (REF MANUAL ESM-07-02, ESM-07-04 AND ESM-06-11) (CHECK AND RECORD VOLTAGE ON RELAY CONTROL COILS 2. CHECK POLARITY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS TRANSFORMER 3. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR 4. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR 5. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONNECTIONS TO RAILS AND CONDITION OF CABLES 6. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES 6. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES 6. INSPECT CONDICTION OF INSULATED JOINTS 9. INSPECT CONDICTION OF INSULATED JOINTS 9. INSPECT CONDITION OF INSULATED JOINTS 9. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 10. INSPECT CONDITION OF BONDING 12. INSPECT CONDITION OF BONDING 13. INSPECT CONDITION OF BONDING 14. INSPECT CONDITION OF BONDING 15. INSPECT CONDITION OF BONDING (WHERE APPLICABLE). BALLAST CONDITION OF BONDING (WHERE APPLICABLE). BALLAST CONDITION OF LIGHTNING PROTECTION EQUIPMENT 16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT 17. TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINATURE PLUG IN- 20. LARGE THAT THE TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT 20. JARGE PLUG IN- 20. LARGE THAT THE TRACK CIRCUIT OPERATES F	SERVICE SCHEDULE / STANDARD JOB S0/211			
 ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT OBSERVE THE APPORPRIATE NETWORK RULES AND PROCEDURES PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END TRACK CIRCUIT PARAMETERS (REF MANUAL ESM-07-02, ESM-07-04 AND ESM-05-11) CHECK AND RECORD VOLTAGE ON RELAY CONTROL COLIS CHECK POLARITY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS TRANSFORMER INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT INSPECT CONDICTIONS TO TRACKSIDE EQUIPMENT INSPECT CONDICTIONS TO TRACKSIDE EQUIPMENT INSPECT CONDICTION OF INSULATED JOINTS INSPECT CONDITION OF ENSULATED JOINTS INSPECT CONDITION OF ENSULATED JOINTS INSPECT CONDITION OF ENDING INSPECT CONDITION OF BONDING INSPECT CONDITION OF BONDING INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS INSPECT CONDITION OF BONDING (WHERE APPLICABLE). BALLAST CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK CANTON RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELY INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELY TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ANSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELY TRACK CIRCU				
1. JADIDE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 4. PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END TRACK CIRCUIT PARAMETERS (REF MANUAL ESM-07-02, ESM-07-04 AND ESM-05-11) 1. CHECK AND RECORD VOLTAGE ON RELAY CONTROL COILS 2. CHECK POLARITY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS TRANSFORMER 3. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR 4. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONNECTIONS TO RAILS AND CONDITION OF CABLES 5. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES 5. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT 7. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT 7. INSPECT CONDECTIONS TO TRACKSIDE EQUIPMENT 7. INSPECT CONDITION OF INSULATED JOINTS 9. INSPECT CONDITION OF BONDING 12. INSPECT CONDITION OF BONDING 13. INSPECT CONDITION OF BONDING 14. INSPECT CONDITION OF BALLAST 74. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 13. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE). 84.LLAST CONDITION 14. INSPECT CONDITION OF BALLAST 74. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT 74. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT 74. CHART OF LIGHTNING PROTECTION EQUIPMENT 74. INSPECT CONDITION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN- 20. LARGE PLUG IN- 21. LARGE PLUG IN- 21. LARGE PLUG IN- 21. LARGE PLUG IN- 22. LARGE PLUG IN- 23. LARGE TOON OF THE FOLLOWING RELAYS WHERE INSTALLED: 14. 15. INSPECT CONDITION OF THE FOLLOWING RELAYS WHERE INSTALLED: 15. 16. 17. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT 74. TRACK RELAY 74. 75. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 16. 17. 18. 19. MINIATURE PLUG IN- 20. LARGE PLUG IN- 20. LARGE PLOG IN TRACK CIRCUIT HISTORY CARDS, TRA				
Observe THE APPROPRIATE NETWORK RULES AND PROCEDURES PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: ONTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END TRACK CIRCUIT PARAMETERS (REF MANUAL ESM-07-02, ESM-07-04 AND ESM-05-11) CHECK AND RECORD VOLTAGE ON RELAY CONTROL COILS CHECK POLARITY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS TRANSFORMER J. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES INSPECT CONNECTIONS TO RAILS AND SLEEPERS TRACK CONNECTIONS TO TRACKSIDE EQUIPMENT INSPECT CONDITION OF INSULATED JOINTS INSPECT CONDITION OF BALLAST INSPECT CONDITION OF BALLAST INSPECT CONDITION OF BALLAST INSPECT CONDITION OF BALLAST RAILS INSPECT CONDITION OF BALLAST INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY I. PERFORM INSPECTION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY I. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY I. INSPECT CONDITION OF BALLAST INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY I. PERFORM INSPECTION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY I. PERFORM INSPECTION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY I. PERFORM INSPECTION OF LIGHTNING RELAYS WHERE INSTALLED: I. INSPECT CONDITION OF LIGHTNING RELAYS WHERE INSTALLED: I. I. MINATURE PLUG IN - LARGE PLUG IN - LARGE PLUG IN - LARGE PLUG IN - LEVICENT ACTIONE ENDINCER AS SOON AS PRACTICABLE AND PROVIDE INSTRUCTIONS HALT THE SIGNA	2 OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT			
 PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: MAINTENANCE ACTION: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END TRACK CIRCUIT PARAMETERS (REF MANUAL ESM-07-02, ESM-07-04 AND ESM-05-11) CHECK AND RECORD VOLTAGE ON RELAY CONTROL COILS CHECK POLARTIY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS TRANSFORMER INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONNECTIONS TO RAILS AND CONDITION OF CABLES INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT INSPECT CABLE FASTEMERS TO RAILS AND SLEEPERS TRACK INSULATION/BONDING INSPECT CONDITION OF INSULATED JOINTS INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT CONDITION OF BONDING INSPECT CONDITION OF BONDING (WHERE APPLICABLE). BALLAST CONDITION OF BALLAST RAILS INSPECT CONDITION OF BALLAST INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY ININIATURE PLUG IN- LAGRE PLUG IN- LAGRE PLUG IN- LAGRE PLUG IN- LAGRE PLUG IN- RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENVESTIGATE AND PROVIDE INSTRUCTIONS RECORD	3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES			
MAINTENANCE ACTION: NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END TRACK CIRCUIT PARAMETERS (REF MANUAL ESM-07-02, ESM-07-04 AND ESM-05-11) 1. CHECK AND RECORD VOLTAGE ON RELAY CONTROL COILS 2. CHECK POLARITY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS TRANSFORMER INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR 4. 4. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONNECTIONS TO RAILS AND CONDITION OF CABLES 6. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES 6. INSPECT CONNECTIONS TO RAILS AND SLEEPERS TRACK INSULATION/BONDING 8. 8. INSPECT CONDITION OF INSULATED JOINTS 9. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 10. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 13. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 14. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 13. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 14. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TACK RELAY TRACK ONDERON 14.	4. PERFORM PRE-WORK SAFETY BRIEF			
NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END TRACK CIRCUIT PARAMETERS (REF MANUAL ESM-07-02, ESM-07-04 AND ESM-05-11) 1. CHECK AND RECORD VOLTAGE ON RELAY CONTROL COILS 2. CHECK POLARITY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS TRANSFORMER 3. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR 4. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONNECTIONS 5. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES 6. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES 7. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT 7. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT 7. INSPECT CONSTONATION OF INSULATED JOINTS 9. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 10. INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT 11. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 12. INSPECT CONDITION OF BONDING 13. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 13. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 13. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 13. INSPECT CONDITION OF BALLAST RALLST CONDITION 14. INSPECT CONDITION OF BALLAST RALS 15. INSPECT CALL CONDITION OF BALLAST RALS 16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PL	MAINTENANCE ACTION:			
TRACK CIRCUIT PARAMETERS (REF MANUAL ESM-07-02, ESM-07-04 AND ESM-05-11) 1. CHECK AND RECORD VOLTAGE ON RELAY CONTROL COILS 2. CHECK POLARITY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS TRANSFORMER 3. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR 4. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONNECTIONS TO RAILS AND CONDITION OF CABLES 5. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT 7. INSPECT CONDITION OF INSULATED JOINTS 9. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 10. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 11. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 11. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 11. INSPECT CONDITION OF BONDING 12. INSPECT TRACT IND NOT BE ONDING (WHERE APPLICABLE). BALLAST CONDITION 14. INSPECT CONDITION OF BALLAST RALIS 15. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION 14. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - <td>NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END</td>	NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END			
 CHECK AND RECORD VOLTAGE ON RELAY CONTROL COILS CHECK POLARITY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS TRANSFORMER INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONNECTIONS INSPECT CONVECTIONS TO RAILS AND CONDITION OF CABLES INSPECT CONVECTIONS TO TRACKSIDE EQUIPMENT INSPECT CONVECTION OF TRACKSIDE EQUIPMENT INSPECT CONDITION OF INSULATED JOINTS INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT CONDITION OF INSULATED JOINTS INSPECT CONDITION OF DATACK SIDE EQUIPMENT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FARTHS ON TRACK CIRCUIT INSPECT CONDITION OF BAULAST INSPECT CONDITION OF DODINIG INSPECT CONDITION OF BODINIG (WHERE APPLICABLE). BALLAST CONDITION INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION INSPECT ROLDITION OF THE FOLLOWING RELAYS WHERE INSTALLED: INSPECT ROLDI TON OF THE FOLLOWING RELAYS WHERE INSTALLED: INSPECT A DIA TOR INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: INSPECT RAIL SURFACES FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL PRINTERMENT ACTION: 	TRACK CIRCUIT PARAMETERS (REF MANUAL ESM-07-02, ESM-07-04 AND ESM-05-11)			
 CHECK POLARTY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS TRANSFORMER INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONNECTIONS INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT INSPECT CONNECTION OF INSULATED JOINTS INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FARTHS ON TRACK CIRCUIT INSPECT CONDITION OF BONDING INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS INSPECT GENERAL CONDITION OF BALLAST RALLAST CONDITION OF BONDING (WHERE APPLICABLE). BALLAST CONDITION OF BALLAST RABLS INSPECT CONDITION OF HEALLAST INSPECT CONDITION OF THE FOLLOWING RELAYS WHERE INSTALLED: INSPECT ON OF THE FOLLOWING RELAYS WHERE INSTALLED: INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: INSPECT CONDITION OF THE FOLLOWING RELAYS WHERE INSTALLED: INSPECT ACTION INSPECT ON OF THE FOLLOWING RELAYS WHERE INSTALLED: INSPECT ADING ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL REINSTATEMENT ACTION: RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL REINSTATEMENT ACTIONE: REORD MAINTENANCE ACTION BY OLOSING OFT THE MST / WORK ORDER RECORD MAINTENANCE ACTION BY OLOSING	1. CHECK AND RECORD VOLTAGE ON RELAY CONTROL COILS			
INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE RESISTOR 4. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONNECTIONS 5. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES 6. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT 7. INSPECT CONDITION OF INSULATED SOLUTION OF CABLES 8. INSPECT CONDITION OF INSULATED JOINTS 9. INSPECT FOR POTENTIAL FARTING SON TRACK CIRCUIT 10. INSPECT FOR POTENTIAL FARTING SON TRACK CIRCUIT 11. INSPECT CONDITION OF BONDING 12. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 13. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION 14. INSPECT GRENERAL CONDITION OF BALLAST RAILS 15. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION 16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - 21. LARGE PLUG IN - 22. LARGE PLUG IN - 23. INSPECT TON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIG	2. CHECK POLARITY REVERSAL BETWEEN ADJACENT LIKE TRACK CIRCUITS			
 INSTECT FOR OVERHEATING / THISTOCH / ENVIRONMENTAL DAMAGE INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONNECTIONS INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT INSPECT CONDECTIONS TO TRACKSIDE EQUIPMENT INSPECT CONDITION OF INSULATED JOINTS INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT CONDITION OF INSULATED JOINTS INSPECT CONDITION OF BONDING INSPECT CONDITION OF BONDING INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS INSPECT GENERAL CONDITION OF BALLAST RALLAST CONDITION INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY INSPECT CONDITION OF THE FOLLOWING RELAYS WHERE INSTALLED: IARGE PLUG IN - LARGE PLUG IN - SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS INSTATEMENT ACTION: 	A INSPECTEOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE			
 A. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRACK CONNECTIONS S. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES S. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT T. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS TRACK INSULATION/BONDING 8. INSPECT CONDITION OF INSULATED JOINTS 9. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 10. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 11. INSPECT CONDITION OF BONDING 12. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 13. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION 14. INSPECT CONDITION OF BALLAST RAILS 15. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION 16. INSPECT CONDITION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - 21. LARGE PLUG IN - 22. ENSURE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER INSTALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 11. RECORD MAINTENANCE ACTION BY LOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY	RESISTOR			
TRACK CONNECTIONS 5. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES 6. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT 7. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS TRACK INSULATION/BONDING 8. INSPECT CONDITION OF INSULATED JOINTS 9. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 10. INSPECT CONDITION OF BONDING 12. INSPECT CONDITION OF BONDING 13. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 13. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION 14. INSPECT GENERAL CONDITION OF BALLAST RAILS 15. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - 21. LARGE PLUG IN - 22. LARGE PLUG IN - 23. LARGE PLUG IN - 24. LARGE PLUG IN - 25. INSPECT COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENSITEMENT ACTION: RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL	4. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE			
 5. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES 6. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT 7. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS TRACK INSULATION/BONDING 8. INSPECT CONDITION OF INSULATED JOINTS 9. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 10. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 11. INSPECT CONDITION OF BONDING 12. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 13. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION 14. INSPECT GENERAL CONDITION OF BALLAST RAUS 15. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - REINSTATEMENT ACTION: RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AND INSPECT TO THE SIGNAL ELE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ERAIDINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY	TRACK CONNECTIONS			
 6. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT 7. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS TRACK INSULATION/BONDING 8. INSPECT CONDITION OF INSULATED JOINTS 9. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 10. INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT 11. INSPECT CONDITION OF BONDING 12. INSPECT CONDITION AD TEST CONTINUITY OF PARALLEL BONDS 13. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION 14. INSPECT GENERAL CONDITION OF BALLAST RAILS 15. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - 20. LARGE PLUG IN - 21. LARGE PLUG IN - 22. LARGE PLUG IN - 23. DE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 	5. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES			
 7. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS TRACK INSULATION/BONDING 8. INSPECT CONDITION OF INSULATED JOINTS 9. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 10. INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT 11. INSPECT CONDITION OF BONDING 12. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 13. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION 14. INSPECT GENERAL CONDITION OF BALLAST RAILS 15. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION 16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - 20. LARGE PLUG IN - 20. LARGE PLUG IN - 21. LARGE PLUG IN - 22. LARGE PLUG IN - 23. LARGE PLUG IN - 24. COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY	6. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT			
TRACK INSULATION/BONDING 8. INSPECT CONDITION OF INSULATED JOINTS 9. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 10. INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT 11. INSPECT CONDITION OF BONDING 12. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 13. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION 14. INSPECT GENERAL CONDITION OF BALLAST RAILS 15. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION 16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - 21. LARGE PLUG IN - 22. LARGE PLUG IN - 23. LARGE PLUG IN - 24. LARGE PLUG IN - 25. OR READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER <td>7. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS</td>	7. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS			
 INSPECT CONDITION OF INSULATED JOINTS INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT INSPECT CONDITION OF BONDING INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION INSPECT RACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION INSPECT RACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY INSPECT CONDITION OF THE FOLLOWING RELAYS WHERE INSTALLED: IA. IMINIATURE PLUG IN - LARGE PLUG IN - LARGE PLUG IN - LARGE PLUG IN - DISTATEMENT ACTION: REINSTATEMENT ACTION: RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 	TRACK INSULATION/BONDING			
 INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT INSPECT CONDITION OF BONDING INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION INSPECT RACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION INSPECT RALL CONDITION OF BALLAST RAILS INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY IP PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: IA MINIATURE PLUG IN - LARGE PLUG IN - LARGE PLUG IN - AUGUMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 	8. INSPECT CONDITION OF INSULATED JOINTS			
 11. INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT 11. INSPECT CONDITION OF BONDING 12. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 13. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION 14. INSPECT GENERAL CONDITION OF BALLAST RAILS 15. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION 16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 	9. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT			
 INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION INSPECT GENERAL CONDITION OF BALLAST RAILS INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: IB. IMINIATURE PLUG IN - LARGE PLUG IN - LARGE PLUG IN - RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 	11 INSPECT CONDITION OF BONDING			
 INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE). BALLAST CONDITION INSPECT GENERAL CONDITION OF BALLAST RAILS 	12. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS			
BALLAST CONDITION 14. INSPECT GENERAL CONDITION OF BALLAST RAILS 15. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION 16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - 20. LARGE PLUG IN - 21. COMPENSATE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY	13. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE).			
BALLAST CONDITION 14. INSPECT GENERAL CONDITION OF BALLAST RAILS 15. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION 16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - 20. LARGE PLUG IN - RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY				
 14. INSPECT GENERAL CONDITION OF BALLAST RAILS 15. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION 16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - 20. LARGE PLUG IN - RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 	BALLAST CONDITION			
 15. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION 16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - 20. LARGE PLUG IN - RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 	14. INSPECT GENERAL CONDITION OF BALLAST RAILS			
LIGHTNING PROTECTION 16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - 20. LARGE PLUG IN - RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY	15 INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS)			
 16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 	LIGHTNING PROTECTION			
 TRACK RELAY 17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - 20. LARGE PLUG IN - RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 	16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT			
 PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED: 18. MINIATURE PLUG IN - LARGE PLUG IN - REINSTATEMENT ACTION: RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 	TRACK RELAY			
 18. 19. MINIATURE PLUG IN - 20. LARGE PLUG IN - REINSTATEMENT ACTION: RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 	17. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED:			
 MINIATURE PLUG IN - LARGE PLUG IN - REINSTATEMENT ACTION: RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 	18.			
20. LARGE PLUG IN - REINSTATEMENT ACTION: RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY	19. MINIATURE PLUG IN -			
REINSTATEMENT ACTION: RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY	20. LARGE PLUG IN -			
ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY				
ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY	AD JUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL			
 THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 				
 RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 	THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS			
2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY	1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER			
	2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY			
3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE	3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE			
4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A	4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A			
CORRECTIVE ACTION	CORRECTIVE ACTION			
5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY	5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY			



	SIGNALLING TECHNICAL MAINTENANCE PLANS
	TRAIN DETECTION AC
	SERVICE SCHEDULE / STANDARD JOB S07212
PRE	EPARATION ACTION:
1.	ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
2.	OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
3.	OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
4.	PERFORM PRE-WORK SAFETY BRIEF
MAI	NTENANCE ACTION:
NO	E: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END
PEF	RFORM S07211 IN CONJUNCTION WITH THIS SERVICE
TRA	ACK CIRCUIT TESTS (REF ESM-07-02)
1.	TEST TRACK CIRCUIT OPERATING PARAMETERS
2.	CARRY OUT A FIXED SHUNT TEST AT ALL EXTREMITIES
3.	TEST TRACK RELAY AND CHECK RELAY VOLTAGE WHEN FEED FUSE REMOVED
DEI	
ADJ	USTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL
ENC	GINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE
THA	AT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS
1.	RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
2.	ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
3.	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
4.	REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
5.	DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

ARTC

SIGNALLING TECHNICAL MAINTENANCE PLANS TRAIN DETECTION FREQUENCY CSEE SERVICE SCHEDULE / STANDARD JOB SX7311 PREPARATION ACTION: 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 4. PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: (REF SES 06, ESM-07-02 & MANUFACTURER'S MANUALS) NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END POWER SUPPLY 1. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE TRANSMITTER 2. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE MATCHING UNIT 3. INSPECT FOR PHYSICAL / ENVIRONMENTAL DAMAGE **TUNING UNIT** 4. INSPECT FOR PHYSICAL / ENVIRONMENTAL DAMAGE **TRACK CONNECTIONS / BONDING** 5. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES 6. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT 7. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS 8. INSPECT CONDITION OF BONDING 9. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS (WHERE APPLICABLE) 10. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE) **TRACK INSULATION** 11. INSPECT CONDITION OF INSULATED JOINTS (WHERE APPLICABLE) 12. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 13. INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT **BALLAST CONDITION (RX & TX ENDS)** 14. INSPECT BALLAST CONDITION - INVESTIGATE TO DETERMINE THE EXTENT OF ANY UNSATISFACTORY CONDITION & REPORT TO THE WORK GROUP LEADER & TEAM MANAGER, SIGNS OF BALLAST RECONDITIONING SHOULD TRIGGER A FULL PARAMETER TEST TO ENSURE THE TRACK IS NOT OVER ENERGISED RAILS 15. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION 16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT RECEIVER



- 17. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE
- 18. CHECK AND RECORD RECEIVER INPUT VOLTAGE (R1/R2) INVESTIGATE ABNORMAL CHANGES IN VALUES

TRACK RELAY

19. PERFORM INSPECTION OF THE FOLLOWING RELAYS AS ER MINIATURE PLUG IN SJ – S05031 GENERAL

20. INSPECT CONDITION OF ALL ELECTRICAL CONNECTIONS AND WIRING

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION FREQUENCY CSEE

SERVICE SCHEDULE / STANDARD JOB SX7312

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4 PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END

(REF ESM-07-02, SMS 11, SES 06, & MANUFACTURER'S MANUAL)

PERFORM S07311 IN CONJUNCTION WITH THIS SERVICE

TRACK CIRCUIT TESTS

1. TEST TRACK CIRCUIT OPERATING PARAMETERS (TESTING SHOULD COMMENCE AT TX END), INCLUDING A FIXED SHUNT TEST AT ALL EXTREMETIES, MIDPOINT AND ESPECIALLY CLEARANCE POINTS

TRACK CIRCUIT INSPECTION TASKS

- 2. EXAMINE CONDITION OF TERMINAL STUDS (TRACKSIDE UNIT)
- CHECK CONDITION ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS 3.
- CHECK TRACK CIRCUIT INSULATION ALONG THE FULL LENGTH OF ANY BRIDGE STRUCTURES 4 LOCATED ALONG THE LENGTH OF THE TRACK CIRCUIT

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY 2.
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A 4 CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION FREQUENCY ML T121 ANALOG

SERVICE SCHEDULE / STANDARD JOB SX7321

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END

(REF SMS 11,

ESM-07-02 & MANUFACTURER'S MANUAL)

POWER SUPPLY

- 1. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE
- 2. CHECK FRONT PANEL LIGHTS FOR NORMAL INDICATION

TRANSMITTER

3. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE

TUNING UNIT

4. INSPECT FOR PHYSICAL / ENVIRONMENTAL DAMAGE

TRACK CONNECTIONS/BONDING

- 5. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES
- 6. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT
- 7. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS
- 8. INSPECT CONDITION OF BONDING
- 9. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS (WHERE APPLICABLE)
- 10. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE)

TRACK INSULATION

- 11. INSPECT CONDITION OF INSULATED JOINTS (WHERE APPLICABLE)
- 12. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT
- 13. INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT

BALLAST CONDITION (RX & TX ENDS)

14. INSPECT BALLAST CONDITION - INVESTIGATE TO DETERMINE THE EXTENT OF ANY UNSATISFACTORY CONDITION & REPORT TO THE WORK GROUP LEADER & TEAM MANAGER, SIGNS OF BALLAST RECONDITIONING SHOULD TRIGGER A FULL PARAMETER TEST TO ENSURE THE TRACK IS NOT OVER ENERGISED

RAILS



15. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS)

LIGHTNING PROTECTION

16. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT

RECEIVER

- 17. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE
- 18. CHECK AND RECORD RECEIVER INPUT VOLTAGE (R1/R2) INVESTIGATE ABNORMAL CHANGES IN VALUES

TRACK RELAY

19. PERFORM INSPECTION OF THE RELAYS WHERE INSTALLED

GENERAL

20. INSPECT CONDITION OF ALL ELECTRICAL CONNECTIONS AND WIRING

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS
- 3. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY AND RECORDED IN ELLIPSE
- 6. TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS
- 7. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION FREQUENCY ML T121 ANALOG

SERVICE SCHEDULE / STANDARD JOB SX7322

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END

(REF ESM-07-02, SMS 11,

& MANUFACTURER'S

MANUAL)

PERFORM S07321 IN CONJUNCTION WITH THIS SERVICE

TRACK CIRCUIT INSPECTION TASKS

- 1. EXAMINE CONDITION OF TERMINAL STUDS (TRACKSIDE UNIT)
- 2. CHECK CONDITION ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS
- 3. CHECK TRACK CIRCUIT INSULATION ALONG THE FULL LENGTH OF ANY BRIDGE STRUCTURES LOCATED ALONG THE LENGTH OF THE TRACK CIRCUIT

TRACK CIRCUIT TESTS

4. TEST TRACK CIRCUIT OPERATING PARAMETERS (TESTING SHOULD COMMENCE AT TX END), INCLUDING A FIXED SHUNT TEST AT ALL EXTREMITIES, MIDPOINT AND ESPECIALLY CLEARANCE POINTS

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS
- 3. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY AND RECORDED IN ELLIPSE
- 6. TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS
- 7. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION FREQUENCY ML T121 DIGITAL

SERVICE SCHEDULE / STANDARD JOB S07331

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END

(REF MANUFACTURER'S MANUALS)

POWER SUPPLY

- 1. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE
- 2. CHECK FRONT PANEL LIGHTS FOR NORMAL INDICATION

TRANSMITTER

3. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE

MATCHING UNIT

4. INSPECT FOR PHYSICAL / ENVIRONMENTAL DAMAGE

TUNING UNIT

5. INSPECT FOR PHYSICAL / ENVIRONMENTAL DAMAGE

TRACK CONNECTIONS/BONDING

- 6. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES
- 7. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT
- 8. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS
- 9. INSPECT CONDITION OF BONDING
- 10. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS (WHERE APPLICABLE)
- 11. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE)

TRACK INSULATION

- 12. INSPECT CONDITION OF INSULATED JOINTS (WHERE APPLICABLE)
- 13. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT
- 14. INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT

BALLAST CONDITION (RX & TX ENDS)

