

ERL MAINTENANCE SUPPORT SDN BHD

(Company No. 498574-T)



ROLLING STOCK DEPARTMENT

PROTECTION OF STAFF WORKING IN THE WORKSHOP

Doc. No. D00.OMR.M15881.BT.0002.A



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**WORKING OR WALKING NEAR MOVING VEHICLES OR THE
25kv OVERHEAD LINE EQUIPMENT IS DANGEROUS
UNLESS YOU FOLLOW THE SAFETY RULES PREPARED
FOR YOUR SAFETY**

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1 Purpose

To enable staff, contractors and others to work safely within the workshop buildings at Salak Tinggi

2 Scope

Applies to all staff and other persons carrying out any activity, walking or working, in the workshop. This procedure may be applied to the Main Workshop, Wheel Lathe building, Spray Cabin, Train Wash Plant and Auxiliary workshop.

Distribution and access to this procedure in Docs H/bird is given to all.

3 Procedure

3.1 All persons

All persons who work or walk without escort in the workshop are required to have been trained/briefed on this procedure.

The workshop floor has been painted to indicate as follow.

- **Yellow** lines are walking areas for all. Visitors must remain in the walking area unless escorted by E-MAS representative.
- **Red** lines are to indicate that all equipment must be outside the lined area during vehicle movement
- **White** lines are the working areas for specific workshop equipment and must be kept clear of all other items.

3.2 Operation of Machinery

Only persons who have been trained, certificated and authorised by the company to the company's procedures are permitted to operate any machinery or equipment within the workshop.

3.3 Authority to work

- a. No work can be carried out on the track, buildings or on vehicles in the workshop without the authority of the Rolling Stock Maintenance Supervisor.
- b. If work need to be carried out other than track 9 & 10 outside of workshop e.g. Train Washing Plant in the radius of 2.75 meters around the Overhead Contact Line, they should request for a valid Track Possession Request from Operation Control Center.
- c. Contractors or third party staff shall inform the Rolling Stock Maintenance Supervisor of their intention to work in or around the train as well as work with any equipment in the Main Workshop or at the others locations in the Main Workshop.
- d. Rolling Stock Maintenance Supervisor will note this down in the RST Supervisor's Handing Over / Taking Over Sheet and also make a note on the White Board in the Foreman's Room.

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3.4 Movement of vehicles

- a. No movement of vehicles into/out of/within the workshop can be done without the authority of The Rolling Stock Maintenance Supervisor. The Rolling Stock Maintenance Supervisor will designate a person (**Workshop Lookout Man**) to be present during the movement to give instructions to staff making the movement .– Refer Procedure : G00.OMR.M11450.DS.0002.A
- b. All movements shall be carried out using the rail vehicles own power, the use of the Shunting Locomotive or the Shunting Vehicle. Movement shall be in accordance with the Procedure Manual for Train Drivers (G00.OMO.M15000.NA.0100). The maximum speed of movements in the Main Workshop/Aux Workshop, Under Floor Wheel Lathe and Spray Cabin shall be at a slow walking pace.

3.5 Adherence to the procedure

The following appendices amplify the arrangements for personal protection, which is described in section 4

- a. With regards to the OCL Isolation handle at track 09 and 10 North, each person has a responsibility to apply his personal protection & to remove it.
- b. No person is authorised to apply or remove another's protection.
- c. In the event of protection not being applied, or not being removed before the person leaves the site, it is a disciplinary offence.
- d. If protection has to be removed in the absence of the person who applied it, the Rolling Stock Maintenance Supervisor or a delegated **trained member** of his staff may remove the protection applied. For that, he **MUST** check all aspects of the job being done. He **MUST** also ensure that it is safe to remove the protection and to **ENSURE** that no bad effect will result from the protection being removed.
- e. Having removed the protection as per paragraph d above, the Rolling Stock Maintenance Supervisor is **REQUIRED** to inform the Rolling Stock Maintenance Manager who will note it down and will inturn inform the Safety Manager who shall record it in the incident log for investigation.

4 Appendices

4.1 Wearing of personal protective equipment.

- a. **All person who walk or work in the sidings in or near the structural gauge (less than 5 metres of any running railway track) shall wear High Visibility Vests.**
- b. Industrial footwear is required while working.
- c. Hard hats are to be worn where working with Cranes.
- e. Bump caps to be worn when working under vehicles and in the pits.

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- e. Eye protection must be worn when using cutting, grinding, chipping, burning and welding equipment.
- f. Ear protection shall be worn when in the vicinity of noisy equipment. Specialist protective clothing shall be worn when required. (e.g. painting face masks, welder's aprons etc...)

