

NSEWL



Rule Book 3

Access to Main Line and Depot Tracks
during Non-Traffic Hours

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For the most up-to-date copy of this Rule Book, please refer to the online version posted in the SMRT Intranet (Rail Operations NSEWL).



General Requirements for the Use of This Rule Book

Staff using this Rule Book must be competent and qualified by the SMRT Institute.

Note:

The procedures listed out in this book only include the critical steps. Staff must still carry out their tasks in accordance with the complete procedures, as detailed in the Work Instructions.



1. *In the course of executing the procedures in this Rule Book, approvals/ authorisation may be required from the Line Head (NSEWL) or the respective Head of Department (HOD).*
2. *If the Line Head (NSEWL) or HOD is absent or unavailable, the approvals/ authorisation required for the execution of procedures shall be made by the deputy Line Head (NSEWL) or respective deputy HOD.*

For example, if approval/ authorisation is required from the Line Head (NSEWL), in his absence, the deputy Line Head (NSEWL) shall make the decision.

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1 General

1.1 Purpose

- a. This book outlines the responsibilities and critical procedures for staff whose duties require them to gain access on to track during Non-Traffic Hours, including staff who are providing assistance and protection.

1.2 People Involved

- a. You will need this book if:
 - i. You require access on to the track during Non-Traffic Hours, including depot tracks;
 - ii. You are a person providing assistance or protection to staff gaining access on to track during Non-Traffic Hours.
- b. This includes, but **is not limited to**, the following list of personnel:
 - i. Chief Controller (CC)
 - ii. Person-In-Charge (PIC)
 - iii. Possession Master (PM)
 - iv. Power Services Controller (PSCO)
 - v. Rail Services Manager (RSM)
 - vi. Station Manager (SM)
 - vii. Track Access Controller (TAC)
 - viii. Track Access Manager (TAM)
 - ix. Train Service Controller (TSC)
 - x. Crew Manager Depot (CMD)
 - xi. Depot Controller (DC)

1.3 Risks

- a. This book provides guidelines to mitigate the following risks:
 - i. Struck by moving train or any other railway vehicle.
 - ii. Electrocution by traction power.

2 Protection Methods during Non-Traffic Hours

2.1 Conditions of Using Authorised Procedures for Access to Tracks during Non-Traffic Hours

- a. During Non-Traffic Hours, the conditions of using the three approved protection methods are as follows:

Where to use?	Types of Protection Method		
	Standing Train Protection	Protection Keyswitch (PKS)	Securing Point
Main line tracks (including Transfer Berths)	Permitted	Permitted	Permitted*
Depot tracks (excluding Transfer Berths)	Permitted	Not Applicable	Permitted*

* Note: Preferred method

- b. Reasons for the preferred methods listed above:

- i. Main line tracks (including Transfer Berths)
 - a) “Securing Point at site” is preferred because it diverts a moving train away from the work site.
 - b) “PKS” does not stop a train on Restricted manual Mode (RM) from entering the work site.
 - c) For “Standing Train Protection”, an Engineer’s train may not be readily available and special arrangement will need to be made if an Electric Multiple Unit (EMU) train is to be used.

- ii. Depot tracks (excluding Transfer Berths)
 - a) “Securing point at site” is preferred because it diverts a moving train away from the work site.
 - b) A Standing Train can only protect staff from train movement in one direction. Additional train will be required to protect staff from a moving train in another direction.
- c. During Non-Traffic Hours, regardless of the protection method chosen, there is a need to place a Red Flashing Light (RFL) at each of the tracks where train(s) can approach the work site. This is to stop a train on RM from entering the site.

3 Critical Execution Plans (CEP) for Work Activities During Non-Traffic Hours



- a. Complex projects and maintenance activities carried out during Non-Traffic Hours can introduce potential operational risks to the start of passenger service. Examples of such risks include:
 - i. Degradation to network infrastructure integrity (e.g. loss of use for switch and crossings);
 - ii. Disruption, degradation, or loss of redundancy to critical systems (e.g. loss of train signalling, control, and communications systems; power systems; or train immobilisation requiring rescue efforts).
- b. CEP plays a key role in ensuring that well-developed recovery plans, maintenance and operations contingencies are in place and synchronised across relevant entities (e.g., OCC, IMCC, Maintenance / Project workgroups) for timely execution to minimise the impact to the start of passenger service when exigencies arise.



Regardless of nature of work, all activities requiring access to main line tracks, transfer berths and depot tracks during Non-Traffic Hours shall adhere to the relevant sections as described within this rule book.

3.1 Project/maintenance activities requiring CEPs

a. Activities approved by System Safety Board (SSB)

- i. *The requirement to file CEP activities for complex project and maintenance work shall be mandated during SSB review.*
 - a) *Whenever feasible, the CEP should be incorporated into an operations circular for the corresponding project to streamline communication and coordination.*
 - b) *If any information in the operations circular regarding actual execution dates or changes in schedule is insufficiently precise, timely updates should be provided to Operations Control Centre (OCC) and Integrated Maintenance Control Centre (IMCC).*
- ii. *If any of the following information is not stated, insufficiently precise, or has changed, the requesting department shall fill up a supplemental CEP using the CEP template, supplementing the information which are already available in the operations circular:*
 - a) *Actual date of work;*
 - b) *Relevant contact information for project management, subject matter expert, Engineering IC, or PM/PIC;*
 - c) *Work schedule and phases of work;*
 - d) *Contingency plans.*

b. Activities not required to be approved by SSB

- i. CEPs can be filed by any department or project team undertaking activities that require maintenance and/or operations contingencies to be executed in the event of unplanned situations.
- ii. Depot works are excluded unless deemed to be applicable on a case-by-case basis.
- iii. List of maintenance/project activities on main line which require CEP is in **Annex C32**.
- iv. To streamline approval administration for recurring CEP works , the maintenance units may seek approval for standardised CEPs with a period coverage of up to 1-year for frequently recurring CEP works that adhere to established work routines. The standardised CEP with period coverage should include CEP work schedule and phases of work.
- v. In view of certain information (e.g., NDO/EIC contact information, site-specific contingency plans) that may not be available until closer to the work date, the maintenance units shall be required to provide updates to IMCC and OCC no later than 1-week from the date of CEP work.
- vi. The branch manager of each maintenance unit shall ensure the proper filing of CEP with reference to the list of maintenance/project activities as stated in Para 3.1b (iii).
- vii. A CEP using the CEP template is required if:
 - a) a standardised CEP with period approval for the recurring CEP work is not available; or
 - b) the actual work scope/schedule deviates from the standardised CEP.

- 3.2 *Important information to be included in a CEP encompass the following:*
- a. *Title and date of work;*
 - b. *Associated list of operations circulars;*
 - c. *SSB/Application for Modification (AFM) reference;*
 - d. *Relevant contact information for management and subject matter decision making when executing recovery or contingency plan;*
 - e. *Outline of recovery and contingency plan;*
 - f. *Incorporating contingency plan by PSCO and OCC if it could impact start of passenger service;*
 - g. *Schedule and phases of work.*



Refer to Annex C33 on the CEP template.

3.3 *CEP Review and Approval Process*

- a. *Refer to Annex C34 for the CEP review and approval process.*
- b. *Approvers of CEP for requestor and any supporting departments should be deputy director level and above.*
- c. *Requesting department is responsible to send the CEP. to the director/ deputy director or in his/her absence, his/her Branch Manager for signing. (Refer to Annex 35 for the routing form for CEP endorsement).*
- d. *Consistency check of the CEP by OCC and IMCC shall be done by manager and above.*

- e. OCC and/or IMCC reserves the right to reject the CEP and cancel the access to track application through TAMO, if information in the CEP is deemed incomplete or inaccurate.
- f. OCC and IMCC are to receive the approved CEP 1-week prior to schedule of work, unless due to unforeseen urgent CEP works.
- g. OCC is to apprise Line Head (NSEWL) of the CEP, the risks involved and operations contingency plan.

3.4 CEP Monitoring and Execution Responsibilities

Role	Responsibilities
<p>Night Duty Officer (NDO)/ Engineering IC (EIC) (Manager / EMM grade and above individual from SMRT Maintenance or Projects team)</p>	<p>Proactively update IMCC Lead Controller on CEP activity:</p> <ul style="list-style-type: none"> a. Confirmation with IMCC that the planned CEP work will proceed by no later than 2200hrs before the start of Non-Traffic Hours on the day of CEP. b. Commencement of CEP work. c. Completion of each stage of CEP work. d. Any deviation to CEP planned work schedule/ early termination or abort of any CEP stages and the need to trigger recovery and contingency actions. e. The end of CEP works. f. At any time when faced with unforeseen circumstances which will affect passenger service.
<p>IMCC Lead Controller</p>	<ul style="list-style-type: none"> a. To check-in with NDO/EIC should the individual not checked in by 2200hrs before the start of Non-Traffic Hours on the day of CEP. b. To check-in with the NDO/EIC at 0345hrs on progress of CEP and to enquire if additional time extension is required. Confirmation of extension beyond 0430hrs is required by 0415hrs.

Role	Responsibilities
<i>IMCC Lead Controller (continuation)</i>	<p>c. If time extension is required beyond 0430hrs, to contact the appropriate SMRT operations, project, and maintenance management at 0415hrs.</p> <p>d. Triggering maintenance contingencies and supporting OCC on recovery and operations contingencies.</p>
<i>IMCC Duty Manager</i>	<p>a. Ensuring CEPs have been properly approved with relevant signatures.</p> <p>b. For CEPs which are not properly approved, the manager reserves the right to inform TAMO to cancel the access to track application.</p> <p>c. Maintaining a register for all CEPs.</p> <p>d. Remind OCC of CEP activities for the upcoming Non-Traffic Hours.</p>
<i>MOCC</i>	<p>a. Ensure that operations contingencies are in place, clear and ready for execution.</p>



OCC shall take control to execute operations contingencies.

4 Processing an Application for Access to Track during Non-Traffic Hours

4.1 Application for Access to Track with Cut-Off Date and Time

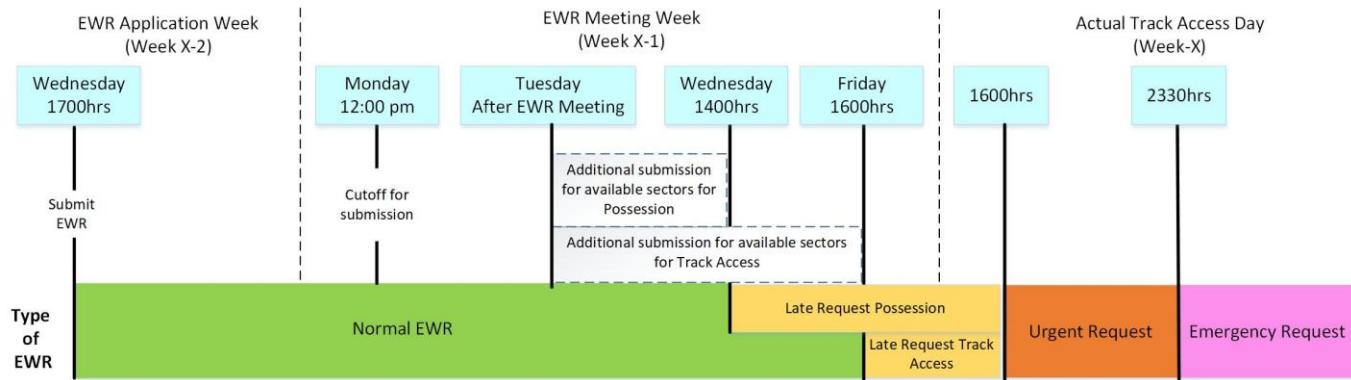


Figure 1

Notes:

1. An Engineering Work Request (EWR) submitted after the cut-off time (i.e. Monday 1200 hours) will not be considered for allocation of access to track during the EWR meeting.
2. TAMO will run the TAMS AI module at 1330 hours to generate an optimum access to track plan for the Engineering Work Request (EWR) meeting on Tuesday.

4.2 Submitting Request for Access to Track



- a. A user who needs to access the TAMS must have a TAMS account.
- b. Land Transport Authority staff (i.e. EWR Requester, staff performing role of Possession Master or Person-In-Charge) must liaise with the respective SMRT coordinator to request for a TAMS login account.
- c. The SMRT coordinator shall seek Track Access Management Operation's approval for account creation (maximum of three TAMS user accounts are allowed for each LTA project).

- a. Request for access to track must be submitted using the Track Access Management System (TAMS) by Monday 1200 hours, after which TAMO will run the TAMS AI module at 1330 hours to generate an optimum access to track plan for the Engineering Work Request (EWR) meeting on Tuesday (see **Figure 1**).
- b. After the Engineering Work Request (EWR) meeting on Tuesday, additional EWR applications can be submitted for available sectors before Wednesday 1400 hours for Possession and before Friday 1600 hours for Track Access (see **Figure 1**).



EWR applications can be directly made by representatives of the LTA. However, if the LTA Representatives wish to submit a Late/ Urgent EWR, their request must be approved by the relevant HOD within SMRT.

- c. EWR application that requires the PM/PIC's supervisor approval must be submitted before the normal EWR cut-off time: Monday, 1200 hours. Email notification will be sent to the supervisor to alert him/her to approve the EWR application. Supervisor can approve the EWR application by email, mobile phone or TAMS.
- d. The staff making the EWR application through the TAMS has the option of including the protection measures or leaving the field "empty" for the PM/ PIC to fill in during the AGAT application.
- e. During the EWR application, TAMS will display the safety protection, such as Short Circuit Device (SCD) point(s), Protection Keyswitch (PKS), appropriate location of red flashing light (RFL) and power sections, including overlapping third rail which protrudes into the adjacent power section at station platform Headwall or Tailwall area.
- f. Application to Gain Access to Track (AGAT) will be automatically generated by TAMS once the EWR request is allocated during the EWR meeting.
- g. For approved request, the EWR Requestor shall log-in to TAMS to check the auto-generated AGAT on the following:
 - i. protection details, including SCD installation point(s) and the responsible party to install the SCD(s);
 - ii. name of PM or PIC;
 - iii. book-in and book-out MRT station. This is a mandatory field which must be filled before the AGAT cut-off time of 2330 hours on the night of access to track. *Failure to do so shall result in the cancellation of work.*

- h. For approved request, PM/ PIC shall log-in to TAMS and carry out the following before 2330 hours of the night of access:
 - i. check the AGAT form for all the protection details, including SCD point(s) and the responsible party to install the SCD(s);
 - ii. check that the PKS/ RFL location(s) and power sectors auto-generated by TAMS are correct.



- a. If a possession is allocated at any of the five designated MRT stations where a Ground Controller is taking on PM role [PM (GC)], the Ground Controller Executive (GCE) shall provide the name and contact number of each PM (GC) involved to the respective Maintenance & Engineering Department and/or Project Team. This is to serve as a confirmation that the Ground Controller will take over the possession.
- b. The five designated MRT Stations are:
 - i. Jurong East MRT Station (JUR);
 - ii. Tanah Merah MRT Station (TNM);
 - iii. Ang Mo Kio MRT Station (AMK);
 - iv. Raffles Place MRT Station (RFP); and
 - v. City Hall MRT Station (CTH).
- c. The GCE can be contacted after 2200hrs through his/her duty mobile phone: 9641 5243 or Office: 6256 2286.

4.3 Late/ Urgent Request

- a. For late/ urgent request, the EWR requestor shall:
 - i. check the sector availability via TAMS; and
 - ii. if the sector is vacant, submit the request for endorsement by his/ her Head of Department (HOD); OR
 - iii. if the sector is occupied, seek consent from the appropriate PM or PIC who has been allocated the sector before submitting the request for endorsement by his/ her HOD;
 - iv. the HOD must endorse the late request/urgent request before TAMS can process and send the request to the duty Track Access Manager (TAM) for recommendation to Head of Department (Control Operations) or HOD (CO) on whether to approve or reject the request.
- b. Late request: To be endorsed by HOD of requestor by 1600 hours of the night of access to track before submitting to HOD (CO) for approval.
- c. Urgent request: To be endorsed by HOD of requestor between 1600 hours and 2330 hours of the night of access to track before submitting to HOD (CO) for approval.
- d. Emergency request*: Request for access to track made after 2330 hours of the night of access to track, for booking in at MRT station without AGAT. EWR requestor must:
 - i. if there is a possession in the working sector, first seek concurrence from the PM;
 - ii. obtain the verbal endorsement from his/ her HOD before seeking approval from the duty TAM;



*Emergency request is meant only for the recovery of fault(s) which occurred after 2330 hours that must be rectified before the Start of Traffic Hours.



Email and SMS notification will be sent to all relevant parties to alert them about pending requests waiting for their endorsement or approval.



“Walk-in” access (i.e., a working party who has not obtained prior approval, but waiting at a MRT station) is strictly not allowed



- a. If Late Request submitted for Head of Department (Control Operations)'s approval involves a possession at one of the five designated MRT stations where a Ground Controller is taking on PM role [PM (GC)], the Requestor must liaise with the Ground Controller Executive (GCE) on the provision of PM (GC) to support the Late Request.
- b. The five designated MRT Stations are:
 - i. JUR;
 - ii. TNM;
 - iii. AMK;
 - iv. RFP; and
 - v. CTH.
- c. The GCE can be contacted after 2200hrs through his/her duty mobile phone: 9641 5243 or Office: 6256 2286.

4.4 Summary of Track Access Applications (STAA) Form and AGAT Form

- a. After printing the STAA form from the TAMS at 2330 hours, the duty TAC shall:
 - i. check that the details on the STAA and AGAT are in order; and.
 - ii. confirm with the duty SM about details, such as boundaries of the working sector, OCC Ref No. etc.

Summary of Track Access Applications Form

- b. The duty TAC shall record all other approved Emergency Request on a manually prepared STAA.
 - c. After printing the AGAT form from the TAMS at 2330 hours), the duty SM shall:
 - i. Verify with duty TAC the boundaries of the working sector indicated in the AGAT, with the headwall (HW) and tailwall (TW) clearly defined.
 - ii. Prepare Part 2 of the “Track Occupation Authorisation” form (TOA form) and attach the correct AGAT form to the TOA form.



SM shall ensure that he/ she does not pre-tick the various protections to be arranged or pre-sign on the form.

OCC No.: N18	AGAT No.: PWYTR-TRCON20088183(D1-1)(A1-1)			
Date of Access: Fri, 13/11/2020	AGAT Status: Allocated			
SMRT Trains Ltd Track Access Management System (TAMS) AGAT				
Access Details :				
Book-in Station	KRJ	Scheduled Book-in Time	01:30	
Book-out Station	KRJ	Scheduled Book-out Time	04:30	
Possession				
Manpower Details :				
PM Name	EMP No./NRIC/WP	Contact No.	Team Size (incl. PM/PIC)	
Durairai Johnson	29552	83870146	15	
PWY, PWYTR				
Booked Sector :				
Line	Bound	Start Station	End Station	Including
NS	NB	KRJ TW	YWT TW	
Task :				
Task Description	Track Renewal possession with consist			
Job/Project Description	urgent rail replacement			
If Possession, allow ride-on PIC(s)	Yes	Consists/EMU	Consists	
		Traction Power	Off	
If allow ride-on PIC(s), allow ride-on PIC(s) to throw point?	Yes	Track Trolley	No	
		Allow work with outstable train	No	
		Hazardous Task If yes, nature?	Yes	
Short Duration If yes, time?	No	Tools/Equipment to be left on trackside	Hot Work	
NA		No		
Does work activity impact continuity of 750V DC traction power?	No	If yes, is clearance given by POW Maint?	NA	
POW personnel who gave clearance	NA	Contact No.	NA	
Remarks				
Last Update Time: 12/11/2020 21:42 Last Update By: Lana Benjie Ugull				
Page 1 of 3				

Application to Gain Access to Track Form

4.5 Cancellation Request

- a. "Cancellation Request" shall be submitted as soon as possible to the requestor's HOD for approval to free the track for booking by other parties.
- b.. Upon submission, the "Cancellation Request" will be routed to the requestor's HOD. The HOD will be alerted by email/ SMS, and can approve or reject the "Cancellation Request" by email, mobile phone or TAMS.
- c. The HOD must endorse the request for cancellation within 30 minutes of submission. If the HOD doesn't approve the cancellation within 30 minutes, TAMS will auto approve the cancellation request and release the track sector for booking.



Once "Cancellation Request" is approved by the requestor's HOD, TAMS will accept the "Cancellation Request" in the system, remove the EWR application and then release the track sector for booking.