15. INSPECT BALLAST CONDITION - INVESTIGATE TO DETERMINE THE EXTENT OF ANY UNSATISFACTORY CONDITION & REPORT TO THE WORK GROUP LEADER & TEAM MANAGER, SIGNS OF BALLAST RECONDITIONING SHOULD TRIGGER A FULL PARAMETER TEST TO ENSURE THE TRACK IS NOT OVER ENERGISED

RAILS

- 16. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) LIGHTNING PROTECTION
- 17. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT

RECEIVER



- 18. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE
- 19. CHECK AND RECORD THRESHOLD CURRENT, TRACK CLEAR CURRENT (AV), PSU VOLTAGE 7 INTERNAL TEMPERATURE

TRACK RELAY

20. PERFORM INSPECTION OF THE RELAYS WHERE INSTALLED

GENERAL

21. INSPECT CONDITION OF ALL ELECTRICAL CONNECTIONS AND WIRING

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS
- 3. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY AND RECORDED IN ELLIPSE
- 6. TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS
- 7. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



	SIGNALLING TECHNICAL MAINTENANCE PLANS					
	TRAIN DETECTION FREQUENCY ML T121 DIGITAL					
	SERVICE SCHEDULE / STANDARD JOB SX7332					
PRE	EPARATION ACTION:					
1.	ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK					
2.	OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT					
3.	OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES					
4.	PERFORM PRE-WORK SAFETY BRIEF					
MAI	NTENANCE ACTION:					
NOT	FE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END					
	(REF ESM-07-02, SMS 11, &					
DED						
1.	INCLUDING A FIXED SHUNT TEST AT ALL EXTREMITIES, MIDPOINT AND ESPECIALLY CLEARANCE POINTS					
TRA	ACK CIRCUIT INSPECTION TASKS					
2.	EXAMINE CONDITION OF TERMINAL STUDS (TRACKSIDE UNIT)					
3.	CHECK CONDITION ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS					
4.	CHECK TRACK CIRCUIT INSULATION ALONG THE FULL LENGTH OF ANY BRIDGE STRUCTURES LOCATED ALONG THE LENGTH OF THE TRACK CIRCUIT					
REII	NSTATEMENT ACTION:					
1.	RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER					
2.	RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS					
3.	ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY					
4.	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE					
5.	REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY AND RECORDED IN ELLIPSE					
6.	TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO					
	THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS					
7.	DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY					



TRAIN DETECTION FREQUENCY PSO III

SERVICE SCHEDULE / STANDARD JOB S07341

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END

(REF ESM 07-02 & MANUFACTURER'S MANUALS)

POWER SUPPLY

1. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE (INSTALLATION AND INSTRUCTION MANUAL)

TRANSMITTER

(PHASE SHIFT OVERLAY 4000 -PSO 4000)

- INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE (PART NUMBERS 7A471, 7A473, 7A474, & 7A475)
- 3. RECORD TRANSMITTER POWER SUPPLY VOLTAGE
- 4. RECORD TRANSMITTER OUTPUT VOLTAGE

WIDE BAND SHUNT/INSULATED JOINT COUPLERS/BATTERY CHOKES.TUNED RECEIVER COUPLERS

- 5. INSPECT CONDITION OF UNITS
- 6. INSPECT ALL TERMINATIONS
- 7. INSPECT SURGE PANE ARRESTORS AND REPLACE IF DAMANGED
- 8. INSPECT AND RECROED VOLTAGES ON UNITS

TRACK CONNECTIONS/BONDING (IF ANY RECEIVER IS CALIBRATED IN POOR BALLAST CONDITIONS, IT MUST BE RE-CALIBRATED WHEN BALLAST CONDITIONS IMPROVE)

- 9. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES
- 10. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT
- 11. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS
- 12. INSPECT CONDITION OF BONDING (AFTER CALIBRATION, VERIFY THAT THE PSO CIRCUIT DE-ENERGIZES WHEN HUNTED WITH THE APPROPRIATE CALIBRATION RESISTANCE 0.06, 0.2, 0.3, 0.4, OR 0.5 OHMS)
- 13. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS
- 14. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE)

TRACK INSULATION

15. INSPECT CONDITION OF INSULATED JOINTS (WHERE APPLICABLE)



- 16. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT
- 17. INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT (FOLLOWING INSTALLATION OR AFTER ANY RECEIVER MENU CHANGES HAVE BEEN MADE, RECALIBRATE THE RECEIVER & TEST FOR PROPER OPERATION PER THE REQUIREMENTS SPECIFIED IN TABLES 7-3 & 7-4)

BALLAST CONDITION

18. INSPECT GENERAL CONDITION OF BALLAST

RAILS

19. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS)

LIGHTNING PROTECTION

20. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT

RECEIVER

- 21. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE
- 22. CHECK AND RECORD RECEIVER INPUT VOLTAGE (Vr1Vr2)
- 23. CHECK AND RECORD 12V SUPPLY VOLTAGE
- 24. CHECK AND RECORD DB SETTINGS
- 25. CHECK RELAY DRIVE LED IS LIT WHEN RELAY IS ENERGISED
- 26. CHECK AND RECORD UNSHUNTED VOLTAGE

TRACK RELAY

- 27. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED:
- 28. MINIATURE PLUG IN S05031

GENERAL

29. INSPECT CONDITION OF ALL ELECTRICAL CONNECTIONS AND WIRING

OTHER THAN TRACK CALIBRATION/RE-CALIBRATION. THERE IS NO PERIODIC MAINTENANCE PERFORMED ON THE PSO 4000, THERE ARE NO USER MAINTAINABLE PARTS WITHIN THE PSO 4000, DEFECTIVE UNITS ARE REPLACED AS A WHOLE: IF ANY PORTION OF A TRANSMITTER FAILS, REPLACE THE 7A471 TRANSMITTER; IF ANY PORTION OF RECEIVER FAILS, REPLACE THE 7A473 RECEIVER; IF A IF ANY PORTION OF A CROSSING ASSEMBLY FAILS, REPLACE THE 7A474 CROSSING ASSEMBLY; IF ANY PORTION OF A TRANSCEIVER FAILS, REPLACE THE 7A475 TRANSCEIVER

REINSTATEMENT ACTION:

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A 4 CORRECTIVE ACTION
- DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY 5



TRAIN DETECTION FREQUENCY PSO III

SERVICE SCHEDULE / STANDARD JOB S07342

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE 1: PERFORM S07341 WITH THIS SERVICE

NOTE 2: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END

(REF

ESM-07-02 & MANUFACTURER'S

MANUALS)

TRACK CIRCUIT TESTS

- 1. TEST TRACK CIRCUIT OPERATING PARAMETERS
- 2. CARRY OUT A FIXED SHUNT TEST AT ALL EXTREMITIES AND MID-POINT
- 3. CARRY OUT SHUNT CHECK AT EXTREMITIES CONNECTED BY PARALLEL BONDING

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

ARTC

SIGNALLING TECHNICAL MAINTENANCE PLANS **TRAIN DETECTION FREQUENCY PSO 4000** SERVICE SCHEDULE / STANDARD JOB SX7351 **PREPARATION ACTION:** 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 3. 4. PERFORM PRE-WORK SAFETY BRIEF **MAINTENANCE ACTION:** NOTE: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END (REF ESM-07-02 & MANUFACTURER'S MANUALS) POWER SUPPLY (INVENSYS RAIL CORPORATION) 1. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE (INSTALLATION AND **INSTRUCTION MANUAL)** TRANSMITTER (PHASE SHIFT OVERLAY 4000 PSO 4000) 2. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE (PART NUMBERS 7A471, 7A473, 7A474, & 7A475) 3. RECORD TRANSMITTER POWER SUPPLY VOLTAGE 4. RECORD TRANSMITTER OUTPUT VOLTAGE 5. WIDE BAND SHUNT/INSULATED JOINT COUPLERS/BATTERY CHOKES.TUNED RECEIVER COUPLERS 6. INSPECT CONDITION OF UNITS 7. INSPECT ALL TERMINATIONS 8. INSPECT SURGE PANE ARRESTORS AND REPLACE IF DAMANGED 9. INSPECT AND RECROED VOLTAGES ON UNITS 10. INSPECT THE GCP REGULATOR IF INSTALLED 11. CHECK DIODES ON REGULATOR FOR DAMAGE TRACK CONNECTIONS / BONDING (IF ANY RECEIVER IS CALIBRATED IN POOR BALLAST CONDITIONS, IT MUST BE RE-CALIBRATED WHEN BALLAST CONDITIONS IMPROVE) 12. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES 13. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT 14. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS 15. INSPECT CONDITION OF BONDING (AFTER CALIBRATION, VERIFY THAT THE PSO CIRCUIT DE-ENERGIZES WHEN SHUNTED WITH THE APPROPRIATE CALIBRATION RESISTANCE (0.06, 0.2, 0.3, 0.4, OR 0.5 OHMS) 16. INSPECT CONDITION AND TEST CONTINUITY OF PARALLEL BONDS 17. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE)

TRACK INSULATION



- 18. INSPECT CONDITION OF INSULATED JOINTS (WHERE APPLICABLE)
- 19. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT
- 20. INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT (FOLLOWING INSTALLATION OR AFTER ANY RECEIVER MENU CHANGES HAVE BEEN MADE, RECALIBRATE THE RECEIVER & TEST FOR PROPER OPERATION PER THE REQUIREMENTS SPECIFIED IN TABLES 7-3 & 7-4)

BALLAST CONDITION

21. INSPECT GENERAL CONDITION OF BALLAST

RAILS

22. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS)

LIGHTNING PROTECTION

23. INSPECT CONDITION OF LIGHTNING PROTECTION EQUIPMENT

RECEIVER

- 24. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE
- 25. CHECK AND RECORD RECEIVER INPUT VOLTAGE (Vr1Vr2)
- 26. CHECK AND RECORD 12V SUPPLY VOLTAGE
- 27. CHECK AND RECORD DB SETTINGS
- 28. CHECK RELAY DRIVE LED IS LIT WHEN RELAY IS ENERGISED
- 29. CHECK AND RECORD UNSHUNTED VOLTAGE

TRACK RELAY

30. PERFORM INSPECTION OF THE FOLLOWING RELAYS WHERE INSTALLED:

31. MINIATURE PLUG IN - S05031

GENERAL

32. INSPECT CONDITION OF ALL ELECTRICAL CONNECTIONS AND WIRING

OTHER THAN TRACK CALIBRATION / RE-CALIBRATION, THERE IS NO PERIODIC MAINTENANCE PERFORMED ON THE PSO 4000, THERE ARE NO USER MAINTAINABLE PARTS WITHIN THE PSO 4000, DEFECTIVE UNITS ARE REPLACED AS A WHOLE: IF ANY PORTION OF A TRANSMITTER FAILS, REPLACE THE 7A471 TRANSMITTER; IF ANY PORTION OF RECEIVER FAILS, REPLACE THE 7A473 RECEIVER; IF A IF ANY PORTION OF A CROSSING ASSEMBLY FAILS, REPLACE THE 7A474 CROSSING ASSEMBLY; IF ANY PORTION OF A TRANSCEIVER FAILS, REPLACE THE 7A475 TRANSCEIVER

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION FREQUENCY PSO 4000

SERVICE SCHEDULE / STANDARD JOB SX7352

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE 1: PERFORM S07351 WITH THIS SERVICE

NOTE 2: MAINTENANCE OF TRACK CIRCUITS SHOULD COMMENCE AT THE TRANSMITTER / FEED END

(REF ESM-07-02 & MANUFACTURER'S MANUALS)

TRACK CIRCUIT TESTS

- 1. TEST TRACK CIRCUIT OPERATING PARAMETERS
- 2. CARRY OUT A FIXED SHUNT TEST AT ALL EXTREMITIES AND MID-POINT
- 3. CARRY OUT SHUNT CHECK AT EXTREMITIES CONNECTED BY PARALLEL BONDING

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS TRAIN DETECTION FREQUENCY SMTC SERVICE SCHEDULE / STANDARD JOB SX7361 **PREPARATION ACTION:** 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 4. PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: (REF ESM-07-02, ESM-07-04 AND MANUFACTURER'S MANUALS) NOTE: MAINTENANCE SHOULD COMMENCE AT THE TRANSMITTER / FEED END **BALLAST CONDITION** 1 INSPECT GENERAL CONDITION OF BALLAST – IF THERE IS ANY UNSATISFACTORY CONDITION. REPORT TO THE WORK GROUP LEADER & TEAM MANAGER. SIGNS OF BALLAST RECONDITIONING SHOULD TRIGGER A FULL PARAMETER TEST TO ENSURE THE TRACK IS NOT OVER ENERGISED **TRANSMITTER & RECEIVER** INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE 2 3. CHECK TRANSMIT AND RECEIVE VOLTAGES, INVESTIGATE ABNORMAL CHANGES POWER SUPPLY 4 INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE **MATCHING & TUNING UNITS** 5. INSPECT FOR PHYSICAL / ENVIRONMENTAL DAMAGE TRACK RELAY 6. PERFORM INSPECTION OF THE RELAYS 7. CHECK RELAY INPUT VOLTS TRACK CONNECTIONS 8. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES 9. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT 10. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS **INSULATED JOINTS (WHERE INSTALLED)** 11. INSPECT CONDITION OF INSULATED JOINTS 12. CHECK FOR FOREIGN OBJECTS THAT MAY CAUSE SHORT CIRCUIT GENERAL 13. INSPECT CONDITION OF ALL ELECTRICAL CONNECTIONS AND WIRING 14. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS) 15. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE)

REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINT	FENANCE PLANS		
TRAIN DETECTION FR			
SERVICE SCHEDULE / STAND/	ARD JOB S07362		
PREPARATION ACTION:			
1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK			
2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT			
3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES			
4. PERFORM PRE-WORK SAFETY BRIEF			
MAINTENANCE ACTION: (REF ESM-07-02, ESM-07-04 AND MANUFACTURER'S MANUALS) NOTE 1: PERFORM S07361 WITH THIS SERVICE NOTE 2: MAINTENANCE SHOULD COMMENCE AT THE TRANSMITTER / FEED END TRACK CIRCUIT TESTS			
13. TEST TRACK CIRCUIT OPERATING PARAMETERS (COMMENCING AT TX END), INCLULDIN SHUNT TEST AT ALL EXTREMITIES, MIDPOINT AND ESPECIALLY CLEARANCE POINTS TO VOLTAGE DROP	NG A FIXED) CHECK		
14. PERFORM CALIBRATION AS REQUIRED			
TRACK CIRCUIT INSPECTION			
15. EXAMINE CONDITION OF TERMINAL STUDS (TRACKSIDE UNIT)			
CHECK CONDITION OF ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS			
REINSTATEMENT ACTION:			
RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS. TRAC			
ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHITHAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS	SIGNAL HALL REQUIRE		
1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER			
2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY			
3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE			
4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN CORRECTIVE ACTION	N THE WMS AS A		

5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY


TRAIN DETECTION FREQUENCY IPITC

SERVICE SCHEDULE / STANDARD JOB SX7371

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REF ESM-07-02, ESM-07-04 AND MANUFACTURER'S MANUALS)

NOTE: MAINTENANCE SHOULD COMMENCE AT THE TRANSMITTER / FEED END

BALLAST CONDITION

1. INSPECT GENERAL CONDITION OF BALLAST – IF THERE IS ANY UNSATISFACTORY CONDITION, REPORT TO THE WORK GROUP LEADER & TEAM MANAGER. SIGNS OF BALLAST RECONDITIONING SHOULD TRIGGER A FULL PARAMETER TEST TO ENSURE THE TRACK IS NOT OVER ENERGISED

TRANSMITTER & RECEIVER

- 2. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE
- 3. CHECK TRANSMIT AND RECEIVE VOLTAGES, INVESTIGATE ABNORMAL CHANGES

POWER SUPPLY

4. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE

MATCHING & TUNING UNITS

5. INSPECT FOR PHYSICAL / ENVIRONMENTAL DAMAGE

TRACK RELAY

- 6. PERFORM INSPECTION OF THE RELAYS
- 7. CHECK RELAY INPUT VOLTS

TRACK CONNECTIONS

- 8. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES
- 9. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT
- 10. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS

INSULATED JOINTS (WHERE INSTALLED)

- 11. INSPECT CONDITION OF INSULATED JOINTS
- 12. CHECK FOR FOREIGN OBJECTS THAT MAY CAUSE SHORT CIRCUIT

GENERAL

- 13. INSPECT CONDITION OF ALL ELECTRICAL CONNECTIONS AND WIRING
- 14. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS)

INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE)

RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION FREQUENCY IPITC

SERVICE SCHEDULE / STANDARD JOB SX7372

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REF ESM-07-02, ESM-07-04 AND MANUFACTURER'S MANUALS) NOTE 1: PERFORM S07361 WITH THIS SERVICE NOTE 2: MAINTENANCE SHOULD COMMENCE AT THE TRANSMITTER / FEED END TRACK CIRCUIT TESTS

- 1. TEST TRACK CIRCUIT OPERATING PARAMETERS (COMMENCING AT TX END), INCLULDING A FIXED SHUNT TEST AT ALL EXTREMITIES, MIDPOINT AND ESPECIALLY CLEARANCE POINTS TO CHECK VOLTAGE DROP
- 2. PERFORM CALIBRATION AS REQUIRED

TRACK CIRCUIT INSPECTION

- 3. EXAMINE CONDITION OF TERMINAL STUDS (TRACKSIDE UNIT)
- 4. CHECK CONDITION OF ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS

REINSTATEMENT ACTION:

RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION FREQUENCY AFTAC MODEL 2

SERVICE SCHEDULE / STANDARD JOB S07381

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REF ESM-07-02, ESM-07-04 AND MANUFACTURER'S MANUALS)

NOTE: MAINTENANCE SHOULD COMMENCE AT THE TRANSMITTER / FEED END

BALLAST CONDITION

1. INSPECT GENERAL CONDITION OF BALLAST – IF THERE IS ANY UNSATISFACTORY CONDITION, REPORT TO THE WORK GROUP LEADER & TEAM MANAGER. SIGNS OF BALLAST RECONDITIONING SHOULD TRIGGER A FULL PARAMETER TEST TO ENSURE THE TRACK IS NOT OVER ENERGISED

TRANSMITTER & RECEIVER

- 2. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE
- 3. CHECK TRANSMIT AND RECEIVE VOLTAGES, INVESTIGATE ABNORMAL CHANGES

POWER SUPPLY

4. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE

MATCHING & TUNING UNITS

5. INSPECT FOR PHYSICAL / ENVIRONMENTAL DAMAGE

TRACK RELAY

- 6. PERFORM INSPECTION OF THE RELAYS
- 7. CHECK RELAY INPUT VOLTS

TRACK CONNECTIONS

- 8. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES
- 9. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT
- 10. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS

INSULATED JOINTS (WHERE INSTALLED)

- 11. INSPECT CONDITION OF INSULATED JOINTS
- 12. CHECK FOR FOREIGN OBJECTS THAT MAY CAUSE SHORT CIRCUIT

GENERAL

- 13. INSPECT CONDITION OF ALL ELECTRICAL CONNECTIONS AND WIRING
- 14. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS)
- 15. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE)

RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS					
TRAIN DETECTION FREQUENCY AFTAC MODEL 2					
SERVICE SCHEDULE / STANDARD JOB SX7382					
PREPARATION ACTION:					
1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK					
2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT					
3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES					
4. PERFORM PRE-WORK SAFETY BRIEF					
MAINTENANCE ACTION: (REF ESM-07-02, ESM-07-04 AND MANUFACTURER'S MANUALS) NOTE 1: PERFORM S07381 WITH THIS SERVICE NOTE 2: MAINTENANCE SHOULD COMMENCE AT THE TRANSMITTER / FEED END TRACK CIRCUIT TESTS					
1. TEST TRACK CIRCUIT OPERATING PARAMETERS (COMMENCING AT TX END), INCLULDING A FIXED SHUNT TEST AT ALL EXTREMITIES, MIDPOINT AND ESPECIALLY CLEARANCE POINTS					
2. PERFORM ADJUSTMENT DESCRIBED BELOW, AS NEEDED					
a. SET THE "POWER LEVEL SWITCH" TO THE DESIRED IST OUTPUT POWER LEVEL					
b. CONNECT A TRACK SHUNT OUTSIDE THE AFTAC II TRACK CIRCUIT, 3 FEET BEYOND THE RECEIVER LEAD CONNECTION					
c. TURN THE "RECEIVER GAIN CONTROL" C.W. UNTIL THE METER REGISTERS IN THE GREEN "OPERATE" AREA, THEN C.C.W. SLOWLY TO BRING METER INTO THE YELLOW "ADJUST" AREA.					
d. REMOVE THE TRACK SHUNT AND VERIFY THAT THE METER IS IN THE GREEN "OPERATE" AREA.					
e. VERIFY ADJUSTMENT BY PLACING THE SHUNT INSIDE THE AFTAC II TRACK CIRCUIT – THE METER MUST BE IN THE RED "OFF" AREA. PLACE THE SHUNT 10 FEET OUTSIDE THE TRACK CIRCUIT – THE METER MUST BE IN THE GREEN "OPERATE" AREA					
TRACK CIRCUIT INSPECTION					
3. EXAMINE CONDITION OF TERMINAL STUDS (TRACKSIDE UNIT)					
4. CHECK CONDITION OF ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS					
REINSTATEMENT ACTION:					
RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS					
1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER					
2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY					
3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE					
4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION					
5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY					



TRAIN DETECTION FREQUENCY FS2500

SERVICE SCHEDULE / STANDARD JOB SX7391

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF



MAINTENANCE ACTION: (REF: ESM-07-02, SES 07 & MANUFACTURER'S MANUALS)

NOTE 1: MAINTENANCE SHOULD COMMENCE AT THE TRANSMITTER / FEED END

NOTE 2: EACH INTERMEDIATE RECEIVER SHALL BE TREATED AS INDIVIDUAL TRACK CIRCUITS (SHARING THE SAME TRANSMITTER) AND HENCE SERVICED AS IF SEPARATE

BALLAST CONDITION

1. INSPECT GENERAL CONDITION OF BALLAST – IF THERE IS ANY UNSATISFACTORY CONDITION, REPORT TO THE WORK GROUP LEADER & TEAM MANAGER. SIGNS OF BALLAST RECONDITIONING SHOULD TRIGGER A FULL PARAMETER TEST TO ENSURE THE TRACK IS NOT OVER ENERGISED

TRANSMITTER & RECEIVER

- 2. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE
- 3. CHECK TRANSMIT AND RECEIVE VOLTAGES, INVESTIGATE ABNORMAL CHANGES

MATCHING UNIT/TUNING UNIT

4. INSPECT FOR PHYSICAL / ENVIRONMENTAL DAMAGE

POWER SUPPLY

5. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE

TRACK RELAY

- 6. PERFORM INSPECTION OF THE RELAYS
- 7. CHECK RELAY INPUT VOLTS

TRACK CONNECTIONS

- 8. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES
- 9. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT
- 10. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS

INSULATED JOINTS (WHERE INSTALLED)

- 11. INSEPCT CONDITION OF INSULATED JOINTS
- 12. CHECK FOR FOREIGN OBJECTS THAT MAY CAUSE SHORT CIRCUIT

GENERAL

- 13. INSPECT CONDITION OF ALL ELECTRICAL CONNECTIONS AND WIRING
- 14. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS)
- 15. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE)

RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION FREQUENCY FS2500

SERVICE SCHEDULE / STANDARD JOB SX7392

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REF: ESM-07-02, SES 07 & MANUFACTURER'S MANUALS)

NOTE 1: PERFORM SX7391 WITH THIS SERVICE

NOTE 2: MAINTENANCE SHOULD COMMENCE AT THE TRANSMITTER / FEED END

NOTE 3: EACH INTERMEDIATE RECEIVER SHALL BE TREATED AS INDIVIDUAL TRACK CIRCUITS (SHARING THE SAME TRANSMITTER) AND HENCE SERVICED AS IF SEPARATE

NOTE 4: IF IT IS NECESSARY TO ADJUST THE TRANSMITTER LEVEL TO OBTAIN CORRECT ADJUSTMENT OF THE INTERMEDDIATE RECEIVER, THEN IT WILL BE NECESSARY TO ALSO READJUST THE PARENT TRACK RECEIVER.

1. TEST TRACK CIRCUIT OPERATING PARAMETERS, INCLUDING FIXED SHUNT TEST AT ALL EXTREMETIES, MIDPOINT AND ESPECIALLY CLEARANCE POINTS

TRACK CIRCUIT INSPECTION

- 2. EXAMINE CONDITION OF TERMINAL STUDS (TRACKSIDE UNIT)
- 3. CHECK CONDITION OF ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS

REINSTATEMENT ACTION:

RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION FREQUENCY EPIC III

SERVICE SCHEDULE / STANDARD JOB SX7401

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REF:MANUFACTURER'S MANUALS)

BALLAST CONDITION

1. INSPECT GENERAL CONDITION OF BALLAST – IF THERE IS ANY UNSATISFACTORY CONDITION, REPORT TO THE WORK GROUP LEADER & TEAM MANAGER.

