**Transport & Communication System in India**

Transport generally involves the movement of people or goods forms one place to another via a means of transport.

On the other hand, communication is the passing of information or data from one source to another.

The transport usually involves means of transport such as roadways, railways, air travel

While the examples of means of communication are email, telephones, letters.

**The Transport System in India**

**Road Transport**

* India has the second-largest roadways in the world in terms of the length of roads (42.3 lakh km). It is second only to the United States.
* 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 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.

Nagpur plan of 1943 classified the roads into four categories- National Highway, Highway, State Highway, District roads, and Village roads. National Highways comes under the jurisdiction of the National Highway Authority of India (NHAI).

Longest National Highway: NH 44 covers the North-South Corridor of NHDP and it is officially listed as running over 3,745 km (2,327 miles) from Srinagar to Kanyakumari.

Shortest national Highway: National Highway 47A has a length of 6 km that links the Junction with NH 47 at Kundanoor to the Town of Willington Island in Cochin.

Best Expressway in India: The Ahmedabad Vadodara Expressway is known as one of the best Expressway in India and also referred to as the National Expressway 1.

Longest Elevated Freeway: Chennai Port Maduravoyal Elevated Expressway will be the longest Elevated Expressway in India.

Golden Quadrilateral is a 5,846 km long 4/6 lane, high-density traffic corridor that connects India’s four big metro cities — Delhi-Mumbai-Chennai-Kolkata.

National Highways are specified by Yellow and White color milestones. State Highways are specified by Green and White color milestones. City roads are specified by black and white color milestones.

100 % FDI.

The National Highways Authority of India (NHAI), which is an autonomous body under the Ministry of Surface Transport was operationalized in 1995.

The Border Road Organization (BRO) was established in May 1960 for the acceleration of economic development and strengthening defense preparedness through the 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.

National Highways

Responsibility of National highway authority of India (NHAI)

Constitutes 2 % of all roads & carry 40 % of total road traffic

Funded by cess on petrol & high-speed diesel (From central road fund in Public accounts of India)

UP: Highest length of National Highways

NH7 Varanasi – Cape – Comorin (Kanyakumari)

NH6 Surat – Kolkata

NH5 Jharkhand – Chennai

NH2 Delhi – Kolkata

NH8 Delhi – Mumbai

NH4 Mumbai – Chennai

NH3 Agra – Mumbai

International Border Highways

Connects Indian borders with neighboring countries.

The responsibility lies with the Border road organization (BRO).

Financed by the World Bank.

NH1 Indo – Pak Border (Delhi, Haryana, Punjab)

NH22 Indo – China Border ( Haryana, Punjab, Himachal Pradesh)

NH35 Indo – Bangladesh Border (WB)

NH39 Indo – Bhutan Border (Assam, Nagaland, Manipur)

NH28A Indo – Nepal Border (Bihar)

Famous Highway Projects

Golden Quadrilateral →6 lane highway project connecting Delhi – Mumbai – Kolkata – Chennai

North-South Corridor →Linking Srinagar – Kanyakumari

East-West Corridor →Linking Silchar (Assam) – Porbandar

Mumbai – Pune expressway (1st expressway of the country) is not under NHAI as it was built by the state government.

State Highways

Connects state capitals with district centers & are constructed by state governments

Union from Central road fund (CRF) provides grants & financial assistance to states if required

Maharashtra has the largest length of state highways

District Highways

District centers to other important places of districts like business centers, industrial centers, etc.