4.2 Protection required for rail vehicles being worked on.

- a. Any person who requires to work on a rail vehicle shall apply the following protection. (See 4.4 & 4.5).
- b. The vehicle shall have the parking brake applied, the wheel chock secured and orange flags applied refer G00. OMR.M11450.DS.0001.A Para 3.2 e
- c. **If working on vehicles roof in the Track 9 or 10 where there is Overhead Contact Line, it is necessary to request the OCC to isolate switch 326 before isolating & earthing the power supply line on the isolation pole to gain access to the roof platform.**
- d. **In addition to that, the earthing poles MUST be applied by an authorized PICOP on the north and south end of the designated location on track outside the workshop building where the maintenance work are to be done.**

4.3 Requirements for protection of work (including cleaning) on track, equipment, pit.

- a. Any person who requires to work on the track or in pits shall apply the following protection (See 4.4 & 4.5).
- b. Any vehicle in the track shall have the parking brake applied.
- c. The vehicle shall have orange flags applied (**yet to be obtained**) on all four sides at opposite ends of the vehicle.
- d. If the vehicle is attached to another, or stabled within one car length of another, the orange flag is to be fixed to the far end of the adjacent vehicle.
- e. **If working on vehicles roof in the Track 9 or 10 where there is Overhead Contact Line, it is necessary to request the OCC to isolate switch 326 before isolating & earthing the power supply line on the isolation pole to gain access to the roof platform.**
- f. **In addition to that, the earthing poles MUST be applied by an authorized PICOP on the north and south end of the designated location on track outside the workshop building where the maintenance work are to be done.**

4.4 The protection at the workshop entrance track 11 & 12 (Heavy Maintenance).

- a. Before work commences on vehicles, the track or other activities within the structural gauge the wheel chock shall be placed in position.
- b. On completion of work the wheel chock shall be removed.

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4.5 Protection of workshop entrance at track 9 & 10 (Light Maintenance).

- a. It is possible to enter this tracks from the North and South end, provided there is **Workshop Lookout man** wearing high visibility vest and green/red luminous flag (during day) and shunting torch (during night). The **Workshop Lookout man** should always position himself outside the entrance of the track refer G00.OMR.M11450.DS.0002.A
- b. At each end of each track is a shunting signal that will allow movements to take place.
- c. Before work commences on vehicles, the track or other activities within the structural gauge the wheel chock shall be placed in position refer G00.OMR.M11450.DS.0002.A

4.6 Isolation of the 25kv Overhead Contact Line

- a. The OCC must be informed to isolate switch 326 before isolating & earthing the overhead line at the isolation switch that is located each at track 9 & 10 North End of the workshop.
- b. Make sure to select the correct switch. This switch disconnects the overhead line in the workshop from the supply outside the workshop. The South End of each track receives no supply, as there is an insulated section.

4.7 Working Instruction for The Rolling Stock Maintenance Supervisor

- a. Vehicles shall not be moved into/out of or within the workshop without his authority.
- b. All movements shall be supervised by him OR by a delegated trained member of staff and he **MUST** use the “**Train Movement Record In/Out of Main Workshop Sheet**” available in H/bird Doc's No. 21668

BEFORE AUTHORIZING THE MOVEMENT OF A VEHICLE OUT OR WITHIN THE WORKSHOP, YOU SHALL CHECK VEHICLES TO ENSURE :

- i. All orange flags, wheel chock and earthing devices are removed.
 - ii. The roof-working platform has been returned to its stabling position (Track 11 only) and the OCL has been energized (if required).
 - iii. All staff at ground level, inside the vehicle and in the pit are standing clear.
 - iv. All equipment is correctly stowed and all hatches and covers are closed and locked.
 - v. All equipment and mobile platforms are laid clear of the vehicle so that it will not be struck by a moving vehicle.
 - vi. All shore supply, battery charge leads and pipes have been removed.
 - vii. Workshop protection as shown in 4.4 or 4.5 has been removed.
- c. HE CAN NOW INSTRUCT THE OPERATION STAFF TO MAKE THE MOVEMENT.
- d. **BEFORE AUTHORIZING THE MOVEMENT OF A VEHICLE INTO THE WORKSHOP, HE SHALL CHECK THE FOLLOWING TO ENSURE :**
- i. All staff and others in the track into which movement is to take place are standing clear.
 - ii. The track has room for the vehicle that requires access.
 - iii. All other equipment is clear from the area into which movement is planned.
 - iv. The roof working platform is in to its stabling position (Track 11 only)

