CHAPTER

20

Transport and Communication

Introduction:

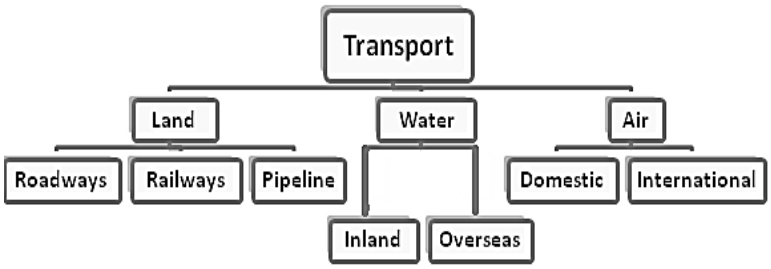
In this chapter, we discuss a transport service or centre for transporting people and goods from one place to another using people, animals and various types of vehicles. Most of the movement of goods and services takes place on land. This includes the delivery of goods and services over land i.e., roads and railways. The first public railway was opened in 1825 between Stockton and Darlington in the north of England and onwards.

1. Transport:

Transporting a service or centre for transporting people and goods from one place to another using people, animals and various types of vehicles. Such movements take place over land, water, and air. Roads and trains are part of land transport; while transport and waterways and airplanes are two alternatives. Pipes carry substances such as petroleum, natural gas, and ores in the form of liquidity.

Transport Network - A few nodes (nodes) connected together by a series of routes (links) to form a pattern.

2. Transportation methods:



The world's main means of transportation, as already mentioned, are land, water, air, and pipelines. These are used for intermediate and intermediate transportation.

1. Land Transport:

Most of the movement of goods and services takes place on land. This includes the delivery of goods and services over land i.e., roads and railways. The first public railway was opened in 1825 between Stockton and Darlington in the north of England and onwards. The introduction of the internal combustion engine changed road transport in terms of road quality and the cars (cars and trucks) that rode on it. Among the new developments in underground transport are pipelines, cable lanes and cable lanes. Liquids such as mineral oil, water, mud and sewage are transported by pipelines.

Major freight companies are trains, ships, boats, canoes and trucks and pipelines.

2. Roads:

Road transport is the safest for short distances compared to rail. Road quality varies greatly between developed and developing countries because the construction and maintenance of roads requires significant expense. In developed countries high-quality roads are available worldwide and provide long-distance links in the form of vehicles, autobahns (Germany), and highways between the provinces for faster access. Trucks, with increasing size and power to carry heavy loads, are common.

3. Road Density:

Countries	Density (For every 100 km² area)
Japan	327
UK	162
France	164
Sri Lanka	151
India	105
Spain	68
USA	67

The length of the world's road network is approximately 15 million km, with North America holding 33 per cent. High traffic congestion and the highest number of registered vehicles on the continent compared to Western Europe.

4. Traffic:

Traffic flow has increased dramatically in recent years. When the road network is unable to meet the traffic requirements, congestion is congested.

5. Highways:

1. Highways are steel roads that connect remote areas. They are built in the form of unstoppable movement of vehicles. So, these are 80 meters wide, with separate traffic lanes, bridges, and flyover and two-lane roads to facilitate uninterrupted traffic. In developed countries, all cities and ports are connected by highways.
2. In North America, highway congestion is high, about 0.65 km per square mile. The whole area is within 20 km of the highway. Pacific coastal cities (west) are closely connected with those of the Atlantic Coast (east).
3. The Trans Canadian Highway connects Vancouver in British Columbia (west coast) with St. Louis. John's City in Newfoundland (east coast) and Alaskan highway connects Edmonton (Canada) with Anchorage (Alaska).
4. The Transcontinental Stuart Highway connects Darwin (north coast) with Melbourne via Tennant Creek and Alice Springs in Australia.
5. Europe has a large number of vehicles and a well-developed highway network.
6. In Russia, a dense road network is being developed in an industrial area west of the Urals of which Moscow is a centre. The main Moscow-Vladivostok highway serves the eastern region.
7. In China, highways cross the country connecting all major cities such as Chongzuo (near the Vietnamese border), Shanghai (central China), Guangzhou (south) and Beijing (north). A new highway linking Chengdu and Lhasa in Tibet.
8. In India, there are many highways that connect cities and cities. For example, National Highway No. 7 (NH 7), which links Varanasi to Kanyakumari, is the longest in the country. The Golden Quadrilateral (GQ) or Super Expressway continues to connect four major cities - New Delhi, Mumbai, Bangalore, Chennai, Kolkata and Hyderabad.

6. Border Roads:

Roads bordered by international borders are called border roads. They play a vital role in uniting people in remote areas and providing protection.

7. Railway:

1. Railways are a land transport system for large goods and long-distance commuters. Rail scales vary from country to country and are classified as wide (over 1.5 m), standard (1.44 m), meter (1 m) gauge and small scale. The standard gauge is used in the U.K.
2. Europe has one of the world's most congested trains. There are about 4, 40,000 km of trains, most of which are double or double tracked. Belgium has a maximum capacity of 1 km of rail every 6.5 square miles. Place.
3. In Russia, trains occupy about 90 per cent of the world's transport network with the heaviest network in the western Urals.

4. In Canada, trains are located in government buildings and are distributed throughout the densely populated areas. Trains across the continent carry loads of wheat and tons of coal.
5. Australia has about 40,000 km of trains, 25% of which are found only in New South Wales.
6. In South America, the railway network is very congested in two regions, namely, Argentina's Pampas and the growing Brazilian coffee region covering 40 per cent of South America's road network.
7. There is a railway crossing a single continent connecting Buenos Aires (Argentina) and Valparaiso (Chile) across the Andes Mountains through the Uspallata Pass located at an altitude of 3,900 m.
8. In Asia, the railway network is overcrowded in densely populated areas of Japan, China, and India.
9. The African continent, though second only, has 40,000 km of railways and South Africa alone has an estimated 18,000 km of gold, diamond and copper mines.