Zila Parishad constructs & maintains these roads (Constitutes 1/3rdof total Indian roads)

Maharashtra has the largest length of District highways

Village Roads

Connects villages with neighboring towns & cities

Responsibility for village roads lies with Gram Panchayat

Central gov. has launched Pradhan Mantri Gram Sadak Yojana (PMGSY) in 2000 as a 100 % centrally sponsored scheme to provide the rural connectivity to unconnected rural areas with a population of 500 persons or more (250 persons in case of Hilly, Tribal & Desert areas)

Project Bharatmala

A road built along India’s vast west-to east land border, approx. 5300km, from Gujarat to Mizoram

Linking it to a road network in coastal states, from Maharashtra to Bengal

This is a road network that will, as it were, garland the territory of India

The Bharat Mala plan has a strong strategic component

It’s India’s attempted answer to improve reach and connectivity in border areas, right across a large part of which lies China’s impressive road infrastructure

Rashtriya Rajmarg Zila Sanjoyokta Pariyojna: Roads will be developed to connect 100 district HQs across the country

Setubharatam: Govt to build 210 rails over bridges in the next two years and about 400-500 bridges would be built as standalone projects.

Pipelines

Pipelines provide easy transport of oil, natural gas, and mineral ores in their slurry form.

This has overcome delays due to trans-shipment and losses during transport.

All the major oil-fields in India are connected to refineries through pipelines.

Although the initial cost of laying the pipelines is high, its operating costs and losses en-route are minimal. There are three major pipeline networks in India.

From Upper Assam to Kanpur—Mainly for transporting mineral oil.

From Salaya in Gujarat to Jalandhar in Punjab.

From Hazira in Gujarat to Jagdishpur in Uttar Pradesh, mainly to transport natural gas.

**Indian Railways**

Indian Railway is the 3rd largest rail network in the world after the US and China.

The first train in India was started by Lord Dalhousie on April 16, 1853, from Bombay to thane (34 Kms).

The first railway engine designed by George Stephenson was put on the rail in England in 1814.

Lord Dalhousie, who became Governor-General of India in 1849, was an ardent advocate of rapid railway construction.

Indian Railways was nationalized in 1950 and presently, it is the largest Railway Network in Asia.

It is a multi-gauge, multi-traction system covering

Broad Gauge(1676 mm),

Meter Gauge (1000 mm),

Narrow Gauge(762/610 mm) with around 68312 km route (As of October 2018).

Indian Railway has 17 zones including the newly formed Kolkata metro zone with production units are Chittaranjan Locomotive works at Chitranjan, Diesel Locomotive Works at Varanasi, Diesel Loco modernization works at Patiala, Integral Coach Factory at Chennai, Rail Coach Factory at Kapurthala, Railwheel factory at Bengaluru.

North Zone is the largest Railway Zone of Indian Railways

Asia’s largest tunnel which is about 6.5 km long, is constructed on the Konkan railway route near Ratnagiri in Maharashtra.

IRCTC’s Tejas Express is India’s first private

The New Delhi-Bhopal Shatabdi is currently India’s fastest train, reaching a maximum speed of 150 km/hr. However, railway minister Piyush Goyal announced that the newly launched Train 18 (Vande BharatExpress), manufactured by the Integral Coach Factory in Chennai can reach speeds as high as 200 km/hr.

The Vivek Express, running between Dibrugarh and Kanyakumari, covers 4,286 km in around 82 hours and 30 minutes. This journey is not just the longest in India, but in the entire subcontinent.

​​​​​​​The platform at Gorakhpur Railway Station in Uttar Pradesh is the world’s longest station, measuring a whopping 1,366 m. The second-longest in India is Kollam Railway Station in Kerala (1,180 m).

The record was previously held by the platform at Kharagpur station in West Bengal at 1,072 m.

The first electric train in India ran on 3 February 1925, between Bombay Victoria Terminal and Kurla Harbour. Later, the electric line was extended to Nashik’s Igatpuri district and then to Pune.

​​​​​​​India’s first passenger train started its service 166 years ago on 16 April 1853, covering a stretch of 33 km from Mumbai to Thane. The train carried 400 passengers. Interestingly, this day was also declared a public holiday.

​​​​​​​The first bullet train in India will be launched in 2022 by the National High-Speed Rail Corporation Limited (NHSRCL). The train will run from Mumbai to Ahmedabad, connecting various cities of Gujarat to Mumbai.

