

Kiel Canal

The Kiel Canal which opened in 1895 and became classified as an international waterway in 1919, links the mouth of the River Elbe, on which the Port of Hamburg, is situated and the Baltic Sea. It provides an alternative sailing route to ships travelling between the North and Baltic Seas, reducing voyage distances by about 250 nautical miles by avoiding the Jutland Peninsula.



The canal is 98 km long and with a maximum speed limit of 8.1 knots has a transit time of approximately 8 hours. Due to its lock and canal restrictions, it can only accommodate ships up to 235.5m long, 32.5m wide with a draft of 7m and an air draft of 40 metres. Shorter ships with a narrower beam and a draft up to 9.5m can also transit the canal. These limitations mean the largest container ship able to use the canal has a capacity of about 1,700 TEUs, depending on its draft and air draft at the time of transit.

In recent years there has been a significant reduction in the number of container ships using the canal. Between 2008 and 2017 the number of container ship transits fell from 8,000 to 5,000 a year - a 38% reduction. This decline is primarily due to changes in port call rotation structures on the deep sea Far East to North Europe trade route. Traditionally Baltic ports were connected to this trade via feeder services using relatively small ships from hub ports such as Hamburg and Rotterdam. However, this changed as shipping lines began to add Baltic ports to their deep sea rotations making them direct calls and reducing the demand for feeder services.

As shipping lines deploy their largest ships on this trade, the size limitations of the Kiel Canal forced them to avoid the canal and sail around the Jutland Peninsula.

Looking specifically at the Polish port of Gdansk on the Baltic Sea, the largest ship serviced in 2009 was an 8,100 TEU Maersk S-Class, in 2015 it was a 15,500 TEU Maersk E-Class and by 2017 it was a 21,413 TEU OOCL G Class all of which were deployed on the Far East to North Europe trade.

Key Terms

- Air draft
- Beam overall (BOA)
- Canal
- Deep sea
- Direct call
- Draft (draught)
- Feeder ship
- International waterway
- Kiel Canal
- Knots (kn)
- Length overall (LOA)
- Lock
- Nautical mile (nm)
- Port call
- Rotation
- Voyage

Glossary

Air draft

The distance from the waterline to the highest point on a ship

Beam overall (BOA)

The width of a ship at its widest point

BOA (beam overall)

The width of a ship at its widest point

Canal

Man-made waterway allowing ships or barges to sail inland or to connect two bodies of water

Deep sea

Cargo shipped by sea across an ocean, e.g. Pacific, Atlantic or Indian oceans - deep sea vessels are typically large in size to achieve economies of scale

Direct call

The movement of cargo from its port of origin to its final port of destination by means of a single ship without the use of transshipment

Draft (draught)

The distance from the waterline to the lowest point on a ship's hull

Draught (draft)

The distance from the waterline to the lowest point on a ship's hull

Feeder ship

Use of a relatively small container ship to transport a container between an import/export port and a transshipment terminal to connect with a larger container ship

International waterway

A channel, river or canal that acts as a boundary between two or more nations or is subject to an international treaty which provides ships of any country the right of passage

Kiel Canal

International waterway in northern Germany linking the North Sea to the Baltic Sea providing an alternative route to sailing around the Jutland Peninsula

Kn (knots)

Unit of measure for ship speed, one knot is equivalent to one nautical mile (1.852 kilometre or 1.151 miles) per hour

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Length overall (LOA)

The length of a ship when measured parallel to the waterline

LOA (length overall)

The length of a ship when measured parallel to the waterline

Nautical mile (nm)

Measures distance at sea – 1 nautical mile is equal to one minute of latitude at the equator or 1,852m (1.1508 miles)

NM (nautical mile)

Measures distance at sea – 1 nautical mile is equal to one minute of latitude at the equator or 1,852m (1.1508 miles)

Port call

When a ship berths and spends time at a port

Rotation

A planned itinerary of a container ship making a series of port calls starting and ending at the same port

Voyage

A series of port calls within a rotation which are marketed by a shipping line to shippers – each voyage is given a unique voyage referencing number