8. Trans-Continental Railways:

Inland trains run across the continent and connect their two destinations. They are built for economic and political reasons to make it easier to travel long distances in different places. The following is the most important of these:

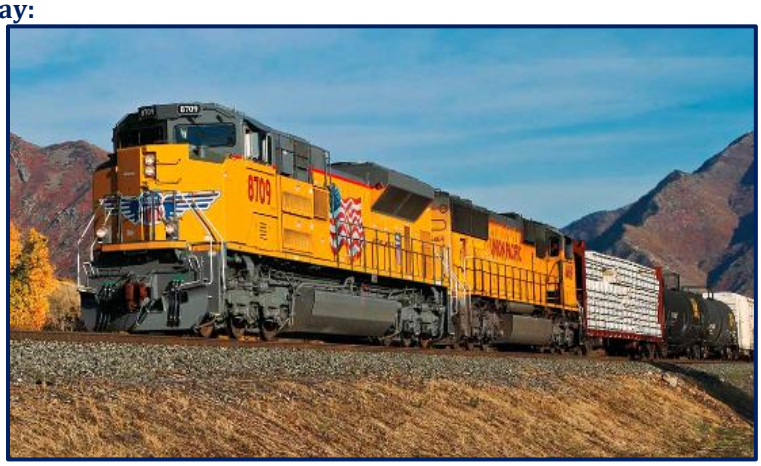
1. **Trans–Siberian Railway:**

This is Russia's main trans-Siberian Railways from St. Petersburg. Petersburg west to Vladivostok on the Pacific Coast east through Moscow, Ufa, Novosibirsk, Irkutsk, Chita and Khabarovsk. It is the most important route in Asia and the longest (9,332 km) double tracked and electrified across the continental railway in the world.

2. **Trans-Canadian Railways:**

This 7,050 km long railway line in Canada runs from Halifax east to Vancouver on the Pacific coast via Montreal, Ottawa, Winnipeg and Calgary. It was built in 1886. It connected the Quebec-Montreal Industrial Region with the Prairie County wheat belt and the Coniferous Forest region to the north.

3. **Union and Pacific Railway:**



This railway connects New York on the Atlantic coast to San Francisco on the Pacific Coast via Cleveland, Chicago, Omaha, Evans, Ogden and Sacramento. The most important exports to this route are ore, grain, paper, chemicals and machinery.

4. Australian Trans-Continental Railway:

This railway runs west-east across the southern part of the continent from Perth on the west coast, to Sydney on the east coast. Passing through Kalgoorlie, Broken Hill and Port Augusta.

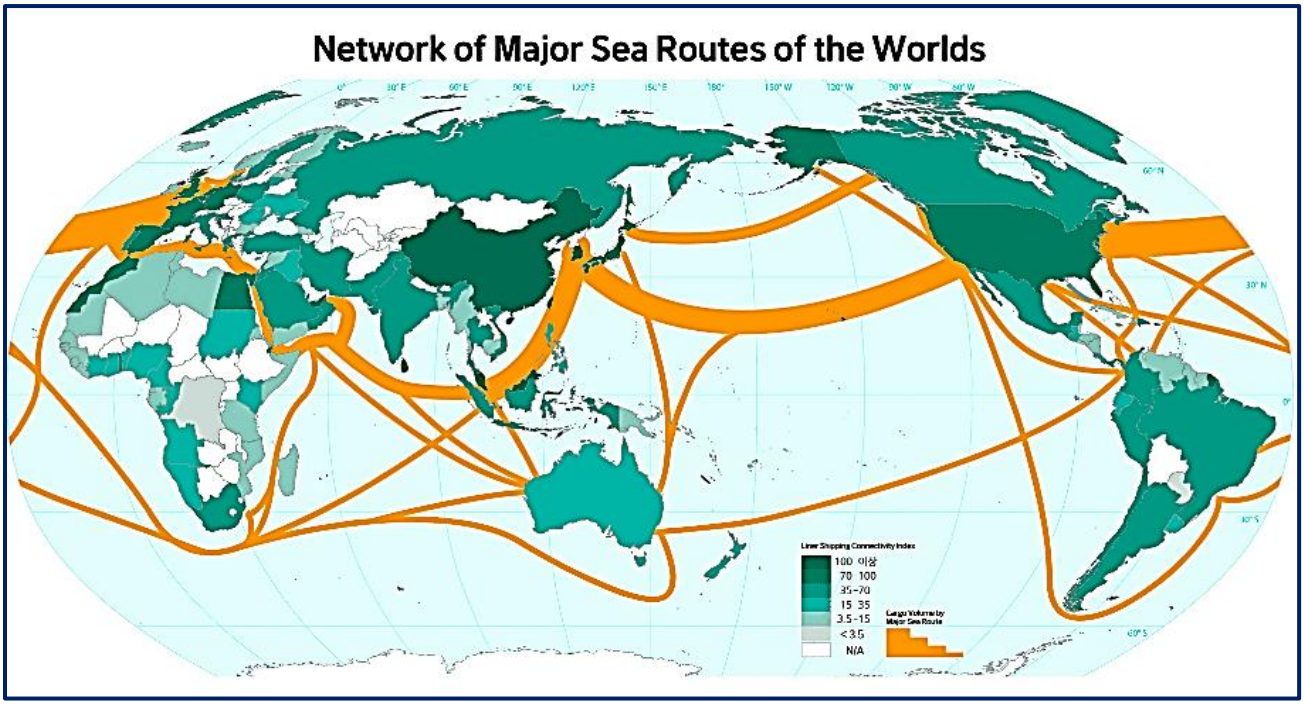
5. Orient Express:

This route runs from Paris to Istanbul via Strasbourg, Munich, Vienna, Budapest and Belgrade. Travel time from London to Istanbul via Express has now been reduced to 96 hours compared with 10 days by sea. The best-selling items on this railway line are cheese, bacon, oats, wine, fruit and machinery.

