ERL MAINTENANCE SUPPORT SDN BHD

Co. Reg. No. 199901023674 (498574-T)

E-MAS

Effective Railway Operations; Reliable System Maintenance

OPERATIONS DEPARTMENT

PROCEDURE FOR TRAIN DRIVERS

Ref. No. G00.OMO.M15113.NA.1004.F

Release

Released:	Dr. Hassan Alsalamat	Chief Executive Officer	12.12.2024	
Checked:	Jayarajah Savarimuthu	Maintenance	03.12.2024	
Checked:	Sukhbir Singh	Safety & Security	09.12.2024	
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	Name	**Department**	**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

Revision	Date	Modification	Name
F	11.10.2024	All Operations Instruction from Apr 2022 up to June 2024 has been incorporated into this document and the change of name for KLIA Terminals. This Version F supersedes previous Procedure for Train Drivers with ref. no. G00.OMO.M15113.NA.1004.E	Norhandee/ Yusaniezam
E	17.05.2021	All Operations Instruction from Jan 17 up to July 20 and new trains information have been incorporated into this document. This Version E supersedes previous Procedure for Train Drivers with ref. no. G00.OMO.M15113.NA.1004.D	Norhandee/ Yusaniezam/ Rustam
D	01.03.2017	All Operations Instruction from Nov 13 up to Oct 16 and new trains information have been incorporated into this document. This version (G00.OMO.M15113.NA.1004.D) supersedes previous **Procedure for Train Drivers** with ref. no. G00.OMO.M15113.NA.1004.C	Norhandee
C	08.01.2014	All Operations Instruction from Aug 12 up to Nov 13 has been incorporated into this document. This version (G00.OMO.M15113.NA.1004.C) supersedes previous **Procedure for Train Drivers** with ref. No. G00.OMO.M15113.NA.1004.B	Norhandee
B	14.09.2012	All Operations Instruction from Feb 2009 up to Aug 12 has been incorporated into this document. The above version (G00.OMO.M15113.NA.1004.B) supersedes previous **Procedure Manual for Train Drivers** with ref. No. G00.OMO.M15113.NA.1004.A	Norhandee
A	03.11.2008	Revision of entire document. All Operations Instruction up to Feb 2009 have been incorporated into this document. The above version (G00.OMO.***M15113***.*NA.1004.A*) supersedes all previous versions of this document with reference number *G00.OMO.**M15113**.NA.0001.B*	Norhandee/ Md Rizal
B	01.12.2003	Revision of the entire document including additional information. All Operations Instructions from no. 01 to 10 have been incorporated into this document.	Azrin / Md. Rizal
A	13.12.2002	Revision of the entire document. All Operations Instructions from no. 01 to 10 have been incorporated into this document.	Oberkampf / Azrin

Planning Of Changes Reference For Revision: G00.OMO.M15113.NA.1004.F					
Issues To Consider	**Checked** *(Please mark X)*				**Remarks**
1) Are there any negative impact?	YES		NO	X	
2) Will the integrity of QEMS be affected?	YES		NO	X	
3) Resources available?	YES	X	NO		
4) Allocation or relocation of responsibilities and authorities required?	YES		NO	X	

TABLE OF CONTENTS ..... Page

1 Purpose

This Operations Procedure details the manner in which the Train Drivers carry out their duties under Normal, Degraded and Emergency Operation.

Definition of Train Drivers can be obtained in the Abbreviations and Glossary (Operations) – G00.OMO.M15110.NA.1003. * .

All Train Drivers must read, understand and be familiar with all instructions and procedures in all types of operations. Provisions are made to deal with situation in Degraded and Emergency Operation to restore back to Normal Operation in the most effective and safe manner. Therefore, it is absolutely necessary to adhere to all instructions and procedures strictly. Additionally, they have to be familiar with other regulations, which are important for their work.

Provisional to guidelines for operating of Shunting Locomotive as per Clause 9 Shunting Loco due to unavailability of Shunting Locomotive. All movements related to Shunting Loco is temporary replaced by SPYTL Shunting Loco and/or Unimog.

2 Scope, Distribution & Access

This procedure shall be read together with the Operations Procedure for Communications & Signal Book [G00.OMO.M15114.NA.1002.*[*]], any other related procedures stated in Company Procedure and shall apply to all Operations Shift Supervisors (OTS) and Operations Train Drivers (OTD).

It will be distributed to OTS and OTD. Access to this procedure shall be given to all Head of Department [HoD] of Operations, Maintenance and Safety & Security via EDMS. Employee without EDMS user access can retrieve this procedure via E-MAS Operations Department portal.

3 General

3.1 Abbreviations and Definitions

Abbreviation	Description
ATP	Automatic Train Protection
ARS	Automatic Route Setting
ATR	Automatic Through Routing
BTS / BS	Bandar Tasik Selatan Station
DC	Depot Controller
DCU	Door Control Unit
EC	Engineering Controller
E.P.	Electro Pneumatic
ET-01	SIEMENS Desiro ET425M
ET-02	CRRC ET Series 2 (China)
KLIA T1	Kuala Lumpur International Airport Terminal 1
KLIA T2	Kuala Lumpur International Airport Terminal 2
KLS	Kuala Lumpur Sentral Station

An asterisk (*) used to refer to the latest version, applicable for all pages in this procedure

LC	Line Controller
OC	Operations Chief
OCC	Operations Control Centre
OCS	Operations Controller Supervisor
OTD	Operations Train Driver
OTS	Operations Shift Supervisor
OSS	Operations Station Supervisor
PIDS	Passenger Information Display System
PCS	Putrajaya Cyberjaya Station
PICOP	Person In Charge Of Possession
STS	Salak Tinggi Station
STD	Salak Tinggi Depot
RST	Rolling Stock Department
PSD	Platform Screen Door

3.2 Glossary and Definitions

Approval To Proceed	Authority for a Driver to proceed. This may be given by a fixed signal or verbal instruction from the OCC.
Control Train	A subsequent train approaching the affected area (track irregularities, reset of axle counter) to observe for any irregularities that may affect train service.
Dead-man Control Device	A control device on electric train and shunting loco, which supervises the consciousness state of the driver. The driver must press and release within the programmed interval (30 sec) The brakes will automatically triggers if the driver do not respond.
Double Ending Relief	A situation whereby a standby Operations staff activates the occupied cab of a terminating train while the occupied cab driver switches off to enable the turnaround time to be kept to a minimum.
Emergency Brake – (ATP)	An unsafe condition such as over speed or passing a stopping point will initiate an emergency brake application. If the trainborne systems initiate an emergency brake for any reason e.g. safety loop open, The ATP will also initiate an emergency brake. After an emergency brake the train can only proceed with permission from OCC and after acknowledging the EB on the ATP panel.
Evacuation Ramp	A portable platform used to transfer passengers from a failed train to a rescue train.
Look Out Man	A qualified personnel which monitor and guide trains or vehicles movements entering/leaving workshop or appointed personnel to monitor train movement and alert PICOP during implementation of Permit to Work.
Person In Charge Of Possession (PICOP)	Authorised person on site to liaise with the Line or Depot Controller. Responsible for the safety of work at site and all arrangement within the track possession area.
Warning Device	Warning device is referred as a horn (Term used by train manufacture), function as an audible warning.

For details refer to Abbreviations and Glossary (Operations) – G00.OMO.M15110.NA.1003. *.

3.3 Operations Instruction

Operations Instruction (OI) are special instructions, which are released whenever there is an amendment or addition to support verbal instruction not covered in this procedure. This Operations Instruction can act as permanent or temporary basis.

Operations Instruction:

- Are issued and signed by Operations Manager and Safety & Security Manager or their delegates
- Addressee must read and understand before signing
- Must be kept in the designated location

3.4 Route Knowledge

Those who are authorised to drive trains and vehicles shall have the *'Route Knowledge'*. This comprises of a good knowledge of the signal locations and specifics such as speed limits, track topography, turnouts, level Crossing, etc.

For sighting purposes, Drivers have to stop their train approximately ***10 meters*** in front of signals. Drivers have to obey the signals on the left side except during bi-directional operations and certain signals in Depot & reversing track where signals are valid on the right side.

3.5 Safety on the Line

If the situation requires, Drivers have to request to the Line Controller's (LC) or Depot Controller's (DC) for adjacent track to be blocked before leaving the train to enter the Structural Gauge.

The Overhead Catenary Line (OCL) has to be considered as always live until it is ensured that the overhead line is discharged and earthed.

Should Driver be in doubt or unclear with an instruction, they should reconfirm the instruction with LC/DC.

3.6 Person/s on or Near the Track Site

In case an OTD sighted any authorized or unauthorized person in the mainline or trackside, OTD has to:

- Activate the warning device without failed
- Initiate braking if the person/s is in immediate danger
- Report to LC/DC immediately and provide details

REMINDER
Authorized personnel can be identified by wearing the Orange high visibility vest.

3.7 Overview of Permissible Speeds in the Network

Locations / Situations	Max. Permissible Speed

Pre Service Train (Inspection Train)	80 km/h
Passing Signal in Danger (refer clause 7.13.1)	40 km/h
Control Train (as advise by LC/DC)	25 km/h
Entering/Leaving Workshop via South 9 & 10	10km/h
Entering/Leaving Workshop via North 9 & 10	5km/h
Entering/Leaving Workshop Track 11 & 12	5km/h
Entering/Leaving Washing Plant	3km/h
ET-02, Hot axle boxes (HB) temperature	40km/h
ET-02, Gear box (GB) temperature	40km/h
ET-02, Bogie stability sensor (BIMS)	40km/h
ET-02, Traction Safety loop	30km/h
ET-02, Driver Interlock loop	30km/h
ET-02, Degraded mode	30km/h
ET-02, Reverse mode	10km/h
ET-02, Two BCU faulty	110km/h
ET-02, Three BCU faulty	40km/h
ET-02, Cab & Bogie swaying	110km/h
ET-02, Wash/Coup mode	3km/h

3.8 Overview of Maximum Permissible Speed with Coupled Trains/Vehicles

	Items	Pulling (km/h)	Pushing (km/h)	ATP Data Configuration
1	Train couple with 1 active train in Main Line (electrical coupling)	No restriction	N.A	L136 B65 V145
2	Train couple with 1 inactive train in Main Line (electrical coupling)	80	N.A	L68 B65 V145
3	Train couple with 1 inactive train in Main Line (mechanical coupling)	80	25	L68 B65 V145
4	Train couple with inactive Shunting Loco in Main Line	25	25	L68 B65 V145

4 Positions and Responsibilities within Operations

Main duties and responsibilities for various positions of the Operations Transportation Department are described and listed below.

4.1 HOD Drivers & Stations

HOD Drivers & Stations reports to the Operations Manager and is responsible to:

- Manage train and station crew and overall train and station operations
- Establish, implement and control operational policies, standards and trainings

4.2 Drivers Executive

Drivers Executive reports to the HOD Drivers & Stations and is responsible to:

- Supervise and control the correct execution of duties by OTD, OTS and Shunter
- Provide input for training and to assess their performances

- Support and upgrading professionalism, creating good working environment, uphold moral values and ethics

4.3 Operations Shift Supervisor (OTS)

Operations Shift Supervisor reports to the Drivers Executive and is responsible to:

- Supervise OTD Signing “ON” and “OFF” duty and assess that OTD’s are fit for driving
- Ensure OTD’s are available to run the scheduled service
- Coordinate assignments and convey information related to trains operations and administrations of the OTD
- Updating of employee Xpress (emplx) for staff leave, swap and overtime
- Keep OTS Journal updated accordingly
- Keep a record of important documents i.e. leave applications, swap duties and overtime
- To maintain cleanliness of the KLS Operation’s office
- Liaise with LC/DC with regards to the train operations and Shunter at Depot

4.4 Operations Train Driver (OTD)

Operations Train Driver reports to the OTS and is responsible to:

- Ensure safe operation of trains on Main Line and Depot area
- Prepare trains for service by carrying out specified checks
- Carry out instructions of the LC/DC and OTS
- Decide when trains are ready to depart safely from platforms
- Relay or receive any information about present operational situation during handing/taking over duty
- Inform LC/DC of any occurrences, which may affect train operations
- Advise OTS if they are not fit to drive
- Receives any altered duty
- Have all necessary equipment’s as per train equipment checklist (G00.OMO.M15113.ND.1045.*)

4.5 Reporting Duty for OTD

All OTD’s must Sign “ON” and “OFF” duty at the designated work place. Any unplanned leave (i.e. medical leave, emergency leave, special leave, etc) shall be reported to their superior 4 hours before starting their duties.

A monthly roster shall be issued at the Notice Board detailing the duties including Sign “ON” / “OFF” times.

In case when their relief does not report for duty on time, staff concerned must remain on duty until a replacement staff is available.

4.5.1 Swapping Duty

Swapping of duty is a mutual agreement amongst staff, subject to both parties agrees and provided with a valid reason. The Swap Form to be submitted at least 48 hours before the shift work starts.

Staff shall check their request status with the Supervisor on duty at least 24 hours before the actual date of swapping.

The maximum allowable swapping is limited to a maximum of 3 times per month.

NOTE
Train Drivers must have sufficient rest of 8 hours between the Sign OFF and the next Sign ON duty.

4.6 Handing Over /Taking Over of Duty for OTD

Handing over and taking over of duty is a process of relaying and receiving of Information about the present operational situation, e.g. additional written or verbal instructions, or other Operational Instructions taking effect on that particular day. This is done with OTS at the start and end of duty.

4.7 Shunter

Shunter reports to the OTS on duty and liaise with LC/DC for any movements. Shunter shall adhere instructions given by LC/DC and is responsible for:

- Shunting movement in the Depot area
- Operating of manual points in coordination with LC/DC
- Liaise with Maintenance personnel
- Swapping of trains

4.8 Standby Train Driver

Additionally, there are standby Train Drivers allocated at KL Sentral or Depot for contingencies. OTS or LC/DC will instruct/utilise the standby Train Driver at a particular location with the necessary instructions.

5 Depot Operation

Salak Tinggi Depot is divided into the following distinct areas:

- Washing Plant (track 4)
- Wheel Lathe, Spray Cabin, Storage, Auxiliary vehicles workshop (track 8)
- Workshop light maintenance (track 9 to 10)
- Workshop heavy maintenance (track 11 to 12)
- Stabling area (track 22 to 24)
- Head shunt

Depot area includes all tracks but not including test tracks and turnouts connecting to the Main Lines. All trains movements in and out of the Depot should be liaised with DC. Depot speed is restricted to 25km/h only.

5.1 Shunting Movement

Movements in the Depot and KLS reversing tracks are called shunting movement. When executing shunting movement, all drivers shall drive under caution and to adjust the

train/vehicle speed within the speed limit in a way that they able to stop the train/vehicle before any obstruction or danger.

DANGER
The Driver must be aware the possibilities of another train or vehicle occupying the same track section.

NOTE
Drivers have to shunt train, Shunting Loco or Track Vehicle up to the “End of Shunting Routes” or to the agreed stopping point.

5.1.1 Shunting Movement in Depot

Prior to any shunting movements, the Driver has to:

1. Make a Shunting Agreement with LC/DC
2. Prepare train for the movement
3. Check that no Orange Flags are attached to the train (workshop area)
4. Ensure lookout man is available (workshop area)
5. Inform LC/DC when he is ready
6. The Driver has to observe:
    a. Depot signals indications
    b. Correct position of the turnouts
    c. Track ahead clear from obstruction, train or vehicles while driving to the stopping point

Shunting Agreement must contain**:**

- Vehicle number
- Purpose of the movement
- Destination and
- Additional information, if required

IMPORTANT
All shunting movements must be executed from the leading cab.

5.1.2 Movement in Depot

In the event a Train driver is required to drive a train from any location in the depot i.e. stabling area, washing plant or workshop, OTD has to: -

1. Receive instruction from the LC/DC
2. Inspect and ensure NO personnel or obstacle in front of the train and inside the passenger's saloon
3. Open driver’s cab window and check that NO personnel or equipment attached to the train
4. Request an approval from LC/DC before executing any movement and ensure track ahead is clear from any obstacle
5. Activate the warning device before moving the train

WARNING
Prior moving the train, at stabling area, Train Driver must ensure NO toilet waste discharge and fresh water filling activities.

5.2 Stabling of Trains

Upon receiving instruction to stable a train from LC/DC, OTD has to:

1. Confirm the stabling location and make a Shunting Agreement with LC/DC
2. Drive to the agreed stopping point
3. Apply Parking Brake
4. Walk through the train up to the end and checks for irregularities
5. Walk outside of the train where possible, to check for any external defects
6. Report to LC/DC status of train after carrying out external and internal inspection

5.2.1 Shutting Down of Train After Revenue Service

In the event of train driver receive instruction to perform a total shutdown, OTD has to:

1. Inform LC/DC before performing the total shutdown
2. Normalize all the Main Switch Toggle
3. Switch Off the Main Component and lower down the pantograph
4. Switch the Master Key to Off position and remove the key
5. Switch Off the train battery by using body side key switch
6. Report to LC/DC

REMINDER
Ensure battery is "**OFF**" and taillight is not illuminated before leaving the train

NOTE
TOTAL SHUTDOWN OF TRAIN is defined as train instructed to be stabled or perform full body washing (Karcher) with battery switched off
SHUTDOWN OF TRAIN define as troubleshooting of train during a failure, which does require the battery to be switched off unless instructed to do so

For ET-02

In the event of train driver receive instruction to perform a total shut down of train, OTD has to:

1. Inform LC/DC before shutting down of train
2. Switch Off the saloon air conditioning system and lighting
3. Switch Off the main switch
4. Lower down the pantograph via pantograph toggle switch and observe the line voltage at DDU
5. Switch the Master Key to Off position and remove the key
6. Switch Off the battery via battery push button located on electrical control cabinet or body side key switch, train battery will be switch Off after 2 seconds

5.2.2 Starting Up of Train After Revenue Service

In the event of train is shutdown and the Main Reservoir Pressure (MRP) is below than 7 bars, the OTD has to: -

1. Switch 'ON' battery (auxiliary compressor will start up automatically)
    a. Auxiliary Compressor will start pumping
    Refer to annex 10.4 Fault Immediate Action and Guidelines

2. Acknowledge train configuration at Driver Display Unit (DDU)
3. Monitor the pressure to build-up i.e. auxiliary compressor stopped pumping
    a. Observe at DDU that the Auxiliary Compressor is flashing '**X'**
    b. Wait until Auxiliary Compressor indicate normal ('**X**" disappear)
    c. Estimate time taken for auxiliary compressor to build up pressure is 2 min 10 sec
    Refer to annex 10.4 Fault Immediate Action and Guidelines

4. Ensure VCB is in White Box
5. Raise the pantograph via pantograph toggle switch
    a. Observe at DDU that the Auxiliary Compressor is flashing '**X**'
    b. Wait until Auxiliary Compressor indicate normal ('**X**" disappear)
    Refer to annex 10.4 Fault Immediate Action and Guidelines

6. Switch 'ON' the Main Switch using the Main Switch toggle
7. Ensure '**X**' appeared at Main Compressor and Main Compressor will start running

NOTE
Fault 'A' message of Emergency brake loop at DDU will disappear after MRP build up more than 7 bars

REMINDER
While pressure is building up i.e. Auxiliary Compressor is still pumping (approximately 1 minute after battery 'ON'), DO NOT raise the pantograph to prevent pantograph system LOCK

For ET-02

In the event of train driver receive instruction to start-up a train, OTD has to:

1. Switch ON train battery
2. Switch ON the master key to activate the cab
3. Acknowledge the "Train Acknowledgement" message
4. Wait for auxiliary compressor from Green Box change to White Box
5. Raise the pantograph and wait for 15 seconds and observe line voltage at DDU
6. Switch ON main switch (White Box turn to Green Box), auxiliary inverter and cab air-conditioning will automatically activated

5.3 Washing of Trains

In the event of a train is scheduled for washing, OTD has to:

1. Receive instruction from LC/DC to proceed to the washing plant
    a. Ekspres body train from KLS
        i. To ensure that Cab B1 windows are closed and locked (before changing cab at reversing track)
    b. Ekspres body train from KLIA T1/KLIA T2
        i. Receive instruction from LC/DC to proceed to the buffer end 1 or 143 and to ensure that Cab B1 windows are closed and locked (before changing cab at buffer end)
    c. Transit body train
        i. To ensure that Cab B1 windows are closed and locked (before changing cab)

NOTE
OTD must ensure that cab windows are closed and locked before confirmation to OCC that washing can be started.

There are 3 methods washing of train to be observed by an OTD.

5.3.1 Karcher Train Wash

Upon receiving instruction to perform full body washing (Karcher) from LC/DC, OTD has to:

1. Confirm the instruction and make a Shunting Agreement with LC/DC
2. Ensure the drivers cab windows on both cabs are closed and locked
3. Proceed when the entrance signal into the washing plant light indicates “flashing WHITE” with max. speed 3km/h
    a. **For ET-02**, press wash/coup button and speed will restrict to 3km/h
4. During entering and proceeding to the stopping point signal indicates “flashing RED and WHITE” simultaneously
5. Stop the train at the designated stopping point and to confirm signal indicates “static RED and GREEN”
6. Confirm with the LC/DC that train has stop at the correct stopping
    a. Refer to annex 10.1.1 Karcher train wash entrance & positioning signal
7. Apply Parking Brake
8. Inform the LC/DC that washing can be executed
9. Receive instruction or request from LC/DC to total shutdown the train
10. Report to LC/DC when washing is completed once the positioning light indicates “static WHITE”
11. Receive confirmation from LC/DC that the OCL power has been re-energized
12. Start-up the train and inform the LC/DC and a new Shunting Agreement
13. Estimated time for washing of train to be completed is approximately 24 minutes

NOTE
In the event the train has overshoot the correct position, the positioning signal will indicate a “*flashing GREEN”.* The OTD has to inform the LC/DC and request approval to reverse until the signal changes back to “*static GREEN”.*

NOTE
Maximum speed entering and leaving washing plant is 3km/h.

DANGER

It is strictly prohibited to enter and leave the washing plant if the entrance signal or positioning signal indicates red or flashing red.

5.3.2 Train Manual Washing

Upon receiving instruction to perform train manual washed from LC/DC, OTD has to:

1. Confirm the instruction and make a Shunting Agreement with LC/DC
2. Prepare train for the movement
3. Ensure the cab windows on both end are closed and locked
4. Proceed to washing plant and stop at the designated stopping point
5. Apply Parking Brake
6. Shut down train and inform PICOP that washing can be executed
7. Inform or received info from PICOP when washing is completed
8. Upon confirmation from PICOP that power has been re-energized, start-up train and report to LC/DC
9. Wait for further instruction from LC/DC

5.3.3 Britannia Train wash

Upon receiving instruction to perform lower body washing (Britannia) from LC/DC, OTD has to:

1. Confirm the instruction and make a Shunting Agreement with LC/DC
2. Prepare train for the movement
3. Ensure the cab windows on both end are closed and locked
   a. **For ET-02**, Press wash/coup button and speed will restrict to 3km/h
4. Proceed and stop at the 1st brush “STOP” marker located at the track before the entrance into the washing plant
5. Observe that entrance signal indicates “static WHITE” and the 1st brush is spinning
   a. Refer to annex 10.1.2 Britannia train wash entrance signal
6. Move the train for the 1st part washing
7. Stop the train at the “STOP” marker
8. Move the train for the 2nd part washing after 2nd brush activate
9. Stop the train at signal D23 and make a new Shunting Agreement with LC/DC
10. Estimated time for washing of train to be completed is approximately 7 minutes

NOTE

If the OTD observes that the 1st or 2nd brushes do not spin, do not move and report to the LC/DC.

If the OTD observes that there is no chemical/water (foam/bubble) being sprayed, immediately report to the LC/DC.

The speed during the movement is 3 km/h.

