



TRANSPORT, COMMUNICATION AND TRADE IN INDIA

In the previous lesson, you have studied mineral and energy as an important infrastructural resource. Transport, communication and trade are yet another important services. They facilitate agriculture and industry to grow to their fullest potential. Transport carries the people and goods from one place to another. It helps both the production, distribution as well as consumption processes. Communication is the process of receiving and sending messages between two persons or agencies located at different places. Radio and Television are the means of mass-communication which provide information, news and entertainment to the people spread over vast distances. Telephone and telegraph services bring the people closer to one another. Their contribution in promoting business and trade is incalculable. Trade involves exchange of goods among people living in different regions or countries of the world. It plays a vital role in accelerating the progress of agriculture and industry of a country.

In this lesson, you will study the relative importance of transport, communication and trade in India. You would also learn about the distribution and density of transport and communication networks. In trade you will know its volume and direction.



OBJECTIVES

After studying this lesson, you will be able to:

- define the term “infrastructure;”
- explain the role of infra-structure in area development;

- establish relationship between needs and mode of transport system;
- identify the pattern and networks of important roads, railways, airways and water ways;
- describe the role of different modern means of communications;
- appreciate the role of transport and communication changing the way of life in rural and urban areas;
- explain the significance of trade in day to day life, inter-regional dependence, and national integration;
- interpret data, graphs, diagrams showing changing patterns of trade;

25.1 INFRASTRUCTURE: DEFINITION AND ITS ROLE IN AREA DEVELOPMENT

According to World Book Dictionary the term “infrastructure” denote the essential elements forming the basis of a system or a structure. Infrastructure covers the resources, which strengthen the basis of the economy of a country. Better infrastructural services including transportation (railways, roads, ports, civil aviation etc.), communication (telecommunication and post); and electricity transmission and distribution boost the growth of a nation.

Infrastructural resources always becomes key elements during preparation of a plan for area development. Quality infrastructure, covering the services of transportation, electricity transmission and distribution, communication, water supply and sanitation, and solid waste management is one of the most important necessities for unleashing high and sustained growth and alleviating poverty, particularly in the backward state. It works as a nerves of the economy of a country.

By providing these infrastructural services an undeveloped or underdeveloped area can be developed. An area planner always keep in mind appropriateness and balance between different services of infrastructure in an area.

25.2 IMPORTANCE OF TRANSPORT

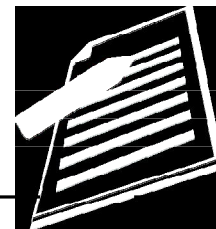
India is a vast country with long distances. A dense and efficient network of transport is essential to promote social cohesion, accelerate economic prosperity and ensure security and territorial integrity.

Transport consists of three different modes - land, water and air. Each one of them has some advantages and disadvantages. They all compete with one another. More importantly they complement each other and in the process constitute a single integrated network.

While air transport is of recent origin, the other two have been as old as the nomadic man himself. The land transport comprises road and rail transport. Of the

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two, the rail transport is relatively new. It is highly useful for carrying heavy goods over long distances at affordable costs. It is most convenient and cost effective for long distance passengers. The road transport on the other hand is very handy and convenient to carry goods and passenger over relatively short distances. Goods can be transported and handed over to a customer at his doorstep safely and at a reasonable cost.

Water transport for passengers is now no more attractive; but it is an ideal means of transport to carry heavy and bulky goods along navigable rivers and across the oceans of the world. By far this is the most inexpensive means of transport despite being rather slow.

Air transport has become tremendously popular for people who are called upon to visit urgently various parts of the world at a very short notice. Despite high fares, it is indeed very economic as it saves both time and energy. It is now also used for carrying perishable goods and precious cargo from one part of the world to another. Recently due to introduction of various private airlines, fares have been reduced significantly both at domestic and international level.

Transport system links areas of production with those of consumption. It facilitates the movement of goods, services and people at local, regional, national and international levels.

- An efficient network of transport is essential to achieve the economic prosperity and to maintain the security of the country.
- Transport takes place through three different modes - land, water and air.

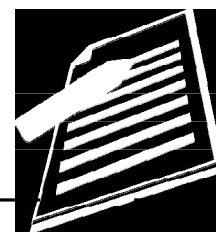
25.3 RAIL TRANSPORT

Indian railway network is the fourth largest in the world after Russia, the U.S.A. and Canada. In a vast country like India, it has brought the people of the farthest corners of the country closer to one another. Railways are ideal for carrying goods and people over long distances. It employs the largest number of persons among the Central Government departments.

The first train steamed off in the country in 1853 from Mumbai to Thana, covering a distance of 34 km. During these years, Indian railways have grown into a vast network. The following table may give you an idea about the growth of the railway system during the post-independence era.

Table 25.1 Operations of Indian Railways

	1950-51	2003-04
Electrified Route in thousand km.	0.4	17.5



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Total Route length in thousand km.	53.6	63.2
Originating Traffic in million tonnes	93.0	557.3
Total Goods Traffic in Billion Tonne – Km**	44.1	381.2
Passengers Originating in Millions	1284.0	5123.0
Passenger- Km+in Billions	66.5	541.2

Source : India 2006, A Reference Annual, P-805-810

*1000 million = 1 billion (1 million = 1,000,000.00)

**1 tonne km = when 1 tonne of goods is carried over one km.

+ 1 passenger-km = when one passenger travels one km.

The above table gives us an idea of quantitative progress made by the railways over 50 years. In the first place the total route length has increased very slightly. However, nearly 28% of its route length has been electrified. It means over this track the traffic is far cleaner and faster. It also means considerable saving in transporting charges of coal which the railways consumed for their own running. To that extent the railway wagons are now free to carry commercial goods of its clients. Similarly, the route length has increased only marginally but the passenger-km traffic has increased more than eight times. Even the goods traffic in terms of tonne-km has increased by well over ten times. This also speaks of qualitative increase in the efficiency of the railways. This has become possible by electrification of part of the route and dieselisation of the track. The number of steam or coal engines had come down to mere 45 by 2003-04 from 8120 in 1950-51. Now there are 4769 diesel engines as compared to mere 17 in 1950-51. Similarly electric locomotives have increased from 72 to 3003 by 2003-04.

As seen earlier, the new railway lines have been added only marginally. However, there has been considerable increase in running track. In 1950-51 it was about 59,000 km. By 2003-04 it rose to nearly 84,000 km. It means considerable portions, particularly the busy ones have been converted from single to double and in some cases even triple tracks. This has enabled railways to run more trains, both goods and passengers. The railways have undertaken to convert metre gauge railway tracks into broad-gauge (1.68 metres) enhancing the capacity of railways to carry more goods and more passengers with an increased speed. By strengthening trunk route railway tracks, Indian Railways run several fast trains. Earlier there were passenger and express or mail trains, the only two categories. Now there are Super fast Expresses, Rajdhani Expresses, and Shatabdi (the fastest) Expresses running between busy terminals. Now metro rail is a new concept which



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provide faster transport facility in metro cities. Delhi is the first ones, where its running successfully.

Indian railways have taken several measures to improve their efficiency and usefulness to the public:

- considerable increase in railway running track.
- increase in electrification of busy trunk routes.
- conversion of metre gauge railway lines into broad gauge.
- introducing several types of fast and superfast passenger trains
- running fast goods and special foodgrain trains.
- Provide better facilities for reservation and other customer care services, introducing reservation through internet.

Let us have a glance at the regions of dense, moderate and sparse railway networks.

The Regions of Dense Network

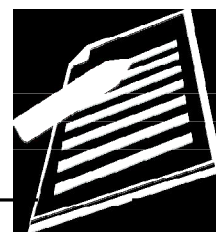
- (i) The northern plains and eastern coastal areas possess a dense network of railways. The level land, fertile soils, dense population and spread of industries are the reasons *for* this dense railway network.
- (ii) The plains of Gujarat and Saurashtra, Central Tamil Nadu and Chhotanagpur Plateau are the other regions. These regions have well developed industries.

Regions of Moderate Railway Network

The whole of peninsular region except Tamil Nadu and Chhotanagpur has a moderate network. The hilly and plateau terrain provides unfavourable conditions for laying railway lines. There are long trunk routes which connect the important industrial cities and ports. The railway lines either pass through the large gaps between hills or through the tunnels.