- d. At every stage of the "Cancellation Request", all parties will be notified through email/ SMS notification to minimise delay caused by any late response.



1. If a Cancellation involves a possession at any of the five designated MRT stations where a Ground Controller is taking on PM role, is approved by the requestor's HOD, each PIC working under the possession must apply for TOA for his/ her respective work at the designated MRT station in accordance with the procedures stated in **Annex A13**.
2. The five designated MRT Stations are:
 - i. JUR;
 - ii. TNM;
 - iii. AMK;
 - iv. RFP; and
 - v. CTH.



For detailed procedures on processing an application for access to track during Non-Traffic Hours, refer to **Annex A4**.

5 Booking in at MRT Station for Access to Track during Non-Traffic Hours



- a. The actions of PM/ PIC shall also apply to PM(L)/ PIC(L)¹, except for those actions required for a possession involving an Engineer's Train.
- b. If a pre-signed TOA form is received, the duty SM shall do the following:
 - i. Reject the TOA application;
 - ii. Retain the TOA form;
 - iii. Ask the PM/ PIC to resubmit a new TOA form;
 - iv. Process applications submitted by other working parties so that other works can start first;
 - v. Inform the duty TAC about the rejected TOA application;
 - vi. Raise an occurrence report with attached photo of the pre-signed TOA form through the Risk Incident Management System.
- c. Duty SM shall:
 - i. Check and confirm the identity and validity of the PM/ PIC's licence;
 - ii. Reject a TOA (Depot) request if he/ she has assessed and concluded that the PM/ PIC is unclear about procedures on to track, such as completion of Tool-box Brief before carrying out the work, protection requirement etc.
- d. The duty TAC shall record all cases of incomplete, unclear or erroneous AGAT application. Daily, the duty TAM shall compile such record and send it to the Senior Manager of Track Access Management Operation or in short, SM (TAMO). SM (TAMO) shall send the record to the appropriate parties, such as HOD (CO), Line Head (NSEWL), relevant Head of CoE/ Div (Maintenance & Engineering) for further actions by the appropriate HODs.
- e. PM/ PIC can contact the duty TAM regarding access to track issues or queries.



- f. Before gaining access on to a main line track, the PM/ PIC must:
 - i. Carry out a survey of the work site (for example, through cab rides) and develop a plan for access to track;
 - ii. Conduct a Tool-box Brief to all members of the working party under his/ her charge. The Tool-box Brief must include the following:
 - a) Safety briefing;
 - b) Briefing on the work to be done using printed* WI, Method Statement (MS) and Risk Assessment (RA);
 - iii. Record the title and document number of WI and MS in a "Checklist for Tool-box Brief";
 - iv. Keep the printed set of WI, MS and RA for subsequent briefing(s);
 - v. Complete the "Checklist for Tool-box Brief";
 - vi. Keep the "Checklist for Tool-box Brief" which must be filed at his/ her office.
- * Assigned staff of appropriate Centre of Excellence (CoE) or Building and Facilities Division or LTA Project Team shall print a set of WI, MS and RA for the PM/ PIC.
- g. PM/ PIC must book-in at a MRT station. However, PM/ PIC and working party can gain access to work site through a location other than book-in station, if it is nearer to the work site, such as:
 - i. Access shaft; or
 - ii. Relay Building; or
 - iii. On-line station.
- h. If PM/ PIC has decided to gain access on to the work site through an Access shaft, or Relay Building, or on-line station, PM/ PIC shall
 - i. draw key from the Station Manager (SM) of book-in station.
 - ii. inform duty Chief Controller before entering any of the above mentioned locations.



- i. The “point of entry” shall be the “point of exit” for the staff involved in the access. For example, if PM/ PIC and working party have entered from the access shaft, he/ she and working party must exit from the access shaft after work has been completed.
- j. PM/ PIC shall ensure that no member of the working party is allowed to use fence gate to gain access to working sector unless a prior waiver has been granted through an Operations Circular. SM, who holds the key for the fence gate, shall not issue it to the PM/ PIC unless a prior waiver has been granted.
- k. When SM or SOM or Rail Services Manager (RSM) is gaining access on to a track alone,
 - i. he/ she is not required to fill up TOA form. However, he/ she must inform duty Track Access Controller (TAC) before and after the access. Duty TAC must then record the access in the “Summary of Track Access Applications” form;
 - ii. The access must be approved by duty Chief Controller of East-West Line and protection must be arranged before the access; and it must be removed after the access.
- l. When SM or SOM or RSM is gaining access on to a track with a team of not more than three persons,
 - i. he/ she is required to fill up TOA form;
 - ii. he/ she shall conduct Tool-box Brief to the team, and fill up “Checklist for Toolbox Brief”, which must be filed with the TOA form and kept in the Passenger Service Centre.
- m. All parties gaining access on to track shall communicate through portable radio and observe the following:
 - i. All radio communications must be in English;
 - ii. Carry out a radio check with duty TSC controlling the access to track before gaining access on to track and immediately upon reaching the working sector;
 - iii. If radio communications failed, other available means of communication, such as mobile phone, can be used.

**¹Note:**

PM(L) - The authorised LTA representative, on site, whom SMRT Institute has qualified, authorised by the ROD to take charge of the possession of the line for the purpose of carrying out engineering and similar work.

PIC(L) - The authorised LTA representative, on site, whom SMRT Institute has qualified, responsible for the work at hand and the safety and conduct of the working party.



In addition to the four PICs working under the PM, up to three additional PWAY LMT sub-teams will be allowed to work under the same PM for a PWAY Line Maintenance (LMT) possession without consist.

For detailed procedures, refer to the relevant chapters in Rule Book 4 “Duties and Responsibilities of PM, PIC, LOM and HSM”

5.1 Workflow on Booking in at MRT Station for Access to Track during Non-Traffic Hours

PM/ PIC shall conduct Tool-box Brief.



PM/ PIC obtains hard copy of AGAT form and submits duly filled TOA form to the duty SM.



Duty SM shall:

- a. Check and confirm the identity and validity of the PM/ PIC's licence;
- b. Check that TOA form is properly filled up;
- c. Verify with duty TAC that details of working sector in the AGAT form are correct; and
- d. Attach TOA form with the AGAT form.



Authorisation to be given by the duty CC of East-West Line or CC (EWL) for access to track for a particular traction power zone.



Duty TAC shall:

- a. Verify OCC reference number with the duty SM;
- b. Complete the STAA form.



Duty SM shall:

- a. Give details, such as book in/ out time, for duty TAC to complete the STAA form;
- b. Arrange and confirm protection as required by PM/ PIC.



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↓
Before gaining access on to track, PM/ PIC must know exactly where the working sector is by making reference to the Track Layout schematic drawing which is installed at the HW.

↓
Signing (by both SM and PM/ PIC) of Part 2 of TOA form.

↓
PM/ PIC arrives at working sector, installs Short Circuit Appliance and ensure that the working party is protected from the danger of trains moving into the working sector at all times.

↓
If Engineer's Train is involved in a possession, PM shall:
a. Place RFLs, where applicable; and
b. Deploy Look-out Man (LOM).

↓
If it is a Live-Track Possession with EMU Train(s), PM shall ensure that:
a. Each Buffer Zone has at least three traction power sections (except for Jurong MRT station (JUR) which has two traction power sections);
b. All 750 V DC circuit breakers within each Buffer Zone, including additional Buffer Zone (if applicable), are switched off.

↓
PM shall arrange with duty SM of the book-in MRT station on the following:
a. Switch on (or place) RFL at each limit of the possession on both bounds;
b. Inform duty SMs of MRT stations within each Buffer Zone, including additional Buffer Zone (if applicable), on the following:
i. Not to allow track access during Live-Track possession;
ii. SM of each last station to install Short Circuit Devices (SCDs) and switch on (or place) RFL on both bounds;
iii. SM of each first station to operate PKS for both bounds.



For detailed procedures on booking in at an MRT station for access to track during Non-Traffic Hours, refer to **Annex A5**.

When a Ground Controller is taking on the PM's role, refer to the procedures stated in **Annex A13**.



1. PM/ PIC shall appoint a Safety Minder if the work is listed as high-risk work activity.
2. For details about the Role of Safety Minder and work listed as High-Risk Work Activities, refer to Chapter 3 of Rule Book 4.

5.2 When PM/ PIC Arrives at Station Where Access to Track Is to Be Taken

- a. Upon reaching the MRT station where access to track is to be taken, the PM/ PIC shall:
 - i. Conduct a Tool-box Brief* using the checklist for Tool-box Brief for all the members of the working party.



*Notes:

- a. Tool-box Brief can be conducted at depot office, Maintenance "home base" office or book-in station.
- b. PM/ PIC shall keep the duly completed checklist, which must be filed at his/ her office.



Possession with an Engineer's Train



- a. If a possession involves an Engineer's Train movement with locomotive, PM shall accompany the train from depot to working sector and do oil spillage check in accordance with the oil spillage check procedure. (If Engineer's Train is not fitted with Vehicle On-Board Controller (VOBC), a possession is required to move to the working sector).
- b. If the Engineer's Train is working under a Possession Master (Ground Controller) at one of the five (5) designated MRT station, refer to the additional procedure stated in **Annex A13**.
- c. The five designated MRT Stations are:
 - i. JUR;
 - ii. TNM;
 - iii. AMK;
 - iv. RFP; and
 - v. CTH.

- b. The PM/ PIC shall get from the SM the appropriate hard copy of AGAT form, together with a TOA form, so that he/she can fill up the appropriate section of Part 1 of the TOA form in triplicate and include details, such as:
- The number of Short Circuit Clamps (SCCs)/ SCDs to be installed;
 - The chainages of SCCs and SCDs to be installed.

TRACK OCCUPATION AUTHORISATION																
<small>Notes: 1. All fields in PARTS 1, 2, 3 and 4 must be completed. If Not Applicable, write 'N/A'. 2. *Delete whichever is inapplicable</small>																
TOA No. _____																
OCC Ref No. _____																
PART 1A (At station only - For PM/ PIC who has applied in advance through the computerised track access system)																
<p>To the SM at _____</p> <p>I have completed the Tool-box Brief and confirm that the details listed in my Application No. _____ are correct. My book-out station is _____</p> <p>The following amendments (including route setting <u>during</u> a possession, where applicable) are made to the application:</p> <p>1. _____ 2. _____ 3. _____</p>																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Name of PM/ PIC*:</td> <td style="width: 33%;">Designation/ Emp no.:</td> <td style="width: 33%;">Signature:</td> </tr> <tr> <td>Mobile phone no. _____</td> <td>Radio ID _____</td> <td>Date/ Time: _____</td> </tr> </table>			Name of PM/ PIC*:	Designation/ Emp no.:	Signature:	Mobile phone no. _____	Radio ID _____	Date/ Time: _____								
Name of PM/ PIC*:	Designation/ Emp no.:	Signature:														
Mobile phone no. _____	Radio ID _____	Date/ Time: _____														
PART 1B (At station or depot- For PM/ PIC who has <u>NOT applied</u> through the computerised track access system)																
<p>To the SM/ CMD at _____</p> <p>I, the PM/ PIC* of a working party of _____ persons, have completed the Tool-box Brief and wish to carry out work on the Northbound/ Southbound/ Eastbound/ Westbound/ Middle/ Siding/ Overrun/ North East* track(s) from _____ to _____ or Transfer Birth(s) numbered _____</p> <p>I am able/ unable* to give way to urgent train movement.</p> <p>My book-out station is _____.</p> <p>Description of Work: _____</p>																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 66%;">Is track access/ possession* granted through TAOS or late request?</td> <td style="width: 33%;">yes [] no []</td> </tr> <tr> <td>• Consist to be used?</td> <td>yes [] no []</td> </tr> <tr> <td>• In depot/ ramp cover/ third rail safety cover* needed?</td> <td>yes [] no []</td> </tr> <tr> <td>• Traction power remains 'ON'?</td> <td>yes [] no []</td> </tr> <tr> <td>• Continuity of power affected?</td> <td>yes [] no []</td> </tr> <tr> <td>• Has clearance been given by Power Maintenance?</td> <td>yes [] no []</td> </tr> <tr> <td>• Track trolley to be used?</td> <td>yes [] no []</td> </tr> </table>			Is track access/ possession* granted through TAOS or late request?	yes [] no []	• Consist to be used?	yes [] no []	• In depot/ ramp cover/ third rail safety cover* needed?	yes [] no []	• Traction power remains 'ON'?	yes [] no []	• Continuity of power affected?	yes [] no []	• Has clearance been given by Power Maintenance?	yes [] no []	• Track trolley to be used?	yes [] no []
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• Continuity of power affected?	yes [] no []															
• Has clearance been given by Power Maintenance?	yes [] no []															
• Track trolley to be used?	yes [] no []															
<p>Arrangement/ Protection required from SM/ CMD*:</p> <p>a. SCDs in Traction Power Sections/ Circuit*: PS no./ DFX no./ LBS no./ PNL no./ ISO no.* _____</p> <p>b. Standing Train Protection at _____</p> <p>c. Protection Keyswitch operated at H/W/TW* of _____ station, platform _____ depot.</p> <p>d. Special Protection Keyswitch operated at H/W/TW* of _____ station, platform _____</p> <p>e. RED flashing light(s) switched on at H/W/TW* of _____ station, platform _____</p> <p>f(i) Points locked and set (<i>Route set with buttons collared, and point selector switches locked and capped</i>) at DCP*, _____ depot, or _____ Points _____ at Normal _____ Points _____ at Reverse _____</p> <p>f(ii) Route locked and set at ATSS*, _____ depot</p> <p>g. Others (including route setting <u>during</u> a possession): _____</p>																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Name of PM/ PIC*:</td> <td style="width: 33%;">Designation/ Emp no.:</td> <td style="width: 33%;">Signature:</td> </tr> <tr> <td>Mobile phone no. _____</td> <td>Radio ID _____</td> <td>Date/ Time: _____</td> </tr> </table>			Name of PM/ PIC*:	Designation/ Emp no.:	Signature:	Mobile phone no. _____	Radio ID _____	Date/ Time: _____								
Name of PM/ PIC*:	Designation/ Emp no.:	Signature:														
Mobile phone no. _____	Radio ID _____	Date/ Time: _____														

Track Occupation Authorisation Form



Use of SCC is not compatible with Engineer's Train with CCD.

- c. If no prior approval for access to track has been given, he/she shall request for access to track from the duty TAM; and if the request is approved, fill up Part 1 of the TOA form.



Track Access within a Possession

- a. PIC taking track access within a possession shall contact the PM at the book-in MRT station to confirm the following:
 - i. Whether the track access is allowed;
 - ii. Track access arrangements and protection(s);
 - iii. Details of Engineer's Train movements, if any;
 - iv. Any last minute changes, information or instructions;
 - v. The "book-out" MRT station.
- b. If the PM allows the PIC to take track access within his/ her possession, the PIC shall:
 - i. Attend (in person) the Tool-box Brief given by the PM before gaining access on to track;
 - ii. Conduct a Tool-box Brief using the checklist for Tool-box Brief for all the members of the working party before gaining access on to the track (keep the duly completed checklist which must be filed at his/ her office);
 - iii. Go to the Passenger Service Centre (PSC) of the book-in station and show a valid PIC licence to the duty SM;
 - iv. Get from the SM the appropriate hard copy of AGAT form, fill up the "PIC Book-in/ out Register" at the PSC of the book-in station.
- c. The PM shall ensure that all PICs within his possession, including those booking in at other stations, are being briefed.



- d. When a PIC books in at MRT station to take track access within a possession, the SM shall:
 - i. *If Part 1C of TOA is not properly filled up by the PM, do not allow the PIC to book-in;*
 - ii. *If Part 1C of TOA has been properly filled up by the PM,*
 1. check and confirm the identity and validity of the PIC's licence;
 2. *if the PIC's identity is confirmed and his/ her licence is valid, provide the appropriate hard copy of AGAT form and allow him/ her to use the "PIC Book-in/ out Register" to book-in;*
 3. *if the PIC's licence is invalid, do not allow him/her to book-in.*

- d. The duty SM of the book-in station shall:
 - i. Check and confirm the identity and validity of the PM/ PIC's licence;
 - ii. Check that the appropriate section of Part 1 of the TOA form is properly filled up by the PM/PIC;
 - iii. Verify the following details in the AGAT form with the duty TAC:
 - a) Boundaries of the working sector, with the HW and TW clearly defined;
 - b) For request of possession involving both bounds, the boundaries must be clearly specified under the "Remarks" section;
 - iv. If the name of the PM/ PIC differs from that indicated on the AGAT, access the TAMS for enquiry on the PM/ PIC certification date;
 - v. If there is no prior approval, ask PM/ PIC to obtain approval through the duty TAM for emergency request.



If the PM/ PIC is from LTA, the duty SM shall check the validity of his/ her licence. If the licence is still valid, the SM shall issue the TOA form.

5.3 Authorisation Given for Access to Track for a Particular Traction Power Zone to Start

- a. When authorisation is given by the duty CC of EWL for access to track for a particular traction power zone to start, the TAC shall inform the relevant SM, quoting the OCC reference number.
- b. The SM shall provide the TAC the necessary details for him/ her to complete the STAA form.
- c. For request where no AGAT form was received and the duty CC of EWL has approved access to track for a particular traction power zone, SM shall contact the duty TAC after 0100 hours to obtain relevant information so that Part 2 of the TOA form can be completed.
- d. The SM shall arrange protection as required by PM/ PIC, particularly in the case of protection with the duty SM in another MRT station. Use the radio, on the appropriate talkgroup with "Read Back" message, to confirm with the SM of another MRT station when protection has been made.
- e. When it is necessary for protection to be arranged at another MRT station, the PM/ PIC shall satisfy that the protection requested has been given.

f. If PKS is used as protection:

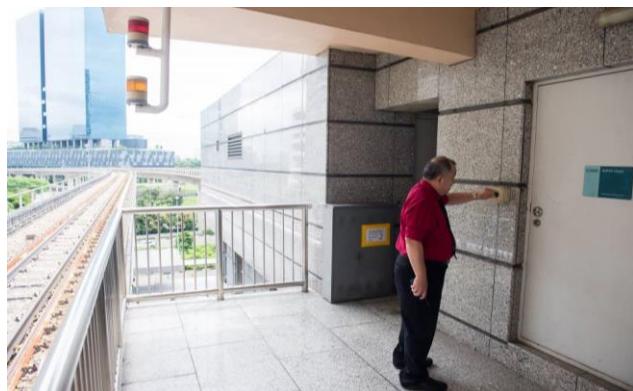
PM/ PIC	SM
<p>a. At the book-in MRT station at either end of the working sector:</p> <ul style="list-style-type: none"> i. Check and confirm that PKS has been operated; ii. Obtain a number lock from the duty SM; iii. Shorten the chain of the protection key by using the number lock and remember the combination number of the lock; iv. Confirm that the length of the chain can no longer reach the PKS keyhole. 	<p>a. Duty SM of book-in MRT station at either end of the working sector shall, after activating the PKS:</p> <ul style="list-style-type: none"> i. Check that the “SAFE TO PROCEED” indicator is illuminated; ii. Verify with TSC that PKS has been successfully activated; iii. Provide a number lock* to the PM/ PIC to secure the protection key to the side of the cabinet. <p>b. Duty SM at another MRT station shall, after activating the PKS:</p> <ul style="list-style-type: none"> i. Check that the “SAFE TO PROCEED” indicator is illuminated; ii. Verify with TSC that PKS has been successfully activated; iii. Secure the PKS key with a number lock until the PM/ PIC has withdrawn his/ her access to track and has authorised the PKS to be normalised.
<p>b. At another MRT station:</p> <ul style="list-style-type: none"> i. Remind the SM not to normalise the PKS until informed to do so. 	

***Note:**

- a. A separate number lock shall be used to secure the protection key for each access to track (i.e., two number locks for two access to track).
- b. For track accesses within a possession, there is no need for additional number lock because ground arrangements are made between each PIC and the PM.

g. If RFL is to be switched on:

PM/ PIC	SM
<ol style="list-style-type: none">a. At the book-in station, check and confirm that the RFL is switched on (or placed).b. At another MRT station, remind the duty SM not to switch off (or remove) the RFL until informed to do so.	<ol style="list-style-type: none">a. Duty SMs of book-in station and other station shall switch on (or place) the RFL.



