

Types of Transport System and Railway System

Introduction

- People use various methods to move goods, commodities, ideas from one place to another.
- Land, water, and air are the major modes of transportation.



- Land transportation includes road, rail, and pipeline.

Railways

- Railways was introduced to India in 1853, when a line was constructed from Bombay to Thane covering a distance of 34 km.
- The total length of Indian Railways network is 99000 km. (March 2021).
- Indian Railways system has been divided into seventeen zones (as shown in the map given below – the lines shown in different colors illustrate the regions of respective zones).
- India has three system of railways – broad gauge (the distance between rails is 1.676 meter); meter gauge (the distance between rails is one meter); and narrow gauge (the distance between the rails is 0.762 meter or 0.610 meter).
- Konkan Railway constructed along the western coast in 1998, is a landmark achievement of Indian Railway.
- Konkan Railway is 760 km long rail route connecting Roha in Maharashtra to Mangalore in Karnataka.
- Konkan Railway crosses 146 rivers, streams, nearly 2000 bridges, and 91 tunnels.
- Asia's largest tunnel which is about 6.5 km long, is constructed on the Konkan railway route near Ratnagiri in Maharashtra.

INDIAN RAILWAY MAP

LEGEND

- Important Broad Gauge Routes
- Other Broad Gauge Lines
- Metre Gauge Lines
- Narrow Gauge Lines
- BG & MG Parallel Lines
- Under Gauge Conversion
- Places of Tourist Interest

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- Based upon Survey of India map with the permission of the Surveyor General of India
- The responsibility for the correctness of Internal details rests with the publisher
- The territorial waters of India extend into the sea to a distance of twelve nautical miles measured from the appropriate base line
- The administrative headquarters of Chandigarh, Haryana and Punjab are at Chandigarh
- The interstate boundaries between Arunachal Pradesh, Assam and Meghalaya shown on this map are as interpreted from the North-East Areas (Reorganisation) Act 1971, but have yet to be verified.