Regions of Sparse Railway Network

- (i) The Himalayan mountain region, comprising Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh have hardly a line here and there. The hilly terrain, rugged topography are the main reasons responsible *for* the very sparse network. Some *foot* hill towns such as *Jammu*, Kathgodam, Kotdwar and Dehradun are the only rail heads touching the region. Recently, railway line has been extended from Jammu to Udhampur in the state Jammu and Kashmir. There are few narrow gauge tracks between Kalka and Shimla and between Siliguri and Darjeeling.
- (ii) The North eastern region has also sparse railway network. Only Brahmaputra valley in Assam has main railway line. All hilly states in this region are almost without a railway line. The hilly terrain, thick forest cover, heavy rainfall, low level of economy and sparse population are the main factors for the absence of railway lines.



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- (iii) Desert region of western Rajasthan has also sparse network of railways. There are some metre gauge railway lines which link the big cities. However, most of these metre gauge railway lines have been converted into broad gauge lines. This area is sparsely populated and has few industries. Moreover the climate is hot and dry. Dry sandy winds obstruct the railway tracks. All these factors hamper the construction of railway lines and their proper maintenance.

The Pattern of Trunk Railway Routes

If you try to trace the busy trunk route railway lines connecting Delhi, Mumbai, Chennai, Kolkata (and back to Delhi), you get a kite-shaped pattern. Further add to it the diagonal lines connecting Mumbai and Kolkata on one hand and Delhi and Chennai on the other, you get a kite or diamond shaped figure. These lines serve as backbone of the entire railway network in the country.

This main pattern needs two important additions one in the Sutlej Basin or the Punjab plains in the north-west and one in the Brahmaputra Valley in Assam. The former consists of lines connecting Delhi with Pathankot, Amritsar-Wagha and Firozpur. The other trunk connects North-east Bihar and Northern West Bengal with Dibrugarh in east or upper Assam.

All these lines connect Delhi with a broad gauge and the most part of them has been electrified.

The Role of Railways

The role of the Indian railways may be made further clear if you study the following table, carefully. Also see if the conclusions drawn at the end are correct objectively.

Table 25.2 Indian Railways Traffic Originating in Million Tonnes

Commodities	1950-51	2003-04
(i) Coal	20.2	271.40
(ii) Raw materials (excluding coal) of Iron & steel industry	N.A.	44.26
(iii) Pig iron, Finished steel lifted from steel plants	—	15.24
(iv) Iron-ore for exports	Nil	36.41
(v) Cement	2.5	53.47
(vi) Food Grains	8	46.52
(vii) Fertilisers	Nil	28.75
(viii) Mineral Oil	2.7	22.00

Source : Economic survey 2005-06, p. 195

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- (i) Coal is the most dominating commodity transported by the railways. Railways promoted industrial growth of the coal starved areas.
- (ii) Railways help to increase industrial production by carrying raw materials to industrial centres.
- (iii) Railways also help in distribution of semi-finished and finished products like pig-iron and steel which in turn promote secondary industries.
- (iv) Railways also help in promoting exports of commodities like iron-ore, cement and food grains to earn foreign exchange.
- (v) Railways promote building activity all over the country by carrying cement over long distances.
- (vi) Railways help in boosting agricultural production by carrying huge amounts of fertilisers from one region to another.
- (vii) Railways carry mineral oil, an industrial input, from port cities and refineries to the interior parts of the country.

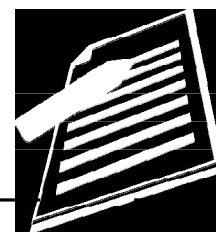
This should explain why Indian Railways constitute the major national means of transport.



INTEXT QUESTIONS 25.1

Answer the following questions briefly:

- (1) Mention any two name of infrastructural services.
(i) _____ (ii) _____
- (2) What is the total route length of Indian railways in 2003-04?
(i) _____ (ii) _____
- (3) Mention two main advantages of railway transport.
(i) _____ (ii) _____
- (4) Name two regions in India where railway network is dense.
(i) _____ (ii) _____
- (5) State the most important reason for the sparse railway network in the North Eastern Region of India.
(i) _____ (ii) _____
- (6) Mention the main problem is laying railway lines in the peninsular plateau regions.
(i) _____ (ii) _____



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25.4 ROAD TRANSPORT

Road transport is an old means of transport. It plays a significant role in carrying goods and people in all parts of the country. Particularly, the rural economy depends upon the road transport. The importance of roads has increased with the advent of auto vehicles. The relative importance of roads is much more than that of railways.

(i) Railway transport limited to the railway heads while the roads provide door to door services. (ii) Roads can negotiate higher gradient of slopes and can traverse the mountainous regions. Construction of railway lines is difficult and expensive in hilly regions. (iii) Road transport is flexible, reliable and quick, (iv) It is more suitable for carrying perishable goods like milk, fruit and vegetables. (v) Its cost of construction and maintenance is far less than that of the railway. (vi) For short distance journey, roads are more suitable. They supplement the railways by linking the interior areas with railway heads. Roads are ideal for the promotion of tourism in the country.

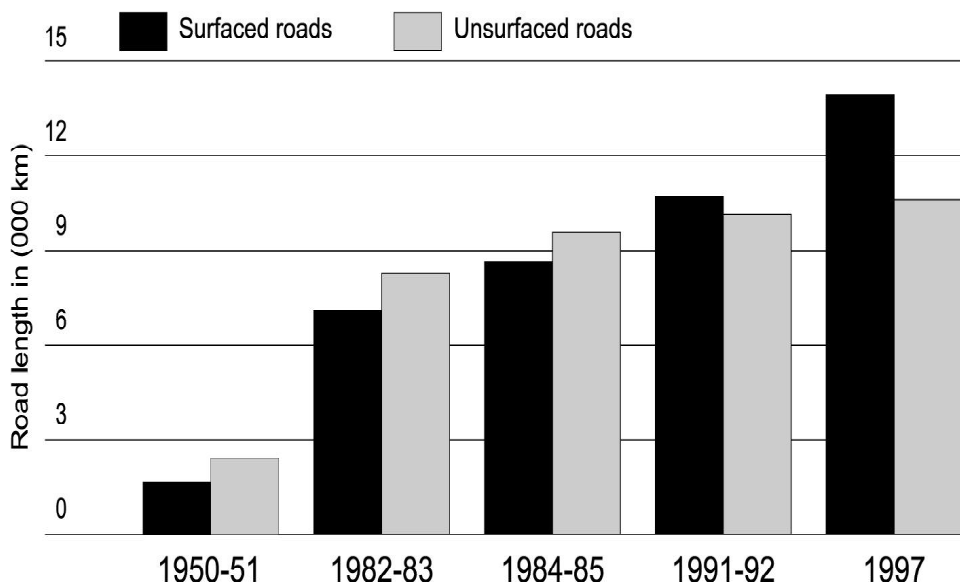


Fig. 25.1 Development of Road Length in India

With the total length of 3.32 million kilometre, India has the largest road network in the world. However, it is far from adequate or efficient.

Surfed and Unsurfaced Roads

Surfed roads are the metalled roads and are made up of cement, concrete or bitumen. These are all weather roads. The total route length of surfaced roads in India till march 1997 was 13,94,067 km. Unsurfaced roads are 'Kucha' roads

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made up of earth. They provide tracks for the bullock carts and link the rural areas with the urban centres. They play an important role in the development of rural economy. During rainy season these roads are of little use. The total length of these roads was 10,71,816 km. till march 1997.

Development of Road Transport

There has been a considerable development in the road length after independence. Route length of surfaced roads has increased from 1.57 lakh km. (1950-51) to 13.94 lakh km. in 1997. The length of unsurfaced roads during the same period has increased from 2.42 lakh km. to over 10.71 lakh km.

Not only the route length of roads has increased but the number of commercial heavy vehicles, particularly the buses and trucks has also shown a tremendous increase since Independence. Vast increase in the road traffic has posed serious problems in handling it smoothly. The number of road accidents has also shown a steady increase. With increased road traffic, pollution of air has been on the rise.