RECEIVER

- 2. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE
- 3. CHECK RECEIVER AND BATTERY VOLTAGE

POWER SUPPLY

4. INSPECT FOR OVERHEATING / PHYSICAL / ENVIRONMENTAL DAMAGE

TRACK RELAY

- 5. PERFORM INSPECTION OF THE RELAYS
- 6. CHECK RELAY INPUT VOLTS

TRACK CONNECTIONS

- 7. INSPECT CONNECTIONS TO RAILS AND CONDITION OF CABLES
- 8. INSPECT CONNECTIONS TO TRACKSIDE EQUIPMENT
- 9. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS

GENERAL

- 10. INSPECT CONDITION OF ALL ELECTRICAL CONNECTIONS AND WIRING
- 11. INSPECT RAIL SURFACES FOR RUST / SAND CONTAMINATION (PARTICULARLY SIDINGS)
- 12. INSPECT TRACTION RETURN BONDING (WHERE APPLICABLE)

RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION FREQUENCY EPIC III

SERVICE SCHEDULE / STANDARD JOB SX7402

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REF: MANUFACTURER'S MANUALS)

NOTE 1: PERFORM SX7402 WITH THIS SERVICE

TRACK CIRCUIT TESTS

- 1. TEST TRACK CIRCUIT OPERATING PARAMETERS
- 2. CARRY OUT A FIXED SHUNT TEST AT ALL EXTREMITIES AND MID-POINT WITH HARDWIRE SHUNT

REINSTATEMENT ACTION:

RESULTS OF READINGS ARE TO BE RECORDED ON TRACK CIRCUIT HISTORY CARDS, TRACK CIRCUIT ADJUSTMENTS TO COMPENSATE FOR BALLAST CONDITIONS MUST BE REPORTED TO THE SIGNAL ENGINEER AS SOON AS PRACTICABLE, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TRACK CIRCUIT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNALLING TECHNICAL MAINTENANCE PLANS				
TRAIN DETECTION AXLE COUNTER ACS2000				
SERVICE SCHEDULE / STANDARD JOB SX7411				
PREPARATION ACTION:				
. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK				
2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT				
B. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES				
. PERFORM PRE-WORK SAFETY BRIEF				
MAINTENANCE ACTION:				
MECHANICAL/VISUAL INSPECTIONS				

(REF: MANUFACTURER'S MANUAL D1414-2 MOUNTING & COMMISSIONING)





1.	CHECK WHEEL SENSOR FOR EXCESSIVE FOREIGN MATERIAL, IF NECESSARY, REMOVE FOREIGN MATERIAL					
2.	CHECK THE TIGHTNESS OF THE NUTS ATTACHING THE BRACKET TO THE RAIL					
3.	CHECK THE TIGHTNESS OF THE NUTS ATTACHING THE AXLE COUNTER HEAD TO THE BRACKET. USE					
	TORQUE WRENCH TO AVOID OVERTIGHTNING.					
4.	CHECK COUNTER HEAD POSITION RELATIVE TO RAIL HEAD WITH THE GO-NO-GO GAUGE (TOP OF					
	RAIL TO TOP OF SENSOR IS IN THE RANGE 40 TO 45 MM)					
5.	CHECK THAT THE WHEEL SENSOR DOES NOT TOUCH THE HEAD OF THE RAIL					
6.	. INSPECT WHEEL SENSOR FOR MECHANICAL DAMAGE: IF NECESSARY, REPLACE WHEFT SENSOR					
7.	INSPECT CABLE PROTECTION TUBE FOR MECHANICAL DAMAGE AND REPLACE IF NECESSARY					
8.	CHECK CABLE TERMINALS IN THE GAK FOR PROPER FIT AND TIGHTEN IF NECESSARY AND CHECK					
	FOR WATER INGRESS, CABLE ENTRY SEAL, VERMIN, CLEANLINESS ETC.					
(REF: MANUFACTURERS MAINTENANCE MANUAL D1414-2) MOUNTING & COMMISSIONING)						
ME	ASUREMENTS AT MEASURING SOCKETS OF EVALUATION BOARD					
9.	CALIBRATE AXLE COUNTER					
10.	CHECK AND RECORD SENSOR CURRENT IN SYSTEMS 1 & 2 IS BETWEEN 280 MV AND 500 MV AT THE					
	SYSTEM MEASURING SOCKET OF THE EVALUATOR BOARD					
	(REF: MANUFACTURER'S MANUAL D10002-08-1.2 PART III AND DIAGNOSITCS MANUAL 10002-08-1.2					
PAF	RT IX)					
ΑΧΙ	LE COUNTER EQUIPMENT PANEL					
11.	ENSURE CARD FILE IS SECURELY MOUNTED AND ALL MODULES AND COVERS ARE FULLY INSERTED					
12.	VISUALLY CHECK ALL WIRING TERMINATIONS					
13.	CHECK LIGHTNING PROTECTION EQUIPMENT FOR DAMAGE					
14.	CONFIRM PROPER OPERATION OF AXLE COUNTER FROM BATTERY SUPPLY (IF APPLICABLE)					
15.	CONNECT THE LAPTOP AND VIEW THE LOG FOR ERRORS.					
тос	DLS AND MEASURING DEVICES					
16.	MV- METER RANGE1000 MVDC, PRECISION +/- 0,5 %					
17.	2 MM METER PROBES					
18.	TESTING PLATE PB200 OR STANDARD DAMPING PLATE NB200					
19.	GO / NO GO GAUGE FOR AXLE COUNTER WHEEL SENSOR					
DEI	20. INSPECTAXLE COUNTER SIGNAGE AS PER SIGNAL PLAN					
	ACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE					
INSTRUCTIONS						
1	RECORD MAINTENANCE ACTION BY OLOSING OFF THE MST / WORK ORDER					
2	ENSURE THAT THE AXI E COUNTER OPERATES CORRECTLY					
3	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE					
<u> </u>	4 REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A					
⁽ .	CORRECTIVE ACTION					

5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNALLING TECHNICAL MAINTENANCE PLANS TRAIN DETECTION AXLE COUNTER FADC SERVICE SCHEDULE / STANDARD JOB SX7421

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SIGNALLING WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

MECHANICAL / VISUAL INSPECTIONS

(REF: MANUFACTURER'S MANUAL D1414-3 MOUNTING & COMMISSIONING)

- 1. CHECK WHEEL SENSOR FOR EXCESSIVE FOREIGN MATERIAL, IF NECESSARY, REMOVE LOOSE FOREIGN MATERIAL
- 2. CHECK THE TIGHTNESS OF THE NUTS ATTACHING THE BRACKET TO THE RAIL
- 3. CHECK THE TIGHTNESS OF THE NUTS ATTACHING THE AXLE COUNTER HEAD TO THE BRACKET. USE TORQUE WRENCH TO AVOID OVERTIGHTNING.
- 4. CHECK COUNTER HEAD POSITION RELATIVE TO RAIL HEAD WITH THE GO-NO-GO GAUGE. (TOP OF RAIL TO TOP OF SENSOR IS IN THE RANGE 40 TO 45 MM)
- 5. CHECK THAT THE WHEEL SENSOR DOES NOT TOUCH THE HEAD OF THE RAIL
- 6. INSPECT WHEEL SENSOR FOR MECHANICAL DAMAGE; IF NECESSARY, REPLACE WHEEL SENSOR
- 7. INSPECT CABLE PROTECTION TUBE FOR MECHANICAL DAMAGE AND REPLACE IF NECESSARY
- 8. CHECK CABLE TERMINALS IN THE GAK FOR PROPER FIT AND TIGHTEN IF NECESSARY AND CHECK FOR WATER INGRESS, CABLE ENTRY SEAL, VERMIN, CLEANLINESS ETC.

(REF: MANUFACTURER'S MANUAL D1414-3 MOUNTING & COMMISSIONING)

MEASUREMENTS AT MEASURING SOCKETS OF EVALUATION BOARD

- 9. CALIBRATE AXLE COUNTER
- 10. CHECK AND RECORD SENSOR CURRENT IN SYSTEMS 1 & 2 IS BETWEEN 280 MV AND 500 MV AT THE SYSTEM MEASURING SOCKET OF THE EVALUATOR BOARD

(REF: MANUFACTURER'DS MANUAL D20003-3 AND INSTALLATION AND OPERATION MANUAL D20002-3) **AXLE COUNTER EQUIPMENT PANEL**

- 11. ENSURE CARD FILE IS SECURELY MOUNTED AND ALL MODULES AND COVERS ARE FULLY INSERTED
- 12. VISUALLY CHECK ALL WIRING TERMINATIONS
- 13. CHECK LIGHTNING PROTECTION EQUIPMENT FOR DAMAGE (BSI)
- 14. CONFIRM PROPER OPERATION OF AXLE COUNTER FROM BATTERY SUPPLY (IF APPLICABLE)
- 15. EXTRACT LOG FROM THE AXLE COUNTER FDS LOG COMPUTER (USING 4SITE) AND REVIEW AND ADDRESS ANY ANOMOLIES

TOOLS AND MEASURING DEVICES

- 16. MV- METER RANGE1000 MVDC, PRECISION +/- 0,5 %
- 17. 2 MM METER PROBES
- 18. 2 MEASURING STRIPS WITH TEST PROBES
- 19. TESTING PLATE PB200 OR STANDARD DAMPING PLATE NB200

20. GO/ NO GO GAUGE FOR AXLE COUNTER WHEEL SENSOR

SIGNS

21. INSPECT AXLE COUNTER SIGNAGE AS PER SIGNAL PLAN WHERE APPLCIBLE

REINSTATEMENT ACTION:

RESULTS OF READINGS ARE TO BE RECORDED ON EQUIPMENT HISTORY CARDS, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE AXLE COUNTER OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE



- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION TREADLE MECHANICAL

SERVICE SCHEDULE / STANDARD JOB SX7511

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTES: AVOID OPENING THE TREADLE WHEN IT IS RAINING CONTACTS ARE FACTORY SET AND MUST NEVER BE CLEANED OR ADJUSTED, THEY ARE TO BE REPLACED AS NECESSARY, WHEN ORDERING PARTS, ALWAYS REFER TO THE TREADLE TYPE NUMBER INDICATED ON THE NAMEPLATE

- 1. CHECK THE TIGHTNESS OF THE NUTS WHICH ATTACH THE BRACKET TO THE RAIL (REF. MANUFACTURERS INSTRUCTION SHEETS)
- 2. CHECK THE TIGHTNESS OF THE NUTS WHICH ATTACH THE TREADLE TO THE BRACKET (REF. MANUFACTURERS INSTRUCTION SHEETS)
- 3. CHECK LEVEL OF DASHPOT OIL RESERVOIR AND TOP UP AS REQUIRED (REF. MANUFACTURERS INSTRUCTION SHEETS)

REINSTATEMENT ACTION:

RESULTS OF READINGS ARE TO BE RECORDED ON EQUIPMENT HISTORY CARDS, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TREADLE OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION TREADLE MECHANICAL

SERVICE SCHEDULE / STANDARD JOB SX7512

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

PERFORM SX7511 IN CONJUNCTION WITH THIS SERVICE

NOTES: AVOID OPENING THE TREADLE WHEN IT IS RAINING, CONTACTS ARE FACTORY SET AND MUST NEVER BE CLEANED OR ADJUSTED, THEY ARE TO BE REPLACED AS NECESSARY, WHEN ORDERING PARTS, ALWAYS REFER TO THE TREADLE TYPE NUMBER INDICATED ON THE NAMEPLATE

- 1. CHECK OPERATING TIME FOR THE TREADLE IS WITHIN SPECIFICATION (REF. MANUFACTURERS INSTRUCTION SHEETS)
- 2. APPLY GENERAL PURPOSE GREASE TO THE ARM BEARINGS AND THE RETURN SPRINGS (REF. MANUFACTURERS INSTRUCTION SHEETS)

REINSTATEMENT ACTION:

RESULTS OF READINGS ARE TO BE RECORDED ON EQUIPMENT HISTORY CARDS, ADJUSTMENTS FOR UNACCOUNTABLE REASONS SHALL REQUIRE THAT THE SIGNAL ENGINEER INVESTIGATE AND PROVIDE INSTRUCTIONS

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE TREADLE OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION CODED MICROTRAX

SERVICE SCHEDULE / STANDARD JOB SX7611

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE 1:TO AVOID EQUIPEMENT DAMAGED AND/OR FAULTY OPERATION, DO NOT INSTALL OR REMOVE ANY MICROTRAX PLUG-IN MODULE WITH THE SYSTEM POWER TURNED ON

NOTE 2: MASTER & SLAVE MUST BE COMPLTED AS PART OF THE ONE SERVICE / MST

- 1. ENSURE CARD FILE IS SECURELY MOUNTED AND ALL MODULES AND COVERS ARE FULLY INSERTED
- 2. PERFORM A PHYSICAL CHECK OF ALL WIRING TERMINATIONS
- 3. CHECK LIGHTNING PROTECTION EQUIPMENT FOR DAMAGE
- 4. OBTAIN AND LOG TRACK PERCENTAGE MARGIN
- 5. DOWNLOAD AND EXAMINE EVENT LOG AND ERROR LOG TO LAPTOP COMPUTER (INVESTIGATE & RESOLVE ERRORS & ANOMALIES THEN CLEAR LOGS)
- 6. CHECK DATE AND TIME CORRECT IF NECESSARY
- 7. RECORD MICROTRAX SUPPLY VOLTAGE AND LOCATION SUPPLY VOLTAGE
- 8. CONFIRM PROPER OPERATION OF MICROTRAX FROM BATTERY SUPPLY
- 9. EXAMINE CONDITION OF TERMINAL STUDS (TRACKSIDE UNIT)
- 10. CHECK CONDITION ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS

NOTE: MASTER & SLAVE MUST BE COMPLETED AS PART OF THE ONE SERVICE/MST

- 11. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 12. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 13. ENSURE THAT THE CODED TRACK CIRCUIT SYSTEM OPERATES CORRECTLY
- 14. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 15. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 16. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION CODED MICROTRAX

SERVICE SCHEDULE / STANDARD JOB SX7612

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 3.
- 4 PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

PERFORM S07611 IN CONJUNCTION WITH THIS SERVICE

NOTE: MASTER & SLAVE MUST BE COMPLTED AS PART OF THE ONE SERVICE/MST

TRACK CIRCUIT TESTS

TEST TRACK CIRCUIT OPERATING PARAMETERS (TESTING SHOULD COMMENCE AT TX END), 1. INCLUDING A FIXED SHUNT TEST AT ALL EXTREMETIES, MIDPOINT AND ESPECIALLY CLEARANCE POINTS

TRACK CIRCUIT INSPECTION TASKS

- 2. EXAMINE CONDITION OF TERMINAL STUDS (TRACKSIDE UNIT)
- 3. CHECK CONDITION ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS
- CHECK TRACK CIRCUIT INSULATION ALONG THE FULL LENGTH OF ANY BRIDGE STRUCTURES 4 LOCATED ALONG THE LENGTH OF THE TRACK CIRCUIT

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1.
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- ENSURE THAT THE CODED TRACK CIRCUIT SYSTEM OPERATES CORRECTLY 3.
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 4.
- REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A 5. CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION CODED ELECTROCODE 4

SERVICE SCHEDULE / STANDARD JOB SX7621

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

(REFERENCE: S4 AND MANUFACTURER'S MANUALS)

UNIT & HOUSING

- 1. INSPECT HOUSING FOR DAMAGE OR DETERIORATION
- 2. ENSURE UNIT IS SECURELY MOUNTED AND CARDS ARE FULLY SEATED
- 3. ENSURE UNIT IS DUST FREE, INTERNALLY AND EXTERNALLY
- 4. CHECK ALL INDICATING LAMPS ARE FLASHING CORRECTLY

INSULATING JOINTS

- 5. INSPECT CONDITION OF INSULATED JOINTS
- 6. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT
- 7. INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT

GENERAL

- 8. CHECK LIGHTNING PREOTECTION EQUIPMENT FOR DAMAGE
- 9. CHECK CONDITION OF ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS
- 10. TEST AND VERIFY THAT THE FOLLOWING PARAMETERS ARE COMPLIANT WITH MANUFACTURER'S SPECIFICATION
 - a. SUPPLY VOLTAGE
 - b. SUPPLY CURRENT
 - c. INPUT VOLTAGE
 - d. RELEASE CURRENT
 - e. PICK UP CURRENT
 - f. TRACK CIRCUIT RECEIVER CURRENT



- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE CODED TRACK CIRCUIT SYSTEM OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



	SIGNALLING TECHNICAL MAINTENANCE PLANS				
	TRAIN DETECTION CODED ELECTROCODE 4				
	SERVICE SCHEDULE / STANDARD JOB S07622				
PRE	PARATION ACTION:				
1.	ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK				
2.	OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT				
3.	OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES				
4.	PERFORM PRE-WORK SAFETY BRIEF				
MAI	NTENANCE ACTION: (REFERENCE: S4 AND MANUFACTURER'S MANUALS)				
NOT	E: PERFORM SX7621 WITH THIS SERVICE				
TRA	CK CIRCUIT TESTS				
1.	TEST TRACK CIRCUIT OPERATING PARAMETERS, INCLUDING FIXED SHUNT TEST AT ALL EXTREMETIES, MIDPOINT AND ESPECIALLY CLEARANCE POINTS				
2.	USING A 0.06 OHM SHUNT, OBSERVE THAT THE LED INDICATOR ON THE 7K MODULE IS EXTINGUISHED				
TRA	CK CIRCUIT INSPECTION TASKS				
3.	EXAMINE CONDITION OF TERMINAL STUDS (TRACKSIDE UNIT)				
4.	CHECK CONDITION OF ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS				
5.	CHECK TRACK CIRCUIT INSULATION ALONG THE FULL-LENGTH OF ANY BRIDGE STRUCTURES LOCATED ALONG THE LENGTH OF THE TRACK CIRCUIT				
REI	ISTATEMENT ACTION:				
1.	RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER				
2	RECORD RESULTS ON THE EQUIPMENT HISTORY CARD				
3.	ENSURE THAT THE CODED TRACK CIRCUIT SYSTEM OPERATES CORRECTLY				
4.	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE				
5.	REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION				

6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS **TRAIN DETECTION CODED ELECTROCODE 5** SERVICE SCHEDULE / STANDARD JOB S07631 **PREPARATION ACTION:** ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 1. 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES PERFORM PRE-WORK SAFETY BRIEF 4. MAINTENANCE ACTION: (REFERENCE: MANUFACTURER'S MANUALS) **UNIT AND HOUSING** 1. INSPECT HOUSING FOR DAMAGE OR DETERIORATION 2. ENSURE UNIT IS SECURELY MOUNTED AND CARDS ARE FULLY SEATED 3. ENSURE UNIT IS DUST FREE, INTERNALLY AND EXTERNALLY 4. CHECK ALL INDICATING LAMPS ARE FLASHING CORRECTLY **INSULATED JOINTS** 5. INSPECT CONDITION OF INSULATED JOINTS 6. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT 7. INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT GENERAL 8. CHECK LIGHTNING PREOTECTION EQUIPMENT FOR DAMAGE 9. CHECK CONDITION OF ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS 10. TEST AND VERIFY THAT THE FOLLOWING PARAMETERS ARE COMPLIANT WITH MANUFACTURER'S **SPECIFICATION** a. SUPPLY VOLTAGE b. SUPPLY CURRENT c. INPUT VOLTAGE d. RELEASE CURRENT e. PICK UP CURRENT

f. TRACK CIRCUIT RECEIVER CURRENT



- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2 RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE CODED TRACK CIRCUIT SYSTEM OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION CODED ELECTROCODE 5

SERVICE SCHEDULE / STANDARD JOB S07632

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REFERENCE: MANUFACTURER'S MANUALS)

NOTE: PERFORM S07631 WITH THIS SERVICE

TRACK CIRCUIT TESTS

- 1. TEST TRACK CIRCUIT OPERATING PARAMETERS, INCLUDING FIXED SHUNT TEST AT ALL EXTREMETIES, MIDPOINT AND ESPECIALLY CLEARANCE POINTS
- 2. USING A 0.06 OHM SHUNT, OBSERVE THAT THE LED INDICATOR ON THE 7K MODULE IS EXTINGUISHED

TRACK CIRCUIT INSPECTION TASKS

- 3. EXAMINE CONDITION OF TERMINAL STUDS (TRACKSIDE UNIT)
- 4. CHECK CONDITION OF ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS
- 5. CHECK TRACK CIRCUIT INSULATION ALONG THE FULL-LENGTH OF ANY BRIDGE STRUCTURES LOCATED ALONG THE LENGTH OF THE TRACK CIRCUIT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2 RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE CODED TRACK CIRCUIT SYSTEM OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION CODED GEO

SERVICE SCHEDULE / STANDARD JOB S07641

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REFERENCE - MANUFACTURER'S MANUALS)

UNIT AND HOUSING

- 1. INSPECT HOUSING FOR DAMAGE OR DETERIORATION
- 2. ENSURE UNIT IS SECURELY MOUNTED AND CARDS ARE FULLY SEATED
- 3. ENSURE UNIT IS DUST FREE, INTERNALLY AND EXTERNALLY
- 4. CHECK ALL INDICATING LAMPS ARE FLASHING CORRECTLY

INSULATED JOINTS

- 5. INSPECT CONDITION OF INSULATED JOINTS
- 6. INSPECT FOR POTENTIAL FOREIGN SHORT CIRCUITS ON TRACK CIRCUIT
- 7. INSPECT FOR POTENTIAL EARTHS ON TRACK CIRCUIT

GENERAL

- 8. CHECK LIGHTNING PREOTECTION EQUIPMENT FOR DAMAGE
- 9. CHECK CONDITION OF ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS
- 10. TEST AND VERIFY THAT THE FOLLOWING PARAMETERS ARE COMPLIANT WITH MANUFACTURER'S SPECIFICATION (REF ELECTRO CODE 5 MANUAL)
 - g. SUPPLY VOLTAGE
 - h. SUPPLY CURRENT
 - i. INPUT VOLTAGE
 - j. RELEASE CURRENT
 - k. PICK UP CURRENT
 - I. TRACK CIRCUIT RECEIVER CURRENT



- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2 RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE CODED TRACK CIRCUIT SYSTEM OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS TRAIN DETECTION CODED GEO SERVICE SCHEDULE / STANDARD JOB S07642 **PREPARATION ACTION:** ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 1. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 2. 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES PERFORM PRE-WORK SAFETY BRIEF 4. MAINTENANCE ACTION: (REFERENCE - MANUFACTURER'S MANUALS) NOTE: PERFORM S07641 IN CONJUNCTION WITH THIS SERVICE SCHEDULE TRACK CIRCUIT TESTS 1. TEST TRACK CIRCUIT OPERATING PARAMETERS, INCLUDING FIXED SHUNT TEST AT ALL EXTREMETIES, MIDPOINT AND ESPECIALLY CLEARANCE POINTS TRACK CIRCUIT INSPECTION TASKS 2. EXAMINE CONDITION OF TERMINAL STUDS (TRACKSIDE UNIT) 3. CHECK CONDITION OF ALL ELECTRICAL CONNECTIONS TO ALL COMPONENTS 4. CHECK TRACK CIRCUIT INSULATION ALONG THE FULL-LENGTH OF ANY BRIDGE STRUCTURES LOCATED ALONG THE LENGTH OF THE TRACK CIRCUIT **REINSTATEMENT ACTION:** 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 2 RECORD RESULTS ON THE EQUIPMENT HISTORY CARD ENSURE THAT THE CODED TRACK CIRCUIT SYSTEM OPERATES CORRECTLY 3. 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION

6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION PREDICTOR (GCP-3000)

SERVICE SCHEDULE / STANDARD JOB S07711

PREPARATION ACTION:

- ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK 1.
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: (REFSMS 13 & MANUFACTURER'S MANUALS

- FOR LEVEL CROSSINGS WITH 12 CELLS OR MORE, CHECK THE VOLTAGE BETWEEN THE PREDICTOR 1. TERMINALS "B", "N" AND ENSURE THE VOLTAGE IS LESS THAN 16.5VOLTS, INVESTIGATE HIGH VOLTAGE, REPLACE "GCP REGULATOR" IF DEFECTIVE OR READJUST BATTERY VOLTAGE IF REQUIRED
- 2. OBSERVE AND RECORD EZ VALUE FROM STATUS DISPLAY
- 3. OBSERVE AND RECORD EX VALUE FROM STATUS DISPLAY
- OBSERVE AND RECORD TRANSMIT CURRENT FROM STATUS DISPLAY 4
- OBSERVE AND RECORD TRANSMIT VOLTAGE FROM STATUS DISPLAY 5.
- CHECK FOR ERRORS USING THE ERROR BUTTON ON THE FRONT PANEL, ALL ERRORS ARE TO BE 6. RECORDED, REVIEWED AGAINST PREVIOUS RECORDED ERRORS AND RECTIFIED, CLEAR ALL ERRORS
- 7. CONNECT LAPTOP PC TO PREDICTOR AND CHECK THE LOG FOR THE CONSISTENCYOF APPROACH TIMES OF THE PREVIOUS 20 TRAINS. INVESTIGATE TIMES THAT ARE INCONSISTENT OR OUTSIDE THE LEVEL CROSSING STANDARD. (REF ESM-07-02 TRACK CIRCUITS AND TRAIN DETECTION DEVICES)

RAIL CONNECTIONS & BONDING

- EXAMINE ALL RAIL CONNECTIONS FOR ALL GCP TRACKS INCLUDING THE UP AND DOWN AS WELL AS 8. THE ISLAND TRACKS FOR INTEGRITY AND DAMAGE, REPAIR OR REPLACE IF REQUIRED
- EXAMINE ALL CONNECTIONS TO TRACK SIDE EQUIPMENT INCLUDING BOOTLEG RISERS FOR 9 INTEGRITY AND DAMAGE, REPAIR OR REPLACE IF REQUIRED
- 10. EXAMINE INSULATED JOINT COUPLERS (WHERE FITTED) FOR DAMAGE, REPAIR OR REPLACE IF REQUIRED
- 11. EXAMINE SHUNTS FOR DAMAGE. REPAIR OR REPLACE IF REQUIRED
- 12. INSPECT CABLE FASTENERS TO RAILS, SLEEPERS AND REPLACE IF NECESSARY

BALLAST CONDITION

13. EXAMINE BALLAST PROFILE IN THE VICINITY OF THE TRACK CONNECTIONS, SHUNTS AND IRJ'S, FOR EVIDENCE OF CONTAMINATION BY DIRT OR FINES MIGRATING FROM THE FORMATION, (ZONAL) IF SIGNS FOUND ARRANGE TO EXAMINE FULL LENGTH OF TRACK CIRCUIT AND REPORT CONDITION TO THE TEAM MANAGER FOR ATTENTION

INSULATED RAIL JOINT



14.	INSPECT CONDITION OF INSULATED JOINTS					
15.	CHECK FOR FOREIGN OBJECTS THAT MAY CAUSE SHORT CIRCUIT					
GEN	GENERAL					
16.	INSPECT CONDITION OF ALL ELECTRICAL CONNECTIONS AND WIRING					
17.	CHECK FOR RUST/SAND CONTAMINATION ON RAIL, ARRANGE FOR RECTIFICATION & / OR CAN WARNING OF TRAINS IF NECESSARY					
LIGHTNING PROTECTION						
18.	EXAMINE ANY LIGHTNING AND SURGE PROTECTION INCLUDING THE "SAFETRAN SURGE PANEL (80026-01) FOR DEFECTS OR LIGHTNING DAMAGE. REPLACE AS REQUIRED					
LOGS						
19.	CONNECT PC TO DATA RECORDER MODULE CARD, DOWNLOAD AND CHECK ERROR LOG					
20.	SAVE ERROR AND HISTORY LOGS FOR FUTURE REFERENCE					
REINSTATEMENT ACTION:						
1.	RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER					
2.	RECORD RESULTS ON THE EQUIPMENT HISTORY CARD					
3.	ENSURE THAT THE GCP & LEVEL CROSSING PROTECTION OPERATES CORRECTLY					
4.	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE					
5.	REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION					