5.3.4 Train Manual Cab Wash

Upon receiving instruction to perform train manual cab wash from LC/Dc, OTD has to: -

1. Confirm the instruction and make a Shunting Agreement with LC/DC
2. Prepare train for the movement
3. Ensure the driver's cab windows on both cabs are closed and locked
4. Proceed to washing plant and stop at the designated stopping point
5. Apply Parking Brake
6. Shut down train and inform LD/DC to de-energized OCL power supply
7. Receive info from LC/DC that power is de-energized
8. Inform RST personnel, that power is de-energized and cab wash can be executed
9. Receive info from RST personnel when both cabs washing are completed
10. Inform LC/DC, Cabs wash completed and request for OCL power supply to be re-energized
11. Upon confirmation from LC/DC that power has been re-energized, start-up train and report to LC/DC
12. Wait for further instruction from LC/DC

REMINDER
OTD to confirm with RST personnel that washing has been completed and all personnel already left Train Washing Plant before requesting LC/DC to re-energized OCL power supply.

5.4 Train Preparation

The train preparation can be divided into 2 categories.

5.4.1 Train Preparation for Revenue Service

Upon arrival at designated train i.e. at stabling yard, station/platform, reversing track, etc, OTD has to:

1. Check external train in accordance with train preparation checklist
2. Enters train and activate the cab – prepare and check train internal in accordance with the train preparation checklist
3. Open and close passenger doors and confirm status via DDU
4. Open passenger doors
5. Walk up to the inactive cab and check for any irregularities
6. Activate the inactive
7. Close and open passengers door and confirm status via the DDU
8. Ensure to close door upon completion train preparation
9. Inform LC/DC and wait for further instruction

TRAIN PREPARATION CHECKLISTS
Train preparation checklist ref. no.:G00.OMO.M15113.DQ.1010.*

WARNING!
OTD should wait at least 30 seconds after shutting down before re-starting up again in order to prevent equipment from damaging.

5.4.2 Train Preparation for Shunting Movement in the Depot

Upon arrival at the designated train, OTD has to:

1. Check train for any irregularities
2. Enter train and activate the cab
3. Check train equipment functionality
4. Perform manual brake test
5. Perform radio check and test call
6. Inform LC/DC and await further instruction

NOTE
Drivers in Depot report to LC/DC using the vehicle number.

5.5 Brake Test

OTD has to perform a brake test before any movements after a train has been shutdown including restart and after coupling/uncoupling.

Before performing the DDU brake test, OTD has to ensure that:

For ET-01
1. Isolation valve in normalized position (EP Panel)
2. Train configuration is acknowledged
3. Main Reservoir Pressure more than **(>) 7 bars**
4. Parking Brake is **Applied**
5. Master Controller and Direction Lever are in coasting/Normal position
6. All passengers train door is closed

For ET-02
1. Isolation valve in normalized position (B05)
2. Train configuration is acknowledged
3. Main Reservoir Pressure more than **(>) 8 bars**
4. Parking Brake is **Released**
5. Direction switch select to Forward position
6. Master Controller in Coasting position
7. All passengers train door is closed and door selector at ‘0’ position

5.5.1 DDU - Short Brake Check

For ET-01
1. Switch DDU screen to Brake status menu
2. Press Short Brake checks soft key, presses ‘Start’, brakes status will be checked automatically
3. DDU’s brake check is completed after all icons are marked “Cross” (X)
4. Perform the same check on the other driver’s cab

5.5.2 DDU - Main Brake Check

For ET-01
1. Switch DDU screen to Brake status menu
2. Press Main Brake check soft key, presses ‘Start’, brakes test will be operated
3. Follow sequence of checklist indicate at DDU
4. DDU’s brake check is completed after Main Brake checks finish icon is marked “Cross” (X)
5. Perform the same check on the other driver’s cab

For ET-02

1. Switch DDU screen to Automatic Brake Test status menu
2. Ensure Pre-condition is “OK”
3. Press Start (brake test - Active) and wait until completed
4. Press the mushroom button
5. Pull master controller to 100% brake position
6. Pull master controller to EB position
7. Brake status show ‘Activate’ and brake test is completed

NOTE
Do not change the DDU page or menu while performing DDU Short/Main Brake check.

5.5.3 ATP MMI – Brake Test

1. Apply ATP Emergency Brake test by activating Emergency Brake Apply button
2. Emergency brake (EB) will be applied and check that Brake Cylinder pressure (White needle) is at 2.2 bar [ET-01] and at 3.4 bar [ET-02]
3. Reset EB by pressing Emergency Brake Reset button
4. EB will release
5. Perform the same check on the other driver’s cab

5.5.4 Dead-man Test

For ET-01

1. Put master controller to coasting position
2. Press master controller knob and dead-man foot pedal at the same time
3. Dead-man Control lamp will illuminate
4. Buzzer will activate and EB will be applied
5. Message at DDU show dead-man test completed

For ET-02

1. Switch DDU screen to Dead-man Test status menu
2. Press Master Controller Knob
3. Dead man signal show ‘Active’ and Dead man test is completed
4. Step on the dead-man foot pedal
5. Dead man signal show ‘Active’ and Dead man test is completed

REMINDER
In case of brake test has to be done on Main Line, only perform Clause 5.5.1 DDU Short Brake check [ET-01] and Clause 5.5.3 ATP Brake Test.

5.5.5 Manual Brake Test

After receiving Approval to Proceed from LC/DC, OTD has to: -

1. Proceed up to 7 km/h by moving master controller to the driving position
2. Put master controller to coasting (neutral) position
3. Pull master controller to 100% braking and check Brake Cylinder pressure (White needle) is above 1.6 bar [ET-01] and above 2.2 bar [ET-02]

5.6 Orange Flag

The Orange Flag is used to indicate that there are works being carried out inside, above, underneath or around the train, which indicate that OTD is not allowed to operate the train.

The Orange Flag are placed at all four corners of the driver's cab bogies. Orange Flags is only allowed to be removed by the duty RST Shift Supervisors or his delegate.

WARNING
Train or vehicle approaching a train with an orange flag must be driven with extreme caution and ensure no unintentional coupling or contact with the said train.

5.7 Workshop Lookout Man

The Workshop Lookout Man is to guide Driver during entry, exit and/or movement inside workshop. The Workshop Lookout Man can be identified by his high Visibility Vest using green/red luminous flags or round bat and/or shunting torch.

WARNING
No movement in or out of workshop can take place without the presence of lookout man at entrance of the workshop.

5.8 Entering Workshop

In the event of a train or shunting loco is required to enter workshop, the OTD is reminded to stop in-front of the signals as detailed below:

- SY_D51 via Southern Entrance
- SY_D21 or SY_D23 via Northern Entrance

REMINDER
Observe the signal indication and to ensure Proceed aspect has been given before moving the train or shunting loco to the designated stabling location

5.8.1 From Southern End (Track 9 & 10)

When OTD receives instruction from LC/DC to drive a train into workshop via Southern entrance, OTD has to:

1. Receive Proceed Aspect at D51
    a. Proceed and stop at the "Lookout Man Board"
2. Activate warning device and proceed after receiving green hand signal (flag, round bat or shunting torch) from the Workshop Lookout Man
3. Proceed and coast when driver's cab window is aligned with OCL pole indicating 'Coasting'
4. Ensure power supply resume (confirm via DDU) and apply traction when driver's cab window is aligned with OCL indicating 'Traction'
5. Stop at the designated stopping point
6. Apply Parking Brake
7. Inform LC/DC and report kilometer reading and energy meter reading
8. Shut down the train (unless instructed not to do so)
9. Handover train to RST

5.8.2 From Northern End (Track 9 & 10)

When OTD receives instruction from LC/DC to drive a train to workshop via Northern entrance, OTD has to:

1. Receive Proceed Aspect at D21 or D23
2. Proceed and stop at the “Lookout Man Board”
3. Activate warning device and proceed after receiving green hand signal (flag, round bat or shunting torch) from the Workshop Lookout Man
4. Stop train at the designated stopping point
5. Apply Parking Brake
6. Inform LC/DC and report kilometer reading and energy meter reading
7. Shut down the train (unless instructed not to do so)
8. Handover train to RST

REMINDER

For safety, use mobile steps to leave the train and use designated walking routes when leaving workshop.

OTD must stop in front of “Lookout Man Board” if lookout man is not presence

NOTE

In case a train is required to be pushed in or pulled out from the workshop track 9 & 10, the procedure for entering/leaving workshop track 11 & 12 shall be applied.

5.9 Leaving the Workshop

5.9.1 From the Southern End (Track 9 & 10)

When OTD receives instruction from LC/DC to drive train out of the workshop via Southern entrance, OTD has to:

1. Report to RST Supervisor
2. Proceed to the designated train
3. Check that no Orange Flags are attached to the train
4. Prepare train together with RST personnel in accordance to the Train Preparation Checklist ref. no.:G00.OMO.M15113.DQ.1010.*
5. Receive Proceed Aspect whilst standing at workshop
6. Activate warning device and proceed after receiving green hand signal (flag, round bat or shunting torch) from the Workshop Lookout Man
7. Proceed and coast when driver’s cab window is aligned with OCL pole indicating ‘Coasting’
8. Ensure power supply resume (confirm via DDU) and apply traction when driver’s cab window is aligned with OCL pole indicating ‘Traction’

5.9.2 From the Northern End (Track 9 & 10)

When OTD receives instruction from LC/DC to drive a train out of the Workshop via Northern entrance, OTD has to:

1. Report to RST Supervisor
2. Proceed to the designated train

3. Check that no Orange Flag are attached to the train
4. Prepare train together with RST personnel in accordance to the Train Preparation Checklist ref. no.:G00.OMO.M15113.DQ.1010.*
5. Receive Proceed Aspect whilst standing at workshop
6. Activate warning device and proceed after receiving green hand signal (flag, round bat or shunting torch) from the Workshop Lookout Man

5.9.3 Entering Workshop Track 11 & 12

In the event of shunting loco couple with train has been requested by RST to enter Track 11 or 12 from other tracks inside depot, OTD has to:

1. Ensure RST personnel presence and on board the train to assist
2. Liaise with RST Personnel before any movement can be executed and to establish the radio communication with each other
3. Receive Proceed Aspect as advised by RST Personnel
4. Observe the speed marker of “START – 5km/h” when pushing a train
    a. *Refer to annex 10.2 Speed Marker Entering/ Leaving Track 11 and Track 12. Pic-1*
5. Reduce speed to 5km/h when the Shunting Loco window is aligned with the marker
6. Receive instruction from RST Personnel to stop in front of the “workshop Lookout Man Board” if lookout man not presence
7. Activate warning device after confirm with RST Personnel that he received green hand signal (flag, round bat or shunting torch) from lookout man
8. Receive instruction from RST Personnel to stop at the designated or agreed stopping point
9. Inform LC/DC and wait for further instruction

5.9.4 Leaving Workshop Track 11 & 12

In the event of RST request to take out train from Track 11 & 12 and shunting loco will couple with the train, OTD has to:

1. Ensure RST Personnel presence and on board the train to assist
2. Liaise with RST Personnel before any movements can be executed and to establish the radio communication
3. Receive Proceed Aspect whilst standing at workshop
4. Activate warning device and proceed after receiving green hand signal (flag, round bat or shunting torch) from lookout man
5. Observe the speed marker of “END – 5 km/h” when pulling a train
    b. *Refer to annex 10.2 Speed Marker Entering/Leaving Track 11 and Track 12. Pic- 2*
6. When the Shunting Loco window is aligned with the marker the OTD can traction as per permissible speed in depot

5.10 Entering Depot from Main Line

When trains are entering Depot from Main Line, OTD has to:

1. Stop at signal D3 from KLS or D73 from KLIA T2
2. Switch to Shunting Mode and select train borne radio channel to Depot
3. Request stabling location from LC/DC
4. Proceed to the designated stopping point and apply Parking Brake

5. Inform LC/DC and report kilometer reading
6. Shut down the train (unless receives an instruction not to do so by the LC/DC)

5.11 Leaving Depot to Main Line

When trains leaving Depot to Main Line, OTD has to:

1. Report to LC/DC that train is ready
2. Activate warning device and proceed with shunting mode
3. Observe signal N46 to KLS or T36 to KLIA T2
4. Select train borne radio channel to Main Line at the above signal

5.12 Testing Train Run at Test Track Under Maintenance Requirement

When a train is required to run at test track for testing purposes, OTD has to:

1. Ensure that the technician is on board
2. Change the ATP data: brake code 2 (65% or B2C) to brake code 3 (39% or B3C)
3. Perform both software Brake Test: (Only applied **for ET-01**)
   a. DDU – Short Brake Check
   b. DDU – Main Brake Check
   c. ATP – Brake Test
4. Perform Manual brake test and dead-man brake test
5. **For ET-02**, if Self test Brake have expired, OTD need to carry out another brake test
6. Proceed as per signal and to observe:
   a. Signal indication and turnout direction
   b. Observe track clearance, any irregularities and obstacles
   c. Observe speed limit especially during raining
   d. Applies EB when required
7. Normalized ATP data: change brake code 3 (39% or B3C) to normal value brake code 2 (65% or B2C) upon completion of the test run and inform LC/DC

NOTE
Changing of ATP data brake code requires prior instruction from RST/SIG personnel.
Speed limit at test track is 90km/h.

6 Normal Operation

Normal Operation is a mode of operation of the KLIA Ekspres and KLIA Transit when scheduled services are possible without unreasonable risk to staff or passengers.

Normal Operation includes the normal functioning of Automatic Train Protection System.

Main tasks of OTD in this mode are as follows:

- Drives train **according to the signals,** route knowledge and speed restrictions
- Observes track for any irregularities
- Observe platforms for passengers standing too close to the edge, using warning device if necessary
- Applies EB when required

6.1 Pre-Service Train (Inspection Train)

Pre-service train (inspection train) is defined as the first train or vehicle routed out to the Main Line to KLS and KLIA T2 before Revenue Service commences each day. The maximum permissible speed is 80 km/h. The drivers are to observe both tracks and report immediately for any obstructions or irregularities enroute to their respective destination.

Both drivers are to report the final status upon arrival at their final destination to LC/DC.

6.2 Stopping Points

In places where trains are required to stop at a designated stopping point, i.e. Terminal Stations, Intermediate Stations, Workshop, Reversing Track and etc, “STOP” signage has been placed to guide OTD on the correct stopping point.

a. Refer to annex 10.6 Stopping points

To further assist OTD, numerical countdown signage’s are placed at KLS Ekspres platform and KLIA T1 platform. The countdown signage’s will begin with **5**, **4, 3, 2, 1** and followed by “STOP” signage.

6.3 Platform Screen Doors (PSD)

PSD is provided at KLS Ekspres platform and KLIA T1 platform. OTD has to ensure to stop at the designated stopping point before opening train doors. The PSD is synchronized with the train door open button command.

When stopping at PSD terminal, OTD has to:

1. Stop train at designated stopping point
2. PSD indicator light will indicate **Green** Aspect
3. Press and hold all door open button until the light illuminate
4. PSD will open after receiving signal from the IR sensor
5. PSD indicator light will indicate **Red** Aspect
6. Close all train doors and visually check through driver’s cab window to ensure all train doors and PSD are properly close

For ET-02

OTD has to select the service mode before departure:

   a. ERL-KLS mode is used at KLS PSD (Door 21/1 and/or 21/2 will remained closed)
   b. ERL mode is used at KLIA T1 PSD

7. PSD indicator light will indicate **Green** Aspect
8. Observe departure signal and timetable before depart

NOTE

In case PSD indicator does not change from Green to Red Aspect after all train door open button is pressed, perform visual check to determine PSD status and report to LC/DC, if PSD still remained close or open.

REMINDER

Carryout visual inspection to ensure train doors and PSD gap is cleared from any obstacle before departure.

6.3.1 Obstacle Trapped Between PSD and Train Door

All OTD are advised to comply with the requirement to make visual check through cab window before departing from Ekspres platform at KLS and both platforms at KLIA T1.

In case the OTD sight any irregularities, open the train door immediately and inform the LC/DC.

6.4 Stopping at Stations

When a revenue train stops at station, OTD has to:

1. Stop train at the designated stopping point at platform
2. Ensure the correct platform side before opening the passenger train doors
3. Monitor all train doors on platform side are opened

For ET-02,

   a. Zero speed will appear at DDU after train come to standstill and speed 0km/h
   b. Select the door selector switch L or R to open the door at Left side or Right side
   c. Open passenger train doors via open door push button on left side or right side desk panel

4. Monitor alighting and boarding of passengers via CCTV in the driver's cab
5. Close passenger train doors after announcement is complete

For ET-02

   a. Press all doors close button and select the door selector switch to normal position '0'
   b. Observe the Door Open light indicator on driver desk is not illuminated
   c. Check at DDU home page, that all door is closed

6. Visually monitor via cab window: -
   - Train doors at platform side are closed
   - Train ramp are inserted
   - Passenger boarding and disembark are safely completed
7. Observe signal aspect and ensure train can depart safely

NOTE
All train drivers are advice to observe as far as they can visualize platform at stations which are slight curve

REMINDER
The minimum dwell times at stations shall be strictly adhered (40 to 60 seconds)

6.5 Changing Cabs

6.5.1 Changing Cab of KLIA Ekspres Trains at KLS Reversing Track

When a KLIA Ekspres train arrived at KLS, OTD has to:

1. Stop train at the designated stopping point
2. Monitor that all passengers have left the train

For ET-02

   a. Zero speed will appear at DDU after train come to standstill and speed 0km/h

b. Door 21/1 & door 21/2 in Car 200 will remained close (ERL KLS service mode)
c. Select the correct door selector switch
d. Open passenger train doors via open door push button

3. Close passenger train doors and observe the CCTV

For ET-02

a. Press all doors close button and select the door selector switch to normal position '0'

4. Switch "ON" shunting mode after receives Proceed Aspect at the Call-On signal
5. Move train to reversing track
6. Stop train at the designated stopping point
7. Change cab and check both interior and exterior, including checking of saloon temperature
8. Activate new leading cab and switch "ON" shunting mode
9. Receive Proceed Aspect at the shunting signal
10. Move train to the designated stopping point at platform
11. Open passenger train doors at platform side
12. Observe departure signal and timetable before depart

6.5.2 Double Ending of Trains

When a train is required to depart from the same platform it arrives or also known as single platform operations,

The arriving OTD has to:

1. Receive confirmation from LC/DC
2. Stop train at the designated stopping point

For ET-02

a. Ensure zero speed appeared at DDU
b. Select the correct door selector

3. Open passenger train doors
4. Take off master switch key and close the cab door
5. Leave the train

The taking over OTD has to:

1. Enter driver's cab and activate the train
2. Ensure that the arriving OTD has left the train
3. Receive Proceed Aspect by signal
4. Monitor the passenger via CCTV

For ET-02

a. Close the train door and select door selector to '0' normal position

5. Move train out of the station according to timetable and signal aspect

6.5.3 Changing Cab of Transit Trains at KLS Transit Platform

When a Transit Trains arrives at KLS, train will change direction while standing at the same platform. OTD has to:

1. Stop train at the designated stopping point

For ET-02

a. Ensure zero speed appeared at DDU
b. Select correct door selector and open the train door

2. Change cab and check for any irregularities
3. Select correct destination
4. Monitor the passenger via CCTV
5. Close passenger train doors

For ET-02

a. Close the train door and select door selector to '0' normal position
b. Select service mode to CRS mode

6. Move train out of the station according to timetable and signal aspect

6.5.4 Changing Cab of Ekspres/Transit Trains at KLIA T2

When an Ekspres/Transit trains arrives at KLIA T2, trains will change direction while standing at the same platform. OTD has to:

1. Stop train at the designated stopping point

For ET-02

a. Ensure zero speed appeared at DDU
b. Select correct door selector and open the train door

2. Change cab and check both interior and exterior, including checking of saloon temperature
3. Select correct destination
4. Monitor the passenger via CCTV
5. Close passenger train doors

For ET-02

a. Close the train door and select door selector to '0' normal position
b. Select service mode to ERL KLS mode for Ekspres train (Door 21/1 & 21/2 at Car 200 will remained close) and CRS mode for Transit train
c. Press button Start Direction at DCP twice if train heading to KLS

6. Move train out of the station according to timetable and signal aspect

6.6 Train Destination Indicator

All trains are equipped with external destination indicator on each cab. The display destination is selectable by using automatic digital control unit in the activated cab. OTD has to select respective destination before departing.

- ET-01: Located below the windscreen of each cab
- ET-02: Located at body side of the train

Announcements to the passengers are then triggered automatically upon departure and arrival at stations.

6.7 Reporting of an Emergency Brake (EB) Activation

EB's activation shall be reported to LC/DC except for Train Preparation. Details of incident have to be filled in the Operations Reporting Form[1] and submitted to the OTS on duty before signing off for duty.

6.7.1 Emergency Brake (EB) by Train System

In the events of EB activated by Train system, OTD has to: -

[1] G00.OMO.M15113.DQ.0021.*

1. Report to LC/DC, provide the details of the events and faults
2. Check fault indicator light on driver's desk panel
3. Check any fault message in DDU
4. Check ATP MMI, if EB triggered cause by ATP system e.g., Over Speed, Lost of ATP position and etc.
5. Receive an approval from LC/DC to reset an Emergency Brake
6. Observe any faults or abnormal sound e.g., Dragging of brake or Flat wheels

6.7.2 Emergency Brake (EB) by Operator

In the events of an EB is activated either using the Master Controller or Mushroom Button, OTD has to: -

1. Report to LD/DC, provide the reason for the activation
2. Check fault indicator light on Driver's desk panel
3. Observe and faults message in DDU
4. Observe any faults or abnormal sound e.g., Dragging of brake or Flat wheels

REMINDER
Should a OTD recognize a failure originating from the bogie set of train, immediately report to LC/DC.

WARNING
EB via the Master Controller or Mushroom Button shall only be initiated in the event of loss of brake force or in case if a passenger or staff at track or platform edge is in immediate danger.

6.8 Leaving Driver's Cab Unattended

If a train driver's cab has to be left unattended for any reason, i.e. attending train failures, washroom, etc. the OTD must ensure the LC/DC is informed.

The OTD must ensure that they are reachable by means i.e. handportable, handphone, etc. and the train is secured before leaving the cab.

6.9 Ekspres Service Train Accidentally Stop at Intermediate Stations

In the event of an OTD accidentally stop at intermediate stations and the Transit passengers have boarded the train, OTD has to; -

If train still at platform (before departing the station).

1. Make an announcement to the Transit passengers, as below: -

   - Penumpang yang baru menaiki tren ini, diminta untuk keluar semula kerana tren ini tidak akan berhenti di stesen pengantara berikutnya
   - Passengers who have just boarded this train are required to alight from this train as this train will not be stopping at the next intermediate stations

If train have departed the platform.

1. Make an announcement to the Transit passengers, as below: -

- Bagi penumpang yang baru menaiki tren ini, harap maklum tren ini tidak akan berhenti di stesen pengantara berikutnya. Anda diminta untuk merujuk kepada pegawai kami yang bertugas untuk bantuan setelah tiba di (…..stesen terakhir)
- For passengers who have just boarded this train, please be informed that this train will not be stopping at the next intermediate stations. Upon arrival at the (…..terminal station), kindly refer to our officer on duty for assistance

6.10 Ekspres Train Body Running as a Transit Services/ Combined Services

In the event of an Ekspres train body is used to perform the Transit service, OTD has to:

1. Lower down the baggage handle bar
2. Isolate the toilet door
3. Paste the 'Out of Order" sticker on the toilet door

In the event of an Ekspres train body is used to perform a combined service operation, OTD has to:

1. Receive info from LC/DC that baggage handle bar has been lowered down by the baggage handler personnel for every trips

6.11 End/Terminate of Train Service

In the event of the OTD receive an instruction from LC/DC that train will be taken out of service or end of revenue hours, the OTD has to: -

1. Make an announcement that train will end or terminate upon arrival (approaching at platform)
   a. In English
   Your attention please, ladies and gentlemen, this train service will be terminated at station XXXX, please disembark the train with all your belongings. We apologize for any inconvenience caused.

   b. In Bahasa
   Minta perhatian tuan-tuan dan puan-puan, perkhidmatan tren ini akan berakhir di stesen XXXX, sila turun dari tren ini bersama semua barangan anda. Kami meminta maaf atas segala kesulitan.
2. Monitor that all passenger has left the train via CCTV/Cab window
3. Switch off lighting and air condition but remain train doors open
4. Change cab and inspect that all passenger has left the train
5. Activate new leading cab
6. Make an announcement that train is not in service (after changing cab)
   a. In English
   Your attention please, ladies and gentlemen, this train is not in service. Please do not board the train. We apologize for the inconvenience caused.

   b. In Bahasa
   Minta perhatian tuan-tuan dan puan-puan, tren ini tidak akan meneruskan perkhidmatan. Anda diminta tidak menaiki tren ini.Kami meminta maaf atas segala kesulitan.