Geographical Distribution of Roads

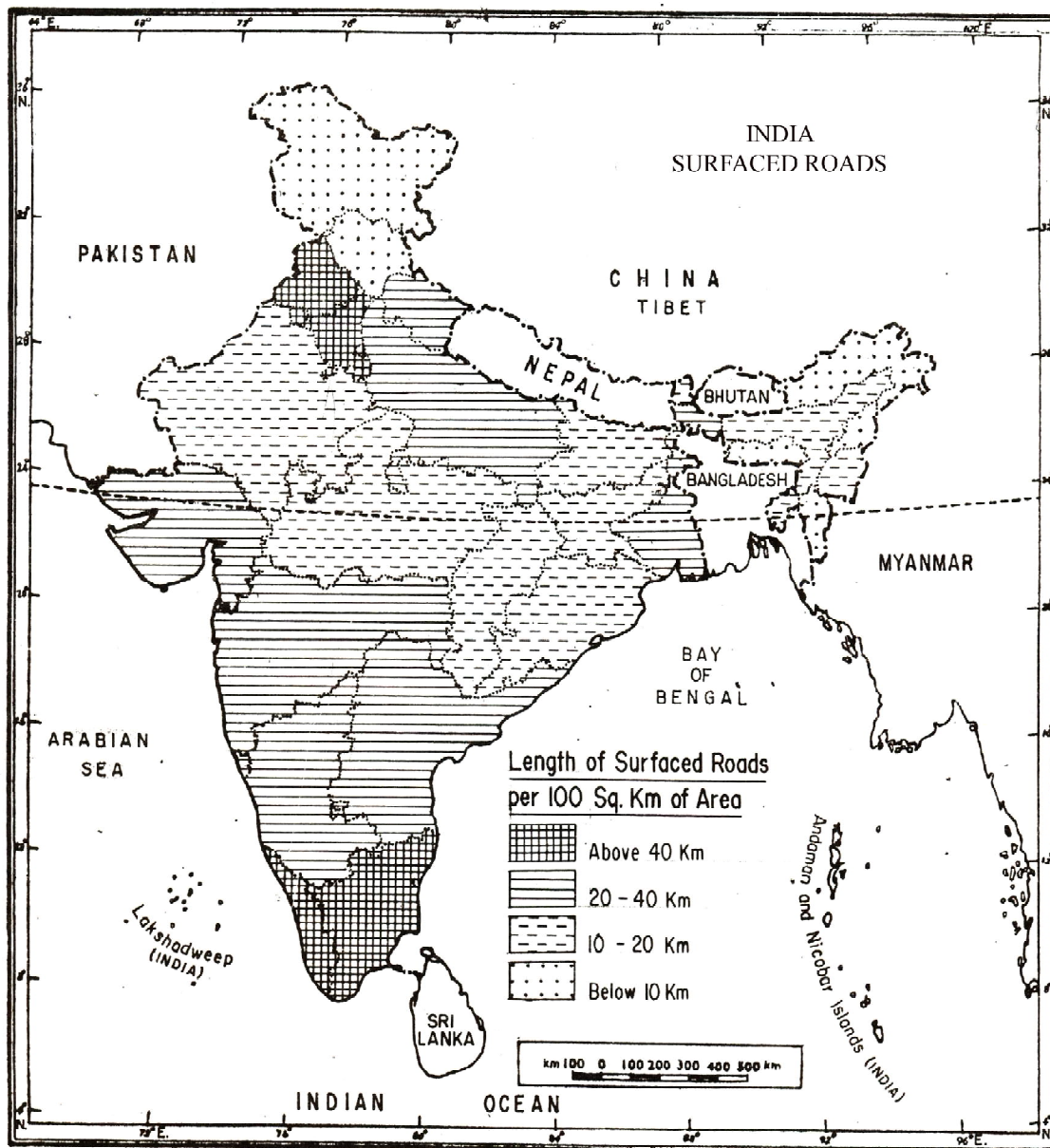
Road density refers to the average length of roads per 100 square km. area. The road density in India is still very low compared to the developed countries. High concentration of road network is found in the Northern Plains because of level land, fertile soil and high density of population. In these parts, unsurfaced roads are more common than surfaced roads. Peninsular plateau has higher proportion of metalled roads because of the easy availability of road building materials. In the North eastern states; the road net work is very sparse due to hilly terrain, thick forest cover and heavy rains causing frequent floods. Sparse population is also the other important reason.

The pattern of road density is also uneven in the country. Tamil Nadu, Kerala, Punjab and Haryana have higher road density. It is because of the growth of agriculture, manufacturing industries, urbanization and dense population. Karnataka and Maharastra also fall in this category, reason behind this is concentration of industries and urbanization.

The states of Andhra Pradesh and Bihar have moderate density of roads. In Rajasthan, Madhya Pradesh and Chhatisgarh, the density of road is low due to low population and low economic development.

The Himalayan region and North Eastern states have very low density of road network, which is below 20 km. per 100 square km area. As regards the pattern of surfaced roads, Punjab in the north and Kerala and Tamil Nadu in the south

have the highest road density. The southern states have a good network of metalled roads. The pattern of surfaced road density is more or less the same as the total density of roads.



Based upon Survey of India outline map printed in 1979.

The territorial waters of India extend into the sea to a distance of twelve nautical miles measured from the appropriate base line.

The boundary of Meghalaya shown on this map is as interpreted from the North-Eastern Areas (Reorganisation) Act, 1971, but has yet to be verified.

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Fig. 25.2 INDIA : Surfaced Roads

Road density in India is not uniform. It varies from region to region depending upon its relief and climatic conditions, economic development and density of population.

Roads are divided into three categories: (i) National highways (ii) State highways, and (iii) District and village roads.

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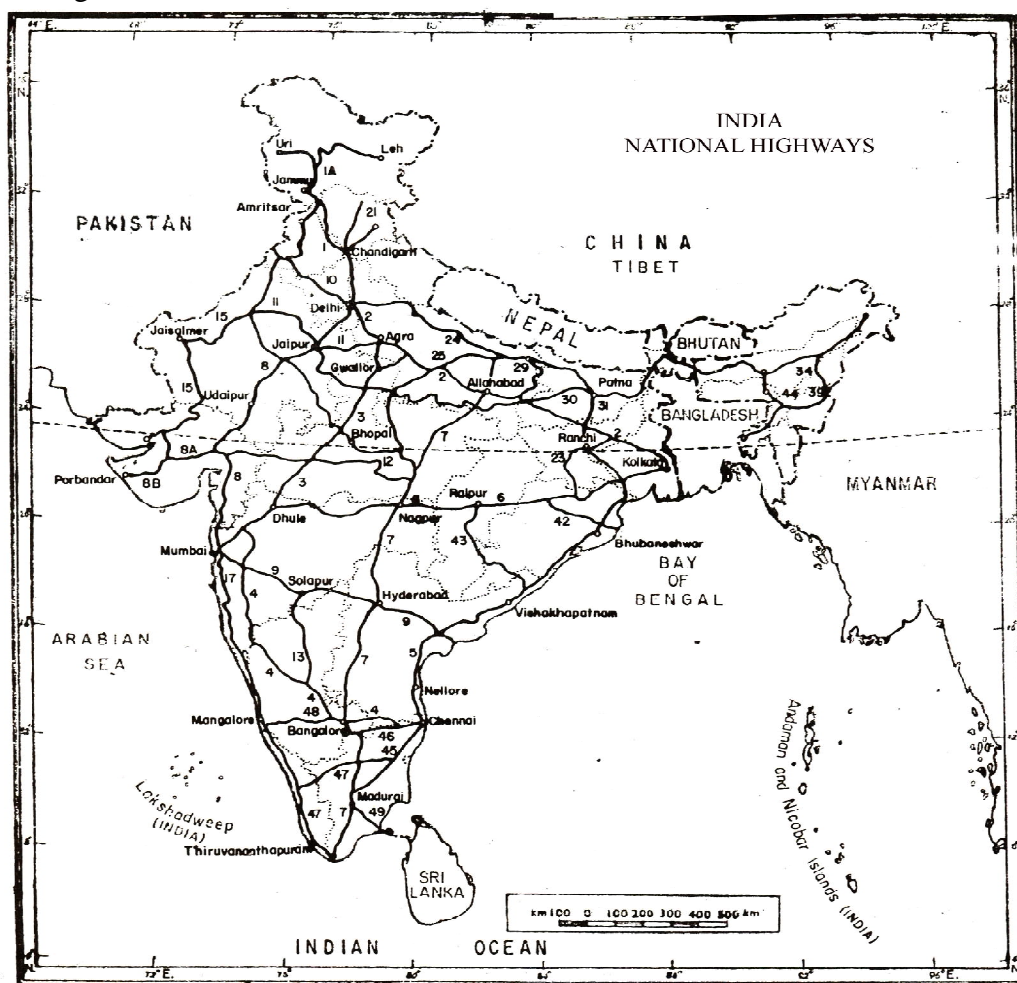
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National Highways are the trunk roads linking major cities of the country. They are built and maintained by the Central Government. Their total length is 65,500 km. Although the national highways comprise only about 2 percent of the total length of surfaced roads in India, they carry about 40% of goods and passenger traffic.

