#52789

ERL MAINTENANCE SUPPORT SDN BHD

(Company No. 498574-T)

E-MAS

Effective Railway Operations; Reliable System Maintenance

ROLLING STOCK DEPARTMENT

IN-HOUSE TECHNICAL INSTRUCTION

RST SYSTEM CORRECTIVE MAINTENANCE GUIDELINE

R00.OMR.M90000.BT.0002.B

Release

Released:	Norazman	RST HOD	13.06.16	
Checked:	Mohamad	RST QEMR	13.06.16	
Author:	Sahar Effizan	RST Tech. Exec.	13/6/16	
	Name	**Dept./Position**	**Date**	**Signature**

Amendments or additions to this procedure must be indicated with a vertical black line in the adjacent left margin.

Change Record and Configuration Control

B	13-Jun-16	Updated to new RST Technical Instruction template & change the reference from DOCS to EDMS. All the main contents are remain unchanged	Sahar Effizan
A	11-Mar-08	New - to supersede the existing procedure, (R00.OMR.M15000.BT.0001.B) in order to comply with the current company requirement.	Roslan
Revision	**Date**	**Modification**	**Name**

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1 Purpose

The purpose of this document is to provide guideline to the RST Department personnel to carry out corrective maintenance in order to ensure the safety and on time service of the trains.
This document specifies the various maintenance manuals and processes that govern corrective maintenance activities within RST maintenance department. In addition, this document provides guidelines for responding to some common failures.

2 Scope, Distribution & Access

This document is applicable to all RST personnel. The distribution and access shall be available for all RST and could be viewed and retrieved via EDMS and RST Portal [http://express50/ E-MAS_Portal/RST.html]. The hardcopy of this procedure is available in RST foreman room for reference. The full access for editing this document is only granted to RST MGT.

This document provides technical references only, with all details and principles being provided by the supplier's manuals for use by the relevant maintenance staff.

3 Corrective Maintenance

The corrective maintenance activities is an unscheduled repair work due to equipment failures or caused by third party hence affects train operations.

On notification of failure, normally is verbally notified by OCC or RST management, the maintenance personnel shall attend immediately at all times to the reported failure in accordance with the guideline as outlined in document.

The Operation Control Centre (OCC) will create a failure notification (SF) in SAP System and the respective supervisors will generate a work order from the notification.

For troubleshooting & rectification guidance and reference, the technician shall refer to O&M Manuals. All safety aspects described in the O&M Manuals shall be complied at all times.

NOTE: If there is any doubt in the references provided below, please refer to your superior immediately.

3.1 O&M Manual References

All the manuals reference is listed and profiled as List of RST Corrective Maintenance Reference Manual, [R00.OMR.M12990.CZ.0006.A], refer to Attachment 1.

4 Major Failures Reporting

In the event of a failure that causes service disruption or considered a failure of a critical system, an incident report shall be created using E-MAS report template, refer to Documentation Manual,

[G00.OMQ.M11160.BT.0001.*]. The incident report shall be submitted to RST HoD for verification and endorsement. The report also shall be copied to the Maintenance Manager for his acknowledgement. .

The typical of major failures are as outlined in the following sub-sections.

4.1 Flat Wheel (Flat Spot)

In the event of flat wheel, the affected train is immediately to be called into depot with reduced speed for inspection. The classification of minor and major flat wheel is described in Manual ref. No: R00.RSE.91121.XR.3011.D_MM_Wheelset, page 24 of 34, which described in Table 1.

Description of damage	Operational Limit	Proceeding to remedy	Reference
Flat Spots	*Length ≤ 40mm & Depth ≤ 0.8mm*	*Re-profiling*	*Ch. 5.1.1.2.1 Ch. 5.3.1*

Table 1: Flat spot operational limit

Apart from checking the flat spot dimensions above, the root cause is to be identified by retrieving and analyzing the CCU, TCU & BCU readouts. The WSP system inclusive of the pneumatic system, dump valves and speed encoder also need to be check and attended.

The photo of each flat spot needs to be documented for records and documentation purposes. Incident report shall be created using E-MAS report template.

4.2 Brake and Air System Failure, Traction and Auxiliary Converter (Redundancy Mode)

All train failures have been categorized and will be displayed in the Driver Display Unit (DDU), which will be used as guideline by Operation and Maintenance personnel.

For Brake System, the Fault "A" is described, as train is not safe for service and therefore it shall be immediately withdrawn from service. The failures are categorized according to its safety criticalness and functionalities, as described in Table 2.

Fault category	**Criticalness category**
Fault "A"	Very High. Train is not safe for operation and should be withdrawn from service immediately. Immediate action by OCC and RST is required.
Fault "B" *[Except for Air Spring Fault Message. Refer to Section 4.2.1]*	High. Train is to complete the trip and RST personnel will be deployed to inspect the train at either terminal station. Immediate action by OCC and RST is required.

Fault "C"	Intermediate. Train is safe for operation but to be withdrawn from service when applicable.
Fault "D"	Low. Train is safe for service but to be withdrawn from service when applicable.

