

Chapter – I

Introduction



Rail transportation gained significance in the 1800s with the invention of steam engine. Since then, Railways has been one of the prominent modes of transportation which is energy efficient. With the advent of high powered locomotives, better track structures and signaling systems, the railway operations have evolved with time. Modern concepts of transportation business like Supply chain and logistics require that the train operations are tailored to cater to the customer needs all over the world.

Of all the national railway networks in the world, Indian Railways is the fourth largest. It carries about 8 billion passengers and 1.4 billion tonnes of freight per year. About 15000 coaching trains and 8500 freight trains are run on a daily basis in the IR network which extends over 7300 stations. Such a large scale operation of trains is carried out every day by coordinated efforts of around 1.3 million employees working in 17 zones spread across the country.

Among the zones, South Central Railway is the 5th largest in terms of freight loading and 8th largest in terms of passenger trains run. In freight operations, the zone caters to the coal mines of Singareni and Western Coal fields which serve power houses spread across six states. Cement industries in Tadipatri, Manikgarh, Malkhaid, Tandur and Jaggiyapet clusters also fall under the zone. Krishnapatnam and Kakinada are the major ports served by SCR. The zone also has food grain loading by FCI and State civil supplies corporations of Andhra Pradesh and Telangana. In passenger operations, the zone has major terminals at Secunderabad, Hyderabad, Vijayawada, Tirupathy and Aurangabad. It is also strategically placed between zones like ECoR, CR, SWR and SR, thereby handling through freight and passenger traffic across these zones.

Train operations in the SCR network is spread across 600 stations. An understanding of Station, Train and their working is fundamental to the understanding of train operations. Hence, these aspects are dealt in the first two chapters of the manual. It is followed by a chapter on Control organization which is the nerve center for coordinating train operations across the stations, sections and between divisions, zones.

In Railways, operations and maintenance go hand in hand. However, maintenance that requires operational downtime affects train running as it consumes path. A chapter on traffic blocks deals with this subject matter. Daily train operations on such a large scale are prone to failures and unusual occurrences that when left undetected or not acted upon lead to unsafe situations. Some of the important unusualls are dealt in brief in the fifth chapter.

In order to attain the best operational efficiency, all assets have to be utilized in the best possible way. The final output i.e. train running depends on how everything is coordinated. It is the measure of these outputs that indicate the health of the organization and the direction in which its performance is heading. The sixth chapter 'Operating Statistics' deals with all such indices that measure the various performance parameters of the train operations.

The activities carried out by staff at stations, on train, in control office and work spots have to be done in a safe and efficient manner to achieve smooth operations. For ensuring this, all these activities are closely monitored at supervisory and officer levels. Inspections, their types, quality and effectiveness which are very essential and critical to keep up safety in train operations are dealt in the seventh chapter.

For an organization to grow and respond to the changes in demand, business pattern, planning needs to be done on a continuous basis. Like any capacity building work, railway projects also have a long gestation period and hence traffic planning has to be carefully undertaken duly taking into account the possible future scenarios and trends. Well planned traffic facility works will ensure smooth train operations in future. Traffic planning is dealt in the final chapter as it is best appreciated after obtaining an overall understanding of all aspects of train operations.

* * *