There are 219 national highways in the country. Some of them are very important as they carry the bulk of road traffic. National Highway No.7 is the longest (2683 km) of all, linking Varanasi in the north with Kanya Kumari in the south.

The state highways are built and maintained by the State Governments. The District and village roads are looked after by the local bodies with some financial assistance coming from the states.



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Fig : 25.3 INDIA: National Highways

Border roads have been constructed in the remote parts of the country lying close international border. They connect these areas with the interior parts of the country.

The responsibility of their construction and maintainance is on Border Road Organisation. These roads have economic as well as strategic importance. Leh and Manali Road, the world's highest road, is an example of our engineering skill and courage. The average height of this road is 4270 meters above sea level. Most of our border roads run through areas of very harsh climate and most inhospitable terrains.

- National Highways connect the major cities of the country. Their length is only 2% but they carry 40% of the total road traffic.
- The state highways join the district head quarters with state capital. District and village roads connect the villages with small towns and district head quarters.

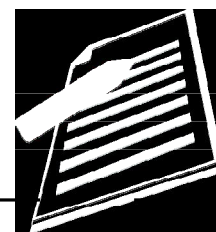
Recent Development of Roads under National Highway Development Project (NHDP)

In order to boost economic development in the country the Government of India initiated a programme called National Highway Development Programme (NHDP). NHDP has already completed two phases and third phase is ready to be implemented. The first two phases have the following components:

- (i) Golden Quadrilateral (GQ) comprising National Highway connecting four metro cities viz, Delhi, Mumbai, Chennai and Kolkata. Total length of the Golden Quadrilateral is 5846 km. The construction has almost been completed. Out of the total 5846 km. four laning of about 4856 km. length has already been completed by 31st May, 2005.
- (ii) The second major task was the construction of North-South and East-West corridors comprising the national highways connecting Srinagar to Kanyakumari including Kochi-Salem spur and Silchar to Porbandur. The total length of the corridors is about 7300 km. But very little progress has been made so far. As on 31st May, 2005 only four/six laning of 707 km. has already been completed. The Government of India has a plan to complete this massive work by December, 2007.
- (iii) The third significant task was four laning of about 356 km. of highways to provide connectivity to 12 major ports and 777 km. on other highways. As on 31st May, 2005, four laning of about 69 km. roads of port connectivity and 287 km. of other National Highways have been completed.

Apart from this National Highways Authority of India (NHAI) has already planned another five phases of NHDP. These are as follows:

- (i) Four laning of 10,000 km. of National Highways through Built-Operate-Transfer (BOT) basis. (Phase-III).
- (ii) Two laning and providing paved shoulders of 20,000 km. of National Highway (Phase IV).



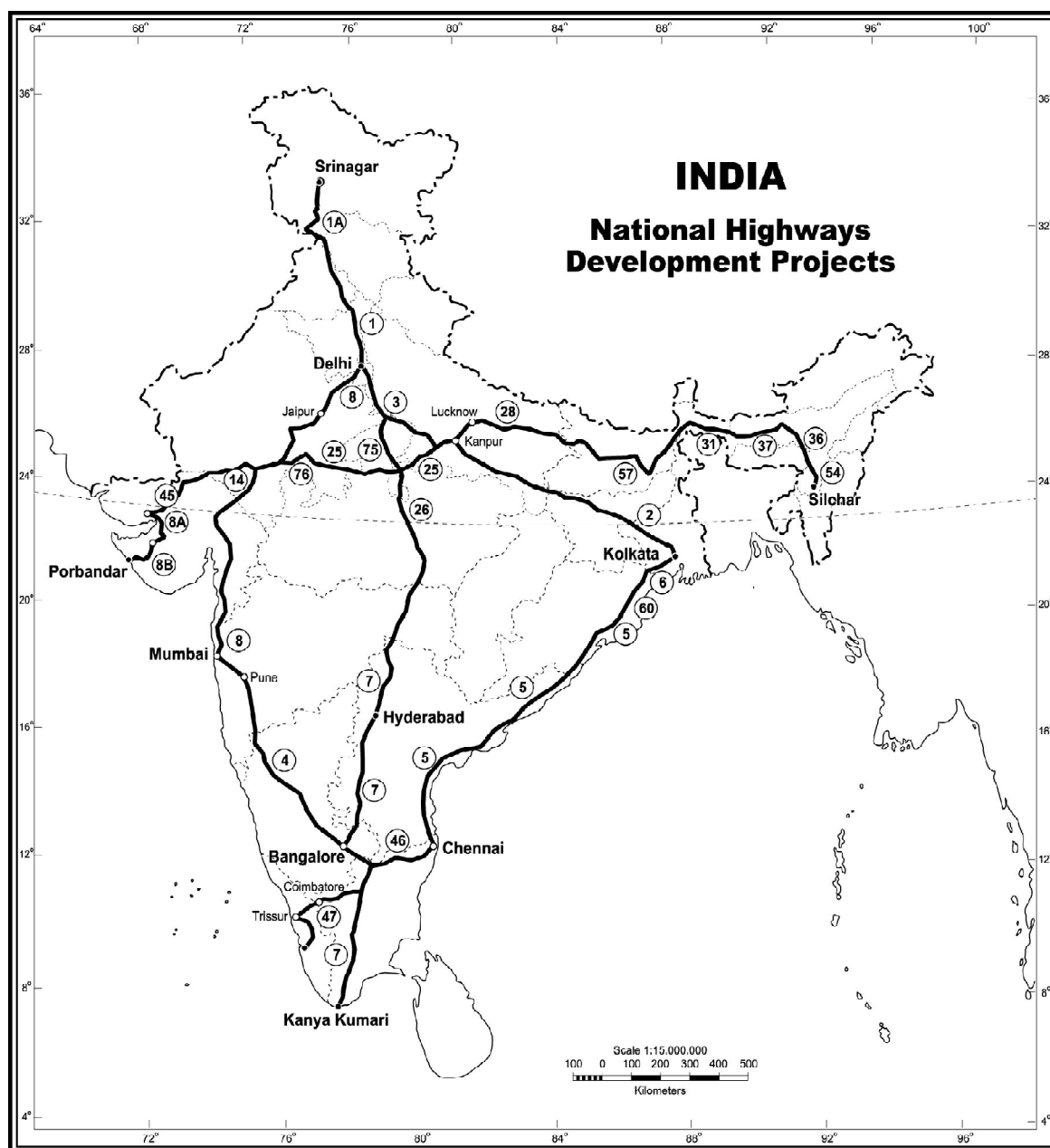
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- (iii) Six laning of 5000 km. of National Highways (Phase V).
- (iv) Development of 1000 km. of Express ways (Phase VI).
- (v) Construction of Ring Roads, By passes, Flyovers etc. to remove the bottlenecks on National Highways.
- (vi) Apart from this, development of National Highways and other roads in the North-Eastern Region is planned under Special Accelerated Road Development Programme in NE Region (SARDP-NE).



Based upon Survey of India Outline Map printed in 1990
The territorial waters of India extended into the sea to a distance of twelve nautical miles measured from the appropriate base line.
The boundary of Meghalaya shown of this map is as interpreted from the North-Eastern Areas (Reorganisation) Act, 1971, but has yet to be verified
Responsibility for correctness of internal details shown on the map rests with the publisher.

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Fig. 25.4 INDIA : Golden Quadrilateral and North-South and East-West Corridor



INTEXT QUESTIONS 25.2

Answer the following questions briefly:

- (1) What was the total length of surfaced roads in 1997?
- (2) Give the names of terminal points of the National Highway No.7.
(i) _____ (ii) _____
- (3) Name two states of India having the highest density of roads.
(i) _____ (ii) _____
- (4) Write the terminal points of the world's highest road.
(i) _____ (ii) _____
- (5) In which areas, unsurfaced roads are more important?