Table 2: Failures & criticalness category

The list of failure categories above is described in RST Fault codes on display DDU, [R00.BYG.M12990.PE.1002.A], which is extracted and compiled from O&M Manual as follows;

- R00_RSE_92131_YR_0005_A_IM_Diagnosticcodes
- R00_RSE_92131_YR_0006_B_OI_Display_Messages.

4.2.1 Action for Fault "A" Failure

For all **Fault "A"** failure (if experienced at departure or arrival platforms KLIA or KLS), RST Supervisors may advise the OTD to move the train towards reversing track at 5 km/h immediately after received approval from OCC to communicate with OTD.

RST Supervisors shall advise the OTD to test the service brake while moving the train at 5km/h and if the service brake does not comply with the Master Controller braking command, then, the last source of braking available is the Parking Brake.

Please also refer to Operation Instruction (OCC) 04/2012, dated 09-Aug-12, [G00.OMO.M15111.ND.1025.A] - Attachment 2

4.2.2 Air Spring Fault Message

Although the fault message is categorized in Fault "B", train has to be called into depot with reduced speed immediately for inspection and rectification after completing the journey. This is according to Siemens report on Derailment Safety Investigation Report version 1, reference no. A6Z00001089694 dated March 2007, indicate that the risk of derailment is higher when train is running on Emergency Springs. Action by OTD, OCC & RST can be viewed in;

- Operation Instruction (OTD) 05/2007 dated 29-May-07 [G00.OMO.M15113.ND.0049.B] – Attachment 3
- Operation Instruction (OCC) 04/2007 dated 29-May-07 [G00.OMO.M15111.ND.0034.B] – Attachment 4

4.3 Train unable to start-up.

The failures such as train unable to be start-up or when a train, which causes tripping of 25Kv supply, will be shunting back to depot for rectification immediately or as soon as possible.
Example of such failures is shown below:

- Unable to raise pantograph
- Total loss of air system (reservoirs drained to empty)
- Ground leakage of Main Transformer

- Flat train batteries

4.4 Broken Windscreen or Window.

In the event of broken windscreen or window, the OTD will report the level of broken windscreen or windows to OCC and RST shift supervisors. OCC will advise the OTD as per Operation Instruction (OCC) 02/2007 dated 10 April 2007 [G00.OMO.M15111.ND.0026.A] – Attachment 5.
Train will be withdrawn from service immediately after completing the journey with reduced speed back to depot for rectification works by RST.

4.5 Driver's Display Unit malfunctions in either driver's cab

In the event of one DDU malfunction, the OTD will report if the malfunction DDU is in the active cab. RST Shift Supervisor shall advise the OTD to continue driving and to observe the entire fault indicator lights such as:

- Fault A, B & C indicators (illuminates if there is fault)
- Passenger Emergency Brake (illuminates if activated)
- Door in open condition (illuminates if door(s) is not fully close)
- Dead-man control (illuminates if not activate by OTD)
- Door close/open command button (illuminates if door in close or open position)
- Parking apply & release command button (illuminates if brakes apply / release)

RST Shift Supervisor will advise the OTD to complete the journey and will call in the train after completing the journey.

4.6 Passenger Door Failures

In the event of passenger door failures, OCC will immediately instruct the OTD to isolate the fail door as per Operation Instruction (OTD) as follow;

- Operation Instruction (OTD) 01/2008, dated 28-Feb-08, [G00.OMO.15113.ND.0059.A] – Attachment 6.
- Operation Instruction (OTD) 06/2015, dated 16-Dec-15, [G00.OMO.15113.ND.1058.A] – Attachment 7.

Then OCC will inform the RST Shift Supervisor on duty. The RST technician shall download the failure message readout before normalizing or rectifying the failed door.

5 Communication during Unscheduled Maintenance

5.1 RST ←→ OCC

OCC will contact RST Shift Supervisor when a failure occurs. The mode of communication to contact RST Shift Supervisor is normally by hand portable radio, hand phone or DECT phone.

5.2 RST ←→ Internal Communication flow

The first point of communication regarding a failure is between OCC and the RST Shift Supervisor or Inspector. Arrangement for the technician to attend the failure at site will be coordinated with OCC by the RST Shift Supervisor. The Technicians are required to inform RST Shift Supervisor if the problem could not be solved at site. The RST Shift Supervisor shall then arrange for the necessary assistance for the technicians and to inform OCC accordingly. The supervisors are also required to inform the HOD of similar failures.

6 Safety Requirement

While performing maintenance activities, all safety issues requirements as stated in Safety Procedure, [G00.OMZ.M11451.NP.0005.*] shall be complied at all time.

7 Important Remark

IF YOU'RE UNCLEAR OF THE INFORMATION FROM MANUALS OR THE PROBLEM NATURE,

DO NOT START THE WORK.

CONTACT YOUR SUPERVISOR IMMEDIATELY!!!