Roadways, Airways, Waterways

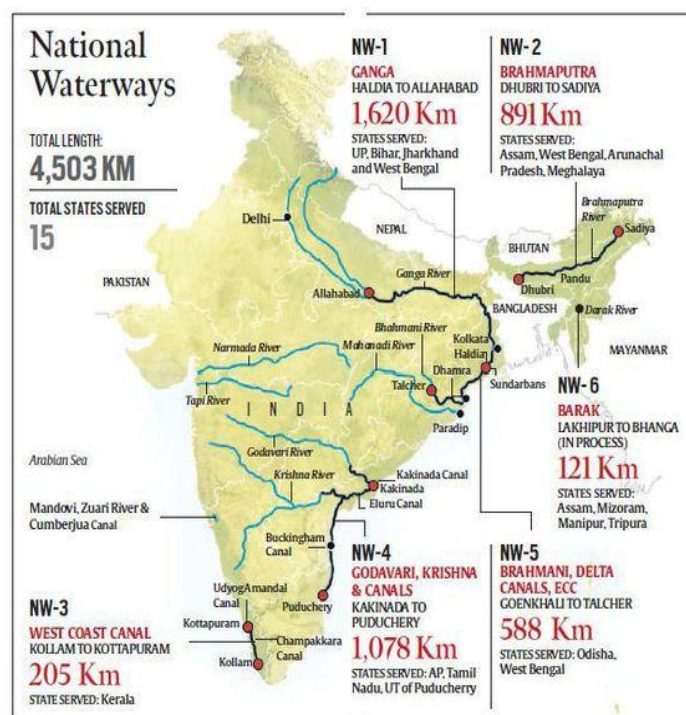
Road

- With a total length of about 42.3 lakh km, India has one of the largest road networks in the world.
- About 85% of passenger and 70% of freight traffic are carried by roads.
- Sher Shah Suri built the Shahi (Royal) road to strengthen and consolidate his empire from the Indus Valley to the Sonar Valley in Bengal.
- This road was later renamed as the Grand Trunk (GT) Road during the British period, connecting Calcutta and Peshawar.
- At present, GT Road extends from Amritsar to Kolkata. It is bifurcated into 2 segments – (a) National Highway (NH)-1 from Delhi to Amritsar, and (b) NH- 2 from Delhi to Kolkata.
- Roads have been classified as National Highways (NH), State Highways (SH), Major District Roads, and Rural Roads.
- The National Highways Authority of India (NHAI), which is an autonomous body under the Ministry of Surface Transport was operationalized in 1995.
- The main roads connecting two or more states are constructed and maintained by the Central Government. These roads are known as the National Highways.
- The NHAI is responsible for the development, maintenance, and operation of National Highways.
- ❖ •The National Highways constitute only 1.67 per cent of the total road length, but carry about 40 per cent of the road traffic.
- Golden Quadrilateral is 5,846 km long 4/6 lane, high density traffic corridor that connects India's four big metro cities : Delhi-Mumbai-Chennai-Kolkata.
- With 4,076 km long road, North-South Corridor aims at connecting Srinagar in Jammu and Kashmir with Kanyakumari in Tamil Nadu.
- With 3,640 km of road length, the East-West Corridor has been planned to connect Silchar in Assam with the port town of Porbandar in Gujarat.
- State Highways are constructed and maintained by the state governments.
- The State Highways join the state capitals with district headquarters and other important towns.
- All State Highways collectively constitute about 4 per cent of the total road length in the country.
- District roads are the roads connecting the District Headquarters and the other important nodes in the district.
- District roads account about 60.83 per cent of the total road length of the country.
- Further, about 80 per cent of the total road length in India come under rural roads.
- Other roads include Border Roads and International Highways.

- The Border Road Organization (BRO) was established in May 1960 for the acceleration of economic development and strengthening defense preparedness through rapid and coordinated improvement of strategically important roads along the northern and north-eastern boundary of the country.
- BRO has constructed roads in high altitude mountainous terrain joining Chandigarh with Manali (Himachal Pradesh) and Leh (Ladakh), which runs at an average altitude of 4,270 meters above the mean sea level.
- The road density is only 12.14 km in Jammu and Kashmir, whereas in Kerala it is 517.77 km.
 - ❖ **Note:** Longest Highway of India which connect Srinagar to Kanyakumari, which is also known as NH44 (The length of NH44 is 3745 Kms).

Waterways

- Water transport can be divided into two major categories – inland waterways and oceanic waterways.
- India has 14,500 km of navigable waterways, contributing about 1% to the country's transportation.
- Currently, 5,685 km of major rivers is navigable by mechanized flat bottom vessels.
- Inland Waterways Authority was set up in 1986 for the development, maintenance, and regulation of national waterways in the country.
- Major National Waterways (NW) of India are NW 1 (Allahabad-Haldia covers 1,620 km); NW 2 (Sadiya-Dhubri covers 891 km); and NW 3 (KottapuramKollam covers 205 km).
- Besides, NW 4 covers specified stretches of rivers Godavari and Krishna along with Kakinada Puducherry; the total distance is 1078 km.
- NW 5 covers specified stretches of river Brahmani along with Matai river, delta channels of Mahanadi and Brahmani rivers and East Coast canals; the total distance is 588 km.
- With 12 major and 185 minor ports, India has a vast coastline of approximate 7,517 km, including islands.
- The Kandla Port in the Gulf of Kutch handles exports and imports for the fertile plains and industrial belts spread over Jammu and Kashmir, Punjab, Haryana, Himachal Pradesh, Rajasthan and Gujarat.



- The Mumbai Port is the largest port in India.
- The Jawaharlal Nehru Port at Navi Mumbai was constructed to decongest traffic at the old Mumbai port.
- The Mormugao Port in Goa handles around 50% of the total iron ore exports from India.
- The New Mangalore Port in Karnataka handles excellent quality iron ore from the Kudermukh mines.
- The Kochi Port is a natural harbor and the last port on the south-west coast.
- The Tuticorin Port in Tamil Nadu handles cargo bound for India as well as our neighbouring countries like Sri Lanka and the Maldives.
- The Chennai Port which is one of the oldest artificial ports in India, and second only to Mumbai in terms of volume of trade and cargo handled.
- The Vishakhapatnam Port is the country's deepest, most protected landlocked port.
- The Paradip Port in Orissa is the main centre for the export of iron ore.
- The Haldia Port was developed to decongest the Kolkata Port.
- The tidal port of Kolkata has a rich Ganga-Brahmaputra hinterland and is an inland port services by the river Hooghly.
- Roughly 95% of India's foreign trade by volume and 70% by value moves through ocean routes.