- (6) Give the most important reason for the low density of road in the North-eastern region of India.

- (7) What is the total length of Golden quadrilateral ?

25.5 PIPE LINE TRANSPORT

Pipe line transport has been developed recently in India. It is the most convenient mode of transport for mineral oil, petroleum products and natural gas. Pipe lines connect oil and natural gas fields with refineries and the main market centres. Now solids are also being transported through pipe lines after converting them into slurry.

There are certain advantages of pipe lines over other modes of transport (i) Pipe line can be laid through difficult terrain as well as under water. (ii) Initial cost of laying pipeline is high but subsequent cost for maintenance and operation is low. (iii) It ensures steady supply and minimises transshipment losses and delays. (iv) Pipe line operation involves very low consumption of energy.

There are some limitations of pipe line transport such as the capacity of pipeline cannot be increased once it is laid. The security of pipe lines in certain areas and the detection of leakage is difficult. Petroleum pipe lines in Assam connect oil

fields with the oil refineries of Assam and Bihar. Pipe line between Kandla and Mathura is the longest oil pipe line (1220 km). There are several pipe lines in the Gujarat and Maharashtra connecting the oil fields, refineries and marketing centres. The longest gas pipe line has been laid from Hazira (Gujarat) to Jagdishpur (UP) via Bijaipur (MP). This HBJ pipe line is 1730 km in length and supplies natural gas to six fertiliser plants and two thermal power plants. Pipe line transport has reduced the burden of railways significantly. Owing to their advantages, more pipe lines have been proposed for smooth supply of oil and natural gas. Gas fired thermal power stations are being set up in the distant and remote parts due to facilities of pipeline transport.

- Pipeline transport is very convenient mode for the regular and smooth supply of oil and natural gas.

25.6 WATER TRANSPORT

The Indian mainland together with its island groups has a long coastline of over 6100 km. This long coastline is dotted with 12 major ports managed by the central government. Then there are 186 minor ports operating under the jurisdiction of the state governments. The 12 major ports handle 90% of international water borne trade of the country. These major ports alone handled 384 million tonnes of sea imports and exports.

The major ports along the western or Arabian Sea coast are Kandla, Mumbai, Jawahar Lal Nehru Port (at Nhava Sheva on the opposite side of Mumbai harbour), Marmugao, New Mangalore and Kochi. Thus all the states on the western coast have at least one major port. The remaining five ports are Tuticorin, Ennore, Chennai, Visakhapatnam, Paradeep (Paradwip) and the Joint port of Kolkata - Haldia. Thus all the coastal states on the Bay of Bengal have at least one port each. The Jawahar Lal Nehru port of Navi Mumbai is the most modern port.

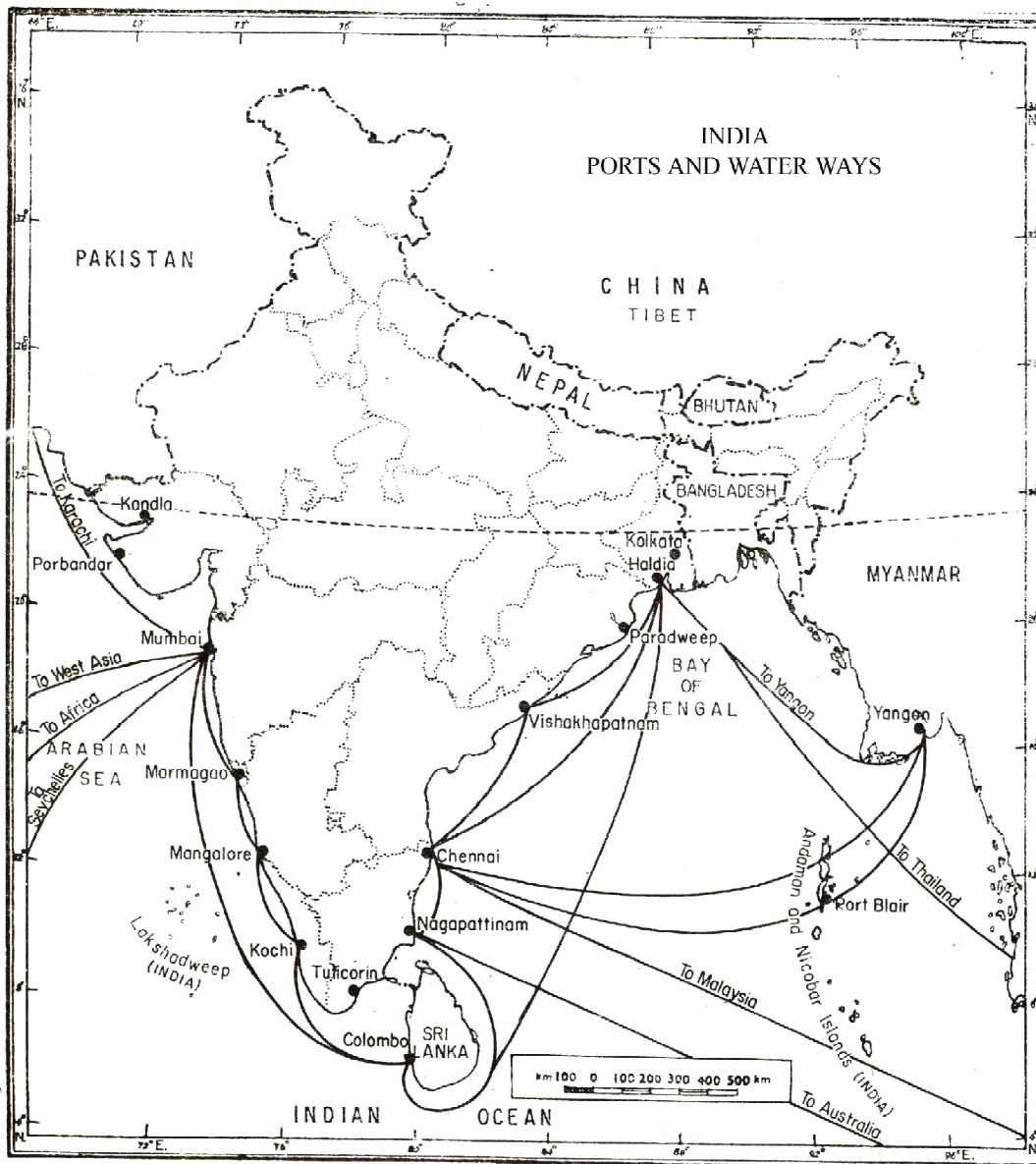
- Water transport is cheaper and helps in the promotion of foreign trade.
- Twelve major ports on the coast line handle 90% of India's sea imports and exports.

Inland Water Ways

The position of inland water ways in India is very poor. The total length of navigable water ways is only 14,500 km which can be used by mechanised boats and steamers. We are actually utilizing only about 2700 km long water ways.

Some important inland water ways are:

- (i) Ganga river between Allahabad and Haldia covering a distance of about 1620 km. Big steamers and crafts can ply upto Patna. This water way is declared as National water way No.1.



Based upon Survey of India outline map printed in 1975.

The territorial waters of India extend into the sea to a distance of twelve nautical miles measured from the appropriate base line.

The boundary of Nagaland shown on this map is as interpreted from the North-Eastern Areas (Reorganisation) Act, 1971, but has yet to be verified.

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Fig. 25.5 INDIA: Ports and water ways

- (ii) Brahmaputra river is navigable upto Dibrugarh a distance of 1384 km. Out of which only 891 km. lies in India, the rest being in Bangladesh.
- (iii) The Kollam and Kotapuram stretch of west coast canal along with Champakara and udyogmandal canals in Kerala which stretches for about 205 km.
- (iv) In south, the lower reaches of Godavari, Krishna and Mahanadi serve as inland water ways. Buckingham canal between Tamil Nadu and Andhra Pradesh is also an inland water way which is now hardly in use.

The following factors affect the inland water ways in India.

- (i) Diversion of water of rivers for irrigation.
- (ii) Silting of river beds reduces the depth of river water.
- (iii) Seasonal fluctuations in the water level of the rivers.
- (iv) Presence of bridges, water falls and cataracts in the course of rivers.
- (v) An unequal competition with railways and road ways.