3. Water Vehicles

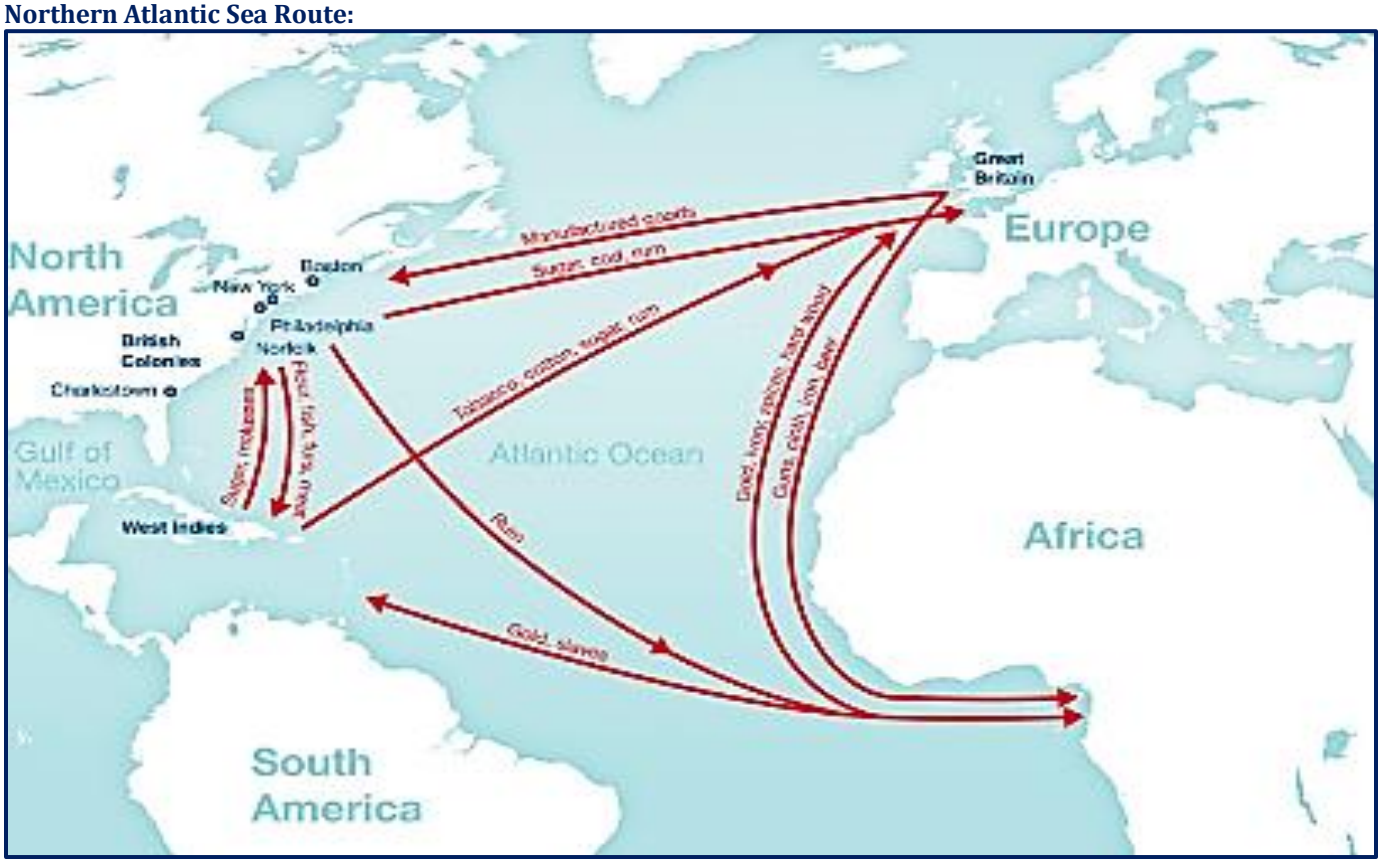
One of the great benefits of water flow is that it does not require the construction of a railway. Oceans are interconnected and negotiated with ships of various sizes. It is much cheaper because water collisions are much smaller than the ground. Energy costs for water transport are low. Water transport is divided into maritime and inland waterways.

1. Sea Routes:



The Sea provides a smooth highway that can travel in all directions without the cost of repairs. Compared to land and air, sea transport is a cheaper way to transport (carry) more goods over a long distance from one continent to another. Modern passenger lines (ships) and cargo vessels are equipped with radar, cordless and other navigation equipment. The main maritime routes are as follows:

1. Northern Atlantic Sea Route:



This connects the Northeast U.S.A. and Northwest Europe, two industrialized regions of the world. One quarter of the world's foreign trade runs on this route. So, it is very busy in the world and in a way, it is called the Big Trunk Route.

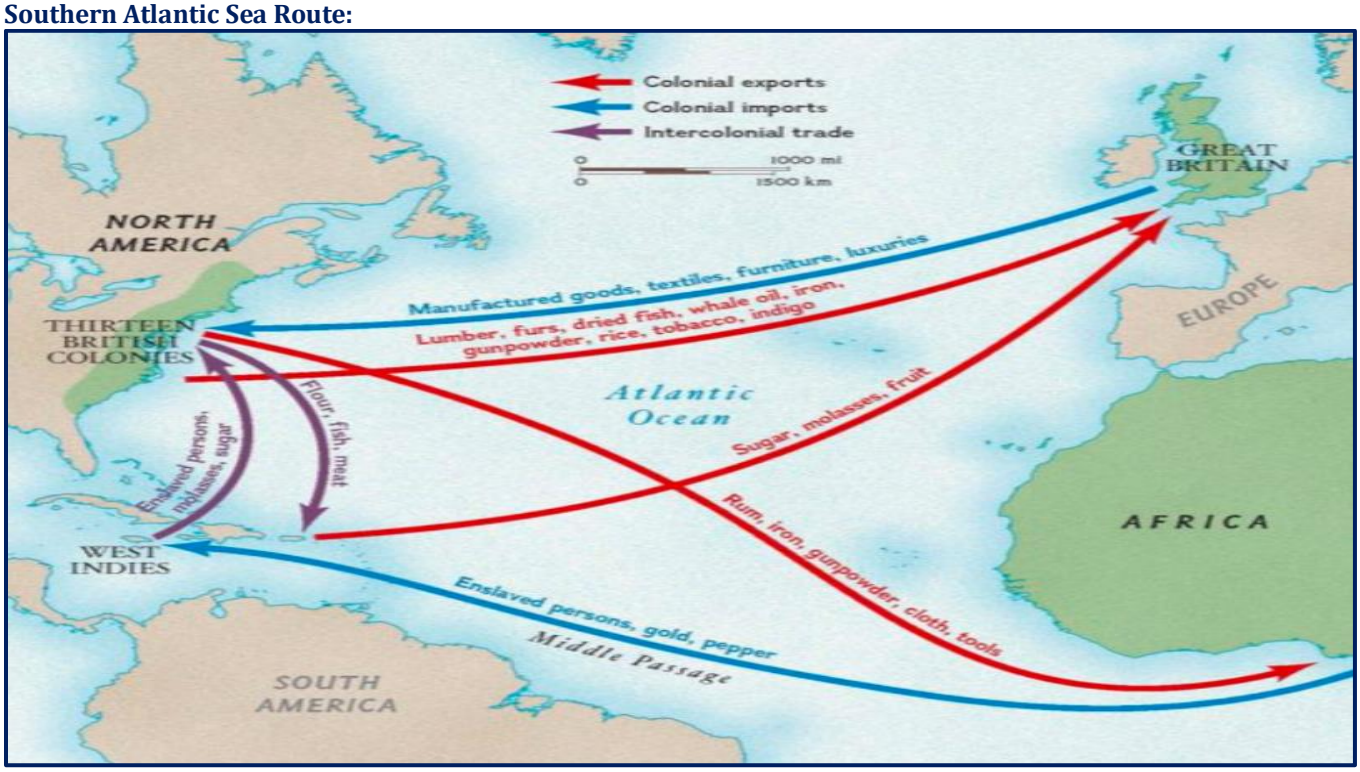
2. The Mediterranean Sea–Indian Ocean:

