

CORRECTION SLIPS TO IRTMM MARCH 2000

Synopsis

Track Machines were introduced on Indian Railways during the early sixties. The use of the machines both for mechanized track maintenance as well as track laying increased with the introduction of **heavy track structures** to meet the challenges of **growing traffic and changed socio-economic conditions**. For working of these machines, the Railway Board and Zonal Railways had issued instructions from time to time based on field experience and recommendations by the machine manufacturer. However, these were not documented at one place. **IRTMM covering all aspects of track machine working has been published in March 2000**. The prevailing instructions in regard to working of track machines over different railways, instructions issued by the Railway Board, provisions in the IRPWM, Indian Railways General Rules other relevant codes and manuals and circulars issued by RDSO, have been kept in view to prepare this manual. **10 Correction Slips** to this manual have been issued, so far.

Correction Slip No. 1 Dated 18.10.2000:

- (A) **The following may be added at the end of Preface to IRTMM, March 2000 (Page prefixing Page 1):**

“This manual has been issued in consultation with Finance and Traffic Directorates of Railway Board.”

Authority: Noting pp 4/n and 12/n of the Board’s office case file No. 96/Track-III/TK/44 Vol. II and Board’s Office letter No. 96/Track-III/TK/44 Vol. II dated 11.7.2000.

- (B) **The following may be added at Page 202, Annexure 8-1, Para (B), below the table:**

“In addition to the above, cooks shall be provided as below:

Machine Type	Existing Staff Strength	No. of cooks required.
TTM	8	1
P and C Tampers	9	1
BCM/SBC	10	1
TRT	28	2
Rail Grinding Machine	7	1
PQRS (Set)	8	1 per set of 3 Portals.
P and C Renewal Machine (T-28)	8	1 per set of 2 T-28 and one Jib Crane,

The requirement of a cook for BRM and DTS shall be met with out of the provision made for the machine to which these machines are attached.

be operated ex-cadre. No separate provision for Khallasi or Helper is to be granted along with the cook.”

Authority: Board’s office’s letter No. 89/Track-III/TK/77 dated 16.8.99.

वेद एखु म्क; त्तव
०१११५] वद २३] तुओज २००७

Track Machine Digest
Year-15, Issue 23, Jan 2007

19

(C) New Para 8.4.7 may be added at Page 200 as below:

8.4.7 Rest Roster: Staff working on Track Machines may be rostered to work for a period of 3 weeks at a stretch followed by continuous rest for a period of one week at headquarters. The three weeks continuous roster will include the actual period of journey undertaken from headquarters to the place of work and the back. The individuals shall not be employed for more than 12 hours on any day. In respect to overtime, the staff will be governed by extant instructions under HOER in regard to the principle of averaging.

The actual duty hours (timings) for staff working on various track machines shall be decided by the Zonal Railways, keeping in view the timings of the nominated corridor blocks over the sections where the machines are deployed, within the above provisions.

The above instructions will be valid for a period of three years (from July, 2000). This is a temporary exemption from the Provision of Railway Act 1989.”

Authority: Board’s Office letter No. E(LL)98-HER/9 dated 6.07.2000.

Correction Slip No. 2 Dated 11.07.2002:

(A) The following corrections/amendments may be made at page 201, Annexure 8.1 para (A) of chapter 8 of IRTMM-March-2000.

Weightage factors (Units) for Track Machines.

Weightage factors for different types of Machines are as under:

S. No.	New Item	Page No.	Types of Machine	Weightage factor
1	Chapter – 8 Annex-8.1	201	Ballast Regulator/Utility Vehicle (Self Propelled)	0.8
2	Chapter – 8 Annex-8.1	201	Ballast Cleaning Machine, Shoulder Ballast Cleaning Machine and Rail Vacuum Excavating Machine (VM-170)	1.5

(B) The following corrections/amendments may also be made at page 202, Annexure 8.1, para (B) of Chapter 8 of IRTMM-March’2000.