India's inland water ways have not been developed as they can not compete with the railways and roads.



INTEXT QUESTIONS 25.3

Answer the following questions briefly:

- (1) Name two main commodities which are usually carried by pipe line transport.
 - (i) _____
 - (ii) _____
- (2) Which gas pipe line in India is the longest?

- (3) Which port in India handles the largest cargo traffic?

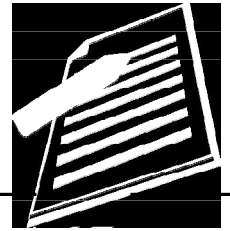
- (4) Name two main navigable rivers of India.
 - (i) _____
 - (ii) _____

25.7 AIR TRANSPORT

Air transport is the fastest and highly convenient mode of transport, although it is more costly than other modes. One can cover a journey between Delhi and Bangalore in about two and a half hours by an aeroplane while this distance is covered in about 42 hours by a railway express train.

Air transport becomes very important in the regions where surface means of transport are difficult to develop. These regions may have dense forests, marshy land, hilly terrain and high mountains.

India is favourably situated on a busy international air route, connecting North America, Europe and South-west Asia on the one hand and East and South-east Asia together with Australia on the other.

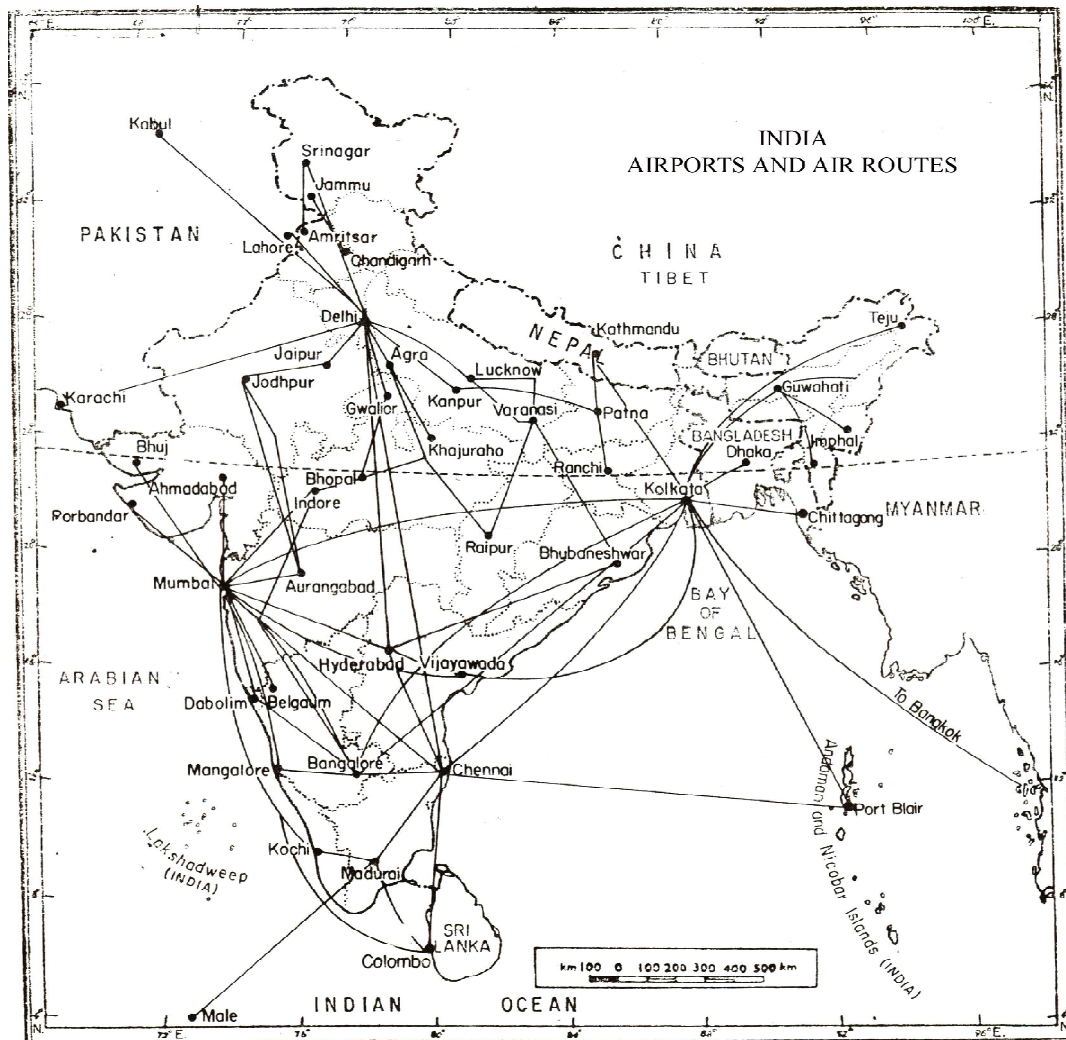


Notes

In the public sector, there are Air India Indian Airlines, Air India Charters Limited (Air India Express) and Alliance Air. In the private sector, there are 7 scheduled airlines (passenger), namely, Jet Airways, Sahara Airlines, Deccan Aviation, Spice Jet, Go Airways, Kingfisher Airlines, Paramount Airways and Indigo. There is also one cargo private scheduled airline, i.e., Blue Dart Aviation. At present, there are 46 companies holding non-scheduled air transport operators permit.

Air India is the international air carrier. It handles the foreign traffic which includes both cargo and passenger services. It provides Regular and more frequent flights to the USA, Canada and European countries.

Currently, there are 37 air crafts most of them Boeing 747 in the fleet of Air India. In 2004-05, Air India carried about 4.4 million passengers. There are eleven international airports which are located at Delhi, Mumbai, Kolkata, Chennai, Thiruvananthapuram, Bangalore, Hyderabad, Guwahati, Amritsar, Jaipur and Lucknow handle the entire foreign air traffic.



Based upon Survey of India outline map printed in 1979.

The territorial waters of India extend into the sea to a distance of twelve nautical miles, measured from the appropriate base line.

The boundary of Meghalaya shown on this map is as interpreted from the North-Eastern Areas (Reorganisation) Act, 1971, but has yet to be verified.

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Fig. 25.6 Airports and Air routes

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Indian Air Lines handles the domestic air transport. There are regular flights among the state capitals and major cities of the country. The places of tourist interest are also served by this airline. Besides it, Indian Airlines operate 55 domestic and 18 international stations. It provides services to neighbouring countries such as Sri Lanka, Nepal, Bangladesh, Pakistan, Malaysia, Singapore, Male and Middle East. Presently Indian Airlines has a fleet of 73 aircrafts.

Pawan Hans Helicopter Ltd., a public sector company, is engaged in providing helicopter services to ONGC for its off shore operations. It's also used by various State Government.

Promotion of air transport in the North-eastern region is a necessity owing to several adverse physical factors like mountainous terrain, thick forest cover, big rivers with frequent flood. Socially and economically too, the region needs to be drawn closer to the rest of India.

- Air transport is the fastest though costlier mode of transport. It has brought the world closer.
- Air India and Indian Air lines are the two main air carriers operating in the country. There are seven private airlines.



INTEXT QUESTIONS 25.4

Answer the following questions:

- (1) Name international air carrier of India.

- (2) Name the Public Sector air transporting company, providing domestic air transport services.

- (3) In which region of India is the air transport a necessity?

- (4) Name five international airports of India.
(i) _____ (ii) _____ (iii) _____
(iv) _____ (v) _____
- (5) In which two ways, does the air transport differ from other modes of transport?
(i) _____ (ii) _____

(6) Name any two private sector air transporting company.

(i) _____ (ii) _____

25.8 COMMUNICATION

Communication system contributes to the development of the economy, social relationships and also helps in promoting cultural unity. Internationally, it brings diverse people of the world close to one another

In the event of any impending calamity, accident or emergency instant means of communication flash the news across the globe so that relief can be rushed to the spot immediately.

Postal Services

It is the most commonly used mode of communication in India. The postal services play a vital role in the rural areas of the country. About 99% of the villages are enjoying postal services to day.

At present about 1.55 lakh post offices are providing postal services covering every part of the country. In tune with the rest of the world the Indian postal services are also being modernised.