7. Close train doors and observe the CCTV
8. Depart as per signal indication and timetable
9. Stop at the designated stopping point as per advise by LC/DC
10. Inspect again to ensure that all passenger have left the train before leaving the train unattended

6.11.1 Train Services Terminated at KLIA T1

In the event of an Ekspres or Transit train will terminate its service in KLIA T1 and not proceed to KLIA T2 due to platform KLIA T2 occupied by a failed train, line blockage, etc., OTD has to: -

1. Receive instruction from LC/DC to inform passengers the train service will be terminated at KLIA T1
2. Make an announcement:
   - First announcement – Leaving STS or approaching KLIA T1 (refer to Table 1)

Table 1

First Announcement Leaving STS or Approaching KLIA T1	
Your attention please.	Minta perhatian
Due to technical problem, this train service will terminate at KLIA T1.	Disebabkan masalah teknikal, perkhidmatan tren ini akan berakhir di KLIA T1.
For passengers going to KLIA T2, please refer to our staff on duty at the platform. We apologize for the inconvenience caused.	Kepada penumpang yang ingin ke KLIA T2, sila rujuk kepada pegawai yang bertugas di platform. Kami memohon maaf atas sebarang kesulitan.

   - Second announcement – Entering KLIA T1 (refer to Table 2)

Table 2

Second Announcement Entering KLIA T1	
Your attention please.	Minta perhatian.
Please disembark at this station. For passengers going to KLIA T2, please refer to our staff on duty at the platform.	Semua penumpang diminta turun di stesen ini. Kepada penumpang yang ingin ke KLIA T2, sila rujuk kepada pegawai yang bertugas di platform.
We apologize for the inconvenience caused.	Kami meminta maaf atas segala kesulitan.

3. Change cab
   - Third announcement – Prior depart from KLIA T1 (refer to Table 3)

Table 3

Third Announcement Prior depart from KLIA T1	
Your attention please.	Minta perhatian.
This train is bound for KL Sentral.	Destinasi tren ini adalah KL Sentral.

6.11.2 Ekspres Service Routed to KLIA T1 Transit Platform

In the event of an Ekspres service train routed to the Transit platform at KLIA T1 station, OTD has to: -

1. Receive instruction from LC/DC that the Ekspres service train will be routed to Transit Platform
2. Ensure the baggage clearance signal is illuminated before departing

REMINDER
In case of the baggage clearance signal is not illuminated when train is ready to depart, report to LC/DC and refer to Clause 7.19 Baggage clearance signal not illuminated.

6.12 Early Braking During Wet Weather/Humid Condition

OTD are reminded to apply Early Braking to prevent/avoid train from sliding thus overshooting the station platform. Additional pre-caution is required for Train Driver to apply brake much earlier before their normal braking point especially entering loop track or diverging track.

In the event of train experience loss of brake force during normal braking, the OTD has to: -

1. Apply Master Controller lever to Emergency Brake (EB) position and hold at that position

If the train is still moving or sliding after step 1

2. Apply the Mushroom Emergency button and maintain in the position until the train come to complete stop

NOTE
1. Observe loss of braking force percentage at driving/braking page in the DDU

2. Observe Brake Cylinder needle fluctuate to indicate loss of brake force

WARNING
DO NOT ACTIVATE PARKING BRAKE BUTTON TO PREVENT TRAIN FROM FLAT WHEEL

6.13 Providing Assistance to Passengers

In the event of there is a person injured, unattended passengers, passengers not following rules, etc., OTD has to: -

Person Injured

If a passenger is injured while at station or on-board train:
1. Receive information from the on-board passengers
2. Report to LC/DC

3. Notify LC/DC if the passenger requires further medical attention
4. Receive instruction from LC/DC to handover the injured passenger to the OSS at station

Unattended Passengers

If a passenger was over-carried to the reversing track, disembark at the wrong station, missing child, etc., OTD has to:

1. Report to LC/DC
2. Hand over the passenger to the OSS or CSM or other Operations staff i.e. OTS, standby OTD, etc.
3. Inform to LC/DC once the passenger has been handed over to relevant personnel
4. Receive instruction from LC/DC

Passengers not Following Rules

Any such person shall be informed that they are committing an offence while at station or on-board train e.g. rampage, intoxicate, under influence of drug. This situation could create panic and endanger safety to the other passengers, OTD has to:

1. Receive information from the on-board passengers
2. Report to LC/DC
3. Co-operate with OSS at station

NOTE

Operations staff is not allowed to act alone as to avoid any physical provocation or harm and to avoid any legal dispute

6.14 Dispatch of Items via Train

In the event of any items are required to be dispatched between stations, OTD has to:

1. Receive the item and information about the content of item
2. Ensure that items are properly packed and clearly labelled i.e. wallet, hand phone, etc. addressed to the designated station
3. Report to LC/DC to notify OSS for collection of item
    a. Pre-advice Call to Duty Customer Service Manager or Ticketing Officer at the other end by OSS

REMINDER

Verify that items forwarded should be only confined to official company matters (no personal items)

In the event of an urgent need to restore Found Items - Acknowledgment Form must accompany item.

6.15 Train Hit Object

In case of a train hit something/unknown object or being hit on mainline, OTD has to:

1. Report to LC/DC
2. Receive instruction from LC/DC to observe the following items while in motion, on site or at terminal:
    a. Main reservoir pressure value (not dropping)
    b. DDU fault message(s)
    c. Visual damage(s) from the driver's cab [windscreen, side window, etc.] and/or external train body inspection during changing cab
    d. Any strange noise, swaying, bouncing after the incident
3. Report the findings to LC/DC
4. Receive further advise from LC/DC

REMINDER
If notice that the main reservoir pressure is decreasing, try to coast to the nearest station or stop immediately if just depart from station.

7 Degraded Operation

Degraded Operation considers all circumstances which affect Normal Service but which are not considered life threatening to passengers or staff.

7.1 Verbal Approval To Proceed

Signals showing a Danger Aspect or Dark Signal are only allowed to pass with a Verbal Approval to Proceed from the LC/DC. A Verbal Approval to Proceed must be issued either by radio or direct telephone.

A Verbal Approval to Proceed is on signal-to-signal basis.

7.2 On Sight and Under Caution

When the driver receives an instruction from the LC/DC to drive '***ON SIGHT AND UNDER CAUTION',*** the driver has to move the train/vehicle in a way that they can stop the train/vehicle in front of any obstruction or danger. ***The maximum permissible speed is 40km/h.***

Driving "on sight and under caution" when there are any irregularities along the track network such as:

- Passing a failed signal/s or turnout/s
- Approaching a train or vehicle (during rescue)
- Track inspection for uncertain track section
- Track irregularities (obstacle, flooding, bouncing)
- Person in the structural gauge (people working under TPR, coupling of vehicle or intruders)

DANGER
The driver must be aware the possibilities of another train or vehicle occupying the same track section.

7.3 Speed Restrictions

Speed Restrictions will normally be indicated in the ***Track Possession Activities and Caution Instruction Notice*** that is provided to the OTD's before the start of Revenue Service. All permanent and temporary speed limits must be observed. LC/DC or OTS will advise the OTD of any other restrictions that may apply.

OTD has to observe speed restriction, which is:

- Written on the Operations Notice Board
- Given verbally via radio by LC/DC
- Shown by speed limit signal board
- In Depot, speed is limited to 25km/h (shunting mode), OTD has to drive the train according to the shunt signals aspect
- Mainline speed limits as per route knowledge

IMPORTANT
Any speed restriction imposed must be updated in the Operation Notice Board by the OTS.

7.4 Wrong Routing

When a Driver recognises that the route is set into a wrong direction in the Depot or on the Main Line, OTD has to:

1. Stop the train or vehicle immediately
2. Inform LC/DC
3. Inform passengers of the situation, if required
4. Wait for further instruction from LC/DC

WARNING
The driver is only allowed to proceed after LC/DC has confirmed that the route is set correctly.

7.5 Overshoot Platform

Train overshooting station platform has to be avoided as this could result to the safety of passengers and also affect the image of the company.

7.5.1 Overshoot Platform

In case a train overshoots the platform **more than** one door leaf, OTD has to:

1. Report to LC/DC and leave train doors closed
2. Make an announcement to passengers to remain on board
3. Wait for instruction from LC/DC to change cab
4. Proceed back to the designated stopping point and observe safety of the passengers at platform
5. Open the passenger train doors on the platform side
6. Change cab to the definite destination

NOTE

In case a train overshoots a platform and all passenger doors are still within the platform area, OTD can open the train doors as per normal and to check visually the passengers flow via driver's cab window.

REMINDER (For Transit train)

1. Ensure speed of train is below 80km/h before the last facing turnout approaching the intermediate station.
2. Ensure speed of train is below 40km/h at the edge of the platform approaching the intermediate station.

7.5.2 Overshoot Stopping Point

In case a train overshoots the stopping point more than one door at station design with PSD, OTD has to:

1. Report to LC/DC and leave the doors closed
2. Make an announcement to passengers to remain board
3. Receive instruction from LC/DC to change cab
4. Proceed back to the designated stopping point and observe a hand signal given by OSS
5. Open the passenger train doors on the platform side
6. Change cab to the definite destination

REMINDER

In case a train overshoots a stopping point **less than** one door report to the LC/DC and received instruction from LC/DC to reverse the train to the designated stopping point.

7.6 Line Blockages

Line Blockages can be due to:

- Maintenance work
- Flooding
- Removal of obstruction i.e. dead body, fallen trees, etc

Should a train stopped on the Main Line and is unable to be removed from the Line by another train or should a train be obstructed by an obstacle and the OTD cannot remove safely, OTD has to: -

1. Report to the LC/DC
   a. Exact location and kind of obstruction
2. Inform passengers about the situation
3. Wait for further instruction from the LC/DC

7.7 Failed Train In Between Stations

In case a train failed in between stations, OTD has to do one of the followings, in the order listed:

- Coast train to the next station
- Stop at a level and straight track
- Stop immediately, if train just started to move away from station

In any situation, OTD shall inform LC/DC immediately about their decision.

7.7.1 In the Main Line

Generally, when a train is a having technical failure and with indications that it will not reach to the next station, OTD has to decide according to their location to coast to the next station (if possible) or to stop immediately if train has just started moving away from a station.
If the train has come to a standstill in between stations, OTD has to:

1. Inform LC/DC about the situation
2. Apply Parking Brake
3. Inform passengers
4. Wait for further instruction from LC/DC
5. Inform passengers about the situation and the possibilities to continue their journey

7.7.2 In the Depot

When a train is having a technical failure in the Depot, OTD has to immediately inform to LC/DC and wait for further instruction.

7.8 Shuttle Service

LC/DC will give instruction when and between which stations Shuttle Service will be initiated. OTD has to:

1. Receive specific instructions from LC/DC
2. Receive information from LC/DC when to depart
3. Announce to the passenger's destination of the train
4. Make announcement to passengers to disembark prior to arrival at final destination
5. Change cab and wait for further instruction from LC/DC

7.9 Bi-directional/Single Line Working Operations

When a portion of a track is having a Line Blockages, the Bi-directional/Single Line Working may be established: - OTD shall receive instruction from LC/DC:

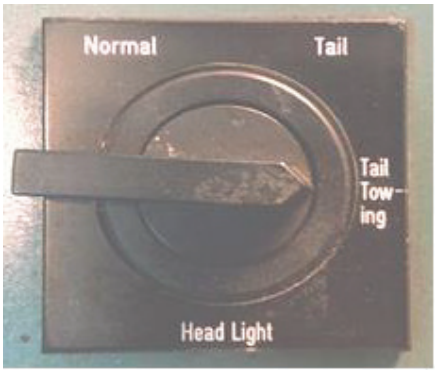
1. Start and end of the bi-directional/single line operations
2. Runs train between the defined locations
3. Ensure correct platform before opening the passenger train door
4. Additional instructions to be observed

7.10 Coupling/Uncoupling of Trains and Vehicles

In the event of a stranded train at mainline, stalled train driver has to: -

1. Remain the train battery in switch 'ON' mode, only if passengers still on board (if no, go to step 3)
2. Switch 'ON' partial lighting and make a proper announcement
3. Switch 'OFF' the train battery after the passengers have been evacuated to the rescue train
4. When receive instruction from LC/DC for coupling procedure,
   a. Confirm with LC/DC the direction of the rescue train or shunting loco will arrive
   b. Select "Tail Towing" (refer to figure 1: exterior lighting switch)
   c. This will only activate the tail lights on that particular cab

5. Visually inspect the tail lights and ensure they are illuminated
6. Standby at clearance gauge and provide hand signal to the approaching rescue train



NOTE

1. Train driver to open the flap window at each car by using the cross key for ventilation purposes if passengers still on board
2. The tail lights will not function in case of battery flat or failure in electrical circuit

REMINDER

During night time, hand signal by torch light is compulsory to indicate a pre-caution signal for the approaching rescue train before stop in-front of the stalled train

DANGER

Train Driver to request from LC/DC to impose speed restriction of 25km/h, before releasing EP Panel and parking brake rings at the adjacent track

7.10.1 Electrical Coupling of 2 Active Train

Driver of Active train 1 has to:

1. Drive his train up to 3 meters to the other train and stop
2. Apply Parking Brake to avoid any unintended movement
3. Confirm with Driver of Active train 2:
   a. **For ET-01**, Coupler Isolation Valve is in “Horizontal” position and Main Isolation Valve is in “Vertical” position
   b. **For ET-02**, Coupler Isolation Valve to ON position and Main Isolation Valve in ON position
4. Ensure coupler guide (cow horn) is parallel to the other train
5. Receive confirmation from the Driver of Active train 2 that both trains are ready for coupling
   a. **For ET-01**, ensure train traction percentage as detailed below:
      i. Level & down gradient: cow horn is parallel (+5% traction)
      ii. Up gradient track: cow horn is parallel (+10% traction)

b. **For ET-02**, press button Wash/Coup and speed restrict to 3km/h before coupling
   i. Level & down gradient: cow horn is parallel (minimum 0.6 km/h)
   ii. Up gradient track: cow horn is parallel (minimum 1 km/h)

6. Release Parking Brake, proceed and couple with the other train
7. Once both couplers engage and electrical contact box is connected, the following message would appear on the DDU inside the active or occupied cab
   a. For **ET-01**, "Deactivate cab 100" (if the active cab is +100) or "Deactivate cab 200" (if the active cab is +200)
   b. For **ET-02**, coupler indicator on driver desk will illuminate
8. Apply parking brake after both couplers engage
9. Change and active new leading cab
10. Acknowledge the new train configuration at DDU
11. Change ATP MMI configuration to (L136 B65 V145**)** or (L2U B2C V145)
12. Proceed slowly forward to perform coupler test and confirm with Driver of Active train 2 that the coupler is intact
13. Perform DDU short brake check and manual brake test (Apply for **ET-01**only)

REMINDER

After both couplers are connected:

- Inspect both electrical contact box cover is open and intact with each other
  Inspect the air pipe connections are secured and no hissing sound

7.10.2 Uncoupling of 2 Active Train

Driver in Active train 1 has to:

1. Change cab, where coupler is engaged
   a. **For ET-01**, uncouple train by turning Master Key Switch to decoupling position. (If not possible, manual de-coupler device to be used)
   b. **For ET-02**, uncouple train by pressing uncoupling button (If not possible, manual de-coupler device to be used)
2. Reverse to uncouple trains
3. Acknowledge the new train configuration at DDU
4. Change ATP MMI configuration to (L68 B65 V145) or (L1U B2C V145)
5. Perform DDU short brake check and manual brake test

Driver in Active train 2, after both trains are uncoupled has to:

1. Normalize coupler isolation valve in "Vertical" position on both trains
2. Acknowledge the new train configuration at DDU
3. Perform DDU short brake check and manual brake test

7.10.3 Coupling of Inactive Train (Electrical Coupling for Rescue)

REMINDER

Electrical rescue will enable rescue train to release the brake system on the stalled train.
Automatic coupling cannot be carried out if the train experience the following conditions: -

1. Main Reservoir Pressure (MRP) loss [EB Loop trip]
2. Battery Flat [Pantograph unable to be raised]
3. Fault 'A' [related to brake and pneumatic]

Rescue train Driver has to:

1. Drive his train up to 3 meters of the other train and stop
2. Apply Parking Brake to avoid any unintended movement
3. Confirm with driver of stalled train:
    a. **For ET-01**, Coupler Isolation Valve is in “Horizontal” position and Main Isolation Valve is in “Vertical” position
    b. **For ET-02**, Coupler Isolation Valve is in ON position and Main Isolation Valve is in ON position
4. Ensure coupler guide (cow horn) is parallel to the other train
5. Receive confirmation from stalled train Driver that both trains are ready for coupling
    a. **For ET-01**, Ensure train traction percentage as detailed below when coupling:
        i. Level & down gradient track: cow horn is parallel (+5% traction)
        ii. Up gradient track: cow horn is parallel (+10% traction)
    b. **For ET-02**, press button Wash/Coup and speed restrict to 3km/h before coupling
        i. Level & down gradient: cow horn is parallel (minimum 0.6 km/h)
        ii. Up gradient track: cow horn is parallel (minimum 1 km/h)
6. Release Parking Brake, proceed and couple with the other train
7. After both couplers engage, coupler indicator on driver desk will illuminate (ET-02 only)
8. Once the couplers are engaged and electrical head are connected, the following message would appear on the DDU inside the active or coupled cab:
    a. “Deactivate Cab 100” (if active cab is +100) or
    b. “Deactivate Cab 200” (if active Cab is +200)
9. Change cab and activate new leading cab
10. DDU display will show the following:
    a. Configuration for 2 trains [Main Components, Air-condition, Lighting, Driving/Braking, State of Brakes, Doors and Voltage/Current]
11. Acknowledge the new train configuration at DDU:
    a. No changes in ATP Train data are required
12. Proceed slowly forward to perform coupler test and confirm with driver of stalled train that the coupler is intact
13. Perform DDU short brake check and manual brake test

Stalled train Driver has to:

1. Switch ‘OFF’ all Main Components and lower the pantograph
2. Leave the train battery in ’ON’ condition
3. Ensure Parking Brake is in ‘APPLY’ condition
4. Ensure all passenger train doors in “CLOSE’ condition
5. Remove Master Switch Key
6. Ensure coupler isolation valve in “Horizontal” position and main isolation valve in “Vertical” position on both trains
7. Inform driver of rescue train that both trains are ready for coupling
8. Confirm with driver of rescue train that coupler is intact

DANGER

Coupling in curves, couplers must be adjusted during the coupling process.
For assistance, a RST Supervisor must be consulted.

7.10.4 Uncoupling of Inactive Train (Electrical Coupling for Rescue)

Rescue train Driver has to:

1. Apply Parking Brake
2. Change cab, where the coupler is engaged
    a. **For ET-01**, uncouple the trains by turning the Master Key Switch to De-coupling position (If not possible, manual de-coupler device to be used)
    b. **For ET-02**, uncouple train by pressing uncoupling button (If not possible, manual de-coupler device to be used)
3. Change cab, where the coupler is engaged
4. Reverse to uncouple the trains
5. Acknowledge train configuration at DDU
6. Apply Parking Brake and perform DDU short brake check and manual brake test

Stalled train Driver after both trains are uncoupled has to:

1. Apply the parking brake
2. Informed LC/DC

7.10.5 Coupling of Inactive Train (Mechanical Coupling for Rescue)

Rescue train Driver has to:

1. Drive his train up to 3 meters of the stalled train and stop
2. Apply Parking Brake to avoid any unintended movement
3. Confirm with driver of stalled train:
    a. **For ET-01**, Coupler Isolation Valve of both trains in “Vertical” position and Main Isolation Valve of both trains in “Horizontal” position
    b. **For ET-02**, Coupler Isolation Valve to OFF position and Main Isolation Valve to OFF position to isolate train pneumatic system
4. Ensure coupler guide (cow horn) is parallel to the failed train
5. Receive confirmation from driver of stalled train that both trains are ready for coupling
    a. **For ET-01**, Ensure train traction percentage as detailed below when coupling:
        i. Level & down gradient track: cow horn is parallel (+5% traction)
        ii. Up gradient track: cow horn is parallel (+10% traction)
    b. **For ET-02**, Press button Wash/Coup and speed restrict to 3km/h before coupling
        i. Level & down gradient: cow horn is parallel (minimum 0.6 km/h)
        ii. Up gradient track: cow horn is parallel (minimum 1 km/h)
6. Release Parking Brake, proceed and couple to the other train
7. After both couplers engage, coupler indicator on driver desk will illuminate [**ET-02 only**]
8. Perform coupling test (reverse train to check if the coupler is intact) and confirm with driver of the stalled train that the coupler is intact
    a. **For ET-01**, Accompany driver of stalled train to confirm that 4 units of Brake Console Panel is isolated and 6 units Parking Brake release rings are fully retracted with a free-play of the brake calipers
    b. **For ET-02**, driver of stalled train to confirm that 5 units of B05 brake isolation cock in each bogie inside saloon is isolated and 5 units Parking Brake cable are fully retracted
9. Perform DDU short brake check and manual brake test from the active cab
10. Ensure train movement is smooth when accelerating

Stalled train Driver has to:

For ET-01

1. Ensure Coupler Isolation Valve in “Vertical” position and Main Isolation Valve in “Horizontal” position on both trains
2. Confirm with driver of rescue train that coupler is intact after coupling
3. Isolate all 4 units of Electro-Pneumatic Control Panel (Brake Console) valves
4. Pull all 6 units of Parking Brake release rings and ensure there is free-play of the brake calipers
5. Inform driver of rescue train that train is ready to move
6. Advise rescue train driver if observe any abnormalities

For ET-02

1. Ensure Coupler Isolation Valve and Main Isolation Valve in OFF position on both trains
2. Confirm with driver of rescue train that coupler is intact after coupling
3. Isolate all 5 units of B05 brake isolation cock
4. Pull all 5 units of Parking Brake release cable
5. Inform driver of rescue train that train is ready to move
6. Advise rescue train driver if observe any abnormalities

REMINDER
OTD to push inward the brake calipers to ensure parking brakes are completely released. During night, torchlight must be used during manually releasing of the parking brakes.

REMINDER
Use key hook to pull Parking Brake release rings manually and ensure a ‘CLICK’ sound is heard.