​​​​​​​Mathura junction is the largest railway junction in India, with as many as 7 routes emerging from this station. Mathura junction also has 10 platforms, with connectivity to all major cities of India.

​​​​​​​Bori Bunder, located in Mumbai was the first railway station in India. India’s first passenger train ran from Bori Bunder to Thane in 1853. It was built by the Great Indian Peninsular Railway. This station was rebuilt as Victoria Terminus later in 1888, named after Queen Victoria.

​​​​​​​The Maharaja’s Express is the most expensive luxury train in India and is also among the most expensive in Asia.

​​​​​​​Bholu the guard elephant is the mascot of the Indian Railways.

​​​​​​​India is home to 8 Railway Museums – in Delhi, Pune, Kanpur, Mysore, Kolkata, Chennai, Ghum, and Tiruchirappalli.

The National Railway Museum in Delhi is the most visited museum in India

​​​​​​​Mettupalayam Ooty Nilgiri Passenger train is the slowest train in India, running at a speed of 10 km/hr, which is roughly 16 times slower than the fastest train in India.

Railway Zones and their Headquarters

Zone Headquarters Divisions

1. Central Mumbai Mumbai(CST), Bhusawal, Nagpur, Pune

2. Western Mumbai Mumbai(Central), Vadodara, Ratlam, Ahmedabad, Rajkot, Bhavnagar

3. Northern Delhi Ambala, Delhi, Lucknow, Moradabad, Ferozpur

4. Eastern Kolkata Asansol, Howrah, Malda, Sealdah

5. Southern Chennai Chennai, Madurai, Palghat, Trichy, Trivandrum, Salem

6. East Central Hajipur Danapur, Dhanbad, Mughalsarai, Samastipur, Sonpur

7. East Coast Bhubaneshwar Khurda Road, Sambalpur, Waltair

8. North Central Allahabad Allahabad, Agra, Jhansi

9. North Eastern Gorakhpur Lucknow, Izzatnager, Varanasi

10. North East Frontier Guwahati Katihar, Alipurduar, Rangiya, Lumding, Tinsukia

11. North Western Jaipur Ajmer, Bikaner, Jaipur, Jodhpur

12. South Central Secunderabad Hyderabad, Nanded, Secunderabad

13. South East Central Bilaspur Bilaspur, Nagpur, Raipur

14. South Eastern Kolkata Adra, Chakradharpur, Kharagpur, Ranchi

15. South Western Hubli Bangalore, Hubli, Mysore

16. South Coastal Visakhapatnam Guntakal, Guntur, Vijayawada

17. West Central Jabalpur Bhopal, Jabalpur, Kota

18. Kolkata Metro Kolkata Not applicable

Duronto Express: Fastest Train in India (Called Restless in Bengali)

Diamond Quadrilateral: High-speed rails project connecting Delhi – Mumbai – Kolkata – Chennai

The first rail railway line in India was operated for public traffic in 1853, between Bombay (now Mumbai) to Thane over a distance of 34 km and it was nationalized in 1950.

The railways recognized by UNESCO are Darjeeling, Himalayan Railways, Nilgiri Mountain Railways, Chhatrapati Shivaji Terminus, and Kalka-Shimla Railways.

The Vivek Express— from Dibrugarh to Kanyakumari — travels 4,273 km, making it the longest run in terms of total time & distance.

The Konkan Railwayspasses through 3 states of India – Goa, Maharashtra, and Karnataka. It runs along the Indian west coast parallel to the Arabian Sea and the Western Ghats. It is an extremely beautiful and scenic route running from Maharashtra to Karnataka.

The Dedicated Freight Corridor Corporation of India Limited (DFCCIL) is a corporation run by the Ministry of Railways (India) to undertake planning & development, mobilization of financial resources, and construction, maintenance, and operation of the Dedicated Freight Corridors. It is both an enabler and beneficiary of other key Government of India schemes, such as Industrial corridor, Make in India, Start-up India, Stand-up India, Sagarmala, Bharatmala, UDAN-RCS, Digital India, BharatNet, and UMANG.