Port Said, Aden, Mumbai, Colombo and Singapore are other important ports along this route. The construction of the Suez Canal significantly reduced distance and time compared to the previous route through the Cape of Good Hope, which was longer than the route through the Suez Canal.

3. **Cape of Good Hope Sea Route:**

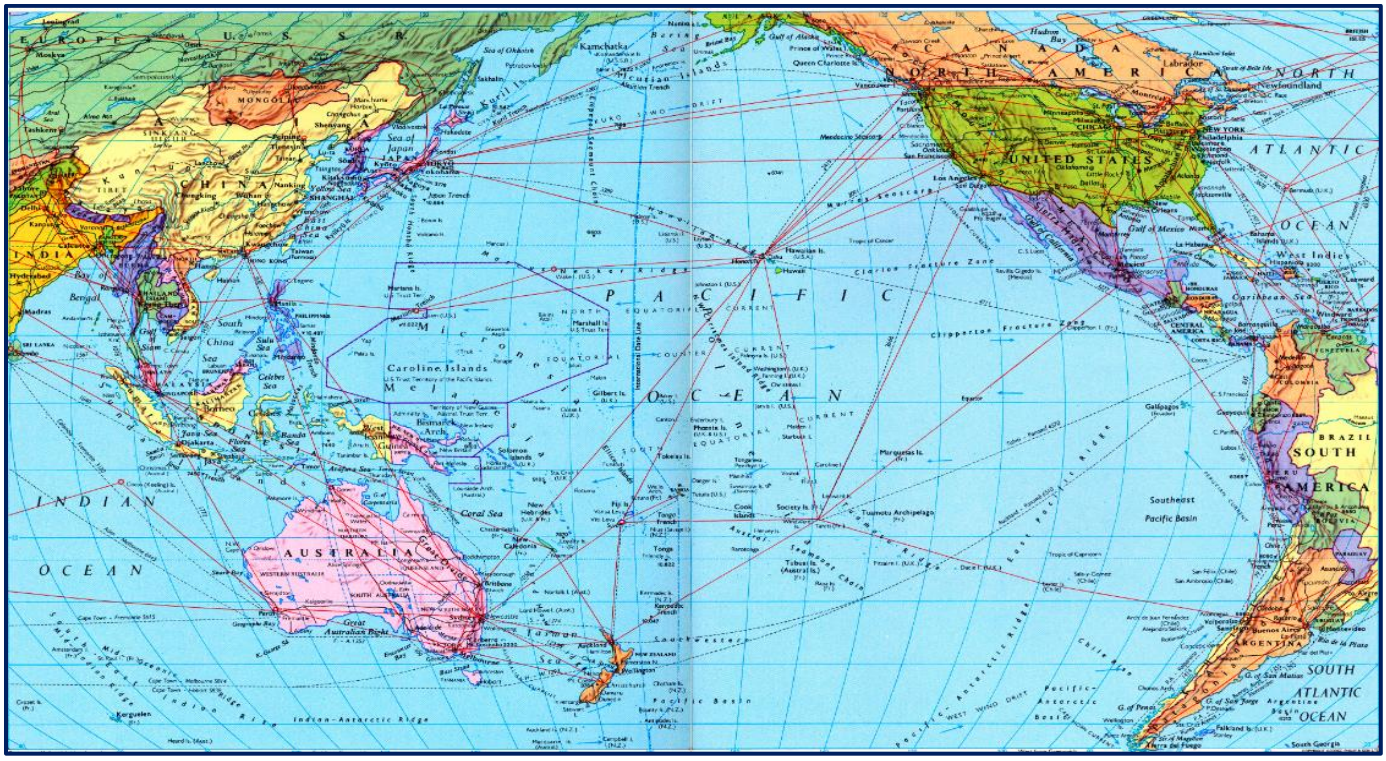
This trade route connects the most industrialized Western European region with West Africa, South Africa, Southeast Asia and the agricultural and livestock trade economics of Australia and New Zealand. The volume of trade and human migration between East and West Africa is growing due to the development of rich natural resources such as gold, diamonds, copper, tin, nuts, palm oil, coffee and fruit.