Appendices

Appendix 1 – Documentation Manual, [G00.OMQ.M11160.BT.0001.*]

Appendix 2 – Maintenance Manual For Power & Trailer Wheelset [R00_RSE_91121_XR_3011_D_MM_Wheelset]

Appendix 3 – RST Fault codes on display DDU, [R00.BYG.M12990.PE.0002.*]

Appendix 4 – Safety Procedure, [G00.OMZ.M11451.NP.0005.*]

Attachment

Attachment 1 – List of RST Corrective Maintenance Reference Manual, [R00.OMR.M12990.CZ.0017.A]

Attachment 2 – Operation Instruction (OCC) 04/2012, dated 09-Aug-12, [G00.OMO.M15111.ND.1025.A]

Attachment 3 – Operation Instruction (OTD) 05/2007, dated 29-May-07 [G00.OMO.M15113.ND.0049.B]

Attachment 4 – Operation Instruction (OCC) 04/2007, dated 29-May-07 [G00.OMO.M15111.ND.0034.B]

Attachment 5 – Operation Instruction (OCC) 02/2007, dated 10-Apr-07 [G00.OMO.M15111.ND.0026.A]

Attachment 6 – Operation Instruction (OTD) 01/2008, dated 28-Feb-08 [G00.OMO.M15113.ND.0059.A]

Attachment 7 – Operation Instruction (OTD) 06/2015, dated 16-Dec-15 [G00.OMO.M15113.ND.1058.A]

Attachment 1

Rolling Stock Maintenance Department

E-MAS
Your Railway Operations & Maintenance Specialist

List of RST Corrective Maintenance Reference Manuals

Group Code	System Description	Reference Manual	Remarks	Page
91040	Automatic coupler Schaku	R00_RSE_91040_XR_4005_A_troublesht_40_1279_4.doc	Chapter 4	4-1 to 4-10
91050	Double leaf sliding door	R00_RSE_91050_XR_4010_C_diagnostic_t410957e13.doc	Chapter 1 & 2	4 to 17
91111	Air-cond Passenger Compartment	R00_RSE_91111_XR_4001_C_OM_Aircon_Pass_Comp.doc	Chapter 9	56 to 61
91120	Bogies & Suspension	R00_RSE_91121_XR_3011_C_MM_trailer_wheelset_BTrans.pdf	Chapter 5 & 6	7 to 33
		R00_RSE_91121_XR_3030_B_OM_sensor_arrangement.doc	Chapter 5	16
		R00_RSE_91121_XR_3040_B_OM_magnet_receiver_mount.doc	Chapter 5	16
		R00_RSE_91122_NZ_3001_B_COM_bogie_frame.doc	Chapter 5	19
		R00_RSE_91123_XR_3010_A_OM_prim_suspens_damper.doc	Chapter 5	17 to 18
		R00_RSE_91123_XR_3020_E_OM_sec_suspension_damper.doc	Chapter 5	26 to 27
		R00_RSE_91123_XR_3030_B_OM_levelling_valve.doc	Chapter 5	17 to 18
		R00_RSE_91123_XR_3050_A_OM_lateral_limit_stop.doc	Chapter 5	16
		R00_RSE_91123_XR_3060_A_Anti_Roll_Bar.doc	Chapter 5	19
		R00_RSE_91123_XR_4001_C_MRM_suspens_syst_WBL.pdf	Chapter 5	20 to 24
		R00_RSE_91126_NZ_3001_B_COM_pilot_bar_arrangement.doc	Chapter 5	16
		R00_RSE_91127_NZ_3001_B_COM_paint_labels.doc	Chapter 5	16
		R00_RSE_91128_XR_3010_B_OM_bogie_piping_arrangmt.doc	Chapter 5	17
		R00_RSE_91128_XR_3020_B_OM_bogie_wiring_arrangmt.doc	Chapter 5	16
		R00_RSE_91128_XR_3030_A_OM_cooling_water_arrangmt.doc	Chapter 5	17
		R00_RSE_91129_NZ_3001_B_COM_brake_arrangment.doc	Chapter 5	22 to 24

