

PREFACE

1. It is with great pleasure that a new Indian Railway Telecommunication Manual is being presented for the guidance of Signal and Telecom Department in particular and all railwaymen in general. The last edition of Telecommunication Manual was brought out in December 1971. Since then, Telecom Department has seen sea changes due to revolutionary evolutions in telecommunication technologies leading to obsolescence of earlier systems. This has modernized both types of systems viz., connected with train operations as well as Passenger Amenities and Information system.
2. Therefore, it becomes imperative to bring out a new Telecommunication Manual encompassing all the technological changes relevant to the working of Telecommunication Department of Indian Railways. Over a period of time, Optical Fibre Communication has completely replaced the conventional landline communication systems for long haul. Moreover, with the evolution of IP based data network, a paradigm shift in the concept of telecom networks has taken place which caters to both Voice as well as Data transmission. Wireless communication has seen complete transformation from Microwave based systems to GSM-R/TETRA based systems. Satellite Communication has completely broken the physical boundaries and has made it possible to connect the remotest of places to the main network.
3. This manual provides detailed guidelines for setting up and maintaining the telecommunication systems covering various applications and fields. With the proliferation of telecommunication technology across the country by various organizations, the role of regulatory bodies such as WPC and PTCC have increased manifold and hence, chapters on procedures for dealing with these organizations have also been incorporated. However, it has not been the intention nor it is possible to provide for every technical aspect required for planning, installation and maintenance of various telecom equipments. The Chief Signal & Telecom Engineers of the Railways and RDSO are authorized to supplement additional guidelines required for day-to-day working.
4. The preparation of Telecommunication Manual has been a great effort with the contribution of officers from Zonal Railways & IRISSET. The entire script has been checked and updated by RDSO and approved by Railway Board. Without the collective effort of various organizations of Indian Railways, this enormous task would not have been completed and hence their contribution is acknowledged with gratitude.
5. In keeping with the demand of e-working, this Manual is being brought out in electronic as well as printed form. It is sincerely hoped that the Manual would serve the purpose for which it has been created.

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