4. **Southern Atlantic Sea Route:**



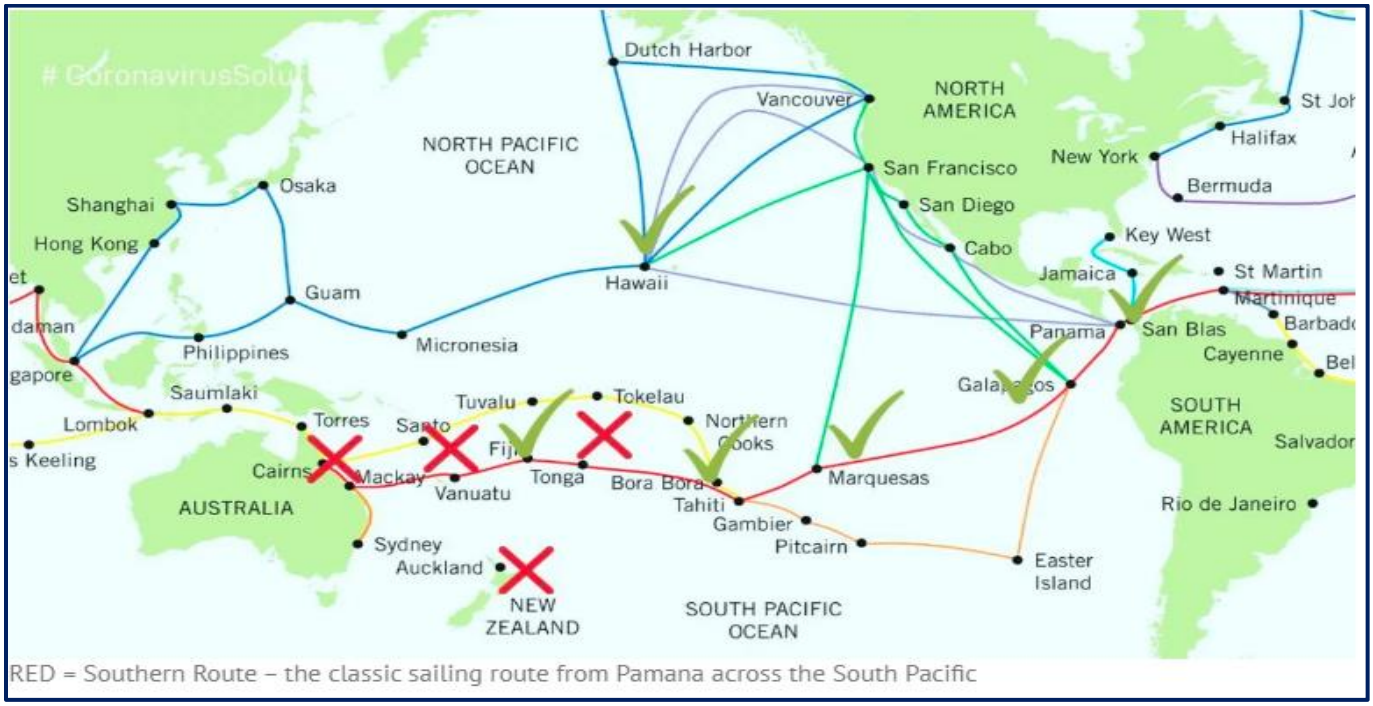
This seaport is one of the most important crossings in the Atlantic Ocean that connects Western European and West African countries with Brazil, Argentina and Uruguay in South America.

5. North Pacific Sea Route:



This sea route connects ports on the west coast of North America with those of Asia. These are Vancouver, Seattle, Portland, San Francisco and Los Angeles on the American side and Yokohama, Kobe, Shanghai, Hong Kong, Manila and Singapore on the Asian side.

6. South Pacific Route:



This seafront connects Western Europe and North America with Australia, New Zealand and the scattered Pacific islands via the Panama Canal. This route is used to reach Hong Kong, the Philippines and Indonesia. The combined distance between Panama and Sydney is 12,000 km. Honolulu is an important port on this route.

7. Coastal Shipping:

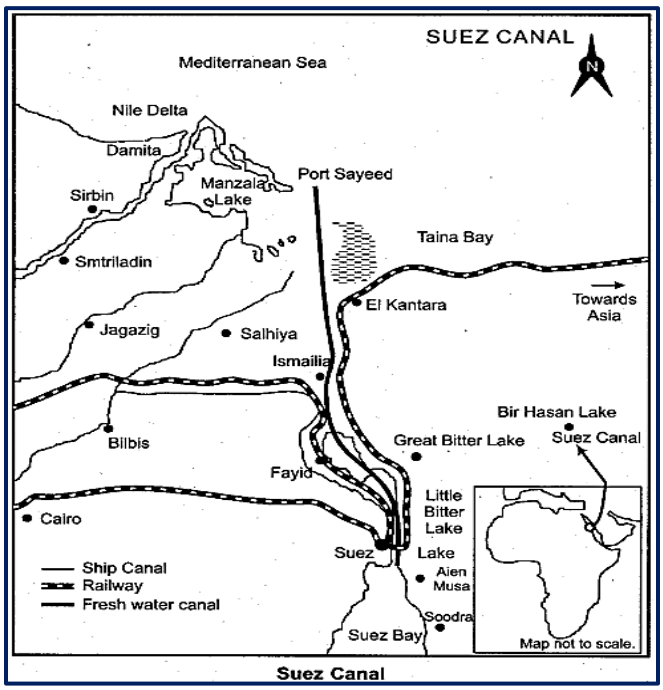
A coastal ship is an easy way to navigate a long coastline, e.g., USA, China and India. These types of coastal vessels can reduce congestion on landlines.