Rolling Stock Maintenance Department

List of RST Corrective Maintenance Reference Manuals

Group Code	System Description	Reference Manual	Remarks	Page
91130	Brake & Pneumatic Equipment WBL	R00_RSE_91131_XR_4002_B_COM_brakedisk_SABWABCO.doc	Chapter 6.4	6-18 to 6-20
		R00_RSE_91131_XR_4004_D_COM_calliper_SABWABCOVH9704502.pdf	Chapter 7.3	7-13 to 7-15
		R00_RSE_91132_XR_4003_C_MRM_el_pneu_brakequ_WBL.pdf	Chapter 5	59 to 71
		R00_RSE_91134_XR_4001_C_MRM_airsupply_unit_WBL.pdf	Chapter 5	58 to 62
		R00_RSE_91135_XR_4001_C_MRM_windscren_wash_WBL.pdf	Chapter 5	24 to 33
		R00_RSE_91136_XR_4001_C_MRM_warninghorn_WBL.pdf	Chapter 5	14 to 16
		R00_RSE_91139_XR_4002_C_MRM_panto_pneum_equ_WBL.pdf	Chapter 5	56 to 60
92010	Pantograph	R00_RSE_92010_NZ_0001_A_COM_panto_dsa200_11.doc	Chapter 8	66 to 67
92020	Vacuum Circuit Breaker	R00_RSE_92020_YR_0001_B_CBdescript 5470971202Ed.B.doc	VCB ACB 2510 Pneumatic Earthing Switch	12–28 43-45
92040	Insulators Bushings	R00_RSE_92041_YR_0001_A_InstaInstr_HAAR49057.pdf	Chapter 5	4
		R00_RSE_92042_NZ_0001_A_COM_Post insulator.doc	Chapter 5	5 to 6
		R00_RSE_92043_NZ_0001_A_COM_HV_Bushing.doc	Chapter 5	5 to 6
92060	Main transformer	R00_RSE_92060_NZ_0001_B_COM_main_transformer.doc	Chapter 5	47 to 49
92070	Traction converter	R00_RSE_92071_YR_0001_A_OM_420050_9060_76.pdf	Chapter 6	41 to 82
		R00_RSE_92073_YR_0004_A_TCU_comiss_trouble_0cxeb3a.doc	Chapter 3.3	26 to 95
92080	Drive Unit	R00_RSE_92081_NZ_0002_A_OI_Traction_Drive_A1A25111.doc	Chapter 5	5-1 to 5-21
		R00_RSE_92083_YR_0004_A_opinstruct_3_325_336 (updated).doc	Chapter 2.8	2-25
92090	Traction cooling unit	R00_RSE_92090_NZ_0001_B_COM_TCU.DOC	Chapter 7	51

Rolling Stock Maintenance Department

List of RST Corrective Maintenance Reference Manuals

Group Code	System Description	Reference Manual	Remarks	Page
92110	Auxiliary Converter	R00_RSE_92110_NZ_0001_B_COM_auxcon_4054010700001.doc	Chapter 4	41 to 61
92120	Battery	R00_RSE_92120_NZ_0001_A_COM_battery.doc	Chapter 5	14 to 15
92130	Central Control System	R00_RSE_92131_YR_0001_A_OM_CCU_3E44010B0257U700.doc	Chapter 3	38 to 50
92140	Drivers desk	R00_RSE_92141_NZ_0001_A_COM_mastContr_d430353.doc	Chapter 5	21
92150	Passenger information	92150 Passenger information\R00_RSE_92150_NZ_0001_B.pdf	Chapter 5	14 to 15
		92150 Passenger information\R00_RSE_92150_NZ_0004_A.pdf	Chapter 2	5 to 7

Attachment 2

#117791

E-MAS
Effective Railway Operations; Reliable System Maintenance

ERL Maintenance Support Sdn Bhd
(Company No. 498574-T)

Operations Instruction (OCC) 04/2012

Date	:	**09-Aug-12**
Related Document	:	**Operations Procedure Manual For OCC (G00.OMO. M15111.NA.1003.A)**
Validity	:	**Permanent**
Paragraph/Clause	:	**7.3.10**
Subject	:	**Brake Failure**
C.C.	:	**OTD** . MJA, HAM

This Operation Instruction will supersede **Clause 7.3.10 – Brake failure** of the Operation procedure Manual for OCC (G00.OMO. M15111.NA.1003.A) and OI 03/2011 (G00.OMO.M15111.ND.1018.A)

Purpose:

To improve procedure in managing of fault 'A' due to the train brake system failure.

Procedure:

7.3.10 Brake Failures (Fault 'A' Categories)

In the event the LC/DC received report of an unknown fault 'A' such as:

- Brake not released but trains speed as normal
- Any other brake failure except Bogie Locked

LC/DC has to:

1. Instruct the OTD to stop the train immediately or not to move if the train is at platform
2. Inform the RST supervisor of the situation
3. Instruct OTD to prepare for train to train evacuation
4. Arranged rescue train to pull the failed train to next terminal to unload the baggage if any or route the train back to Depot
5. Make arrangement to replace the next departure of the failed train if possible

7.3.10.1 Fault 'A' (Bogie Locked)

In the event the LC/DC received a report of fault 'A', with DDU fault message **Bogie Locked Car 100" or "Bogie Locked Car 200" and Parking or service brake pressure low**, LC/DC has to:

If fault message appeared at terminal station:

1. Received report from the OTD
2. Cancelled the affected trip and disembark the passengers

ERL Maintenance Support Sdn. Bhd., Kompleks Rel Udara, Bandar Baru Salak Tinggi, 43900 Sepang, Selangor Darul Ehsan

3. Make arrangement to replace the next departure of the failed train if possible
4. Inform the RST Supervisor

If fault message is appeared while train is in motion:

1. Instruct the OTD to stop the train immediately
2. Instruct the OTD to change ATP braking curve to 39% (Code 3) in the ATP MMI
3. Ensure the Main Reservoir (MR) needle is maintain above 9 bar
4. Set the route to the next station (loop track)
5. Instruct OTD to drive the train at speed not more than 80km/h, or in accordance to the ATP line speed
6. Instruct OTD to exercise early braking assuming the train has only half of the braking rate
7. Instruct OTD to stop the train at the next station for passengers evacuation

