SUBJECT: GEOGRAPHY
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TRANSNATIONAL SEA ROUTES

Waterways are the most suitable and cheapest for the international trade. International trade is carried out through ports and harbours which are connected with hinterlands through railways, roads or inland waterways. Waterways are the most suitable and cheapest for the international trade. International trade is carried out through ports and harbours which are connected with hinterlands through railways, roads or inland waterways. Water Transport includes transportation from canals, lakes, rivers, seas and oceans. It can be classified as national and international transportation. The water transport can be divided into two parts: (a) Inland water transport; (b) Ocean water transport. The list of International Sea routes are discussed below:

1. South Atlantic Oceanic Route

This route joins North America and Europe with South America. Through this, waterway, the industrial goods from North America and Europe are transported to South America. The major products transported by this oceanic route are machines, electric goods, goods of daily needs, medical apparatus and medicines, railways goods, parts of airplanes and army and defence equipment.

2. North Atlantic Oceanic Route

It has much more important than any other waterways. This waterway joins the developed regions of Western Europe with the developed region of North America. There are many important parts of the world on this oceanic route, e.g. Glasgow, Manchester, Southampton, London, Rotterdam, Breman, body, Lisbon, Quebec, Montreal, New Orleans, York, Charleston, Gaveston, and New Havana**.** Maximum goods are transported through this waterway of the world.

3. Routes of Mediterranean Sea

This waterway joins Asia and Australia continents with North Atlantic Ocean routes**.** Mediterranean waterway joins together the maximum number of countries of the world. Through this waterway the raw material of eastern countries is being transported to western countries and transport industrial products to eastern countries.

4. Cape of Good Hope route

It joins **Ea**stern Asia and Europe to southern parts of Africa. This oceanic route has lost its importance with the construction of the Suez Canal. Now-a-days, only large sized ships loaded with heavy and cheap goods sail through this oceanic route.

5. North Pacific Oceanic Route

These waterways join East Asia and North America with each other. This waterway is very long. From this route the countries like China. Korea, Japan, Philippines, Indonesia, Malaysia, Singapore and Hong Kong take maximum benefits.

6. South Pacific Oceanic Route

It connects Australia, New Zealand, North America and Western Europe with each other. Through this oceanic route Australia exports wool, butter, cheese, skins, rubber, etc. and industrial products are imported.

7. Routes of Indian Ocean

Indian oceanic waterways are used by the countries which fall in the vicinity of the Indian Ocean. The major items exported through this route are tea, jute products, mineral ores and import items are mainly industrial products.

Suez Canal

The Suez Canal is an artificial sea-level waterway in Egypt, connecting the Mediterranean Sea to the Red Sea through the Isthmus of Suez. It is often considered to define the border between Africa and Asia. Constructed by the Suez Canal Company between 1859 and 1869, it officially opened on 17 November 1869. The canal offers watercraft a more direct route between the North Atlantic and northern Indian oceans via the Mediterranean and Red seas, thus avoiding the South Atlantic and southern Indian oceans and reducing the journey distance from the Arabian Sea to London, for example, by approximately 8,900 kilometres (5,500 mi). It extends from the northern terminus of Port Said to the southern terminus of Port Tewfik at the city of Suez. Its length is 193.30 km (120.11 mi) including its northern and southern access-channels. In 2012, 17,225 vessels traversed the canal (an average of 47 per day). The original canal featured a single-lane waterway with passing locations in the Ballah Bypass and the Great Bitter Lake. It contains no lock system, with seawater flowing freely through it. In general, the canal north of the Bitter Lakes flows north in winter and south in summer. South of the lakes, the current changes with the tide at Suez.

When built, the canal was 164 km (102 mi) long and 8 m (26 ft) deep. After several enlargements, it is 193.30 km (120.11 mi) long, 24 m (79 ft) deep and 205 metres (673 ft) wide. It consists of the northern access channel of 22 km (14 mi), the canal itself of 162.25 km (100.82 mi) and the southern access channel of 9 km (5.6 mi). The so-called *New Suez Canal*, functional since 6 August 2015, currently has a new parallel canal in the middle part, with its length over 35 km (22 mi). The current parameters of the Suez Canal, including both individual canals of the parallel section are: depth 23 to 24 metres (75 to 79 ft) and width at least 205 to 225 metres (673 to 738 ft).

