A Timeline of Transportation

Movement in space
Movement by air (human power)
Movement by land (animal power)
Movement by water (machine power)
Movement by water (human power)

3000 BC

domestication of pack animals
oxen, yaks, donkeys, asses, dogs

mesopotamia
invention of the wheel

egypt, mesopotamia, and china
creation of early roads

sumerian
introduction of two-wheeled chariots pulled by oxen

introduction of the four-wheeled cart

egyptians
use of oar propelled river boats

egyptians
introduction of the square sail
used as a supplement to the oar

egyptians
use of sea navigation
Navigation facilitated voyages to Crete and Phoenicia, and later trade journeys to the eastern coast of Africa.

2000 BC

introduction of the spoked wheel and mule and horse-drawn carriages
introduction of bronze spokes
enhanced speed, necessitated better roads
chariot introduced to egypt from syria

Chinese Junk

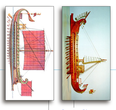
Chinese Bulkhead Construction

1000 BC

persian empire
introduction of the four-poled chariot drawn by eight horses
incorporated spinning blades on the wheels used in slashing enemy infantry

persian empire
creation of the first imperial road system
instituted by darius the great (521-486 BC)

Northern European Clinker Construction
Mediterranean Carvel Construction



Roman Birreme

Roman Trireme

1000 AD

Roman Plaustrum Wagon

roman empire
introduction of a comprehensive paved network of roads
utilized a drained sub-base paved with tight-fitting flat rocks
creation of the first postal service (cursus publicus)

celts
invention of the pivoting front axle
Celtic Wagon

arabia
introduction of the lateen sail

Period of Minimal Land Transportation Development
greater dependence on saddle horse transportation

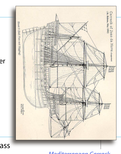
Movement during the Middle Ages (roughly 1000 AD to 1400 AD) was dominated by the Crusades, the ascendancy of medieval religion, subsequent construction to facilitate religious travel, and the positioning of powerful institutions (the Roman Catholic Church, the Nestorian, Liegaic, and the Venetian empire).

1200 AD

improvements in animal harnessing
introduction of the suspended carriage

mediterranean
introduction of the two-masted ship
Venetian Buss

england
invention of the fore- and after-castles



introduction of the rudder

1300 AD

invention of the compass

Mediterranean Carrack

1400 AD

france
reintroduction of a national system of roads

british, dutch, and portuguese
introduction of the three-masted ship
combined lateen with square sails

lodestone used consistently

1500 AD

portugal
doubling of ship sizes and capacities
first school of oceanic navigation
laws of cabotage enacted

Journeys of Da Gama, Drake, Cabot, Columbus, Frobisher, and Raleigh

Dutch Fluyt
Spanish Galleon

Begin:
Age of Expansive Sail and Exploration
Development of **Global Trade**

Major trading nations come to dominate ship design and construction.

Naval warfare erupts as a result of Dutch and English trade competition.

Naval Convoy
Venetian Cog

East Indiamen

1600 AD

english east india company
english shipping doubles

1700 AD

introduction of the triangular headsail

British iron as dominant machine power

1750 AD

france
military requirements lead to a revival of governmental road building

utilized both steam power and auxiliary animal movement

most of the world's shorelines are charted
extensive webbed canal system in england and wales

first submarine
propelled by hand crank
Turtle

britain, france, and the united states
first steamboats tested
propelled by paddlewheels
Pyroscaphe

Charlotte Dundas
Amerikas Clippers

1800 AD

innovations in ship building fully utilized
east india company's monopoly in britain's china trade is abolished
first unqualifiedly successful steamboat trial
commercial services begin
first ocean voyage by steamboat
Savannah
beginning of the **atlantic ferry**
Royal William
Great Western
Sirius
Britannia
Acadia
Columbia
Great Britain
Baltic
Pacific
Arctic
Atlantic
Europa
Cunard line subsidized by mail contracts
invention of the screw-propeller
Great Eastern
– iron hulled, propeller, paddle and sail driven

great western steamship company
first all-iron hulled steamer
erie canal formed

first diesel-electric locomotive

Period of fierce competition on the North Atlantic passenger run