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SAFETY CIRCULAR – 2/2024**Sub: Working of On-Track Machines**

In view of some past derailments, unusual incidents related to Track Machine working over ECoR the following working of On-Track Machines is reiterated below for wide circulation among the concerned departments and stations for strict adherence. Officers and supervisors during inspections should check and ensure its implementation in the field.

A. COMPETENCY OF OPERATOR/JE/SSE(TM) TO WORK TRACK MACHINE:

1. The JE/SSE/TM must be conversant with rules for operation and section over which the unit has to work. Each machine will be under the control of a JE/SSE/TM and he is responsible for the safe working of the machine and following of rules.
 2. The JE/SSE/TM after successful initial training at IRTMTC are to undergo training on 'Train working rules' at ZRTI, SINI and after successful completion, Dy.CE(TM) of Zonal Railway shall issue competency certificate conducting requisite written and oral test on technical as well as train working rules. The Competency Certificate is valid for 03 years & kept in the personal custody of the operator which shall be promptly produced when required. The JE/SSE/TM has to undergo refresher courses once in three years.
 3. The JE/SSE/TM should also possess a certificate of medical fitness in A-3 category issued by a Railway Medical Officer. Period of PME shall be as prescribed for SSE/JE (P.way).
- B.** The JE/SSE/TM should also possess a separate competency certificate for working in Auto Section as per IRTMM para 703 (5).

C. RULES FOR WORKING OF ON-TRACK MACHINE:-

1. The On-track machine shall be treated as train as per G & SR 1.02(58) for all purposes and shall run under the system of working In force.
2. To improve productivity of track maintenance, the maximum number of track machines required to be worked at a time in one block section shall be decided as per the MOU, jointly framed by COM and PCE and it shall be modified from time to time if required.
3. No Machine shall be brought on a running line from the siding/stabling line without the written permission of the Station Master on duty in the form of shunt signal/shunting order (T/806).
4. When the track machine is required to move from one block station to another block station, the JE/SSE/TM should run the machine only with proper authority to proceed as per the system of working in force.
5. In time clearance of block is the responsibility of the person-in-charge of the machine(s). Hence, before availing the block and entering into the block section, he should match his timings with station watch.
6. No guard/ Train Manager are required. In emergent & special situation, SSE/JE/ P.Way shall work as Guard IRTMM Para 705(12)
7. Each machine shall display LV board/Tail lamp if moving alone and while moving in a convoy, the LV Board/Tail lamp shall be fixed on the last machine on the direction of the movement.

When the track machine is stabled at a station necessary precaution for stabling has to be taken as per GR.5.23 & SR there to.

9. Maximum number of staff to accompany/travel in the driving Cab shall not normally exceed five (Para 702(1) of IRTMM).
10. Speed of the track machine when self propelled, coupled with other track machine & when attached with train formation is as per the stipulated guidelines in IRTMM Annexure 7.7 as per speed certification by RDSO and sanctioned by Railway Board.
11. Equipments of Track Machine as per G& SR 4.65 (vi), OM: 20.04 and IRTMM Para 704 (1&2)
12. **During total interruption, foggy and stormy weather** – Not permitted.
13. **When disabled** – it must be protected as per protection Rules.
14. **It shall not be stabled on a running line except in case of emergency.**
15. **Failure or accident** – Failure of Track Machine and other accidents shall be treated in the same manner as train accidents under appropriate class and action taken as described in Chapter-VI of General and subsidiary rules and in the Accident Manual.
16. The JE/SE (P-Way) is responsible for protection of the work site and also protection of the adjoining line in case of infringement.
17. If during work it is felt necessary to block the adjoining line then JE/SE(P-Way) must ask SM on duty who can allow only after getting permission from section controller through an order number.
18. **Working procedure of Track Machines in Automatic signaling system:** Automatic signaling system between the proposed stations of work shall be suspended by the SMs on duty under exchange of messages with private number ensuring the section concerned is clear of all trains in consultation with the section controller. Working procedures as mentioned at Para 20.05 of Operating Manual shall be followed.

D. Working of track machine between block stations:

1. It shall work under “**line block**” only.(Block forwarding/ Block back as per requirement.)
2. The Person-in-charge of the track machine(s) shall give the requisition for block in duplicate to the station master on duty, indicating the following:
 - The number and types of machines to work and its sequence to proceed into the block section.
 - Name of the Block Section (Between stations and particular line, if intended to work in Double/Multiple line section)
 - Exact Location of work for each machine.
 - Duration of Work including transit time.
 - Whether the machine will proceed to the next station or return to the starting station after completion of the work.
 - In double line section only work and proceed normally.
3. The SM shall then apprise the section controller the details of block and movement of the machine(s).
4. After recording the control order in the control order number book in token of permission granted for block and the exact duration of block granted, SM shall return the duplicate requisition to the person-in-charge of machines endorsing the duration of the block permitted and other instructions, if any.
5. Before allowing the block, the station master on duty shall exchange message with the station master of the other end of the block section with private number. Gatemen in the section shall also be informed about the detailed block particulars viz. location of work, number of machines and direction of movement by the respective controlling station master under exchange of private number. All necessary precautions shall be taken at both end stations to prevent entry of trains in to the concerned section during the working of the machines. Suitable entries in red ink in TSR and SM's diary should be made.