6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION PREDICTOR (GCP-3000)

SERVICE SCHEDULE / STANDARD JOB S07712

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE: PERFORM S07711 IN CONJUNCTION WITH THIS SERVICE SCHEDULE

(REF MANUFACTURER'S MANUALS

GCP CALIBRATION

- 1. CHECK THE CALIBRATION OF THE GRADE CROSSING PREDICTOR
- 2. CHECK THE CALIBRATION OF THE ISLAND TRACK
- 3. PERFORM A FIXED SHUNT TEST ON ALL GCP TRACKS
- 4. FUNCTION TEST THE OPERATION OF THE "DC SHUNTING ENHANCER PANEL" (WHERE FITTED)
- 5. WITH NO TRAINS PRESENT, VERIFY THERE IS A MINIMUM OF 5.0V DC ON THE
- 6. TRACK AND 15V DC AT THE UAX TERMINAL ON THE 80049 PANEL
- 7. REMOVE AC POWER FROM THE PANEL
- 8. VERIFY THAT A MINIMUM OF 4.5V DC IS NOW PRESENT ON THE TRACK AND
- 9. 15V DC STILL PRESENT AT THE UAX TERMINAL ON THE PANEL
- 10. REMOVE DC POWER FROM THE PANEL
- 11. OBSERVE THAT THE LEVEL CROSSING OPERATES
- 12. RESTORE BOTH AC AND DC POWER TO THE PANEL
- 13. REPLACE THE DATA RECORDER MODULE BATTERY WITH A NEW LITHIUM BATTERY BCX-72-AA, 3.9V, P/N 3B65

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE GCP & LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

SIGNALLING TECHNICAL MAINTENANCE PLANS TRAIN DETECTIONPREDICTOR (GCP-4000) SERVICE SCHEDULE / STANDARD JOB S07721

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

(REF ESD-03-01 LEVEL CROSSING DESIGN)

(REF MANUFACTURER'S MANUALS

- FOR LEVEL CROSSINGS WITH 12 CELLS OR MORE, CHECK THE VOLTAGE BETWEEN THE PREDICTOR TERMINALS "B", "N" & ENSURE THE VOLTAGE IS LESS THAN 16.5VOLTS, INVESTIGATE HIGH VOLTAGE, REPLACE "GCP REGULATOR" IF DEFECTIVE OR READJUST BATTERY VOLTAGE IF REQUIRED
- 2. OBSERVE AND RECORD THE FOLLOWING: EZ, EX, CHECK EZ, ISLAND Z, HIGH EZ, EX WITH HIGH EZ, LOW EX AND EZ WITH LOW EX
- 3. INVESTIGATE ANY ABNORMALTIES WITH THE ABOVE AND CLEAR THE FOLLOWING: EX WITH HIGH EZ AND EX WITH LOW EZ
- 4. CHECK FOR ERRORS, ALL ERRORS ARE TO BE RECORDED ON THE HISTORY CARD, REVIEWED AGAINST PREVIOUS AND RECTIFIED
- 5. CONNECT LAPTOP PC TO PREDICTOR AND CHECK THE LOG FOR THE CONSISTENCY OF APPROACH TIMES OF THE PREVIOUS 20 TRAINS, INVESTIGATE TIMES THAT ARE INCONSISTENT OR OUTSIDE THE LEVEL CROSSING STANDARD

(REF ESM-07-02 TRACK CIRCUITS AND TRAIN DETECTION DEVICES)

RAIL CONNECTIONS & BONDING

- 6. EXAMINE ALL RAIL CONNECTIONS FOR ALL GCP TRACKS INCLUDING THE UP AND DOWN AS WELL AS THE ISLAND TRACKS FOR INTEGRITY AND DAMAGE, REPAIR OR REPLACE IF REQUIRED
- 7. EXAMINE ALL BONDING AT MECHANICAL RAIL JOINTS FOR INTEGRITY AND DAMAGE, REPAIR OR REPLACE IF REQUIRED
- 8. EXAMINE ALL CONNECTIONS TO TRACK SIDE EQUIPMENT INCLUDING BOOTLEG RISERS FOR INTEGRITY AND DAMAGE, REPAIR OR REPLACE IF REQUIRED
- 9. EXAMINE INSULATED JOINT COUPLERS (WHERE FITTED) FOR DAMAGE, REPAIR OR REPLACE IF REQUIRED
- 10. EXAMINE SHUNTS FOR DAMAGE, REPAIR OR REPLACE IF REQUIRED
- 11. INSPECT CABLE FASTENERS TO RAILS, SLEEPERS AND REPLACE IF NECESSARY

BALLAST CONDITION

12. EXAMINE BALLAST PROFILE IN THE VICINITY OF THE TRACK CONNECTIONS, SHUNTS AND IRJ'S, FOR EVIDENCE OF CONTAMINATION BY DIRT OR FINES MIGRATING FROM THE FORMATION, IF SIGNS ARE FOUND ARRANGE TO EXAMINE FULL LENGTH OF TRACK CIRCUIT AND REPORT CONDITION TO THE TEAM MANAGER FOR ATTENTION

INSULATED RAIL JOINT

- 13. INSPECT CONDITION OF INSULATED JOINTS
- 14. CHECK FOR FOREIGN OBJECTS THAT MAY CAUSE SHORT CIRCUIT



GENERAL 15. INSPECT CONDITION OF ALL ELECTRICAL CONNECTIONS AND WIRING 16. CHECK FOR RUST / SAND CONTAMINATION ON RAIL LIGHTNING PROTECTION 17. EXAMINE ANY LIGHTNING AND SURGE PROTECTION INCLUDING THE "SAFETRAN SURGE PANEL (80026-01) FOR DEFECTS OR LIGHTENING DAMAGE, REPLACE AS REQUIRED LOGS 18. CONNECT PC TO DATA RECORDER MODULE CARD, DOWNLOAD AND CHECK ERROR LOG 19. SAVE ERROR AND HISTORY LOGS FOR FUTURE REFERENCE **REINSTATEMENT ACTION:** RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1. 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD 3. ENSURE THAT THE GCP & LEVEL CROSSING PROTECTION OPERATES CORRECTLY ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 4. 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY 6.



TRAIN DETECTION PREDICTOR (GCP-4000)

SERVICE SCHEDULE / STANDARD JOB S07722

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE: PERFORM S07721 IN CONJUNCTION WITH THIS SERVICE SCHEDULE

SHUNT TEST

1. PERFORM A FIXED SHUNT TEST ON ALL GCP TRACKS

GCP CALIBRATION / LINERISATION

- 2. PERFORM CALIBRATION OF THE ISLAND TRACK
- 3. PERFORM CALIBRATION OF ALL TRACKS OF THE GRADE CROSSING PREDICTOR
- 4. PERFORM LINERISATION OF ALL TRACKS OF THE GRADE CROSSING PREDICTOR

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE GCP & LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

ARTC

	SIGNALLING TECHNICAL MAINTENANCE PLANS					
	TRAIN DETECTION PREDICTOR HXP - 3					
			SERVICE SCHEDULE / STANDARD JOB S07751			
PRE	PARA	TION ACTION:				
1.	ADVI	ISE NETWORK CONTROLLER BEFORE COMM	ENCING WORK			
2.	OBSE	ERVE THE REQUIREMENTS OF THE SAFE WC	RK METHOD STATEMENT			
3.	OBSE	ERVE THE APPROPRIATE NETWORK RULES A	AND PROCEDURES			
4.	PERF	FORM PRE-WORK SAFETY BRIEF				
MAINTENANCE ACTION:		IANCE ACTION:	(REFERENCE HXP Instruction Manual 100052-001)			
	1.	INSPECT ENCLOSURE CONDITION AND CLE	AN THE INSIDE OF THE CASE BY ELECTRIC BLOWER.			
	2.	INSPECT CONDITION AND DUST OFF THE O	JTSIDE OF THE CASE.			
	3.	CHECK VOLTAGE BETWEEN THE PREDICTO THE VOLTAGE IS BETWEEN 12 VDC +/-2.	R TERMINALS "B12"& "N12" AND ENSURE			
	4.	ENSURE RSI CARD POTENTIOMETER LOCKN	IUT IS TIGHT			
	5.	OBSERVE RX VALUE IS BETWEEN 105 & 95 A (OPERATING & DIAGNOSTIC) FROM 'IDK' DIS OR – ONE DIGIT). RECORD ON MAINTENANC	ND CHECK SOFTWARE VERSIONS PLAY. ENSURE THE RX VALUE IS STABLE (+ Œ HISTORY CARD			
	6.	CHECK DIAGNOSTICS FOR ERRORS USING ALL ERRORS AND RECTIFY PROBLEMS AS F	THE 'IDK' KEYPAD ON THE FRONT PANEL. RECORD REQUIRED.			
	7.	CONNECT LAPTOP TO PREDICTOR AND CHE APPROACH TIMES FOR PREVIOUS 20 TRAIN INCONSISTENT, EXTREMELY LONG OR BELO CROSSING APPROACH. DOWNLOAD & SAVE REFERENCE.	ECK HISTORY LOG FOR CONSISTENCY OF S. INVESTIGATE TIMES THAT ARE DW THE MINIMUM WARNING TIME FOR THE LEVEL E ERROR AND HISTORY LOGS FOR FUTURE			
	8.	CHECK THE HXP DISPLAY STATUS INDICATI CODES WITH REFERENCE TO THE HXP MAIN UNEXPLAINED 'SD' CODES.	ONS & THE MONITOR SELF DIAGNOSTICS (SD) NTENANCE MANUAL. INVESTIGATE ANY			
	9.	CHECK THE HXP SETTINGS ARE IN ACCORD VALUES AS PER THE DESIGN. RECORD ALL MAINTENANCE HISTORY CARD.	ANCE WITH THE LOCATION SETUP OPTIONS AND ADJUSTMENTS ON THE			
	10.	CLEAR RECORDED 'SD' CODES AND RESET	HIGH SIGNAL / LOW PHASE.			
	11.	CHECK THE HXP DATE AND TIME IS WITHIN	1 MINUTE OF THE LEVEL CROSSING			

MONITOR. ADJUST IF REQUIRED
RAIL CONNECTIONS & BONDING (REF MANUAL: ESM-07-02)

- 12. EXAMINE CONDITION OF ALL RAIL CONNECTIONS, WIDE & NARROW BAND & TERMINATION SHUNTS & INSULATED JOINT COUPLERS FOR ALL TRACKS. REPAIR OR REPLACE IF NECESSARY.
- 13. EXAMINE ALL BONDING AT MECHANICAL RAIL JOINTS FOR INTEGRITY AND DAMAGE. REPAIR OR REPLACE IF REQUIRED.
- 14. EXAMINE ALL CONNECTIONS TO TRACK SIDE EQUIPMENT INCLUDING BOOTLEG RISERS FOR INTEGRITY AND DAMAGE. REPAIR OR REPLACE IF REQUIRED.
- 15. EXAMINE TUNEABLE JOINT COUPLERS (WHERE FITTED) FOR DAMAGE. REPAIR OR REPLACE IF REQUIRED.
- 16. EXAMINE SHUNTSEFOR DAMAGE. REPAIR OR REPLACE IF REQUIRED.
- 17. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS

INSULATED RAIL JOINT (REF MANUAL: ESM-07-02)

- 18. INSPECT CONDITION OF INSULATED JOINTS
- 19. CHECK FOR FOREIGN OBJECTS THAT MAY CAUSE SHORT CIRCUIT

BALLAST CONDITION

20. EXAMINE BALLAST PROFILE FORMATION IN THE VICINITY OF THE TRACK CONNECTIONS, SHUNTS & IRJ'S FOR EVIDENCE OF CHANGE IN CONDITION E.G. RENEWAL, EXCESSIVE BALLAST HEIGHT OR CONTAMINATION THAT MAY AFFECT THE LIA ADJUSTMENT NECESSITATING READJUSTMENT OF THE HXP LIA. IF THERE IS A SIGNIFICANT CHANGE THEN INSPECT THE REMAINDER OF THE TRACK/S & REPORT CONDITION TO THE SIGNAL MAINTENANCE ENGINEER FOR RECTIFICATION

RAIL

21. CHECK FOR RUST/SAND CONTAMINATION ON RAIL. NOTIFY SIGNAL MAINTENANCE ENGINEER IF CONTAMINATION PRESENT AND ASSIST WITH RECTIFICATION &/OR CAN WARNING OF TRAINS IF NECESSARY.

LIGHTNING PROTECTION (REFERENCE HXP Instruction Manual 100052-001)

22. EXAMINE ANY LIGHTNING AND SURGE PROTECTION INCLUDING THE SURGE PANEL (PART MSDA-1 OR 2) FOR DEFECTS OR LIGHTNING DAMAGE. REPLACE AS REQUIRED.

GENERAL

- 23. VISUAL INSPECT ALL RACK MOUNTED EQUIPMENT, WIRING AND TERMINATIONS AND CLEAN OR REPAIR IF NECESSARY.
- 24. ENSURE THE SITE IS CLEAN AND CLEAR OF RUBBISH.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE HXP & LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE COMPLETED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION PREDICTOR HXP – 3

SERVICE SCHEDULE / STANDARD JOB S07752

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

NOTE: PERFORM S07751 IN CONJUNCTION WITH THIS SERVICE SCHEDULE

HXP CALIBRATION / LINEARISATION

- 1. PERFORM CALIBRATION OF THE ISLAND TRACK AS PER HXP Instruction Manual 100052-001
- 2. PERFORM SHUNT TEST ON TUNEABLE JOINT COUPLERS (IF PRESENT) AND RECORD VALUES. IF VALUE ACROSS INSULATED RAIL JOINT IS ABOVE 1RX DIFFERENCE THE TJC'S ARE DEFECTIVE OR IMPROPERLY ADJUSTED. ADJUST TJC AS PER **HXP Instruction Manual 100052-001** OR CHANGE OUT DEFECTIVE TJC IF UNABLE TO ADJUST
- 3. PERFORM A SHUNT TEST AND RECORD SHUNT VALUES AT THE 25%, 50%, 75% AND 100% FOR ALL APPROACHES AND REVIEW AGAINST THE PREVIOUS HISTORY CARD, IF VALUES DIFFER BY MORE THAN 2 RX NOTIFY THE SIGNAL MAINTENANCE ENGINEER
- 4. REVIEW 100% AND 50% VALUES AND IF REQUIRED PERFORM LUMPED IMPEDANCE ADJUSTMENT AS PER **HXP Instruction Manual 100052-001** IN CONJUNCTION WITH SIGNAL MAINTENANCE ENGINEER NOTIFICATION

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE GCP & LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION PREDICTOR XP – 4

SERVICE SCHEDULE / STANDARD JOB S07761

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: REFERENCE ElectroLogIXS XP4 System Operation Maintenance Manual 100323-010)

- 1. INSPECT ENCLOSURE CONDITION AND CLEAN THE INSIDE OF THE CASE BY ELECTRIC BLOWER.
- INSPECT CONDITION AND DUST OFF THE OUTSIDE OF THE CASE. 2.
- 3. CHECK VOLTAGE BETWEEN THE PREDICTOR TERMINALS "B12"& "N12" AND ENSURE THE VOLTAGE IS BETWEEN 12 VDC +/-2.
- OBSERVE RX VALUE IS BETWEEN 105 & 95 AND CHECK SOFTWARE VERSIONS (OPERATING & 4. DIAGNOSTIC) FROM CDU-1 OR USING MAINTENANCE LAPTOP.. ENSURE THE RX VALUE IS STABLE (+ OR - ONE DIGIT). RECORD ON MAINTENANCE HISTORY CARD
- 5. CONNECT LAPTOP TO XP4 AND CHECK HISTORY LOG FOR CONSISTENCY OF APPROACH TIMES FOR PREVIOUS 20 TRAINS. INVESTIGATE TIMES THAT ARE INCONSISTENT, EXTREMELY LONG OR BELOW THE MINIMUM WARNING TIME FOR THE LEVEL CROSSING APPROACH. DOWNLOAD & SAVE ERROR AND HISTORY LOGS FOR FUTURE REFERENCE.
- 6. CHECK THE XP4 DISPLAY STATUS INDICATIONS & THE MONITOR SELF DIAGNOSTICS (SD) CODES WITH REFERENCE TO THE XP4 MAINTENANCE MANUAL, INVESTIGATE ANY UNEXPLAINED 'SD' CODES.
- CHECK THE XP4 SETTINGS ARE IN ACCORDANCE WITH THE LOCATION SETUP VALUES AS PER THE 7. DESIGN. RECORD ALL OPTIONS AND ADJUSTMENTS ON THE MAINTENANCE HISTORY CARD.
- 8. RECORD & CLEAR 'SD' CODES AND RESET HIGH SIGNAL / LOW PHASE.
- CHECK THE XP4 DATE AND TIME IS WITHIN 1 MINUTE OF THE LEVEL CROSSING MONITOR. ADJUST IF 9 REQUIRED.
- 10. CHECK THE HEALTHY STATE INDICATION LED ON EACH OF THE XP4 MODULES IN THE CHASSIS.

AIL CONNECTIONS & BONDING (REF MANUAL: ESM-07-02)

- 11. EXAMINE CONDITION OF ALL RAIL CONNECTIONS, WIDE & NARROW BAND & TERMINATION SHUNTS & INSULATED JOINT COUPLERS FOR ALL TRACKS. REPAIR OR REPLACE IF NECESSARY.
- 12. EXAMINE ALL BONDING AT MECHANICAL RAIL JOINTS FOR INTEGRITY AND DAMAGE. REPAIR OR REPLACE IF REQUIRED.
- 13. EXAMINE ALL CONNECTIONS TO TRACK SIDE EQUIPMENT INCLUDING BOOTLEG RISERS FOR INTEGRITY AND DAMAGE. REPAIR OR REPLACE IF REQUIRED.
- 14. EXAMINE INSULATED JOINT COUPLERS (WHERE FITTED) FOR DAMAGE. REPAIR OR REPLACE IF REQUIRED.
- 15. EXAMINE SHUNTS FOR DAMAGE. REPAIR OR REPLACE IF REQUIRED.
- 16. INSPECT CABLE FASTENERS TO RAILS AND SLEEPERS



INSULATED RAIL JOINT

- 17. INSPECT CONDITION OF INSULATED JOINTS
- 18. CHECK FOR FORIEGN OBJECTS THAT MAY CAUSE SHORT CIRCUIT
- 19. EXAMINE BALLAST PROFILE FORMATION IN THE VICINITY OF THE TRACK CONNECTIONS, SHUNTS & IRJ'S FOR EVIDENCE OF CHANGE IN CONDITION E.G. RENEWAL, EXCESSIVE BALLAST HEIGHT OR CONTAMINATION THAT MAY AFFECT THE LIA ADJUSTMENT NECESSITATING READJUSTMENT OF THE XP4 LIA. IF THERE IS A SIGNIFICANT CHANGE THEN INSPECT THE REMAINDER OF THE TRACK/S & REPORT CONDITION TO THE SIGNAL MAINTENANCE ENGINEER FOR RECTIFICATION

RAIL

20. CHECK FOR RUST/SAND CONTAMINATION ON RAIL, NOTIFY SIGNAL MAINTENANCE ENGINEER IF CONTAMINATION PRESENT AND ASSIST WITH RECTIFICATION &/OR CAN WARNING OF TRAINS IF NECESSARY.

LIGHTNING PROTECTION (REFERENCE ElectroLogIXS XP4 System Operation & Maintenance Manual 100323-010)

21. EXAMINE ANY LIGHTNING AND SURGE PROTECTION INCLUDING THE SURGE PANEL (PART MSDA-1 OR 2) FOR DEFECTS OR LIGHTNING DAMAGE. REPLACE AS REQUIRED.

GENERAL

- 22. VISUAL INSPECT ALL RACK MOUNTED EQUIPMENT, WIRING AND TERMINATIONS AND CLEAN OR REPAIR IF NECESSARY.
- 23. ENSURE THE SITE IS CLEAN AND CLEAR OF RUBBISH.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE GCP & LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION PREDICTOR XP – 4

SERVICE SCHEDULE / STANDARD JOB S07762

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION: REFERENCE ElectroLogIXS XP4 System Operation Maintenance Manual 100323-010)

NOTE: PERFORM S07761 IN CONJUNCTION WITH THIS SERVICE SCHEDULE

XP4 CALIBRATION / LINEARISATION

- 1. PERFORM CALIBRATION OF THE ISLAND TRACK
- 2. PERFORM SHUNT TEST ON TUNEABLE JOINT COUPLERS (IF PRESENT) AND RECORD VALUES. IF VALUE ACROSS INSULATED RAIL JOINT IS ABOVE 1RX DIFFERENCE THE TJC'S ARE DEFECTIVE OR IMPROPERLY ADJUSTED. ADJUST TJC AS PER 100323-010 XP4 SYSTEM OPERATION AND MAINTENANCE MANUAL OR CHANGE OUT DEFECTIVE TJC IF UNABLE TO ADJUST
- 3. PERFORM A SHUNT TEST AND RECORD SHUNT VALUES AT THE 25%, 50%, 75% AND 100% FOR ALL APPROACHES AND REVIEW AGAINST PREVIOUS HISTORY CARD, IF VALUES DIFFER BY MORE THAN 2 RX NOTIFY THE SIGNAL MAINTENANCE ENGINEER
- 4. REVIEW 100% AND 50% VALUES AND IF REQUIRED PERFORM LUMPED IMPEDANCE ADJUSTMENT AS PER 100323-010 XP4 SYSTEM OPERATION AND MAINTENANCE MANUAL, IN CONJUNCTION WITH SIGNAL MAINTENANCE ENGINEER NOTIFICATION

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE GCP & LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS **TRAIN DETECTION GUAGE DETECTOR - TURCK**

SERVICE SCHEDULE / STANDARD JOB S07811

PREPARATION ACTION:

- ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK 1.
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 3.
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

- PERFORM VISUAL INSPECTION OF THE SENSOR AND ASSOCIATED CABLING INSTALLED ON TRACK 1 FOR WEAR, DAMAGE ETC.
- 2. CHECK THE SENSOR FOR CORRECT POSITION.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE GCP & LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A 5. CORRECTIVE ACTION
- DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY 6.



TRAIN DETECTION - TPWS

SERVICE SCHEDULE / STANDARD JOB SX7911

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 1. SECURITY OF ATTACHMENT CHECK THAT ALL BOLTS, NUTS, SCREWS, ELECTRICAL CONNECTIONS ETC. ARE FITTED AND SECURE.
- 2. CRACKS, FRACTURES AND DISTORTION EXAMINE EQUIPMENT FOR CRACKS, FRACTURES, BENDING OR OTHER DAMAGE CAUSED BY TRACKSIDE VEHICLES AND PLANT EQUIPMENT.
- 3. CHAFFING, FRAYING, SCORING OR WEAR CHECK THAT ALL WIRING INSULATION IS INTACT AND THAT NO BARE WIRES ARE EXPOSED.
- 4. CORROSION, DETERIORATION, CONTAMINATION AND OVERHEATING
 - a. EXAMINE EQUIPMENT FOR SIGNS OF CORROSION (RUST), OVERHEATING (DISCOLOURATION) OR LEAKS FROM PIPES AND HOSES (STAINS/NOISE).
 - b. CHECK EQUIPMENT COVERS, CABLE ENTRY POINTS AND CABLE GLANDS FOR DAMAGE, WHICH MAY PERMIT THE INGRESS OF MOISTURE OR DUST.
 - c. CHECK EQUIPMENT ENVIRONS FOR EVIDENCE OF FLOODING.
- 5. FAULTY OR BROKEN LOCKING DEVICES EXAMINE STAPLE AND PADLOCKS FOR EFFECTIVE OPERATION AND SECURITY.
- 6. EXTERNAL DAMAGE CHECK EQUIPMENT FOR OTHER DAMAGE, PARTICULARLY THAT CAUSED BY VANDALISM.
- 7. INFESTATION BY VERMIN OR VEGETATION CHECK FOR EVIDENCE OF OCCUPATION BY ANIMALS, INSECTS OR VEGETATION, WHICH MAY DETRACT FROM THE OPERATIONAL EFFICIENCY OF THE EQUIPMENT.
- 8. OTHERS

TPWS BOX MODULES

- (A) CHECK THE VCR RELAY IS ENERGISED.
- (B) CHECK THE LED INDICATIONS ON ALL MODULES ARE AS FOLLOWS:

LED	COLOUR STATE	
POWER ON	GREEN	LIT
FAULT	RED	UNLIT

IF FAILED INDICATION ALIGHT, FOLLOW STEPS IN 9 - SYSTEM RESET.

IF FAILED INDICATION REAPPEARS UNDERTAKE FAULT INVESTIGATION.

NOTE: INVESTIGATE ANY FAULT THAT IS INDICATED. IF YOU CANNOT RECTIFY THE FAULT, YOU MUST ADVISE THE SIGNALLER.

ARTC





- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE GCP & LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAIN DETECTION - TPWS

SERVICE SCHEDULE / STANDARD JOB <u>SX7912</u>

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

1





2.2 SIGNAL STRENGTH MEASUREMENT

- a. ARRANGE FOR THE SIGNALLER TO DISPLAY THE CORRECT ASPECT TO ENERGISE THE LOOPS.
- b. CHECK THAT THE VCR RELAY IS ENERGISED IF APPLICABLE.
- c. CHECK THAT THE GREEN "POWER ON" LED'S ARE LIT ON ALL MODULES FOR THE SIGNAL.
- d. CHECK THAT THE RED "FAULT" LED IS NOT LIT.
- e. CHECK THAT THE YELLOW "MAIN I/P" AND "SUPP I/P" ARE LIT AND UNLIT RESPECTIVELY. PLACE THE MAINTENANCE JIG ACROSS THE CENTRE OF THE LOOP AERIAL AND INSERT THE TEST AERIAL (CONNECTED TO THE TEST-METER) 60-100MM BELOW THE TOP OF THE RAIL.
 - MEASURE THE FIELD STRENGTH, WHICH MUST BE AT LEAST 29 MV BUT NO GREATER THAN 53 MV (MEASURED ON THE 50MVAC RANGE OR AUTO-SCALE), AND THE FREQUENCY WHICH MUST BE WITHIN 0.01KHZ OF THE AERIAL'S STATED FREQUENCY.
- f. RECORD THE FIELD STRENGTH (MVAC) AND FREQUENCY (KHZ; FIVE DIGITS) ON THE TPWS MAINTENANCE RECORD FORM.