- h. After being informed by the duty TAC that traction power has been switched off for access to track requiring traction power to be “OFF”, the SM shall:
 - i. Confirm that traction power is “OFF” using a working voltage tester;
 - ii. Install SCD(s) at platform track (location of SCD to be installed is marked by Power Maintenance) as requested by PM/ PIC;
 - iii. Upon installation of the SCD(s), record details in the:
 - a) Computerised SCD System* the status of the SCD(s) installed using the work station in the PSC; and
 - b) Station Occurrence Logbook.
- i. For SCD(s) installed at other stations:
 - i. The SMs of other MRT stations shall record in the computerised SCD System the status of SCD(s) installed and then write such details in the Station Occurrence Logbook.
 - ii. PM/ PIC shall use the portable radio, on the appropriate talkgroup with “Read Back” message, to confirm with the duty SM of book-in MRT station that SCD(s) has been installed.

- j. The SM shall record all protections which have been arranged at MRT station(s); and SCD locations in Part 2 of the TOA form before handing it over to the PM/ PIC and allowing PM/ PIC to gain access on to the track.

PART 2 (To be completed by the SM/ CMD and confirmed by the PM/PIC)

To the PM/ PIC*

You have been informed and had successfully conducted a radio check with CMD/SM. You are required to monitor track access talkgroup throughout your work duration.

You are authorised to carry out work on the track(s) as listed in the Application No.

I have informed you of the track(s) boundary and the limits of the working sector which you have applied for. You are responsible for the safety and behaviour of your working party, and must clear the track(s) of all persons, tools, equipment and materials by _____ hours, today.

Please note that the following arrangements you require are given below:

	Confirm [✓] when arrangement is made by SM	Confirm [✓] when arrangement is made by CMD	Confirm [✓] by PM/ PIC*
1. Traction power sections which are: "Switched OFF": PS no./DFX no./LBS no./ <u>PNL no.</u> /ISO no.* "Switched ON": PS no./DFX no./LBS no./ <u>PNL no.</u> /ISO no.*	[]	[]	[]
2. Short Circuit Device installed at: a. HW TW* of platform _____ at _____ station b. HW TW* of platform _____ at _____ station c. HW TW* of platform _____ at _____ station d. HW TW* of platform _____ at _____ station	[]	[]	[]
3. Standing Train Protection at _____	[]	[]	[]
4. Protection Keyswitch operated at: a. HW TW* of platform _____ at _____ station Padlock provided by SM/ PIC to apply b. HW TW* of platform _____ at _____ station Padlock provided by PM/ PIC to apply c. HW TW* of platform _____ at _____ station Padlock provided by PM/ PIC to apply d. _____ depot	[]	[]	[]
5. Special Protection Keyswitch operated at: a. HW TW* of platform _____ at _____ station Padlock provided for PM/ PIC to apply b. HW TW* of platform _____ at _____ station Padlock provided for PM/ PIC to apply	[]	[]	[]
6. Red flashing light(s) switched on at: a. HW TW* of platform _____ at _____ station b. HW TW* of platform _____ at _____ station c. HW TW* of platform _____ at _____ station	[]	[]	[]
7a. Points locked and set (Route set with buttons collared, and point selector switches locked and capped) at DCP*, or 7b. Route locked and set at ATSS* a. Points _____ at Normal b. Points _____ at Reverse	[]	[]	[]
8. Others _____	[]	[]	[]

I declare to the best of my knowledge that the protection measure(s) agreed upon above are adequate for the safety of the working party.

Name of SM/ CMD*	Name of PM/ PIC*
Signature	Signature
Date/ Time	Date/ Time

Part 2 of TOA Form

- k. The TAC shall monitor the status of SCDs installed on the main line using the computerised SCD System*.



***Note:**

- a. If the computerised SCD System is not available at a station, TAC shall update the reported status of SCD installed on behalf of the duty SM.
- b. If the computerised SCD System is not available at all stations and OCC, TAC shall record the SCDs installation on a form.

- 5.4** When SM Hands over the TOA Form to PM/ PIC with Part 2 filled in
- a. When the duty SM hands over the TOA form to the PM/ PIC, the PM/ PIC shall:
 - i. Check that Part 2 has been filled in correctly;
 - ii. Ensure that the protection requested of the SM has been arranged;
 - iii. Sign on Part 2 of the TOA form.
 - b. Before gaining access on to the track, PM/ PIC shall confirm the exact working sector using the Track Layout schematic drawing installed at the HW.
 - c. Upon arriving at the work site, PM/ PIC must install Short Circuit Appliance at work site*.
 - d. If the entry point is through an on-line substation to get to the work site, PM/ PIC must install Short Circuit Appliance at on-line substation track and at work site*.
 - e. When access is to one “bound” within a zone, while traction power is still switched “ON”:
 - i. PM/ PIC shall:
 - a) ensure that protection is provided;
 - b) Not install any SCD in any traction power section.
 - ii. If a subsequent request is granted for access to that same traction power zone and traction power is to be switched off, then SCD and Short Circuit Appliance must be installed.



*For maintenance works that are exempted from SCD installation at a work site on the main line, refer to **Annex C28**.

5.5 Safety Measures When an Engineer's Train Is Involved in a Work Site

- a. The PM shall:
 - i. Contact the duty TSC through portable radio and request the route to be set using Route Reference Diagram as guide;
 - ii. Give confirmation to the TSC for the route setting;
 - iii. Confine train movements to within the work site limits;
 - iv. Where applicable, place a RFL at least 20 metres before the rear limit and another RFL at least 20 metres after the forward limit of the work site;
 - v. Appoint and position a qualified and competent LOM* to look out and provide effective warning for the working party affected by the Engineer's Train's movements.



*Appointing of LOM is applicable for each working party who is working under the possession of a PM (Consist).

5.6 Live-Track Possession with EMU Train(s)

a. General

- i. As a basic principle for Live-Track Possession with Buffer Zone at each end of the possession, each Buffer Zone will comprise three traction power sections. However, to optimise track availability for engineering works, an exception has been made when engineering works involve JUR MRT station, where the Buffer Zone will comprise two traction power sections as follows:
 - a) For EWL Live-Track possession involving JUR, the safety Buffer Zone on NSL is from JUR to Choa Chu Kang MRT station (CCK), instead of from JUR to Yew Tee MRT station (YWT);
 - b) For NSL Live-Track possession up to JUR, the safety Buffer Zone on EWL is from Boon Lay MRT station (BNL) to Clementi MRT station (CLE), instead of from BNL to Buona Vista MRT station (BNV).
- ii. The last station in a Buffer Zone must be a MRT station with a third rail gap (e.g., if the last station is Tiong Bahru MRT station (TIB), which is a station without third rail gaps, then the Buffer Zone shall be extended to the next MRT station, i.e., Redhill MRT station (RDH)).
- iii. If there is a connecting line or Transfer Berth where there is a possibility of member(s) of a working party straying into a Live-Track possession, the possession is required to have additional Buffer Zone.
- iv. Track Access Management Operation (TAMO) shall ensure that sufficient Buffer Zones are provided for Live-Track Possession.



For detailed procedures by TAMO on ensuring that sufficient Buffer Zones are provided for Live-Track Possession, refer to **Annex A6**

- v. If there is a need to further reduce the safety Buffer Zones for Live-Track possession at JUR, prior approval must be sought from Principal Fellow (Power), Head (SMRT Safety and Security) and Line Head (NSEWL), and thereafter, the following measures must be put in place, where applicable:
 - a) Open the sectionalising switches to divide one traction power section into two traction power sections;
 - b) Lock points to route train away from the Buffer Zone;
 - c) Operate the PKS at adjacent MRT stations of the connecting lines;
 - d) Impose "Close Track" at designated track circuits as specified by the PM of the working party;
 - e) Issue an Operations Circular (including RA) to notify all parties about the work arrangements and mitigation measures to be put in place.

b. Illustration on a Live-Track Possession with the protection required on both bounds

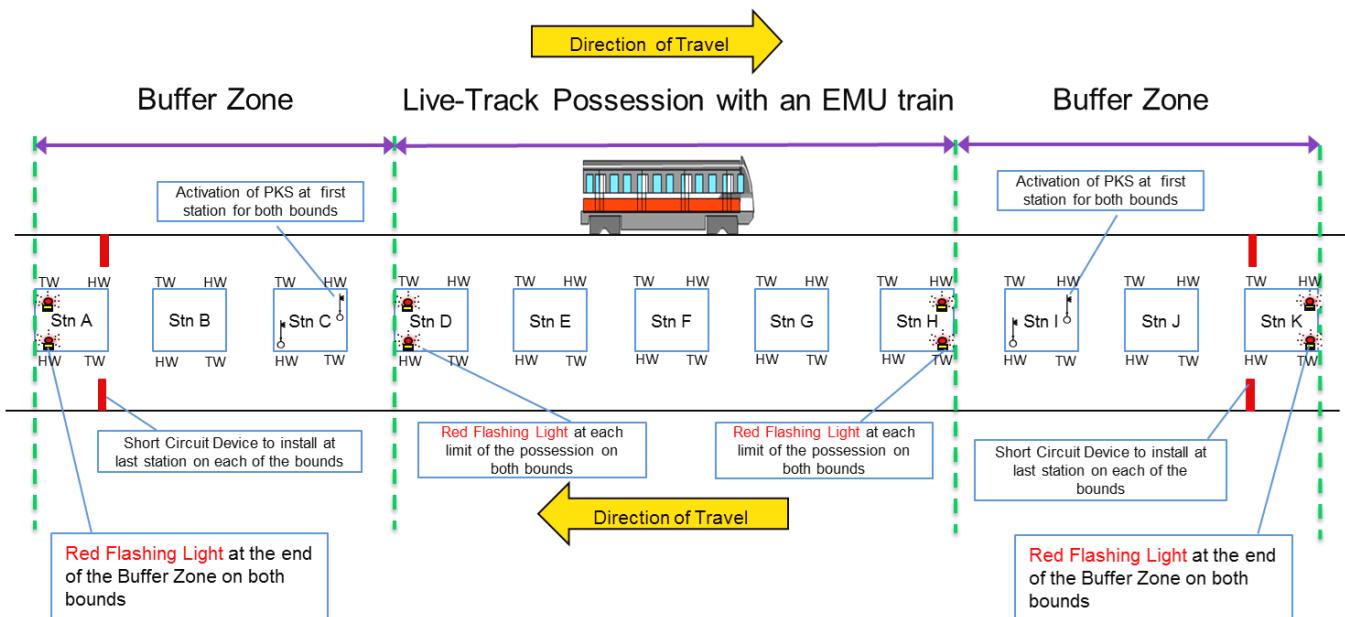
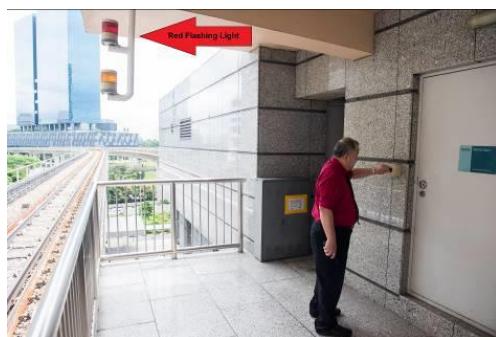


Figure 1: Live-Track Possession with the Protection Required on Both Bounds

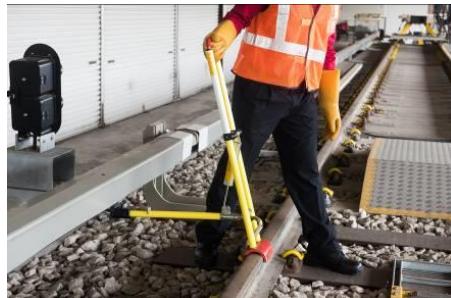
c. Co-ordination by Staff for Live-Track Possession

- i. If the access is a Live-Track possession involving EMU train(s), the PM shall contact the duty CC of EWL to:
 - a) Ensure that at least three traction power sections, including on-line substation tracks, are provided for each Buffer Zone at both ends of the possession (except for JUR which can have two traction power sections);
 - b) Confirm that all 750 V DC circuit breakers within each Buffer Zone, including the additional Buffer Zone (if applicable), have already been switched off.
- ii. The PM shall also request duty SM of the book-in MRT station to:
 - a) Arrange for RFL to be switched on (or placed) at each limit of the possession on both bounds;



- b) Inform duty SMs of all the MRT stations within each Buffer Zone, including the additional Buffer Zone (if applicable) that access to track is not allowed;

- c) Request duty SM of the last MRT station within each Buffer Zone to install a SCD each on both bounds and to switch on (or place) a RFL at the end of the Buffer Zone on both bounds;



- d) Request duty SM of the first MRT station within each Buffer Zone, including the additional Buffer Zone (if applicable), to operate PKS for both bounds. (This is to trip an EMU test train that has over shot the possession sector and prevent it from proceeding further.)



- iii. The **duty SM of the book-in MRT station** shall carry out the actions as requested by the PM in para c. ii. above.

- iv. **The duty SM of the last MRT station within each Buffer Zone** shall install a SCD each on both bounds and switch on (or place) a RFL at the end of the Buffer Zone on both bounds;
- v. **The duty SM of the first MRT station within each Buffer Zone** shall operate the PKS*.



*After activating the PKS, SM shall:

- a. Check that the “SAFE TO PROCEED” indicator is illuminated;
- b. Verify with TSC that PKS has been successfully activated;
- c. Use a number lock to secure the Protection Key to the side of the cabinet.



For detailed procedures on co-ordination by staff for live-track possession, refer to **Annex A6**.

5.7 Installation or removal of SCD When There Is an Engineer's Train at the Platform Track

- a. In order to ensure safety of the duty SM going down on to track to install or remove SCD, the Engineer's Train shall be used as standing train protection. The following steps shall be followed:
 - i. Before going down to trackside to install or remove SCD, the SM shall communicate with the Engineer's Train Officer (ETO) and request the ETO to apply the parking brake of the leading locomotive and trip the Safety Interlock Relay (SIR);
 - ii. The SM must see the parking brake handle/ knob being shifted/ turned to the right position (see pictures below for parking brake in the locomotive);
 - iii. The SM must request for the Locomotive key to be removed from the main key switch and keep the Locomotive key as part of safety principle of "Lock-out and Tag-out";
 - iv. After installation or removal of SCD, the Locomotive key shall be returned to the ETO.



- a. The duty SM will hold on to the Locomotive key only for the duration that he/ she is on track installing or removing SCD within the platform track. The key must be returned to ETO after installation or removal of SCD.
- b. The person who has installed the SCD must remove the SCD himself/ herself.

Deli Locomotive

Parking Brake Lever

Schoma Locomotive

Parking Brake Switch

Wanhang Locomotive

Parking Brake Lever



Parking Brake Switch

CSR Locomotive

Parking Brake Button

- 5.8** Procedure on PIC (Patrolling Team) passing a Red Flashing Light (RFL) during his/her track access
- a. PIC (Patrolling Team) shall contact the appropriate duty TAC when he/she encountered a RFL to check whether the working sector is a track access or possession.
 - b. The appropriate duty TAC shall check the Summary of Track Access Application (STAA) and carry out either of the following:
 - i. if there is a track access at the working sector, authorise the PIC (Patrolling Team) to pass through the RFL; OR
 - ii. if there is a possession at the working sector, inform the PIC (Patrolling Team) to obtain permission from the PM of that possession to enter into the possession.
 - c. PIC (Patrolling Team) shall carry out either of the following:
 - i. proceed to pass the RFL when authorised by the appropriate duty TAC; OR
 - ii. seek authorisation from the PM, and proceed to pass the RFL when authorised by the PM.
 - d. PIC (Patrolling Team) and the appropriate duty TAC shall repeat the above actions with the next RFL, if any.

5.9 When an Engineer's train or a working party with track trolley needs to move passed a Short Circuit Device (SCD) which has been installed at a Headwall (HW)/ and/or Tailwall (TW) of a MRT Station

a. Engineer's Train

- i. The duty PM or PM (Consist) shall contact the duty TAC to inform about the removal of the station's SCD, stating the SCD point number, for an Engineer's Train to pass the SCD point;
- ii. Upon receiving the acknowledgement from the duty TAC, the duty PM or PM (Consist) shall proceed to remove the SCD which was installed earlier by the duty SM;
- iii. After the Engineer's train has passed the SCD point, the PM or PM (Consist) shall re-install the SCD at the same SCD point;
- iv. The duty PM or PM (Consist) must contact the duty TAC and inform TAC that the SCD has been re-installed at the same SCD point; and wait for the TAC's acknowledgement before proceeding with his/her work or booking out.



For a possession that is allocated at any of the five designated MRT stations where Ground Controller (GC) is taking on PM role [PM (GC)], PM(Consist) shall remove and re-install SCD as mentioned in Para 4.9 above if the GC is not on board the Engineer's Train.

b. Track Trolley

- i. For protection, the duty PM or PIC of a working party with track trolley must first install a SCD at the rear of the SCD point (in the same power section) before removing the station's SCD;
- ii. The duty PM or PIC must then contact the duty TAC and inform TAC about the removal of the station's SCD, stating the SCD point number, for the track trolley to pass the SCD point;
- iii. Upon receiving the acknowledgment from the duty TAC, duty PM or PIC shall proceed to remove the SCD, which was installed earlier by the duty SM;
- iv. After the track trolley has passed the SCD point, the PM or PIC shall re-install the station's SCD at the same SCD point; and remove the SCD which was installed earlier by him/ her;
- v. The duty PM or PIC must contact the duty TAC and inform TAC that the station's SCD has been re-installed at the same SCD point; the working party's SCD has been removed; and wait for the TAC's acknowledgement before proceeding with his/ her work or booking out.

6 Booking out at MRT Station for Access to Track during Non-Traffic Hours

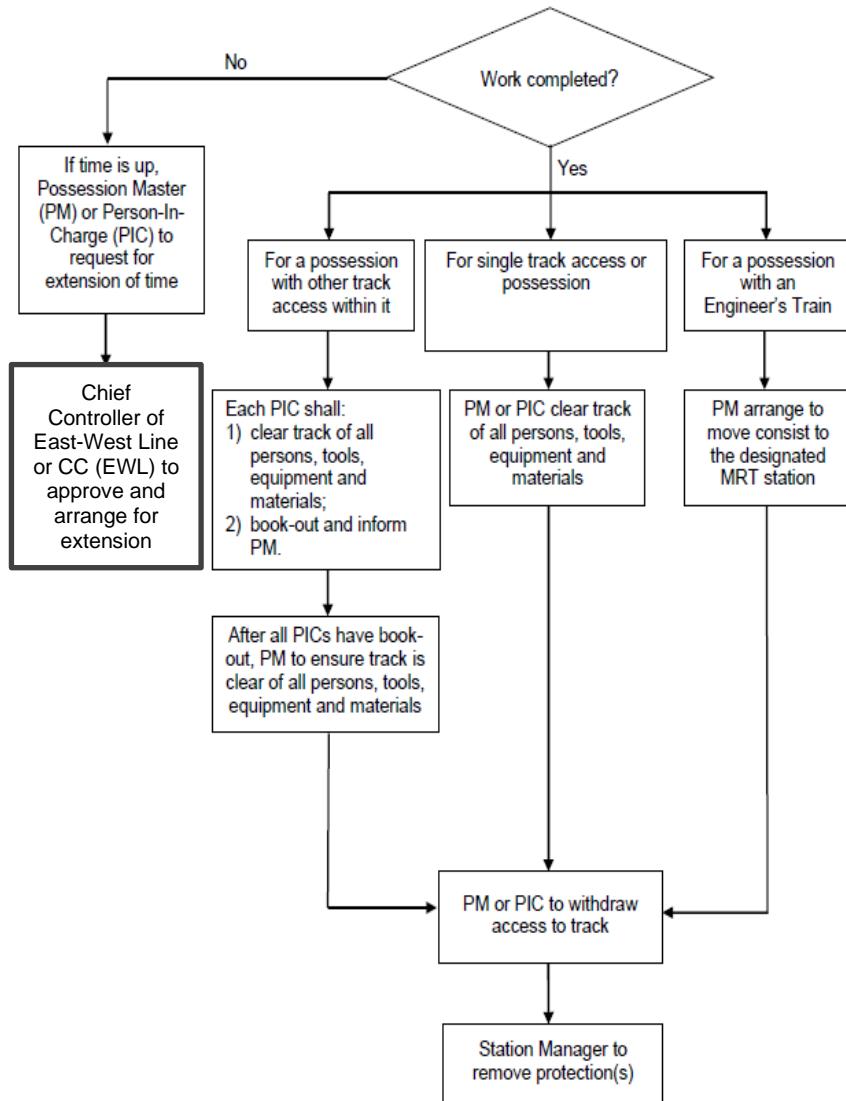


- a. The actions of PM/ PIC shall also apply to PM(L)/ PIC(L)*, except for those actions required for a possession involving Engineer's Train.
- b. All parties gaining access on to main line track shall communicate through portable radio and observe the following:
 - i. All radio communications must be in English;
 - ii. Carry out a radio check with duty TSC controlling the access to track before gaining access on to track and immediately upon reaching the working sector.
 - iii. If radio communications fail, other available means of communication, such as mobile phone, can be used.
- c. The “point of entry” shall be the “point of exit” for the staff involved in the access. For example, if PM/ PIC and working party have entered from the access shaft, he/ she and working party must exit from the access shaft after work has been completed.
- d. PM/ PIC shall ensure that no member of the working party is allowed to use the fence gate to get out of the working sector. SM, who holds the key for the fence gate, shall not issue it to the PM/ PIC.