Once arrived at the next station,

1. Instruct OTD to disembark the passengers
2. Instruct OTD to drive the train at speed not more than 80km/h, or in accordance to the ATP line speed
3. Instruct OTD to exercise early braking
4. Instruct OTD to proceed until next terminal to unload the baggage if any or route the train back to Depot

NOTE

NO RESCUING OF TRAIN SHOULD BE ARRANGED, AS THE FAILED TRAIN COULD MOVE USING IT'S OWN POWER WITH MAXIMUM ALLOWABLE SPEED OF 80KM/H

.....	.....	 09082012
James Boudville	**Sukhbir Singh**	**MdJamil**
Operations Manager	Safety & Security Manager	RST Manager

Attachment 3

ERL Maintenance Support Sdn Bhd
(Company No. 498574-T)

E-MAS
Your Railway Operations & Maintenance Specialist

Operations Instruction (OTD) 05/2007

Date	:	**29-May-07**
Related Document	:	**Operations Procedure Manual For Train Drivers (G00.OMO. M15113.NA.0001.B)**
Paragraph/Clause	:	**New**
Subject	:	**Air Spring Faulty**
C.C.	:	**OCC, OTS, RST**

This Operations Instruction will supersede the Operations Instruction 02/07 (OTD) dated 07th May 2007 [G00.OMO M15113.ND.0049.A]

Purpose:
To establish a safe procedure in handling a defect to train air spring.

Procedure:
In the event of a defect to the Air Spring during train operations, the train driver has to: -

A. If Air Spring Failure is detected while train is in motion:

1. Report to the OCC the status of the failure via the DDU ["air spring fault] and Fault B indicator is illuminated
2. Continue journey with a maximum speed of **110km/h**, if failure is detected while in motion.
3. Wait for further orders from the OCC

B. If Air Spring Failure is detected at terminal station:

1. Report to the OCC the status of the failure via the DDU ["air spring fault] and Fault B is illuminated
2. Received information from OCC that the trip will be cancelled and wait for further advise

Concurred by,
RST

.....
James Boudville
Operations Manager

29/05/07
.....
Sukhbir Singh
Safety & Security Manager

.....
Name & Dept: ROSLAN RST
Date: 29 May 07

Attachment. Memo dated 25-01-07 (OMO.RS0.M15110.0011.A)

ERL Maintenance Support Sdn Bhd , Kompleks Rel Udara, Bandar Baru Salak Tinggi, 43900 Sepang, Selangor Darul Ehsan

ERL Maintenance Support Sdn Bhd

(Company No. 498574-T)

E-MAS
Your Railway Operations & Maintenance Specialist

MEMORANDUM

To:	Originator:	James Boudville
All Operations Staff	Department:	Operations
	Tel:	+(60) 3-2267-7621
	Fax:	+(60) 3-2267-7770
	E-mail:	

Reference Number:
OMO.RS0.M15110.0011.A

Date:
25-Jan-06

☐ Urgent	☐ Review	☐ Comment	☐ Reply	☐ Retain
☑ Action	☑ Info	☐ Note	☐ Call me	☐ Sign & Return

Attachment(s): ☑ None ☐ As listed below

Action In The Event Of Air Spring Failure(s)

Please be informed that in the event of defective air spring(s) [secondary suspension] which can be identified by: -

- Hissing sound of air leakage
- Lost/drop of Main Reservoir pressure
- DDU failure message: -
  - "BCU in +100: Air suspension failure on Bogie 1 or 2"
  - "BCU in +200: Air suspension failure on Bogie 1 or 2"

The following actions have to be taken by: -

- OTD: to report to the OCC upon identifying the above events
- OCC: to inform RST
- OCC: arrange train to be taken off from revenue service

Sincerely

James Boudville - OMO

Attachments: {none}
cc: OPS Mgmt, TBA, HAM, MJA, RST Supervisors

QUALITY SYSTEM

CERTIFICATE NO 208003

ERL Maintenance Support Sdn Bhd , Kompleks Rel Udara, Bandar Baru Salak Tinggi, 43900 Sepang, Selangor Darul Ehsan

Attachment 4

ERL Maintenance Support Sdn Bhd
(Company No. 498574-T)

E-MAS
Your Railway Operations & Maintenance Specialist

Operations Instruction (OCC) 04/2007

Date	:	**29-May-07**
Related Document	:	**Operations Procedure Manual For OCC (G00.OMO. M15111.NA.0001.B)**
Paragraph/Clause	:	**New**
Subject	:	**Air Spring Faulty**
C.C.	:	**OTD, OTS, RST**

This Operations Instruction will supersede the Operations Instruction 03/07 (OCC) dated 07th May 2007 [G00.OMO.M15111.ND.0034.A]

Purpose:
To establish a safe procedure in handling a faulty air spring.