7.10.6 Uncoupling of Inactive Train (Mechanical coupling for Rescue)

Rescue train Driver has to:

1. Position in Driver’s Cab, where coupler is engaged
2. Communicate with driver of stalled train that trains are ready to uncouple
3. Request driver of stalled train to install the wooden brake shoes
4. Receive information from driver of stalled train that wooden brake shoes have been installed at the train wheels
    a. **For ET-01**, uncouple train by turning master switch key to decouple position (If not possible, manual de-coupler device to be used)
    b. **For ET-02**, uncouple train by pressing uncoupling button (If not possible, manual de-coupler device to be used)
5. Reverse to uncouple the trains

Stalled train Driver has to:

1. Install the wooden brake shoes
2. Inform rescue train driver that both trains are ready for uncoupling

7.10.7 Coupling of Train at Confine Space

In case a failed train is stalled at station platform or reversing track, which requires mechanical coupling, the:

Stalled train Driver has to:

1. Receive instruction from LC/DC that the failed train will be coupled
2. Ensure rescue train has coupled with failed train
3. Release pneumatic pressure from both Isolating Valve of the failed train to 45 degrees – Main Isolation Valve (left hand side of the Coupler A1 and B1)
    a. *Refer to annex 10.5 Coupling of train at confine space*
4. Ensure the Main Reservoir pressure and Brake Cylinder pressure is Zero (0) bar
5. Isolate EP Panels and pull the Parking Brake of the failed train which are accessible
6. Inform rescue train Driver to pull [60% traction force] the failed train until the remaining EP Panels and Parking Brake are accessible
    a. OSS will assist during the pulling of train away from station platform (to confirm/ensure that the EP Panel and Parking Brake are accessible)
7. Confirm with rescue train Driver that all EP Panels has been isolated and all Parking Brakes has been released
8. Inform rescue train Driver that both trains can be moved safely to the location instructed by the LC/DC

Rescue train Driver has to:

1. Receive instruction from LC/DC to rescue the failed train
2. Establish the radio communication with driver of the failed train and OSS
3. Ensure both trains have been coupled
4. Confirm with Stalled train Driver that all EP Panels has been isolated and all Parking Brakes has been released
5. Report to LC/DC that train has been coupled successfully
6. Wait for further instruction from LC/DC
7. Observe the train movements during pulling of train

7.10.8 Coupling/Uncoupling of Shunting Loco with Train

Refer to Clause 9 for Shunting Loco

7.11 Pushing of Trains on Mainline

When a train is stalled (procedure as per Clause 7.7.1 has been performed) and has to be moved by another train or shunting Loco,

Stalled train Driver has to:

1. Receive information from LC/DC the stalled train will be pushed
2. Confirm with LC/DC direction of the rescue train or shunting loco will arrive
    a. Prepare train as per Clause 7.10 Coupling/Uncoupling of trains
    b. Normalize exterior lighting switch, trains have been coupled, before proceed to the front driver's cab
3. Occupy the front driver's cab and switch ON the train battery
4. Switch OFF all passenger saloon lighting
5. Select Cab/Schedule Lighting switch to "Cab + Schedule" or "Schedule + Cab"

6. Turn Diagnostic Mode switch to “Maintenance”
7. Select Direction Lever to “Forward”
    a. Low beam light will be illuminated on that particular cab
    b. The high beam can be operated at this stage
    c. Visual inspect and ensure that head lights are illuminated for that particular cab
8. Receive information from Driver of rescue train when ready to depart
9. Observe track and signal aspect while being pushed and communicate with the rescue train Driver in accordance to the Procedure for Communication and Signal Book [G00.OMO.M15114.NA.1002.*]

REMINDER

1. OTD on the stalled train shall monitor train battery’s power. The driver can assume that the battery power is depleted if both schedule light and driver’s cab lighting are completely off.

2. OTD on stalled train to switch ON the Tri-Colour Torch Light (White Light) if the battery power is depleted and placed them on the dashboard in the direction being pushed.

Rescue train or shunting loco Driver has to:

1. Receive information from LC/DC to rescue a stalled train
2. Receive Approval To Proceed from LC/DC to enter occupied section
3. Stop 3 meter before the stalled train
    a. Establish direct communication with the stalled train Driver
    b. Receive information from stalled train Driver to couple the train
4. Proceed towards the stalled train and couple
5. Inform LC/DC that train is coupled and ready to be move

After receiving Approval to Proceed from LC/DC:

1. Inform stalled train Driver that trains are ready to be move
2. Ensure that communication is possible during pushing the stalled train
3. Stop train at the agreed stopping point as instructed by LC/DC
4. Inform LC/DC and wait for further instruction

DANGER

Rescue, stalled or shunting loco driver must ensure that communication is possible as detailed in the Operations Procedure for Communications and Signal Book [G00.OMO.M15114.NA.1002.*]

7.12 Pulling of Trains on Mainline

When a train is stalled (procedure as per Clause 7.7.1 has been performed) and has to be moved by another train or shunting Loco,

Stalled train Driver has to:

1. Receive information from LC/DC the stalled train will be pulled
2. Confirm with LC/DC direction of the rescue train or shunting loco will arrive
    a. Prepare train as per Clause 7.10 Coupling/Uncoupling of trains
3. Proceed to the rear cab and select “Tail Towing” on Exterior Lighting Switch

a. This will only activate the tail lights on that particular cab
b. Visual inspect the tail lights and ensure they are working

4. Proceed back to the front driver's cab
    a. Notify Driver of rescue train after occupied the driver's cab
    b. Normalize the exterior lighting switch
5. Receive information from Driver of rescue train when ready to depart

Rescue train or shunting loco Driver has to:

1. Receive information from LC/DC to rescue a stalled train
2. Receive Approval To Proceed from LC/DC to enter occupied section
3. Stop 3 meter before the stalled train
    a. Establish direct communication with the stalled train Driver
    b. Receive information from stalled train Driver to couple the train
4. Proceed towards the stalled train and couple
5. Inform LC/DC that train is coupled and ready to be move

After receiving Approval to Proceed from LC/DC:

1. Inform stalled train Driver that trains are ready to be move
2. Stop train at the agreed stopping point as instructed by the LC/DC
3. Inform LC/DC and wait for further instruction

7.13 Signaling Equipment Related Failures and Irregularities

If an OTD observes a signal showing no aspect (dark signal) or unusual aspect, OTD has to:

1. Stop the train immediately
2. Report to LC/DC
3. Wait for further instruction

7.13.1 Approval to Proceed Passing Signal in Danger Aspect

In case a signal showing a Danger Aspect, OTD has to:

1. Stop train in front of the signal
2. Report to LC/DC the signal aspect and signal number
3. Receive verbal Approval to Proceed to pass the signal
4. Override the signal via ATP MMI as per ATP Failure Guideline
5. Proceed with a maximum speed of 40km/h on sight and under caution up to the next signal

7.13.2 ATP Failure

There are two kinds of ATP Failures:

- Train borne ATP Failures
- Line side ATP Failures

A failure of the ATP would cause train to be brought to a standstill by an EB application. After train has come to standstill, OTD has to:

1. Report to LC/DC
2. Check fault message on the ATP MMI and report to LC/DC
3. Receive instruction from LC/DC to release the EB via ATP MMI
4. Receive further instruction from LC/DC

7.13.3 Loss of ATP Display

When none of the led indicator on the ATP MMI is illuminated, OTD has to:

1. Report to LC/DC
2. Receive instruction from LC/DC to proceed to the next station with maximum speed of 80km/h (ATP needle shows “0” km/h)
3. Observe signals and turnouts

7.13.4 Loss of ATP position

In case the ATP position is lost, the **W**arning, **F**ault and **E**mergency led indicators on the ATP MMI will be illuminated. OTD has to:

1. Report to LC/DC
2. Press “F” button on the ATP MMI to identify fault message:
    a. Disturb no. 1: V-reduced
    b. Disturb no. 2: ZSI sector 0”
    c. Disturb no. 3: Position
3. Report to LC/DC the fault messages and request to release EB
4. Receive approval from LC/DC to release the EB via ATP MMI
5. Proceed to the next OCL pole:
    a. ATP needle will remain at “**0**” km/h
    b. Observe signal and turnout
6. Stop and align driver’s cab window to the OCL pole attached with KM board and inform LC/DC
7. Key in the new km position as advised by LC/DC into the ATP MMI by pressing button “**P**” (position)
8. Proceed as per ATP recommended speed (ATP needle)
9. The “**F**ault” led indicator will remain illuminated until train passed the next calibrating magnet (Which is approx 1km)
10. Inform LC/DC the train status

7.13.5 ATP No Telegram

In case a train has ATP no telegram permanently, OTD has to:

1. Report to LC/DC
2. Press “**F**” button on the ATP MMI to read the fault message: -
    a. Disturb.no. 1: “A XXXX signal stop” (i.e. T3397)
    b. Disturb.no. 2: “No telegram”
3. Report to LC/DC the fault message and request to release EB
4. Receive approval from LC/DC to release EB
5. Receive approval to override signal (if red aspect) or turnout via the ATP MMI
6. Proceed as per ATP recommended speed (ATP needle)
7. ATP will resume normal after reaching the next ATP section

7.13.6 Train Data Not Confirmed

In case train data not confirmed, the **W**arning, **F**ault and **E**mergency led indicators on the ATP MMI would be illuminated. OTD has to:

1. Report to LC/DC
2. Press “F” button on the ATP MMI to identify fault message:
    a. Disturb.nr 1: train data not confirm
3. Report to LC/DC the fault messages and request to release EB
4. Receive approval from LC/DC to release the EB via ATP MMI
5. Confirm the correct train data via ATP MMI

7.13.7 Turnout Failures

The failed turnout has to be secured with a manual point lock and confirm by LC/DC before any movements over the turnout.
OTD has to:

1. Receive instruction from LC/DC to override signal and turnout
2. Observe the turnout position facing or trailing
3. Observe ATP needle is dropping while approaching the turnout
4. Stop approx 10 meters before the turnout
5. Override the turnout
6. Proceed with a maximum speed of 20km/h on sight and under caution

For details on turnout position diagram & layout, please refer to annex 10.4

NOTE
For facing turnout-direction left (4) or direction right (6) must be selected via ATP MMI (no selection is necessary for trailing turnout).

DANGER
In case a train or vehicle has trailed a turnout, stop immediately. Do not reverse! Report to LC/DC and wait for further instruction.

7.13.8 Switching Off the Shunting Mode

In case the “Shunting Mode” does not switch off automatically when leaving from depot to the main line and when departing from an Exit Signal at Terminal station the ATP recommended speed would be restricted to 40km/h.

If the “Shunting Mode” does not switch off automatically **BEFORE** departing an Exit Signal at KLS or when leaving Depot to Main Line, OTD has to:

1. Switch Off “Shunting Mode” manually
2. Override ATP MMI if signal is in Red/Stop aspect
3. Proceed and report back the status to LC/DC

In case the “Shunting Mode” does not switch off automatically **AFTER** departing at Exit Signal at KLS or from Depot to Main Line OTD has to:

1. Stop the train immediately

2. Report to LC/DC
3. Put master switch key in “OFF” position and turn back to “ON”
4. Acknowledge ATP Data
5. Report back the status to LC/DC
6. Proceed as per signal indication

7.13.9 Operating of Automatic Through Routing (ATR) Switch

Open Transportation Network (OTN) is a medium of transmitting messages, communications instruction codes and signal etc. Automatic Through Routing (ATR) is a predefined route setting used in case of a communication failure between interlocking and the Traffic Management System (TMS)

In case the OTN is having a failure, the OTD has to operate the ATR Selector switch at Home Signal in KLS and KLIA T1:

1. Receive information from LC/DC
2. Secure train by applying Parking Brake and make announcement to passengers about the delays
3. Proceed to the Home signal equipped with ATR Selector switch. KLS: - KS N12 & KS N13 and KLIA T1: - KA T22 & KA T23.
4. Ensure that the ATR switch indication is illuminated
5. Open the ATR Selector Switch cover marked ERL or CRS, located at Home Signal
6. Use ATR key to turn the ATR Selector gently clockwise 90° to the end of red mark. (*Refer to annex 10.4 Fault immediate action and guidelines*)
7. ‘Proceed Aspect’ will illuminate when route ahead is set
8. Proceed after signal is given and route has performed
9. Inform LC/DC that train has stopped at the arrival platform

REMINDER

Observe signal aspect given after operating the ATR selector.

Flashing ATR light indicate that the system accepts the request but cannot execute for the moment.

In case of wrong selection of route, wait for 3 mins before re-selecting the correct route.

WARNING

Transit train has to observe Home Signals and Exit Signals at the intermediate stations, as the signal will indicate Green Aspect.

IMPORTANT

Open first door on signal side to exit train.
Use the body side key switch to enter the train.

7.13.10 Train ATP System Bypassed

In the event when train experience ATP failure and requires SIG personnel to bypass the train ATP system, OTD has to: -

1. Report to LC/DC
2. Make an announcement to passengers that train is having a technical issue
3. Receive information from LC/DC that SIG personnel will attend and bypassed the ATP system
    a. If train stranded in between station
        i. Make an announcement to passengers that train is unable to proceed and prepare for train-to-train evacuation, if required
    b. If train stranded at terminal /stations
        i. Make an announcement to passengers that train is unable to proceed and to disembark from train
4. After SIG personnel arrived and bypassed the ATP system:
    a. Inform LC/DC status of the ATP system
    b. Receive instruction from LC/DC on the direction of travel i.e. station/depot
    c. Brief SIG personnel on the method of stopping train during an emergency (i.e. Emergency Stop Button)
5. Drive and observe signal indication with maximum allowable speed of 80km/h (ATP needle shows “0”km/h)
6. Inform LC/DC after stop at the designated stopping point
7. Wait for further instruction from LC/DC

WARNING
Only SIG personnel is permitted to bypass the ATP switch (located in Cab A1).

REMINDER
Prior to moving the train, wait until SIG personnel onboard the active driver’s cab and has been briefed on the method of stopping train during an emergency.

7.14 Train Equipment Related Failures and Irregularities

Train Failures or irregularities will be indicated by a “Fault message” on the Drivers Display Unit (DDU).

7.14.1 Failure of Speedometer

There are 2 types of speedometer installed in the driver’s cab i.e. a digital and an analogue type. If either one of the speedometers is having a failure, OTD will proceed according to Normal Operations and has to: -

1. Report to LC/DC
2. Monitor the train speed via the active speedometer
3. Receive further instruction from LC/DC

7.14.2 Malfunction of One Driver Display Unit (DDU)

In the event of one (1) DDU is malfunctioned, OTD has to:

1. Report to LC/DC
2. OTD has to take corresponding action based on the indicator status,
    a. Fault A, B, & C indicators (illuminates if there is fault)
    b. Passenger Emergency Brake Unit (illuminates if activated)
    c. **For ET-02**, Passenger Emergency Door Release (illuminates if activated)
    d. Door open (illuminates if door is not fully closed)

e. Dead-man Control (illuminates if not activated by OTD)
f. Door close/open command button (illuminates if door in close or open position)
g. Parking Brake 'apply & release' command button (illuminates if brakes apply/release)

7.14.2.1 Malfunction of ET-02 DDU (Communication Fault)

Degraded mode operation will be activated when:
- Communication fault between both CCU, or within the DDU of the active cab
- Master controller connection to CCU via I/O is defective in the active cab

In the event of DDU malfunction and display Communication Fault with yellow background. Train will initiate EB and come to standstill

OTD has to:
1. Report to LC/DC
2. Receive an approval to activate the degraded mode switch
3. Master controller only can apply two level of position 50% & 100% for traction and braking
4. Speed restricted to 30km/h [Refer to the DDU Speed Limit]
5. Continue journey to the nearest station

7.14.3 Pantograph Failure

In case of a Pantograph failure and power supply to the train is lost. OTD has to:

1. Report to the LC/DC
2. Coast the train to the next station platform or stop immediately if just depart from station
3. Observe Main Reservoir Pressure (MRP) while coasting
4. Report to LC/DC immediately if there is any MRP drop
5. Wait for further instructions from LC/DC

7.14.4 Toilet S.O.S. Button Activation

An S.O.S button is located in the toilet in each ET-01 Ekspres train. When the S.O.S is activated, a yellow message will appear in the DDU, OTD has to:

1. Report to LC/DC immediately
2. Received instruction from LC/DC to stop at the next station
3. Make an announcement to passenger that train will stop at the next station
4. Inspect the toilet with assistance of OSS
5. Report status to LC/DC

7.14.5 Passenger Door/Ramp Failure

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

1. Open and close doors (on platform side) – if failure rectified, continue 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 visually check which door ramp is not retracted/stuck or refer door closing warning lamp flashes (yellow lamp blinking):
    a. Fault message will pop up at DDU including door number, car, time and type of failures
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:

    For ET-01
    a. Toggle Switch S6 located at all doors
    b. Select the Toggle Switch S6 to “OFF” position

    For ET-02
    a. DCU located at all doors
    b. Select the DCU (S7) toggle switch to “OFF” position, then wait until DCU LED indicator is off (not illuminated)
        - Normal position for (S7) toggle switch position is “I” and ramp (S6) is “O”
        - OFF position for DCU (S7) toggle switch is “O”
6. Open door panel right side (inside view) and manually retract the ramp via ramp motor crank handle (clockwise) back to close position (if ramp is in open position)
7. Close the door manually (if door is opened)
    a. **Push the door using your palm** at the middle of both door leaf to ensure the door is properly closed
    b. Inspect condition of the door to ensure it is properly locked and safe for operation (Check and ensure no gap at center of door leaf or between door side panel to door leaf)
8. Isolate the door by turning isolating locking mechanism 90° to the right (clockwise)

    For ET-01
    a. Normalize Toggle Switch S6 to “ON” position

    For ET-02
    a. Normalize DCU (S7) toggle switch to “ON” position
    b. Wait for 8-10 second and the isolation lamp will illuminate (red - static) at the overhead door panel
9. Close side door panel and overhead panel
10. Paste “Out of Order” sticker on the isolated door
11. Proceed to the driver’s cab and report to LC/DC either:

    For ET-01
    a. Door locked message “one or several door locked” appears in DDU event overview
    b. Observe message “Door Malfunctioning” appears in DDU home page

    For ET-02
    a. Door locked message pop-up “Door XX/X Door Isolated” appears in DDU home page
    b. The isolated door indicates yellow colour at DDU [side 1 or side 2]
12. Close doors:

    For ET-01

a. If door open light indicator at driver's desk is not blinking (light off) proceed as per normal
b. If no (door indicator remaining blinking), inform LC/DC immediately

For ET-02 (Select the door selector accordingly to the platform side)
a. Ensure all doors are properly closed via DDU
b. Set door selector to "0" [Neutral]
c. Ensure door open indicator light at driver's desk is not illuminated / lights off

13. Continue journey and wait for further instruction from LC/DC

WARNING
DO NOT PULL THE PER DOOR LATCH ON ET-01 & ET-02 AFTER ISOLATING THE FAILED DOOR.

NOTE [ET-01]
Usage of Toggle Switch S6 (identified with a yellow tagging) shall substitute the use of DCU Toggle Switch.

NOTE
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.

REMINDER [ET-01]
DDU event message "Door XX/1 malfunction" and "Door XX/2 malfunction" will remain if DCU is malfunction after normalize 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.

7.14.5.1 Passenger Train Door Opened while in Motion

In the event of passenger train door opened while in motion, OTD has to:

1. Report to LC/DC of the situation
2. Receive instruction from LC/DC to immediately stop the train
3. Inspect physically and report to LC/DC the door status
4. Receive instruction from LC/DC to isolate the affected door
5. Isolate the affected door
6. Report to LC/DC that door has been isolated
7. Request permission from LC/DC to continue journey

7.14.6 Passenger Emergency Door Release Activation

For ET-01, when passenger emergency door release (PER) is operated while train in motion, the door will open approximately 10 cm. The "Door Open" indication will flash intermittently on control panel and message Door Malfunction will be indicated on the DDU. Train will be having loss traction.

For ET-02, when passenger emergency door (PER) is operated while train in motion, the door leaf will move/shift outward. The "Door Open" indication will illuminate on control panel, message PER activated will pop-up and door status indicate "Blue box" in the DDU.

- The door can be opened manually if train speed less than 5km/h or after the train come to standstill.
- If the train speed more than 5km/h, the door will remain closed for maximum 60 seconds. Train will initiate EB.

When the PER is activated, OTD has to:

1. Report to LC/DC of the incident
2. Inform passengers that train will stop immediately
3. Request passenger operating the PER to respond via passenger emergency intercom
4. Receive instruction from LC/DC to inspect condition of the train door
5. Reset PER after solving the problem
6. **For ET-02**, reset PER handle manually and open door overhead panel to reset Service Button
7. **For ET-02,** Observe train door status at DDU
8. Inform LC/DC status of train door and continue journey

7.14.7 Passenger Emergency Brake Unit Activation

The passenger emergency brake unit (PEBU) is installed at passenger train doors of the Ekspres and Transit trains to enable passengers to stop the train in case of an emergency.

If a PEBU handle for **ET-01** is activated:

1. Train will experience an EB
2. Fault message (EB loop has tripped) and (passenger emergency brake activated) is indicated on the DDU
3. PEBU indicator is illuminated on the control panel

OTD has to:

1. Report to LC/DC
2. Request passenger operating the PEBU to respond via passenger emergency intercom
3. Checks the status and inform LC/DC
4. Receive instruction from LC/DC to override PEBU switch and proceed to the nearest station (Max speed restricted to 80km/h)
5. Reset PEBU using cross key after solving the problem and continue journey

In case, PEBU handle for **ET-02** is activated:

1. Train will experience an Emergency Brake and train will come to a standstill
2. Observe message Emergency Brake Loop appear on DDU and fault indicator PEBU (Red Color) illuminated
3. Train will be unable to be moved but indication in DDU will show the speed limit 25km/h

OTD has to:

1. Report to LC/DC

2. Request passenger operating the PEBU to respond via passenger emergency intercom
3. Receive instruction form LC/DC to operate the PEBU Override toggle switch to 'ON' position and proceed with speed limit 25km/h to the nearest station
4. Normalize the PEBU handle by using the cross key (Refer to the **DDU EVENT OVERVIEW** message 'PEBU activated')
5. After normalize PEBU handle, speed will remain to 25km/h (Refer to the DDU speed limit)
6. Reset the train Master Switch Key and speed limit will resume normal (Refer to the DDU speed limit)

REMINDER

Action sequence			SPEED LIMIT
1. PEBU Activated			Train will apply Emergency Brake
2. PEBU Activated	→	PEBU Override	25km/h ** See Note 1
3. PEBU Activated	→	PEBU Bypass	80km/h ** See Note 2

Note 1: Train will move in 25km/h when PEBU override is selected to "On" position. The speed will back to normal speed after successfully reset the PEBU and train Master Switch key.
Note 2: The train speed will be limited to 25km/h before reset the train Master Switch Key. The speed limit 80km/h will only be applied after PEBU bypass switch is switched to "Bypass" and reset the train Master key.

7.14.8 Brake Failures

In case of a failure to the brake system, OTD reports to LC/DC immediately the fault message category i.e. Fault A, B and/or C:

1. <u>Brake – Fault A</u> such as Emergency Brake [EB] activation by Signaling system [lost position, ATP computer fault, etc]

a. Refer to Clause 7.13; Signaling equipment related failures and irregularities

2. <u>Brake – Fault A</u> due to
a. "Bogies locked in car 100" AND "Parking or service brake pressure low"
b. "Bogies locked in car 200" AND "Parking or service brake pressure low"

When Train at Platform.

1. Report to LC/DC on the fault message
2. Disembark the passengers with the advise from LC/DC
3. Standby for further instruction from LC/DC

When Train in Motion.

1. STOP the train immediately
2. Report to LC/DC on the fault message
3. Change the ATP MMI data: brake code 3 (39%)

4. Drive the train at the speed of not more than 80km/h, or as per the ATP permissible speed [whichever lower]
5. Check the Main Reservoir (MR) needle is above 9 bar
6. Exercise early braking, assuming the train has only half of the braking rate
7. Once it arrives at the next station, the driver shall:
    - Disembark passengers as advise by LC/DC
    - Standby for further instruction from LC/DC

REMINDER
Ensure the MR needle is maintained above 9 bars. If the pressure drops below 9 bars, inform LC/DC immediately.

