

Transportation Management

Lesson 4

Modern Trends in Transport Management

4 Freight Operation

4.1 Unit Train :

Unit Train is a freight train, which contains all the wagons for a single destination. The full train is either loaded by a single consignor or multi-consignors from a station to a single point. Such a train movement is also known as “point-to-point” movement. The advantage of Unit Train movement accrues in terms of elimination of marshalling of trains in marshalling yard, elimination of wagon detention in the marshalling yard, improved wagon turn round, improved wagon-usage, improved efficiency, quick transit time etc. The disadvantages are: (i) a very large unit of transport, requiring availability of large quantity of goods for movement, (ii) high mobilization efforts in terms of labor and transportation from godowns.

Indian Railways have resorted to Unit Train movement in 1980 to tide over the capacity shortage problem. They are normally not loading wagons in piecemeal or goods less than wagon load.

4.2 Heavy Haul Trains :

Heavy haul trains are longer trains carrying large number of wagons in one train. Currently, the heaviest train on Indian Railways consists of 59 BOXN wagons. The trailing load of the train is about 5400 tonnes. Heavy haul trains, comprising two trains of 58 BOXN each having a trailing load of 9400 tonnes, have also been run during the 1980s and 1990s on experimental basis between Eastern and Northern Railway Coal Circuits. However, longer trains pose problem due to inadequacy of length of loop lines at stations. The standard loop length is 686 metre, which is normally extended to 715/730 meters in graded sections to accommodate for multiple loco running.

4.3 High Speed Freight Trains

The normal speed of a freight train with air-brake BOXN/BCN stock is 75 kmph in the loaded direction and 80 kmph in the empty direction. However, to increase the line capacity and improve the transit time, Indian Railways have embarked upon the strategy of running freight trains at 100 kmph. The container trains between Delhi and Mumbai and rakes of coal trains between Eastern and Northern Railway are running at 100 kmph. The transit time of container trains has been reduced to half by running them at 100 kmph.

4.4 Multimodal Container Trains

With globalization economy and trade, export and import traffic is growing, at very fast pace. Gradually the international traffic has been shifting to the container. This required focused attention on container movement. Indian Railways have formed a separate company, named CONCOR. To deal with container business, both international and domestic. Railways as facing stiff competition from 'road', which is resulting in diversion of traffic from rail to road mode of transport. Moreover, with increased share of 'manufacturing sector' in the GDP, aggregation of consignments to form a train load has become essential. Diversion of this traffic from road to rail requires provision of total logistic solution and containerization of the traffic for multimodal movement. CONCOR is successfully increasing its share in the domestic multimodal traffic, using the container route.

Passenger Operation

4.5 Intercity Shatabdi Trains

To cater to the requirement of business travellers covering a distance of 300 to 500 kms., high-speed fully air-conditioned Shatabdi-type trains have been introduced on Indian Railways. These trains have AC Chair Car and Ac Executive Chair Car accommodation. They provide for the normal travel requirement of business travellers and are very popular. The maximum speed of these trains varies from 120 to 140 kmph.

4.6 Rajdhani Trains

These set of trains connect state capitals with Delhi, which is the Capital of the country. These are fully air-conditioned trains, having Ist Ac, 2-tier AC and 3-tier AC sleeping accommodation. They normally cover the distance of the state capitals as overnight journey. Meals and other bed roll requirements, etc. are fully met. The maximum speed of Rajdhani trains normally in the range of 120 kmph.

4.7 Jan Shatabdi Trains

These are newly-introduced trains during the 150th year of Railways, existence. These are second-class high-speed intercity trains, catering to the not-so-affluent travelers' requirement.

4.8 EMU Trains

In the suburban section, for fast travel of daily commuters, Electrical Multiple Units (EMUs) type of trains are run. These trains have fast acceleration and deceleration, wide doors and are run on sections which have high level platforms, which normally flush with the floor of the coach. This provides for a service with small stoppages at short and frequent intervals. High acceleration and deceleration helps in tiding over the loss of time in frequent stoppages. Wide doors help in entraining and detraining of passengers in short halts. High level of platform avoids need of steps in the coach and help in quick entraining/detraining.

4.9 Duranto Trains

These trains were introduced in 2009. They run nonstop between originating and terminating stations. But now days these are stopped at important stations.

4.10 Semi-High Speed Trains on Indian Railways.

The inauguration of the Gatimaan Express on 5 April 2016 ushered the beginning of semi-high speed trains in India. The Gatimaan Express runs at the top speed of 160 km/hr from Delhi to Agra and has an average speed of 113 km/h.

With the success of Gatimaan Express, it is planned to start additional semi-high speed services along the Delhi - Bhopal / Chandigarh / Kanpur / Lucknow routes shortly. In Rail budget 2014 speech it has been announced that “an effort will be made to increase the speed of trains to 160-200 kmph in select sectors so as to significantly reduce travel time between major cities.” The identified sectors are:

- i. Delhi-Agra
- ii. Delhi-Chandigarh
- iii. Delhi-Kanpur
- iv. Nagpur-Bilaspur
- v. Mysore-Bengaluru-Chennai
- vi. Mumbai-Goa
- vii. Mumbai-Ahmedabad
- viii. Chennai- Hyderabad and
- ix. Nagpur-Secunderabad.

During the trial run in Delhi-Mumbai route, in 2016, Spain’s Talgo trains have reached a peak speed of 150 km/h, observing laid-down speed cautions and halting at the usual stoppages as the Mumbai Rajdhani, Talgo clocked an average speed of 117.5 km/h to cover the distance. The Mumbai Rajdhani clocks 15 hours, 50 minutes at an average 87.7 km/h.

4.11 High Speed Planning on Indian Railways.

Ministry of Railways has set-up the National High Speed Rail Corporation Limited as a government company on 12 February 2016 to promote high speed rail corridors. RVNL set up a corporation called “High Speed Rail Corporation of India Ltd” (HSRC) on 25 July 2013, that will deal with the proposed high-speed rail corridor projects.

The Expert Group for Modernization of Indian Railways in its report of Feb, 2012 made the following recommendations: "Construct a High Speed railway line between Ahmedabad and Mumbai with speed of 350 kmph. Undertake detailed studies for 6 other High Speed rail corridors already identified. These include:

- i. Delhi-Chandigarh-Amritsar (450 km);
- ii. Hyderabad-Dornakal-Vijayawada-Chennai (664 km);
- iii. Howrah-Haldia (135 km);
- iv. Chennai-Bangalore-Coimbatore-Ernakulam (850 km);
- v. Delhi-Agra-Lucknow-Varanasi-Patna (991 km) &
- vi. Ernakulam-Trivandrum (194 km)..."

Mumbai-Ahmedabad is the First High Speed Corridor of India which has been undertaken for implementation by HSRC. It will be built in collaboration with Japan which will be about 500 km long and high speed train operation will be at a top speed of 320 km/h. Under the proposal, construction is expected to begin in 2017 and operational from 2025 onwards. It would cost about ₹980 billion and be financed by a low-interest loan from Japan.

PARCEL OPERATION

4.9 Private Parcel Trains

Indian Railways are running millennium parcel express trains, which are leased to private operators. These trains are dedicated to private operators and are run between two sets of points. The private operator fixes its own tariff and fills the train. He pays a fixed rate per kilogram to the Railways.

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