Scale of Staff for field operation.

Scale of field operation staff for each type of machine are as under:

S. No	New Item	Page No.	Name of Machine	AFO cum Sr. Opt.	Chargeman cum operator	Highly Skilled	Skilled fitter	Khalasi/ Helper Khalasi	Total
12	Chapter-8 Annex-8.1	202	Utility Vehicle (Self Prop)	1	1	1	1	3	7
13	Chapter-8	202	Rail	1	2	2	1	4	10

	8.1		Vacuum Excavating Machine VM-170						
--	-----	--	---	--	--	--	--	--	--

The above machines were procured after issue of manual hence not included at the time of issue of IRTMM.

Correction slip No. 3 Dated 14.05.2003:

The following New Paragraph No. 4.6.8. in the Chapter-4 of IRTMM included.

4.6.8.

Track machine working is likely to produce a dusty atmosphere and/or heavy noise pollution. Hence extra care is necessary at site to ensure safety of workers. For this, the following steps should be taken:

- i) Hooters should be provided on the track machines. These hooters should preferably have remote control operation so that the Lookout man standing around 150m away from the track machine can operate the hooter to warn the staff working on/around the track machine about approaching train on adjoining track.
- ii) Temporary Whistle Board should be fixed on the adjoining track, which can be moved along with track machine worksite.
- iii) It is necessary that all trains passing on the adjoining track should be issued a caution order "OBSERVE HAND SIGNAL WHISTLE FREELY AND STOP IF REQUIRED". Such caution order on the adjoining track is necessary due to high noise level caused by track machine and large concentration of staff working around it.

Correction Slip No. 4 Dated 26.05.2003:

The following New Paragraph No. 4.6.8 (iv) is added under Para 4.6-“Precautions” of Chapter 4 of IRTMM-2000-Rules for movement and working Track Machines as under.

4.6.8(iv)

“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 insured by supervisor working with track machine that there should be no infringement to Signal post, OHE and any other Structure as per schedule of dimensions”

Correction Slip No. 5 Dated 15.09.2003:

The following Paragraphs are added under Para 5.6 – “Special Precautions While Working Machines in Ghat Section” of Chapter 5 of IRTMM-2000 as under:

5.6(xi):

movement shall be done in convoy while moving in Ghat Section. Only one machine shall be allowed to move for run through movement in Ghat Section at a time.

वर्ष २००७ मई २३] तक २३] तक २००७

Track Machine Digest
Year-15, Issue 23, Jan 2007

21

5.6(xii):

- (a) Normally machines shall not work in convoy while visibility of track is restricted due to sharp curves and steep gradients. Where the working of track machines in convoy is indispensable i.e. like deep screening, track relaying site etc., the necessary block protection shall be done as per para 806 of IRPWM and special precaution shall be taken as per para 811 of IRPWM for the first machine facing the direction of traffic in double line section and for the front and rear most machines in single line section.
- (b) The minimum distance between the machines when working in convoy shall be 50m to avoid collision between machines and danger to life of machine and P. Way staff working with machine.
- (c) It shall be ensured that there is no infringement to the adjacent track due to any part of the machine working on the track.

Correction Slip No. 6 Dated 13.01.2004:

- (A) **The Paragraph number 4.3.3 under Para 4.3 – Competency of Operator of Chapter 4 of IRTMM-2000 may be revised to read as under:**

4.3.3.

“The operator shall apply to the Dy.Chief Engineer incharge of the machines well in advance of the date of expiry for renewal of the competency certificate. The officer shall renew the certificate for further period of three years at a time after holding a test. The operator shall, however, be required to go for a Refresher Course in Zonal Training Centre/IRTMTTC, Allahabad, within a period of 3 (three) years.

- (B) **The Paragraph number 8.3.2 under para 8.3 – ‘Training of Track Machine Personnel’ of Chapter 8 of IRTMM-2000 may be revised and corrected as under:**

8.3.2.