Procedure:
In the event of a defect to the Air Spring Fault during train operations, the OCC has to: -

A. If Air Spring Failure is detected while in motion:

1 Receive report of the Train Driver on the status of the failure via the DDU ["air spring fault] and Fault B indicator is illuminated.
2 Receive/Instruct the Train Driver to continue journey with maximum speed of **110km/h**
3. Make arrangement to replace the next departure of the failed train
4. Inform the RST Supervisor

B. If Air Spring Failure is detected at terminal station:

1. Receive report of the Train Driver on the status of the failure via the DDU ["air spring fault] and Fault B indicator is illuminated.
2 Cancelled the affected train trip and advise the Train Driver
3. Make arrangement to replace the next departure of the failed train
4. Inform the RST Supervisor

Concurred by:
RST

.....
Name & Dept: ROSLAN RST
Date: 29 May 07

.....
James Boudville
Operations Manager

29/05/07
.....
Sukhbir Singh
Safety & Security Manager

Attachment: Memo dated 25-01-07 (OMO.RS0.M15110.0011.A)

ERL Maintenance Support Sdn Bhd , Kompleks Rel Udara, Bandar Baru Salak Tinggi, 43900 Sepang, Selangor Darul Ehsan

Attachment 5.

ERL Maintenance Support Sdn Bhd
(Company No 498574-T)

E-MAS
Your Railway Operations & Maintenance Specialist

Operations Instruction (OCC)
02/2007

Date	:	**10 April 2007**
Related Document	:	**Operations Procedure Manual For OCC (G00.OMO.M15111.NA.0001.*)**
Subjects	:	**Broken Window**
Paragraph	:	**New**
Distribution	:	**OSS, OTS & OTD**

Purpose:
To established a safe procedure in the event of broken window/door glass during train operations

Procedure:
1.1 Outer Layer Only

In the event of broken window glass (outer layer) the OCC has to: -

1. Confirm the severity of the damages with the OTD/OSS.
    - Window still in one piece – To isolate the door nearest to the affected area and cordon the area. Replace train at the terminal at early possible opportunity
2. Instruct OTD to drive with the maximum speed of 120km/h to minimize the damage to the broken window or door glass.
3. If the inner layer is also affected during movement, refer to clause ***1.2***.

1.2 Total Shattered/Both Layers

In the event of both window and door glass is totally shattered or broken with a hole, the OCC has to: -

1. Confirm the severity of the damages with the OTD/OSS.
2. Cancel the trip and arrange for a replacement if the damage is detected at terminal stations.
3. Cordon the area at the next stop (intermediate station) and instruct OSS/OTD to advise the passengers to move away from the cordoned area.
4. Replace train at the terminal

.....	.....	Concurred by; RST .....
James Boudville	Sukhbir Singh	Name & Dept ROSLAN - RST
Operations Manager	Safety & Security Manager	Date 19 APRIL 2007

*Note: Clause number *1.1 & 1.2 is just a sample.*

Attachment 6

ERL Maintenance Support Sdn Bhd
(Company No. 498574-T)

E-MAS
Your Railway Operations & Maintenance Specialist

Operations Instruction (OTD) 01/2008

Date	:	**28-Feb-08**
Related Document	:	**Operations Procedure Manual For Train Drivers (G00.OMO. M15113.NA.0001.B)**
Paragraph/Caluse	:	**New**
Subject	:	**Passenger Door Failure**
C.C.	:	**OCC, OTS, OSS, RST.**

This Operations Instruction will supersede Operations Instruction 03/2006.

Purpose:

To ascertain a proper and safe procedure on isolation of passenger door failure.

Procedure:

Passenger Door Failure (Train Preparation) at Depot

When the Train Driver experiences a failure on the passenger door during train preparation i.e messages in DDU door XX/X malfunction, slight door malfunction or driver's cab door open indicator light illuminates permanently/blinking, the Train Driver has to:

1. Report immediately to the OCC.
2. Receive further instruction from the OCC.

Passenger Door Failure at Mainline

When a Train Driver experiences a passenger door failure at the platform:

1. Open and close all doors on platform side, if failure rectified proceeds as per signal indication.
    a. If the failed passenger door is on the trackside, immediately isolate the affected door.
2. If failure still persists, open all doors on platform side and check via DDU or visually.
3. Request from OCC to isolate the failed door.
4. Take the cross key and 'Out of Order Sticker" to the failed door.
5. Open the side panel and overhead panel where the DCU switch is located.
6. Switch DCU toggle switch to **'OFF'** position and manually retracts the ramp back to close position via the ramp manual knob.

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7. Close the door manually (if door is opened) and isolate the door by turning the isolating switches 90° to the right.
8. Switch **"ON"** back DCU toggle switch.
    a. If the DCU toggle switch not normalise to "ON" position, DDU message will be
        i. Door XX/1 malfunction
        ii. Door XX/2 malfunction
9. Close back the overhead panel and side door panel.
10. Paste the 'Out of Order Sticker" on the inside of the isolated door.
    - *(The said sticker has to be pasted exactly on the "Door Open" push button for the Transit train and above the "Mind the Gap" sticker for the Ekspres train).*
11. Proceed back to the driver's cab and check that "one or several door is locked" message appears in DDU event overview.
12. If message "one or several door are locked" does not appear; check back position for door isolating switch and confirm it switches 90° to the right. Then follow back step 11.
13. Close all doors on the platform side. If door open indicator at driver desk is not blinking (light-off), train can proceed as per-normal.
14. If Yes; inform OCC and proceed as per signal indication.
15. If No; inform OCC immediately.