Airways

Air transport is the quickest means of transport. It is a very efficient to carry passengers and mail. On the times of emergencies like war, floods, earthquakes, air transport is very useful. India is a vast country and has all the favourable factors for the development of air transport. There are two separate corporations for operational purpose.

They are:

1. Air India International which provides services between India and various other countries.
2. Indian Airlines which operates within the country and also connects neighbouring countries.

- Air transport in India marked its beginning in 1911 with the commencement of airmail over



a little distance of 10 km between Allahabad and Naini.

- Pawan Hans is the helicopter service operating in hilly areas and is widely used by tourists in north-eastern regions.

List Of International Airports in India

| International Airport Name & Code | International Airport Location | Type/Purpose |
|--|--------------------------------|--------------------|
| Chhatrapati Shivaji International Airport – BOM | Mumbai, Maharashtra | Commercial Airport |
| Kempegowda International Airport – BLR | Bangalore, Karnataka | Commercial Airport |
| Chennai International Airport – MAA | Chennai, Tamil Nadu | Commercial Airport |
| Netaji Subhas Chandra Bose International Airport – CCU | Kolkata, West Bengal | Commercial Airport |
| Chaudhary Charan Singh International Airport – LKO | Lucknow, Uttar Pradesh | Commercial Airport |
| Sri Guru Ram Dass Jee International Airport – ATQ | Amritsar, Punjab | Commercial Airport |
| Visakhapatnam International Airport – VTZ | Visakhapatnam, Andhra Pradesh | Civil Enclave |
| Kannur International Airport – CNN | Kannur, Kerala | Commercial Airport |
| Surat International Airport – STV | Surat, Gujarat | Commercial Airport |
| Devi Ahilya Bai Holkar Airport – IDR | Indore, Madhya Pradesh | Commercial Airport |
| Cochin International Airport – COK | Kochi, Kerala | Commercial Airport |
| Sardar Vallabhbhai Patel International Airport – AMD | Ahmedabad, Gujarat | Commercial Airport |
| Indira Gandhi International Airport – DEL | Delhi | Commercial Airport |
| Dabolim Airport – GOI | Goa | Civil Enclave |
| Pune Airport – PNQ | Pune, Maharashtra | Civil Enclave |
| Thiruvananthapuram International Airport – TRV | Thiruvananthapuram, Kerala | Commercial Airport |
| Coimbatore International Airport – CJB | Coimbatore, Tamil Nadu | Commercial Airport |
| Calicut International Airport – CCJ | Calicut, Kerala | Commercial Airport |

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|--|-----------------------------|---|
| Biju Patnaik International Airport – BBI | Bhubaneswar, Odisha | Commercial Airport |
| Lokpriya Gopinath Bordoloi International Airport – GAU | Guwahati, Assam | Civil Enclave |
| Lal Bahadur Shastri International Airport – VNS | Varanasi, Uttar Pradesh | Commercial Airport |
| Rajiv Gandhi International Airport- HYD | Hyderabad, Telangana | Commercial Airport |
| Tiruchirappalli International Airport – TRZ | Tiruchirappalli, Tamil Nadu | Commercial Airport |
| Dr. Babasaheb Ambedkar International Airport – NAG | Nagpur, Maharashtra | Commercial Airport |
| Sheikhul Aalam International Airport – SXR | Srinagar, Jammu and Kashmir | Civil Enclave |
| Imphal International Airport – IMF | Imphal, Manipur | Commercial Airport |
| Jaipur International Airport – JAI | Jaipur, Rajasthan | Commercial Airport |
| Madurai Airport – IXM | Madurai, Tamil Nadu | Customs, Commercial |
| Bagdogra International Airport – IXB | Siliguri, West Bengal | Commercial Airport |
| Jay Prakash Narayan International Airport – PAT | Patna, Bihar | Commercial (Restricted International Flights, Customs) |
| Mangalore International Airport – IXE | Mangalore, Karnataka | Commercial Airport |
| Chandigarh International Airport – IXC | Chandigarh | Civil Enclave (Restricted International Flights, Customs) |