The opening of the canal created the first salt-water passage between the Mediterranean Sea and the Red Sea. Although the Red Sea is about 1.2 m (4 ft) higher than the eastern Mediterranean, the current between the Mediterranean and the middle of the canal at the Bitter Lakes flows north in winter and south in summer. The current south of the Bitter Lakes is tidal, varying with the tide at Suez. The Bitter Lakes, which were hypersaline natural lakes, blocked the migration of Red Sea species into the Mediterranean for many decades, but as the salinity of the lakes gradually equalised with that of the Red Sea the barrier to migration was removed, and plants and animals from the Red Sea have begun to colonise the eastern Mediterranean. The Red Sea is generally saltier and more nutrient-poor than the Atlantic, so the Red Sea species have advantages over Atlantic species in the less salty and nutrient-rich eastern Mediterranean. Accordingly, most Red Sea species invade the Mediterranean biota, and only few do the opposite. Invasive species originating from the Red Sea and introduced into the Mediterranean by the canal have become a major component of the Mediterranean ecosystem and have serious impacts on the ecology, endangering many local and endemic species. About 300 species from the Red Sea have been identified in the

Mediterranean, and there are probably others yet unidentified. The Egyptian government's intent to enlarge the canal has raised concerns from marine biologists, fearing that this will worsen the invasion of Red Sea species. Construction of the canal was preceded by cutting a small fresh-water canal called Sweet Water Canal from the Nile delta along Wadi Tumilat to the future canal, with a southern branch to Suez and a northern branch to Port Said. Completed in 1863, these brought fresh water to a previously arid area, initially for canal construction, and subsequently facilitating growth of agriculture and settlements along the canal.

Panama Canal

The Panama Canal is an artificial 82 km (51 mi) waterway in Panama that connects the Atlantic Ocean with the Pacific Ocean. The canal cuts across the Isthmus of Panama and is a conduit for maritime trade. Canal locks are at each end to lift ships up to Gatun Lake, an artificial lake created to reduce the amount of excavation work required for the canal, 26 m (85 ft) above sea level, and then lower the ships at the other end. The original locks are 32.5 m (110 ft) wide. A third, wider lane of locks was constructed between September 2007 and May 2016. The expanded canal began commercial operation on June 26, 2016. The new locks allow transit of larger, neo-Panamax ships, capable of handling more cargo. The construction of the Panama Canal is where the expression "Another Day, Another Dollar" comes from, as the workers were rumoured to be paid a dollar a day for their labor.

The layout of the canal as seen by a ship passing from the Atlantic to the Pacific is:

- From the formal marking line of the Atlantic Entrance, one enters Limón Bay a large natural harbour. The entrance runs 5½ mi (8.4 km). It provides a deepwater port, with facilities like multimodal cargo exchange (to and from train) and the Colón Free Trade Zone (a free port).
- A 2 mi (3.2 km) channel forms the approach to the locks from the Atlantic side.
- The Gatun Locks, a three-stage flight of locks 1¼ mi (1.9 km) long, lifts ships to the Gatun Lake level, some 87 ft (27 m) above sea level.
- Gatun Lake, an artificial lake formed by the building of the Gatun Dam, carries vessels 15 mi (24 km) across the isthmus. It is the summit canal stretch, fed by the Gatun River and emptied by basic lock operations.
- From the lake, the Chagres River, a natural waterway enhanced by the damming of Gatun Lake, runs about 5¼ mi (8.5 km). Here the upper Chagres River feeds the high level canal stretch.
- The Culebra Cut slices 7¾ mi (12.4 km) through the mountain ridge, crosses the continental divide and passes under the Centennial Bridge.
- The single-stage Pedro Miguel Lock, which is ⅞ mi (1.4 km) long, is the first part of the descent with a lift of 31 ft (9.4 m).
- The artificial Miraflores Lake 1⅛ mi (1.7 km) long, and 54 ft (16 m) above sea level.
- The two-stage Miraflores Locks is 1⅛ mi (1.7 km) long, with a total descent of 54 ft (16 m) at mid-tide.
- From the Miraflores Locks one reaches Balboa harbor, again with multimodal exchange provision (here the railway meets the shipping route again). Nearby is Panama City.
- From this harbor an entrance/exit channel leads to the Pacific Ocean (Gulf of Panama), 8¼ mi (13.2 km) from the Miraflores Locks, passing under the Bridge of the Americas.

Thus, the total length of the canal is 50 miles.