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- v. The crane hooks are not foul of the movement (Track 11 only)
 - vi. The vehicle lifting line is in the lowered position (Track 12 only)
 - vii. The rail vehicle driver is driving from the front driver's cab OR there is a member of ground staff in place at the front of the vehicle to give directions by hand signal or radio to the shunting locomotive driver.
- e. HE CAN NOW INSTRUCT THE OPERATION STAFF TO MAKE THE MOVEMENT.
- f. The vehicle shall be parked right up to the next vehicle OR 7 metres clear of the next vehicle so there is either NO gap (Coupled Condition) OR a big gap between vehicles (Normal Stabling Condition in the Workshop).
- g. He shall be present for the move and ensure the vehicle is stabled correctly according to his requirements and the content of the Operations Procedure Manual for Drivers (G00.OMC.M15000.NA.0100)
- h. When movement is complete you shall apply the workshop protection as shown in appendix 4.4, & 4.5**
- i. Supervision of staff safety

If any person fails to apply Personal Protective Equipment as indicated in Apendices Para 4.1, he must be removed from the work place until he has applied his protection.

- i. Failure to apply or remove work place protection is a disciplinary offence.
- ii. If protection has to be removed for a person who has left site, check all aspects of the job being done, to ensure that it is safe to remove protection and to ensure that no bad effect will result from the protection being removed.
- iii. Having removed the protection as per paragraph d above, the Rolling Stock Maintenance Supervisor is **REQUIRED** to inform the Rolling Stock Maintenance Manager who will note it down and will inturn inform the Safety Manager who shall record it in the incident log for investigation.

4.8 Working Instruction for staff on rail vehicles in the workshop

**Your protection only protects one person – YOU.
Each person must protect himself according to this instruction.**

a. Track 9 &10

Use the “**Train Movement Record In/Out of Main Workshop Sheet**” available in H/bird Doc's No. 21668

- i. Apply wheel chock and orange flags at both ends of the vehicle / train.
- ii. If working on roof, or working on a job that requires 25kv disconnected, the earthing device must be applied on north & south end of the track.

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- iii. When work is finished remove orange flags, wheel chock and earthing device at both ends of vehicle / trains.

b. Track 11 & 12

Use the “**Train Movement Record In/Out of Main Workshop Sheet**” available in H/bird Doc's No. 21668

- i. Apply wheel chock and orange flags at both ends of the vehicle / train.
- ii. Remove orange flags and wheel chock when work is finished.

4.9 Working Instruction for persons moving rail vehicles in /out or within the workshop.

- a. Vehicles can only be moved in/out or within the workshop when instructed by The Rolling Stock Maintenance Supervisor.
- b. The vehicle **CANNOT** be moved if orange flags are attached.
- c. Other than Rolling Stock Maintenance Supervisor OR the Assigned Maintenance Staff, no one else is authorized to remove the orange.
- d. Personnel involved prior to an intended movement **MUST** carry out radio test.
- e. Drive from leading cab OR if a vehicle is being propelled by another vehicle, there must be a member of the ground staff at the front of the vehicle in radio or visual contact with the driver.
- f. If a driver is working to the instruction of ground staff and lose visual or radio contact, he should **stop** immediately.
- g. Sound warning device before movement
- h. Drive at slow walking pace.
- i. Stop at Workshop doors momentarily (for train entering into Main Workshop). Then proceed if signal is given by **Workshop Lookout man** situated at the front of open doorway.

4.10 Working instructions for persons walking through the Workshop

- a. Keep to designated footpaths and walkways. These are painted with Yellow lines.
- b. Do not enter any area where work is being carried out.
- c. **Beware of the movement of trains and other vehicles/cranes.**
- d. Wear specified personal protection equipment.
- e. Do not touch any equipment. Only authorised staff may operate machines etc.

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- f. Do not enter any vehicles unless you have informed the Rolling Stock Maintenance Supervisor and obtained his approval.
- g. If a walkway takes you between stabled vehicles **BEWARE** of the likely movement of the vehicles. Do **NOT** walk between stabled vehicles if the gap between vehicles is less than 7 metres.

Summary

Movement with regards to Maintenance and Non-Maintenance personnel in relations to the Main Workshop and the associated buildings, and also in relations to the trains, other vehicles and equipment have been addressed in this procedure.

The safety aspect of the Isolation of the 25kv Overhead Contact Line and the re-energization of this line although not covered in detail, nevertheless is sufficient to ensure no possible injury to personnel as well as train and equipment.