“All technical staff working on track machines shall undergo regular courses framed for different categories at IRTMTTC/Allahabad. They shall also undergo various refresher courses at IRTMTTC once in 5 years. However, the staff performing the duties of driving the track machines shall undergo refresher courses at IRTMTTC once in 3 years. Training facilities with manufacturers may also be availed”.

Correction Slip No. 7 Dated 7.04.2004:

The Paragraph number 4.3.1 under Para 4.3-“Competency of Operator” of Chapter 4 of IRTMM-2000 may be modified to read as under:

The operator shall be fit in A-3 medical category. If wearing spectacles, he shall carry one extra pair while on duty.

Technicians and helpers working on Track Machines shall be fit in B-1 medical category.

വെബ്സൈറ്റ്: www.irtmm.org
മെയ് 2007

Track Machine Digest
Year-15, Issue 23, Jan 2007

22

Correction Slip No. 8 Dated 25.10.2004:

The following New Paragraph No. 5.1.3 is added under Para No. 5.1 at Page No. 132 of Chapter 5 of IRTMM-2000 as under:

Para 5.1.3:

Following track structures and track geometry standards shall be ensured before deployment of track machines on construction projects.

- (a) Track laying standards in respect of gauge, joints, expansion gaps and spacing of sleepers for the new track as specified in Para 316 of IRPWM may be followed.
- (b) The pre-tamping and post tamping operations as specified in Chapter 3 of IRTMM should be followed.
- (c) A minimum cushion of 150mm of clean ballast alongwith adequate ballast on shoulders and cribs should be ensured before deploying the tamping machines.
- (d) The track geometry prior to deployment of track machines for new works of new line, doubling, gauge conversion etc. should be as under:

Peak value of Unevenness	:	15mm on 3.6 m Chord.
Peak value of Twist	:	15mm on 3.6 m Chord.
Peak value of Alignment	:	15mm on 7.2 m Chord.

The above track geometry standards are not safety/slow down tolerances but are only a prerequisite for deployment of track tamping machines for better machine productivity and their optimum utilization.

- (e) For achieving the track geometry parameters as above, suitable small track machines such as off-track tampers etc. may be used.
- (f) Dy.CE.(Construction)/DEN(Construction) should certify the track geometry as mentioned above before deploying the track machines.
- (g) Deployment of DGS alongwith tamping machines is desirable.

Para 5.1.4:

The existing Para No. 5.1.3 is renumbered as 5.1.4.

Correction Slip No. 9 Dated 20.10.2006:

The annexure – 8.1 as given on page 201 to 204 of Indian Railways Track Machine Manual-2000 may be replaced with the following:

Weightage Factors for Track Machines and yardsticks for staff.

(A) Weightage Factors (Units) for Track Machines:

Track Machine Digest 23
Year-15, Issue 23, Jan 2007
Weightage Factors for different types of machines are as under:

S. No.	Type of Machine	Weightage Factor
1.	Tampers, Rail Grinding Machines (each module of 16 stones), Dynamic Track Stabilizer, Mobile Flash Butt Welding Plant, Points & Crossing Laying Machine.	1.0
2.	Ballast Regulator/Utility Vehicle (Self Propelled), Track Maintenance Vehicle.	0.8
3.	Ballast Cleaning Machine, Shoulder Ballast Cleaning Machine and Rail Vacuum Excavating Machine (VM-170).	1.5
4.	Track Relaying Train.	3.0
5.	Portal Crane, Spoil Disposal Unit/Tie Crane/Tie Exchanger/Rail Lifting Units, Rail-Cum-Road Vehicles.	0.5

(B) Scale of Staff for Field Operation.