***Notes:**

- PM(L) - The authorised LTA representative, on site, whom SMRT Institute has qualified, authorised by the ROD to take charge of the possession of the line for the purpose of carrying out engineering and similar work.
- PIC(L) - The authorised LTA representative, on site, whom SMRT Institute has qualified, responsible for the work at hand and the safety and conduct of the working party.

6.1 Workflow on Booking out at MRT Station for Access to Track during Non-Traffic Hours





For detailed procedures on booking out at an MRT station for access to track during Non-Traffic Hours, refer to **Annex A8**.

When a Ground Controller is taking on the PM's role, refer to the procedures stated in **Annex A13**.

6.2 When Work Is Completed

- a. When work is completed or time is up, PM/ PIC shall clear the track of all persons, tools, equipment and materials*, and ensure that the track is safe for train movement before proceeding to MRT station to withdraw access to track.



*Storage of items at trackside is strictly not allowed, no matter what types of mitigating factors are available.

- b. If there is a possession with Engineer's Train movement, the PM shall arrange to move Engineer's Train to the designated MRT station within the possession* and make sure that the Engineer's Train does not move until authorised by the duty TSC to do so. When a Ground Controller is taking on the PM's role, refer to the procedures stated in **Annex A13**.



***Notes:**

- a. Engineer's Train Officer must seek acknowledgement from the duty TSC before entering a platform track which is within the possession.
- b. For detailed procedures, refer to **Annex A14**.



Track Access within a Possession

- a. **PIC taking track access within a possession** shall:
 - i. Clear the track of all persons, tools, equipment and materials;
 - ii. Proceed to the book-out MRT station and fill in the "PIC Book-in/ out Register" before booking out;
 - iii. Inform the **PM** about his/ her booking out.
- b. **PM** with other track access within his/ her possession shall check that the PIC has book-out his/ her track access before removing the Short Circuit Appliance at work site. He/ she can then proceed to the MRT station to withdraw access to track.

- c. If the time is up, but work is still not completed:
 - i. The PM/ PIC shall contact the duty SM to request for extension of time. The SM must then inform the duty CC of EWL that PM/ PIC has requested for extension of time;
 - ii. TAC shall inform the duty SM to investigate if PIC had not contacted the duty SM when time is up. He/ she shall then report the situation to the duty TAM and CC of EWL;
 - iii. When informed about request for extension from the PM/ PIC, the CC of EWL shall decide on the extension of time for PM/ PIC and inform the duty SM, TAM, TAC and TSC about the decision;
 - iv. If extension will affect passenger train service, the duty CC of EWL shall consult the duty Manager, Operations Control Centre (MOCC) and follow the MOCC's instructions, such as:
 - a) Informing relevant staff (including Train Management) through the Enhanced Group Dissemination System (EGDS);
 - b) To standby contingency plan, etc.

6.3 Upon Reaching the Book-Out Station

- a. PM/ PIC shall remove the number lock securing the Protection Key and return it to the duty SM, and withdraw the track access or possession. If the station is NOT where the TOA form was issued, he/ she shall provide the "three-digit combination numbers" to the duty SM of the MRT station where the TOA form was issued.
- b. PM/ PIC shall then fill up Part 3 of the TOA form and hand it to the duty SM.



Track Access within a Possession

- a. **PM** with other track access within his/ her possession shall physically check the "PIC Book-in/ out Register" to confirm that the PIC and his/ her working party have cleared the track. If the book-out MRT station is not the MRT station where the PIC is booking out from, contact the duty SM of the MRT station where the PIC is booking out from and check the status of the PIC and his/ her working party;
- b. If it is confirmed that the PIC has booked out, PM shall proceed to withdraw access to track*.
***PM** shall ensure that PIC working within his/ her possession has withdrawn and cleared the track before removing the number lock that secured the Protection Key.
- c. SM shall ensure that the PIC uses the "PIC Book-in/ out Register" to book out his/ her track access when the PIC book out his/ her track access.

- c. When PM/ PIC withdraws access to track at the MRT station where TOA form was issued, the duty SM shall:
 - i. If PKS has been used for protection, ensure that PM/ PIC returns the number lock;
 - ii. Check that PM/ PIC has filled up and signed Part 3 of TOA form;
 - iii. When access to track for a particular working sector has been withdrawn, switch off (or remove) RFL(s), remove SCD(s) and other protection(s) that are in place;
 - iv. Inform each duty SM where additional protection and SCD arrangements were taken, remove them, and confirm with each SM that it has been done;
 - v. Inform the duty TAC that access to track has been withdrawn.
- d. When PM/ PIC withdraws access to track at the MRT station where TOA form was not originally issued:
 - i. The duty SM of the MRT station where the access to track is being withdrawn shall:
 - a) Confirm with PM/ PIC that all Short Circuit Appliances installed at work site have been removed;
 - b) Check that Part 3 of TOA form is filled and signed;
 - c) Inform duty SM of the MRT station (where TOA form was originally issued) that TOA is withdrawn and working party has returned to MRT station;
 - d) Switch off (or remove) RFL(s).

- ii. The duty SM of the MRT station (where TOA form was originally issued) shall:
 - a) If PKS has been used for protection, obtain the “three-digit combination numbers” from the PM/ PIC to unlock the number lock securing the Protection Key;
 - b) Switch off (or remove) RFL(s);
 - c) Remove SCD(s);
 - d) Remove other protection(s), if any, which was arranged at his/ her station;
 - e) Inform each duty SM, where additional protection and SCD arrangements were taken, remove them, and confirm with each SM that it has been done;
 - f) Inform the duty SM of the MRT station where access to track is being withdrawn that all protections and SCDs have been removed, and that the access to track can be withdrawn.

6.4 After SM Has Removed All Protections

- After removing the protections, duty SM shall fill in the appropriate section of Part 4 of the TOA form and return the duplicate copy to the PM/ PIC. The SM shall then inform the duty TAC that track access or possession has been withdrawn.
- The PM/ PIC can leave the station once the SM has returned the duplicate copy of TOA form with Part 4 completed.

TRACK OCCUPATION AUTHORISATION							
OCC Ref No. _____							
PART 3 (To be completed by the PM/ PIC when he/ she books out)							
To the SM/ CMD* at: _____							
<i>I conducted a radio check upon reaching my work site and was able to receive messages from CMD/OCC clearly.</i>							
<p>I certify that the track(s) which my working party has occupied are clear of all persons, tools, equipment and materials and that the work which we have carried out has not made the track unsafe. I have also removed all additional short circuit appliances at working sector.</p> <p>The continuity of traction power return has been permanently/ temporarily* restored and is safe for use.</p> <p>I have checked and confirmed that there is NO OIL SPILLAGE/ OIL SPILLAGE* on the track(s) within my possession.</p> <p>I have taken the following remedial actions for the oil spillage [To indicate the location(s) of oil spillage below]:</p> <hr/>							
Name/ Signature of PM/ PIC*: _____ Date/ Time: _____							
PART 4A* (To be completed by the SM/ CMD – for TOA issued and withdrawn at the same station or depot)							
<p>I acknowledge the withdrawal of the track occupation by the PM/ PIC*.</p> <p>I have switched off the red flashing light(s) [if applicable].</p> <p>I have removed all protections including short circuit appliance(s) from the track(s) at the station/ depot.</p> <p>I have informed SMs of other stations/ DC to return signal control to normal, and where protections and SCOs were arranged, to remove them.</p> <p>[] <i>This if applicable</i> The above arrangements have not been removed/ normalised as there is another track occupation in the same working sector.</p>							
Name/ Signature of SM/ CMD*: _____ Date/ Time: _____							
PART 4B* (To be completed by the SM/ CMD – for TOA issued and withdrawn at different station or depot)							
<p>a. SM of issuing station/ CMD*</p> <p>I have switched off the red flashing light(s) [if applicable].</p> <p>I have removed all protections including short circuit appliance(s) from the track(s) at my station/ depot.</p> <p>I confirm that SMs of _____ (stations) have removed all protections including SCOs [if applicable].</p> <p>I have informed SM of the station/ CMD* where the TOA is withdrawn, that all protections including SCOs have been removed, and that the TOA can be withdrawn.</p> <p>[] <i>This if applicable</i> The above arrangements have not been removed/ normalised as there is another track occupation in the same working sector.</p>							
Name/ Signature of SM/ CMD*: _____ Date/ Time: _____							
<p>b. SM of station/ CMD* where TOA is withdrawn</p> <p>I acknowledge the withdrawal of the track occupation by the PM/ PIC*.</p> <p>I have informed SM of the station/ CMD* where the TOA was issued, that the TOA is being withdrawn at my station/ depot*.</p> <p>I have switched off red flashing light(s) [if applicable].</p> <p>I have removed all protections including short circuit appliance(s) from the track(s) at my station/ depot* [if applicable].</p> <p>I acknowledged that the SM of the station/ CMD* where the TOA was issued, has informed me that all protections including SCOs have been removed; and that the TOA can be withdrawn.</p> <p>[] <i>This if applicable</i> The above arrangements have not been removed/ normalised as there is another track occupation in the same working sector.</p>							
Name/ Signature of SM/ CMD*: _____ Date/ Time: _____							
<p>Note: The retention period of this form is three months.</p> <p>Distribution:</p> <table border="0"> <tr> <td>White (original copy)</td> <td>- SM/ CMD of book-in Station/ Depot</td> </tr> <tr> <td>Blue (carbon copy)</td> <td>- SM/ PIC</td> </tr> <tr> <td>Yellow (carbon copy)</td> <td>- SM/ CMD of book-out Station/ Depot</td> </tr> </table>		White (original copy)	- SM/ CMD of book-in Station/ Depot	Blue (carbon copy)	- SM/ PIC	Yellow (carbon copy)	- SM/ CMD of book-out Station/ Depot
White (original copy)	- SM/ CMD of book-in Station/ Depot						
Blue (carbon copy)	- SM/ PIC						
Yellow (carbon copy)	- SM/ CMD of book-out Station/ Depot						

Part 3 & 4 of TOA Form

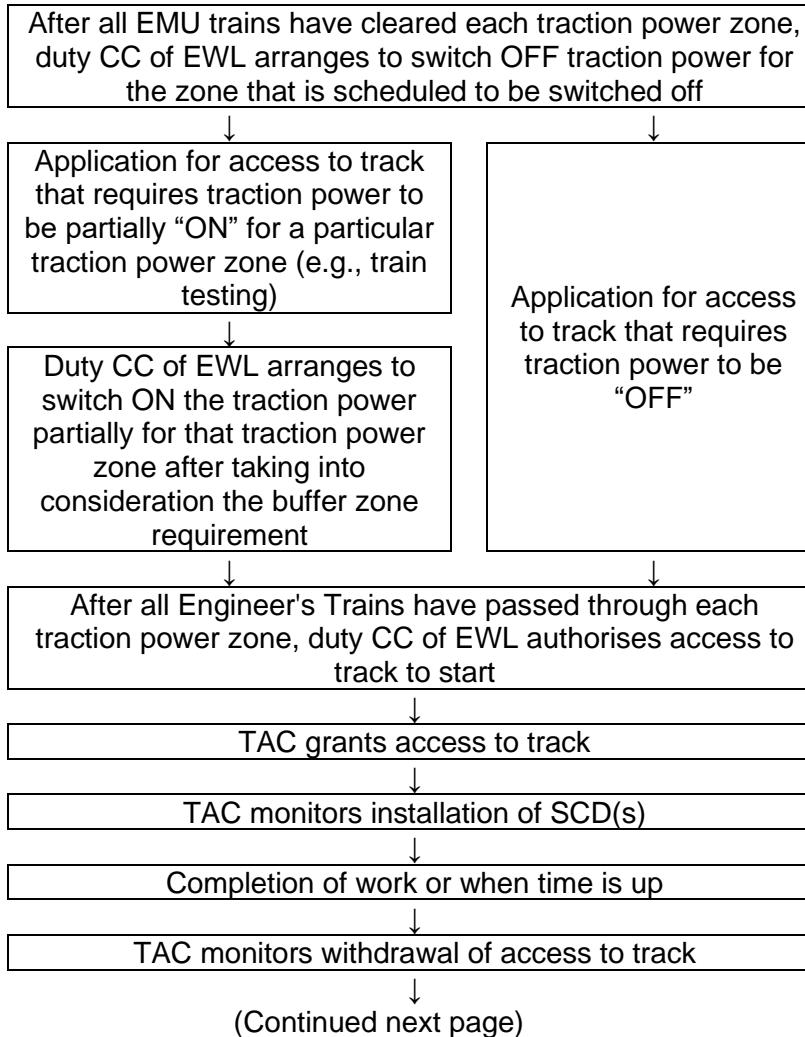
- c. When all SCD(s) have been removed for a particular traction power zone as indicated by the computerised SCD System, TAC shall follow procedures in Chapter 6 of Rule Book 3.
- d. After access to track has been withdrawn and when authorised by duty CC to carry out the point testing, duty TSC shall test that each point is working normally, and put each point in the appropriate position for the first passenger train to run.
- e. If Engineer's Train is involved, the PM shall:
 - i. Inform the ETO to contact duty TSC for further instructions;
 - ii. Accompany train to depot and do oil spill check in accordance with oil spill check procedure. (If the Engineer's Train is not fitted with VOBC, a possession is required for movement to depot.)



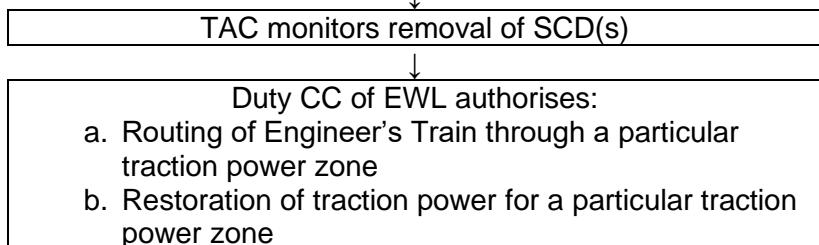
- f. When the Engineer's Train is ready to proceed to depot, TSC shall set routes and authorise the ETO to proceed in Automatic Train Protection manual Mode (ATPM) and in the normal direction back to depot, in accordance with the procedure for "Co-ordination in Operations Control Centre for Access to Track during Non-Traffic Hours" [see Rule Book 3, Chapter 6].
- g. The TSC (Liaison) shall initiate oil spill check in accordance with oil spill check procedure, if there is a locomotive movement.

7 Co-ordination in OCC for Access to Track during Non-Traffic Hours

7.1 Workflow on Co-ordination in OCC for Access to Track during Non-Traffic Hours



(continued from previous page)



For detailed procedures on co-ordination in OCC for access to track during Non-Traffic Hours, refer to **Annex A7**.

7.2 Switching OFF of Traction Power for a Particular Power Zone

- a. TSC shall inform the duty CC of EWL when all EMU trains have cleared each traction power zone.*
- b. The CC of EWL shall request duty PSCO to switch OFF traction power for that zone if traction power for that zone is scheduled to be switched off.*
- c. The PSCO shall switch OFF traction power for that zone and inform the CC about it.*



*TSC, CC and PSCO shall record the time and sign in the appropriate column of the Engineering Works Certification Record (“EWCR” form).



In an emergency, PSCO shall switch off electrical equipment immediately, including traction power if necessary and then inform the duty CC about it.

7.3 Partial Switching ON of Traction Power for a Particular Power Zone

- a. If traction power for a particular zone is scheduled to be partially “ON”, e.g., for EMU train testing:
 - i. The CC of EWL shall request PSCO to switch OFF traction power for that zone and then to switch ON traction power partially for that zone as indicated in the “Test Train Requirement” form;
 - ii. PSCO shall switch OFF traction power for that zone and switch ON traction power partially for a particular zone as indicated in the “Test Train Requirement” form;
 - iii. TSC shall inform the duty TC of the EMU test train that traction power would be temporarily switched OFF and thereafter to update the TC when traction power has been switched ON.

7.4 Granting Access to Track for Application with Power ON

- a. After all Engineer’s Trains have been routed from depot to site and have cleared each traction power zone, TSC shall inform the duty CC of EWL about it*.
- b. The CC shall authorise the duty TAC to grant access to track for applications requiring traction power to be ON in that traction power zone*.
- c. TAC shall inform duty SM to grant access to track for applications requiring traction power to be ON for that zone*. He/ She shall also record the details in the STAA.



*TSC, CC and TAC shall record the time and sign in the appropriate column of the EWCR form.

7.5 When EMU Train(s) Testing Is Required



TEST TRAIN REQUIREMENT					
PART I					
To:	Power Service Controller _____ (Name)				
From:	Chief Controller _____ (Name)				
An EMU test train is to operate and traction current will be required to be switched ON between					
1.	and	_____	on	(N / S / E / W / All **) bounds.	
2.	and	_____	on	(N / S / E / W / All **) bounds.	
3.	and	_____	on	(N / S / E / W / All **) bounds.	
4.	and	_____	on	(N / S / E / W / All **) bounds.	
The three extended stations for Buffer Zones will be on both bounds at each side of the test area from					
1.	to	_____ (HW / TW **)	to	_____ (HW / TW **)	
2.	to	_____ (HW / TW **)	to	_____ (HW / TW **)	
3.	to	_____ (HW / TW **)	to	_____ (HW / TW **)	
4.	to	_____ (HW / TW **)	to	_____ (HW / TW **)	
Notes: Some test areas require additional Buffer Zones; please refer to the following tables (Appendix 1): i) North-South Bound Main Line - Booking of At Least Three Extended Stations (Buffer Zones) At Both Ends of The Live-Track Possession ii) East – West Bound Main Line - Booking of At Least Three Extended Stations (Buffer Zones) At Both Ends of The Live-Track Possession					
Remarks: _____ <i>[Handwritten signature]</i>					
Signature:	Date:	/	/	Time:	hrs
PART II					
To:	Chief Controller				
From:	Power Service Controller				
Traction current is switched ON between					
1.	and	_____	on	(N / S / E / W / All **) bounds.	
2.	and	_____	on	(N / S / E / W / All **) bounds.	
3.	and	_____	on	(N / S / E / W / All **) bounds.	
4.	and	_____	on	(N / S / E / W / All **) bounds.	
Signature:	Date:	/	/	Time:	hrs
<i>[See Page 2 to complete PART III, PART IV and PART V of this form]</i>					
<i>* Delete accordingly. All fields are to be filled or a "Not Applicable" (NA) entry is required.</i>					

Test Train Requirement Form

- When EMU train(s) testing is required:
 - The duty CC of EWL shall complete Part I of "Test Train Requirement" form and issue it to the duty PSCO;

ii. The PSCO shall:

- a) Switch ON traction power as required;
- b) Confirm that at least three traction power sections for Buffer Zones at both ends of the Live-Track possession (except for JUR which can have two traction power sections);
- c) Switch OFF all 750 V DC circuit breakers within the Buffer Zones, including the additional Buffer Zone* (if applicable);
- d) Complete Part II of the form after traction power has been switched ON and return it to the CC of EWL.



*If there is a connecting line or Transfer Berth where there is a possibility of member(s) of a working party straying into a Live-Track possession, the possession is required to have additional Buffer Zone. See **Annex C8 (Appendix 1)** for those Live-Track possessions which require additional Buffer Zones.

iii. The CC of EWL shall then complete Part III and issue it to the duty TAC.

vi. The TAC shall act as stated in the form and fill up Part IV of the form. The TAC then returns it to the CC.

v. The CC shall complete Part V and issue to the TSC so that EMU train testing can commence.

iv. When issued with a "Test Train Requirement" form, the TSC shall commence EMU train testing if possession has been taken.