Metro Rails (Functioning)

Kolkata (First mass rapid transit system in India)

Delhi

Bangalore (Wifi Enabled)

Mumbai (Public-Private Partnership)

Jaipur

Chennai

Gurgaon (India’s first fully privately financed metro + India’s first fully privately financed metro stations)

Dedicated Freight Corridor Projects

Amritsar-Kolkata Punjab, Haryana, Uttar Pradesh, Uttarakhand, Bihar, Jharkhand & WB Wholly by GOI, funded by WB

Mumbai Bengaluru MH, Karnataka Britain

Chennai-Bengaluru Karnataka, TN, Andhra (Rayalaseema region) JICA (Japan International Cooperation Agency)

Delhi Mumbai (launched & Biggest) UP, Delhi, Haryana, Rajasthan, Gujarat, and Maharashtra.

Waterways Transport System in India

Waterways are the cheapest means of transport.

Ennore – 1stcorporate port (To release pressure on Chennai port)

Indian Ports –95 % by volume & 70 % by value – India’s international trade

In monsoon, all western ports except Mumbai, Cochin & Kandila are closed (12 Major & 1 Minor Port)

Maritime transport is to be administered by both the Central and the State governments.

While the central government’s shipping ministry administers the major ports, the minor and intermediate ports are administered by the relevant state gov. of coastal states.

All major ports, except one Ennore Port, are government-administered. It is the first port in India which is a public company.

Central Government has jurisdiction over both the National Highways and the National Waterways

The States’ Governments have NO jurisdiction over the National Waterways.

Indian Waterways à 1 % of total transport

Inland waterways – 14500 km

Indian coastline – Approx. 7500 km

Major Inland Waterways by Inland waterways authority of India (IWAI)

Inland Waterway 1 Allahabad-Haldia stretch of Ganga-Bhagirathi-Hooghly river system

Inland Waterway 2 The Sadiya-Dhubri stretch of the Brahmaputra River (Assam)

Inland Waterway 3 The Kottapuram-Kollam stretch of the West Coast Canal, Champakara Canal, and Udyogmandal Canal (Kerala)

Inland Waterway 4 Kakinada-Pondicherry along Godavari and Krishna River system

Inland Waterway 5 Talcher – Paradip (Odisha)

Inland Waterway 6 Lakhipur to Bhanga on the River Barak (Assam – Proposed)

12 Major Sea Ports in India

Mumbai Natural harbor & biggest port of India (Gateway of India)Handles approx. 1/5th of India’s foreign trade

Nava Seva Jawahar Lal Port (Highly Mechanized Port), Mumbai

Chennai Oldest artificial harbor on east coast & 2nd largest port in terms of volume of traffic

Ennore 1st corporate port (To release pressure on Chennai port)

Tuticorin (TN) On the Eastern coast of India

Kandla Tidal Port (To release pressure on Mumbai port, developed after the partition of India), Gujrat

Kochi A natural harbor

Vishakhapatnam Deepest artificial harbor on the east coast

Kolkata Riverine Port (Handles goods coming from SE Asian countries Australia & New Zealand)

Haldia Developed on river Hooghly to relieve pressure on Kolkata port

Paradip Located on Orissa coast

Mormugao In Goa ( 5th in total traffic handled)

New Mangalore On New Mangalore

Air Transport System in India

Air transport is the fastest and costlier mode of transport.

It was started in 1911 in India between Allahabad and

JRD Tata was the first person to take a solo flight from Mumbai to Karachi in 1931.

In 1995, the International Airport Authority of India and the National Airports Authority were merged to form the Airports Authority of India.

The authority manages the Civil Aviation Training College at Allahabad and the National Institute of Aviation Management and Research at Delhi.