3. <u>Brake – Fault A</u> due to other reason such as
    - Brake not released message displayed in the DDU but train speed is as per normal
    - Any other brake failures except "Fault A – Bogie Locked"

1. Report to LC/DC
2. STOP THE TRAIN, IMMEDIATELY
3. Inform and update the train status to RST and LC/DC to seek for further advise

7.14.8.1 Failure of Master Controller

Failure of Master Controller can be identified:
- Message appear at DDU
- Check status at DDU Driving/braking page
- Not functioning either traction or braking

In case Master Controller application fails, OTD has to:

1. Report to LC/DC
2. Coast to the nearest station, if master controller traction force failed
3. STOP the train using the "EMERGENCY STOP BUTTON", if master controller braking force failed
4. Receive instruction from LC/DC to change cab and proceed back to the station, if train stop in between stations
5. If failure of master controller at both driver's cab, receive instruction from LC/DC to evacuate passengers

7.14.8.2 ET-02 Brake System Self-Test Fault Message

In case of a train ET-02 fault message appears when brake system self-test activated [reminder and/or expired], OTD has to: -

1. Brake – Fault A due to brake system self-test – **<u>REMINDER</u>**
    a. Report to LC/DC
    b. STOP THE TRAIN IMMEDIATELY
    c. Inform and update the train status to RST and LC/DC to seek for further advise
    d. Make an announcement to passengers due to train technical stop
    e. Receive instruction from RST to perform brake system self-test

REMINDER

Brake system self-test reminder: Fault message appears when the brake system self-test has not been performed successfully for more than 26 hours.

(Ensure the MRP reading is maintained above 9 bars before initiating brake self-test)

2. Brake – Fault C due to brake system self-test – **EXPIRED**

When train at platform

a. Report to LC/DC
b. Receive instruction to perform brake system self-test
c. Perform brake system self-test, if success continue journey
d. If brake system self-test fail, disembark the passengers with advice from the LC/DC
e. Standby for further instruction from LC/DC

When train in motion

a. Report to LC/DC
b. Proceed to the next station
c. Receive instruction to perform brake system self-test
d. Perform brake system self-test, if success continue journey
e. If brake system self-test fail, disembark the passengers with advice from LC/DC
f. Standby for further instruction from LC/DC

REMINDER

Brake system self-test Expired: Fault message appears when the brake system self-test has not been performed successfully for more than 24 hours or when the train is restarted.

(Ensure the MRP reading is maintained above 9 bars before initiating brake self-test)

7.14.9 Failure Of Dead-Man Device

Failure of dead-man device can be identified:

1. When dead-man buzzer is continuously sounds or no buzzer sound at all for more than 30 seconds
2. Dead-man could not be reset and followed by EB activation
3. EB Loop message will appear on DDU
4. Fault “A” and Dead-man indicator is illuminated on the control panel

OTD has to:

1. Report to LC/DC immediately
2. Receive approval from LC/DC to break toggle switch seal and bypass the “**Dead-man Control**” switch
3. If “EB Loop has tripped” message is shown in the DDU, break the seal and bypass “**Emergency Brake Loop**” (max speed limited to 30km/h)
4. **For ET-02**, receive approval from LC/DC to break toggle switch seal and bypass the “**Dead-man Control**” switch (**NO speed restriction**)

a. Receive instruction from LC/DC to proceed with max speed of 30km/h

5. **For ET-02**, EB Loop message will disappear after train stop and Zero Speed indicate at DDU
6. Proceed to the next station
7. OSS will bypass "**Dead-man Control**" switch in the inactive cab and join OTD in the active cab
8. **For ET-02**, no requirement for OSS to bypass "Dead-man Control" switch in the inactive cab
9. Observed message in DDU that "**Dead-man bypassed in both cabs**"
10. Put **"EB Loop"** switch to active position (Apply for ET-01)
11. **For ET-02**, observed message in DDU that Car+100 or Car+200 Dead-man Control Bypassed
12. Brief OSS on the method of stopping train during an emergency (i.e. Emergency Stop Button)
13. Inform LC/DC that OSS is in the driver's cab and has been briefed
14. Continue journey with normal line speed
15. Receive further instruction from LC/DC

7.14.10 Headlight & Taillight

Failures on one of the train headlight/upper beam or taillight do not directly affect train operations, however failure of total train headlight/taillight is a safety concern especially during night or low visibility. When OTD notice a failure on their or another train during crossing, OTD has to report immediately to LC.

7.14.10.1 Failure of One Train Headlight & Taillight

Either one of the train headlight/upper beam or taillight is malfunctioned. OTD has to: -

- Report or received info from LC
- Continue journey until end of terminal
- Received instruction to verify the affected headlight/taillight at the terminal station
- Wait for further instruction from LC

REMINDER
In case ONE of headlight/upper beam failure during night time, train shall run with restricted speed 80km/h until end of terminal.

7.14.10.2 Failure of TOTAL Train Headlight or Taillight

DAY TIME

In case both train headlight/upper beam or taillight is malfunctioned, OTD has to: -

- Report or received info from LC
- Continue journey until end of terminal
- Received instruction from LC to verify the affected headlight/taillight at the terminal station
- Wait for further instruction from LC on when and where the train will be replaced

NIGHT TIME

In case both train headlight/upper beam or taillight is malfunctioned, OTD has to: -

- Report to LC
- Receive instruction from LC to stop and terminate train services at next station
- Make a proper announcement and disembark passengers
- Wait for further instruction from LC

NOTE
OTD shall report to DC in case they observe any irregularities of the train headlight/upper beam or taillight during train preparation at stabling or workshop

7.14.11 Loss of Interior Lighting

During total loss of train saloon lighting during nighttime, passengers will be evacuated at the nearest station and train will be withdrawn from service.

When lighting of a train is partially lost. OTD has to:

1. Report to LC/DC
2. Advise passengers to move into another part of the train where lighting exists, if possible
3. Receives information from LC/DC when the train will be taken out of service

7.14.12 Broken/Damaged Windows

Damage to a window does not normally affect comfort or safety of the passengers provided that only the outer layer of the window is broken. In case of a broken window is reported or is detected by the OTD, he has to:

1. Report to LC/DC
2. Check the window to see whether it is intact or not and check if any passengers are affected
3. Evacuate passengers if necessary, as advised by LC/DC
4. Receive instructions from LC/DC when and where the train will be taken out of service

7.14.13 Failure of Air Conditioning System

In the event of a train air-conditioning is having a failure, OTD has to: -

1. Report to LC/DC and continue journey
2. **For ET-02**, Check the temperature logger reading not exceeding 26 degrees at DDU 'saloon temperature' and fault message
3. Make an announcement to the passengers
4. **For ET-01**, if time permits, check the temperature data logger reading at each car (Temperature reading shall not exceed 26° C) at the terminal station
5. Receive instruction from LC/DC when the train will be taken out of service

REMINDER
Report to LC/DC any failures or defects on temperature data logger such as display blank, crack, error, missing and etc

NOTE
Failure of the air conditioning system affects comfort of the passengers but do not directly affect safety of passengers

7.14.14 Failure of Bogie Set

The following failures of the bogie set have to be considered:

- Hot axle boxes
- Hot gear boxes
- Cab & Bogie swaying
- Bogie overload
- Brake rigging defect resulting in dragging brake
- Broken or damages to bogie frames, etc
- Flat wheels

WARNING
DRAGGING BRAKE ACCORDING TO THE RST MANUAL IS A FAULT “A” FAILURE, STOP THE TRAIN IMMEDIATELY

DANGER
SHOULD AN OTD RECOGNISE A FAILURE ORIGINATING FROM THE BOGIE SET OF A TRAIN ON AN ADJACENT TRACK, REPORT TO LC/DC BY AN EMERGENCY CALL

In case train having failure of bogie set and/or observe message of Wheel Slip/Slide Protection, OTD has to: -

1. Report to the LC/DC
2. **For ET-02**, Pre alarm warning & warning buzzer triggered, when temperature exceeded
3. **For ET-02**, DDU will display message and train will run with restricted speed limit
4. Receive instruction from LC/DC to stop at the next station (train with failed bogie will not be routed through the diverging track)
    a. If an Ekspres train approaching KLIA T1, the train shall be routed to Platform B instead of normal Platform A
    b. If an Ekspres train approaching KLS, the train shall be routed to Platform 2 instead of normal arrival platform
5. Make appropriate announcement to the passengers
6. Receive instruction from LC/DC to check train bogie for any sign of the followings: -

- Smoke or fire
- Burning smell
- Glowing parts
- Strange noise
- Flat wheels

WARNING [ET02]
One/ Two of gearbox temperature sensors faulty [Fault C] - Continue Journey.
All three gearbox temperature sensors faulty [Fault B] - Back to Depot.

NOTE
The speed limit for cab and bogie swaying will gone after no swaying detected.

7.14.15 Air Spring Fault

In case of a defect to the Air Spring during train operations, OTD has to:

Train in motion:

1. Report to LC/DC 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
3. Wait for further instructions from LC/DC

Train at Station and Terminal:

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

AIR SPRING FAULT INDICATION
1. Hissing sound of air leakage
2. Lost/drop of main reservoir pressure
3. 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

7.14.16 Failure of Baggage Compartment

In case of a baggage compartment [ET-01] failure e.g. compartment unable to be locked, OTD has to:

1. Report to LC/DC
2. Receive information from LC/DC whether the train will be taken out of service or to continue journey
3. Ensure there is no baggage container on-board when the train is brought back to Depot

7.14.17 Main Compressor MCB Tripped

In case Main Reservoir (MR) loss of air pressure or Main Compressor MCB Tripped message appears on DDU, OTD has to:

1. Report to LC/DC
2. Receive approval to communicate with RST
3. Inform RST fault message on the DDU (including the failure time) and MR air pressure reading
4. Monitor the air pressure and failures at DDU
5. Receive advise from RST
   a. Whether to continue journey to terminal
   b. Stop at the nearest intermediate station

6. Report to LC/DC and make a proper announcement onboard
7. Receive further instruction from LC/DC

7.14.18 Train in Redundancy Mode

In the event of train having 400vAc redundancy mode, train's speed will be restricted to a maximum of 110km/h only and the air condition system for the whole train will be not available. Only ventilation and blower are operational (no cooling). OTS/OSS will be instructed to board the affected train for opening/closing the flap window.

OTS/OSS will be instructed to board the affected train for opening/closing the flap window.

If the failure occurs before train depart from Terminal KLS, KLIA T1 or KLIA T2, LC/DC will instruct as follows:

- OTS to be on-board train leaving KLS
- OSS to be on-board train leaving KLIA T1 or KLIA T2

Before Express or Transit train depart from terminal stations, OTD has to:-

1. Report to LC/DC
2. Receive information from LC/DC that OTS or OSS is onboard the train to unlock and open all flap windows by using cross key
3. Make an announcement to passengers that air condition is not available
    a. In English
    Your attention please, due to technical problems, this train will be operating without the air condition. If you wish to board the subsequent train, please disembark and wait for the next train. We apologize for the inconvenience caused.

    b. In Bahasa
    Minta perhatian, akibat masalah teknikal, tren ini akan beroperasi tanpa penghawa dingin. Sekiranya anda ingin menaiki tren berikutnya, sila turun dan tunggu tren seterusnya. Kami meminta maaf atas segala kesulitan yang di hadapi.

After Express train departs from terminal stations, OTD has to:-

1. Report to LC/DC
2. Receive information from LC/DC to stop the train at PCS station
3. Make an announcement to passengers that air condition is not available and train will stop at PCS Station

a. In English
Your attention please, due to the air condition failure, this train will make a quick stop at Putrajaya station. If you wish to board the subsequent train, please disembark at this station. This train will continue its journey to (KLS / KLIA T2). We apologize for the inconvenience caused.

b. In Bahasa
Minta perhatian, akibat masalah penghawa dingin, tren ini akan berhenti seketika di stesen Putrajaya. Sekiranya anda ingin menaiki tren berikutnya, sila turun di stesen ini. Tren ini

akan meneruskan perkhidmatannya ke (KLS / KLIA T2). Kami meminta maaf atas segala kesulitan yang di hadapi.

4. Stop the train at PCS station and open all train doors on platform side

NOTE
OSS at PCS will assist to monitor passengers' flow

After Transit train departs from terminal station, OTD has to:-

1. Report to LC/DC
2. Make an announcement to passengers that air condition is not available
3. Inform passengers who wish to board the subsequent train may disembark at the next intermediate stations

   a. In English
   Your attention please, due to technical problems, this train will be operating without air condition. If you wish to board the subsequent train, please disembark at the next station. We apologize for the inconvenience caused.

   b. In Bahasa
   Minta perhatian, akibat masalah teknikal, tren ini akan beroperasi tanpa penghawa dingin. Sekiranya anda ingin menaiki tren yang lain, sila turun di stesen yang berikutnya. Kami meminta maaf atas segala kesulitan yang di hadapi.

REMINDER
OPENING AND CLOSING OF FLAP WINDOW WILL BE DONE SUBJECT TO WEATHER CONDITION i.e. heavy rain, haze

7.14.19 Overloading of Train ET-02 Transit Service

When driving an ET-02 as Transit Service, while stopping at Salak Tinggi Station, before closing doors, if "bogie overload message" appears on the DDU, OTD has to: -

1. Make onboard announcement to stop passengers from entering and to close train doors
2. Report DDU message to LC/DC
3. Depart as usual
4. Receive instruction from LC/DC that the train will be diverted to Platform 1 at PCS

NOTE
To ease passengers movement during disembarkation from a heavily loaded ET-02 train at PCS northbound platform.

7.15 Communication Failures

7.15.1 Public Address System

Failure of the **ET-01** Passenger Information System (PIS)/**ET-02** Passenger Communication System (PCS) must be reported to LC/DC immediately. If the PIS/PCS fails

during service, OTD may continue the scheduled service until replacement of this train is possible. Instructions will be given by the LC/DC. The failures can be identified if route selector unable to select and acknowledge.

7.15.2 Display Control Panel (DCP)

In case of **ET-02** DCP failure in Main line, OTD has to:

1. Report to LC/DC the affected cab
2. Receive instruction from LC/DC to reset the breaker for DCP located at the rear panel
3. If failure rectify, continue journey
4. If failure still remains, wait for further instruction from LC/DC

7.15.3 Train Radio

In case of a Train Radio failure in the Main line, OTD has to:

1. Report to LC/DC by use of the hand portable or train hand phone
2. Continue service under Normal Operations
3. Receives further information when the train will be taken out of service

When LC/DC finds that an OTD does not answer radio calls, LC/DC will instruct OSS of the next station in advance of the affected train to check the situation with the OTD.

The OTD makes a test call to LC/DC via Radio and responds accordingly.

If the train radio fail is detected in Depot, OTD has to:

1. Report to LC/DC by other means of communication available
2. Receive Approval to Proceed from LC/DC via other communication system

7.16 Traction Power Failure

7.16.1 Train at Platforms

If the traction power fails when a train is in a station and the traction power cannot be restored immediately, OTD has to:

1. Receive instruction from LC/DC to evacuate passengers
2. Inform passengers via PA system about the situation and request all passengers to disembark
3. Wait further instructions from LC/DC

7.16.2 Train in Between Stations

In case of traction power failure, OTD has to decide whether to coast to the next station or to stop immediately (if the train has just departed from a station).

If train has come to a standstill between stations, OTD has to:

1. Apply Parking Brake
2. Inform passengers via PA system about the situation and assistance
3. Wait further instructions from LC/DC.

7.17 Track Irregularities/Abnormalities

In case an OTD observes or experience any track irregularities i.e., bouncing, unusual noise/sound, the OTD has to:

1. Report to LC/DC details of the affected track section i.e. kilometres
2. Receive further instructions from LC/DC i.e. CODE 2 activated [Combine Service]

The OTD on the adjacent track has to:

1. Receive instruction from LC/DC
2. Drive on sight and under caution with max speed of 40 km/h
3. Observe track for any visible obstruction on the affected track
4. Report status to LC/DC

IMPORTANT
Affected track section will be blocked from any train movements until SPYTL Trackwork check and declare track is safe for operation.

7.18 Platform Screen Door Failure

In case platform screen door (PSD) does **not open** after the door open command is given, OTD has to:

1. Report to LC/DC and make an announcement to passengers to remain on board
2. Re-close passenger train doors
3. Receive instruction from LC/DC to communicate with OSS
4. Communicate with OSS using hand portable radio on channel OPS 1001 (to initiate manual PSD opening)
5. Receive information from OSS that all PSD are opened
6. Confirm the situation visually via CCTV
7. Open passenger train doors at platform side

In case the PSD does **not close** after the door close command is given, OTD has to:

1. Report to LC/DC and leave passenger train door close
2. Receive instruction from LC/DC to communicate with OSS
3. Communicate with OSS using hand portable radio on channel OPS 1001 (to initiate manual PSD closing)
4. Receive information from OSS that all PSD are closed
5. Confirm the situation visually via CCTV
6. Depart as per signal indication

7.19 Baggage Clearance Signal not Illuminated

7.19.1 Depart from Platform KLIA T1

In case of baggage clearance signal is not illuminated when the train is ready to depart from platform KLIA T1, OTD has to:

1. Report to LC/DC and leave passenger train doors open
2. Receive instruction from LC/DC to check visual via driver's cab window that baggage activity is completed

3. Close passenger train doors
4. Proceed when Main Signal and PSD indicator is Green/Proceed Aspect

7.19.2 Depart from Platform KLS

In case of baggage clearance signal is not illuminated when the train is ready to depart at departure platform KLS, OTD has to:

1. Report to LC/DC and leave passenger train doors open
2. Receive instruction from LC/DC to close the doors
3. Close passenger train doors
4. Proceed when Main Signal and PSD indicator is Green/Proceed Aspect

7.20 Health Problem While Driving

In case OTD having health problem while driving, OTD has to:

1. Report to LC/DC
2. Receive information from LC/DC that OSS will join in the active cab
3. Brief OSS on the method to stop the train in case of emergency i.e. Emergency Stop button and usage PA system
4. Wait for further instruction from LC/DC
5. Continue journey as usual till the terminal station

NOTE

OSS is not allowed to drive the train if OTD become unconscious while driving.

OSS to make regular announcement to passengers in the event OTD becomes unconscious.

7.21 Controlled Evacuation of Passengers

Controlled evacuation refers to situations where safety of passengers is not at immediate risk, and the following evacuation scenarios are possible:

- From trains to trains (via evacuation ramp)
- From trains to stations
- From trains to the ground

7.21.1 Evacuation from Train to Train

When OTD of stalled train receives instruction from LC/DC to evacuate passengers to a rescue train,

Stalled train Driver has to:

1. Apply Parking Brake and keep passenger train doors closed
2. Inform passengers via PA system and advises them that they will soon be taken to their destination by a rescue train
3. Receives information from LC/DC when and where rescue train will arrive
4. Proceed and standby at door no. 23/1 or 23/2 and wait for rescue train to stop and align
5. Open door no. 23/1 or 23/2 of the stalled train using ***Passenger Emergency Release Lever*** once receive hand signal from Driver of rescue train or OSS

6. Co-operate with OSS and Driver of rescue train to install the evacuation ramp
7. Assist OSS and Driver of rescue train to move passengers to the rescue train
8. Ensure that all passengers have disembarked to the rescue train and advise Driver of rescue train
9. Remove evacuation ramp and transfer into the rescue train and closes passenger train door
10. Proceed to the driver's cab and waits for further instruction from LC/DC

When Driver of rescue train receive instruction from LC/DC that his train will be a rescue train:

Rescue train Driver has to:

1. Receive instruction from LC/DC to pick up OSS and evacuation ramp at the next station
2. Inform passengers via PA system that the train will pick up passengers from a stalled train
3. Proceed and stop when aligns to stalled train
4. Apply Parking Brake and proceed to door 23/1 or 23/2
5. Advise Driver of stalled train that it is safe to open his door
6. Open door no. 23/1 or 23/2 of the rescue train using ***Passenger Emergency Release Lever***
7. Co-operate with OSS and Driver of stalled train to install the evacuation ramp
8. Assist OSS and Driver of stalled train to move passengers to the rescue train
9. Receive confirmation from Driver of stalled train that all passengers from the stalled train are on board rescue train
10. Assist OSS and Driver of stalled train to transfer evacuation ramp in the rescue train
11. Proceed to the leading driver's cab and report to LC/DC that all passengers are on board rescue train and ready to proceed

(*Refer to annex 10.7 Evacuation ramp installation diagram*).

REMINDER

For ET-02, Train Driver to reset back the "Service Button – White" at the respective door overhead panel.

7.21.2 Evacuation from Train to Station

When an OTD received instruction from LC/DC to evacuate passengers at the next station, OTD has to:

1. Inform passengers that they will be required to disembark at the next station
2. Stop train at platform
3. Make an announcement to all passengers to disembark
4. Open passenger train doors and make sure that all passengers have left the train
5. Closes all passenger train doors
6. Wait for further instruction from LC/DC

7.21.3 Evacuation from Train to the Ground

When a train fails in between stations due to emergencies and OTD receive instruction from LC/DC to evacuate passengers to the track, OTD has to:

1. Apply Parking Brake and keep passenger train doors closed
2. Receive information from LC/DC that power is de-energized and track has been possessed
3. Inform passengers of the evacuation
4. Receive information from LC/DC to start the evacuation
5. Open one of the passenger train doors at clearance gauge side
6. Make announcement to passengers advising them that they have to leave the train through specified door
7. Assist passengers and advise them direction to the evacuation assembly point
8. Check train to ensure that all passengers have left the train
9. Close passenger train doors
10. Report to LC/DC and wait for further instruction

8 Emergency Operation

Emergency Operation considers potentially life-threatening situations in which passengers or staff has to be evacuated.

8.1 Incident Management

In Malaysia the use of the Incident Command System (ICS) is compulsory for railways to cope with emergency situations.

Three tiers differentiate emergency situations or incident levels.

Tier 1 (level 1) incidents are those incidents that can be dealt with the internal emergency response teams.

Tier 2 (level 2) incidents are those incidents that require the assistance by external emergency response teams such as Bomba, Police and Medical Services.

Tier 3 (level 3) incidents are catastrophes (disaster) beyond the capacity of internal and external response teams. In such cases the National Security Council would call up the SMART.

The ICS provides for a unified command structure. Incident Commander heads the unified command at the Incident Command Post. At ERL the Operations Controller Supervisor (OCS) assumes role of the Incident Commander in an emergency. The highest-ranking Bomba Officer, Police Officer and Medical Officer join him in the command.

At the incident site, Operation Chief is in charge of rescue operations. In ERL / CRS System, Operation Chief consists of the Operations Management personnel who is on call duty. Operation Chief is also responsible for the safety of rescue operations. Operation Chief co-operates with the Bomba Officer, Police Officer and Medical Officer. Operation Chief sets up Incident Base, which serves as his command post.

8.2 Role of Acting Operation Chief

During an emergency, usually it takes time for the Operation Chief on call duty to arrive at incident site. Therefore, OCS can nominate OTD on site as the Acting Operation Chief until Operation Chief arrives to the incident site. Refer to Incident Management Procedure (G00.OMO.M15880.NG.0001. *) for details.

In case of an OTD is nominated to be Acting Operation Chief, OTD has to:

1. Supervise incident area and keep LC/DC updated of the situation
2. Responsible for the safety of passengers and equipment
3. Rendering assistance and first aid to casualties
4. Takes measures to prevent further danger on site, such as:
    a. Request LC/DC to stop trains movement on the adjacent track
    b. Take care of evidence to ensure it is not modified or taken away
    c. Collect information from participants on the events

In the event where emergency response teams are required to access to the track, Acting Operation Chief must ensure access is safe. OTD has to:

1. Request LC/DC to block both tracks in between stations or necessary tracks at stations
2. Supervise incident area and keep LC/DC updated of the situation

8.3 Relief by the Operation Chief

When the Operation Chief on duty arrives at incident site, Acting Operation Chief briefs the Operation Chief e.g. safety precautions taken & evidence collected and hand over responsibility to the Operation Chief.