7.6 Granting Access to Track for Application with Power OFF

- a. For each traction power zone that duty PSCO has confirmed traction power has been switched OFF, the duty CC of EWL shall:
 - i. Record on the EWCR form the MRT stations which are separated by sufficient power sections, including on-line substation tracks at both ends;
 - ii. Authorise the duty TAC to grant access to track for applications not requiring traction power to be ON in that traction power zone*.
- b. PSCO shall verify the details recorded by the CC of EWL on the EWCR form regarding MRT stations which are separated from live traction power zones by sufficient traction power sections, including on-line substation tracks at both ends.
- c. After being informed by CC, TAC shall:
 - i. Confirm the details recorded by the duty CC of EWL on the EWCR form regarding MRT stations which are separated from live traction power zones by sufficient traction power sections, including on-line substation tracks at both ends, and sign in the appropriate column of the EWCR form;
 - ii. For the MRT stations indicated and authorised by the duty CC of EWL, inform duty SM to grant application for access to track not requiring traction power to be ON in that particular traction power zone, quote to him/her the OCC reference number*. He shall also record details in the STAA.
- d. TAC shall use the computerised SCD System to monitor the status of SCDs installed by the duty SM in a particular traction power zone.
- e. Duty CC and PSCO shall continue monitoring until all traction power zones are safely switched OFF as per scheduled and all valid requests for access to track have been granted.



*CC (EWL) and TAC shall record the time, and sign in the appropriate column of the EWCR form.

7.7 Withdrawal of Access to Track



When the time is up and duty SM has not reported the removal of SCD(s) in the computerised SCD System or access to track has not been withdrawn, TAC shall contact the SM to check the situation and inform the duty CC of EWL about the situation. Duty CC shall monitor the situation and if access to track is to extend into Traffic Hours, procedures in Chapter 7 are to be complied.

- a. When all duty SMs have reported that all access to track have been withdrawn for a traction power zone, TAC shall inform the duty CC of EWL about it*. He/ She shall also record and indicate the status in the STAA.
- b. When all duty SMs have reported in the computerised SCD System that all SCDs have been removed for a particular traction power zone, TAC shall
 - i. Use the computerised SCD System to confirm the status of SCDs removed by duty SMs in a particular traction power zone;
 - ii. Inform the duty CC of EWL about it*.
- c. When TAC have confirmed that SCDs have been removed and all requests for access to track have been withdrawn for a particular traction power zone, CC shall
 - i. Record and indicate the status in the appropriate column of the EWCR form;

- ii. Ensure that there is a buffer zone (comprising at least two traction power sections) for adjacent traction power zone where access to track has not been withdrawn yet, before requesting the duty PSCO to switch ON traction power for that traction power zone*.
- d. The PSCO shall
 - i. Confirm with the CC of EWL that there is a buffer zone (comprising at least two traction power sections) for adjacent traction power zone where access to track has not been withdrawn yet;
 - ii. Switch ON traction power for the traction power zone and inform the CC when it has been done.
- e. CC shall then authorise duty TSC to route Engineer's Train(s) through that particular traction power zone.



*TAC, TSC and CC (EWL) shall record the time and sign in the appropriate column of the EWCR form.

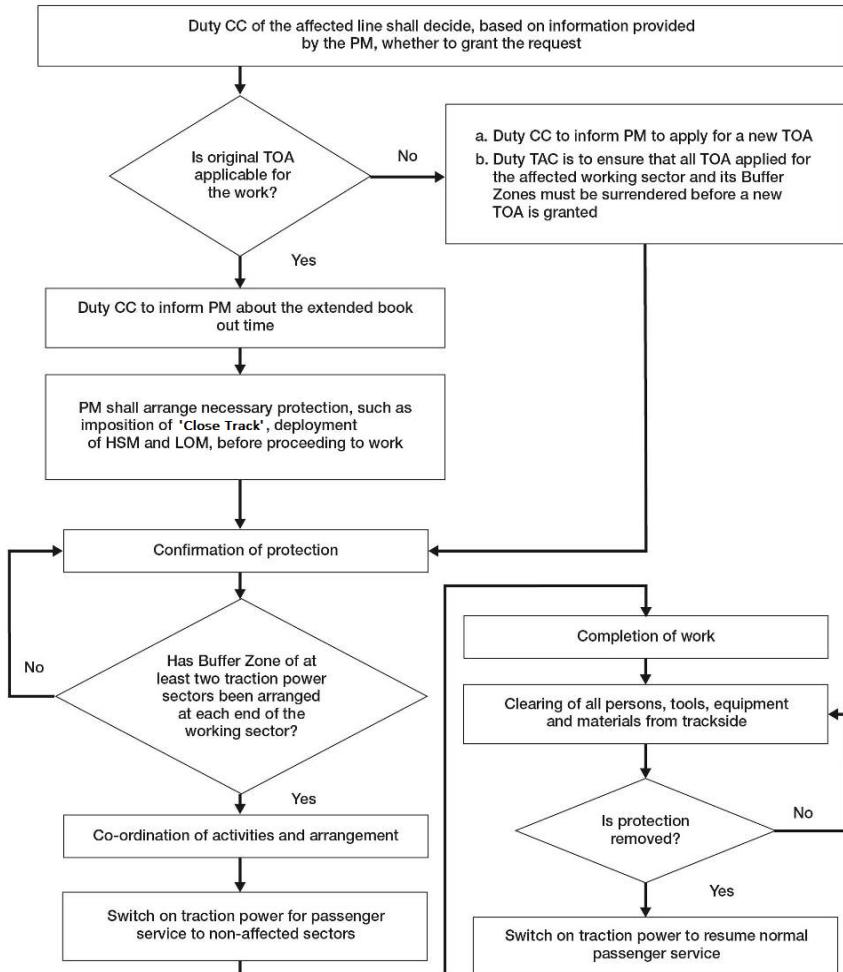
7.8 Commencement of Passenger Service

- a. When traction power for each traction power zone has been switched ON, PSCO shall inform the duty CC of EWL about it*.
- b. The CC shall authorise duty TSC to route:
 - i. Unscheduled EMU trains through the particular traction power zone;
 - ii. Passenger service trains through the particular traction power zone in accordance with the Train Timetable*.
- c. TSC shall route the train as instructed.*



*PSCO, CC (EWL) and TSC shall record the time and sign in the appropriate column of the EWCR form.

8 Access to Track for Work during Non-Traffic Hours Which Extends into Traffic Hours



8.1 Workflow on Access to Track for Work during Non-Traffic Hours Which Extends into Traffic Hours

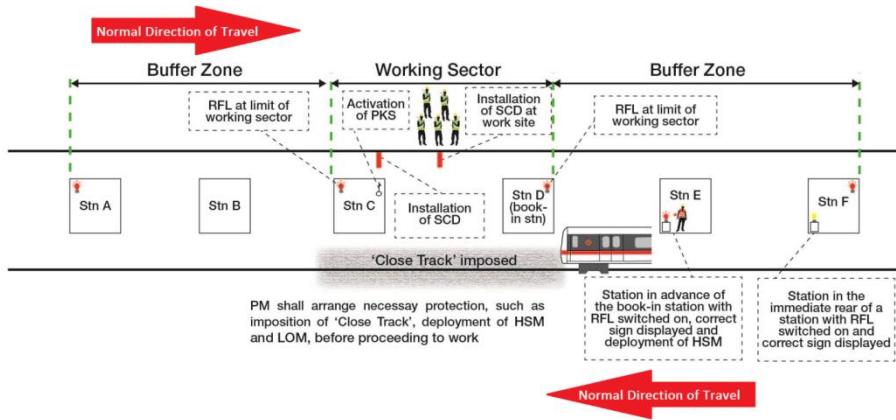


Figure 2: Protection Required for Work Which Extends into Traffic Hours



When the working sector is near a crossover or siding or when there is a possibility of member(s) of a working party straying on to the adjacent track at the opposite (counter) bound, "Close Track" must be imposed on the appropriate track circuit(s) on the opposite (counter) bound and siding, where applicable, and HSM and/ or LOM to be deployed.

8.2 Actions by PM [This shall also apply to a Ground Controller who is taking on the PM's role, refer to the procedures stated in Annex A13]

- a. Inform the duty CC of the affected line (NSL or EWL) immediately if work is likely to extend into Traffic Hours.
- b. When informed by the duty CC of the affected line that:
 - i. The work is to be carried out under the original TOA and the extended book-out time, take note of it; OR
 - ii. The work is to be carried out under a new TOA:
 - a) Surrender the original TOA and apply a new TOA;
 - b) Liaise with the duty SM to arrange for all necessary protections applicable for the work;
 - c) Take note of the train service arrangement when informed by the duty CC of the affected line;
 - d) Install SCD at the work site, as required, and work within the agreed working sector.
- c. As a requirement for access to track during Traffic Hours, when work site is near a crossover, siding; or when there is a possibility of member(s) of a working party straying on to the adjacent track at the opposite (counter) bound,
 - i. Request for additional protection as follows:
 - a) Imposition of 'Close Track' on the appropriate track circuit(s) on the opposite (counter) bound and siding, where applicable;
 - b) Duty SM of the station in advance of the working sector (in the normal direction of travel) to:
 - i) Switch on (or place) RFL at the headwall of the opposite (counter) bound; and
 - ii) Display the correct headwall sign;

- ii. Position a qualified HSM at the headwall of the opposite (counter) bound, of the station in advance of working sector (in the normal direction of travel) and instructing the HSM to:
 - a) Stop each train at the headwall with a RED flag;
 - b) Inform the TC to look, read and comply with the message on the headwall sign;
 - c) Hand signal the train to proceed only when the TC has acknowledged that he/ she understood the message on the headwall sign;
- iii. Position sufficient qualified LOM at suitable location(s) in accordance with sighting distance/ timing requirement to:
 - a) Warn the working party about trains approaching;
 - b) Stop a train in an emergency.
- d. Upon completion of the work:
 - i. Arrange with the duty CC of the affected line, duty SM and relevant Maintenance Staff of any special arrangements required for train movements (e.g., imposition of speed restriction for movement of passenger service trains);
 - ii. Withdraw access to track and book out.

8.3 Actions by Duty CC of the Affected Line

- a. When informed about work during the Non-Traffic Hours that likely to extend into Traffic Hours, based on information provided by the Possession Master (PM), decide on the following:
 - i. Limits of the working sector and Buffer Zones;
 - ii. Train service arrangement.
- b. Coordinate with the duty TAM on the arrangement for the work to be carried out under the original TOA or a new TOA.
- c. Inform the PM about the following:
 - i. The extended book-out time, if the work is to be carried out under the original TOA; OR
 - ii. Surrender the original TOA and apply a new TOA, if the work is to be carried out under a new TOA;
 - iii. Train service arrangement.
- d. If passenger service at the non-affected line is affected by the extension of work, inform the duty CC of the non-affected line so that arrangements can be made to minimise delay caused by the extension.
- e. Inform the duty TSC and duty SM about the extended book-out time or the change to the limits of working sector, protection(s) required and the train service arrangement.

- f. As a requirement for access to track during Traffic Hours, when working sector is near a crossover, siding; or when there is a possibility of member(s) of a working party straying on to the adjacent track at the opposite (counter) bound,
 - i. Ensure PM arrange for necessary protection, such as:
 - a) Imposition of 'Close Track' on the appropriate track circuit(s) on the opposite (counter) bound and siding, where applicable;
 - b) Duty SM of the station in advance of the working sector (in the normal direction of travel) to:
 - i) Switch on (or place) RFL at the headwall of the opposite (counter) bound; and
 - ii) Display the correct headwall sign;
 - c) Duty SM of the station in the immediate rear of the station (with red flashing light switched on [or placed] and headwall sign displayed), in the normal direction of travel, to:
 - i) Switch on (or place) YFL at the headwall of the opposite (counter) bound; and
 - ii) Display the correct headwall sign;
- g. Inform the duty RSM about the extension of work into Traffic Hours and the book-out time, train service arrangement, and inform him/ her to proceed to the book-in station.
- h. Check with the duty RSM (or in his absence, duty SM) that all necessary arrangements have been made, such as protection required, traction power arrangement and installation of SCD(s).

- i. For switching on traction power for train service at non-affected sectors,
 - i. Acknowledge on the third rail diagram prepared by the duty PSCO to confirm the correct sector that the traction power is to be switched ON;
 - ii. Ensure that there is a buffer zone of at least two traction power sections at both limits of the working sector and all access to track have been withdrawn from each buffer zone.
- j. When informed by the duty PSCO that traction power has been switched ON, ensure that all protections are in place before authorising duty TSC for train movement.
- k. After the PM has withdrawn the access to track, arrange with the duty PSCO to switch ON traction power.
- l. Inform duty TSC about any special arrangements required for train movements, such as imposition of Temporary Speed Restrictions.

8.4 Actions by Duty TAM

- a. When informed by the duty CC of the affected line,
 - i. If the work is to be carried out under the original TOA, arrange to extend the book-out time; OR
 - ii. If the work is to be carried out under a new TOA,
 - a) Ensure that all access to track granted in the affected working sector and its Buffer Zones must be withdrawn;
 - b) Arrange other work(s) that is not completed yet to come under the new TOA;
 - c) After all access to track have been withdrawn, grant the new TOA and update the CC about it.

8.5 Actions by Duty SM

- a. Duty SM of the book-in station, when informed by the duty CC of the affected line about work which extends into Traffic Hours, and
 - i. That the work is to be carried out under the original TOA and the extended book-out time, shall take note of the time; OR
 - ii. That the work is to be carried out under a new TOA, shall carry out the following:
 - a) Liaise with PM to surrender the original TOA and apply a new TOA;
 - b) Arrange protection required, such as PKS. If PKS has been operated,
 - i) check that the “SAFE TO PROCEED” indicator is illuminated;
 - ii) verify with duty TSC that PKS has been successfully activated;
 - c) Arrange for installation of SCD(s);
 - d) Arrange to switch on (or place) RFL at each limit of working sector and at the end of each Buffer zone; and
 - iii. Take note of the train service arrangement.
- b. Duty SM of the station in advance of the working sector (in the normal direction of travel), when requested by the PM, shall carry out the following:
 - i. Switch on (or place) RFL at the headwall of the opposite (counter) bound; and
 - ii. display the correct headwall sign.

- c. Duty SM of the station in the immediate rear of the station (with red flashing light switched on [or placed] and headwall sign displayed), in the normal direction of travel, when requested by the PM, shall carry out the following:
 - i. Switch on (or place) YFL at the headwall; and
 - ii. display the correct headwall sign.
- d. Upon the arrival of the duty RSM, SM of the book-in station shall update the RSM about the arrangements made, such as protection, traction power arrangement and installation of SCD(s).
- e. After the PM has withdrawn the access to track, SM of the book-in station shall arrange to remove all protections and SCD(s).

8.6 Actions by Duty TSC

- a. When informed by the duty CC of the affected line about work, which extends into Traffic Hours:
 - i. Check with all SMs involved in the access that protections are in place, headwall signs have been put up and flashing lights are switched on (or placed);
 - ii. Ensure no route is set into working sector including Buffer Zones;
 - iii. Take note of the arrangement of train service.
- b. If PKS has been operated,
 - i. for unmodified PKS, when requested for PKS activation is received at the Automatic Train Supervision System (ATSS) terminal:
 - a) Execute the ATSS command to activate the PKS and confirm it has been successfully activated at the ATSS;
 - b) Inform the SM about it.

- ii. for modified PKS, when informed by SM that PKS has been operated,
 - a) Check that it has been successfully activated at the ATSS;
 - b) Inform the SM about it.
- c. When the duty CC of the affected line authorises train movement, take note of any special arrangements required for train movements, particularly on the imposition of Temporary Speed Restrictions, and instruct duty SM to display relevant sign.

8.7 Actions by RSM

- a. When informed by the duty CC of the affected line about work, which extends into Traffic Hours, and the book-out time:
 - i. Immediately proceed to the book-in station;
 - ii. Take note of train service arrangement.
- b. Upon arrival at the book-in station, ask the duty SM to update on the arrangements made, such as protection, traction power arrangement and installation of SCD(s). Ensure all necessary arrangements are in place.
- c. Update the duty CC of the affected line on the progress of work, where applicable.
- d. When informed that access to track has been withdrawn by the PM, confirm all protections and SCD(s) have been removed, and update the duty CC of the affected line accordingly.

8.8 Actions by PSCO

- a. When informed by the duty CC of the affected line that traction power can be switched ON for non-affected sectors:
 - i. Colour the sector requested by the CC on the third rail diagram; and
 - ii. Get the CC to acknowledge on the third rail diagram to confirm that it is the correct sector to which the traction power is to be switched ON.
- b. After the duty CC of the affected line has acknowledged on the third rail diagram:
 - i. Ensure that there is a buffer zone of at least two traction power sections at both limits of the working sector;
 - ii. Confirm with the CC that all access to track within the buffer zones have been withdrawn;
 - iii. Switch ON traction power for the sector requested;
 - iv. Inform the CC when it has been done.
- c. When informed by the duty CC of the affected line to switch ON traction power after access to track has been withdrawn by the PM, arrange to do so.

9 Access to Depot Track



Depot track refers to track controlled by CMD except non-signalled tracks such as workshop track and Permanent Way siding.



Staff using authorised walkway in a depot must always look out and listen for trains at all times, and move to the destination as quickly as possible.



- a. "Able to Give-way Possession" indicates that, if necessary, it would be possible to stop work immediately, restore the track and associated equipment to a safe manner to allow for safe passage of a train, and to switch ON traction power.
- b. "Unable to Give-way Possession" indicates that the nature of the work being carried out will not allow the traction power to be restored or to allow any train movement to take place, other than within the possession.



The actions of PM/ PIC shall also apply to PM(L)/ PIC(L)*.

*Note:

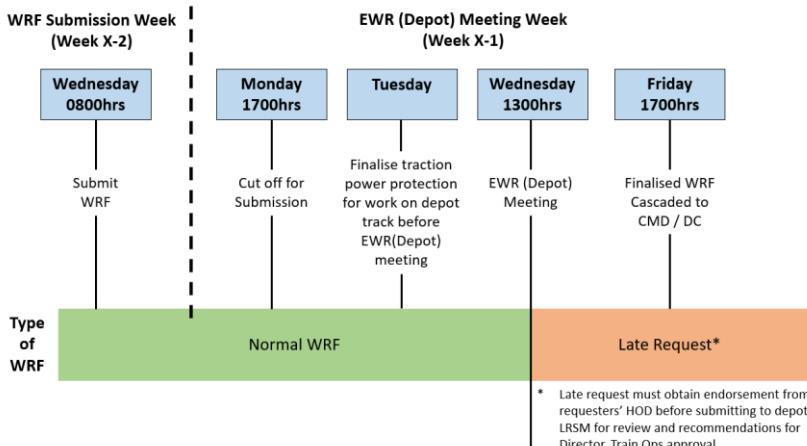
- PM(L) - The authorised LTA representative, on site, whom SMRT Institute has qualified, authorised by the ROD to take charge of the possession of the line for the purpose of carrying out engineering and similar work.
- PIC(L) - The authorised LTA representative, on site, whom SMRT Institute has qualified, responsible for the work at hand and the safety and conduct of the working party.



In addition to the four PICs working under the PM, up to three additional PWAY LMT sub-teams will be allowed to work under the same PM for a PWAY Line Maintenance (LMT) possession without consist.

For detailed procedures, refer to the relevant chapters in Rule Book 4 “Duties and Responsibilities of PM, PIC, LOM and HSM”.