Scale of Field Operation staff for each type of machine per shift it as given in the following table:

S. No.	Name of Machine	Track Machine Supervisors cum machine operators in the present designations of SSE(TM)/SE(TM)/JE-I(TM)/ JE-II(TM)	Track Machine Maintainers	Track Machine Helper	Cook	Total (Excluding Cook)
1.	Plain Track Tamper (UNO, DUO/ Worksite & CSM)	2	3	3	1	8
2.	P&C Tamper (Unimat)/ Multipurpose Tamper	3	3	3	1	9
3.	Dynamic Track Stabilizer	2	2	2	Nil	6
4.	Rail Grinding Machine (16 Stone)	2	3	2	1	7
5.	Mobile Flash Butt Welding Plant	2	3	3	Nil	8
6.	Ballast Regulator	2	2	3	Nil	7
7.	Ballast Cleaning	3	3	4	1	10

8.	Track Relaying Train	6	8	14	2	28
9.	Portal Crane (one No.)/Spoil Disposal Unit/Tie Crane/Tie Exchanger/Rail Lifting Units/Rail Cum Road Vehicles	1	1	1	1 Per set of 2/3 Portals	3

Vd eakhu Mk; tLV
o"kl 15] vd 23] tuojh 2007

Track Machine Digest
Year-15, Issue 23, Jan 2007

24

S. No.	Name of Machine	Track Machine Supervisors cum machine operators in the present designations of SSE(TM)/SE(TM)/JE-I(TM)/ JE-II(TM)	Track Machine Maintainers	Track Machine Helper	Cook	Total (Excluding Cook)
10.	Shoulder Ballast Cleaning Machine	3	3	4	1	10
11.	P&C Laying Machine (Two T-28 Cranes + one Jib Crane)	3	3	3	1 per set of 2 T-28 & 1 Jib Crane	9
12.	Utility Vehicle (Self Propelled), Track Maintenance Vehicle	2	2	3	Nil	7
13.	Rail Vacuum Excavating Machine (VM170)	3	3	4	Nil	10
14.	Tamping Express (09-3X-CSM)	2	4	4	1	10

Note:

- i. The categories of Track Machine supervisors cum machine operators, track machine maintainers and track machine helpers shall be operated as cadre posts and the post of cook shall be operated as ex-cadre. No separate provision for Khalasi or helper is to be granted along with the cook.
- ii. The requirement of a cook for BRM & DTS shall be met with out of the provision made for the machine to which these machines are attached.
- iii. For all the above categories, no Leave Reserve (LR), Rest Giver (RG), & Trainee Reserve have been considered. These shall be regulated under instructions of Railway Board, if any, from time to time.
- iv. Distribution & Designation of individual posts in various categories shall be based on restructuring formulae and percentage distribution of various types of grades applicable from time to time.

ture of track machine maintenance covers all types of artisan staff required for operation of machine.

(C) Scale of Staff for Field Supervision, Technical & General Services for Divisional Depot.

1. Gazetted Posts.

(a) Junior Scale/Senior Scale posts for field supervision: Yard stick for this category of posts is as below:

Vd eakhu Mk; tlv
o"kl 15] vd 23] tuojh 2007

Track Machine Digest
Year-15, Issue 23, Jan 2007

25

(i) 1 (one) post for every 6 units of Track Machines subject to the condition that maximum 1 (one) Jr. Scale post to be provided in each Division for units of Track Machines up to 12 (Twelve).

(ii) For division with more than 12 units of Track Machines, one Sr. Scale and one Jr. Scale posts are to be provided.

2. Non-Gazetted posts:

Staff requirement for field supervision, technical and general services shall be worked out on the following scale for a set of six track machine units and following set up should be provided in each division:-

S. No.	Category	Nos.
1	Track Machine supervisors cum machine operators in the present designations of SSE(TM)/SE(TM)/JE-I(TM)/JE-II(TM)	2
2	Track Machine maintainers in the present designations of Master Crafts man/Fitter Gr.I/Fitter Gr.II/Fitter Gr.III	3
3	Track Machine Helpers in the present designations of Helper Gr.I/Helper Gr.II	2
4	Sr. Clerk/Material Chaser	1
	Total (for a set of 6 units)	8

Note:

i) Weightage factors as per para (A) shall be applied and units of track machines calculated by multiplying number of each type of track machine with the weightage factor.

ii) For all the above categories, no Leave Reserve (LR). Rest Giver (RG) and Trainee Reserve has been considered. These shall be regulated under instructions of Railway Board, if any, from time to time.

iii) Distribution and designation of individual posts in various categories shall be based on restructuring formulae and percentage distribution of various types of grades applicable from time to time.

iv) The nomenclature of track machine maintainers covers all types of artisan staff required for operation of machine.