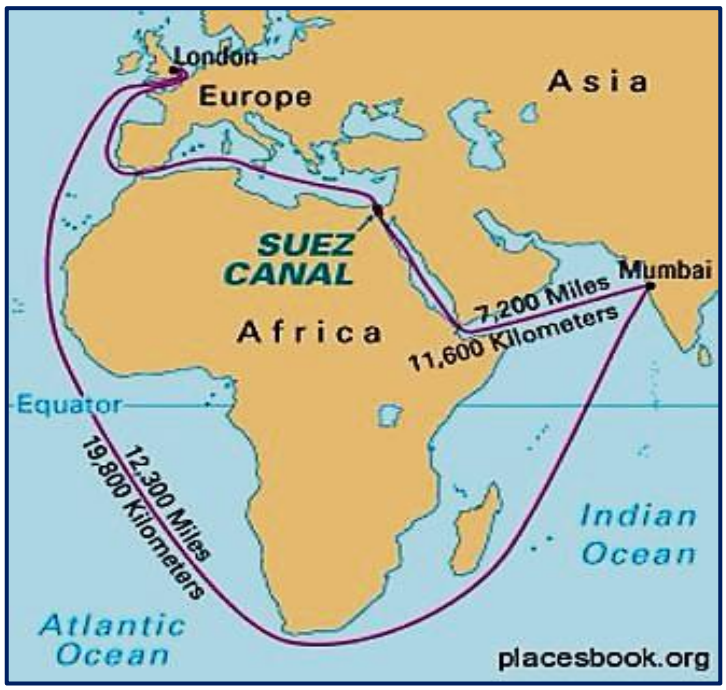
2. Shipping Channels:

Suez and the Panama Canals are two important man-made canals or waterways that serve as trading gates for both east and west countries.

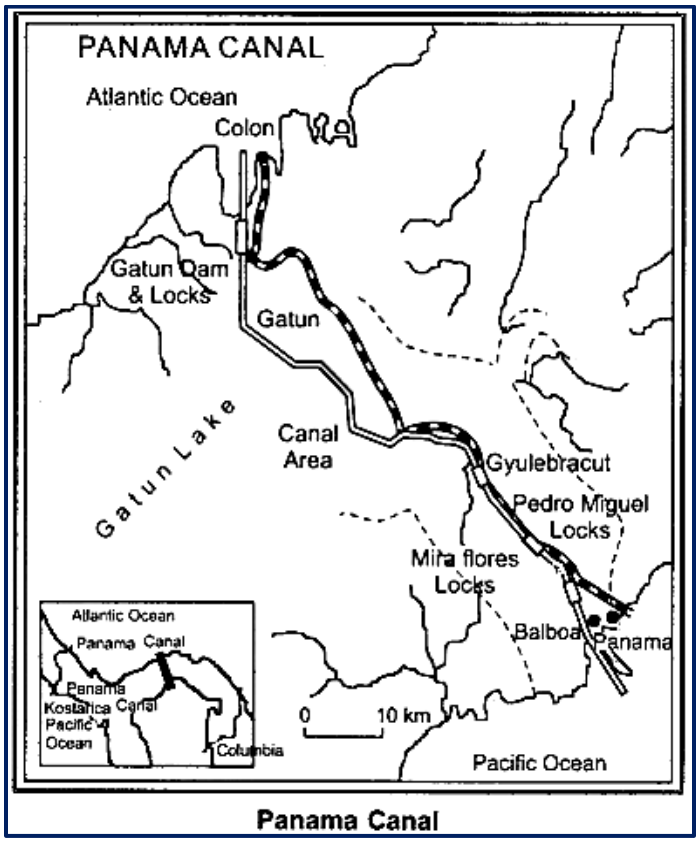
1. Suez Canal:

This canal was built in 1869 in Egypt between Port Said in the north and Port Suez in the south which connects the Mediterranean Sea and the Red Sea. It is a seawater-level canal about 160 km and 11 to 15 m deep. About 100 ships travel daily and each ship takes 10-12 hours to cross the canal.





2. Panama Canal:



This canal connects the Atlantic Ocean to the east and the Pacific Ocean to the west. Canal is approximately 72 km. length and involves the deepest cut to a length of 12 km. It has six locking systems and ships pass through different levels (26 m above and below) through these locks before entering the Gulf of Panama. It covers the distance between New York and San Francisco by 13,000 miles [13,000 km] of sea. And East and Southeast Asia are abbreviated. The economic value of this Canal is much lower than that of Suez. However, it is important for the Latin American economy.

3. Inland Waterways:

The development of inland waterways depends on the width and depth of the channel, the continuity of water flow, and the transport technology used. Rivers are the only means of transportation in dense jungles. Heavy materials such as coal, cement and timber and iron ore can be transported in inland waters. The most important water resources in the country are:

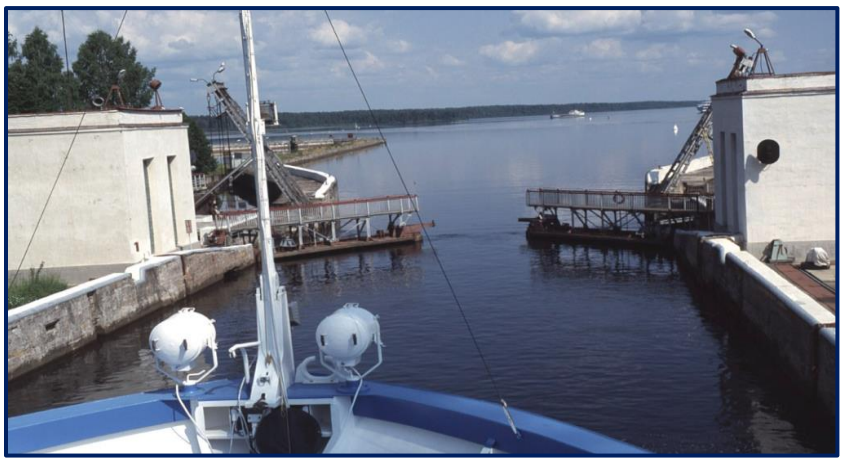
4. Rhine Waterways:

The Rhine flows through Germany and the Netherlands. It can sail 700 kilometers from Rotterdam, at its mouth in the Netherlands to Basel in Switzerland. Shipping can reach Cologne. The Ruhr River joins the Rhine from the east. Dusseldorf is the Rhine port of this region. This watercourse is the most widely used in the world. Each year more than 20,000 naval vessels and 2, 00,000 submarines exchange their cargo. It connects the industrial areas of Switzerland, Germany, France, Belgium and the Netherlands and the North Atlantic Ocean Route.

5. Danube Waterway:

This important inland waterway operates in Eastern Europe. The Danube River rises in the Black Forest and flows east through many lands. It can roam all the way to Turnu Severin. The main exports are wheat, corn, timber and machinery.