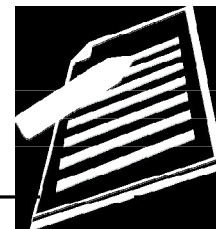
(1) (Postal Index Number) PIN has facilitated the prompt delivery of mail (ii) Speed post service has been introduced for fast and quick delivery of post (iii) Quick Mail Service (QMS) is another step in this direction.

Besides these, satellite money order scheme was introduced in 1994 as a pilot project for providing services to hilly, backward and remote areas from six principal cities. International mail services carried by air and sea is an important step in linking the foreign countries with India.

Telecommunication

It is the modern device for the communication at individual and mass level. Telegraph, Telephone; Talex and Fax are the main means of tele communication. By the end of 2004-05, India was the 10th largest telecom network in terms of number of phones.

- (1) **Telegraph:** is comparatively an old mean for providing quick communication in event of any emergency. At present about forty thousand telegraph offices have been working in the country.
- (2) **Telephone:** There has been a very fast progress in telephone facilities. As on 31 March 2006, the network comprises of 142.09 million telephone connections and over 2.34 (February, 2006) million Public Call Office (PCOs). There are over 62.90 million cellular subscribers in the country



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and the cellular customer base is growing at the rate of over two million per month. Telephone services have been expanding very rapidly in the country. STD (Subscriber Trunk Dialing) facilities are available to all the big and small towns of the country. Fully automatic Interantional Subscriber Dialling (ISD) service is available to almost all the countries.

- (3) **Telex:** Telex services make possible to send information in printed form. More than 200 cities of India enjoy the service. Use of satellite has revolutionized the Tele communication system to day.

Mass - Communication

Radio and television are the electronic media of mass communication. They play an important role in individual and social life.

Radio is a powerful medium which provide all sorts of useful information, news and variety of entertainment. There are about 223 radio broad casting stations in the country and provide services to 91.42% of the area and 99.13% of the total population. Now, FM Radio services have given a new face to radio transmission.

Television service was started in 1959 in India. However, the real expansion of T.V. Service began after 1980. Only recently several channels on television have been made available to private parties. This has promoted keen competition to improve the quality of programme even of Doordarshan. Doordarshans network consist of (i) 64 Doordarshan Kendra (studio centres); 1400 transmitters (1134 transmitters for DD1, 153 transmitters for DD News, 109 transmitters for regional services and 1 digital transmitters each at Delhi, Chennai, Kolkata, and Mumbai). DD1 provide services 79% of area and about 91% of the total population.

Cinema is yet another mean of mass communication. It entertains millions of people everyday.

Print media

Newspapers, periodicals and journals fall in the category of print media. Print media expanded very rapidly after independence. There were 62,550 daily newspapers, periodicals and different journals in Indian languages on 31st March, 2006. These were 6,800 dailies, 369 tri/bi-weeklies, 21,453 weeklies, 8,227 fortnightlies, 18,545 monthlies, 4,340 quarterlies, 584 annuals, and 2,232 of the other periodicity. The largest number of newspapers and periodicals registered in any Indian language is in Hindi (24,017), second is English (8,768).



INTEXT QUESTIONS 25.5

Answer the following questions:

1. Write the fulform of these abbreviations :

(i) PIN, (ii) QMS, (iii) STD, (iv) PCO, (v) ISD.

(i) _____ (ii) _____ (iii) _____ (iv) _____ (v) _____

2. Name three means of mass-communication.

(i) _____ (ii) _____ (iii) _____

3. What is print media?

25.9 TRADE

The services which involve the activities of buying and selling of goods are termed as trade. Like transport, communication, banking etc. it is also a tertiary service and an important infrastructure for the development of economy including agriculture and industry in the country. Trade may take place at various levels -local, regional, national or international.

The growth of trade depends on accessibility of a well developed market and well advanced communication system.

International Trade

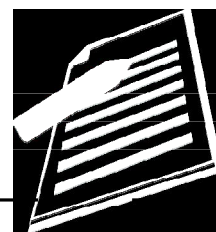
It involves selling and buying various commodities at the international level. International trade may be multilateral or bi-lateral; depending upon the number of parties involved. India's international trade has grown very rapidly after Independence. India's total international trade in the year 1950-51 stood at Rs. 1,214 crore. Since then this has witnessed continuous increase with occasional down turns. During the year 2004-05 the value reached at Rs. 8,37,133 crores. Though, India has trade relations with all the major trading blocks and all the geographical regions of the world, the major trade partners are the USA, Russia, countries of West Europe, Japan and Oceania. In dollar terms, Asia and Oceania accounted for 47.41% of India's total exports followed by west Europe (23.80%) and America (20.42%) during 2004-05. India's imports were highest from Asia and Oceania (35.40%) followed by west Europe (22.60%) and America (8.36%) during the same period.

Export

During the colonial era major commodities of our exports were either raw materials like cotton, jute, leather, spices, minerals or food items like wheat, tea, coffee and spices etc. All the trade was channelised through Britain. After Independence there has been significant changes in the items of export because of the rapid industrial development in the country. Now India exports nearly 7500 commodities. There has been a appreciable growth in exports since 1950-51 when it was worth only of Rs. 607 crores. It has increased to Rs. 3,56,069 crores by 2004-05.

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While there are year to year variations, some of the major commodities whose exports have been increasing over the last few years and also in 2004-05 include engineering goods, gems and jewellery, chemical and related products, textiles, petroleum products, agriculture and allied products, and ores and minerals.

There has been a significant change in the export products since Independence. The largest value of exports is now obtained manufactured products.

Imports

After Independence, there has been a sharp increase in the value of imports in India. We now import about 6000 commodities. During pre-Independence period, main items of imports were machinery, manufactured goods, textiles, chemicals, medicines etc. After independence in the early decades, India's import consisted mainly of food grains because of the partition of the country.

India's total value of import in 1950-51 was of Rs. 581 crores which had increased to Rs. 4,81,064 crores in 2004-05. There has been significant increase in the imports during the last 55 years.

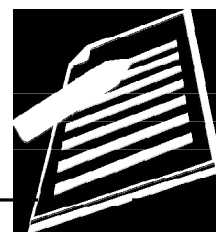
In the year 2004-05, bulk import as a group accounted for about 40% of the total imports. This group includes fertilizers, cereals, edible oils, news print and petroleum products. But only crude petroleum and products have 71% share among the bulk products import and about 28% share among the total import.

The other principal imports consists of pearls, precious and semi-precious stones, machinery, project goods, medicinal and pharmaceutical products, organic and inorganic chemicals, coal, coke and briquettes, artificial resins etc.

The Recent Trends in Foreign Trade of India

At the time of Independence, India's foreign trade was very limited. India was the main exporter of primary commodities and imported manufactured products and machinery. After independence there has been a rapid progress in the field of industry and agriculture. The international market has also expanded. The commodities of export and import have shown a great change in the last decades. India has developed trade relations with the countries of Asia, Africa and Oceania for the promotion of her exports. Incentives such as, providing export credits at lower interest, and by removing restrictions and controls on the exports has helped in the promotion of export. Main stress is given to export of value added commodities.

We have also adopted a policy of liberalisation of imports. Adoption of new import policy has strengthened the economy of the country. Some commodities which help in the manufacturing industries can now be imported on easy terms.