Repairs and maintenance for Zonal Depot.

The scale of staff for repairs and maintenance in zonal depots excluding POH is as under:

1. Gazetted Posts.

Senior Scale and JA Grade posts for Zonal Depots: Yardstick for this category of posts is as below:

S. No.	Category	Sr. Scale	JA Grade
1.	Up to 25 Units of TMs	1	0
2.	25 to 40 Units of TMs	0	1
3.	More than 40 Units of TMs	1	1

Track Machine Digest
Year-15, Issue 23, Jan 2007

Track Machine Digest
Year-15, Issue 23, Jan 2007

26

1. Non-Gazetted posts.

S. No.	Category	Nos. for large holding zones i.e. > 40 units	Nos. for medium holding zones i.e. > 21 to 40 units	Nos. for small holding zones i.e. up to units
1	Track Machine supervisors cum machine operators in the present designations of SSEITM)/SE(TM)/ JE-I(TM)/ JE-II(TM)	14	10	6
2	Track Machine maintainers in the present designations of Master Craftsman/ Fitter Gr.I /Fitter Gr.II /Fitter Gr.III	30	21	15
3	Track Machine Helpers in the present designations of Helper Gr.I/Helper Gr.II	28	21	13
4	OS	1	-	-
5	Head Clerk	1	1	1
6	Sr. Clerk	1	1	-
7	Draftsman	1	1	1
8	Steno	2	1	1
9	DSK	1	1	1
10	Material Chaser	3	2	2
	Total	82	59	40

Note:

- Weightage factors as per para (A) shall be applied and units of track machines calculated by multiplying number of each type of track machine with the weightage factor.
- For all the above categories, no Leave Reserve(LR). Rest Giver (RG) and Trainee Reserve has been considered. These shall be regulated under instructions of Railway Board, if any, from time to time.
- Distribution and designation of individual posts in various categories shall be based on restructuring formulae and percentage distribution of various types of grades applicable from time to time.

structure of track machine maintainers covers all types of artisan staff required for operation of machine.

Correction Slip No. 10 Dated 12.12.2006:

The Para 2 of Annexure 5.9 at Page 174 of Indian Railways Track Machine Manual - 2000 may be revised to read as under:

വെക്കു മക; തി
o'kz 15] vcl 23] tuojh 2007

Track Machine Digest
Year-15, Issue 23, Jan 2007

27

2. Life of the machine in terms of gross units of work done, unit cost of the machine, weightage for different types of machines for proportionate distribution of overheads on technical and general supervision and works units between IOHs are as follows:

S. N.	Type of machine	Life of machines (Gross Units of work done) (Km)	Work Units between POH (Km)	Work units between IOH (2 IOHs between POH) (Km)	Weightage
1	UT	2500	1250	425	1
2	UNO	4500	2250	750	1
3	DUO	6000	3000	1000	1
4	CSM	7500	3750	1250	1
5	UNIMAT	10000 T/Outs	5000 T/outs	1650 T/outs	1
6	Portal Crane of 3 sets	500	-	250	0.5
7	TRT	1500	750	250	3
8	BCM	1000	500	175	1.5
9	DTS	10000	5000	1700	1
10	BRM	10000	5000	1700	0.8
11	RGM	17500	8750	2925	1
12	SBCM	3000	1500	500	1.5
13	Multipurpose Tamping Machines	7500	3750	1250	1
14	Tamping Express (09-3X)	11000	5500	1850	1
15	Points & Crossing	1000	500	175	1

F-28)				
-------	--	--	--	--