6. Volga Waterway:



Russia has a large number of improved waterways, of which the Volga is one of the most important. It provides an 11,200 km cruise ship and flows into the Caspian Sea. The Volga-Moscow Canal connects the Moscow region with the Volga-Don Canal and the Black Sea.

7. The Great Lakes:

St. Lawrence Seaway the Great Lakes of North America Superior, Huron Erie and Ontario connected with the Soo Canal and Well and Canal to build an inland watercourse. Duluth and Buffalo are two important ports along this route.

8. Mississippi Waterways:

Mississippi-Ohio waterway connects the interior of the U.S.A. and the Gulf of Mexico in the south. Major trains can pass this route up to Minneapolis.

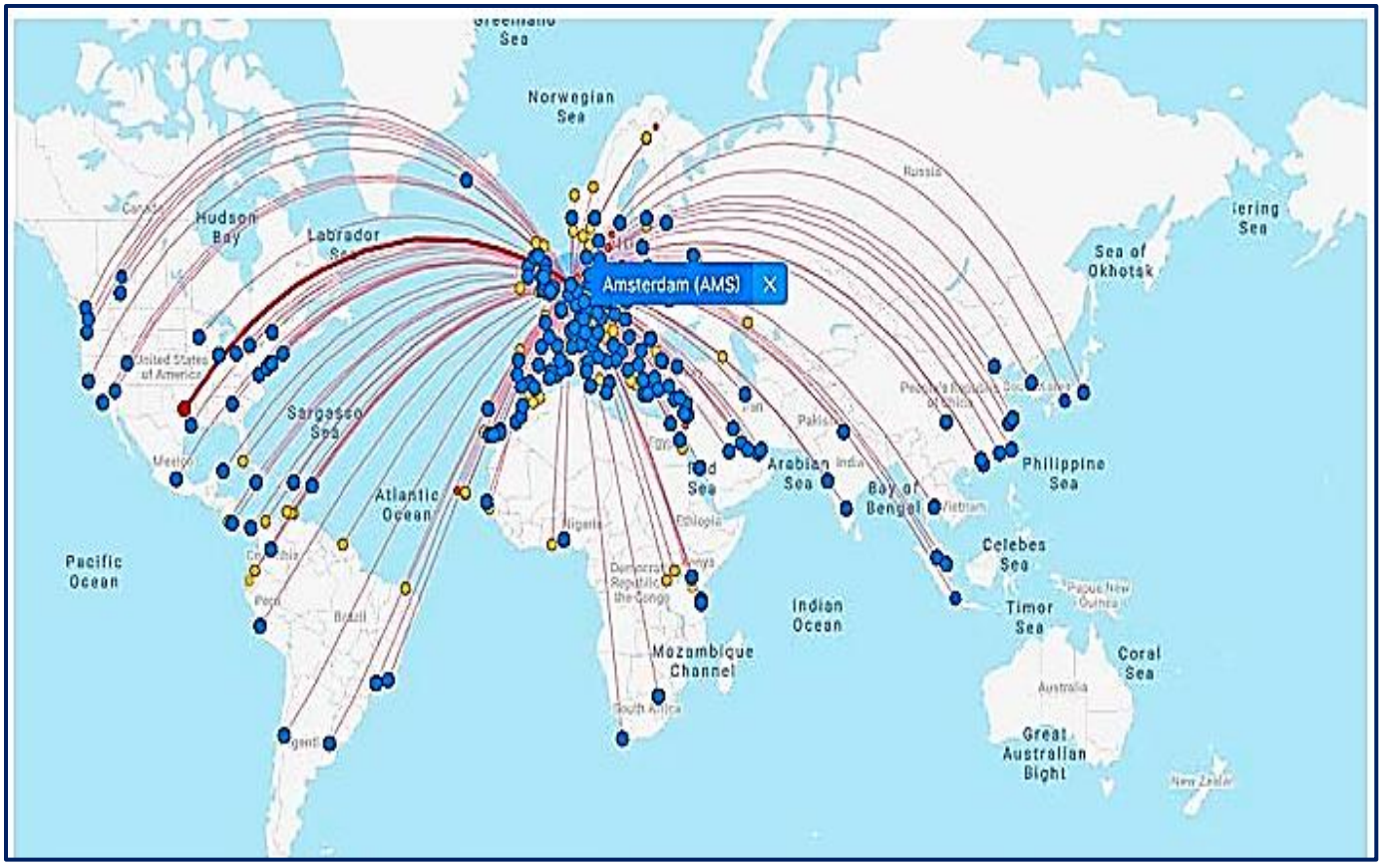
Activity

Q1. Make a short note on the transport?
Q2. Make a short note on the transportation methods?
Q3. Make a short note on the water vehicles?

4. Air Transportation

Air transport is the fastest way, but the most expensive. It is often the only way to reach places that are not easily accessible. Due to the high cost of construction and maintenance, air transport has greatly improved in the industrialized world. Supersonic flights close the distance in a very short time.

1. Inter-Continental Air Routes:



In the Northern Hemisphere, there is a separate east-west belt of inland airways. A dense network exists in Eastern U.S.A., Western Europe and Southeast Asia. The U.S.A. alone makes up 60% of international airlines. New York, London, Paris, Amsterdam, Frankfurt Rome, Moscow, Karachi, New Delhi, Mumbai, Bangkok, Singapore, Tokyo, San Francisco, Los Angeles and Chicago are major destinations where airports meet or spread across continents. Africa, the Asian part of Russia, and South America do not have air resources. There are limited air resources within 10-35 latitudes in the Southern hemisphere due to small population, limited space and economic development.

2. Pipeline:

Pipelines are widely used to transport liquids and gases such as water, petrol and natural gas to flow uninterrupted. Cooking gas or LPG is supplied by pipes in many parts of the world. Pipes can also be used to transport liquid coal. In New Zealand, milk is supplied by pipelines from farms to factories. The Big Inch is one of the world's most famous pipelines, and it carries gasoline from the oil fields of the Gulf of Mexico to the northeast. About 17% of all loads per ton-km. transported by U.S pipelines.