The emphasis of Personal Protective Equipment having been addressed has to be strictly complied with so as to prevent any possible injury

Attachment

1. R00.OMR.M14100.PT.0001.A Docs No. 21668 - Rolling Stock Checklist Forms - (Train Movement Record worksheet) - "Train Movement Record In/Out of Main Workshop Sheet".

Rolling Stock Department

Train Movement Record In/Out of Main Workshop Sheet

Refer Procedure: G00.OMR.M11450.DS.0002.A & D00.OMR.M15881.BT.0002.A

GEN

E-MAS

Your Railway Operations & Maintenance Specialist

A. Checklist For Train Entering Workshop & Before Start Work

Train No. : _____

Track No.: _____ North South Date: _____ Time: _____ : _____ H

Reason: _____ Stamp

Train Driver: _____ Workshop Lookout Man: _____

1. General (Apply to Track 9,10,11 and 12):

- 1.1 No obstacles on/near track before train entering workshop.
- 1.2 Mobile Stairs / Personnel clear from red-lined area before train entering workshop.
- 1.3 Orange Flags on Car A1 Side 1 & 2 applied.
- 1.4 Orange Flags on Car B1 Side 1 & 2 applied.
- 1.5 Pantograph Lowered (If required).
- 1.6 Wheel Chock placed under wheel (Axle 2 side 1 and Axle 9 side 2 or Axle 2 side 2 and Axle 9 side 1).
- 1.7 Removal Tags placed when Parts removed.
- 1.8 Battery :
 - 1.8.a Battery terminal disconnected if required (e.g for battery maintenance).
 - 1.8.b External charging required if work with 110DC necessary but without high voltage.

YES	NO

2. If train at Track 9 & 10 and 11 only:

- 3.1 Entire length of inside Pitline is clear from personnel before train entering workshop.

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3. If train at Track 9 & 10 only:

- 3.1 Roof platform clear from personnel before train entering workshop.
- 3.2 Earthing Switch enabled and locked (If required - e.g for High Voltage maintenance work).
- 3.3 If OCL to be De-energised:
 - 3.3.a Switch 326 isolated by OCC.
 - 3.3.b Tracks 9 & 10 OCL pole isolated and locked.
 - 3.3.c Earthing Device applied on Track _____ North South

4. If train at Track 12 only:

- 3.1 Train bogies are stopped within Under Floor Lifting Line columns respectively.

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5. If train moved by Shunting Loco:

- 5.1 Train is uncoupled from Shunting Loco.

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* Always wear plastic overshoes during working inside train.

Acceptance Supervisor : _____ Date: _____

Stamp

B. Checklist For Train Release Before Leaving Workshop & Handed Over to Operations

Track No.: _____ North South Date: _____ Time: _____ : _____ H

Reason: _____ Stamp

Train Driver: _____ Workshop Lookout Man: _____

1. General (Apply to Track 9,10,11 and 12):

- 1.1 Removal Tags removed when the Parts replaced.
- 1.6 Battery terminals connected.
- 1.2 All plugs, cover and locks are secured and marking applied.
- 1.3 Interior are cleaned from waste generated from work performed.
- 1.4 New Wheel Diameter entered in DDU (If Wheel No. 5 or 6 Reprofiled)
- 1.5 Orange Flags on Car A1 Side 1 & 2 removed.
- 1.6 Orange Flags on Car B1 Side 1 & 2 removed.
- 1.7 All Wheel Chocks removed and track clear from any obstacles before the train move.

YES	NO

2. If train at Track 9 & 10 only and move with own power:

- 2.1 Roof platform clear from personnel.
- 2.2 Earthing Switch unlocked and disabled.
- 2.3 If OCL to be Re-energised:
 - 2.3.1 Earthing Device removed from Track _____ North South
 - 2.3.2 Tracks 9 & 10 OCL pole unlocked and normalised.
 - 2.3.3 Switch 326 connected by OCC.
- 2.4 Pantograph raised.
- 2.5 Normalise all the brake isolating cocks.

3. If train at Track 9 & 10 and 11 only:

- 3.1 Entire length of inside Pitline is clear from personnel.

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4. If train moved by Shunting Loco:

- 4.1 Isolate all the Brake Isolating Cocks before shunting work performed.

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5. PERFORM DAILY INSPECTION (DI)- Attached separate list.

- 4.1 Isolate all the Brake Isolating Cocks before shunting work performed.

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*TRAIN FIT FOR OPERATIONAL SERVICE YES NO

Releasing Supervisor : _____ Date: _____

Stamp