8.4 Accident Involving Injuries or Fatality

If an OTD is involved in an accident with a person(s) whereby injuries or fatality occurs, OTD has to:

8.4.1 Injured Person on the Track

1. Report to LC/DC
2. Stop the train immediately and visually check the status of injured person
3. Initiate medical assistance to the injured person and request for assistance immediately through LC/DC
4. Standby for further instructions from LC/DC about all relevant information prior to arrival of assistances
5. Request advise from LC/DC to secure incident place from further hazard

8.4.2 Dead Body on the Track

1. Report to LC/DC
2. Request for assistance immediately through LC/DC
3. Wait for further instruction from LC/DC

8.5 Fire

Fire causes a hazardous situation, which may lead to an emergency. However, not all fire has to be seen as an emergency especially if OTD is able to extinguish the fire. Trains are equipped with fire extinguishers both in the driving cab and in the passenger saloons.

WARNING

In case a train has to run through a burning station with smoke evolution OTD has to switch off the air conditioning.

8.5.1 Fire Escape Rope for OTD

An Emergency Rope Ladder is located in the cabinet in the rear left-hand side of the cab Ekspres train [Baggage Compartment]. The ladder enables an escape to be made from the cab when it is impossible to exit via the driver's cab door due to a fire or other emergency. In this case OTD has to:

1. Open the cabinet
2. Remove the ladder
3. Open driver's cab window and hook the ladder onto window frame
4. Leave the train safely using emergency rope ladder
5. Report to LC/DC
6. Receive instruction from LC/DC for evacuation of passenger's

8.5.2 Fire on Board a Train

In case of a train is on fire, OTD has to:

8.5.2.1 Controlled Situation

1. Make an Emergency Call to LC/DC
2. Stop the train immediately and visually check if the fire can be extinguished
3. Make announcement to passengers advising them shift to the safe passenger's saloon
4. When the fire is extinguished, inform LC/DC to advise OSS to provide support on arrival at the next station
5. Receive further instruction from LC/DC

8.5.2.2 Uncontrolled Situation

1. Make an Emergency Call to LC/DC and stop the train
2. Make announcement to passengers advising them shift to the safe passenger's saloon
3. Report to LC/DC and request to perform evacuation procedures if attempting to extinguish the fire is unsuccessful
4. Receive further instruction from LC/DC

When a train is standing at the platform and the fire cannot be extinguished immediately, OTD has to request permission from LC/DC to move train to a location out of the station to avoid danger to the station.

8.5.3 Fire in the Depot

In case of an OTD observes a fire in the Stabling Area, the OTD has to report immediately to LC/DC. The OTD shall extinguish the fire if the situation allows.

If a fire is detected on board a moving train in the Depot, OTD should stop the train at an open area where the fire can be extinguished. The OTD reports to LC/DC who will give instruction where the train will be stabled.

IF POSSIBLE

- Don't block points
- Don't stop near the storage shed for dangerous goods
- Don't endanger other trains
- Don't stop near the washing plant

- Don't enter the roofed area
- Don't enter the workshop

8.6 Derailment

In case of an OTD aware the train has derailed, the OTD has to:

1. Immediately gives an Emergency Call to LC/DC
2. Warns other trains by use the train headlights (continuous flashing of high beam)
3. Request LC/DC to arrange for protection of the Line and advise LC/DC:
    a. The location of the derailment especially if the train has derailed towards adjacent track
    b. The direction of derailment
    c. OCL pole damages i.e. slanting to adjacent track or etc
    d. Numbers of axles are derailed
    e. Whether there are any injured passengers and
    f. Whether there is damage to the train and/or infrastructure
4. Calm down passengers to avoid panic
5. Help passengers, if possible administer first aid
6. Wait for further instruction from LC/DC

REMINDER
Before OTD enters the structural gauge, they must ensure that protection has been provided for their personal safety.

8.7 Collision

In case of a collision, OTD has to:

1. Immediately give an Emergency Call to LC/DC
2. Advise LC/DC:
    a. The location of the collision
    b. The visible extent of the damage i.e. OCL, track, train, etc
    c. Whether there are injured passengers
3. Calm down passengers to avoid panic
4. Help passengers, if possible
5. Check infrastructure and bogie, etc
6. Report to LC/DC and wait for further instructions

8.8 Uncontrolled Evacuation of Passengers

Emergency Evacuation applies where the safety of passengers is at immediate risk and an immediate evacuation is necessary. To avoid an emergency evacuation from a train to ground, which exposes passengers to the great risk, OTD must proceed whenever possible to the station ahead where passengers can be evacuated directly to a platform.

8.8.1 From Train to the Ground

In case an emergency evacuation from a train to ground, OTD has to:

1. Immediately give an Emergency Call to LC/DC

2. Apply Parking Brake
3. Calm down passengers to avoid panic
4. Warn other passing trains by use the train headlights (continuous flashing of high beam)
5. Warn passengers to remain in the train until arrangements have been made for their protection
6. Receive confirmation from LC/DC that the adjacent track has been blocked
7. Perform a headcount of the passengers
8. Open both sides of the passenger doors when received confirmation from LC/DC that trains on the adjacent track have been brought to a standstill
9. Ensure that the train headlights are on high beam to act as a warning and illumination, if required
10. Leave the cab to help passengers and nominate other passengers to assist during the evacuation
11. Direct passengers towards the nearest station or nearest access
12. Give all necessary information to LC/DC
13. Wait for further instruction from LC/DC

9 Shunting Loco

9.1 General

Operating the Shunting Loco with onboard ATP system will caused a detrimental effect to ELT's Vehicle movement and maintenance work.

9.2 Shunting Loco Movements

Shunting Loco movements shall be executed according to signals. The Driver receives instruction from LC/DC to move a vehicle to the defined destination and has the sole responsibility for ensuring safety of the movement.

The maximum allowable speed on revenue line for Shunting Loco is 70km/h. Due to this design speed; it is possible to run the shunting loco in between train runs under certain conditions i.e. during de-graded or emergency.

As the Shunting Loco operates axle counters, the vital signalling system is able to prevent following trains from entering track sections, which are occupied, by the Shunting Loco.

In Depot, Driver has the full responsibility to ensure that the maximum allowable speed is 25km/h and the Shunting Loco is operated in a safe manner.

9.3 Shunting Loco Preparation

9.3.1 Starting-up of Shunting Loco

Before moving of Shunting Loco, the Driver has to:

1. Check external of the shunting loco for any irregularities
2. Enter the cab and switch "ON" Start-up Key Switch:
   a. Depress button to switch "ON" the battery – wait until green light illuminate
   b. Depress 'Engine Diesel – Start' button to start-up the engine. Wait at least 10 second before switching "ON" the Main Switch
   c. Switch "ON" the Main Switch. Wait until blinking light (green) and Fault Accept button (red) illumination turn steadily after Main Pipe indicate 9.9 bar (Press button F13 to check the pressure)
3. Checks all operating functions in the cab and advises LC/DC of any irregularity
4. Should the 'Fault' (red light) still blink, press the Fault button to acknowledge:
   a. Press F13 follow by F9 soft key buttons to overview the faults message
   b. Press 'Enter' soft key button (green colour) at DDU and Fault Accept button (red) to acknowledge the fault message

REMINDER

If fault cannot be acknowledged after third time, informed LC/DC immediately.

5. "Escape" soft key button to exit to Press main menu (Diesel engine)
6. Check fuel level (tank volume)
7. Select vehicle mode by pressing 'F13' soft key button – Travel Status
8. Depress 'Enter' soft key button
9. Key in User name: [User] and Password: [100] to change the travel mode

10. Depress 'Enter' soft key button **twice** to select travel mode:
    I. Shunting Mode (Depot/Single Loco)
    II. Shunting Mode (Depot/One Train)
    III. Shunting Mode (Depot/Two Trains)
    IV. Single Loco On Fast Track - (On Main Line)
    V. Loco With Cemafer Trailer - (On Main Line)
    VI. Loco With One Train Outside Depot - (On Main Line)
    VII. Loco With Two Trains Outside Depot - (On Main Line)
11. Take off the Main key, to ensure that Start-up Key switch is remaining "ON"
12. Activate one of the operational panels: - Switch "ON" the main key switch
13. Switch direction mode to '**F**orward' or '**B**ackward'
14. Inform LC/DC that Shunting Loco is ready to proceed
15. Press Driving/Braking Lever until both Yellow & Red illuminations appeared shortly to release pneumatic brake
16. Move Driving/Braking Lever to move the Shunting Loco forward

WARNING
The Driver must wait a short time between shutting down and starting up a Shunting Loco in order to prevent equipment damage.

WARNING
In case of brake problems at electrical side, the pneumatic brake takes over the braking system completely.

To observe longer braking distance.

9.3.2 Brake Test

The Driver has to make a brake test before bringing Shunting Loco into service, before coupling and uncoupling and before starting the Shunting Loco after it has been stabled for a long time.

After the Driver has received Approval To Proceed via signal or verbal from LC/DC, he has to:

- Push Dead-man controller to release pneumatic brake (both Yellow & Red illuminations appeared shortly)
- Proceed about 1 meter by moving the Driving/Braking Lever to the driving position
- Test the brakes by moving Driving/Braking Lever to the brake position
- Check that Shunting Loco has come to a standstill (air release sound can be heard during this process)

Same check on the other operational panel.

REMINDER
In case of a Driver experiencing Shunting Loco having difficulties to stop before i.e. Danger Signal, vehicle or train or hit object even after applying 100% braking, he has to initiate/activate the Emergency Push Button (Mushroom Button) to prevent overshoot.

9.3.3 Shutting Down of Shunting Loco

When Driver needs to leave the Shunting Loco unattended, he is responsible for ensuring that it is safely secured. The Driver has to:

1. Stop at the designated stopping point or stabling area
2. Ensure that the Shunting Loco is totally standstill
3. Move Driving/Braking Lever to Neutral position
4. Switch direction mode selector to **'O'** (Neutral) position
5. Switch Off the main key switch & take off the Master Key (from the driver's panel)
6. Ensure that air conditioning is switched off
7. To set back the traveling mode shunting mode (depot/single loco), if the Shunting Loco is stable in depot:
   a. Depress the Main Switch button
   b. Depress 'Diesel Engine – Off" to shut down the engine
   c. Ensure that the engine is totally stop and no lights are illuminated
   d. Depress 'Battery Off' button to switch off the battery
8. Switch off the Start-up key switch (remove keys from control panel)
9. Ensure that all windows are closed and locked before leaving the Shunting Loco

WARNING
Driver must ensure that the fuel is at the minimum of half tank before leaving the Shunting Loco.

9.4 Instruction for Shunting Loco Usage Outside of the Depot

In case of being outside the depot with un-braked cars being towed by the Shunting Loco, the following sequences and precautions have been followed by the line:

a. The Shunting Loco must under no circumstances been shut down, until the Driver secured the complete train (install brake shoes) in both directions
b. If the emergency stops is initiated, it has to be reset as soon as the Shunting Loco comes to a complete stop, and the Shunting Loco has to be started up immediately after that
   - If it is not possible to start up the Shunting Loco directly after the stop, the actions explained under item a) have to be executed immediately. After that, it is safe for the Driver trying to start up the Shunting Loco again
   - It is under no circumstances allowed to remove the brake shoes before the Shunting Loco is completely started up
c. The is responsible for that if he leaves the Shunting Loco outside the depot, there are the warning signs stating that it is not allowed and dangerous to extract the brake shoes

WARNING
During towing actions with the Shunting Loco, the safety instructions must be followed strictly!

9.5 Coupling Procedure

9.5.1 Coupling Shunting Loco with trains in Depot /Main Line

Coupling of trains by using Shunting Loco will be required in the Depot or on the Main Line. Before coupling the Driver has to:

1. Receive instructions from LC/DC to couple
2. Upon receiving Approval to Proceed, proceed and stop approximately 3 meters in front of the train
3. Communicate with driver of stalled train to ensure that train has been secured.
4. Couple with stalled train carefully (mechanical only)
5. Advise driver of stalled train that the trains have been successfully coupled (after performing coupler test)
6. Communicate with the driver of stalled train to ensure that main isolation valve for the train and coupler isolation valve for the coupler unit have been isolated
7. Change configuration at the Shunting Loco DDU
8. Initiate a brake test
9. Request Approval to Proceed from LC/DC

9.5.2 Uncoupling of trains with Shunting Loco in Depot/Main Line.

Before uncoupling, the Driver has to:

1. Receive instruction from LC/DC
2. Communicate with driver of stalled train that train is ready to be uncoupled and request driver of stalled train to install brake shoes
3. Once received confirmation from driver of stalled train that brake shoes have been installed, uncouple by pressing the decouple button
4. Reverse Shunting Loco approximately 1 meter to the back and inform driver of stalled train that Shunting Loco already uncouple with the train
5. Change configuration at the Shunting Loco DDU
6. Inform LC/DC that Shunting Loco already uncouple with the train and request for further instructions
7. Make a brake test before proceeding for another movement

NOTE
If the Shunting Loco initiates Emergency Brake (EB), check fault message at DDU and press Fault Accept button to release the EB.

9.5.3 Coupling Shunting Loco with Maintenance Vehicles at Station

In case of Shunting Loco is required to couple with Maintenance Vehicles at the station area, the Driver has to:

1. Stop the Shunting Loco approximately 1 meter in front of Stop Signal Board, if any
2. Wait for OSS to remove the Stop Signal Board
3. Proceed and stop approximately 1 meter in front of the Maintenance vehicle
4. Wait for OSS to remove brake shoes in between the Shunting Loco and Maintenance Vehicle
5. Proceed and couple with Maintenance Vehicle
6. Receive confirmation from Track Vehicle Driver (OCL Personnel in the case of Telescopic Crane or Cable Drum Wagon) that coupling is successful
7. Reverse to ensure coupler is intact and inform OSS to remove rear brake shoes
8. Inform LC/DC that coupling is successful and wait for further instructions

9.6 Pushing and Pulling of Trains Using the Track Vehicle

Track Vehicle refers to Shunting Locomotive and Unimog that moves on the track.

NOTE

In the event of our Shunting Locomotive and/or Unimog is not available, the SPYTL Shunting Locomotive will be used for shunting movement in depot and also rescue of trains in mainline.

If a train is required to be moved in the depot area using the Track Vehicle, the Driver and RST Personnel has to:

9.6.1 In case of Pulling (In Depot)

1. RST personnel to accompany the Track Vehicle Driver
2. Track Vehicle Driver request to LC/DC for approval of movement
3. Track Vehicle Driver to observe signal indication, turnout and track clearance
4. Track Vehicle Driver to stop at the designated stopping point
5. Track Vehicle Driver informs LC/DC and wait for further instruction

9.6.2 In case of Pushing (In Depot)

1. RST personnel will standby at the leading cab of the train that to be pushed to direct the movement
2. Track Vehicle Driver request to LC/DC approval for movement
3. Track Vehicle Driver must communicate in accordance to Communication for Pushing of Trains [Procedure for Communications and Signal Book: G00.OMO.M15114.NA.1002.*] with the RST personnel
4. RST personnel at the leading cab to observe signal indication, turnout and track clearance and to advise Track Vehicle Driver accordingly
5. RST personnel advise Track Vehicle Driver to stop at the designated stopping point
6. Track Vehicle Driver informs LC/DC and wait for further instruction

If SPYTL Shunting Locomotive is required to rescue a train in the mainline, the SPYTL Driver and Shunter has to:

9.6.3 In case of Pulling (In Mainline)

1. Shunter to accompany the Driver in the Shunting Locomotive
2. Shunter request to LC/DC for approval of movement
3. Once approved; advise Driver the approval for movement
4. Shunter to observe signal indication, turnout and track clearance and to advise Driver accordingly
5. Shunter to advise Driver to stop at the designated stopping point
6. Shunter informs LC/DC and wait for further instruction

9.6.4 In case of Pushing (In Mainline)

1. Stalled train Driver will standby at the leading cab of train that to be pushed to direct the movement
2. Shunter request to LC/DC approval for movement
3. Shunter must communicate in accordance to Communication for Pushing of Trains [Procedure for Communications and Signal Book: G00.OMO.M15114.NA.1002.*] with the stalled train Driver
4. Stalled train Driver at the leading cab to observe signal indication, turnout and track clearance and to advise Shunter/Driver accordingly
5. Stalled train Driver advise Shunter/Driver to stop at the designated stopping point

6. Shunter informs LC/DC and wait for further instruction

NOTE

RST personnel/Shunter accompanying Track Vehicle Driver must be equipped with a hand portable and must maintain constant communication with the Track Vehicle Driver.

RST personnel/Stalled train Driver at the leading cab must immediately advise Track Vehicle Driver/Shunter to stop if there is any potential danger during the movements.

9.7 Rescuing of Shunting Loco

In case of the Shunting Loco is disabled or unable to run on it's own power and has to be moved by rescue train or vehicle, the Driver has to:

1. Inform LC/DC about the situation
2. Receive information from LC/DC that another train/vehicle will rescue

After the Shunting Loco is coupled with another train or vehicle,

1. Inform driver of rescue train to reverse/backward to test whether the coupler is intact
2. Receive information from driver of rescue train to release the air from the main compressor by isolating the "Isolation Lever" and to pull the "Parking Brake Cable" to release the parking brake (*Refer to annex 10.2: Isolation Lever & PB Cable*)

When the rescue train and Shunting Loco has reached the predetermined location, the Driver has to:

1. Inform driver of the rescue train that the wooden brake shoes have been installed and Shunting Loco is ready to be uncoupled

After the train and Shunting Loco has been uncoupled:

1. Inform driver of rescue train that the uncoupling is successful
2. Wait for further orders from LC/DC

9.8 Shunting Loco Moving OCL Vehicle

In order to ensure the Shunting Loco is standstill during actual work of the OCL team, the Driver has to:

1. Stop the vehicle according to instructions of the OCL Supervisor
2. After the vehicles have come to a stop, put driving/braking lever in neutral position and not touch the deadman on top of the driving/braking lever again
3. Check DDU for status of the brake
4. After "loco brake closed" is indicated, confirm this to the OCL Supervisor

DANGER

In case vehicles are moving unintentionally, hit the mushroom button "Emergency Stop".

10 Annexes

10.1 Washing Of Trains

10.1.1 Karcher Train Wash Entrance & Positioning Signal

Pic 1 - Entrance Signal
Flashing WHITE

Pic 2 – Positioning Signal
Flashing RED & WHITE

Pic 3 – Positioning Signal
Static RED & GREEN

Pic 4 – Positioning Signal
Static WHITE

10.1.2 Britannia Train Wash Entrance Signal

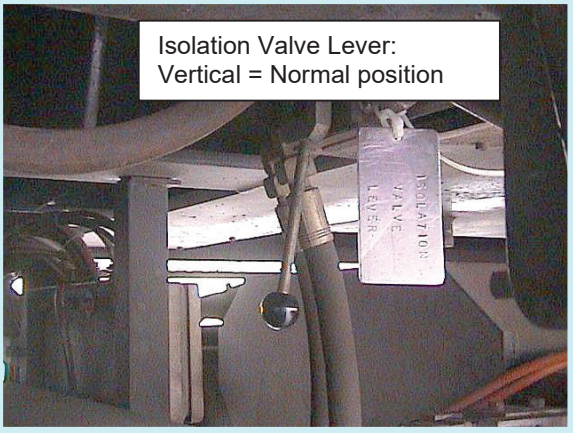
Pic 1 – 1st Brush STOP marker

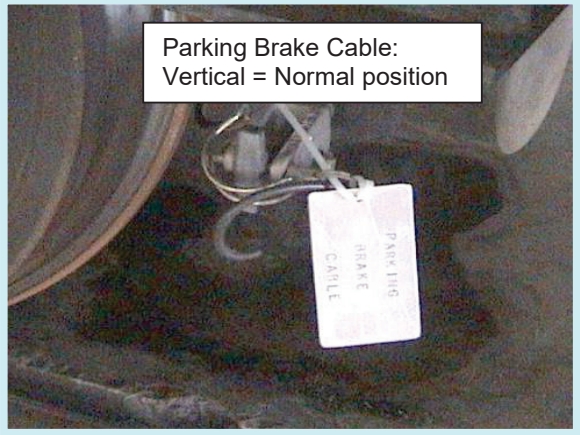
Pic 2 – Entrance Signal

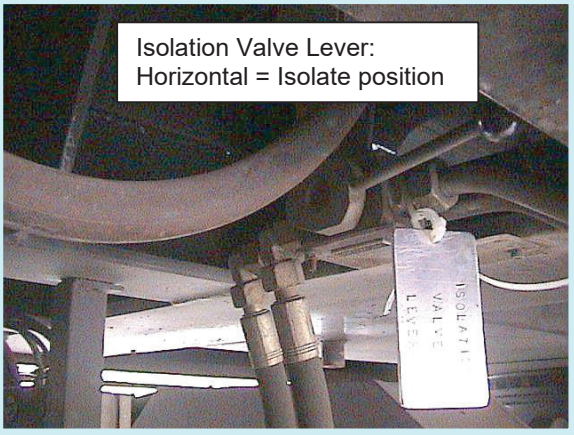
Pic 3 – 2nd Brush STOP Marker

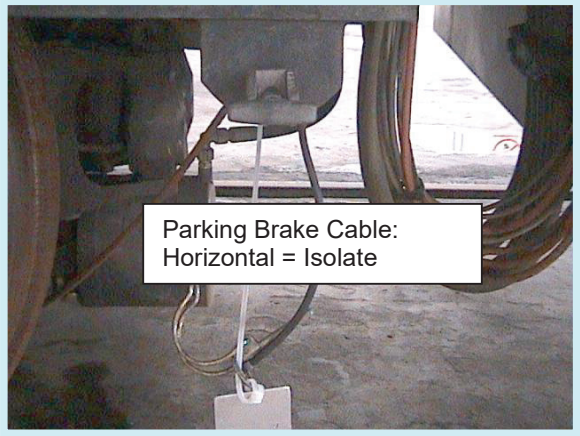
10.2 Speed Marker Entering/Leaving Track 11 and Track 12

10.3 Rescuing of Shunting Locomotive: Isolation Valve Lever & Parking Brake



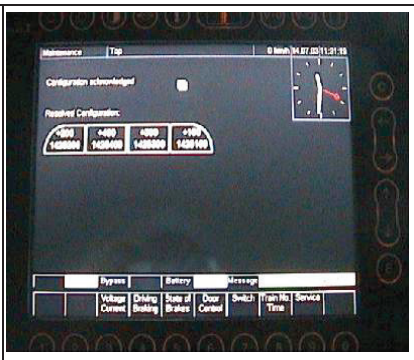
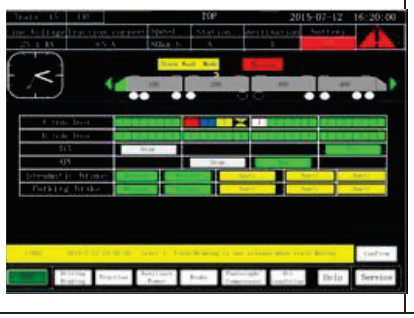




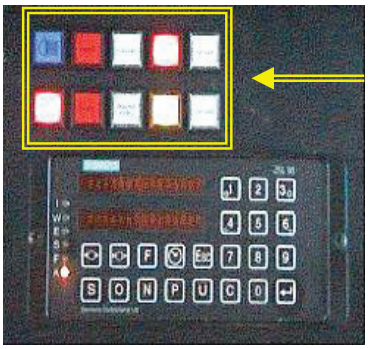


10.4 Fault Immediate Action and Guidelines

Driver's Display Unit (DDU)