REMINDER

IF THE TRAIN DRIVER UNABLE TO ISOLATE THE FAILED DOOR/RAMP ON THE 1ST ATTEMPT, INFORM OCC AND ASK FOR RST ADVICE.

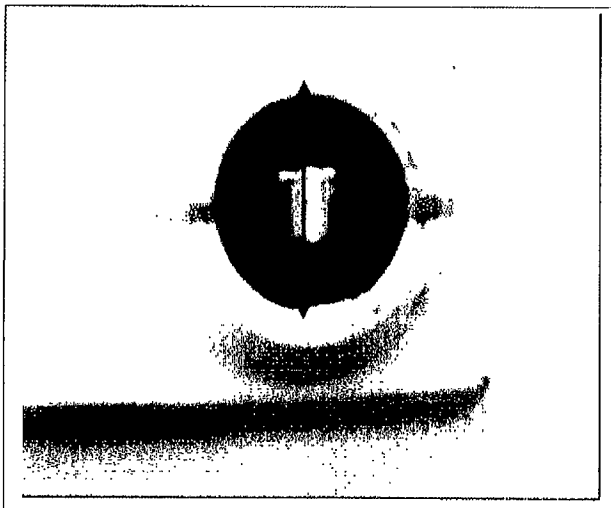
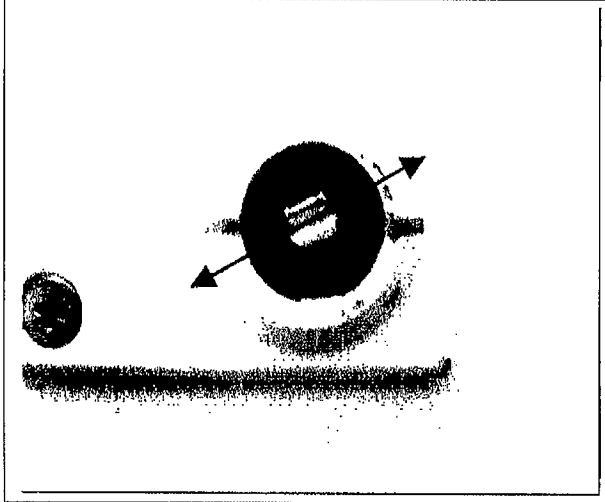
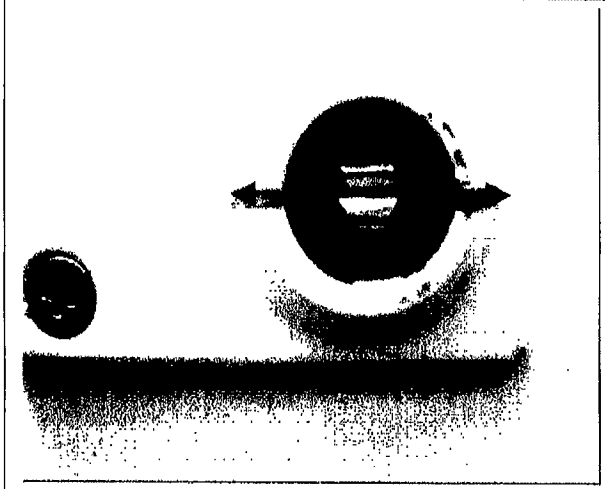
DANGER

IF THE PASSENGER DOOR FAILURE RECTIFICATION AT TERMINAL STATION IS UNSUCCESSFUL, INFORM OCC AND GET APPROVAL TO BREAK SEAL FOR DOOR OVER-RIDE SWITCH AND MOVE TRAIN TO REVERSING TRACK.

Verified by;

.....	.....	.....
James Boudville	Sukhbir Singh	Name & Dept: AZMAN (RST)
Operations Manager	Safety & Security Manager	Date: 28.02.08

Position of Door Isolation Switch

	Photo 1: Door Isolation Switch • **NORMAL** position.
	Photo 2: Door Isolation Switch • **IMPROPER** or **INCORRECT** position when the door is isolated. • Switch groove is at 45°.
	Photo 3: Door Isolation Switch • **PROPER** or **CORRECT** position when door is isolated. • **"One or several doors are locked"** fault message appears in DDU.

Attachment 7

#129878

E-MAS
Effective Railway Operations Reliable System Maintenance

ERL Maintenance Support Sdn Bhd
(Company No. 498574-T)

Operations Instruction (OTD) 06/2015

Date	:	**16-Dec-15**
Related Document	:	**Procedure for Train Drivers (G00.OMO. M15113.NA.1004.C)**
Validity	:	**Until Further Notice**
Paragraph/Clause	:	**7.14.5 Passenger Door/Ramp Failure**
Subject	:	**Passenger Door/Ramp Failure**
C.C	:	**OTS, OCC, OSS.**

Purpose:

This Operations Instruction (OI) will supersede Clause 7.14.5 Passenger Door/Ramp Failure and OI 04/2015 to improve procedure in the event of Passenger Door/Ramp failure.