6. On both double and single line, when only one machine is allowed to work, the section shall be blocked back or blocked forward as the case may be as per GR L.02(8) and (9). The authority to proceed for the machine shall be the caution order itself as mentioned in item no. (8) Below. The signals can be taken off, if permitted.
7. When more than one machine are allowed to work, the following procedure should be followed :
 - The leading machine shall be dispatched as mentioned at Para (6) above with a caution order.
 - The second and subsequent machines shall be allowed on authority of block ticket in the form of T/A-602 or T/C-912 as the case may be along with a caution order for each machine. The kilometer at which, the machine is to work is to be mentioned on each block ticket.
 - The person-in-charge of the machines will personally supervise the movement by travelling in the machine to keep the minimum safe distance margin of 180 meter in the same direction as per Para 20.05.02 (f) (iii) of Operating Manual.
 - During night, fixed tail light of the machine shall be lit for each machine but the flashing tail lamp should be fixed only to the last machine.
 - Operator of each machine is to be provided with walkie talkie.
8. SM shall issue caution order to person-in-charge and JE/SSE/TM (s) of machine(s) indicating number and type of machine(s) to work and their sequence, duration of work, location of work, movement of machines via right or wrong direction and whether return to same station or proceed to next station after completion of work etc. Signature of person-in-charge of machines and each JE/SSE/TM shall be obtained on the record foil of the caution order/block ticket as acknowledgement. The JE/SSE/TM (s) should be extra vigilant while passing level crossing gates and personally ensure closure of level crossing gates before passing it.
9. The person in-charge of track machine(s) will be responsible to see that the adjacent line is not fouled at any point of time during the course of working. In case of fouling, he must immediately arrange to protect the adjacent track as per GR.6.03.
10. After completion of the work, the machine(s) will be received at the station either on taking off stop signals, calling on signal or issuing written authority as per system of working in force or by exhibiting green hand signal after ensuring correct setting and locking of relevant points. All the machines should be admitted on one line except in case where it is operationally not feasible.
11. On reaching the station, the person-in-charge of the track machine(s) will hand over the authority to proceed (if any) and sign the complete arrival register. He should also certify that the section is clear of all obstruction and the track is fit for movement of subsequent trains.
12. Before sending the block removal report/train out of section report, the station master/cabin master must satisfy himself that all machines have arrived complete and the track is certified fit. Block Ticket(s) if any should be collected and cancelled.
13. Details of Track Machine working & authority during Block is enclosed in Annexure-A

D. Run through movement of track machines in convoy without work:

Under Absolute Block System of working only one machine is allowed to run without working within a block section. However, more than one machine may be allowed at a time provided they are coupled together with continuous pressure. This will be treated as one train and the last vehicle indicator should be fixed in rear of the rearmost machine and all other red lamps fixed at the end of other vehicle(s) must be extinguished. If the track machine operator is new to the section and not fully aware of the section/route, then one P.Way supervisor/LP or ALP who is aware of that section/route may accompany the machine for guidance of the machine operator as per Para 705(11) of IRTMM

E. Precautions while working of machines:

- a. Person-in-charge (JE/SE (P.Way)) is responsible for protection of the site of the work and also for protection of the adjoining tracks in case of infringement. He shall be conversant