3. LOCATION AND NETWORK CONTROLLER INDICATIONS

DE-ENERGISE THE OSS ARMING LOOP BY SLIPPING LINKS TO THE LOOP OUTPUT CIRCUIT AND CHECK THAT THE FOLLOWING LED INDICATIONS ARE SHOWN:

LED	FUNCTION	STATE
OSM/TSM	FAULT	LIT (RED)
SIM	LOOP ACTIVE	UNLIT

1. CHECK THE VCR RELAY HAS DE-ENERGISED.

2. RE-ENERGISE THE OSS ARMING LOOP BY REMAKING THE LINKS TO THE LOOP OUTPUT CIRCUIT AND CHECK THAT THE FOLLOWING LED INDICATIONS ARE SHOWN:

LED	FUNCTION	STATE
OSM/TSM	FAULT	LIT (RED)
SIM	LOOP ACTIVE	LIT (YELLOW)

- 3. CHECK THE VCR RELAY HAS RE-ENERGISED.
- 4. RESET THE SYSTEM, CHECK THAT THE FAULT LED IS UNLIT.
- 5. REPEAT TEST FOR OSS TRIGGER LOOP, TSS ARMING AND TRIGGER LOOPS.

4. TPWS LOOP INSPECTION

- a. CHECK LOOP AERIAL FLYING LEADS, TAIL CABLES AND FLEXIBLE CONDUIT, CONNECTOR COUPLINGS AND DISCONNECTION BOXES.
- b. CHECK LOOP AERIAL GRP (GLASS-REINFORCED PLASTIC) PANELS REPLACE IF BROKEN OR CRACKED IAW NIMI-0302-01.
- c. CHECK HEIGHT OF LOOP AERIALS (60-100 MM BELOW TOP OF RAILS) AND RECORD ONTO THE TPWS MAINTENANCE RECORD FORM.
- d. CHECK FIXING AND CONDITION OF LOOP AERIAL BEAMS AND MOUNTING CLAMPS.

NOTE: USE A TORQUE WRENCH TO TIGHTEN THE MOUNTING CLAMP SET SCREWS TO A TORQUE OF 8NM AS REQUIRED.

- e. CHECK LOCATION OF TSS AND OSS AS PER IN-SERVICE BONDING PLANS.
- f. CHECK CABLE TIES SECURING THE CONNECTOR COUPLING HALVES TOGETHER AND SECURING THE FLYING LEAD AND TAIL CABLE TO THE LOOP AERIAL ROUND CROSS-MEMBERS.
- 5. SYSTEM RESET
 - a. TO RESET THE 'FAULT' LEDS (RED), THE BX110 SUPPLY IS TO BE DISCONNECTED FOR 5 SECONDS BY THE REMOVAL OF THE FUSE IN TERMINAL NO.1. THE FUSE HOLDER SHOULD NOT BECOME DETACHED FROM THE TERMINAL BLOCK.
 - b. WHEN YOU RE-CONNECT THE FUSE, THE 'POWER ON' LEDS (GREEN), ON ALL MODULES BECOME LIT AND ALL 'FAULT' LEDS SHOULD BECOME UN-LIT.
 - c. DO NOT ATTEMPT TO RESET THE SYSTEM BY REMOVING AND REPLACING THE MODULE.
 - d. CHECK THAT ISOLATION FUSES/LINKS ARE IN THE CORRECT POSITION.

ARTC

INFORMATION ONLY

THE FOLLOWING ARE THE CONTROL MODULES AND LOOP FREQUENCIES.

NAME	LOOP AERIALS	TPWS DIRECTION	FREQUENCY
F2	TRIGGER (TSS AND OSS)	NORMAL DIRECTION	65.250 KHZ
F3	TSS ARMING	FREQUENCIES	66.250 KHZ
F1	OSS ARMING		64.250 KHZ
F5	TRIGGER (TSS AND OSS)	REVERSE OR WRONG DIRECTION FREQUENCIES	65.750 KHZ
F6	TSS ARMING		66.750 KHZ
F4	OSS ARMING		64.750 KHZ

ALL FREQUENCIES HAVE A TOLERANCE OF ±0.01KH





WESTINGHOUSE DESIGNED

SIGNAL DISPLAYING STOP

TSS/OSS3(T), TSS(A) & OSS3(A) ENERGISED

SIGNAL DISPLAYING MEDIUM ASPECT OSS2(T) & OSS2(A) ENERGISED

NOTE: THE SIGNAL MAY BE APPROACHED LIT, THEREFORE THE SIGNAL MAY REQUIRE A TRACK SECTION OCCUPIED FOR TIME, TO DISPLAY A MEDIUM ASPECT. (REFER TO CONTROL TABLES FOR THE SIGNAL).

UNITED GROUP DESIGNED TPWS

SIGNAL DISPLAYING STOP

ALL LOOPS ENERGISED

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. RECORD RESULTS ON THE EQUIPMENT HISTORY CARD
- 3. ENSURE THAT THE GCP & LEVEL CROSSING PROTECTION OPERATES CORRECTLY
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 6. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS TA SYSTOKEN BLOCK TRAIN STAFF

SERVICE SCHEDULE / STANDARD JOB S08011

PREPARATION ACTION:

- ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 1.
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- PERFORM PRE-WORK SAFETY BRIEF 4.

MAINTENANCE ACTION:

ORDINARY TRAIN STAFF

- 1. INSPECT FOR DAMAGE OR WEAR
- INSPECT AND TEST WARDS AND INDEXING 2.
- 3. CHECK STAFF SECTION NAMEPLATE AND COLOUR STAMPS
- 4. INSPECT, CLEAN, LUBRICATE AND TEST STAFF BOX
- INSPECT LOOSE KEY CONDITION AND CHECK WARDS 5.

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1.
- 2. ENSURE THAT THE STAFF BOX MECHANISM OPERATES CORRECTLY
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY 5.



SIGNALLING TECHNICAL MAINTENANCE PLANS TA SYS TOKEN BLOCK TRAIN STAFF SERVICE SCHEDULE / STANDARD JOB S08012

(REF ESM-05-01)

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

ORDINARY TRAIN STAFF

1. PERFORM INTERLOCKING TEST (SIGNAL ENGINEER)

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE STAFF BOX MECHANISM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



ATMS - AMS

SERVICE SCHEDULE / STANDARD JOB S08021

PREPARATION ACTION:

- ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 1.
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

FOLLOW THE INSTRUCTIONS IN ATMS NCC MAINTENANCE MANUAL UNDER SECTION 8.1.4 POWER 1. CYCLE AMS AND HARDWARE CHECKS

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1.
- ENSURE THAT THE STAFF BOX MECHANISM OPERATES CORRECTLY 2.
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A 4. CORRECTIVE ACTION
- DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY 5.



ATMS - AMS

SERVICE SCHEDULE / STANDARD JOB S08022

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

ANNUAL REVIEW OF ATMS GENERIC APPLICATION SAFETY CASE (GASC), APPENDIX H, APPLICATION SAFETY ASSUMPTIONS (MARKED AS CONDITION OF TYPE APPROVAL) AGAINST RECENT INCIDENTS TO ENSURE VALIDITY OF ATMS SAFETY CASES.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE STAFF BOX MECHANISM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



ATMS - AMS

SERVICE SCHEDULE / STANDARD JOB S08023

PREPARATION ACTION:

- ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 1.
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- PERFORM PRE-WORK SAFETY BRIEF 4.

MAINTENANCE ACTION:

FOLLOW THE INSTRUCTIONS IN ATMS NCC MAINTENANCE MANUAL UNDER SECTION 8.1.3 AMS 1. HARDWARE SRARQS

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1.
- ENSURE THAT THE STAFF BOX MECHANISM OPERATES CORRECTLY 2.
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A 4. CORRECTIVE ACTION
- DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY 5.



TECHNICAL MAINTENANCE PLANS

POWER SUPPLY AC

SERVICE SCHEDULE / STANDARD JOB S09011

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. CONTRACTORS ARE TO OBTAIN APPROVAL FROM ARTC'S SIGNAL WORK GROUP LEADER BEFORE ISOLATING ANY POWER SUPPLIES
- 3. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 4. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 5. PERFORM PRE-WORK SAFETY BRIEF
- 6. THE WORK IS TO BE UNDERTAKEN BY A QUALIFIED SUPERVISOR ELECTRICIAN IN ACCORDANCE WITH AUSTRALIAN STANDARD AS3000, AS3760, ARTC STANDARDS AND WORKCOVER CODE OF PRACTICE 2001 FOR LOW VOLTAGE ELECTRICAL WORK AND WORKCOVER
- 7. ISOLATE POWER SUPPLIES BEFORE WORKING ON ANY LIVE COMPONENTS, CONNECTIONS, CONDUCTOR

MAINTENANCE ACTION:

- 1. CHECK THAT A LOCK IS FITTED TO THE SWITCHBOARD OR SWITCH ROOM DOOR AND THAT THE LOCK OPERATES FREELY
- 2. CHECK THAT WARNING 415 / 240 VOLT SIGNS ARE ATTACHED TO ANY ENTRY DOORS
- 3. CHECK AND REPORT ANY DEFECTS, VANDALISM OR DAMAGE TO THE INSTALLATION AND ASSOCIATED STRUCTURES TO ARTC SIGNALLING WORKGROUP LEADER
- 4. INSPECT EARTH STAKE AND EARTH CLIP, REPLACE IF DAMAGED OR CORRODED, PAINT NEW EARTH CLIP TO EARTH STAKE ATTACHMENT POINT AS REQUIRED
- 5. CHECK EARTH STAKE LOCATION IS CLEARLY MARKED ON SWITCHBOARD
- 6. CHECK THAT MAIN EARTH CONDUCTOR HAS NOT BEEN DISTURBED, EARTH ELECTRODE IS NOT CORRODED OR DAMAGED AND CONNECTIONS AT SWITCHBOARD AND STAKE ARE FIRMLY ATTACHED - TEST EARTH RESISTANCE / RESTORE AS REQUIRED
- 7. REPAINT EARTH CLIP TO EARTH STAKE CONNECTION AS REQUIRED
- 8. INSPECT / TEST SURGE PROTECTION EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS - REPLACE DEFECTIVE UNITS
- 9. CHECK FOR EVIDENCE OF NEW ELECTRICAL WORK OR ALTERATIONS AND REPORT CHANGES TO SIGNALLING WORKGROUP LEADER
- 10. CLEAN DOWN THE FRONT OF THE SWITCHBOARD & EQUIPMENT WITH A DRY CLOTH TO REMOVE DIRT, DUST, INSECT NESTS, INSECTS & COB WEBS
- 11. TEST RCD TO CONFIRM CORRECT OPERATION REPLACE ANY NONCOMPLYING UNITS
- 12. CHECK ELECTRICAL CONNECTIONS FOR TIGHTNESS, EVIDENCE OF OVERHEATING, BURNING OR ARCING REPAIR / REPLACE DAMAGE EQUIPMENT
- 13. CHECK THAT ALL SWITCHBOARD SECURING SCREWS, BOLTS, NUTS, HINGES ARE IN PLACE AND FIRMLY FIXED



- 14. CHECK THE SEAL OF OPENINGS AROUND SWITCHBOARD CABLE ENTRIES, SEAL HOLES IN PANELS WITH INSULATING COMPOUND TO PREVENT THE INGRESS OF INSECTS AND VERMIN
- 15. LUBRICATE ALL HINGED JOINTS ON DOORS, COVERS AND PANELS
- 16. TOUCH UP ANY CORRODED METAL SURFACES ON OUTDOOR SWITCHBOARDS AND METER BOARDS WITH GALMAT OR SIMILAR
- 17. APPLY INSECT SURFACE SPRAY TO THE ENCLOSURE
- 18. UNDERTAKE VEGETATION CONTROL MEASURES TO THE SURROUNDS OF THE SWITCHBOARD, BUILDING, SERVICE POLE ACCESS TRACK, CHECK CLEARANCE TO ANY AERIALS AND REPORT DISCREPANCIES TO ARTC SIGNAL WORKGROUP LEADER OR TEAM MANAGER
- 19. SWEEP OUT SWITCHBOARD / SWITCH ROOM, CHECK FOR EVIDENCE OF VERMIN AND IF REQUIRED PLACE MOUSE/RAT BAITS
- 20. COMPLETE AND ATTACH INSPECTION / TEST TAG TO SWITCHBOARD

ENVIRONMENTAL INSTRUCTIONS

- 1. APPROVED HERBICIDES MAY BE USED AROUND BUILDINGS AND STRUCTURES IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS
- 2. VEGETATION MUST BE CLEARED FOR A DISTANCE OF 3 METRES FROM AROUND WOOD POLES AND THE MATERIALS DISPOSED OFF SITE
- 3. PRUNING OF VEGETATION UNDER AERIALS MAY REQUIRE APPROVAL FROM THE ARTC TEAM MANAGER
- 4. APPROVED TERMITE AND RODENT CONTROLS MUST BE USED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS
- 5. ENVIRONMENTAL INFORMATION IS AVAILABLE FROM ARTC WEBSITE

TOOLS AND EQUIPMENT

TOOLS, PAINT, PAINT BRUSH, LUBRICANT, SILICONE, INSECT SURFACE SPRAY, BROOM, HAND BROOM AND SHOVEL, RUBBISH BIN, RODENT BAITS, MEGGER, MULTI-METER, RCD TESTER, CLEANING RAGS, PPE, APPROVED HERBICIDES, WHIPPER SNIPPER

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 4. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY
- 5. ENSURE THAT ALL SWITCHBOARDS, SWITCH ROOMS, COVERS AND DOORS ARE SECURED AND LOCKED AS APPROPRIATE
- 6. RECORD DETAILS OF TESTS TO RCD, EARTH RESISTANCE AND SURGE PROTECTION EQUIPMENT IN SITE HISTORY CARD OR LOG BOOK



POWER SUPPLY AC TRANSFORMED

SERVICE SCHEDULE / STANDARD JOB S09021

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

CHANGEOVER CONTACTOR (AUTOMATIC CHANGE OVER SWITCH)

- 1. TEST OPERATION OF CHANGE OVER CONTACTOR
- 2. INSPECT CONDITOIN OF CONTACTS

SUPPLY VOLTAGE

3. TEST SUPPLY VOLTAGE BALANCE TO EARTH (WHERE NO RELIABLE ELD)

DISTRIBUTION BOARD

4. INSPECT DISTRIBUTION BOARD AS PER AUSTRALIAN STANDARDS

EARTH LEAKAGE PROTECTION

(REF PROCEDURE ESM-11-01)

- 5. CHECK STATUS OF EARTH LEAKAGE PROTECTION UNIT
- 6. TEST EARTH LEAKAGE PROTECTION RELAY

TRASNFORMER

7. CHECK CONDITION OF TRANSFORMER

GENERAL

- 8. INSPECT ALL EQUIPMENT FOR EVIDENCE OF OVERHEATING
- 9. CHECK ALL ELECTRICAL CONNECTIONS FOR TIGHTNESS
- 10. INSPECT CONDITION OF ELECTRICAL WIRING
- 11. CHECK THAT WARNING 415/240 VOLT SIGNS ARE SECURELY ATTACHED AND LEGIBLE.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 4. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POWER SUPPLY AC TRANSFORMED

SERVICE SCHEDULE / STANDARD JOB S09022

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

SURGE PROTECTION

- 1. INSPECT CONDITION OF SURGE PROTECTION EQUIPMENT
- 2. TEST ARRESTORS
- 3. TEST VARISTORS
- 4. TEST EARTH

SUPPLY PHASE (FOR LOCATIONS FEEDING AC TYPE TRACK CIRCUITS ONLY & NO PHASE DETECTORS FITTED)

- 5. TEST PHASE ANGLES BETWEEN SUPPLIES
- 6. TEST PHASING BETWEEN AC TRACK CIRCUITS AT SUPPLY INTERFACE LOCATIONS

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 4. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POWER SUPPLY MOTOR GENERATOR

SERVICE SCHEDULE / STANDARD JOB S09111

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

CONTROL PANEL

- 1. CHECK OPERATION OF ALARM CIRCUITS & RECTIFY CAUSE OF ANY ALARM INDICATED
- 2. OBSERVE OPERATION OF CHANGE OVER CONTACTOR AND INSPECT CONDITION OF CONTACTS
- 3. RECORD HOUR RUN METER READING BEFORE AND AFTER RUNNING THE DIESEL ENGINE

ENGINE STARTING BATTERY

- 4. CHECK ELECTROLYTE LEVEL (WET CELL ONLY)
- 5. CHECK TIGHTNESS OF CONNECTIONS AND CLEAN BATTERY TERMINALS AS NECESSARY
- 6. CHECK BATTERY CHARGE RATE
- 7. CHECK CHARGE LEVEL OF BATTERY WITH HYDROMETER (WET CELL ONLY)
- 8. CHECK BATTERY STATE OF CHARGE (USE LOAD TESTER)
- 9. INSPECT BATTERY FOR EVIDENCE OF OVERHEATING OR DEFORMITY
- 10. CLEAN AIR FILTER AS REQUIRED (ESPECIALLY IF THE ENGINE HAS BEEN RUN FOR SOME TIME AND IS IN A DIRTY ENVIRONMENT)

EARTH LEAK TEST

- 11. TEST AC SUPPLY VOLTAGE LEAK TO EARTH (WHERE A RELIABLE ELD IS NOT FITTED)
- 12. CHECK AND TEST STATUS OF THE EARTH LEAKAGE DETECTOR (WHERE FITTED)

SURGE PROTECTION

13. INSPECT CONDTION OF SURGE PROTECTION EQUIPMENT INCLUDING THE EARTHING SYSTEM TEST THE SURGE ARRESTORS

DIESEL ENGINE

- 14. CHECK FUEL SUPPLY LEVEL & TOP UP IF NECESSARY
- 15. CHECK ENGINE OIL LEVEL IS HALF TO FULL (LESS THAN HALF IS TOO LOW). ADD TOP UP OIL AS REQUIRED.
- 16. CHECK OPERATION OF ENGINE COOLING SYSTEM (FAN OR WATER COOLED) CHECK COOLANT LEVEL (WATER COOLED MODELS ONLY) AND TOP UP AS REQUIRED.
- 17. CHECK FOR FUEL AND LUBRICATING OIL LEAKS RECTIFY AS NECESSARY REPORT TO MECHANIC OR FITTER



- 18. CHECK ALL FUEL LINES FOR LEACKS & DEGRADATION (ESPECIALLY ANY RUBBER OR PLASTIC FITTINGS) - REPORT TO MECHANIC OR FITTER
- 19. WIPE ENGINE AND BASE PLATE CLEAN
- 20. CHECK EXHAUST EXTRACTION SYSTEM IS INTACT AND FUNCTIONING CORRECTLY

FUNCTIONAL TEST

- 21. SWITCH OFF NORMAL SUPPLY (ENSURES THE MOTOR IS ON LOAD) AND CHECK ENGINE START **OPERATION**
- 22. RUN ENGINE AND CHECK GENERAL OPERATION UNDER LOAD FOR MINIMUM OF 30 MINUTES
- NOTE: ENGINE CYLINDER DEGLAZES WHEN RUN ON LOAD, ENGINE TO BE RUN UNTIL NORMAL **OPERATING TEMPERATURE IS REACHED (30 MINUTES)**

GENERAL

- 23. CHECK ALL ELECTRICAL CONNECTIONS FOR TIGHTNESS
- 24. INSPECT CONDITION OF ELECTRICAL WIRING AND CONNECTIONS
- 25. CHECK ALL EQUIPMENT FOR EVIDENCE OF OVERHEATING OR ARCING
- 26. INSPECT FUEL TANKS AND BATTERY FOR CORROSION ISSUES.

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER AND COMPLETING 1. MAINTENANCE HISTORY CARD
- ENSURE THAT THE MOTOR GENERATOR OPERATES CORRECTLY 2.
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A 4 CORRECTIVE ACTION
- DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY 5.



POWER SUPPLY MOTOR GENERATOR

SERVICE SCHEDULE / STANDARD JOB SX9112

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

DIESEL MOTOR

- 1. REPLACE AIR FILTER
- 2. DRAIN LUBRICATING OIL AND REFIL WITH CORRECT GRADE OIL (15W/40 DIESEL ENGINE OIL)
- 3. RENEW OIL FILTER ELEMENT
- 4. RENEW FUEL FILTER ELEMENT (DRAIN THE FUEL TANK IF INSPECTION OF THE ELEMENT INDICATES CONTAMINATED OF THE FUEL)
- 5. DRAIN THE RADIATOR & REFILL WITH COOLANT & ANTIFREEZE ADDITIVE (WATER COOLED MODELS ONLY)
- 6. CHECK FREE WORKING OF THE GOVENOR LINKAGE
- 7. WASH THE ENGINE DOWN WITH PARAFFIN OR FUEL OIL
- 8. INSPECT THE CONDITION OF THE FINS ON THE CYLINDER HEAD, INJECTOR AND CYLINDER
- 9. INSPECT THE CONDITION OF THE INLET MANIFOLD AND EXHAUST SYSTEM
- 10. INSPECT THE CONDITION OF THE FAN BLADES

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER AND COMPLETING MAINTENANCE HISTORY CARD
- 2. ENSURE THAT THE MOTOR GENERATOR OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

		SIGNALLING TECHNICAL MAINTENANCE PLANS
		POWER SUPPLY - UPS
		SERVICE SCHEDULE / STANDARD JOB S09211
PRE 1. 2. 3. 4.	PA AE OE OE PE	RATION ACTION: DVISE NETWORK CONROLLER BEFORE COMMENCING WORK BSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT BSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES ERFORM PRE-WORK SAFETY BRIEF
ΜΑΙ	NTE	ENANCE ACTION:
GEN	ENERAL (REF TO E.G MANUFACTURER'S MANUAL)	
	1.	INSPECT ALL EQUIPMENT FOR EVIDENCE OF OVERHEATING
	2.	CHECK ALL ELECTRICAL CONNECTIONS FOR TIGHTNESS
	3.	INSPECT CONDITION OF ELECTRICAL WIRING
	4.	CLEAN UPS, USE ONLY APPROVED CLEANING SUBSTANCES
	5.	ENSURE VENTILATION OPENINGS ARE NOT OBSTRUCTED
UPS	;	(REF TO E.G MANUFACTURER'S MANUAL)
	6.	FOR NORMALLY ONLINE UPS, CHECK OPERATIONAL (NOT IN BYPASS)
	7.	TEST OPERATION BY TURNING OFF SUPPLY TO UPS FOR 2 MINUTES
	8.	CHECK UPS FRONT PANEL LCD SCREEN INDICATION AND LED'S ARE FUNCTIONING CORRECTLY AS PER MANUFACTURE 'S MANUAL DESCRIPTION
	9.	CHECK INDIVIDUAL BATTERIES FOR UPS AS PER MANUFACTURER'S REQUIREMENTS.
	10.	REVIEW MANUFACTURES RECOMMENDATION FOR BATTRY LIFE AND REPLACE BATTERIES AS NECESSARY
CHE	CK	COOLING FAN AND REPLACE IT AS NECESSARY
EXT	ER	NAL BATTERY CHARGER (IF FITTED) (REF TO E.G MANUFACTURER'S MANUAL)
	11.	CHECK THAT AMMETER SETTLES DOWN TO SHOW A NON-ZERO CURRENT FLOW
	12.	CHECK THAT LED'S ARE FUNCTIONING CORRECTLY AS PER FRONT PANEL OPERATION DESCRIPTION
	13.	CHECK THAT CHARGER IS MAINTAINING BATTERY BANK FLOAT VOLTAGE VIA THE UPS FRONT PANEL LCD SCREEN
MA	INT	ENANCE BYPASS SWITCH (MBS) (REF TO E.G MANUFACTURER'S MANUAL)
	14.	CHECK UPS OPERATION STATUS WHILE MBS IS IN "TEST", "BYBASS" OR "NORMAL" POSITION
	15.	CONFIRM EQUIPMENT CONTINUED TO OPERATE WITHOUT DISRUPTION
REI 1.	NST RE M/ EN	ATEMENT ACTION: ECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER AND COMPLETING AINTENANCE HISTORY CARD ISURE THAT THE UPS OPERATES CORRECTLY
2.		JVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE

5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

ARTC

SIGNALLING TECHNICAL MAINTENANCE PLANS POWER SUPPLY D.C LX BATTERY BACKUP SERVICE SCHEDULE / STANDARD JOB S09311

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

CHARGER / TRANSFORMER / RECTIFIER

- 1. TEST OUTPUT VOLTAGE FROM CHARGER / TRANSFORMER / RECTIFIER UNIT
- CHECK THE BATTERY CHARGER ALARM CARD REFERENCE AND LOW VOLTAGE ALARM VOLTAGES ARE CORRECT (WHERE FITTED). LOW VOLTAGE ALARM SHOULD BE 11.8V FOR 10 CELL, 14.6V FOR 12 CELL ARRANGEMENT FOR NICKEL CADMIUM AND 11.4V FOR LEAD ACID. ADJUST THE ALARM CARD SETTING IF REQUIRED.
- 3. CHECK THE ADJUSTMENT OF THE BATTERY CHARGER OUTPUT WITH THE CURRENT STABILISED TO A TRICKLE CURRENT
- 4. CHECK OPERATION OF BATTERY CHARGER MR 6 BLOCKING DIODE (IF APPLICABLE)
- 5. CHECK MAINS POWER SUPPLY ALARM FOR CORRECT OPERATION (WHERE FITTED

BATTERY

- 6. CHECK BATTERY ELECTROLYTE LEVEL (IF NOT SEALED TYPE)
- 7. EXAMINE BATTERY TERMINALS FOR CORROSION / DEGRADATION AND CHECK TIGHTNESS OF CONNECTIONS
- 8. CHECK THE FLOAT VOLTAGE OF THE BATTERY IS 1.45V PER CELL
- 9. CHECK BATTERY STATE OF CHARGE (USE LOAD TESTER)
- 10. CHECK CHARGE RATE (FLOAT VOLTAGE, TRICKLE CURRENT, LOAD TEST BATTERY FOR 2 MINUTES AND RECORD BATTERY VOLTAGE, BOOST CURRENT)
- 11. CHECK CHARGER REGULATOR / DIODE
- 12. EXAMINE BATTERY CELL CASING FOR INTEGRITY
- 13. SWITCH THE BATTERY CHARGER OFF AND MEASURE THE BATTERY CELL VOLTAGE AFTER THE CROSSING LOAD HAS BEEN APPLIED FOR TWO MINUTES. NICKEL CADMIUM CELLS SHOULD NOT MEASURE LESS THAN 1.25 V AND LEAD ACID CELLS NOT LESS THAN 2.0 V. FOR UNSEALED LEAD ACID CELLS ALSO CHECK THE SPECIFIC GRAVITY OF THE ELECTROLYTE WITH A HYDROMETER. THIS SHOULD READ ABOUT 1.25 FOR A FULLY CHARGED CELL.