Procedure:

In the event of passenger Door/Ramp failure, OTD has to: -

1. Open and close doors (on platform side)- if failure rectified proceed with journey as per signal indication
2. If failure still persists, open all doors (on platform side) and check via Driver Display Unit (DDU) which door has failed or check visually door ramp which not retracted
3. Receive instruction from LC/DC to isolate the failed door
    a. Refer to Clause 10.4 Fault immediate action and guidelines, Door isolation & rectification
4. Take cross key and "Out of Order" sticker
5. Open overhead panel where the DCU switch is located
    a. Car 100 and Car 300 – at Side 1
    b. Car 200 and Car 400 – at Side 2
6. Switch Door Control Unit (DCU) toggle switch to "OFF" position
7. Open side panel of the failure door and manually retracts the ramp back to close position via ramp manual knob
8. Close door manually and isolate the door by turning isolating switches 90° to the right (clockwise)
9. Break the seal for Passenger Emergency Door Release (PER) and pull the door latch
10. Ensure the door leaf is not open and confirm the door is mechanically locked
11. Normalise the PER by pushing back the door latch to normal position

ERL Maintenance Support Sdn. Bhd., Kompleks Rel Udara, Bandar Baru Salak Tinggi, 43900 Sepang, Selangor Darul Ehsan

Reference Number: G00.OMO.M15113.ND.1058.A **Date:** 16-Dec-15

12. Close side panel of the failure door
13. Switch "ON" DCU toggle switch and close overhead panel
14. Paste "Out of Order" sticker on the isolated door
15. Proceed to the driver's cab and report to LC/DC either
    a. Door locked message "one or several door locked" appears in DDU event overview, or
    b. Observe message "Door malfunctioning" appears in DDU

    (Refer to the attached Guideline)
16. Close doors.
    a. If "door open" light indicator at driver's desk is not blinking (light off), proceed as per normal
    b. If no (door open indicator remaining blinking), inform LC/DC immediately
17. Continue the journey and wait for further instruction from LC/DC

NOTE

OTD to ensure the train door is locked and safe for operation by manually force open door leaf after the PER is pulled.

The "Out of Order" sticker has to be pasted exactly on the "door open" push button for Transit train and above "mind the gap" sticker for the Ekspres train.

IMPORTANT

DDU event message "Door XX/1 malfunction" and "Door XX/2 malfunction" will remain if Door Control Unit (DCU) is malfunction after normalise DCU toggle switch to "ON" position.

DANGER

If the passengers train door rectification is unsuccessful and train unable to traction, inform LC/DC to seek an approval to break seal and bypassed the "door loop" toggle switch.

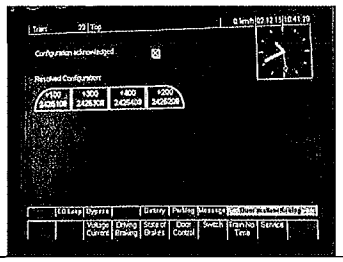
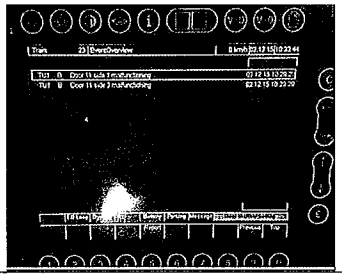
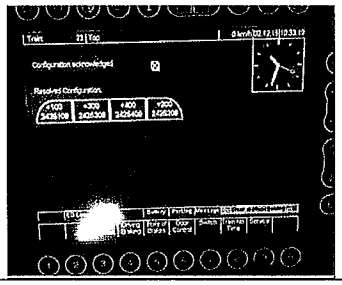
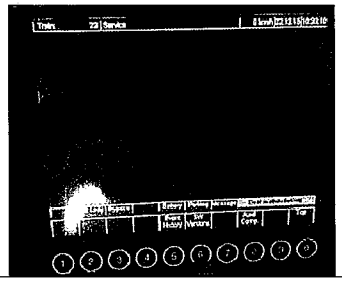
for .....
James Boudville
Operations Manager

for .....
Norazman
Rolling Stock Manager

.....
Sukhbir Singh
Safety & Security Manager

Reference Number: G00.OMO.M15113.ND.1056.A **Date:** 3-Dec-15

Guideline for confirming DCU malfunction

1. **Observe message "Door malfunctioning" appeared at DDU**	
2. **Press soft key button for "Message Event"** • **TU1 B Door XX side 1 malfunctioning** • **TU1 B Door XX side 2 malfunctioning**	
3. **Press soft key button "Service"**	
4. **Press soft key button "SW Versions"**	
5. **Observe Software Versions message as follows:** • **Component: Door 11** • **Software: 0 00** • **NSDB: 0 00**