- with the infringement conditions of the various machines. He shall also be responsible for safe condition of the track before clearing the block after the machine work.
- b. Some machine like BRM, T-28 tends to foul the adjacent line, while working on the double line section or in the yard. If any part of the machine is likely to foul the adjacent line while working, the person-in-charge shall request SM in writing to block the lines. Such works shall only be undertaken if blocking of such adjoining lines has been permitted by the SM and such adjoining lines have been protected.
 - c. It is necessary that all trains passing on the adjoining line should be issued with a caution order. The loco pilot shall keep a sharp look out, whistle intermittently and be prepared to stop observing hand signals at site of the work. Such caution order on the adjoining track is necessary due to high noise caused by track machine and large concentration of staff working around it.
 - d. The vertical and lateral clearance for OHE, signal post and any other structure should be checked and adjusted before clearing the block. It shall be ensured by P.Way supervisor working with the track machine, that there is no infringement to signal post, OHE and any other structure as per schedule of dimensions.
 - e. The operator shall not relinquish charge until he has satisfied that the machines have been properly secured and protected as prescribed herein. During shunting on a line occupied by track machines, no machine shall be shunted without the presence of competent machine staff.
 - f. The SM on either side shall inform all the manned LC gates falling within the jurisdiction of work about the total number of track machines permitted in the block section under exchange of private number.
 - g. In course of working when it is required to pass a level crossing gate, it is the responsibility of the JE/SSE/TM to ensure that the level crossing gate is closed in case of manned level crossing or there is no road traffic in case of unmanned level crossing gate.
 - h. Necessary line blocks board/Engg. block board is to be placed on the TLBI/DLBI of the concerned section.

F. Stabling and securing of on-Track Machine:

- a. The track machine shall normally be stabled on a non-running line.
- b. Whenever On-Track Machine is stabled on a running line at a station, the JE/SSE of TM should ensure that it is clear of the fouling mark. The mechanical hand brake shall be applied and the machine shall be secured by application of skids and chain to the rails in accordance with GR 5.23 to prevent rolling down. The responsibility of securing machines with the JE/SSE/TM.
- c. Lever collars and reminder collars must be used as per G&SR 5.04.01.
- d. In case of machine is stabled in the siding, in addition to securing of the same as mentioned above, the siding points should be set in their normal position, clamped and padlocked. Key of the padlock should be kept with the SM on duty. No shunt movement should be allowed over the line where machine is stabled.

The above should be read in conjunction with G&SR, Operating Manual & Track Machine Manual. For any conflict/confusion the rules pertaining to G&SR & OM should prevail.

Encl: Annexure:A in 03 pages.

Sanjay
29/2/22
**Chief Safety Officer,
Bhubaneswar**

Copy to:

- a. Secy. to GM for kind information of GM.
- b. Secy. To AGM for kind information of AGM
- c. PCE, PCEE, PCOM, PCME, PCSTE for information.
- d. DRM/WAT, KUR, SBP for information & necessary action.
- e. Sr. DSOs, Sr. DOMs & Sr.DEN (Co)s of WAT, SBP, KUR for information and necessary action.

ANNEXURE-A

WORKING OF TRACK MACHINE & AUTHORITY DURING BLOCK , BOTH IN ABSOLUTE BLOCK SYSTEM & AUTO SYSTEM.

ABSOLUTE BLOCK SYSTEM OF WORKING

SINGLE LINE	SYSTEM	AUTHORITY	PROCEDURE TO ENTER SECTION	PROCEDURE TO RETURN FROM SECTION.	REMARKS
Only One Machine working	The Section shall be Blocked back.	Caution Order, Signal can be taken off.	It may work & proceed or work and Back to same station.	a. Taking off Stop signal. b. Calling-on Signal. c. Written Authority. d. Exhibiting Green Hand Signal at 1 st Facing Point.	
MORE THAN ONE MACHINE					
1st Machine	The Section shall be Blocked back.	Caution Order, Signal can be taken off.	It may work & proceed or work and Back to same station.	a. Taking off reception Stop signal. b. Calling-on Signal. c. Written Authority of T/369(3b). d. Exhibiting Green Hand Signal at 1 st facing point.	
Second & Subsequent Machines	Same	Caution Order, Block Ticket T/A-602. Proceed Hand Signal.	It may work & proceed or work and Back to same station.	a. Taking off reception Stop signal. b. Calling-on Signal. c. Written Authority of T/369(3b). d. Exhibiting Green Hand Signal at 1 st facing point.	
DOUBLE LINE SINGLE MACHINE					
Right Line	The Section shall be Blocked Forward.	Caution Order, Signal can be taken off.	It may work & proceed only & return with proper line with proper authority.	If work & proceed to next Station. a. Taking off Reception Stop signal. b. Calling-on Signal. c. Written Authority. d. Exhibiting Green Hand Signal at 1 st Facing point. If work & return back to same station in same line as per SCR. (wrong direction) a. Stop at opposite direction 1 st stop signal. b. Written Authority for P/In. T369/3b. c. Exhibiting Green Hand Signal at 1 st facing Point.	Exception
Wrong Line	The Section shall be Blocked back.	Caution Order, Starting Order T/511. Proceed Hand Signal.	It may work & Back to same station only, and proceed to next station is not permitted.	If work & return back to same station in same line (Right direction) a. Taking off Reception Stop signal. (Right direction). b. Calling-on Signal. c. Written Authority. d. Exhibiting Green Hand Signal at 1 st Facing point.	