Pawan Hans Helicopter Limited has provided helicopter support services to the petroleum sector like ONGC, ODL, etc., and also provides services to certain state Governments, PSU, and in the North-Eastern States.

Nationalized in 1953 – Indian Airlines

Managed by Airport Authority of India (AAI)

Hartsfield Jackson International Airport, Atlanta (USA) is the busiest airport in the world.

Indira Gandhi International Airport is the busiest airport in India. It has the longest runway of 4km.

Chhatrapati Shivaji International Airport (Mumbai) is the 2nd busiest airport in India.

Transport & Communication System in India (Notes+MCQ)

Communication System in India

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Postal System

Postal System in India was introduced by Lord Clive in the year 1766

It was further developed by Warren Hastings by establishing the Calcutta General Post Office (GPO) under the Post Master General in the year 1774.

In Bombay and Madras, the General Post Office came into existence in 1786 and 1793

The Act of 1873 first regulated the Post Office on a uniform basis to unite the post office organization throughout the three presidencies into one All India Service.

Post Office of India was placed on the present administrative footing about one hundred and fifty years ago on October 1, 1854.

The statute presently governing the postal services in the country is the Indian Post Office Act, 1898.

Besides providing postal communication facilities, the post office network has also provided facilities for remittance of funds, banking, and insurance services from the latter half of the 19th century.

At the time of Independence, there were 23,300 post offices throughout the country.

In March 2017, the country has 1, 54,965 post offices, of which 1, 39,067 are in the rural areas and 16,400 in the urban areas.

As a result of this seven-fold growth, today India has the largest postal network in the world.

Radio

Radio broadcasting was started in India in 1923 by the Radio Club of Bombay.

The government took control over radio broadcasting in 1930 and established the Indian Broadcasting System.

All India Radio was constituted in 1936 and it came to be known as Akashwani from 1957.

Over a period of time, All India Radio started broadcasting a variety of programs related to information, education, and entertainment.

Among all programs, news bulletins were also broadcasted on specific occasions like the session of parliament and state legislatures.

Telegraph and Telephone Service in India

The growing use of mobile phones and the Internet has led to a steep decline in the usage of the telegraphic service.

In India, the first telegraph message was transmitted live through electrical signals between Calcutta (now Kolkata) and Diamond Harbour, a distance of about 50 km, on November 5, 1850; and the service was opened for the general public in February 1855.

The telegram services have been stopped in India on July 15, 2013, as BSNL was suffering a huge monetary loss.

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Television

Television first went on air in 1959.

Television broadcasting has emerged as an effective audio-visual medium for disseminating information as well as educating the masses.

By 1972, many Television broadcasting centers became operational throughout the country.

In 1976, TV was separated from All India Radio (AIR) and got a separate identity as Doordarshan (DD).

Print Media

The total number of newspapers and periodicals being published was over 42,000 on December 31, 2006.

Hindi publication has the largest share of over 40 percent of the total.

Books are an equally important means of communication for preserving and propagating knowledge, information, and entertainment to posterity.

Indian Satellites

With the advent of satellites, the Indian Communication System has revolutionized the mode of communication.

After INSAT-IA (National Television-DD1) became operational, Common National Programs (CNP) was started for the entire network. Services were also extended to the backward and rural areas of the country.

On the basis of configuration and purposes, satellite system in India can be grouped as –

Indian National Satellite System (INSAT) and

Indian Remote Sensing satellite system (IRS).

The INSAT, which was established in 1983, is a multipurpose satellite system specialized for telecommunication, meteorological observation, and for many other data and programs.

The IRS satellite system became operational only after the launch of IRS-IA in March 1988 from Vaikanour, Russia.

However, India has also developed its own Launch Vehicle PSLV (Polar Satellite Launch Vehicle).

The National Remote Sensing Centre (NRSC) at Hyderabad is responsible for the acquisition, processing, the supply of aerial and satellite remote sensing data and continuously exploring the practical uses of remote sensing technology.