EARTH BALANCE

14. TEST VOLTAGE BALANCE TO EARTH

EARTH LEAKAGE PROTECTION

(REF PROCEDURE ESM-11-01)

- 15. CHECK STATUS OF EARTH LEAKAGE PROTECTION UNIT
- 16. TEST EARTH LEAKAGE PROTECTION RELAY



GENERAL

- 17. INSPECT ALL EQUIPMENT FOR EVIDENCE OF OVERHEATING
- 18. CHECK ALL ELECTRICAL CONNECTIONS FOR TIGHTNESS
- 19. INSPECT CONDITION OF ELECTRICAL WIRING

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 4. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS POWER SUPPLY D.C BATTERY BACKUP

SERVICE SCHEDULE / STANDARD JOB S09312

PREPARATION ACTION:

- ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 1.
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

SURGE PROTECTION

- INSPECT CONDITION OF SURGE PROTECTION EQUIPMENT 1.
- 2. **TEST ARRESTORS**
- 3. **TEST VARISTORS**
- 4. TEST EARTH

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1.
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A 3. CORRECTIVE ACTION
- 4. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

POWER SUPPLY D.C BATTERY BACKUP

SERVICE SCHEDULE / STANDARD JOB S09321

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

CHARGER / TRANSFORMER / RECTIFIER

- 1. TEST OUTPUT VOLTAGE FROM CHARGER / TRANSFORMER / RECTIFIER UNIT
- 2. CHECK THE BATTERY CHARGER ALARM CARD REFERENCE AND LOW VOLTAGE ALARM VOLTAGES ARE CORRECT (WHERE FITTED)
- 3. CHECK THE ADJUSTMENT OF THE BATTERY CHARGER OUTPUT WITH THE CURRENT STABILISED TO A TRICKLE CURRENT
- 4. CHECK OPERATION OF BATTERY CHARGER MR 6 BLOCKING DIODE (IF APPLICABLE)
- 5. CHECK MAINS POWER SUPPLY ALARM FOR CORRECT OPERATION (WHERE FITTED

BATTERY

- 6. CHECK BATTERY ELECTROLYTE LEVEL (IF NOT SEALED TYPE)
- 7. EXAMINE BATTERY TERMINALS FOR CORROSION / DEGRADATION AND CHECK TIGHTNESS OF CONNECTIONS
- 8. CHECK THE FLOAT VOLTAGE OF THE BATTERY IS 1.45V PER CELL
- 9. CHECK BATTERY STATE OF CHARGE (USE LOAD TESTER)
- 10. CHECK CHARGE RATE (FLOAT VOLTAGE, TRICKLE CURRENT, LOAD TEST BATTERY FOR 2 MINUTES AND RECORD BATTERY VOLTAGE, BOOST CURRENT)
- 11. CHECK CHARGER REGULATOR / DIODE.
- 12. EXAMINE BATTERY CELL CASING FOR INTEGRITY

EARTH BALANCE

13. TEST VOLTAGE BALANCE TO EARTH

EARTH LEAKAGE PROTECTION (REF PROCEDURE ESM-11-01)

- 14. CHECK STATUS OF EARTH LEAKAGE PROTECTION UNIT
- 15. TEST EARTH LEAKAGE PROTECTION RELAY

GENERAL

- 16. INSPECT ALL EQUIPMENT FOR EVIDENCE OF OVERHEATING
- 17. CHECK ALL ELECTRICAL CONNECTIONS FOR TIGHTNESS
- 18. INSPECT CONDITION OF ELECTRICAL WIRING

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 4. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS POWER SUPPLY D.C RECTIFIED SERVICE SCHEDULE / STANDARD JOB S09341 **PREPARATION ACTION:** 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 4. PERFORM PRE-WORK SAFETY BRIEF **MAINTENANCE ACTION: TRANSFORMER / RECTIFIER** TEST OUTPUT VOLTAGE FROM TRANSFORMER / RECTIFIER UNIT 1. 2. EARTH BALANCE TEST VOLTAGE BALANCE TO EARTH 3. EARTH LEAKAGE PROTECTION (REF PROCEDURE ESM-11-01) 4. CHECK STATUS OF EARTH LEAKAGE PROTECTION UNIT TEST EARTH LEAKAGE PROTECTION RELAY 5. GENERAL 6. INSPECT ALL EQUIPMENT FOR EVIDENCE OF OVERHEATING 7. CHECK ALL ELECTRICAL CONNECTIONS FOR TIGHTNESS 8. INSPECT CONDITION OF ELECTRICAL WIRING **REINSTATEMENT ACTION:** RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1 ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 2. 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY 4



POWER SUPPLY D.C RECTIFIED

SERVICE SCHEDULE / STANDARD JOB S09342

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

SURGE PROTECTION

- 1. INSPECT CONDITION OF SURGE PROTECTION EQUIPMENT
- 2. TEST ARRESTORS
- 3. TEST VARISTORS 4 TEST EARTH

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 4. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



POWER SUPPLY SOLAR SYSTEM

SERVICE SCHEDULE / STANDARD JOB S09411

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

BATTERY

- 1. CHECK BATTERY ELECTROLYTE LEVEL (IF NOT SEALED TYPE)
- 2. CLEAN BATTERY TERMINALS AS NECESSARY AND CHECK TIGHTNESS OF CONNECTIONS
- 3. CHECK BATTERY STATE OF CHARGE (USE LOAD TESTER)
- 4. INSPECT BATTERY TEMPERATURE COMPENSATION SENSOR AND ENSURE IT IS INSTALLED CORRECTLY AND REPLACE IF REQUIRED,
- 5. CHECK CHARGE RATE (FLOAT VOLTAGE, TRICKLE CURRENT, LOAD TEST BATTERY FOR 2 MINUTES AND RECORD BATTERY VOLTAGE, BOOST CURRENT)
- 6. CHECK CHARGER REGULATOR / DIODE

SOLAR ARRAY

- 7. CHECK SOLAR ARAY FOR DAMAGE OR CONTAMINATION
- 8. CHECK CONDITION AND STABILITY OF POST AND MOUNTING
- 9. INSPECT CONDITION OF ELECTRICAL WIRING
- 10. CHECK OUTPUT VOLTAGE AND SHORT CIRCUIT CURRENT FROM PANELS

GENERAL

- 11. INSPECT BATTERY FOR EVIDENCE OF OVERHEATING OR DEFORMITY
- 12. CHECK ALL ELECTRICAL CONNECTIONS FOR TIGHTNESS
- 13. INSPECT CONDITION OF ELECTRICAL WIRING
- 14. INSPECT CIRCUIT BREAKERS FOR EVIDENCE OF DAMAGE AND CONDITION

SOLAR CHARGE CONTROLLER

- 15. VISUAL INSPECTION FOR ANY DAMAGE, CLEANLINESS, CABLE TIGHTNESS AND AIR FLOW
- 16. PERFORM VISUAL CHECK AND EARTH LEAK CHECK
- 17. CHECK OUTPUT VOLTAGE AND CURRENT LEVEL
- 18. CHECK ALARM MODULE FOR SOLAR ALARMS AND VISULA INSPECTION OF MODEM IF INSTALLED
- 19. PERFROM ANY OTHER TESTS AS PER MANUFACTURER GUIDELINE AS REQUIRED IN MANUAL



- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 4. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY


POWER SUPPLY WIND TURBINE

SERVICE SCHEDULE / STANDARD JOB S09511

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTNENACE ACTION:

- 1. VISUAL INSPECTION OF THE CABLE, CONNECTION ETC.
- 2. VISUAL INSPECTION OF THE TURBINE AND ASSOCIATED MECHANISM FOR DAMAGE, WEAR ETC.
- 3. CHECK MOUNITNG POLE FOR CORROSION, EROSION AND SURROUNING GROUND.
- 4. ELECTRICAL CHECK OF OUTPUT OF TURBINE WHEN OPERATING (CHARGING CURRENT)
- 5. VISUAL INSPECTION OF LOAD CONTROLLER

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 4. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



COMMS VITAL RADIO

SERVICE SCHEDULE / STANDARD JOB S10011

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- PERFORM PRE-WORK SAFETY BRIEF 4.

MAINTENANCE ACTION:

TVIEW+ & DIAGNOSTICS

- RUN TVIEW+ AND CHECK THE STATUS OF THE RADIO MODEMS 1.
- 2. **RECEIVED SIGNAL STRENGTH**
- 3. FREQUENCY ERROR
- 4. CHECK DC SUPPLY VOLTAGE

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1.
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



COMMS VITAL RADIO

SERVICE SCHEDULE / STANDARD JOB S10012

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 3.
- 4 PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

- CHECK THAT THE WIRING LOOMS ARE NEAT AND TIDY AND SECURED INSIDE OF CABINETS 1.
- 2. CHECK EQUIPMENT HOUSING IS GROUNDED OR ISOLATED
- 3. CHECK THE LIGHTNING ARRESTOR IS PROPERLY GROUNDED AND ANY SIGN OF DAMAGE
- MEASURE RETURN LOSS, WITH ANTENNA AND CABLE CONNECTED, USING SPECTRUM ANALYSER OR 4. VSWR METER RECORD THE RETURN LOSS RESULT
- RECORD THE VSWR MEASUREMENT 5.
- MEASURE DTF (DISTANCE TO FAULT) AND COMPARE RESULTS TO PREVIOUS TRACE, RECTIFY 6. INSTALLATIONS IF NECESSARY
- 7. USE SPECTRUM ANALYSER AND MEASURE SIGNAL STRENGTH. COMPARE THE ACTUAL VALUE TO TVIEW+
- ENSURE THE ANTENNA MAST IS VERTICALLY ALIGNED 8.
- 9. CONDUCT GROUND RESISTANCE MEASUREMENT

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1.
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A 4 CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

ARTC





MAINTENANCE ACTION:

- 1. THERE ARE NO USER SERVICEABLE PARTS THAT REQUIRE MAINTENANCE
- 2. VISUALLY INSPECT THE DISH TO ENSURE IT IS SECURELY MOUNTED AND THERE IS NO OBVIOUS DAMAGE
- 3. VISUALLY INSPECT THE DISH MOUNTING BRACKET AND/OR POLE TO ENSURE THERE IS NO OBVIOUS DAMAGE
- 4. VISUALLY INSPECT THE DISH CABLING TO ENSURE THERE IS NO OBVIOUS DAMAGE

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



COMMS NON-VITAL RADIO

SERVICE SCHEDULE / STANDARD JOB S10031

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTNEANCE ACTION:

- 1. CHECK THE VISUAI CONDITIONS OF THE RADIO EQUIPMENT.
- 2. CHECK THE POWER SUPPLY AND MEASURE THE VOLTAGE.
- 3. CHECK THE LIGHTNING ARRESTOR IS PROPERLY GROUNDED AND ANY SIGN OF DAMAGE.
- 4. CHECK THE TERMINATIONS ARE CORRECT.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS COMMS SYSTEM

SERVICE SCHEDULE / STANDARD JOB S10211

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTNEANCE ACTION:

- 1. CHECK THAT THE WIRING LOOMS ARE NEAT AND TIDY AND SECURED INSIDE OF CABINETS
- 2. CHECK EQUIPMENT HOUSING IS GROUNDED OR ISOLATED
- 3. CHECK THE LIGHTNING ARRESTOR IS PROPERLY GROUNDED AND ANY SIGN OF DAMAGE
- 4. CHECK REMOTE MONITORING OF COMMS SYSTEM FOR ANY ISSUES

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

ARTC

SIGNALLING TECHNICAL MAINTENANCE PLANS

SIGNALLING CABLE

SERVICE SCHEDULE / STANDARD JOB S11011

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

INSULATION TEST

(REF PROCEDURE ESM-11-01)

- 1. TEST LOCATION EARTH TEST VALUE TO ENSURE IT COMPLIES WITH ESM-11-01 CLAUSE 3.2
- 2. EXAMINE WIRING & CABLES
- 3. EXAMINE CABLE ENTRIES AND ENSURE CABLES ARE NOT CHAFING
- 4. TEST INTERNAL WIRING
- 5. TEST ALL TAIL CABLES
- 6. TEST ALL MAIN (INTERLOCATION) CABLES
- 7. TEST ALL POWER CABLES
- 8. TEST ALL TRACKSIDE EQUIPMENT INCLUDING INTERNAL WIRING AND TEST TO EQUIPMENT FRAME / HOUSING
- NOTE 1: ENSURE ALL ELECTRONIC COMPONENTS, INCLUDING LED SIGNAL LIGHTS, ARE ISOLATED TO PREVENT DAMAGE
- NOTE 2: INSULATION TEST IS NOT NECESSARY FOR SIGNALS OPERATED BY CBI LAMP DRIVER CARD AND WHERE THE POWER SUPPLY IS MONITORED BY AN EARTH LEAKAGE DETECTOR (ELD)
- NOTE 3:FOR LED SIGNALS IF A 500V MEGGER IS USED WHEN CONDUCTING CORE TO CORE TESTING THE PRINTED CIRCUIT BOARDS MUST BE DISCONNECTED FROM TAIL CABLES BEFORE THE MEGGER IS APPLIED, HOWEVER THIS IS NOT NECESSARY FOR CORE TO EARTH TESTING
- NOTE 4:IF CIRCUIT IS NOT DOUBLE SWITCHED THEN CARRY OUT A FUNCTION TEST OF EXTERNAL CONTACTS OF THE OPERATING APPARATUS TO VERIFY NO CORE TO CORE INSULATION BREAKDOWN, ALTERNATIVELY CORE TO CORE INSULATION TESTS OF ALL WORKING CONDUCTORS IN THE MULTICORE CABLE MAY BE USED BUT NOT IF MORE THAN ONE AT A TIME HAS TO BE DISCONNECTED FROM ITS TERMINAL IN THE APPARATUS

NOTE: THE LINKS AT THE LOCATION ARE TO BE OPENED

- 1. RECORD MAINTENANCE ACTION BY COMPLETING THE RELEVENT MAINTENANCE HISTORY CARD & CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT AFFECTED EQUIPMENT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



CABLE ROUTES

SERVICE SCHEDULE / STANDARD JOB S11111

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

CABLE PLANS

1. CHECK CABLE PLANS ARE UP TO DATE

CABLE MARKERS

- 2. ENSURE CABLE ROUTE MARKERS ARE IN PLACE AND IN FUNCTIONAL CONDITION
- 3. CLEAR OR POISON VEGETATION FROM AROUND MAKERS

CABLE PITS

- 4. ENSURE PIT LIDS ARE SECURE
- 5. ENSURE PITS ARE FREE OF VERMIN AND DEBRIS
- 6. ENSURE PITS ARE IN A SAFE AND FUNCTIONAL CONDITION

CABLE ROUTE

- 7. ENSURE CABLES ARE NOT EXPOSED
- 8. ENSURE EARTH WORKS OR CONSTRUCTION WORKS HAVEN'T DEGRADED THE EARTH COVER

GLT AND GST

- 9. ENSURE LIDS ARE SECURE AND CABLE ENTRIES ARE SEALED TO PREVENT VERMIN ENTRY
- 10. ENSURE TROUGHINGS ARE FREE OF VERMIN AND DEBRIS
- 11. ENSURE TROUGHINGS ARE SAFE, STABLE AND FUNCTIONAL
- 12. ENSURE NO VEGETATION IS GROWING OVER AND AROUND THE TROUGHING, CLEAR OR POISON AS REQUIRED AND BOLLARDS ARE PRESENT, VERTICAL AND REFLECTIVE TAPE IS PRESENT.
- 13. ENSURE EARTH WORKS OR CONSTRUCTION WORKS HAVEN'T DEGRADED THE STABILITY / PROTECTION OF THE TROUGHING

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 4. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

	SIGNALLING TECHNICAL MAINTENANCE PLANS		
	AERIAL & POLE ROUTE		
	SERVICE SCHEDULE / STANDARD JOB STI2TI		
1			
2	OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT		
2. 3	OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES		
3. 4.	PERFORM PRE-WORK SAFETY BRIEF		
MAI	NTENANCE ACTION:		
POLE			
1.	INSPECT CONDITION OF POLE		
2.	CHECK STABILITY OF EARTH AROUND LINE POLE		
INSU	JLATORS		
3.	INSPECT CONDITION OF INSULATORS (CRACKS, BREAKS OR BURNS)		
4.	INSPECT CONDITION OF INSULATOR PINS		
5.	INSPECT CONDITION OF INSULATOR TIES, CHECK FOR DAMAGE OR LOOSENESS		
WIR	WIRES / CONDUCTORS		
6.	CHECK TENSION OF LINE WIRES		
7.	INSPECT FOR FOREIGN OBJECTS IN LINE WIRES		
8.	CHECK HEIGHT OF WIRES ABOVE ROADWAYS		
9.	CHECK FOR ANNEALING, BURNING OR STRANDING		
10.	INSPECT CONDITION OF CROSSARINS FOR CRACKING, DOWING, SPLITTING, DURIN DAMAGE,		
11	INSPECT ARM BRACES		
12	INSPECT CONDITION OF STAY WIRES		
13.	CHECK TENSION OF STAY WIRES AND SIGNS OF SLIPPAGE ON POLE		
14.	CHECK GROUND ANCHOR BELOW SURFACE FOR SIGNS OF CORROSION		
15.	EXAMINE GROUND ANCHOR FOR DAMAGE OR SIGNS OF MOVEMENT		
LEA	LEAD IN WIRING		
16.	INSPECT CONDITION OF LEAD IN WIRING		
17.	INSPECT CONNECTIONS AT DRIP POINTS		
18.	CHECK CONNECTION/CLAMP FOR LOOSE CONNECTION, OVERHEATING OR BURNING		
SIGNAGE			
19.	CHECK SIGNS / MARKERS FOR VISIBILITY, UV DAMAGE, VANDALSIM, CORRECT LOCATION AND SIGNS		
	ARE LEGIBLE		
GENERAL			
20.	CLEAR VEGETATION FROM VICINITY OF LINE ROUTE		
REI	NSTATEMENT ACTION:		
1.	RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER		
2.	ENSURE THAT THE AFFECTED EQUIPMENT OPERATES CORRECTLY		
3.	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE		
4.	REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION		
5.	DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY		



SIGNALLING TECHNICAL MAINTENANCE PLANS POLE INSPECTION SERVICE SCHEDULE / STANDARD JOB S11212

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

WOODEN POLE

- 1. EXAMINE POLE CAP
- 2. EXAMINE FOR SIGNS OF IMPACT DAMAGE, LEANING, CRACKS, BURNS AND FIRE DAMAGE
- 3. EXAMINE POLE BASE (INTERNALLY) FOR EVIDENCE OF DAMAGE FROM TERMITE, ROT OR NATURAL DECAY
- 4. FOR POLES MORE THAN 12 YEARS CHECK FOR DECAY BELOW GROUND LEVEL TO APPROX 300MM
- 5. EXAMINE POLE FOUNDATION FOR SIGNS OF DEGRADATION/SUNSIDNECE OR ALTERED GROUND LEVEL (EARTHWORKS)
- 6. EXAMINE POLE STEPS FOR CONDITION, SECURITY AND CORROSION, CHECK FOR REDUCED CLEARANCE TO FIRST STEP
- 7. EXAMINE EARTH WIRE TO ENSURE IT IS SECURED TO THE POLE
- 8. CHECK BIOGAURD BANDAGE
- 9. CHECK LEVEL OF POLESAVER RODS BY USING STEEL ROD OR SIMILAR, CHECK PLUGS ARE FITTED TO ALL HOLES PRIOR TO LEAVING SITE

STEEL POLE

- 10. EXAMINE POLE FOR CORROSION
- 11. AT <u>12 YEARS</u> INTERVALS CHECK FOR CORROSION BELOW GROUND LEVEL TO APPROX 300MM, RECORD DATE AND CONDITION IN ASSET MANAGEMENT SYSTEM
- 12. PARTICULAR BELOW GROUND SURFACE
- 13. EXAMINE POLE FOR IMPACT DAMAGE AND LEANING
- 14. EXAMINE POLE FOUNDATION FOR SIGNS OF DEGRADATION / SUBSIDENCE OR ALTERED GROUND LEVEL (EARTHWORKS)
- 15. EXAMINE POLE STEPS FOR CONDITION, SECURITY AND CORROSION. CHECK FOR REDUCED CLEARANCE TO FIRST STEP

LIGHTING

16. CHECK AND REPLACE LAMP/LEDS AS REQUIRED

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE AFFECTED EQUIPMENT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



EQUIPMENT ENCLOSURES

EQUIPMENT ENCLOSURES SERVICE SCHEDULE / STANDARD JOB S12011

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION

- 1. CLEAN AND DUST
- 2. CHECK AIR CONDITIONING IS WORKING (WHERE PROVIDED) AND CLEAN, CHANGE FILTERS AS NECESSARY
- 3. CLEAR VEGETATION IF REQUIRED AND TREAT AS NECESSARY
- 4. CHECK FOR WATER LEAKS
- 5. CHECK FOR VERMIN AND ENSURE VERMIN PROTECTION AND / OR ERADICATION MEASURES ARE EFFECTIVE / REPLENISHED
- 6. CHECK VENTILATION IS NOT BLOCKED, FILTER IN GOOD CONDITION AND VENTILATION IS WORKING CORRECTLY
- 7. INSPECT THE STRUCTURE, FOOTINGS, DOORS, SEALS AND ROOF (INCLUDING ENVIRONMENTAL SHADE) FOR SECURITY AND INTEGRITY
- 8. CHECK LIGHTING IS WORKING CORRECTLY ZONAL INSPECTION OF EXTERNAL EQUIPMENT (GENERAL VISUAL INSPECTION OF EQUIPMENT)
- 9. WITHOUT OPENING THE COVERS OF OPERATING UNITS, LOOK AND LISTEN FOR EVIDENCE OF DEFECTS, DAMAGE UNDUE DEGRADATION AND POTENTIAL FAILURES OF SIGNALLING EQUIPMENT ATTACHED TO THE LOCATION

- 1. RECORD MAINTENANCE ACTION BY COMPLETING THE RELEVENT MAINTENANCE HISTORY CARD & CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT AFFECTED EQUIPMENT OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



TRAINBORNE ATMS

SERVICE SCHEDULE / STANDARD JOB S13011

PREPARATION ACTION:

- 1. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 2. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 3. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION

ANNUAL AUDIT OF ATMS TRAINBORNE SPARES

REINSTATEMENT ACTION:

1. RECORD MAINTENANCE CLOSING OFF THE MST / WORK ORDER



TEST INSTRUMENTS

SERVICE SCHEDULE / STANDARD JOB ECSG02

PREPARATION ACTION:

- ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK 1.
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- PERFORM PRE-WORK SAFETY BRIEF 4.