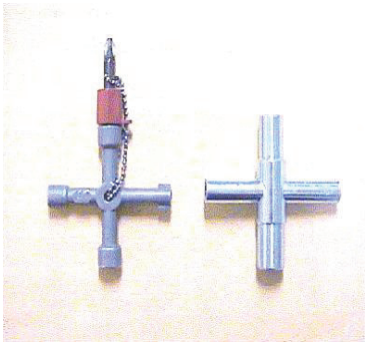
1a.		**For ET-01** • Provides an interface between the driver and the train control systems • Allows driver to monitor, overview and control the principal driving and braking parameters and subsidiaries
1b		**For ET-02** • Provides an interface between the driver and the train control systems • Divided into two Level: ○ Level 1 for driver guide and train status display ○ Level 2 interface is used for test, train set and maintenance

Fault Indicators

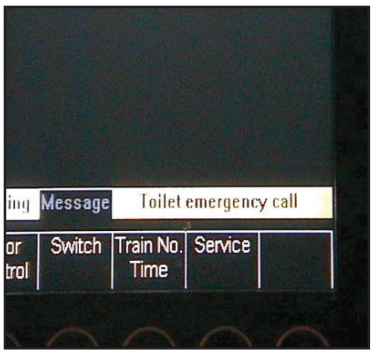
1a.		**For ET-01** Any faults will be illuminated on the indicators • Fault A • Fault B • Fault C • Dead man • Passenger Emergency Brake • Door Open

1b.		**For ET-02** Any faults will be illuminated on the indicators • Fault A • Fault B • Fault C • Dead Man Control • PER • PEBU • Coupling • Door Open

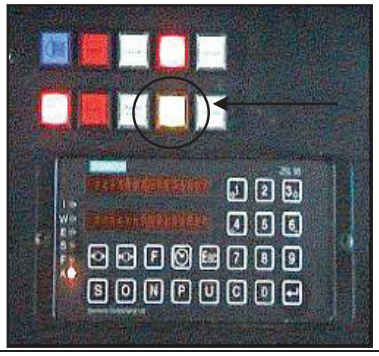
Equipment's Required

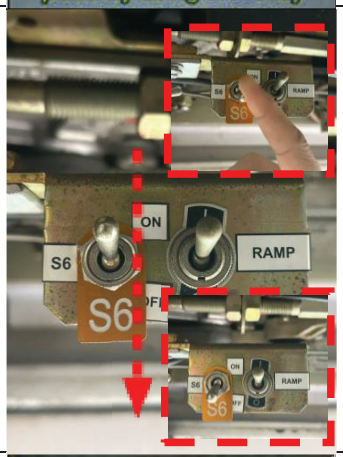
1a.		**ET-01** Train Keys: • A – Body side key switch – switching on/off battery & to open first door • B – Driver's cab key • C – Master switch key: - activate the main switch
1b.		**ET-02** Train Keys • A - Driver's Cab key • B - Body side key switch - switching On/Off battery & open first door • C - Master Switch key - activate the main switch • D - B05 key - To open cabinet for brake isolation valve
2.		Train Cross Key: • To open overhead door panel & door side panel • Isolation of doors, toilet door • Normalizing of PEBU handle

S.O.S Button

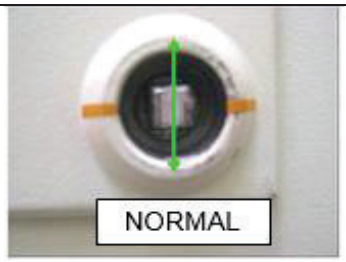
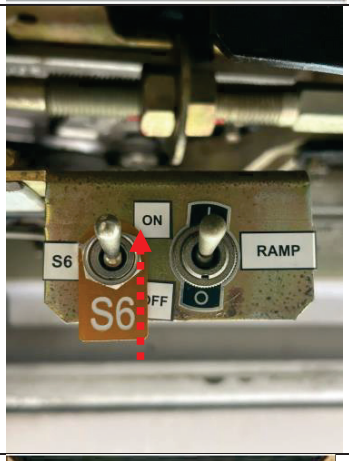
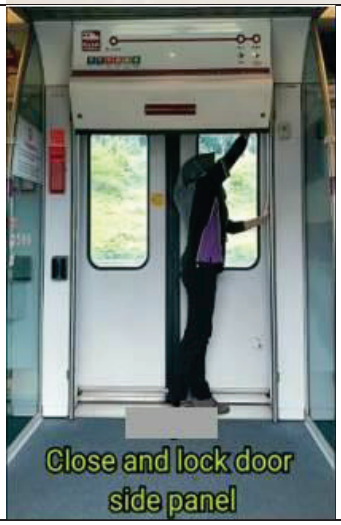
1.		• Located inside the W/C (toilet) in all express train • No light indications if inactivate
2.		• By pressing the soft-key button, light will illuminate to indicate the activation
3.		• It will also indicate on DDU: on the right bottom side, fault overview

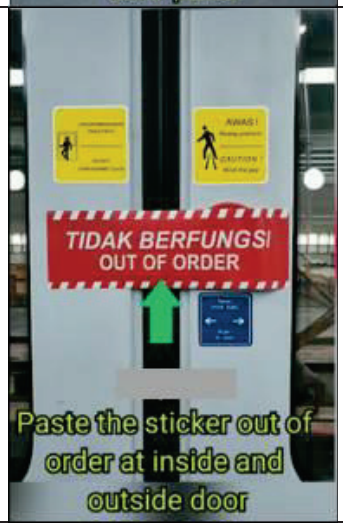
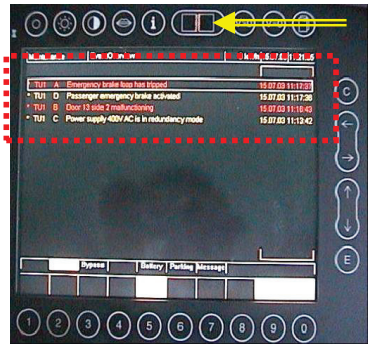
Door Isolation & Rectification **ET-01**

1.		• Door open indicator will blink • DDU – Fault Message: Door Open • Visually check from driver's cab window
2.		• Open all doors on platform side • Proceed to the failed door
		• Visually check door closing warning lamp flashing

		• Open overhead panel where the S6 Toggle switch is located
		• Select S6 Toggle switch to “OFF” position
		• Open door panel right side (inside train)

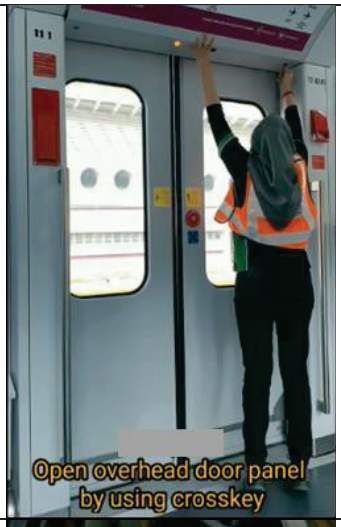
			• Manually retract the ramp via ramp motor crank handle (clockwise) back to close position (if ramp is in open position)
			• Close the door manually (if door is opened)
			• Push the door leaves using your palm to ensure that door is properly lock

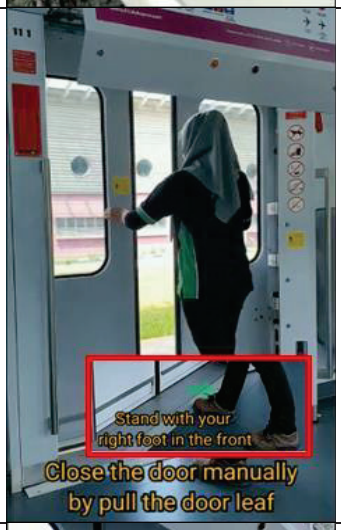
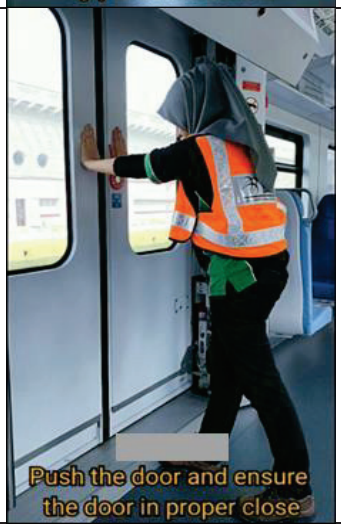
	 	• Isolate the door by turning isolating locking mechanism 90° to the right (clockwise)
		• Normalize S6 Toggle switch to “ON” position
		• Close side door panel

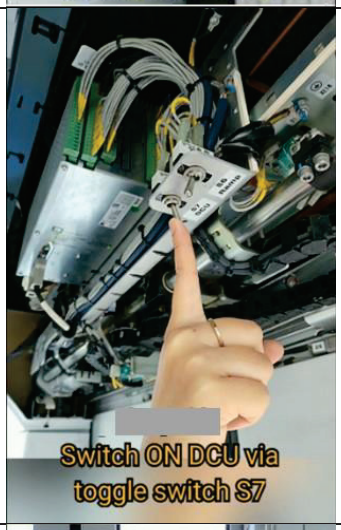
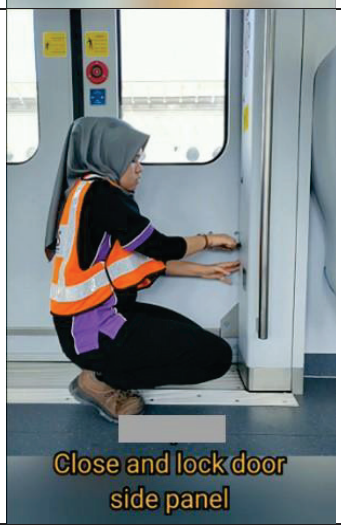
		• Close overhead panel
		• Paste “Out of Order” sticker on the isolated door
12.		• Check and confirm “one or several door is locked” message appears in DDU event overview

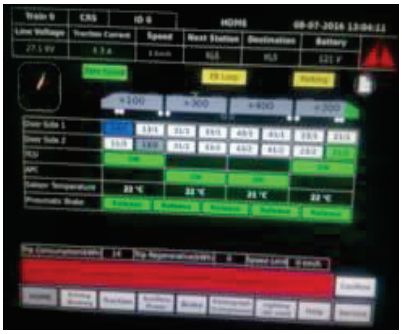
Door Isolation & Rectification **ET-02**

1.		• Door open indicator will illuminate • DDU – Fault Message • Visually check from driver's cab window
3.		• DDU will indicate location of failure door e.g.: door number & door side • Refer door status
		• Visually check door closing warning lamp flashing

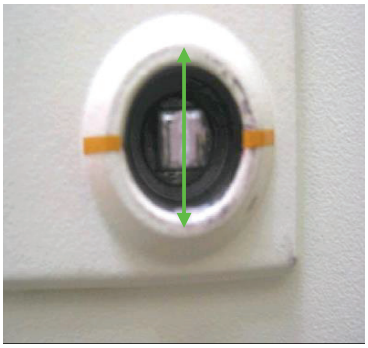
			• Open overhead panel where the DCU switch is located (DCU located at all doors)
			• Select DCU toggle switch to “OFF” position
			• Open door panel right side (inside train)

			• Manually retract the ramp via ramp motor crank handle (clockwise) back to close position (if ramp is in open position)
			• Close the door manually (if door is opened)
			• Push the door leaves using your palm to ensure that door is properly lock

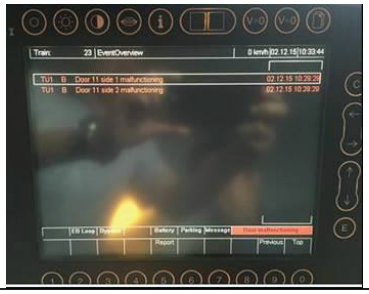
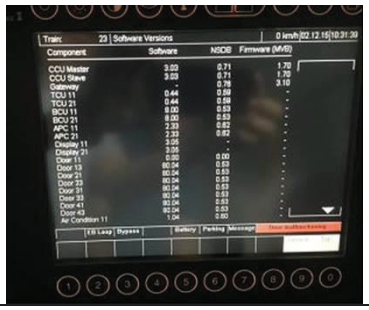
			• Isolate the door by turning isolating locking mechanism 90° to the right (clockwise) • Wait for 8-10 second and the isolation lamp will illuminate (red - static) at the overhead door panel
			• Normalize DCU toggle switch to “ON” position
			• Close side door panel

		• Close overhead panel
		• Paste “Out of Order” sticker on the isolated door
10.		• Check and confirm Door Isolated with yellow background appear at DDU home page

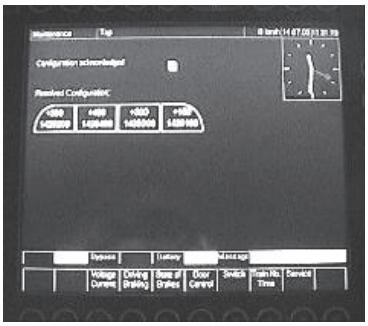
Proper and Correct Positioning of Door Isolation

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

Guideline for confirming DCU malfunction on **ET-01**

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**	

Doors Open While In Motion

1.		• Door can be opened while stop or in motion by pulling the Passenger Emergency door Release (PER) latch beside each door • The PER latch is always sealed
2.		• Break the seal sticker and pull the PER latch. • Door Open indicator will blink in the driver's cab • Door overhead light will illuminate
3.		• Door would open approximately 10cm • Resulting in lost of traction
4.		• DDU - Fault message: Door XX/X Open

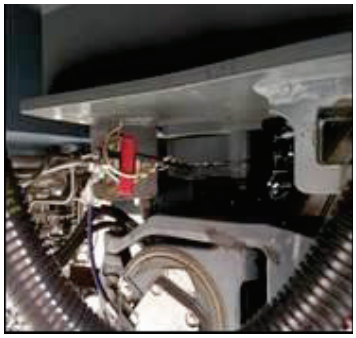
Brake System Isolation

E.P. Control Panel (Brake Console) for **ET-01**

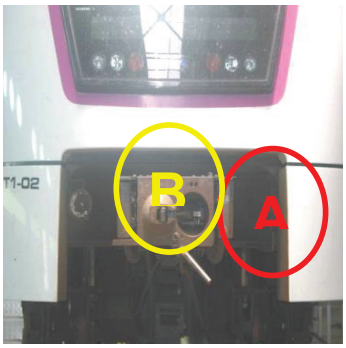
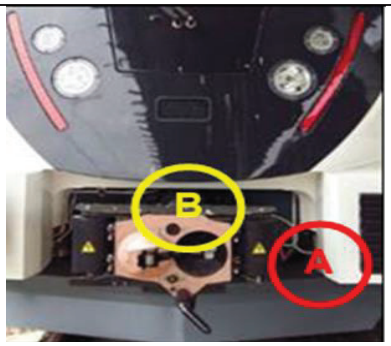
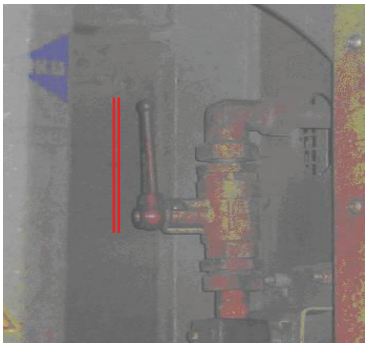
1.		• Located underneath the train set, beside bogie 1 and 2 on the right hand side of Car 100 (heading to KLIA~~2~~) and beside bogie 4 and 5 on the right hand side of Car 200 (heading to KLS) • Normal working condition – horizontal position. • Left: Isolate B.C. (Brake Cylinder) valve • Middle: P.B. (Parking Brake) isolation valve • Right: B.S.R. (Brake Supply Reservoir) isolation valve
2.		• Isolated condition – vertical position. • To isolate all three valves before mechanical coupling • This will release all the air from the main reservoir
3.		• Parking Brake Release Ring – to release all parking brakes, which applied • 6 nos. of Parking Brake Release Rings, located at axle no. 2, 4 & 8 on the left hand side and axle no. 3, 7 & 9 on the right hand side (both from Car 100 direction to KLIA)

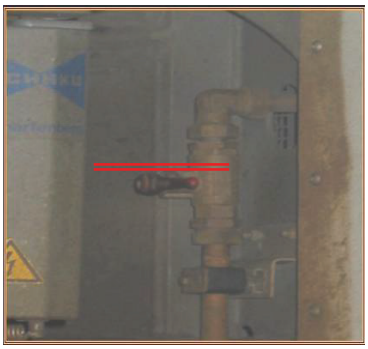
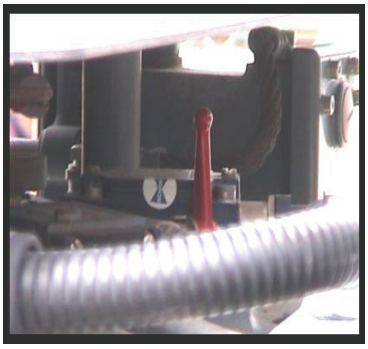
B05 Brake isolation cock for **ET-02**

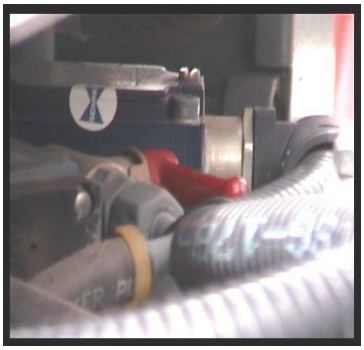
		• Normal working condition – ON position • 5 nos. of B05 Brake Isolation Cock, located on-board passenger saloon near door 11/2, 21/1, 13/1, 43/2 & 23/2.

		• Isolated condition – OFF position • To isolate all 5 nos. of B05 Brake Isolation Cock before mechanical coupling • This will release all the air from the main compressor
		• Parking Brake Release Cable - to release all parking brakes, which applied • 5 nos. of Parking Brake Release Cable, located at side 2 axle 3 & axle 9 and side 1 axle2, axle 6 & axle 8

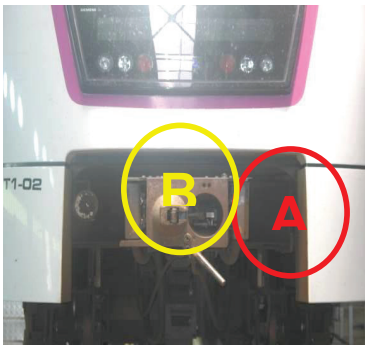
Isolation Valves

1a.		**For ET-01** • Two isolation valves to be isolated before any mechanical coupling is executed • **A – Main Isolation Valve**: on the right hand side at both coupler units to isolate airflow from main reservoir • **B – Coupler Isolation Valve**: inside the coupler unit to isolate the Electrical Contact Box at both coupler units
1b.		**For ET-02** • Two isolation valves to be isolated before any mechanical coupling is executed • **A – Main Isolation Valve**: on the right hand side at both coupler units to isolate airflow from main reservoir • **B – Coupler Isolation Valve**: inside the coupler unit to isolate the Electrical Contact Box at both coupler units
2a.		**For ET-01** • **A - Main Isolation Valve** • Normal working condition – vertical position • Must be normalizing at all time
2b.		**For ET-02** • **A -Main Isolation Valve [W01]** • Normal working condition – ON position • Must be normalizing at all time

3a.		**For ET-01** • **A - Main Isolation Valve** • Isolated condition – horizontal position • Must be isolated before mechanical coupling
3b.		**For ET-02** • **A - Main Isolation Valve [W01]** • Isolated condition – OFF position • Must be isolated before carryout mechanical coupling
4a.		**For ET-01** • **B - Coupler Isolation Valve** • Isolated condition – vertical position • Isolated at all time to isolate electrical contact box • To inspect before mechanical coupling
4b.		**For ET-02** • **B – Coupler Isolation Valve** • Isolated condition- OFF position • Isolated all at time to isolate electrical contact box • To inspect before mechanical coupling

5a.		**For ET-01** • **B - Coupler Isolation Valve** • Normal working condition – vertical position • To be put horizontal position before electrical coupling
5b.		**For ET-02** • **B – Coupler Isolation Valve** • Normal working condition- ON position • Electrical contact box will be couple together automatically

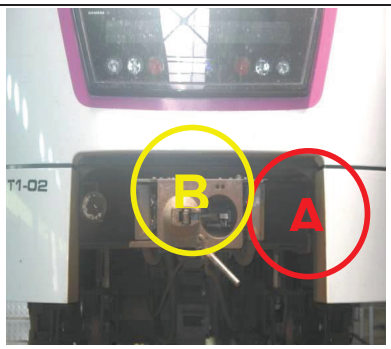
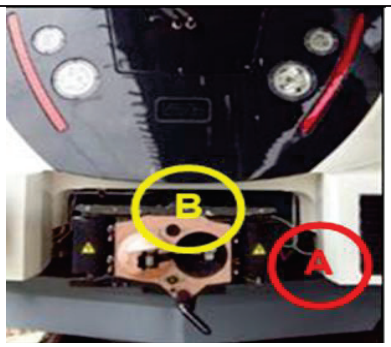
Coupling of Train

1.		• Check the Coupler Isolation Valve – Isolated Position • Isolate the Main Isolation Valve
2.		• Rescue Train to stop exactly when its coupler guiding (cow horns) is parallel to the Failed Train cow horns **For ET-01** Driver of Rescue Train has to ensure train traction percentage as detailed below: - 1. Level & down gradient track: 5% traction 2. Up gradient track: 10% traction **For ET-02** Driver of Rescue Train to select wash/coup mode (max allowable 3km/h) 1. Level & down gradient: cow horn are parallel (minimum 0.6 km/h) 2. Up gradient track: cow horn are parallel (minimum 1 km/h)
3.		• Couple the trains • Perform coupler test to ensure both coupler are engage
4a.		**For ET-01** • Isolate all brakes on the E.P. Control Panel a. Isolate B.C. b. Isolate P.B. c. Isolate B.S.R.

