

# ships and shipbuilding

The Middle Ages, 2003

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The use of ships for the movement of people and goods was central to the economic life of the Middle Ages. Water transport was the fastest method of transportation available since the poor network of roads greatly hindered long-distance travel on land. As the Middle Ages progressed, shipbuilding was transformed from a purely local industry, practiced by skilled individual boatwrights, to a busy industry controlled by guilds and merchant companies. Great shipbuilding centers developed in important port cities, including London, Marseilles, Copenhagen, Amsterdam, Rouen, Nantes, Genoa, Venice, and Barcelona.

Various simple ship types were in use from Roman times in northern Europe and the British Isles. The punt was a long squarish vessel used for cargo transport or as a river ferry. The curragh was a long rounded boat built of wooden ribs, wicker, and waterproof animal hides, and it floated easily on rough open seas. The cog was one of the most common ships during the early Middle Ages. The first cogs were flat-bottomed boats, useful for traveling on rivers and canals as well as for easy beaching along the seacoast. A cog was built by nailing straight planks to a skeleton of cross ribs. The side planks rose high above the water, allowing the cog to carry a large volume of cargo. A single mainsail was raised on a mast, placed about half-way down the cog's length.

In the Mediterranean Sea, the most common ship of the early Middle Ages was the rowed galley, a ship that originated with the great military and commercial fleets of the Roman Empire. After the empire's fall, the galley gradually changed, as Mediterranean shipbuilders came into contact with Arab ships that depended on sail power. A hybrid ship was developed that used oars as well as sails, rigged either perpendicular to the hull or as "fore and aft" sails, rigged parallel to the hull, making the ship more maneuverable. This ship type was most useful for pirating expeditions, carried out by Europeans as well as Arabs, that were common throughout the Middle Ages and made the Mediterranean a very dangerous place to venture.

The most effective warship of the Middle Ages, however, was the Viking longship, which first made its appearance in Britain and the continent of Europe during the eighth century. These fast and durable boats were built for rough open seas, but their relatively shallow bottoms made it easy for their crews to draw them up on beaches during a surprise attack or penetrate inland along shallow rivers. A large rectangular sail rose on the ship's mast, which could be lowered when the ship left the open sea. The Viking ship carried at its bow the figure of a monster or dragon, carved to strike terror into those unfortunate enough to be caught by a sudden attack from the sea. In these vessels, the Northmen could survive for weeks on the open seas, undertake an entire season of raiding on the continent, or journey as far as Iceland, Greenland, and the distant coasts of North America.

After the era of Viking raids ended during the tenth century, European shipbuilders adapted design features of the longships to their own vessels. During the twelfth century a central keel

was added to the cog, allowing it more stability in open seas. Cogs grew longer, and their carrying capacity increased; the addition of a rudder during the twelfth century made them easier to handle and maneuver. By this time, the cog had attained its leading role as the basic cargo vessel in use throughout northern Europe; in addition, the cog was used as a warship, which carried large companies of archers and spearmen to fight from raised platforms in the bow and stern.

By the fifteenth century a new method of rigging sails to ships had come into use. The “full-rigged” or “square-rigged” ship carried three masts, with square or rectangular sails placed on the foremast and mainmast and a triangular sail rigged to the mizzenmast (stern). This system allowed ships greater speed and easier handling; it also allowed them to sail more closely to oncoming winds, if necessary. The ships of this time were built on larger, sturdier frames, with their builders no longer using the closely fitted planks that made up the basic framework of earlier cogs and longships. This new design originated in Mediterranean ports and was gradually adopted by northern shipbuilders through the fifteenth century. Square-rigged ships, with their sturdier frames, were safer for long-distance sailing and made possible the great voyages of discovery that began at the end of the Middle Ages.

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