MAINTENANCE ACTION:

CALLIBRATION

- COMPLETE MANUFACTURER RECOMMENDED CALIBRATION TESTING OF TEST INSTRUMENT AT 1. AUTHORISED RETAILER
- 2. ENSURE CALLIBRATION CERTIFICATE IS ATTACHED TO CLOSED MST

- RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER 1.
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE 3.
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



	SIGNALLING TECHNICAL MAINTENANCE PLANS		
	TEST INSTRUMENTS		
	SERVICE SCHEDULE / STANDARD JOB ECSG03		
PF	PREPARATION ACTION:		
1.	ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK		
2.	OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT		
3.	OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES		
4.	PERFORM PRE-WORK SAFETY BRIEF		
MAINTENANCE ACTION:			
CALLIBRATION			
1.	COMPLETE MANUFACTURER RECOMMENDED CALIBRATION TESTING OF TEST INSTRUMENT AT AUTHORISED RETAILER		
2.	ENSURE CALLIBRATION CERTIFICATE IS ATTACHED TO CLOSED MST		
REINSTATEMENT ACTION:			
1.	RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER		
2.	ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY		
3.	ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE		
٨			

- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICALMAINTENANCE PLANS MAINTENANCE GAUGES

SERVICE SCHEDULE / STANDARD JOB S15021

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

CALLIBRATION

- 1. VISUALLY INSPECT MAINTENANCE GAUGES FOR DAMAGE OR DEFORMITIES, IF DEFECTS ARE FOUND THEN REMOVE FROM SERVICE
- 2. USING VERNIER CALIPERS ENSURE THAT THE THICKNESS OF THE GAUGE MATCHES THE INSCRIBED TEST VALUE, IF IN QUESTION COMPARE GAUGE TO KNOWN WORKING UNIT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE POINT DRIVE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



WSI SLIP DETECTOR

SERVICE SCHEDULE / STANDARD JOB S16011

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

GROUND – SLIP DETECTOR

- 1. VISUAL INSPECTION FOR DAMAGE
- 2. CHECK PVC PIPE IS VISIBLE AT ANCHOR POINT AND DETECTION BOX
- 3. CHECK THE CORRECT OPERATION OF EACH MICROSWITCH, THIS IS DONE BY REMOVING THE SWITCHES AND MANUALLY OPERATING EACH SWITCH IN TURN AND WATCHNG THE END FUNCTION FOLLOW, THE DETECTOR SHOULD BE TRIPPED BY PULLING THE CABLE AT THE ANCHOR POINT, THIS WILL REVEAL IF ANY PROBLEMS ARE DEVELOPING WITH THE CABLE OR THE SPRING AS THE MOVEMENT SHOULD BE SMOOTH AND SPRING TENSION SUFFICIENT TO KEEP THE CABLE TAUT AND PUSH THE DETECTOR PISTON BACK WHEN RELEASED
- 4. CHECK PLUNGER FOR FREEDOM OF MOVEMENT
- 5. CHECK CABLE CONNECTIONS
- 6. ANY MOVEMENT IN THE CALIBRATION SHOULD BE REPORTED TO THE CIVIL REPRESETATIVE FOR INVESTIGATION

LOCATION

- 7. CHECK SLIP SITE RADIO MESSAGE FOR CORRECT OPERATION
 - a. SLIP SITE NORMAL MESSAGE (TRACK CIRCUIT NOT OCCUPIED, I.E NO TRAIN)
 - b. SLIP SITE NORMAL MESSAGE (TRACK CIRCUIT OCCUPIED, I.E TRAIN ON APPROACH)
 - c. SLIP DETECTOR ACTIVATED MESSAGE
- 8. CHECK SLIP SITE ALARM PANEL FOR CORRECT OPERATION

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE HOTBOX DETECTOR OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE AFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



WSI ROCKFALL DETECTOR

SERVICE SCHEDULE / STANDARD JOB S16021

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

ROCKFALL DETECTOR

- 1. CHECK THE CORRECT TENSION OF CABLE
- 2. CHECK OPERATION OF EACH TENSION SWITCH, THE DETECTOR SHOULD BE TRIPPED BY PULLING THE CABLE AT THE ANCHOR POINT
- 3. INSPECT SYSTEM FOR SIGNS OF DAMAGE
- 4. INSPECT FOR DAMAGE OR OBSTRUCTION TO ROCKFALL FENCES AND REPORT DAMAGE TO RELEVANT CIVIL REPRESENTATIVE

LOCATION

5. CHECK ALARM PANEL FOR CORRECT OPERATION AND INDICATIONS WHEN DETECTOR IS TRIPPED

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE HOTBOX DETECTOR OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY

WSI WEATHER STATION

SERVICE SCHEDULE / STANDARD JOB S16031

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE ELECTRICAL AND SIGNALLING WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 5. REMEMBER TO STOP AND THINK
- 6. CONTACT MEA ON 08 8332 9044 BEFORE COMMENCING WORK

MAINTENANCE ACTION: (REF MANUFACTURER'S MANUALS)

POWER SUPPLY

- 1. CLEAN SOLAR PANEL
- 2. INSPECT BATTERY AND BATTERY CONNECTIONS
- 3. OPEN MAGPIE SOFTWARE AND SELECT SITE FROM LIST
- 4. CHECK AND RECORD BATTERY VOLTAGE
- 5. DISCONNECT FROM SITE IN MAGPIE SOFTWARE AND CLOSE MAGPIE

MECHANICAL/VISUAL INSPECTIONS

- 6. VISUALLY CHECK CONDITON OF WEATHER STATION ENCLOSURE AND FIXINGS
- 7. VISUALLY CHECK WIRING TO SOLAR PANEL, AERIAL, RAIN GUAGE AND FLOW MONITOR
- 8. DISASSEMBLE RAIN GUAGE AS PER MANUFACTURER'S MANUAL AND CLEAN AS DIRECTED
- 9. CHECK RAIN GUAGE IS LEVEL THEN RE-ASSEMBLE
- 10. CHECK FLOW MONITOR IS CLEAN AND REMOVE ANY DEBRIS FROM CULVERT
- 11. OPEN UNIT, OPERATE TEST SWITCH AND OBSERVE LED'S AS PER MANUFACTURER'S MANUAL, CLOSE UNIT
- 12. CLEAN GLASS ON ANEMOMETER TRANSMITTER SOLAR PANEL
- 13. CHECK ANEMOMETER CUPSET IS FREELY SPINNING (WEATHER STATION)
- 14. CLEAN AND OIL WIND CUPS ON ANEMOMETER; CALIBRATE RAIN GAUGE AS PER MAINTENANCE MANUAL
- 15. CLEAN AND OIL WIND CUPS ON ANEMOTER CALIBRATE RAIN GUAGE AS PER MANUFACTURER'S MANUAL

- 1. RESULTS OF READINGS ARE TO BE RECORDED ON EQUIPMENT HISTORY CARDS
- 2. WHERE REPAIRS OR ADJUSTMENTS ARE REQUIRED THEY ARE TO BE EFFECTED IMMEDIATELY IF PRACTICAL AND RECORDED IN THE WORKS MANAGEMENT SYSTEM AS COMPLETED
- 3. WHERE REPAIRS OR ADJUSTMENTS ARE REQUIRED BUT IT IS NOT PRACTICAL TO COMPLETE IMMEDIATELY THEY ARE TO BE RECORDED IN THE WORKS MANAGEMENT SYSTEM WITH AN APPROPRIATE PRIORITY, IF THE REPAIR OR ADJUSTMENT IS CRITICAL TO THE SAFE OPERATION OF THE SYSTEM THEN THE EQUIPMENT SHALL ALSO BE BOOKED OUT OF SERVICE
- 4. CONTACT MEA ON 08 8332 9044 AT COMPLETION OF WORK
- 5. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 6. ALL REPLACEMENT OF EQUIPMENT MODULES (FAILED OR OTHERWISE) TO BE RECORDED IN WMS AS

- COMPLETED
- 7. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 8. DISPOSE OF ALL CONSUMABLES APPROPRIATELY

STREAM FLOW DETECTOR

SERVICE SCHEDULE / STANDARD JOB S16041



PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE ELECTRICAL AND SIGNALLING WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF
- 5. REMEMBER TO STOP AND THINK
- 6. CONTACT MEA ON 08 8332 9044 BEFORE COMMENCING WORK

MAINTENANCE ACTION: (REF MANUFACTURER'S MANUALS)

POWER SUPPLY

- 1. CLEAN SOLAR PANEL
- 2. INSPECT BATTERY AND BATTERY CONNECTIONS
- 3. OPEN MAGPIE SOFTWARE AND SELECT SITE FROM LIST
- 4. CHECK AND RECORD BATTERY VOLTAGE
- 5. DISCONNECT FROM SITE IN MAGPIE SOFTWARE AND CLOSE MAGPIE

MECHANICAL/VISUAL INSPECTIONS

- 6. VISUALLY CHECK CONDITON OF WEATHER STATION ENCLOSURE AND FIXINGS
- 7. VISUALLY CHECK WIRING TO SOLAR PANEL, AERIAL, RAIN GUAGE AND FLOW MONITOR
- 8. DISASSEMBLE RAIN GUAGE AS PER MANUFACTURER'S MANUALS AND CLEAN AS DIRECTED
- 9. CHECK RAIN GUAGE IS LEVEL THEN RE-ASSEMBLE
- 10. CHECK FLOW MONITOR IS CLEAN AND REMOVE ANY DEBRIS FROM CULVERT
- 11. OPEN UNIT, OPERATE TEST SWITCH AND OBSERVE LED'S AS PER MANUFACTURER'S MANUALS, CLOSE UNIT
- 12. CLEAN GLASS ON ANEMOMETER TRANSMITTER SOLAR PANEL
- 13. CHECK ANEMOMETER CUPSET IS FREELY SPINNING (WEATHER STATION)
- 14. CLEAN AND OIL WIND CUPS ON ANEMOMETER; CALIBRATE RAIN GAUGE AS PER MAINTENANCE MANUAL
- 15. CLEAN AND OIL WIND CUPS ON ANEMOTER CALIBRATE RAIN GUAGE AS PER MANUFACTURER'S MANUALS

- 1. RESULTS OF READINGS ARE TO BE RECORDED ON EQUIPMENT HISTORY CARDS
- 2. WHERE REPAIRS OR ADJUSTMENTS ARE REQUIRED THEY ARE TO BE EFFECTED IMMEDIATELY IF PRACTICAL AND RECORDED IN THE WORKS MANAGEMENT SYSTEM AS COMPLETED
- 3. WHERE REPAIRS OR ADJUSTMENTS ARE REQUIRED BUT IT IS NOT PRACTICAL TO COMPLETE IMMEDIATELY THEY ARE TO BE RECORDED IN THE WORKS MANAGEMENT SYSTEM WITH AN APPROPRIATE PRIORITY, IF THE REPAIR OR ADJUSTMENT IS CRITICAL TO THE SAFE OPERATION OF THE SYSTEM THEN THE EQUIPMENT SHALL ALSO BE BOOKED OUT OF SERVICE
- 4. CONTACT MEA ON 08 8332 9044 AT COMPLETION OF WORK
- 5. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 6. ALL REPLACEMENT OF EQUIPMENT MODULES (FAILED OR OTHERWISE) TO BE RECORDED IN WMS AS COMPLETED
- 7. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 8. DISPOSE OF ALL CONSUMABLES APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS PUMP STATION

SERVICE SCHEDULE / STANDARD JOB S16051

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

1. MAINTENEANCE ARE BEING PERFORMED BY CONTRACTOR UNDER THE MAINTENANCE CONTRACT WITH ARTC.

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION



WSI CAMERA

SERVICE SCHEDULE / STANDARD JOB S16061

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE ELECTRICAL AND SIGNALLING WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

- 1. PERFORM VISUAL INSPECTION OF CAMERA
- 2. VISUAL INSPECTION OF ANY LOOSED CABLING, MISSING CAMERA, WIRING AND TERMINATION ETC.
- 3. CHECK WHEATHER CAMERA FUCNTIONS AS REQUIRED

- 4. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 5. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 6. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION



WSR HOT BOX DETECTOR (HBD)

SERVICE SCHEDULE / STANDARD JOB S16111

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE ELECTRICAL AND SIGNALLING WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

- 1. INSPECT HBD & HWD SCANNERS, COVERS AND CABLING FOR DAMAGE, CORROSION, VERMIN, CORRECT AS REQUIRED
- 2. INSPECT CABLE PITS, JUNCTION BOXES FOR DAMAGE, CORROSION, VERMIN, CORRECT AS REQUIRED
- 3. CHECK 26.3VDC IN SCT CABINET, ADJUST AS REQUIRED, RECORD RESULTS ON CHECK SHEET
- 4. CHECK DIRT & VF VALUES OF ALL HBD & HWD SCANNERS, RECORD RESULTS ON CHECK SHEET
- 5. CLEAN AND\OR REPLACE ALL HBD & HWD SCANNERS, RECORD RESULTS ON CHECK SHEET
- 6. NACHKAL AND TEST ALL HBD & HWD SCANNERS, RECORD RESULTS ON CHECK SHEET
- 7. CHECK MEASUREMENTS OF HBD & HWD SCANNER POSITIONS, ADJUST AS REQUIRED, RECORD RESULTS ON CHECK SHEET
- 8. CHECK MEASUREMENTS FOR RC1, RC2 & RC4 IN RELATION TO HEAD OF RAIL, ADJUST AS REQUIRED, RECORD RESULTS ON CHECK SHEET
- 9. RE-CALIBRATE RC1, RC2 & RC4, REPLACE IF REQUIRED, RECORD RESULTS ON CHECK SHEET
- 10. INSPECT AVI TAG READERS FOR CORRECT ALIGNMENT AND ENSURE FASTENING BOLTS ARE TIGHT
- 11. CHECK STEEL SLEEPER BOLTS ARE FASTENED TIGHT TO RAIL
- 12. ENSURE ALL CABLES ARE NEATLY PLACED AWAY FROM THE RAIL, APPLY YELLOW PAINT IF REQUIRED
- 13. CHECK AND RECORD DIRT & VF VALUES OF ALL HBD & HWD SCANNERS, RECORD RESULTS ON CHECH SHEET

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION



WSR HOT BEARING DETECTORS (HBD) HOT WHEEL DETECTORS (HWD) - SCANNER CLEAN

SERVICE SCHEDULE / STANDARD JOB S16112

PREPARATION ACTION:

- ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK 1.
- 2. ADVISE NETWORK PERFORMANCE BEFORE COMMENCING WORK
- 3. ADVISE AREA MANAGER BEFORE COMMENCING WORK
- 4. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 5. PERFORM PRE-WORK SAFETY BRIEF
- 6. REMEMBER TO STOP AND THINK

MAINTENANCE ACTION:

- 1. CHECK 26.3VDC IN SCT CABINET, ADJUST AS REQUIRED, RECORD RESULTS ON CHECK SHEET
- 2. CHECK DIRT & VF VALUES OF ALL HBD & HWD SCANNERS, RECORD RESULTS ON CHECK SHEET
- 3. CLEAN AND/OR REPLACE HBD & HWD SCANNERS WITH HIGH DIRT AND HIGH TEMPERATURE VALUES, RECORD RESULTS ON CHECK SHEET
- 4. NACHKAL AND TEST CLEANED OR REPLACED HBD & HWD SCANNERS, RECORD RESULTS ON CHECK SHEET
- 5. CHECK AND RECORD DIRT & VF VALUES OF CLEANED OR REPLACED HBD & HWD SCANNERS, RECORD RESULTS ON CHECH SHEET

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER.
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION



SIGNALLING TECHNICAL MAINTENANCE PLANS WSR BEARING ACOUSTIC MONITOR - (RAILBAM)

SERVICE SCHEDULE / STANDARD JOB S16121

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. ADVISE NETWORK PERFORMANCE BEFORE COMMENCING WORK
- 3. ADVISE AREA MANAGER BEFORE COMMENCING WORK
- 4. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 5. PERFORM PRE-WORK SAFETY BRIEF
- 6. REMEMBER TO STOP AND THINK

MAINTENANCE ACTION:

- 1. INSPECT NEAR AND FAR CABINETS FOR DAMAGE, GRAFFITI AND CORROSION, ETC
- 2. INSPECT ALL ENCLOSURES FOR VERMIN AND INSECTS
- 3. CHECK AUXILIARY SENSORS AND MEASURE FOR CORRECT VERTICAL AND HORIZONTAL POSITION FROM RAIL AND CHECK FOR LOOSE BOLTS AND TIGHTEN IF NESSESARY
- 4. CHECK SPEED SENSORS FOR DAMAGE AND CHECK FOR LOOSE BOLTS AND TIGHTEN IF NESSESARY, CLEAN SPEED SENSOR WINDOWS
- 5. INSPECT CABLING AND FITTINGS FOR DAMAGE
- 6. OPERATE CABINET SHUTTERS AND CHECK FOR CORRECT OPERATION
- 7. INSPECT AVI TAG READERS FOR NORMAL ALIGNMENT AND ENSURE FASTENING BOLTS ARE TIGHT
- 8. INSPECT THE CONDITION OF THE RAIL HEAD FOR DAMAGE IN THE AREA OF OPERATION
- 9. INSPECT VERTICAL DEFLECTION OF RAIL DURING NEXT TRAIN MOVEMENT IF POSSIBLE. REPORT TO AREA MANAGER IF EXCEEDS TOLERANCE
- 10. REMOVE VEGETATION AROUND EQUIPMENT

REINSTATEMENT ACTION:

- 1. RECORD DETAILS OF MAINTENANCE ON CHECK LIST
- 2. CONTACT TRACK IQ TO ENSURE SYSTEM OPERATES CORRECTLY WITH NEXT TRAIN MOVEMENT
- 3. ADVISE NETWORK PERFORMANCE THAT MAINTENANCE IS COMPLETE
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE AFFECTED IMMEDIATELY OR RECORDED IN ELLIPSE AS A CORRECTIVE ACTION
- 6. CLOSE OFF THE MST / WORK ORDER

DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



SIGNALLING TECHNICAL MAINTENANCE PLANS WSR DRAGGING EQUIPMENT DETECTOR (DED) SERVICE SCHEDULE / STANDARD JOB S16131

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

- 1. CHECK DETECTOR SWITCH OPERATION
- 2. FUNCTION TEST DETECTOR TO SIGNALLERS PANEL
- 3. REMOVE COVER CHECK CONDITION OF ASSEMBLIES
- 4. LUBRICATE UNIT

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ENSURE THAT THE SYSTEM OPERATES CORRECTLY
- 3. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 4. REPAIRS OR ADJUSTMENTS ARE TO BE AFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
- 5. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



VOESTALPINE DRAGGING EQUIPMENT DETECTOR MAINTENANCE

SERVICE SCHEDULE / STANDARD JOB S16132

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. ADVISE NETWORK PERFORMANCE BEFORE COMMENCING WORK
- 3. ADVISE AREA MANAGER BEFORE COMMENCING WORK
- 4. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 5. PERFORM PRE-WORK SAFETY BRIEF
- 6. REMEMBER TO STOP AND THINK

MAINTENANCE ACTION:

- 1. REMOVE ALL A FRAME PLATES FROM BASE PLATES.
- 2. CHECK DED SENSORS AND CABLING FOR DAMAGE, CORROSION, VERMIN, CORRECT AS REQUIRED.
- 3. CHECK RAIL CONTACT AND CABLING FOR DAMAGE/ CORROSION/VERMIN, CORRECT AS REQUIRED.
- 4. INSPECT CABLE PITS, JUNCTION BOXES FOR DAMAGE, CORROSION, VERMIN, CORRECT AS REQUIRED
- 5. REMOVE DED SENSORS/ NYLON PLATE FROM THE BASE PLATE
- 6. REMOVE ANY DIRT FROM NYLON PLATES AND DED BASE PLATES AND CLEAN OUT BOLT HOLES USING PRESSURISED AIR THEN APPLY LUBRICANT TO BOLT HOLES
- 7. USE TORQUE WRENCH TO ACHIEVE APPROPRIATE TIGHTNESS FOR DED SENSORS TO NYLON PLATES 10Nm
- 8. USE TORQUE WRENCH TO ACHIEVE APPROPRIATE TIGHTNESS FOR NYLON PLATES TO BASE PLATES 30Nm
- 9. USE TORQUE WRENCH TO ACHIEVE APPROPRIATE TIGHTNESS FOR BOLTS FASTENING A FRAMES TO BASE PLATES 90Nm
- 10. RECORD ALL HARDWARE CHECKS AND TORQUE SETTINGS ON DED CHECK SHEET.
- 11. CHECK MEASUREMENT OF RC IN RELATION TO HEAD OF RAIL, ADJUST AS REQUIRED, RECORD RESULTS ON CHECK SHEET
- 12. CHECK MEASUREMENT OF RC IN RELATION TO DED SENSORS, CHECK THAT THIS MEASUREMENT TIS CORRECT IN DED CONFIG FILEL, ADJUST AS REQUIRED, RECORD RESULTS ON CHECK SHEET
- 13. CHECK RC ON EC-2 AND RE-CALIBRATE IF REQUIRED, RECORD RESULTS ON CHECK SHEET.
- 14. ENSURE ALL CABLES ARE NEATLY PLACED AWAY FROM THE RAIL, APPLY YELLOW PAINT IF REQUIRED
- 15. RUN TEST TRAINS ON EC-2 TO TEST THE DED, AS PER TEST PROCEDURE AND RECORD REULTS, REPLACE DED SENSORS AS REQUIRED

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION



WSR WHEEL CONDITION MONITOR (WCM)

SERVICE SCHEDULE / STANDARD JOB S16141

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. ADVISE NETWORK PERFORMANCE BEFORE COMMENCING WORK
- 3. ADVISE AREA MANAGER BEFORE COMMENCING WORK
- 4. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 5. PERFORM PRE-WORK SAFETY BRIEF
- 6. REMEMBER TO STOP AND THINK

MAINTENANCE ACTION:

- 1. INSPECT SENSOR ARRAY FOR DAMAGE, TIGHTEN LOOSE BOLTS, CHECK FOR MISSING RAIL CLIPS
- 2. INSPECT ALL ENCLOSURES FOR VERMIN AND INSECTS
- 3. INSPECT BALLAST CLEARANCE BELOW STRAIN GAUGES AND REMOVE IF NECESSARY
- 4. INSPECT CABLING AND FITTINGS FOR DAMAGE
- 5. CHECK AVI TAG READERS FOR NORMAL ALIGNMENT AND ENSURE FASTENING BOLTS ARE TIGHT
- 6. INSPECT THE CONDITION OF THE RAIL HEAD FOR DAMAGE IN THE AREA OF OPERATION
- 7. INSPECT VERTICAL DEFLECTION OF RAIL DURING NEXT TRAIN MOVEMENT IF POSSIBLE. REPORT TO AREA MANAGER IF EXCEEDS TOLERANCE
- 8. REMOVE VEGETATION AROUND EQUIPMENT

REINSTATEMENT ACTION:

- 1. RECORD DETAILS OF MAINTENANCE ON CHECK LIST
- 2. CONTACT TRACK IQ TO ENSURE SYSTEM OPERATES CORRECTLY WITH NEXT TRAIN MOVEMENT
- 3. ADVISE NETWORK PERFORMANCE THAT MAINTENANCE IS COMPLETE
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE AFFECTED IMMEDIATELY OR RECORDED IN ELLIPSE AS A CORRECTIVE ACTION
- 6. CLOSE OFF THE MST / WORK ORDER

DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



WSR WHEEL PROFILE MONITOR

SERVICE SCHEDULE / STANDARD JOB S16151

PREPARATION ACTION:

- 1. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 2. ADVISE NETWORK PERFORMANCE BEFORE COMMENCING WORK
- 3. ADVISE AREA MANAGER BEFORE COMMENCING WORK
- 4. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 5. PERFORM PRE-WORK SAFETY BRIEF
- 6. ENSURE THE USE OF LASER PROTECTION GOGGLES DURING ON TRACK TESTING

REMEMBER TO STOP AND THINK

MAINTENANCE ACTION:

- 1. DEACTIVATE LASERS BY ROTATING LHCB KEY TO OFF POSITION
- 2. INSPECT BLOWERS FOR NORMAL OPERATION
- 3. INSPECT BLOWER FILTERS AND REPLACE IF REQUIRED
- 4. INSPECT BLOWER DUCTING FOR LEAKS AND DAMAGE
- 5. INSPECT CABLING AND FITTINGS FOR DAMAGE
- 6. CHECK CAMERA OPERATION AND CLEAN CAMERA SHEILD
- 7. INSPECT LASER WARNING INDICATOR IS ON AT ALL TIMES
- 8. CHECK LASER SHUTTER OPERATION
- 9. INSPECT LASER WINDOWS FOR CRACKS AND CLEAN
- 10. CHECK WHEEL FLANG SENSORS AT EQUIPMENT AND MEASURE FOR CORRECT VERTICAL AND HORIZONTAL POSITION FROM RAIL
- 11. CHECK WAKEUP SENSORS AND MEASURE FOR CORRECT VERTICAL AND HORIZONTAL POSITION FROM RAIL. ENSURE CORRECT OPERATION
- 12. INSPECT DEBRIE SHEILDS FOR DAMAGE AND TIGHTEN LOOSE BOLTS OR REPLACE
- 13. INSPECT WTS COVERS FOR DAMAGE AND TIGHTEN LOOSE BOLTS OR REPLACE
- 14. ACTIVATE LASERS BY ROTATING LHCB KEY TO ON POSITION
- 15. INSPECT ALL ENCLOSURES FOR VERMIN AND INSECTS
- 16. INSPECT VERTICAL DEFLECTION OF RAIL DURING NEXT TRAIN MOVEMENT IF POSSIBLE. REPORT TO AREA MANAGER IF EXCEEDS TOLERANCE
- 17. REMOVE VEGETATION AROUND EQUIPMENT



PREPARATION ACTION:

- 7. ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK
- 8. ADVISE NETWORK PERFORMANCE BEFORE COMMENCING WORK
- 9. ADVISE AREA MANAGER BEFORE COMMENCING WORK
- 10. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 11. PERFORM PRE-WORK SAFETY BRIEF
- 12. ENSURE THE USE OF LASER PROTECTION GOGGLES DURING ON TRACK TESTING

REMEMBER TO STOP AND THINK



WSR WHEEL NOISE DETECTOR (RAIL SQAD)

SERVICE SCHEDULE / STANDARD JOB S16161

PREPARATION ACTION:

- ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK 1.
- 2. ADVISE NETWORK PERFORMANCE BEFORE COMMENCING WORK
- 3. ADVISE AREA MANAGER BEFORE COMMENCING WORK
- 4. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 5. PERFORM PRE-WORK SAFETY BRIEF

REMEMBER TO STOP AND THINK

MAINTENANCE ACTION:

- 1. INSPECT CABINET FOR DAMAGE, GRAFFITI AND CORROSION, ETC
- INSPECT ALL ENCLOSURES FOR VERMIN AND INSECTS 2.
- 3. CHECK AUXILIARY SENSORS AND MEASURE FOR CORRECT VERTICAL AND HORIZONTAL POSITION FROM RAIL AND CHECK FOR LOOSE BOLTS AND TIGHTEN IF NESSESARY
- 4. CHECK SPEED SENSORS FOR DAMAGE AND CHECK FOR LOOSE BOLTS AND TIGHTEN IF NECESSARY, CLEAN SPEED SENSOR WINDOWS
- 5. CHECK WAKEUP SENSORS AND MEASURE FOR CORRECT VERTICAL AND HORIZONTAL POSITION FROM RAIL. ENSURE CORRECT OPERATION
- INSPECT CABLING AND FITTINGS FOR DAMAGE 6
- 7. OPERATE CABINET SHUTTER AND CHECK FOR CORRECT OPERATION
- CHECK AVI TAG READERS FOR NORMAL ALIGNMENT AND ENSURE FASTENING BOLTS ARE TIGHT 8.
- 9. INSPECT THE CONDITION OF THE RAIL HEAD FOR DAMAGE IN THE AREA OF OPERATION
- 10. INSPECT VERTICAL DEFLECTION OF RAIL DURING NEXT TRAIN MOVEMENT IF POSSIBLE. REPORT TO AREA MANAGER IF EXCEEDS TOLERANCE
- 11. REMOVE VEGETATION AROUND EQUIPMENT

REINSTATEMENT ACTION:

- 1. RECORD DETAILS OF MAINTENANCE ON CHECK LIST
- 2. CONTACT TRACK IQ TO ENSURE SYSTEM OPERATES CORRECTLY WITH NEXT TRAIN MOVEMENT
- 3. ADVISE NETWORK PERFORMANCE THAT MAINTENANCE IS COMPLETE
- ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE IS COMPLETE 4
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE AFFECTED IMMEDIATELY OR RECORDED IN ELLIPSE AS A CORRECTIVE ACTION
- CLOSE OFF THE MST / WORK ORDER 6.

DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



WSR BOGIE MONITOR (TBOGI)

SERVICE SCHEDULE / STANDARD JOB S16171

PREPARATION ACTION:

- ADVISE NETWORK CONTROLLER BEFORE COMMENCING WORK 1.
- 2 ADVISE NETWORK PERFORMANCE BEFORE COMMENCING WORK
- 3. ADVISE AREA MANAGER BEFORE COMMENCING WORK
- OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 4.
- 5. PERFORM PRE-WORK SAFETY BRIEF
- ENSURE THE USE OF LASER PROTECTION GOGGLES DURING ON TRACK TESTING 6.