DOUBLE LINE MORE THAN ONE MACHINE					
<u>Right Line.</u> 1 ST Machine	The Section shall be Blocked Forward	Caution Order Signal can be taken off .	It may work & proceed or return with proper line with proper authority.	If work & proceed to next Station. a. Taking off Reception Stop signal. b. Calling-on Signal. c. Written Authority. d. Exhibiting Green Hand Signal at 1 st Facing point.	Exception
2 nd & Subsequent Machines.		Caution order. Block Ticket: T/A- 602.		If work & return back to same station in same line as per SCR. (wrong direction) a. Stop at opposite direction 1 st stop signal. b. Written Authority for P/In. (T369/3b). c. Exhibiting Green Hand Signal at 1 st facing Point.	
<u>Wrong Line.</u> 1 ST Machine & 2 nd & Subsequent Machines.	The Section shall be Blocked back.	Caution Order , Block Ticket. T/A- 602. Starting Order T/511. Proceed Hand Signal.	It will work & Back to same station only and proceed to next station s not permitted.	a. If work & return back in same line as per SCR (Right Direction). b. Taking off Stop signal. c. Calling-on Signal. d. Written Authority. e. Exhibiting Green Hand Signal at 1 st Facing point.	

AUTO SECTION.

In Automatic Signaling Territory , the System of working to be Suspended, under exchange of PN between stations by both SMs.

SINGLE LINE					
SINGLE MACHINE	The Section shall be Blocked back.	Caution Order , T/369(3b) as Absolute Block System in same case.	It may work & proceed or work and Back to same station.	a. Taking off reception Stop signal if manual. b. Calling-on Signal. c. Written Authority of T/369(3b). d. Exhibiting Green Hand Signal at 1 st Facing point.	
MORE THAN ONE MACHINE					
1st Machine	The Section shall be Blocked back.	Caution Order , T/369(3b)	It may work & proceed or work and Back to same station.	a. Taking off reception Stop signal if manual. b. Calling-on Signal. c. Written Authority of T/369(3b). d. Exhibiting Green Hand Signal at 1 st Facing point.	
Second & Subsequent Machines	The Section shall be Blocked back.	Caution Order , Block Ticket T/C-912.	It may work & proceed or work and Back to same station.	a. Taking off reception Stop signal if manual. b. Calling-on Signal. c. Written Authority of T/369(3b). d. Exhibiting Green Hand Signal at 1 st Facing point.	

DOUBLE LINE SINGLE MACHINE					
Right Line	The Section shall be Blocked Forward.	Caution Order, T/369(3b).	It may work and proceed only or return with proper line with proper authority.	If work & proceed to next Station. a. Taking off Reception Stop signal. b. Calling-on Signal. c. Written Authority. d. Exhibiting Green Hand Signal at First Facing point. If work & return back to same station in same line as per SCR. (wrong direction) a. Stop at opposite direction 1 st stop signal. b. Written Authority for P/In. T369/3b. c. Exhibiting Green Hand Signal at 1 st facing Point.	Exception
Wrong Line.	The Section shall be Blocked back.	Caution Order, Starting Order T/511. Proceed Hand Signal	It may work & Back to same station only and proceed to next station is not permitted.	a. Taking off Reception Stop signal. (Right direction). b. Calling-on Signal. c. Written Authority. d. Exhibiting Green Hand Signal at First Facing point.	
DOUBLE LINE MORE THAN ONE MACHINE					
RIGHT LINE 1 ST MACHINE	The Section shall be Blocked Forward.	Caution Order, Signal can be taken off.	It may work & proceed only or return with proper line with proper authority.	If work & proceed to next Station. a. Taking off Reception Stop signal. b. Calling-on Signal. c. Written Authority. d. Exhibiting Green Hand Signal at First Facing point.	Exception
2 ND & Subsequent		Block Ticket T/C-912. Caution order.		If work & return back to same station in same line as per SCR. (wrong direction) a. Stop at opposite direction 1 st stop signal. b. Written Authority for P/In. T369/3b. c. Exhibiting Green Hand Signal at 1 st facing Point.	
Wrong Line	The Section shall be Blocked back.	Block Ticket T/C-912. Starting Order T/511. Caution Order, Proceed Hand Signal	It may work & Back to same station only and proceed to next station is not permitted.	Taking off Stop signal. Calling-on Signal. Written Authority. Exhibiting Green Hand Signal at 1 st Facing point.	

On Double line, track maintenance machine will work on Block Forward and Block Back procedure. Going through to next station will be on regular Line clear. On Double Line the TT Machine must not return to the Station from where it started, and proceed to next station only. It Will return on proper line with proper authority. However in case of emergency the above procedure can be adopted to receive the machine.