9.1 Application for Access to Depot Track

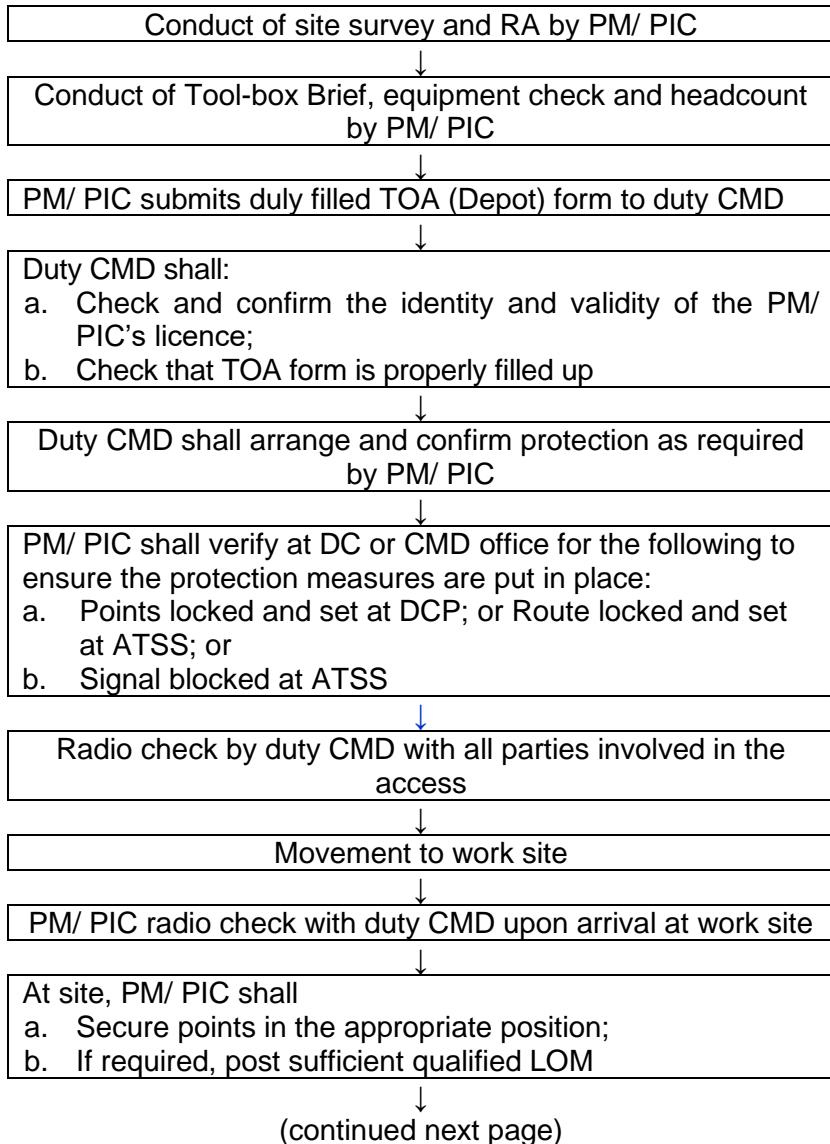


a. Arrangement for scheduling of work request

- The Engineering Works Request (Depot) or EWR (Depot) Meeting will be held on every Wednesday at 1400 hours. It will be chaired by the Senior Manager, Train Operations (North-South Line or East-West Line).
- Prior to the EWR (Depot) Meeting, the Work Requestor shall submit a Work Request Form or WRF (see **Annex C12**) to the Lead Rail Services Manager (RSM), who is in-charge of the depot where work is to be carried out, before 1700 hours on Monday.
- The Lead RSM shall do the following:
 - de-conflict the work requests;
 - consolidate the requests; and
 - submit the consolidated requests to the Manager (Power) by Tuesday, 1700hrs.

- iv. Before the EWR (Depot) weekly meeting, the Manager Train Services (MTS) in-charge and Manager (Power) of the appropriate zone, shall discuss and approve the traction power switching arrangements for all the works which are stated in the WRF to ensure that adequate protection(s) is planned for.
 - v. At the EWR (Depot) meeting, work requests in all the four depots will be discussed.
 - vi. All the Lead RSMs will disseminate the approved list of WRF, to the Work Requestor, Crew Manager Depot (CMD) and Depot Controller (DC) by each Friday.
 - vii. The respective duty CMD shall follow the approved list of WRF to process the TOA (Depot) form.
- b. Managing Late Request and Cancellation of Work
- i. After the EWR (Depot) meeting, submission of WRF for work in the following week will be considered as Late Request.
 - ii. For Late Request, the Work Requestor must get consent from a Possession Master (PM) or Person-In-Charge (PIC) to work in the sector before getting endorsement from his/her Head of Department (HOD). After the HOD has endorsed it, the Work Requestor must then submit the Late Request to the Head of Department (Train Operations) for approval.
 - iii. For cancellation of work, the Work Requestor is required to obtain endorsement from his/her HOD before submitting it to the Head of Department (Train Operations).

9.2 Overview of Booking-In and Booking-Out for Access to Depot Track



(continued from previous page)



PM/ PIC shall;

- a. If access to track is with traction power ON and a ramp cover or third rail safety cover is needed, place ramp cover or third rail safety cover over the ramp of the third rail or third rail adjacent to the area where work is to be carried out; OR
- b. If access to track is with traction power OFF, install Running Rail Bridging Clamp (RRBC) at the appropriate positions. Use a voltage tester to confirm traction power has been discharged and then install Short Circuit Device(s) or SCD(s) at the appropriate positions.



Start of work when necessary arrangement has been made



In an “Able to Give-way Possession”, when a train is to pass through the work site, PM/ PIC, duty CMD and duty DC, control and conduct passage of train through the work site



Completion of work, clearing of equipment, tools and materials, and conducting of headcount by PM/ PIC



Movement back to CMD's office, PM/ PIC liaises with duty CMD for withdrawal of access to depot track



For detailed procedures of access to depot track at all times, refer to **Annex A9**. For detailed procedures of depot traction power switching arrangements, refer to **Annex A12**.

9.3 Requesting Access

- a. Before gaining access on to a depot track, Possession Master (PM)/ Person-In-Charge (PIC) must:
 - i. Carry out a survey of the work site (for example, through cab rides) and develop a plan for access to track.
 - ii. Appoint a Safety Minder if the work is listed as high-risk work activity.



For details about the Role of Safety Minder and work listed as High-Risk Work Activities, refer to Chapter 3 of Rule Book 4

- iii. Conduct a Tool-box Brief to all members of the working party under his/ her charge. The Tool-box Brief must include the following:
 - a) Safety briefing;
 - b) Briefing on the work to be done using printed* Work Instruction (WI), Method Statement (MS) and Risk Assessment (RA);
- iv. Record the title and document number of WI and MS in a “Checklist for Tool-box Brief”;
- v. Keep the printed set of WI, MS and RA for subsequent briefing(s);
- vi. Complete the “Checklist for Tool-box Brief”;
- vii. Keep the “Checklist for Tool-box Brief” which must be filed at his/ her office.



* Assigned staff of appropriate Centre of Excellence (CoE) or Building and Facilities Division or LTA Project Team shall print a set of WI, MS and RA for the PM/ PIC.

- b. Staff gaining access on to depot track (including for training purposes), except non-signalled tracks such as workshop track and Permanent Way siding, shall make an application using the Track Occupation Authorisation (Depot) form (hereafter known as "TOA (Depot) form"). The only exception where the use of TOA (Depot) form is not required is when a staff is using authorised walkway in a depot to get into a train. Some examples are: TC is going to pick up a train for duty; training is to be conducted on-board a train; maintenance staff going to do work on-board a train.
- c. If a pre-signed TOA (Depot) form is received, the duty CMD shall do the following:
 - i. Reject the TOA application;
 - ii. Retain the TOA (Depot) form;
 - iii. Ask the PM/ PIC to resubmit a new TOA (Depot) form;
 - iv. Process applications submitted by other working parties so that other works can start first;
 - v. Raise an occurrence report with attached photo of the pre-signed TOA through the Risk Incident Management System.
- d. Duty CMD shall:
 - i. Check and confirm the identity and validity of the PM/ PIC's licence;
 - ii. Reject a TOA (Depot) request if he/ she has assessed and concluded that the PM/ PIC is unclear about procedures on to track, such as completion of Tool-box Brief before carrying out the work, protection requirement etc.

- e. All parties gaining access on to depot track shall communicate through portable radio. All radio communications must be in English. If radio communications failed, other available means of communications, such as mobile phone, can be used.



Track Access within a Possession

- a. PIC taking track access within a possession shall contact the PM at the depot to confirm the following:
 - i. Whether the track access is allowed;
 - ii. Track access arrangements and protection(s);
 - iii. Details of Engineer's Train movements, if any;
 - iv. Any last minute changes, information or instructions.
- b. When contacted by a PIC taking track access within the possession, the PM shall inform the PIC about the following.
 - i. Whether the PIC can proceed with the track access;
 - ii. Track access arrangements and protection(s);
 - iii. Details of Engineer's Train movements, if any;
 - iv. Any last minute changes, information or instructions.
- c. If the PM does not allow the PIC to take track access within the possession, the PIC shall not book in.



- d. If the PM allows the PIC to take track access within his/ her possession, the PIC shall:
 - i. Attend (in person) the Tool-box Brief given by the PM before gaining access on to track;
 - ii. Conduct a Tool-box Brief using the checklist for Tool-box Brief for all the members of the working party before gaining access on to the track (keep the duly completed checklist which must be filed at his/ her office);
 - iii. Go to the CMD's office,
 - (a) submit a "Track Occupation Authorisation (Depot)" [hereafter known as TOA (Depot)] form with Part 1 duly filled up;
 - (b) show a valid PIC licence to the duty CMD;
 - (c) fill up the depot book-in and book-out form/ logbook (see **Annex C29**).
- e. When a PIC books in at CMD's office to take track access within a possession, the duty CMD shall:
 - i. if Part 1 of TOA (Depot) form submitted by the PM is not properly filled up by the PM, do not allow the PIC to book-in;
 - ii. if Part 1 of the TOA (Depot) form has been properly filled up by the PM,
 - (a) check that Part 1 of TOA (Depot) form has been properly filled up by the PIC;
 - (b) confirm the identity and validity of the PIC's licence;
 - (c) if the PIC's identity is confirmed and his/ her licence is valid, allow him/ her to book-in and fill up the depot book-in and book-out form/logbook (see **Annex C29**);
 - (d) if the PIC's licence is invalid, do not allow him/her to book-in.

9.4 Switching Off Traction Power

- a. If traction power needs to be switched OFF, the PM/ PIC is to borrow from CMD, where necessary, the following item(s):
 - i. Voltage tester;



- ii. RRBC;



- iii. SCD;



- iv. High voltage gloves.



- b. The CMD is to arrange with duty Power Maintenance staff to switch off traction power*.



*For switching of traction power,

- a) Power Maintenance staff who is carrying out the switching of traction power shall report the status to the duty CMD through portable radio using the Depot Talkgroup. If radio communications failed, other available means of communications, such as mobile phone, must be used.
- b) The CMD shall record the traction power switching status in the TOA (Depot) form.

- c. Once the duty Power Maintenance staff reports that traction power has been switched off, the CMD is to:
 - i. Inform PM/ PIC that traction power has been switched off;
 - ii. Inform DC that the TOA (Depot) form has been issued. Tell him/ her
 - a) About limits of the work site;
 - b) Where traction power is switched OFF;
 - c) Duration of the access;

- iii. Fill up Part 2 of the TOA (Depot) form and hand it over to PM/ PIC.
- d. When informed by duty CMD about an access that has been granted to a depot track, the duty DC shall ensure that no route is set into the work site by carrying out the following:
 - i. Lock the appropriate points through the depot ATSS; OR
 - ii. Set and collar the selector switches on the Depot Control Panel in “Panel Mode” to position(s) that correspond with what PM/PIC secure at site.

9.5 Protection at Site

- a. At site, the PM/ PIC is to:
 - i. Work only in the sector that he/ she has requested, approved and authorised for;
 - ii. If access to track is with traction power ON and a ramp cover or third rail safety cover is needed, place ramp cover or third rail safety cover over the ramp of the third rail or third rail adjacent to the area where work is to be carried out; OR
 - iii. If access to track is with traction power OFF:
 - a) Install RRBC in the appropriate position;
 - b) Use a voltage tester to confirm traction power has been discharged;
 - c) Then install SCD(s) at the appropriate position *.



*Installation of SCD(s) has been waived for the following maintenance works:

1. Third rail meggering & Direct Current (DC) cable preventive maintenance;
2. Sectionalising switch preventive maintenance (Load Break Switch and Isolator Switch).

- iv. Secure each point at both ends of the working sector in the appropriate position to divert trains away from work site or if no such points are available, erect temporary barriers and place RFL(s) to mark the limits of the working sector;
- v. If the working party is exposed to danger from mechanised vehicles or trains, ensure that sufficient qualified LOM are posted to warn the working party of train movements.

- b. Only when the necessary arrangements listed above have been arranged can the working party start work.

9.6 Completion of Work on Depot Tracks

- a. When work is completed or time is up, whichever is earlier, the PM/ PIC shall:
 - i. If access to track is with traction power ON and ramp cover or third rail safety cover is used, remove ramp cover or third rail safety cover from third rail ramp or third rail;
 - ii. If access to track is with traction power OFF, remove SCD(s) and RRBC at site;

- iii. Free each point that was previously secured at site or remove the RFLs and barriers erected earlier;
 - iv. Clear track of all persons, tools, equipment and materials (including track trolley, if any);
 - v. Ensure that no item is stored at trackside.
- b. The PM/ PIC shall hand over the TOA (Depot) form with Part 3 filled up and declare to the CMD the following:
 - i. If access to track is with traction power OFF, whether SCD(s) and RRBC are removed from site;
 - ii. If access to track is with traction power ON and a ramp cover or third rail safety cover is used, whether ramp cover or third rail safety cover is removed from site;
 - iii. Whether the track is cleared of all persons, tools, equipment, materials and is safe for train movement.
- c. If access to track is with traction power OFF and when work has been completed and PM/ PIC has handed over the TOA (Depot) form with Part 3 filled up, the CMD shall:
 - i. arrange with the duty Power Maintenance staff to restore traction power when PM/ PIC confirms that SCD(s) and RRBC are removed from site;
 - ii. when traction power has been restored as informed by duty Power Maintenance staff,
 - a) inform the appropriate duty CC that access to track has been withdrawn if it affects passenger service operation;
 - b) inform duty DC that access to track has been withdrawn;
 - c) fill up Part 4 of TOA (Depot) form and return the duplicate copy to PM/ PIC;
 - d) File the original TOA (Depot) form.

- d. If access is with traction power ON and when work has been completed and PM/ PIC has handed over the TOA (Depot) form with Part 3 filled up,
 - i. Inform the appropriate duty CC of the affected line (i.e. NSL or EWL) that access to track has been withdrawn if it affects passenger service operation;
 - ii. Inform duty DC that access to track has been withdrawn;
 - iii. Fill up Part 4 of TOA (Depot) form and return the duplicate copy to PM/ PIC;
 - iv. File the original TOA (Depot) form.
- e. When informed by duty CMD that access to track has been withdrawn, the DC shall remove the point locking through the depot ATSS or collars from the selector switches on the Depot Control Panel.

10 Access to Transfer Berth during Non-Traffic Hours



Notes:

- a. When gaining access on to a Transfer Berth (TB) during Non-Traffic Hours, the PM/ PIC must do the following:
 - i. First book-in at the MRT station, nearest to the depot, to apply for access to the TB;
 - ii. Thereafter, book-in at depot to apply for access, through the depot, on to the TB in accordance with Chapter 8 "Access to Depot Track";
 - iii. Ensure that relevant traction power section(s) on both main line and depot track leading to TB have been switched off before gaining access on to the TB.
- b. PIC taking track access within a possession shall contact the PM at the depot and act in accordance with the procedures stated in Chapter 8 "Access to Depot Track".
- c. The actions of PM/ PIC shall also apply to PM(L)/ PIC(L), except for those actions required for a possession involving an Engineer's Train.
- d. If a pre-signed TOA form is received, the duty SM shall do the following:
 - i. Reject the TOA application;
 - ii. Retain the TOA form;
 - iii. Ask the PM/ PIC to resubmit a new TOA form;
 - iv. Process applications submitted by other working parties so that other works can start first;
 - v. Inform the duty TAC about the rejected TOA application;
 - vi. Raise an occurrence report with attached photo of the pre-signed TOA form through the Risk Incident Management System.
- e. Duty SM shall
 - i. Check and confirm the identity and validity of the PM/ PIC's licence;
 - ii. Reject a TOA request if he/ she has assessed and concluded that the PM/ PIC is unclear about procedures on to track, such as completion of Tool-box Brief before carrying out the work, protection requirement etc.

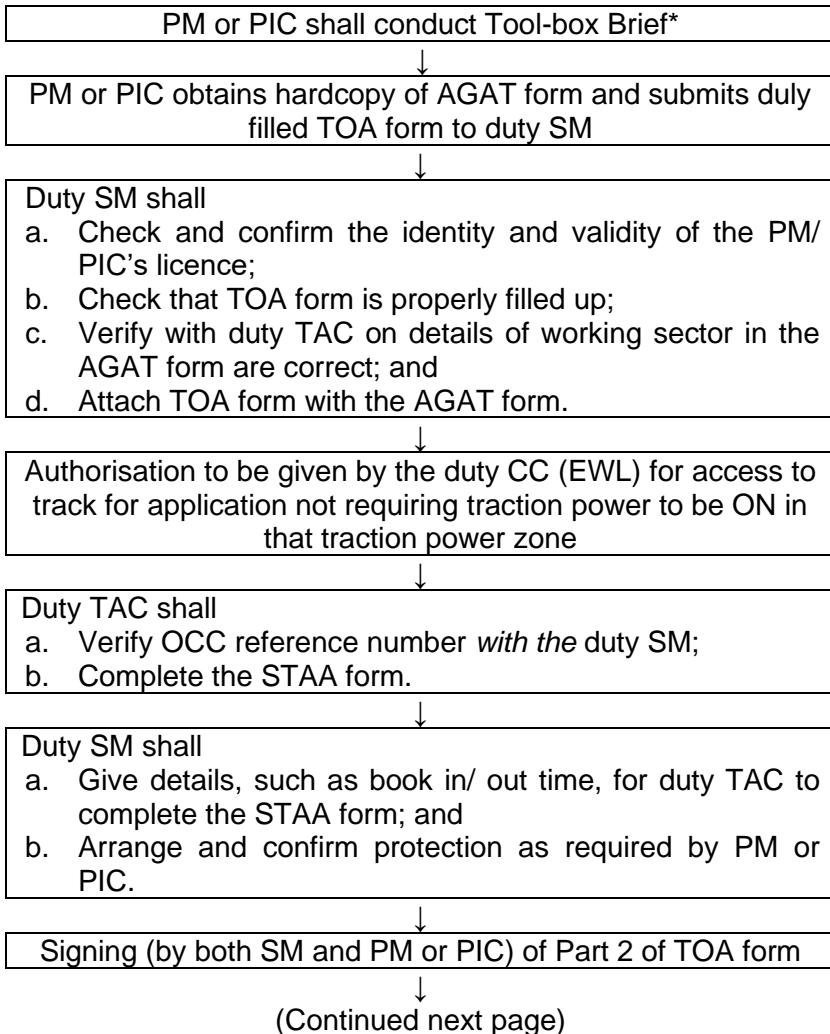


- f. The duty TAC shall record all cases of incomplete, unclear or erroneous AGAT application. Daily, the duty TAM shall compile such record and send it to the SM of TAMO or in short, SM (TAMO). SM (TAMO) shall send the record to the appropriate parties, such as HOD (CO), Line Head (NSEWL), relevant Head of CoE/ Div (Maintenance & Engineering) for further actions by the appropriate HODs.
 - g. PM/ PIC can contact the duty TAM regarding issues or queries relating to access to track.
 - h. Before gaining access on to the TB, the PM/ PIC must
 - i. Carry out a survey of the work site (for example, through cab rides) and develop a plan for access to track;
 - ii. Appoint a Safety Minder if the work is listed as high-risk work activities (for details about the role of Safety Minder and work listed as high-risk work activities, refer to Chapter 3 of Rule Book 4)
 - iii. Conduct a Tool-box Brief to all members of the working party under his/ her charge. The Tool-box Brief must include the following:
 - a) Safety briefing;
 - b) Briefing on the work to be done using printed* WI, Method Statement (MS) and Risk Assessment (RA);
 - iv. Record the title and document number of WI and MS in a “Checklist for Tool-box Brief”;
 - v. Keep the printed set of WI, MS and RA for subsequent briefing(s);
 - vi. Complete the “Checklist for Tool-box Brief”;
 - vii. Keep the “Checklist for Tool-box Brief” which must be filed at his/ her office.
- * Assigned staff of appropriate Centre of Excellence (CoE) or Building and Facilities Division or LTA Project Team shall print a set of WI, MS and RA for the PM/ PIC.

