



सत्यमेव जयते



Government of India  
Ministry of Railways

Indian Railway Standard

# Track Manual

Metric

Volume I  
(Revised)

Chapters I to VI

*Issued by*

Research Designs & Standards  
Organisation

(Ministry of Railways)  
1994

## PREFACE

The Indian Railways Standard Manual of Permanent Way was first issued in 1934 and revised initially in 1936. Again in 1947, Chapters I to IV were revised and the new Indian Railway Standard Track Manual was issued. The scope of the Manual was later expanded by adding Chapter V on Turnouts, Switches and Crossings in the year 1953, Chapter VI on Diamonds and Slips in 1956 and Chapter VII of Scissors and Ordinary Cross-overs in 1961. The 1962 edition of the Manual thus comprised Chapters I to VII. This edition was later reprinted in 1967 incorporating addendum and corrigendum slips issued up to 30-9-1966. First edition of the Manual in metric unit was issued in 1980. The present compilation includes the modifications and additions effected since the previous edition. It is an illustrated record in a convenient form of the present track standards. Some new designs also feature in the compilation. Annexure 'A' in the 1980 edition, containing a list of FPS track parts and equivalent metric track parts is not included in the present edition.

The IRS Track Manual has been compiled in two volumes. Vol. I containing Chapter I to VI and Vol. II containing Chapters VII to XII and an Annexure showing therein the statement and drawings for adoption of rail screws/plate screws in place of dog spikes/round spikes in turnout assemblies. Brief notes have been given at the beginning of each chapter. The manual retains its loose leaf feature to enable additional information to be subsequently added either in the form of new chapters or additional pages. Replacements of plates due to revision of the designs will also be facilitated.

The information contained in the notes and the drawing plates will, it is hoped, illustrate clearly the salient features of the Indian Railway Standard Track Designs and tabulated data be of practical value to those concerned with the

construction and maintenance of track. 'Part Number' in the tables indicated the RDSO drawing number of the component.

As the ultimate aim of standardisation is to reduce the number of types and consequently the stocks to be maintained for replacements, it is desirable that before placing orders for supply of track parts of non-standard assemblies, those concerned should satisfy themselves that none of the standard parts will suit or could be modified to suit their requirements.

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### CHAPTER I—Rails and fastenings (RF)

Brief notes on rails and fastenings; dimensions, properties and weights of rails; fishplates and fishbolts for standard rail sections; spring washers; combination fishplates and bolts for standard and non-standard rail sections; insulated rail joints four channel types rail expansion joints for spans upto 30.5 metres and for spans upto 76.2 metres; rail anchors; table showing weights and quantities of rails, fishplates and fishbolts.

### CHAPTER II—Sleeper fastenings (SF)

Brief notes on sleeper fastenings; dogspikes, fang bolts round spikes and rail/plate screws; hook bolts bearing plates mild steel (single rail), canted and flat, bearing plates cast iron, ordinary and anticreep; spring steel loose jaws, two-way keys, ordinary and over-size, modified loose jaws, special key; fastenings for cast iron sleepers; grooved rubber sole plate and steel pads for ST sleepers; table showing weights and quantities of sleepers and fastenings for various spacings of sleepers.

### CHAPTER III—Cast iron sleepers (SC)

Brief notes on cast iron sleepers; CST-9 type plate sleepers BG & MG; CST-9 reversed jaw type plate sleepers BG & MG.

### CHAPTER IV—Steel trough sleepers (SS)

Brief notes on steel trough sleepers; steel trough sleepers with loose jaws, BG & MG; steel sleepers for turnouts for use with loose jaws and two-way keys BG & MG; steel trough sleepers with elastic rail clips.

**CHAPTER V—Turnouts, Switches and Crossings (TSC)**

Brief notes, general definitions and parts of turnouts, section of turnout sleepers; table of assemblies, sub-assemblies and main parts, BG, MG and NG; turnouts-main dimensions; main dimensions for setting out turnouts; rail lengths and offsets; typical 1 in 8½ and 1 in 12 built up crossings. BG, MG and NG, typical 1 in 16 built up crossings BG & MG, typical 1 in 20 built up crossing BG; typical short and long switches BG, MG & NG, typical curved switches BG & MG typical partly curved switches MG; bolts and turned bolts for points and crossings, special bolts and bolts with grooved nuts for switches; spherical washers and switch anchors; typical check rails; typical ordinary and insulated tie plates for crossings and switches; typical leading and following insulated stretcher bars BG & MG, typical alternative leading insulated stretcher bars BG, typical leading and following ordinary stretcher bars, alternative typical leading and following ordinary stretcher bars MG and NG; MS Brackets for stretcher bars; typical slide chairs for over riding switches; typical special flat bearing plates.

**CHAPTER VI—Diamonds and Slips (DS)**

Brief notes, general definitions and nomenclature of assemblies, sub-assemblies and main parts of diamonds and slips and movable switch diamond and slips; main dimensions rail lengths and offsets for laying diamonds and movable switch diamonds and slips; position of spherical washers on loose heel and fixed heel for diamonds with slips; typical 1 in 8½ obtuse crossing and intermediate portions for diamonds and slips BG, typical 1 in 8½ obtuse crossing of diamonds and slips MG typical 1 in 8½ acute crossing MG; typical 1 in 8½ obtuse crossing and intermediate portion for movable switch diamonds and slips BG, typical 1 in 10 obtuse crossing and intermediate portion for movable switch diamonds and slips BG, typical 1 in 10 acute crossing BG, typical 1 in 12 obtuse crossing and intermediate portion for movable switch diamond and slips BG and MG; typical ordinary and insulated leading stretcher bars for double slip, leading and following ordinary and insulated stretcher bars for movable switch

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diamonds; check rails for diamonds; ordinary and insulated crossing tie plates and switch tie plates in slips; typical slide chairs for switch diamonds and slips BG & MG; typical lugs and centre brackets for leading stretcher bars for double slips BG & MG.

## CHAPTER I

### RAILS AND FASTENINGS

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