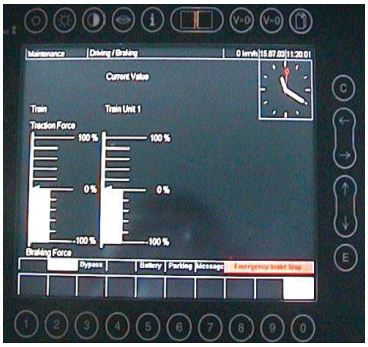
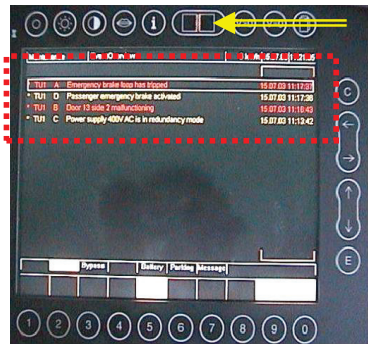
4b.		**For ET-02** • Isolate all B05 Brake Isolation Cock inside saloon at each bogies
5a.		**For ET-01** • Pull the Parking Brake Release Rings to release/isolate all parking brakes
5b.		**For ET-02** • Open the pin • Pull the Parking Brake Release Cables to release/isolate all parking brakes

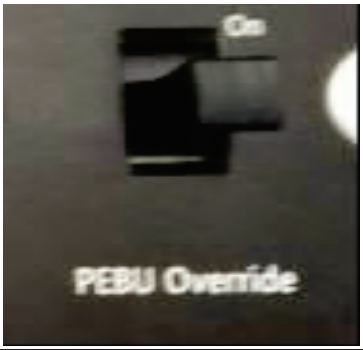
Decoupling of Train

1a.		**For ET-01** • Decouple the stalled train by using the Main key Switch by turn it 90° to left direction – **De-couple** • Observe the coupler for both trains
1b.		**For ET-02** • Decouple the stalled train by using Uncoupling Mode button • Observe the coupler for both trains • After decouple, check coupling indicator at driver's desk
2a.		**For ET-01** • If not possible, use the manual decouple device to uncouple the trains • Turn the device clockwise until both coupler units are detached
2b.		**For ET-02** • If not possible, use the manual decouple handle to uncouple the trains • Pull the handle until both coupler units are detached • Stand in a safe distance at least 1 meter

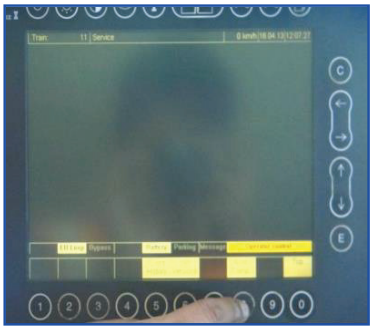
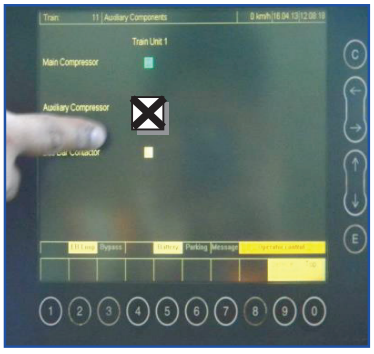
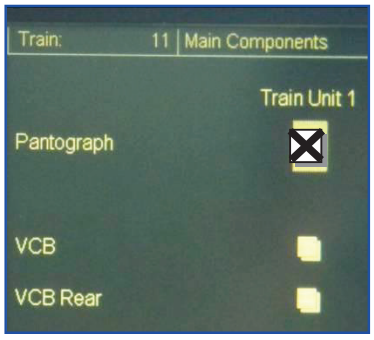
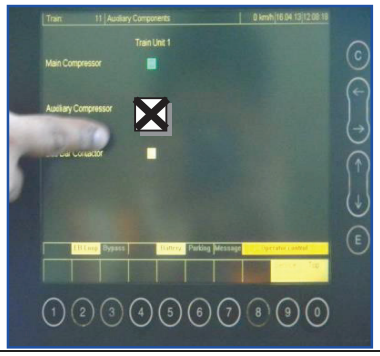
3a.		**For ET-01** • Normalize the Main Isolation Valve (A) • Inspect the Coupler Isolation Valve (B) • Perform brake test after decouple
3b.		**For ET-02** • Normalize the Main Isolation Valve (A) • Inspect the Coupler Isolation valve (B) • Perform brake test after decouple

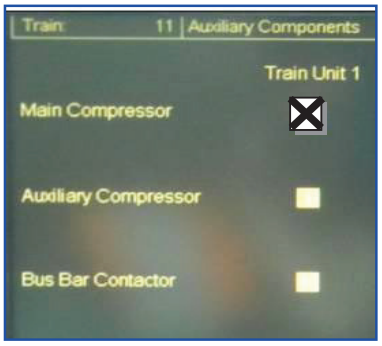
Passenger's Emergency Brake Unit (PEBU)

1.		• A manual brake device • Located beside door no. 11/1, 13/2 with intercom, 31/1, 33/2 with intercom, 41/2, 43/1with intercom and 23/1 with intercom - (additional 21/2 for transit train) • Normal position: handle attached and sealed
2.		• Activated: handle detached and seal break
3.		• "Passenger Emergency Brake Loop" appears on the DDU • Emergency brake will trigger
4.		• Press the Fault Message Overview (yellow arrow) soft key button to overview the messages • Message will appear on the DDU • Ask passenger reason for activating PEBU: - ➢ If emergency, attend to the passenger immediately ➢ If not, proceed to next step

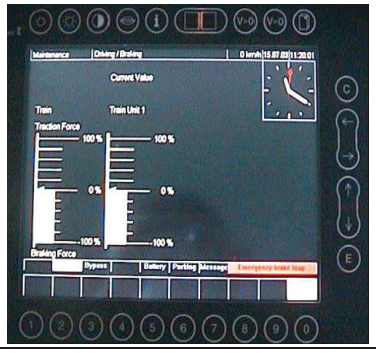
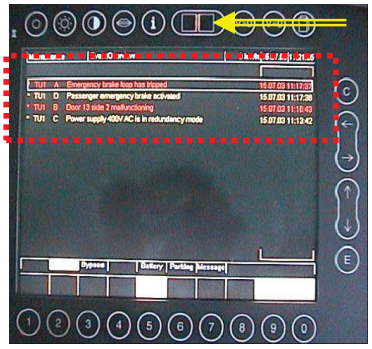
5a.		**For ET-01** • Passenger Emergency Brake Override button: press to bypass the emergency brake and to move • Maximum speed allowable is 80km/h
5b.		**For ET-02** • Passenger Emergency Brake Override toggle switch: push to 'On' to bypass the emergency brake and to move • Maximum speed allowable is 80km/h
6.		• Normalizing the affected PEBU at next station/stop: • Turn the cross key clockwise. • Push the handle

Start-up of train in during total shutdown

1.		• Switch 'ON' train battery • Auxiliary compressor will start up automatically • Press button 'Service' at DDU
2.		• Observe at DDU that the Auxiliary Compressor is flashing '**X**' • Wait until auxiliary compressor indicate normal ('**X**' disappear) • Estimate time taken for auxiliary compressor to build up pressure is 2 min 10sec.
3.		• Raise up pantograph via toggle switch
4.		• Observe at DDU that the Auxiliary Compressor is flashing '**X**' • Wait until auxiliary compressor indicate normal ('**X**' disappear)

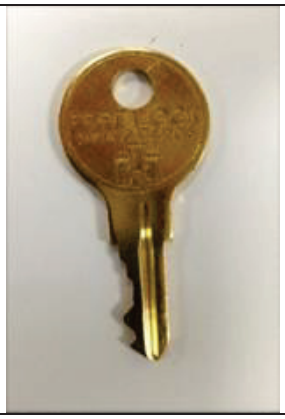
5.		• Switch 'ON' Main Switch
6.		• Ensure '**X**' appeared at Main Compressor • Fault 'A' message of Emergency brake loop at DDU will disappear after MRP build up more than 7 bars

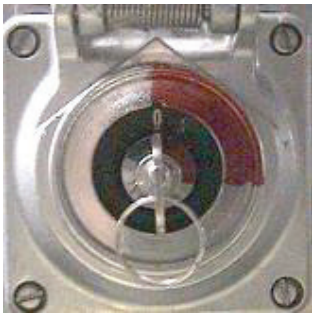
Main Components Failure

1.		• Any failures or events will indicate on the DDU message indicator
2.		• Press the Fault Message Overview (yellow arrow) soft key button to overview the messages • Message will appear on the DDU • Press [V>O] or [V=O] button for operation advise message
3.	  	• Blue box: component available, not ready • White box: component available, ready • Crossed box: component fully functioning
4.	  	• Faulty: component fault and affected • Communication Error: CCU connection to subcomponent disturbed • Locked: component locked and malfunction

5.	Pantograph VCB VCB rear Traction converter Traction converter rear Auxiliary converter Auxiliary converter rear	• Switch menu: - Illumination – Air Cond – Main Comp – • Main Comp menu: - Auxiliary converter is fault. • Press the Fault Message Overview soft key button to overview the messages • Press [V>O] or [V=O] button for operation advise message • Inform the OCC / RST
6.	Pantograph VCB VCB rear Traction converter Traction converter rear Auxiliary converter Auxiliary converter rear	• Follow the instruction from RST • Press “Lock” • The affected component will turn to Yellow Triangle • Press “Unlock” ➢ If unsuccessfully, contact RST ➢ Totally shut down the train
7.	Pantograph VCB VCB rear Traction converter Traction converter rear Auxiliary converter Auxiliary converter rear	➢ Start-up the train • The affected component will blink before to blue box • Switch On the main switch

Operating Of Automatic Through Routing (ATR)

1.		• When the OTN is unavailable, the ATR will automatically activate • The activation indicator on the ATR Go switch will illuminate in yellow light
2.		• ATR Key • To be used in operating of the ATR switches
3.		• To ensure trains depart on time and after confirmation from LC/DC • Open the cover and insert the key properly
4.		• Push the key and turn gently clockwise 90° to position 1 - the end of red mark (refer to diagram) • The key cannot be pulled out in position 1

5.		• Turn back the key to position 0 and pull out the key gently

Automatic Train Protection (ATP)

- ZSL 90 – ATP local control panel: Main Machine Interface (MMI) in the Driver's Cab
- ATP Failure Guidelines are obtained in annex 1

ATP Failure Guidelines

No	ATP Failure	Implication	How to solve
1.	**Signal Failure** a) Driver managed to stop the train according to ATP	• ATP needle will drop • Speed is reducing List below may also appear and cause the disturbance: ➢ No telegram	• Train stop • Apply parking brake • Depress ***F*** soft key button to clarify the failure/disturbance **disturb.no.1** **ST_N31 stop** } ***Will appear in the MMI*** • Report to OCC accordingly. • Receive "Approval To Proceed" from OCC to pass respective signal • Depress * **O*** soft key to override the signal **signal ST_N31** **Override?**

			• Press ***Enter*** soft key button to confirm and acknowledge. • Proceed; maximum speed allowable is 40km/h until the next signal.
	b) ATP activates an E.B. to stop train.	• A+F+W+E will illuminate • Emergency brake applied due to over speeding • ATP drops to zero (0) • Buzzer activated ➢ The over speeding (v-vehicle or v-route) may also be appeared in the reason.	• Train stop due to E.B • Depress ***F*** soft key button to clarify the failure/disturbance **Disturb.no.1** **ST_N31 stop** ***Will appear in the MMI** • Report to OCC accordingly • Receive **Approval To Proceed*** from OCC to reset E.B. & pass respective signal • Press **"Release Brake"** soft key to reset/release E.B. **Brake Reset** ***Will appear in the MMI** • Press ***Enter*** soft key button to confirm. **Reason** **ST_N31 stop** • Press ***Enter*** soft key button to confirm. **Reset ?** • Press *Enter* soft key button to confirm. • Depress *0* soft key button to override the signal. **Signal ST_N31** **Override ?** • Press ***Enter*** soft key button to confirm and acknowledge. • Proceed maximum speed allowable is 40km/h until the next signal. (Follow signal indications)
2.	**<u>Turnout Failure</u>** a) Driver managed to stop the train according to ATP.	• ATP needle will drop. • Speed is reducing. • List below may also appear and cause the disturbance: ➢ Point defective ➢ Point incorrect	• Train stop. • Apply parking brake. • Depress ***F*** soft key button to clarify the failure/disturbance. **Disturb.no.1** **Point PJ_P302 defect** ***Will appear in the MMI** • Report to OCC accordingly.

			• Receive ***Approval To Proceed*** from OCC to pass respective turnout. • Depress ***O*** soft key button to override the turnout. **Point PJ_P302 defect** **Override?** • Press ***Enter*** soft key button to confirm. **Point l/r ?** **?** • Press ***4*** to left direction or *6* soft key buttons to right direction. (Facing Turnouts) **Point <** **<** ***i.e.: Direction is left or 4** • Press ***Enter*** soft key button to confirm and acknowledge. • Proceed maximum speed allowable is 20km/h until the whole train is clear from the turnout. • Proceed as per ATP.
	b) ATP activates an E.B. to stop train.	• A+F+W+E will illuminate. • Emergency brake applied due to over speeding. • ATP drops to zero(O). • List below may also appear and cause the position Fault: ➢ Point defective ➢ Point incorrect	• Train stop due to E.B. • Depress ***F*** soft key button to clarify the failure/disturbance. **disturb.no.1** **Point PJ_P302 defect** ***Will appear in the MMI** • Report to OCC accordingly. • Receive ***Approval To Proceed*** from OCC to reset E.B. & to pass respective turnout. • Press ***Release Brake*** soft key button to reset/release E.B. **Brake Reset** **Reset ?** ***Will appear in the MMI** • Press ***Enter*** soft key button to confirm. **Reason** **Point PJ_P302 stop** • Press ***Enter*** soft key button to confirm. **Reset ?** • Press ***Enter*** soft button key to confirm.

			• Depress ***O*** soft button to override the turnout. **Point PJ_P302 defect** **Override?** • Press ***Enter*** soft key button to confirm. **Point l/r ?** **?** • Press ***4*** for left direction or ***6*** soft key buttons for right direction. (Facing Turnouts) **Point <** **<** ***i.e.: Direction is left or 4** • Press ***Enter*** soft key button to confirm and acknowledge. • Proceed maximum speed allowable is 20km/h until the whole train is clear from the turnout. • Proceed as per ATP.
3.	**Position Fault** **(Lost Of Position)** a) ATP activates an E.B. to stop train.	• A=F=W=E will illuminate. • Emergency brake applied due to over speeding. • ATP drops to zero (O) • Buzzer activated. • List below may also appear and cause the Position Fault: ➢ Position measuring board ➢ Magnetic receiver 1 defect • The over speeding (v-vehicle or v-route) may also be appeared in the Reason. • F indicator will switch off after passing magnetic receiver. • Proceed with not exceeding 80km.h to next OCL pole attach with KM Board. • Stop align with the pole. • Request position number from OCC according to the KM Board number.	• Train stop due to E.B. • Depress ***F*** soft key button to clarify the failure/disturbance. **disturb.no.1** **V-route/vehicle** **&** **disturb.no.2** **ZSI Sector 0** **&** **disturb.no.3** **Position ?** ***Will appear in the MMI** • Report to OCC accordingly. • Receive ***Approval To Proceed*** from OCC to reset E.B. • Press ***Brake Release*** soft key button to reset/release E.B. **Emergency brake** **Reset ?** ***Will appear in the MMI** • Press ***Enter*** soft key button several times to confirm. • A+F remain illuminated. • Depress ***P*** soft key button for over viewing position.

		❖ The position (post) numbers must be keyed-in according to the kilometer number on chainage marker (small white plat) allocated at every OCL mast (pole) with KM board. ❖ KM-0.738=100738m ❖ KM 0 to 9.99(E.G. km 6.2=6200m ❖ KM 10 – 56(E.G.km34.7)=34700m • To OBSERVE turnouts and signals, if any. • The ***F*** led on the MMI will remain lit until next calibrating magnet is passed.	**Pos xxxxx m** **xxxxx m** • Depress ***P*** soft key button again to key-in the new position. **Pos ?** **?** • Press numbering button to key-in the position. **Pos 19485 m** **19485 m** ***i.e.: location is KM19.5*** • Press ***Enter*** soft key button to confirm. **Track ?** **?** • Press numbering button to key-in track number. **Track 3** **3** • Press ***Enter*** soft key button to confirm and acknowledge. **Pos 19485 m** **Track 3** • Proceed as per ATP's recommendation.
4.	**Train Data Not Confirm** a) ATP activates an E.B. to stop train.	• A=F=W=E will illuminate • Emergency brake applied due to train data/configuration was not confirmed. • ATP drops to zero (O). • Buzzer activated.	• Train stop due to E.B. • Depress *F* soft key button to overview the failure/disturbance. **disturb.no.1** **Traindata** • Report to OCC accordingly. • Receive ***Approval To Proceed*** from OCC to reset E.B. • Press ***Brake Release*** soft key button to reset/release E.B. **Brake Reset** **Traindata** • Press ***Enter*** soft key button to confirm. **Reset ?**

			[ ] • Press ***Enter*** soft key button to confirm • Press ***Enter*** soft key button to acknowledge & confirm the train data/configuration. **[L68 B65 V160]** **[L1U B2C V160]** **or** **[L68 B65 V160]** **[L1U B2C V160]** *** B2C- 65% & B3C-39%** • Press ***S*** soft key button for shunting movement if in or entering the shunting areas. • Proceed as per ATP's recommendation.
5.	**<u>Over Speeding</u>** a) ATP activates an E.B. to stop train. • Lists below may also appear and cause the fault: ➢ **V-shunt** ➢ **V-route** ➢ **V-train** ➢ **V-vehicle** ➢ **V-depot**	• A+F+W+E will illuminate. • Emergency brake applied due to over speeding. • ATP drops to zero (O). • Buzzer activated.	• Train stop due to E.B. • Depress ***F*** soft key button to clarify/disturbance. **[disturb.no.1]** **[V-route/vehicle]** • Report to OCC accordingly. • Receive ***Approval To Proceed*** from OCC to reset E.B. • Press Brake Release soft key button to reset/release E.B. **[reason]** **[V-route/vehicle]** • Press ***Enter*** soft key button to confirm. **[Reset ?]** **[ ]** • Press ***Enter*** soft key button to confirm. • Proceed as per ATP's recommendation.

Photo of KM Chainage (White Plat) for New Positioning

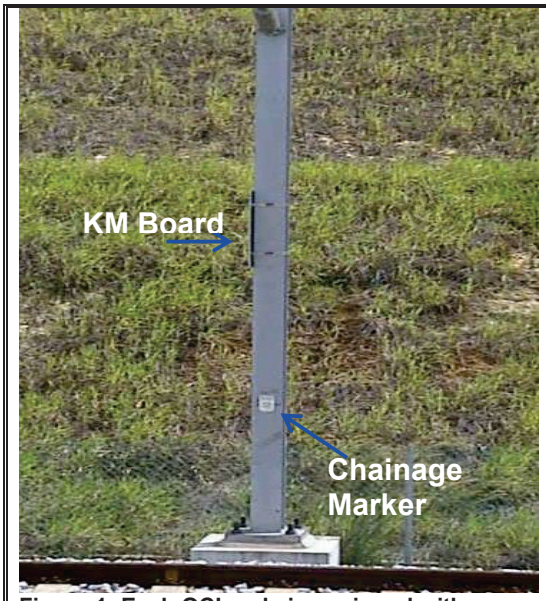


Figure 1: Each OCL pole is equipped with chainage marker (white plat), only selected pole equipped with KM board.

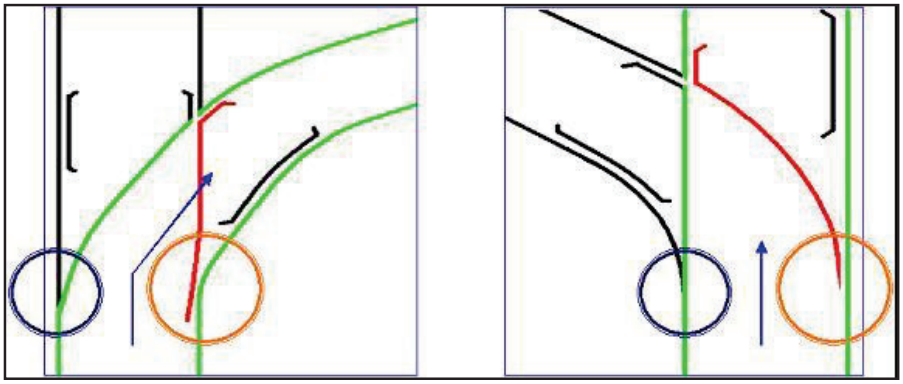
Figure 2: KM board stated the track position (KM) in sequence of XX.0, XX.2, XX.5, and XX.7.

Figure 3: Chainage marker (small white plat) stated the actual position (KM), which to be used for keying-in the position on the ATP MMI.

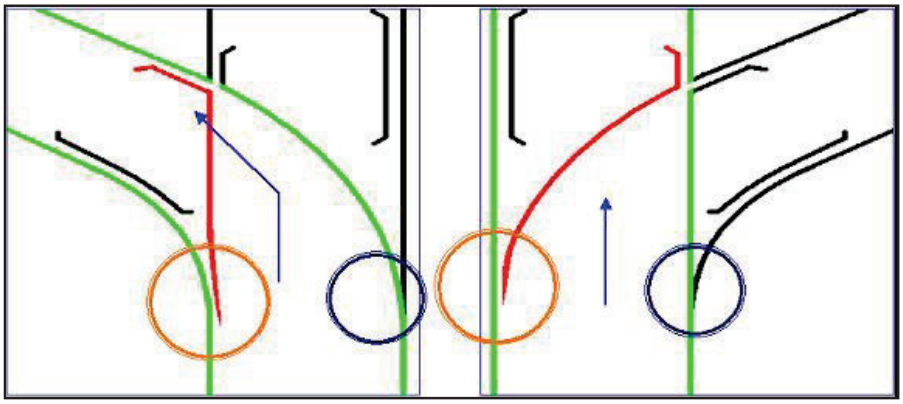
Figure 4: For KM below 0 or negative (-0); should be started with 10, i.e., 100379 (6 digits). For KM below 10; i.e., 1055 (4 digits). For KM above 10; i.e., 44500 (5 digits).

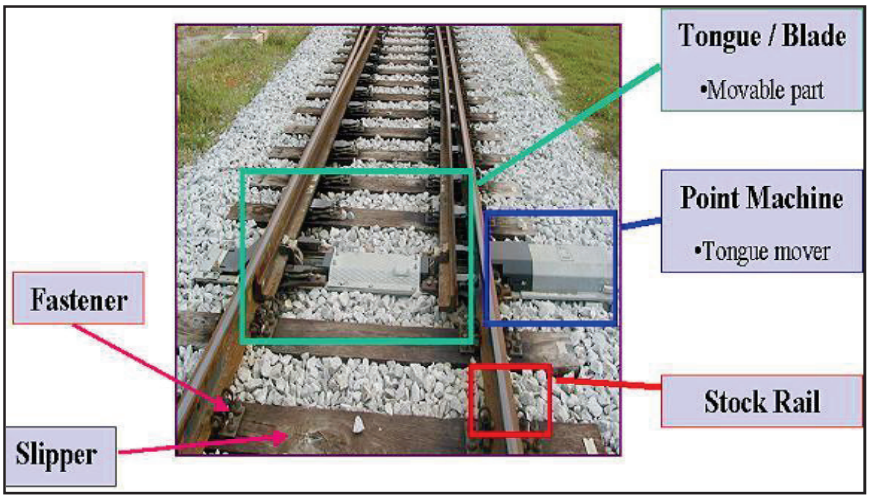
Turnout Position Diagram & Layout

Left Position

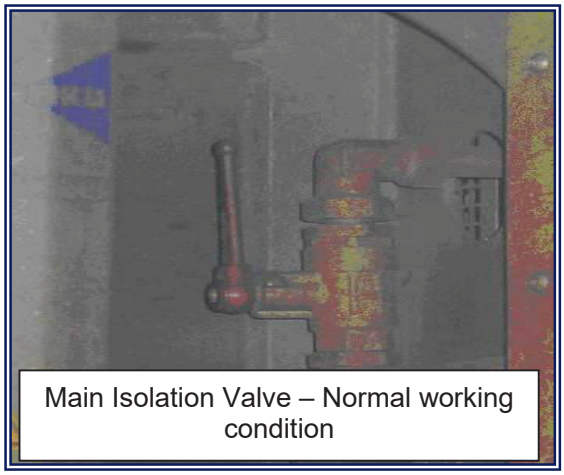


Right Position





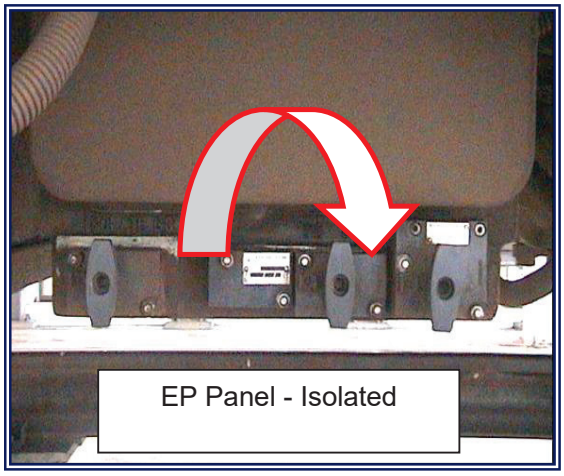
10.5 Coupling of Train at Confine Space ET-01



Main Isolation Valve – Normal working condition

Main Isolation Valve – Isolated to 45º

EP Panel – Normal working condition



EP Panel - Isolated

Parking Brake Release Ring

10.6 Stopping Points

Pic 1- Numerical countdown signages

Pic 2- Stop marker shall be within the square cab window

10.7 Evacuation Ramp Installation Diagram