PROLOGUE

The use of Information Technology (IT) has a fundamental impact on the risks to the organisation and methods of managing those risks to achieve the intended objectives. Since computers process a large volume of data, small mistakes not only add up to large amounts but also undermine the reliability that can be placed on data generated by the system. Poor processing logic inbuilt in the programme would result in the error being repeated ad infinitum till it is discovered and corrected. This differs from the manual system in as much as in manual processing a calculation mistake may occur only occasionally and its implication will be limited to the particular transaction. However, a small mistake of a few hundred rupees in computerised transaction processing has grave implications, as it shows deficient processing logic or malfunctioning controls. Improperly implemented and poorly controlled IT Systems thus have far reaching consequences for any organisation in terms of incorrect decision making and high cost of computer error, apart from issues like protection of costly assets, maintenance of privacy and organizational cost of data loss. It is, therefore, imperative that the transition from manual systems to IT Systems should be through a very structured process, more often than not involving Business Process Re-engineering.

Computerisation in Indian Railways has been necessitated by the sheer size and volume of its operations and this has resulted in extensive use of computers in its functioning. This report covers Information Technology audit of two of its important functional areas viz., IT applications concerned with pay, allowances and related functions and IT applications concerned with inventory management.

The focus of Information Technology Audit is to evaluate whether the IT system adopted safeguards assets, maintains data integrity, helps to achieve the objectives effectively and performs its functions efficiently and economically. IT audits of two applications of Indian Railways were conducted using globally accepted frameworks to assess the controls. Data analysis was done using Computer Assisted Audit Techniques (CAATs) such as IDEA (Interactive Date Extraction and Analysis, a generalized audit software) and SQL (a computer language used to retrieve data from relational database management systems).

This report is divided into four chapters:

- **Chapter 1**: Covering Information Technology audit of Pay Roll and Independent Modules (PRIME), a computerised application for pay and related systems. The pay roll and related systems were audited at Southern Railway, Chennai, Western Railway, Mumbai and South Eastern Railway, Kolkata.

- **Chapter 2**: Containing an evaluation of IT governance with reference to implementation of Pay Roll and Independent Modules (PRIME) and Advanced Financial and Railway Expenditure Management System (AFRES) in Eastern Railway, Kolkata.

- **Chapter 3**: Containing results of Information technology audit of the Transaction Accounting System (TAS) at Metro Railway, Kolkata.

- **Chapter 4**: Covering Information Technology audit of different inventory management systems adopted in two production units and one zonal railway viz, Rail Coach Factory, Kapurthala, Chittaranjan Locomotive Works, Chittaranjan and Western Railway, Mumbai.