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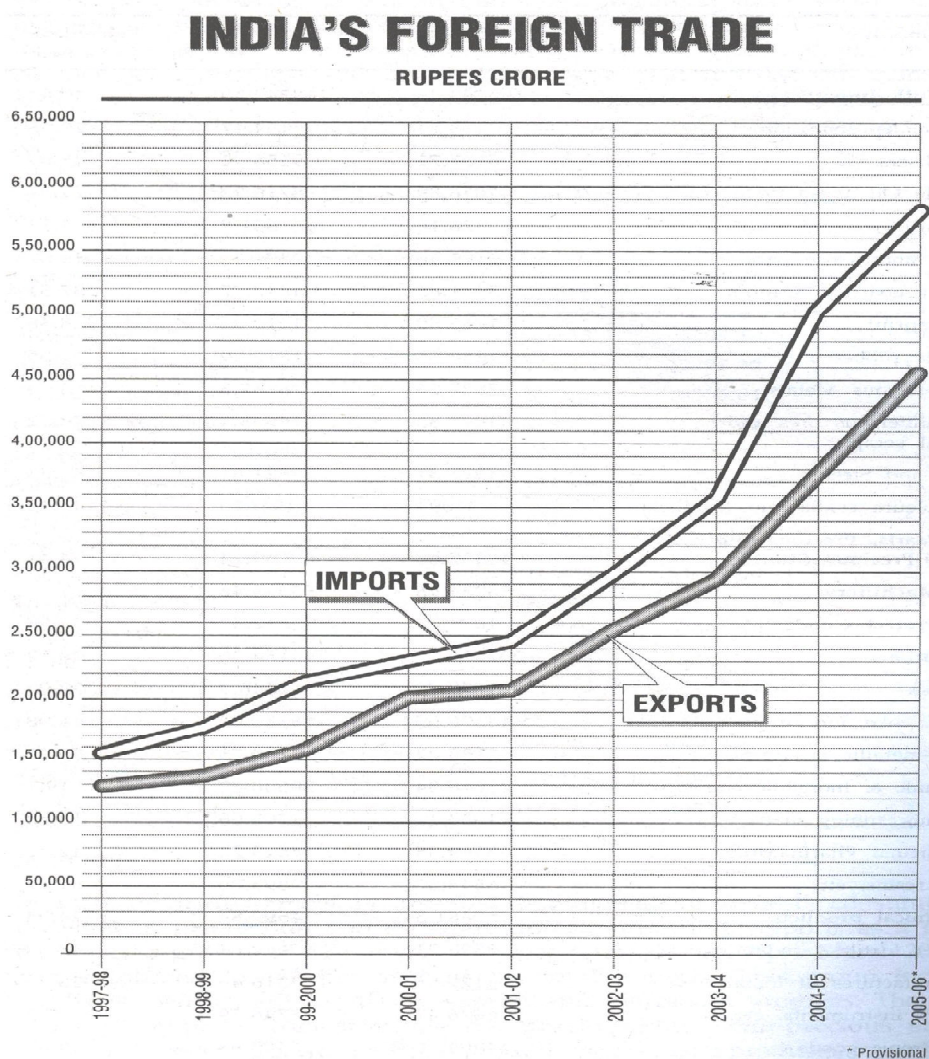


Fig. 25.7 Recent Trends in Foreign Trade in India

- During the past two decades, India's imports have shown a considerable change.
- India's foreign trade has risen rapidly from Rs. 1214 crores in 1950-51 to Rs. 837133 crores in 2004-05.
- There has been a great change in the foreign trade of India-especially in the commodities of export and imports.

Balance of Trade

Difference between value of exports and imports is termed as balance of trade. When the value of exports and imports of a country is equal it is a situation of balanced foreign trade. If exports exceed the imports, It is favourable; and on the other hand when imports are more than exports, it is unfavourable trade.

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At the time of Independence, our foreign trade was favourable but after Independence, in the first two decades, the imports of India increased rapidly due to the imports of food grains. At present the imports of the country exceed the exports. Thus, our foreign trade has become unfavourable. In rupee terms, the trade deficit in 2004-05 was Rs. (-) 123995. It is worth noting that our exports and imports have increased in volume and value remarkably. But over the past 55 years our share in world trade has decreased considerably. It is not even one per cent of the world trade.



INTEXT QUESTIONS 25.6

Answer the following questions.

- (1) Name the two components in which foreign trade is divided.
(i) _____ (ii) _____
- (2) What is the important change in India's exports since independence?
(i) _____ (ii) _____
- (3) Name two most important trade partners of India.
(i) _____ (ii) _____
- (4) Name the commodity which has the largest share of our imports.
(i) _____ (ii) _____
- (5) Name the policy India has adopted for promoting foreign trade.
(i) _____ (ii) _____
- (6) What is balance of trade?
(i) _____ (ii) _____



WHAT YOU HAVE LEARNT

The term infrastructure denote the essential elements forming the bases of a system or structure. Transport, communication and trade are important infrastructural resources of economy. These services provide support for the development of entire economy, particularly agriculture and industries.

Railways, roads and pipe lines are the means of land transport. They play an important role in strengthening the national unity. They also promote social and economic prosperity in the country. Water transport is an inexpensive but slow

means of transport. The development of inland water transport is limited only to the eastern part and eastern coastal plains. India is ideally situated on the busy Suez route joining Australia and south-east Asia and Europe. The air transport is the fastest through costliest means of transport. It is also suitable in the areas where construction and maintenance of surface transport is difficult, such as Northeastern region. All these means of transport have brought the world closer. Rail transport provides services particularly for long distance and carries bulk of traffic at one time. Northern plains, eastern coastal plains, and Gujarat plains have dense network of railways; while the Northeastern region, Western Rajasthan and the Himalayan region have sparse railway network. Road transport provides door to door services. It is flexible and is suitable for short distances. Punjab, Kerala and Tamil Nadu have the highest density of surfaced roads.

Communication involves sending or receiving messages at individual or mass level. It includes postal services, telegraph, telephone, teleprinters, radio, television and print media. Radio and television belong to electronic telecommunication media. Transport and communication are interrelated and they strengthen and supplement each other.

The trade relations of India have grown very rapidly after Independence. India has bilateral trade with many developed and developing countries. There has been a significant change in the commodities of export and import after independence. India has now adopted the policy of liberalisation of trade removing restrictions on imports. Despite phenomenal growth in foreign trade India's share in world trade is very low - not even one per cent.

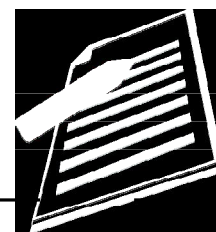
**TERMINAL QUESTIONS**

Answer the following questions:

1. Define the term infrastructure.
2. Explain two merits of railway transport.
3. Explain two main reasons for the development of dense railway network in the Northern plains of India.
4. State two main advantages of road transport.
5. Why is air transport more favourable in the northeastern region of India?
6. Distinguish between:
 - (i) National high way and state high ways.
 - (ii) Surfaced and Unsurfaced roads.
 - (iii) Exports and Imports.
7. Examine the role of postal services as a means of communication in India.
8. Explain briefly the recent changes in the trade of India with other countries, giving suitable examples.

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ANSWER TO INTEXT QUESTIONS

25.1

1. Transportation, Electricity transmission and distribution, Communication (any two) 2. 63.2 Crore Km. 3. (a) Suitable for passengers covering long distances (b) carry the heavy goods in bulk. 4 Northern plains and plains of Gujarat and Saurashtra 5. Hilly terrain/Forested cover/heavy rain 6. Hills and mountain ranges having rough terrain.

25.2

1. 13,94,061 Km. 2. Varanasi and Kanyakumari 3. Punjab and Kerala 4. Leh to Manali Road 5. Rural sector 6. Sparsely populated, poor in natural resources/Hilly terrain/ Heavy rain with thick forest 7. 5846 Km.

25.3

1. Petrol and Natural gas (2) HBJ Pipe Line Hazira, Bijaipur, Jagdishpur (3) Mumbai (4) Ganga and Brahmaputra

25.4

- (1) Air India (2) Indian Air Lines (3) Northeastern part of India (4) (i) Mumbai (ii) Delhi (iii) Kolkata (iv) Chennai and (v) Thiruvananthapuram (5) (i) Fastest mode (ii) Costlier 6. Jet airways, Sahara Airlines, Kingfisher Airlines (any two)

25.5

1. (i) Postal Index Number (ii) Quick Mail Service
(ii) Subscriber Trunk Dialling
(iii) Public Call Office
(iv) International Subscriber Dialling
2. (i) Radio, (ii) Television (iii) Cinema
3. Newspapers, periodicals and journals fall in the category of Print Media.

25.6

- (1) Exports and Imports (2) Switch over from primary to secondary products (3) The USA and Russia (4) Petroleum & Petroleum products (5) Liberalisation of trade and reduction in import restrictions (6) A difference between the value of exports and Imports.

HINTS TO TERMINALS QUESTIONS

1. Refer to section 25.1
2. Refer to section 25.3
3. Reasons for dense railway network – the level land, Fertile soil, dense population and spread of Industries (any two). For more detail refer to section 25.3
4. Refer to section 25.4
5. Refer to section 25.7
6. (i) Refer to section 25.4
(ii) Refer to section 25.9
7. Refer to section 25.8
8. Refer to section 25.9