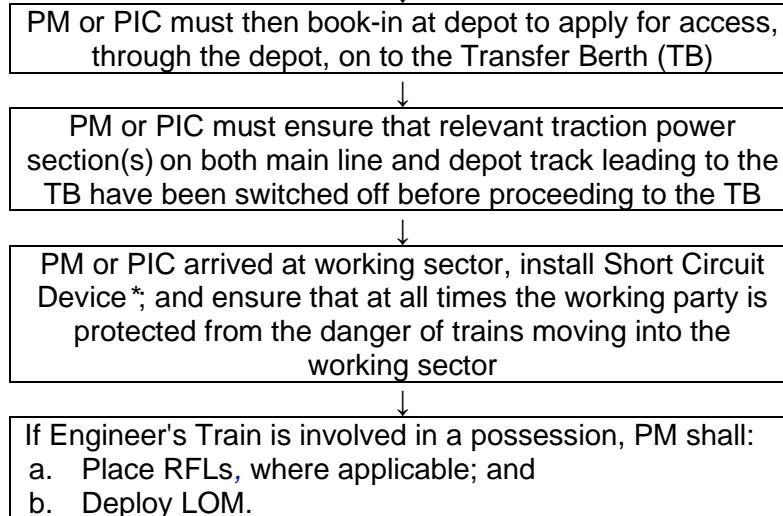


- i. All parties gaining access on to track shall communicate through portable radio and observe the following:
 - i. All radio communications must be in English;
 - ii. Carry out a radio check with duty TSC controlling the access to track before gaining access on to track and immediately upon reaching the working sector;
 - iii. If radio communications failed, other available means of communication, such as mobile phone, can be used.

10.1 Workflow on Access to Transfer Berth during Non-Traffic Hours



(Continued from previous page)



*Tool-box Brief can be conducted at depot office, Maintenance “home base” office or book-in station.



*Installation of Short Circuit Device(s) at TB has been waived for the following maintenance works:

1. Third rail meggering & Direct Current (DC) cable preventive maintenance;
2. Sectionalising switch preventive maintenance (Load Break Switch and Isolator Switch).



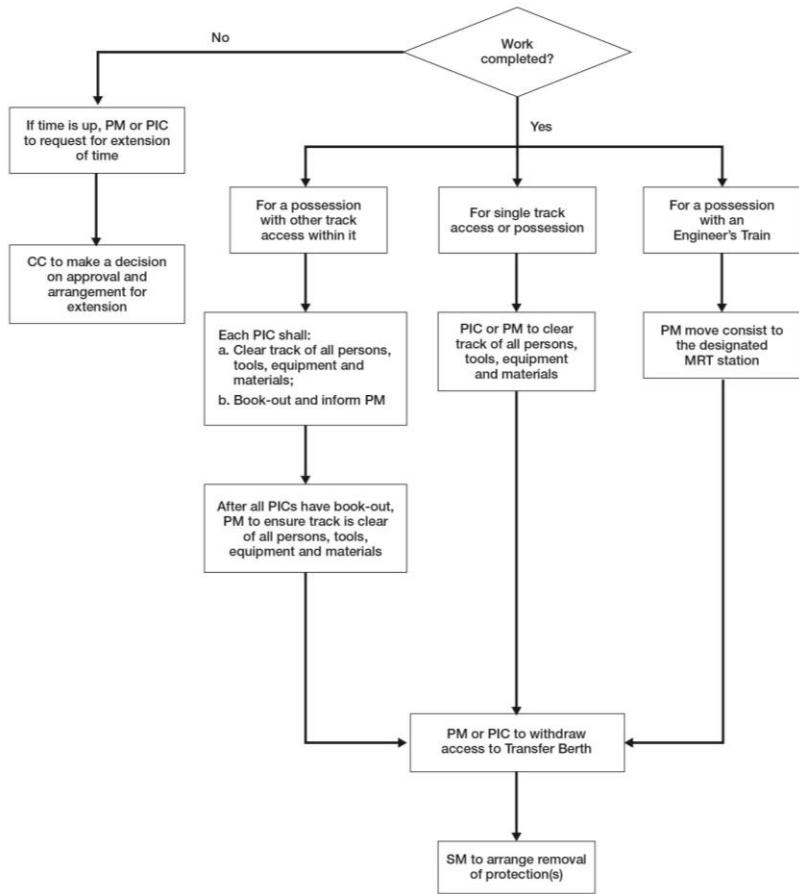
For detailed procedures of access to Transfer Berth during Non-Traffic Hours, refer to **Annex A11**.



Traction Power to be Switched OFF to Transfer Berths (TB) for the respective depots

Depot	TB	Track Circuit Numbers for Transfer Berth (TB)	Mainline Power Sector	Depot Power Circuit
BSD	1	N646, N644, B302T, B304T	PS N 24 / PS CT 01	DFX 01
	2	N645, N643	PS N 24 / PS CT 01	DFX 02
	3	N640, N642	PS N 22	DFX 02
UPD	1	U201T	PS W 21	DFX 01
	2	W700, U202T	PS W 22	DFX 04
	3	W675, W677, U203T	PS W 19	DFX 04
CHD	1	E707, C201T	PS E 29	DFX 02
	2	C202T	PS E 30	DFX 01
TWD	1	W932T	PS W 42	DFX 07
	2	W941T	PS W 41	DFX 01

10.2 Workflow on Booking out at MRT Station for Access to Transfer Berth during Non-Traffic Hours



AMENDMENT LEAFLET #01/2024

RULE BOOK 3:
ACCESS TO MAIN LINE AND DEPOT TRACKS DURING NON-TRAFFIC HOURS

1. The following information, which was approved at the Ad-hoc Procedures Review Meeting (PRM) held on 16 Mar 2023, has been added to page 2:
 - a. In the course of executing the procedures in this Rule Book, approvals/authorisation may be required from the Line Head (NSEWL) or the respective Head of Department (HOD);
 - b. If the Line Head (NSEWL) or HOD is absent or unavailable, the approvals/authorisation required for the execution of procedures shall be made by the deputy Line Head (NSEWL) or respective deputy HOD.

For example, if approval/ authorisation is required from the Line Head (NSEWL), in his absence, the deputy Line Head (NSEWL) shall make the decision.
2. With reference to the incorporation of CEP Policy, which was approved at the PRM held on 17 Nov 2023, the following contents have been added as Chapter 3 “Critical Execution Plans (CEP) for Work Activities During Non-Traffic Hours”:
 - a. the following information has been added:
 - “i. Complex projects and maintenance activities carried out during Non-Traffic Hours can introduce potential operational risks to the start of passenger service. Examples of such risks include:
 - a) Degradation to network infrastructure integrity (e.g. loss of use for switch and crossings);
 - b) Disruption, degradation, or loss of redundancy to critical systems (e.g. loss of train signalling, control, and communications systems; power systems; or train immobilisation requiring rescue efforts).
 - ii. CEP plays a key role in ensuring that well-developed recovery plans, maintenance and operations contingencies are in place and synchronised across relevant entities (e.g., OCC, IMCC, Maintenance / Project workgroups) for timely execution to minimise the impact to the start of passenger service when exigencies arise.”
 - b. the following contents on CEP have been added:
 - i. Project/ maintenance activities requiring CEPs, which include activities approved by System Safety Board (SSB) and activities not required to be approved by the SSB;
 - ii. important information to be included in a CEP;
 - iii. CEP review and approval process;

- iv. CEP monitoring and execution responsibilities by the various staff, i.e. Night Duty Officer (NDO)/ Engineering IC (EIC), Manager / EMM grade and above individual from SMRT Maintenance or Projects team; IMCC Lead Controller, IMCC Duty Manager and MOCC
3. To address the recommendation for RB mentioned in the incident investigation report on "LTA PIC book in for track access via the wrong process and book-in station", under Sect 5.2 "When PM/ PIC arrives at station where access to track is to be taken", the following information on "Track Access within a Possession" has been amended from:

"When a PIC books in at MRT station to take track access within a possession, the SM shall:

- i. Check and confirm the identity and validity of the PIC's licence;
- ii. If the PIC's identity is confirmed and his/ her licence is valid, provide the appropriate hard copy of AGAT form and allow him/ her to use the "PIC Book-in/ out Register" to book-in."

to:

"When a PIC books in at MRT station to take track access within a possession, the SM shall:

- i. If Part 1C of TOA is not properly filled up by the PM, do not allow the PIC to book-in;
- ii. If Part 1C of TOA has been properly filled up by the PM,
 - 1. check and confirm the identity and validity of the PIC's licence;
 - 2. if the PIC's identity is confirmed and his/ her licence is valid, provide the appropriate hard copy of AGAT form and allow him/ her to use the "PIC Book-in/ out Register" to book-in;
 - 3. if the PIC's licence is invalid, do not allow him/her to book-in."

4. Amendments made are in '*italic*'.

Note

Name of staff who has commented on Item 2 above	Designation
Ye Chenghao	Head, MEC
Jackie Tan Seow Lim	Head IMCC

S/ No	Old Document(s) <u>removed</u> from SMRT Intranet (NSEWL)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEWL)
1	RULE BOOK 3 (Revision Status: 16)	RULE BOOK 3 (Revision Status: 17)

	Designation	Signature	Date
PREPARED BY	Rail Operations Group Rules & Procedures Section	 limkimchye (Jan 5, 2024 10:35 GMT+8)	05/01/24
REVIEWED BY	HOD (OS)	 lim phuay eng (Jan 5, 2024 11:00 GMT+8)	05/01/24
APPROVED BY	Line Head (NSEWL)	 Teo Wee Kiat (Jan 5, 2024 13:27 GMT+8)	05/01/24
	SVP (Rail Ops)	 Alvin Kek (Jan 5, 2024 14:02 GMT+8)	05/01/24
	SVP (Rail Maintenance)	 Ang Hang Guan (Jan 5, 2024 13:06 GMT+7)	05/01/24
	President, Rail	 Lam Sheau Kai (Jan 5, 2024 15:59 GMT+8)	05/01/24

AMENDMENT LEAFLET #01/2023

RULE BOOK 3:
ACCESS TO MAIN LINE AND DEPOT TRACKS DURING NON-TRAFFIC HOURS

1. Due to power configuration at Bishan Depot (BSD) and Ulu Pandan Depot (UPD), the following amendments have been made to the table: Traction Power to be Switched OFF to Transfer Berth (TB) for the respective depots under Chapter 9 “Access to Transfer Berth during Non-Traffic Hours”:
 - a. the depot power circuit for BSD TB2 has been amended from “DFX01” to “DFX02”;
 - b. the depot power circuit for UPD TB1 has been amended from “DFX02” to “DFX01”;
 - c. the depot power circuit for UPD TB2 and TB3 have been amended from “DFX01” to “DFX04”.
2. Amendments made are in ‘italic’.

Note

Name of staff who has commented on Item 1b and 1c above	Designation
Mohamad Faeliq Bin Ramley	RSM

S/ No	Old Document(s) <u>removed</u> from SMRT Intranet (NSEWL)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEWL)
1	RULE BOOK 3 (Revision Status: 15)	RULE BOOK 3 (Revision Status: 16)

	Designation	Signature	Date
PREPARED BY	Rail Operations Group Rules & Procedures Section	 limkimchye (Aug 28, 2023 13:14 GMT+8)	28/08/23
REVIEWED BY	HOD (OS)	 lim phuay eng (Aug 28, 2023 20:01 GMT+8)	28/08/23
APPROVED BY	Line Head (NSEWL)	 Teo Wee Kiat (Aug 29, 2023 09:08 GMT+8)	29/08/23
	SVP (Rail Ops)	 Alvin Kek (Aug 29, 2023 09:24 GMT+8)	29/08/23
	SVP (Rail Maintenance)	 Ang Hang Guan (Aug 29, 2023 12:51 GMT+8)	29/08/23
	President, Rail	 Lam Sheau Kai (Aug 29, 2023 20:12 GMT+8)	29/08/23

AMENDMENT LEAFLET #04/2021

RULE BOOK 3:
ACCESS TO MAIN LINE AND DEPOT TRACKS DURING NON-TRAFFIC HOURS

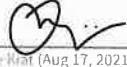
Amendments made are as follows:

1. As endorsed at the Procedure Review Meeting on 9 Jun 21 and approved at WSSQ on 22 Jun 21, the following contents have been incorporated in Chapter 4 “Booking in at MRT Station for Access to Track during Non-Traffic Hours” and Chapter 8 “Access to Depot Track”:
 - a. In addition to the four PICs working under the PM, up to three additional PWAY LMT sub-teams will be allowed to work under the same PM for a PWAY Line Maintenance (LMT) possession without consist;
 - b. For detailed procedures, refer to the relevant chapters in Rule Book 4 “Duties and Responsibilities of PM, PIC, LOM and HSM”.
2. Amendments made are in ‘italic’.

Note

Name of staff who has contributed to the review of the procedure	Designation
Goh Kai Xiang	M (PWAY Maint)

S/ No	Old Document(s) <u>removed</u> from SMRT Intranet (NSEWL)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEWL)
1	RULE BOOK 3 (Revision Status: 14)	RULE BOOK 3 (Revision Status: 15)

	Designation	Signature	Date
PREPARED BY	Rail Operations Group Rules & Procedures Section	 limkimchye (Aug 17, 2021 10:14 GMT+8)	17/08/21
APPROVED BY	Line Head (NSEWL)	 Teo Wan Kiat (Aug 17, 2021 17:35 GMT+8)	17/08/21
	SVP (Rail Ops)	 Alvin Kek (Aug 17, 2021 20:18 GMT+8)	17/08/21
	SVP (Rail Maintenance)	 Ng Chan Cheok (Aug 18, 2021 10:32 GMT+8)	19/08/21
	President Trains	 Lam Sheau Kai (Aug 21, 2021 10:53 GMT+8)	21/08/21

AMENDMENT LEAFLET #03/2021

RULE BOOK 3: ACCESS TO MAIN LINE AND DEPOT TRACKS DURING NON-TRAFFIC HOURS

A review was carried out and the following amendments have been made:

1. With the removal of Rule Book 6 “Access to Track by LTA Working Party” as approved at the Procedure Review Meeting held on 9 Jun 2021, the terms “Possession Master (X) or PM(X) and Person-In-Charge (X) or PIC(X) have been removed as they are no longer valid.
2. The following amendments have been approved at the Procedures Review Meeting held on 9 Jun 2021:
 - a. under Para 4.2b, the following statement regarding the use of of Short Circuit Clamps or SCCs has been added:

“Use of SCC is not compatible with Engineer’s Train with CCD”
 - b. under Chapter 4.5a, the following statement has been added so as to provide better clarity regarding which working party needs the appointment of a LOM:

“Appointing of LOM is applicable for each working party who is working under the possession of a PM (Consist)”
 - c. under Para 4.9a, the following statement has been added so as to provide better clarity:

“For a possession that is allocated at any of the five designated MRT stations where Ground Controller (GC) is taking on PM role [PM (GC)], PM(Consist) shall remove and re-install SCD as mentioned in Para 4.9 above if the GC is not on board the Engineer’s Train’
 - d. under Para 8.1a, amendments have been made as follows:
 - i. the Engineering Works Request (Depot) or EWR (Depot) Meeting will be held on every Wednesday at 1400 hours, instead of at 1300 hours;
 - ii. the Lead RSM shall submit the consolidated requests to the Manager (Power) by Tuesday, 1700hrs, instead of before 1300 hours on Tuesday.
 - e. under Chapter 8.2 “Overview of Booking-In and Booking-Out for Access to Depot Track”, after the duty CMD has arranged and confirmed the protection as required by the PM/ PIC, the following action to be carried out by the PM/ PIC has been added:

“PM/ PIC shall verify at DC or CMD office for the following to ensure the protection measures are put in place: Points locked and set at DCP; or Route locked and set at ATSS; or Signal blocked at ATSS”
 - f. under Chapter 9.1 “Workflow on Access to Transfer Berth during Non-Traffic Hours”, the table depicting “Traction Power to be Switched OFF to Access Transfer Berth (TB) for the respective depots” has been updated so as to provide better clarity to the PM/ PIC.

3. Under Chapter 8 “Access to Depot Track”,
 - a. to be in line with Chapter 5.4 of Rule Book 1 “General Safety Requirements for Access to Track and Protection Methods”,, the following action by the duty DC to ensure that no route is set into the work site under Para 8.4d item ii has been amended from:

“collar the appropriate points at the Depot Control Panel”

to:

“set and collar the selector switches on the Depot Control Panel in “Panel Mode” to position(s) that correspond with what PM/PIC secure at site”
 - b. to improve clarity, Para 8.6e has been amended to state that:

“The DC shall remove the point locking through the depot ATSS or collars from the selector switches on the Depot Control Panel”

instead of:

“The DC shall remove the point locking through the depot ATSS or collars from the appropriate points at the Depot Control Panel”
4. With reference to AL No. 07/2021, Para 5.4d has been amended to state that duty TSC shall commence testing of points only after access to track has been withdrawn and when authorised to do so by the duty CC.
5. Amendments made are in ‘italic’.

S/ No	Old Document(s) removed from SMRT Intranet (NSEWL)	New Document(s) inserted to SMRT Intranet (NSEWL)
1	RULE BOOK 3 (Revision Status: 13)	RULE BOOK 3 (Revision Status: 14)

	Designation	Signature	Date
PREPARED BY	Rail Operations Group Rules & Procedures Section	limkimchye <small>limkimchye (Jul 2, 2021 13:18 GMT+8)</small>	02/07/21
APPROVED BY	Head (NSEWL)	 <small>Teo Wee Kiat (Jul 2, 2021 16:35 GMT+8)</small>	02/07/21
	SVP (Rail Ops)	 <small>Alvin Kuk (Jul 2, 2021 17:14 GMT+8)</small>	02/07/21
	SVP (Rail Maintenance)	 <small>Ng Chan Cheok (Jul 5, 2021 11:51 GMT+8)</small>	05/07/21
	President Trains	 <small>Lam Sheau Kai (Jul 7, 2021 18:20 GMT+8)</small>	07/07/21

AMENDMENT LEAFLET #02/2021

RULE BOOK 3:
ACCESS TO MAIN LINE AND DEPOT TRACKS DURING NON-TRAFFIC HOURS

1. As approved at Procedures Review Meeting held on 3 Feb 2021, the requirements of Safety Minder from Safety & Security Circular have been incorporated.
2. Amendments made are in '*italic*'.

S/ No	Old Document(s) <u>removed</u> from SMRT Intranet (NSEWL)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEWL)
1	RULE BOOK 3 (Revision Status: 12)	RULE BOOK 3 (Revision Status: 13)

	Designation	Signature	Date
PREPARED BY	Rail Operations Group Rules & Procedures Section	 Lim Kim Chye (Mar 10, 2021 10:41 GMT+8)	10/03/21
APPROVED BY	Head (NSEWL)	 Teo Wee Kiat (Mar 12, 2021 20:29 GMT+8)	12/03/21
	SVP (Rail Ops)	 Alvin Kek (Mar 13, 2021 07:12 GMT+8)	13/03/21
	SVP (Rail Maintenance)	 Ng Chan Cheok (Mar 14, 2021 09:06 GMT+8)	14/03/21
	President Trains	 Lam Sheau Kai (Mar 14, 2021 19:51 GMT+8)	14/03/21

AMENDMENT LEAFLET #01/2021

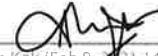
RULE BOOK 3: ACCESS TO MAIN LINE AND DEPOT TRACKS DURING NON-TRAFFIC HOURS

The key amendments made are as follows:

1. Relevant contents of the following Operations Circulars have been incorporated:
 - a. Operations Circular No. 23/2021 “Implementation of Track Access Management System (Stage 1) for Main Line during Non-Traffic Hours”;
 - b. Operations Circular No. 30/2021 “Stage 1 of the Track Management System (TAMS) for the North South East West Line (NSEWL)”;
 - c. Operations Circular No. 55/2021 “Removal and Reinstallation of Short Circuit Device (SCD) at Station’s SCD Point”;
 - d. Operations Circular No. 63/2021 “Enhancement of Work Arrangement for Engineer’s Train working on the Main line”.
2. Relevant contents of Traffic Circular No. 07/2021 “Modification of Protection Keyswitch (PKS) on North-South and East-West Lines (NSEWL)” have been incorporated.
3. The following terms have been amended:
 - a. “Group Dissemination System or GDS” amended to “Enhanced Group Dissemination System or EGDS”;
 - b. “Head of ROD (NSEWL)” amended to “Line Head (NSEWL)”;
 - c. “Head (SMRT Safety & Inspectorate)” amended to “Head (SMRT Safety & Security)”.
4. The actions by the CC (NSL) during Non-Traffic Hours have been taken over by the CC (EWL).
5. It was approved in the Procedures Review Meeting held on 5 Jun 2020 that there is no need to scotch the point(s) for movement of Engineer’s Train in a possession when Train Service Controller (TSC) is able to set route for the intended movement. As such, under
 - a. Para 4.1 “Workflow on Booking in at MRT Station for Access to Track during Non-Traffic Hours”; and
 - b. Para 9.1 “Workflow on Access to Transfer Berth during Non-Traffic Hours”;the following action by PM has been removed:

“Ensure that points are scotched in the correct positions for movement of Engineer’s Train within possession limits”
6. Amendments made are in ‘italic’.