In Europe, Russia, West Asia and India pipelines are used to connect oil wells to refineries, as well as to ports or domestic markets. Turkmenistan is located in central Asia and expands pipelines to Iran and parts of China. Iran-India proposed pipeline through Pakistan international oil and natural gas will be the longest in the world.

5. Communications

People have used various means of remote communication which were essential telegraph and telephone. The phone is the most widely used mode. In developing countries, the use of cell phones, made with satellites, is essential for rural connectivity. Recent technological advances have led to Optical Fiber Cables (OFC). They allow a large amount of data to be transmitted almost without error. Telecommunications is now integrated with computers to form integrated networks called the Internet.

1. Satellite Communication:

Satellite communications have emerged as a new space in telecommunications technology since the 1970s after the U.S.A. and the U.S.S.R. established space research. This is a satellite communication that has reduced the cost of each unit and the connection time again.

India has also made great strides in the development of satellites. Aryabhatta was launched on April 19, 1979, Bashkir-I in 1979 and Rohini in 1980. On June 18, 1981, the APPLE (Arian Passenger Payment Test) was launched with an Arian rocket. Bhaskar, Challenger and INSAT B made long-distance communication, television and radio very effective.

2. Cyberspace - Internet:

Cyberspace is the world of computer space. Compiled by the Internet as the World Wide Web (www). In simple terms, the digital world of electronic communication or access to information over computer networks without the physical movement of the sender and receiver. It is also called the Internet. It is these modern communication systems, beyond transport that have made the concept of the universe a reality.

Activity

Q1. Make a short note on the Air Transportation?

Q2. Make a short note on the Communication?

Questions For Practice

1. When was the first public railway line opened?
(a) 1815 (b) 1825
(c) 1830 (d) 1835

2. Between which of the following terminals does the Trans-continental Stuart Highway run?
(a) Chengdu and Lhasa
(b) Vancouver and St. John's City
(c) Edmonton and Anchorage
(d) Darwin and Port Augusta

3. Which is the busiest sea route in the world?
(a) North Atlantic
(b) Pacific route
(c) Indian Ocean
(d) Panama route

4. Through which of the following oceans does the Big Trunk route run?
(a) The Mediterranean-Indian Ocean
(b) North Atlantic Ocean
(c) South Atlantic Ocean
(d) South Pacific Ocean

5. Reindeer is a pack animal in?
(a) Africa
(b) Australia
(c) Siberia
(d) South America

6. What is the width of a standard gauge railway?
(a) 1.5 m (b) 1.44 m
(c) 1 m (d) 0.75 m

7. Which of the following continents is famous for the reindeer used as a pack animal?
(a) Africa (b) Eurasia
(c) Australia (d) South America

8. Which mode provides door to door service?
(a) Rail (b) Road
(c) Airways (d) Pipelines

9. What does the Big Inch Pipeline transport?
(a) Water
(b) Liquefied Petroleum Gas
(c) Petroleum
(d) Minerals

10. Which mode carries high-value light goods?
(a) Railways (b) Roads
(c) Airways (d) Waterways

11. In which continent is the reindeer used as a pack animal for the first time?
(a) Africa
(b) Eurasia
(c) Australia
(d) South America

12. Which of the following stations was the first public railway line opened?
(a) Thane
(b) Delhi
(c) Calcutta
(d) None of the above

13. Which seas are joined by the Suez Canal?
(a) Mediterranean Sea and Red Sea
(b) Black and Mediterranean Sea
(c) The North Sea and Baltic Sea
(d) Baltic Sea and Black Sea

14. When was the Suez Canal constructed?
(a) 1849 (b) 1859
(c) 1869 (d) 1879

15. Reindeer is a pack animal in?
(a) Africa
(b) Australia
(c) Siberia
(d) South America

16. What is the width of a standard gauge railway?
(a) 1.5 m (b) 1.44 m
(c) 1 m (d) 0.75 m

17. Which mode provides door to door service?
(a) Rail (b) Road
(c) Airways (d) Pipelines

18. Which mode carries high-value light goods?
(a) Railways (b) Roads
(c) Airways (d) Waterways

19. Identify the country with the highest density of railway network?
(a) USA (b) Germany
(c) Brazil (d) Thailand

20. Which is the busiest sea route of the world?
(a) North Atlantic (b) Pacific route
(c) Indian Ocean (d) Panama route

21. In which continent is the reindeer used as a pack animal?
(a) Africa (b) Eurasia
(c) Australia (d) South America

22. In which year was the first public railway line opened?
(a) 1815 (b) 1825
(c) 1830 (d) 1835

23. Which seas are joined by the Suez Canal?
(a) Mediterranean Sea and Red Sea
(b) Black and Mediterranean Sea
(c) North Sea and Baltic Sea
(d) Baltic Sea and Black Sea

24. When was the Suez Canal constructed?
(a) 1849 (b) 1859
(c) 1869 (d) 1879

25. "Camel" is used as a means of transportation in which country?
(a) North America
(b) Australia
(c) Desert
(d) South America

26. What is the width of a standard gauge railway?
(a) 1.5 m (b) 1.44 m
(c) 1 m (d) 0.75 m

27. Which mode provides door to door service?
(a) Rail (b) Road
(c) Airways (d) Pipelines

28. Which mode carries high-value light goods?
(a) Railways (b) Roads
(c) Airways (d) Waterways

29. Identify the country with the highest density of railway network.
(a) USA (b) Germany
(c) Brazil (d) Thailand

30. Which is the busiest sea route of the world?
(a) North Atlantic
(b) Pacific route
(c) Indian Ocean
(d) Panama route

Solutions

1. (b)	**4. (b)**	**7. (b)**	**10. (c)**	**13. (a)**	**16. (c)**	**19. (a)**	**22. (b)**	**25. (c)**	**28. (c)**
2. (d)	**5. (c)**	**8. (b)**	**11. (b)**	**14. (c)**	**17. (b)**	**20. (a)**	**23. (a)**	**26. (c)**	**29. (a)**
3. (a)	**6. (c)**	**9. (c)**	**12. (b)**	**15. (c)**	**18. (c)**	**21. (b)**	**24. (c)**	**27. (b)**	**30. (a)**