REMEMBER TO STOP AND THINK

MAINTENANCE ACTION:

- REMOVE LASER KEYS FROM ALL MODULES 1.
- 2. INSPECT MODULES FOR DAMAGE, GRAFFITI AND CORROSION, ETC
- INSPECT ALL ENCLOSURES FOR VERMIN AND INSECTS 3.
- 4 INSPECT LASER AND CAMERA WINDOWS FOR DAMAGE AND CLEAN
- 5. CHECK WHEEL SENSORS FOR CORRECT POSITION ON RAIL AND CHECK FOR LOOSE BOLTS AND TIGHTEN IF NECESSARY. CLEAN TOP OF SENSORS
- 6. CHECK WAKEUP SENSORS AND MEASURE FOR CORRECT VERTICAL AND HORIZONTAL POSITION FROM RAIL. ENSURE CORRECT OPERATION
- 7. INSPECT CABLING AND FITTINGS FOR DAMAGE
- 8. CHECK AVI TAG READERS FOR NORMAL ALIGNMENT AND ENSURE FASTENING BOLTS ARE TIGHT
- INSPECT THE CONDITION OF THE RAIL HEAD FOR DAMAGE IN THE AREA OF OPERATION 9
- 10. INSTALL LASER KEYS AND ENABLE LASERS AT EACH MODULE
- 11. INSPECT ALL ENCLOSURES FOR VERMIN AND INSECTS
- 12. INSPECT VERTICAL DEFLECTION OF RAIL DURING NEXT TRAIN MOVEMENT IF POSSIBLE. REPORT TO AREA MANAGER IF EXCEEDS TOLERANCE
- 13. REMOVE VEGETATION AROUND EQUIPMENT



- 1. RECORD DETAILS OF MAINTENANCE ON CHECK LIST
- 2. CONTACT SGC RAIL TO ENSURE SYSTEM OPERATES CORRECTLY WITH NEXT TRAIN MOVEMENT
- 3. ADVISE NETWORK PERFORMANCE THAT MAINTENANCE IS COMPLETE
- 4. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE IS COMPLETE
- 5. REPAIRS OR ADJUSTMENTS ARE TO BE AFFECTED IMMEDIATELY OR RECORDED IN ELLIPSE AS A CORRECTIVE ACTION
- 6. CLOSE OFF THE MST / WORK ORDER
- 7. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



WSR WEIGH BRIDGE

SERVICE SCHEDULE / STANDARD JOB S16181

PREPARATION ACTION:

- 1. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 2. PERFORM PRE-WORK SAFETY BRIEF
- 3. REMEMBER TO STOP AND THINK

MAINTENANCE ACTION:

- 1. PERFORM THE VISUAL INSPECTION OF THE WEIGH BRIDGE EQUIPMENT
- 2. PERFORM THE VISUAL INSPECTION OF THE CABLES, CONNECTORS ETC
- 3. EXAMINATION FOR CLEANLINESS AND TIGHTNESS OF THE EQUIPMENT
- 4. CHECK THE SUPPLY VOLTAGE
- 5. RECORD RESULTS

- REPAIRS OR ADJUSTMENTS ARE TO BE AFFECTED IMMEDIATELY OR RECORDED IN ELLIPSE AS A 1. CORRECTIVE ACTION
- 2. CLOSE OFF THE MST / WORK ORDER
- 3. DISPOSE OF ALL COMPONENTS, BATTERIES SOILED RAGS, PAPERS, ETC APPROPRIATELY



WSR HEIGHT DETECTOR

SERVICE SCHEDULE / STANDARD JOB S16191

PREPARATION ACTION:

- 1. ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
- 2. OBSERVE THE REQUIREMENTS OF THE ELECTRICAL AND SIGNALLING WORK METHOD STATEMENT
- 3. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
- 4. PERFORM PRE-WORK SAFETY BRIEF

MAINTENANCE ACTION:

- 1. VISUAL CHECK OF HEIGHT DETECTOR SENSOR
- 2. VISUAL INSPECTION TO ENSURE THERE IS NO INTERRUPTION TO SENSOR WHICH CAN AFFECT ITS FUNCTIONING
- 3. PERFORM VISUAL INSPECTION INSIDE THE BOX OR DISCONNECTION BOX FOR WIRING AND **TERMINATION**
- 4. PERFORM FUNCTION TEST TO ENSURE THAT ALARM GOES BACK TO CONTROLLER WHEN DETECTOR TRIGGERES

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. ADVISE THE NETWORK CONTROLLER THAT MAINTENANCE ACTION IS COMPLETE
- 3. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION
| | | SIGNALLING TECHNICAL MAINTENANCE PLANS |
|-----|--|--|
| | | ENGINEERING INSPECTION |
| | | SERVICE SCHEDULE / STANDARD JOB S17011 |
| | PREPA OBSER OBSER PERFO | RATION ACTION:ADVISE NETWORK CONROLLER BEFORE COMMENCING WORK
AVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT
AVE THE APPROPRIATE NETWORK RULES AND PROCEDURES
ORM PRE-WORK SAFETY BRIEF |
| GEN | IERAL INSP | PECTION |
| 1. | CARRY O | JT GENERAL INSPECTION TO: |
| | a. | ASSESS THE CONDITION OF EQUIPMENT IN ORDER TO DETERMINE PRIORITY BASED PROGRAMS AND BUDGETS FOR RENEWAL |
| | b. | MONITOR THE STANDARD OF MAINTENANCE IN ORDER TO DIRECT ANY REQUIRED CORRECTIVE ACTIONS AND PLAN FOR IMPROVEMENT |
| | C. | MONITOR THE LEVEL OF COMPLIANCE WITH REQUIRED PROCEDURES, PRACTICES AND SPECIAL INSTRUCTIONS |
| | d. | MONITOR THE COST EFFECTIVENESS OF MAINTENANCE IN ORDER TO DIRECT ANY
REQUIRED CORRECTIVE ACTIONS AND TO PLAN FOR IMPROVEMENTS |
| | e. | MONITOR THE EFFICIENCY AND EFFECTIVENESS OF THE SIGNALLING SYSTEM IN MEETING
OPERATIONAL REQUIREMENTS IN ORDER TO DIRECT ANY REQUIRED CORRECTIVE
ACTIONS AND TO PLAN FOR IMPROVEMENTS |
| | f. | COMMUNICATE DIRECTLY WITH MAINTENANCE STAFF TO PROVIDE THEM WITH THE
OPPORTUNITY TO RAISE ISSUES AND RECEIVE FEEDBACK ON MATTERS AFFECTING
THEM. |
| | g. | OSERVE STAFF COMPLETING WORK AND RECORD ISSUES REQUIRING TRAINING,
COMPETENCY, INCREASED SUPERVISION, LOCAL INSTRUCTIONS OR PROCEDURE
CHANGES |
| SPE | CIFIC SIGN | AL ENGINEER INSPECTIONS AND TESTS: |
| 2. | THE FOLL
RELEVAN
a. | OWING EQUIPMENT SPECIFIC INSPECTIONS AND TESTS SHOULD BE CARRIED AS PER THE
T INTERVALS STATED IN THE TECHNICAL MAINTENANCE PLAN:
MECHANICAL LOCKING TEST (SEE ESM-05-01) |
| |)
b.
<u>c.</u> | CBI VERSION VERIFICATION (SEE ESM-05-01)
ACTIVE LEVEL CROSSING INSPECTION (SEE ESM-03-01) |
| REI | NSTATEME | NT ACTION: |
| 1. | RECORD | THE RESULTS OF THE ENGINEERING INSPECTION INCLUDING THE FOLLOWING: |
| | a. | CONDITION ASSESSMENT OF THE EQUIPMENT, INCLUSUIONS FOR RENEWAL PROGRAMS |
| | D. | REPORT AS TO THE STANDARD OF MAINTENANCE |
| | с.
d | |
| | u. | DETAILS OF ANY DEFECTS IDENTIFIED AND RECORDED IN THE WORK MANAGEMENT |
| | с. | SYSTEM AND ANY TCR'S THAT MAY HAVE BEEN RAISED |
| | f. | ANY DEFICIENCIES OR ISSUES IDENTIFIED AS PART OF THE ENGINEERING INSPECTION
INCLUDING TRAINING REQUIREMENTS TO IMPROVE STAFF COMPETENCIES, ,
SUGGESTIONS CONCERNING MAINTENANCE FREQUENCY ETC. |
| 2. | ENSURE 1 | THAT ALL EQUIPMENT IS SECURED AND AVAILABLE FOR USE |
| 3. | ADVISE TH | HE NETWORK CONTROLLER THAT THE INSPECTION IS COMPLETE |

4. CLOSING OFF THE MST / WORK ORDER

ARTC

SIGNAL SIGHTING – FRONT OF RAIL VEHICLE SERVICE SCHEDULE / STANDARD JOB S17012 PREPARATION ACTION: 1. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 2. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 3. PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: SIGNAL SIGHTING (REF SMP 31 AND SCP 15) 1. CHECK SIGNAL SIGHTING FROM FRONT OF TRAIN 2. OBSERVE LED MODULE FOR DETERIATED OR LED NOT OPERATING 3. OBSERVE LED OR INCANDESCANT LAMP FOR INSUFFICENT SIGHTING DUE TO DETERIATION 4. OBSERVE SIGNAL IDENTIFICATION PLATE AND RECORD DEFECTS FOR ACTION 5. ENSURE SIGNAL IDENTIFICATION PLATE AND RECORD DEFECTS FOR ACTION 6. OBSERVE SIGNAL IDENTIFICATION SUBSIDES RELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS 7. OBSERVE SIGNAL FOR SIGHTING ISSUES RELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS 7. OBSERVE SIGNAL FOR SIGHTING SUBS RELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS 7. OBSERVE SIGHTING RELATED TO TREES OR OBSTRUCTIONS. ENSURE IF SIGNAL CANNOT BE MOMENTARILY SIGHTED THAT THE TIME DOES NOT EXCEED THE STANDARD BEFORE BEING RESIGHTED 8. ENSURE PULSATING RELATED TO TREES OR OBSTRUCTIONS. ENSURE IF SIGNAL CANNOT BE MOMENTARILY SIGHTED THAT THE TIME DOES NOT EXCEED THE STANDARD BEFORE BEING RESIGHTED 8. ENSURE PULSATING RELATED TO TREES OR OBSTRUCTIONS. ENSURE IF SIGNAL CANNOT BE MOMENTARILY SIGHTED THAT THE TIME DOES NOT EXCEED THE STANDARD BEFORE BEING RESIGHTED 8. ENSURE PULSATING RELATED TO TREES OR OBSTRUCTIONS. ENSURE IF SIGNAL CANNOT BE MOMENTARILY SIGHTED THAT THE TIME DOES NOT EXCEED THE STANDARD BEFORE BEING RESIGNTED 8. ENSURE PULSATING REPENCIES SHOULD BE ACTED ON IMMEDIATELY 9. CHECK AND DISCUSS ANY READ THROUGH ISSUES THAT MAY HAVE RESULTED FROM PROJECT 10. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT MAY HAVE RESULT DE ON DERATIONAL DELAYS. 11. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT RESULT IN OPERATIONAL DELAYS. 12. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT RESULT IN OPERATIONAL DELAYS. 13. OBSERVE AND DISCUSS ANY
SERVICE SCHEDULE / STANDARD JOB S17012 PREPARATION ACTION: 1. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 2. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 3. PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: SIGNAL SIGHTING FROM FRONT OF TRAIN 2. OBSERVE LED MODULE FOR DETERIATED ON LED NOT OPERATING 3. OBSERVE LED MODULE FOR DETERIATED ON LED NOT OPERATING 3. OBSERVE LED ON INCANDESCANT LAMP FOR INSUFFICENT SIGHTING DUE TO DETERIATION 4. OBSERVE SIGNAL IDENTIFICATION PLATE AND RECORD DEFECTS FOR ACTION 5. ENSURE SIGNAL IDENTIFICATION PLATE AND RECORD DEFECTS FOR ACTION 6. OBSERVE SIGNAL IDENTIFICATION PLATE AND RECORD DEFECTS FOR ACTION 7. OBSERVE SIGNAL FOR SIGHTING ISSUES RELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS 7. OBSERVE SIGNAL FOR SIGHTING ISSUES NELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS 8. ENSURE PULSATING ARE PULSATING CORRECTLY AND SIGHTING IS NOT INTERPRETED AS A STEADY YELLOW. ANY DISCREPENCIES SHOULD BE ACTED ON IMMEDIATELY 9. CHECK AND DISCUSS ANY READ THROUGH ISSUES THAT MAY HAVE RESULTED FROM PROJECT OR ILAMPILED REPLACEMENT. NEW LED MAY RESULT IN A SIGNAL ASPECT OVERPOWERING ANOTHER ASPECT. 10. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT KESULT IN OPERATIONAL DELAYS. 11. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT MAY HAVE RESULTED FROM PROJECT OR ILAMPILED
PREPARATION ACTION: 1. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 2. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 3. PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: SIGNAL SIGHTING (REF SMP 31 AND SCP 15) 1. CHECK SIGNAL SIGHTING FROM FRONT OF TRAIN 2. OBSERVE LED MODULE FOR DETERIATED OR LED NOT OPERATING 3. OBSERVE LED OR INCANDESCANT LAMP FOR INSUFFICENT SIGHTING DUE TO DETERIATION 4. OBSERVE SIGNAL SIGNAL IDENTIFICATION PLATE AND RECORD DEFECTS FOR ACTION 5. ENSURE SIGNAL FOR SIGHTING ISSUES RELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS 7. OBSERVE SIGNAL FOR SIGHTING ISSUES RELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS 7. OBSERVE SIGNAL FOR SIGHTING CORRECTLY AND SIGHTING IS NOT INTERPRETED AS A STEADY YELLOW. ANY DISCREPENCIES SHOULD BE ACTED TO IMMEDIATELY 8. ENSURE PULSATING ARE PULSATING CORRECTLY AND SIGHTING IS NOT INTERPRETED AS A STEADY YELLOW. ANY DISCREPENCIES SHOULD BE ACTED TO IMMEDIATELY 9. CHECK AND DISCUSS ANY READ THROUGH ISSUES THAT MAY HAVE RESULTE FOM PROJECT OR LAMP/LED REPLACEMENT. NEW LED MAY RESULT IN A SIGNAL ASPECT OVERPOWERING ANOTHER ASPECT. 10. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT RESULT IN OPERATIONAL DELAYS. 11. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT RESULT IN OPERATIONAL DELAYS.
PREPARATION ACTION: 1. OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT 2. OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES 3. PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: SIGNAL SIGHTING (REF SMP 31 AND SCP 15) 1. CHECK SIGNAL SIGHTING FROM FRONT OF TRAIN 2. OBSERVE LED MODULE FOR DETERIATED OR LED NOT OPERATING 3. OBSERVE LED OR INCANDESCANT LAMP FOR INSUFFICENT SIGHTING DUE TO DETERIATION 4. OBSERVE SIGNAL IDENTIFICATION PLATE AND RECORD DEFECTS FOR ACTION 5. ENSURE SIGNAL SHAVE CORRECT SIGHTING TIME TO STANDARD 6. OBSERVE SIGNAL FOR SIGHTING ISSUES RELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS 7. OBSERVE SIGNAL FOR SIGHTING ISSUES RELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS 8. ENSURE PULSATING RELATED TO TREES OR OBSTRUCTIONS. ENSURE IF SIGNAL CANNOT BE MOMENTARILY SIGHTED THAT THE TIME DOES NOT EXCEED THE STANDARD BEFORE BEING RESIGNTED 8. ENSURE PULSATING ARE PULSATING CORRECTLY AND SIGHTING IS NOT INTERPRETED AS A STEADY YELLOW. ANY DISCREPENCIES SHOULD BE ACTED ON IMMEDIATELY 9. CHECK AND DISCUSS ANY READ THROUGH ISSUES THAT MEY AVE RESULT IN OPERATIONAL DELAYS. 10. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT RESULT IN OPERATIONAL DELAYS. 11. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT RESULT IN OPERATIONAL DELAYS. 11. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT RESULT IN OPERATIONAL DELAYS.
 OBSERVE THE REQUIREMENTS OF THE SAFE WORK METHOD STATEMENT OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: SIGNAL SIGHTING (REF SMP 31 AND SCP 15) CHECK SIGNAL SIGHTING FROM FRONT OF TRAIN OBSERVE LED MODULE FOR DETERIATED OR LED NOT OPERATING OBSERVE LED OR INCANDESCANT LAMP FOR INSUFFICENT SIGHTING DUE TO DETERIATION OBSERVE SIGNAL IDENTIFICATION PLATE AND RECORD DEFECTS FOR ACTION ENSURE SIGNALS HAVE CORRECT SIGHTING TIME TO STANDARD OBSERVE SIGNAL FOR SIGHTING ISSUES RELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS OBSERVE SIGNAL FOR SIGHTING CORRECTLY AND SIGHTING IS NOT INTERPRETED AS A STEADY YELLOW. ANY DISCREPENCIES SHOULD BE ACTED ON IMMEDIATELY CHECK AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT RESULT IN OPERATIONAL DELAYS. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT RESULT IN OPERATIONAL DELAYS.
 OBSERVE THE APPROPRIATE NETWORK RULES AND PROCEDURES PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: SIGNAL SIGHTING (REF SMP 31 AND SCP 15) CHECK SIGNAL SIGHTING FROM FRONT OF TRAIN OBSERVE LED MODULE FOR DETERIATED OR LED NOT OPERATING OBSERVE LED OR INCANDESCANT LAMP FOR INSUFFICENT SIGHTING DUE TO DETERIATION OBSERVE SIGNAL IDENTIFICATION PLATE AND RECORD DEFECTS FOR ACTION ENSURE SIGNALS HAVE CORRECT SIGHTING TIME TO STANDARD OBSERVE SIGNAL FOR SIGHTING ISSUES RELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS OBSERVE SIGHTING RELATED TO TREES OR OBSTRUCTIONS. ENSURE IF SIGNAL CANNOT BE MOMENTARILY SIGHTED THAT THE TIME DOES NOT EXCEED THE STANDARD BEFORE BEING RESIGHTED ENSURE PULSATING ARE PULSATING CORRECTLY AND SIGHTING IS NOT INTERPRETED AS A STEADY YELLOW. ANY DISCREPENCIES SHOULD BE ACTED ON IMMEDIATELY CHECK AND DISCUSS ANY READ THROUGH ISSUES THAT MAY HAVE RESULTED FROM PROJECT OR LAMP/LED REPLACEMENT. NEW LED MAY RESULT IN A SIGNAL ASPECT OVERPOWERING ANOTHER ASPECT. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT RESULT IN OPERATIONAL DELAYS. OBSERVE AND DISCUSS ANY HEADWAY ISSUES WHERE DRIVERS MAY BE HELD OR DELAYED AT CERTAIN SIGNALS DUE TO MIXED TRAFFIC, STOPPING TRAINS OR CERTAIN ASPECT SEQUENCES.
 3. PERFORM PRE-WORK SAFETY BRIEF MAINTENANCE ACTION: SIGNAL SIGHTING (REF SMP 31 AND SCP 15) 1. CHECK SIGNAL SIGHTING FROM FRONT OF TRAIN 2. OBSERVE LED MODULE FOR DETERIATED OR LED NOT OPERATING 3. OBSERVE LED OR INCANDESCANT LAMP FOR INSUFFICENT SIGHTING DUE TO DETERIATION 4. OBSERVE SIGNAL IDENTIFICATION PLATE AND RECORD DEFECTS FOR ACTION 5. ENSURE SIGNALS HAVE CORRECT SIGHTING TIME TO STANDARD 6. OBSERVE SIGNAL FOR SIGHTING ISSUES RELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS 7. OBSERVE SIGHTING RELATED TO TREES OR OBSTRUCTIONS. ENSURE IF SIGNAL CANNOT BE MOMENTARILY SIGHTED THAT THE TIME DOES NOT EXCEED THE STANDARD BEFORE BEING RESIGHTED 8. ENSURE PULSATING ARE PULSATING CORRECTLY AND SIGHTING IS NOT INTERPRETED AS A STEADY YELLOW. ANY DISCREPENCIES SHOULD BE ACTED ON IMMEDIATELY 9. CHECK AND DISCUSS ANY READ THROUGH ISSUES THAT MAY HAVE RESULTED FROM PROJECT OR LAMP/LED REPLACEMENT. NEW LED MAY RESULT IN A SIGNAL ASPECT OVERPOWERING ANOTHER ASPECT. 10. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT RESULT IN OPERATIONAL DELAYS. 11. OBSERVE AND DISCUSS ANY HEADWAY ISSUES WHERE DRIVERS MAY BE HELD OR DELAYED AT CERTAIN SIGNALS DUE TO MIXED TRAFFIC, STOPPING TRAINS OR CERTAIN ASPECT SEQUENCES.
 MAINTENANCE ACTION: SIGNAL SIGHTING (REF SMP 31 AND SCP 15) CHECK SIGNAL SIGHTING FROM FRONT OF TRAIN OBSERVE LED MODULE FOR DETERIATED OR LED NOT OPERATING OBSERVE LED OR INCANDESCANT LAMP FOR INSUFFICENT SIGHTING DUE TO DETERIATION OBSERVE SIGNAL IDENTIFICATION PLATE AND RECORD DEFECTS FOR ACTION ENSURE SIGNALS HAVE CORRECT SIGHTING TIME TO STANDARD OBSERVE SIGNAL FOR SIGHTING ISSUES RELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS OBSERVE SIGHTING RELATED TO TREES OR OBSTRUCTIONS. ENSURE IF SIGNAL CANNOT BE MOMENTARILY SIGHTED THAT THE TIME DOES NOT EXCEED THE STANDARD BEFORE BEING RESIGHTED ENSURE PULSATING ARE PULSATING CORRECTLY AND SIGHTING IS NOT INTERPRETED AS A STEADY YELLOW. ANY DISCREPENCIES SHOULD BE ACTED ON IMMEDIATELY CHECK AND DISCUSS ANY READ THROUGH ISSUES THAT MAY HAVE RESULTED FROM PROJECT OR LAMP/LED REPLACEMENT. NEW LED MAY RESULT IN A SIGNAL ASPECT OVERPOWERING ANOTHER ASPECT. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT RESULT IN OPERATIONAL DELAYS. OBSERVE AND DISCUSS ANY HEADWAY ISSUES WHERE DRIVERS MAY BE HELD OR DELAYED AT CERTAIN SIGNALS DUE TO MIXED TRAFFIC, STOPPING TRAINS OR CERTAIN ASPECT SEQUENCES.
 SIGNAL SIGHTING (REF SMP 31 AND SCP 15) CHECK SIGNAL SIGHTING FROM FRONT OF TRAIN OBSERVE LED MODULE FOR DETERIATED OR LED NOT OPERATING OBSERVE LED OR INCANDESCANT LAMP FOR INSUFFICENT SIGHTING DUE TO DETERIATION OBSERVE SIGNAL IDENTIFICATION PLATE AND RECORD DEFECTS FOR ACTION ENSURE SIGNALS HAVE CORRECT SIGHTING TIME TO STANDARD OBSERVE SIGNAL FOR SIGHTING ISSUES RELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS OBSERVE SIGHTING RELATED TO TREES OR OBSTRUCTIONS. ENSURE IF SIGNAL CANNOT BE MOMENTARILY SIGHTED THAT THE TIME DOES NOT EXCEED THE STANDARD BEFORE BEING RESIGHTED ENSURE PULSATING ARE PULSATING CORRECTLY AND SIGHTING IS NOT INTERPRETED AS A STEADY YELLOW. ANY DISCREPENCIES SHOULD BE ACTED ON IMMEDIATELY CHECK AND DISCUSS ANY READ THROUGH ISSUES THAT MAY HAVE RESULTED FROM PROJECT OR LAMP/LED REPLACEMENT. NEW LED MAY RESULT IN A SIGNAL ASPECT OVERPOWERING ANOTHER ASPECT. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT RESULT IN OPERATIONAL DELAYS. OBSERVE AND DISCUSS ANY HEADWAY ISSUES WHERE DRIVERS MAY BE HELD OR DELAYED AT CERTAIN SIGNALS DUE TO MIXED TRAFFIC, STOPPING TRAINS OR CERTAIN ASPECT SEQUENCES.
 CHECK SIGNAL SIGHTING FROM FRONT OF TRAIN OBSERVE LED MODULE FOR DETERIATED OR LED NOT OPERATING OBSERVE LED OR INCANDESCANT LAMP FOR INSUFFICENT SIGHTING DUE TO DETERIATION OBSERVE SIGNAL IDENTIFICATION PLATE AND RECORD DEFECTS FOR ACTION ENSURE SIGNALS HAVE CORRECT SIGHTING TIME TO STANDARD OBSERVE SIGNAL FOR SIGHTING ISSUES RELATED TO DIRECT SUNLIGHT, ESPECIALLY GREEN ASPECTS OBSERVE SIGHTING RELATED TO TREES OR OBSTRUCTIONS. ENSURE IF SIGNAL CANNOT BE MOMENTARILY SIGHTED THAT THE TIME DOES NOT EXCEED THE STANDARD BEFORE BEING RESIGHTED ENSURE PULSATING ARE PULSATING CORRECTLY AND SIGHTING IS NOT INTERPRETED AS A STEADY YELLOW. ANY DISCREPENCIES SHOULD BE ACTED ON IMMEDIATELY CHECK AND DISCUSS ANY READ THROUGH ISSUES THAT MAY HAVE RESULTED FROM PROJECT OR LAMP/LED REPLACEMENT. NEW LED MAY RESULT IN A SIGNAL ASPECT OVERPOWERING ANOTHER ASPECT. OBSERVE AND DISCUSS ANY SIGNAL CLEARING ISSUES THAT RESULT IN OPERATIONAL DELAYS. OBSERVE AND DISCUSS ANY HEADWAY ISSUES WHERE DRIVERS MAY BE HELD OR DELAYED AT CERTAIN SIGNALS DUE TO MIXED TRAFFIC, STOPPING TRAINS OR CERTAIN ASPECT SEQUENCES.
12. OBSERVE AND DISCUSS LEVEL CROSSING OPERATIONS SUCH AS BOOM OPERATION, QUEING ISSUES OR PUBLIC ADHERANCE TO CROSSING LIGHTS
REINSTATEMENT ACTION:

- 1. RECORD MAINTENANCE ACTION BY CLOSING OFF THE MST / WORK ORDER
- 2. REPAIRS OR ADJUSTMENTS ARE TO BE EFFECTED IMMEDIATELY OR RECORDED IN THE WMS AS A CORRECTIVE ACTION