S/ No	Old Document(s) <u>removed</u> from SMRT Intranet (NSEWL)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEWL)
1	RULE BOOK 3 (Revision Status: 11)	RULE BOOK 3 (Revision Status: 12)

	Designation	Signature	Date
PREPARED BY	Rail Operations Group Rules & Procedures Section	 Lim Kimchye (Feb 5, 2021 02:24 GMT+8)	05/02/21
	Head (NSEWL)	 Teo Wee Kian (Feb 9, 2021 13:08 GMT+8)	09/02/21
	SVP (Rail Ops)	 Alvin Kek (Feb 9, 2021 14:25 GMT+8)	09/02/21
APPROVED BY	SVP (Rail Maintenance)	 Ng Chan Cheok (Feb 10, 2021 17:44 GMT+8)	10/02/21
	President Trains	 Lam Siew Kai (Feb 17, 2021 15:04 GMT+8)	17/02/21

AMENDMENT LEAFLET #01/2020

RULE BOOK 3: ACCESS TO MAIN LINE AND DEPOT TRACKS DURING NON-TRAFFIC HOURS

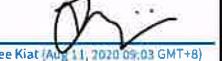
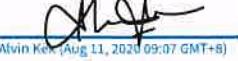
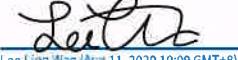
The key amendments made are as follows:

1. Relevant contents of Operations Circular No. 138/2020 “Waiver to Install Short Circuit Device (SCD) at Work Site for Maintenance Works in Depot and Transfer Berth” have been incorporated in the following chapters:
 - a. Chapter 8 “Access to Depot Track”;
 - b. Chapter 9 “Access to Transfer Berth during Non-Traffic Hours”.
2. Under Chapter 8 “Access to Depot Track”, Para 8.3 “Requesting Access”, the actions by a Possession Master, Person-In-Charge and Crew Manager Depot involving a possession with track access have been added (approved at Procedures Review Meeting).
3. Under “Notes” of Chapter 9 “Access to Transfer Berth during Non-Traffic Hours”,
 - a. the following statement has been added:

“PIC taking track access within a possession shall contact the PM at the depot and act in accordance with the procedures stated in Chapter 8 “Access to Depot Track”.”
 - b. the following statement has been removed as the PM or PIC must book-in at depot to apply for access, through the depot, on to the Transfer Berth:

“PM/ PIC shall ensure that no member of the working party is allowed to use fence gate to gain access to working sector unless a prior waiver has been granted through an Operations Circular. SM, who holds the key for the fence gate, shall not issue it to the PM/ PIC unless a prior waiver has been granted.
4. Amendments made are in ‘italic’.

S/ No	Old Document(s) <u>removed</u> from SMRT Intranet (NSEWL)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEWL)
1	RULE BOOK 3 (Revision Status: 10)	RULE BOOK 3 (Revision Status: 11)

	Designation	Signature	Date
PREPARED BY	Rail Operations Group Rules & Procedures Section	 <small>limkimchye [Aug 9, 2020 22:22 GMT+8]</small>	09/08/20
APPROVED BY	Head (NSEWL)	 <small>Teo Wee Kiat [Aug 11, 2020 09:03 GMT+8]</small>	11/08/20
	SVP (Rail Ops)	 <small>Alvin Kee [Aug 11, 2020 09:07 GMT+8]</small>	11/08/20
	SVP (Rail Maintenance)	 <small>Ng Chan Cheok [Aug 11, 2020 10:08 GMT+8]</small>	11/08/20
	CET	 <small>Lee Ling Wee [Aug 11, 2020 10:09 GMT+8]</small>	11/08/20

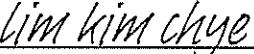
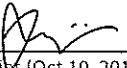
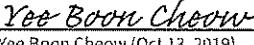
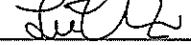
AMENDMENT LEAFLET #08/2019

RULE BOOK 3 (CBTC OPERATIONS):
ACCESS TO MAIN LINE AND DEPOT TRACKS DURING NON-TRAFFIC HOURS

The amendments made are as follows:

- 1 Relevant contents of the following chapters have been reviewed and amended with reference to Operations Circular No.141/2019 “Ground Controller (GC) performing the roles of Possession Master (PM) at designated MRT stations on the main lines during Non-traffic Hours”:
 - a. Chapter 3 “Processing an Application for Access to Track during Non-Traffic Hours”;
 - b. Chapter 4 “Booking in at MRT Station for Access to Track during Non-Traffic Hours”;
 - c. Chapter 5 “Booking out at MRT Station for Access to Track during Non-Traffic Hours”;
 - d. Chapter 7 “Access to Track for Work during Non-Traffic Hours Which Extends into Traffic Hours”.
- 2 Amendments made are in ‘italic’.

S/ No	Old Document(s) <u>removed</u> from SMRT Intranet (NSEWL)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEWL)
1	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 9)	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 10)

	Designation	Signature	Date
PREPARED BY	Rail Operations Group Operations Support Department Rules & Procedures Section	 lim kim chye (Oct 9, 2019)	09/10/19
	Head (NSEWL)	 Teo Wee Kiat (Oct 10, 2019)	10/10/19
	SVP (Rail Ops)	 Alan Kek (Oct 10, 2019)	10/10/19
APPROVED BY	SVP (Rail Maintenance)	 Yee Boon Cheow (Oct 13, 2019)	13/10/19
	CET	 Lee Ling Wee (Oct 14, 2019)	14/10/19

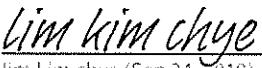
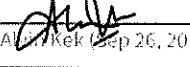
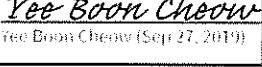
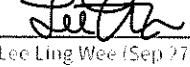
AMENDMENT LEAFLET #07/2019

RULE BOOK 3 (CBTC OPERATIONS):
ACCESS TO MAIN LINE AND DEPOT TRACKS DURING NON-TRAFFIC HOURS

The amendments made are as follows:

- 1 Instead of a padlock, a number lock shall be used by the duty Station Manager of another MRT station to shorten the chain of the protection key.
- 2 Relevant contents of the following chapters have been reviewed and amended with reference to Traffic Circular No.09/2019 “Monitoring of Computerised Short Circuit Device (SCD) System during Non-Traffic Hours”:
 - a. Chapter 4 “Booking in at MRT Station for Access to Track during Non-Traffic Hours”;
 - b. Chapter 5 “Booking out at MRT Station for Access to Track during Non-Traffic Hours”;
 - c. Chapter 6 “Co-ordination in OCC for Access to Track during Non-Traffic Hours”.
- 3 Amendments made are in ‘italic’.

S/ No	Old Document(s) <u>removed</u> from SMRT Intranet (NSEWL)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEWL)
1	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 8)	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 9)

	Designation	Signature	Date
PREPARED BY	Rail Operations Group Operations Support Department Rules & Procedures Section	 lim kim chye (Sep 24, 2019)	24/09/19
APPROVED BY	Head (NSEWL)	 Teo Wee Kiat (Sep 26, 2019)	26/09/19
	SVP (Rail Ops)	 Alvin Kek (Sep 26, 2019)	26/09/19
	SVP (Rail Maintenance)	 Yeo Boon Cheow (Sep 27, 2019)	27/09/19
	CET	 Lee Ling Wee (Sep 27, 2019)	27/09/19

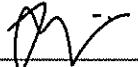
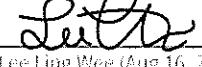
AMENDMENT LEAFLET #06/2019

RULE BOOK 3 (CBTC OPERATIONS):
ACCESS TO MAIN LINE AND DEPOT TRACKS DURING NON-TRAFFIC HOURS

The key amendments made are as follows:

- 1 Relevant contents of the following chapters have been reviewed and amended with reference to Operations Circular No.159/2019 “Waiver to install Short Circuit Device (SCD) at work sector for maintenance works on the Main Line”:
 - a. Chapter 4 “Booking in at MRT Station for Access to Track during Non-Traffic Hours”;
 - b. Chapter 8 “Access to Depot Track”;
 - c. Chapter 9 “Access to Transfer Berth during Non-Traffic Hours”.
- 2 Amendments made are in ‘italic’.

S/ No	Old Document(s) <u>removed</u> from SMRT Intranet (NSEWL)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEWL)
1	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 7)	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 8)

	Designation	Signature	Date
PREPARED BY	Rail Operations Group Operations Support Department Rules & Procedures Section	 Lim Kim Chye (Aug 7, 2019)	07/08/19
APPROVED BY	Head (NSEWL)	 Teo Wee Kiat (Aug 15, 2019)	15/08/19
	SVP (Rail Ops)	 Alvin Lee (Aug 15, 2019)	15/08/19
	SVP (Rail Maintenance)	 Yeo Boon Cheow (Aug 15, 2019)	15/08/19
	CET	 Lee Ling Wee (Aug 16, 2019)	16/08/19

AMENDMENT LEAFLET #05/2019

RULE BOOK 3 (CBTC OPERATIONS):
ACCESS TO MAIN LINE AND DEPOT TRACKS DURING NON-TRAFFIC HOURS

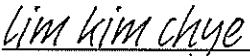
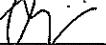
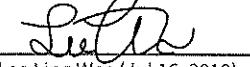
The key amendments made are as follows:

- 1 Under Para 4.6 “Live-Track Possession with EMU Train(s)”, an Information Box has been added to state the following:

“For detailed procedures by TAMO on ensuring that sufficient Buffer Zones are provided for Live-Track Possession, refer to **Annex A6 (CBTC)**”.

- 2 Amendments made are in ‘italic’.

S/ No	Old Document(s) <u>removed</u> from SMRT Intranet (NSEWL)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEWL)
1	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 6)	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 7)

	Designation	Signature	Date
PREPARED BY	Rail Operations Group Operations Support Department Rules & Procedures Section	 lim kim chye (Jul 10, 2019)	10/07/19
	Head (NSEWL)	 Teo Wee Kiat (Jul 11, 2019)	11/07/19
	SVP (Rail Ops)	 Alvin Kek (Jul 11, 2019)	11/07/19
APPROVED BY	SVP (Rail Maintenance)	 Yee Boon Cheow (Jul 15, 2019)	15/07/19
	CET	 Lee Ling Wee (Jul 16, 2019)	16/07/19

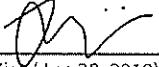
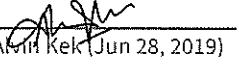
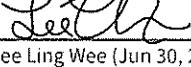
AMENDMENT LEAFLET #04/2019

RULE BOOK 3 (CBTC OPERATIONS): ACCESS TO MAIN LINE AND DEPOT TRACKS DURING NON-TRAFFIC HOURS

The amendments made are as follows:

- 1 The proposed procedure on a Person-In-Charge of a patrolling team passing a Red Flashing Light during a track access was approved at the Procedures Review Meeting held on 7 Jun 19 and has been incorporated under Chapter 4 “Booking in at MRT Station for Access to Track during Non-Traffic Hours”.
- 2 Operations Circular No. 131/2019 “Procedures for Request to Work on Track in Depot” has been incorporated under Chapter 8 “Access to Depot Track”.
- 3 Under Chapter 8 “Access to Depot Track”, the relevant content has been amended to state that only “power meggering” is exempted from SCD installation at a work site.
- 4 Amendments made are in ‘italic’.

S/N	Old Document(s) <u>removed</u> from SMRT Intranet (NSEW)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEW)
1	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 5)	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 6)

	Designation	Signature	Date
PREPARED BY	Rail Operations (NSEWL) Division Projects & Train Support Branch Documentation Section	 Cheng Heng Ying (Jun 27, 2019)	27/06/19
APPROVED BY	Head (NSEWL)	 Teo Wee Kiat (Jun 28, 2019)	28/06/19
	SVP (Rail Ops)	 Alvin Kek (Jun 28, 2019)	28/06/19
	SVP (Rail Maintenance)	 Yee Boon Cheow (Jun 28, 2019)	28/06/19
	CET	 Lee Ling Wee (Jun 30, 2019)	30/06/19

AMENDMENT LEAFLET #03/2019

**RULE BOOK 3 (CBTC OPERATIONS): ACCESS TO MAIN LINE AND DEPOT TRACKS
DURING NON-TRAFFIC HOURS**

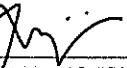
The amendments made are as follows:

1. To improve clarity, relevant contents of "Track Access within a Possession" under Para 4 "Booking in at MRT Station for Access to Track during Non-Traffic Hours" have been amended to state the following:

"If the PM allows the PIC to take track access within his/ her possession, the PIC shall attend (in person) the Tool-box Brief given by the PM before gaining access on to track"

2. It was approved by SSQA committee (SSQA meeting #07-18) that the installation of Short Circuit Device (SCD) at a work site has been waived for the following activities:
 - a. Permanent Way (PWAY) patrolling; and
 - b. power meggering.
3. Amendments made are in 'italic'.

S/N	Old Document(s) <u>removed</u> from SMRT Intranet (NSEW)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEW)
1	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 4)	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 5)

	Designation	Signature	Date
PREPARED BY	Rail Operations (NSEWL) Division Projects & Train Support Branch Documentation Section	 Cheng Heng Ying (Jun 11, 2019)	11/06/19
APPROVED BY	Head (NSEWL)	 Teo Wee Kiat (Jun 17, 2019)	17/06/19
	SVP (Rail Ops)	 Alan Kee (Jun 17, 2019)	17/06/19
	SVP (Rail Maintenance)	 Yee Boon Cheow (Jun 18, 2019)	18/06/19
	CET	 Lee Ling Wee (Jun 19, 2019)	19/06/19

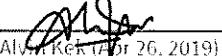
AMENDMENT LEAFLET #02/2019

**RULE BOOK 3 (CBTC OPERATIONS): ACCESS TO MAIN LINE AND DEPOT TRACKS
DURING NON-TRAFFIC HOURS**

The key amendments made are as follows:

1. Relevant contents of Operations Circular No. 100/2019 “Access on to Transfer Berth (TB)” have been incorporated.
2. Amendments made are in ‘italic’.

S/N	Old Document(s) <u>removed</u> from SMRT Intranet (NSEW)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEW)
1	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 3)	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 4)

	Designation	Signature	Date
PREPARED BY	Rail Operations (NSEWL) Division Projects & Train Support Branch Documentation Section	 Cheng Heng Ying (Apr 25, 2019)	25/04/19
	Head (NSEWL)	 Teo Wee Kiat (Apr 26, 2019)	26/04/19
APPROVED BY	SVP (Rail Ops)	 Alvin Kek (Apr 26, 2019)	26/04/19
	CMO	 Yee Boon Cheow (Apr 29, 2019)	29/04/19
	CET	 Lee Ling Wee (Apr 29, 2019)	29/04/19

AMENDMENT LEAFLET #01/2019

RULE BOOK 3 (CBTC OPERATIONS): ACCESS TO MAIN LINE AND DEPOT TRACKS DURING NON-TRAFFIC HOURS

The key amendments made are as follows:

1. It was decided at the Procedure Review Meeting held on 23 Oct 2018 that for pre-signed TOA form, Station Manager or Crew Manager Depot shall raise an occurrence report with attached photo of pre-signed TOA, through Risk Incident Management System. As such, the following have been amended accordingly:
 - a. item b of "Notes" under Chapter 4 "Booking in at MRT Station for Access to Track during Non-Traffic Hours";
 - b. item c of Para 8.1 "Requesting Access";
 - c. item c of "Notes" under Chapter 9 "Access to Transfer Berth during Non-Traffic Hours".
2. Para 8.4 "Switching Off Traction Power"
 - a. under Para a, "High voltage gloves" have been added;
 - b. under Para c, the following action to be carried out by the CMD has been added: "Fill up Part 2 of the TOA (Depot) and hand it over to PM/ PIC."
3. Para 8.6 "Completion of Work on Depot Tracks"
 - a. To improve clarity, Para c has been amended from:

"If access is with traction power OFF and when work is completed and PM/ PIC has submitted the relevant documents, the CMD shall arrange with the duty Power Maintenance staff to restore traction power when PM/ PIC confirms that SCD(s) and RRBC are removed from site"

to

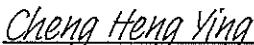
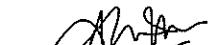
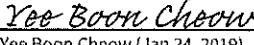
"If access is with traction power OFF and when work has been completed and PM/ PIC has handed over the TOA (Depot) form with Part 3 filled up, the CMD shall:

 - i. arrange with the duty Power Maintenance staff to restore traction power when PM/ PIC confirms that SCD(s) and RRBC are removed from site;
 - ii. when traction power has been restored as informed by duty Power Maintenance staff,
 - a) inform the appropriate duty CC that access to track has been withdrawn if it affects passenger service operation;
 - b) inform duty DC that access to track has been withdrawn;
 - c) fill up Part 4 of TOA (Depot) form and return the duplicate copy to PM/ PIC;
 - d) File the original TOA (Depot) form."

- b. under Para d,
 - i. to improve clarity, the following statement has been amended from:
“If access is with traction power ON or when traction power is restored as informed by duty Power Maintenance staff”
to
“If access is with traction power ON and when work has been completed and PM/ PIC has handed over the TOA (Depot) form with Part 3 filled up”
 - ii. the following actions to be carried out by the CMD have been added:
 - (a) Fill up Part 4 of TOA (Depot) form and return the duplicate copy to PM/ PIC;
 - (b) File the original TOA (Depot) form.

- 4. Amendments made are in ‘italic’.

S/N	Old Document(s) <u>removed</u> from SMRT Intranet (NSEW)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEW)
1	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 2)	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 3)

	Designation	Signature	Date
PREPARED BY	Rail Operations (NSEWL) Division Projects & Train Support Branch Documentation Section	 Cheng Heng Ying (Jan 24, 2019)	24/01/19
	SVP (Rail Ops)	 Alvin Kek (Jan 24, 2019)	24/01/19
APPROVED BY	CMO	 Yee Boon Cheow (Jan 24, 2019)	24/01/19
	CET	 Lee Ling Wee (Jan 25, 2019)	25/01/19

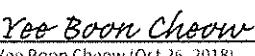
AMENDMENT LEAFLET #01/2018

**RULE BOOK 3 (CBTC OPERATIONS): ACCESS TO MAIN LINE AND DEPOT TRACKS
DURING NON-TRAFFIC HOURS**

The key amendments made are as follows:

- A Under Para 4,
 - A1 The contents on after PM/PIC book-in at a MRT station, the PM/PIC and working party can gain access to work site through a location such as Access Shaft, or Relay Building, or On-line station, has been incorporated. This was approved at SSQA on 31 Aug 2018.
 - A2 If the entry point is through an on-line substation to get to the work site, PM/PIC must install additional Short Circuit Appliance at on-line substation track and at work site. This was approved at SSQA on 4 Oct 2018.
 - A3 The relevant contents of Station Ops Local Instruction on access to tracks during Non-Traffic Hours by SM or SOM or RSM, has been incorporated.
- B Amendments made are in '*italic*'.

S/N	Old Document(s) <u>removed</u> from SMRT Intranet (NSEW)	New Document(s) <u>inserted</u> to SMRT Intranet (NSEW)
1	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 1)	RULE BOOK 3 (CBTC OPERATIONS) (Revision Status: 2)

	Designation	Signature	Date
PREPARED BY	Rail Operations (NSEWL) Division Projects & Train Support Branch Documentation Section	 Cheng Heng Ying (Oct 26, 2018)	26/10/18
APPROVED BY	SVP (Rail Ops)	 Alvin Yeo (Oct 26, 2018)	26/10/18
	CMO	 Yeo Boon Cheow (Oct 26, 2018)	26/10/18
	CET	 Lee Ling Wee (Oct 28, 2018)	28/10/18