subsequently of Colbert, had been devoting themselves to colonial enterprises both across the Atlantic and in distant India, to the eventual important increase of French shipping, whilst on the other hand Spanish shipping was declining. As the result of the Navigation Act and its successful maintenance a great increase had taken place in English tonnage, which in 1688 was said to he nearly double that of 1666. In the war with France this increase was greatly in favour of her privateers, which in two years are stated to have captured 3000 British ships as against but 67 which were taken from France, a result in part attributable to her employment of Dutch vessels. About this time Inverness, long devoted to shipbuilding, had obtained a high reputation for its ships.

In 1701 England’s private shipping numbered 3281 vessels, of a total burthen of 261,222 tons and carrying 5660 guns, London leading with 560 ships of 84,882 tons, Bristol coming next with 165 of 17,338 tons, Liverpool being seventh on the list with 102 ships. Thirty years later London’s ships had increased to 1417, ranging from 15 tons to a great ship of 750 tons owned by the South Sea Company, but the majority measured less than 200 tons. In 1765 we read that the Dutch, Danish and Swedish ships were generally larger than the English vessels and that they had succeeded in ousting England as the carrier of Lisbon’s Mediterranean trade. In 1714 an act was passed, and at subsequent dates revived, offering public rewards for improved methods of ascertaining longitude at sea, and John Harrison (“ that heaven taught artist” ) received in all £20,000 for the invention of a chronometer which was successful to a degree of accuracy beyond that for which the act provided. Towards the second half of the 18th century the foundations were laid of the present great shipping industry on the Great Lakes. Oak timber of large size was now becoming scarce in England, and in the interests of the navy restrictions were placed upon the East India Company as regards its use. British merchant shipping, too, had apparently outgrown the supply of seamen, for towards the close of the century it was permitted to British vessels to carry foreign seamen to the extent of three-fourths of the crew. The traffic in African negroes gave much employment to British shipping. The war with America led to the harrying of British commerce by American privateers cruising off the English coasts. War premiums were very high and the insurance obtainable was insufficient. Partly on this account and partly owing to the fact that about 1000 British vessels had been taken up for transport and other public services, whilst many more were sailed as privateers, the Thames was now full of foreign vessels loading British cargoes. During the absence from the West Indies of the British fleet under Admiral Byron, engaged in conveying homewards the West Indian merchantmen, two valuable British islands were captured by the French. The hostilities of the rival states were being fought out at sea, with peaceful commerce as their objective. The seas swarmed with privateers, armed and equipped as sordid specu- lative enterprises, occasional rich prizes stimulating the greed of many citizens, not a few of them, no doubt, the owners of ships and merchandise which had in like manner fallen to the enemy. The French privateer “ Bordelais,” captured by the English in 1799, is reported to have taken in four years 164 prizes, of the net value of £1,000,000 sterling (Mahan). Between May 1756 and July 1757 a total of 772 French vessels was captured by the British, whilst 637 British ships were taken by the French. It was declared in the House of Lords in February 1778 that the value of the British captures of American vessels had amounted to £1,808,000, against which that of British shipping captured by America had been £1,800,000. Towards the close of the prolonged hostilities which concluded in 1815 Liverpool and Glasgow were holding public meetings and urging upon the admiralty and the throne that they were being ruined by the want of protection to their shipping. In 1786 an act was passed (26 Geo. III. c. 86) for the encouragement of shipping, in which the personal liability of shipowners, till then unlimited, was in certain cases of their loss of cargo now limited to the value of the vessel and her freight, the first of progressive acts of the like nature. Smuggling was for long the cause of serious loss to the national revenue, and an act was passed declaring forfeited any British sloops or cutters found within four leagues of the coast if provided with a bowsprit exceeding two-thirds of the vessel in length (27 Geo. III. c. 32).

In 1797 the English and Scottish private vessels numbered together 12,995 of 1,385,252 tons burthen. With respect to tonnage, in the days of wooden vessels the weight of cargo which a ship was capable of carrying was about equivalent to her own displacement or breaking-up weight. Nowadays, owing to steel construction and the adoption of a fuller cross-section in ship designing, the carrying capacity of a cargo steamer is reported to be about double, or even more than double, the ship’s own weight; hut types of steamers of course vary. The Board of Trade ton is 100 cub. ft., purely a measure of permanently covered-in space, and not to be confounded with the ship’s capacity to carry dead-weight, of which capacity the registered tonnage is consequently not to be regarded as an index. For the purpose of a rough and ready calculation, however, the dead-weight carrying capacity of an average cargo steamer may be taken to be about twice that of her net registered tonnage or a little more. The chief object of fixing and registering the gross and net tonnage is the establishment of a basis of assessment for tonnage dues and for liability for payment of damages caused by wrongful navigation or otherwise. The present diversity in the designs of steamships is in no small degree due to a desire on the part of shipowners to possess vessels which with a minimum of registered tonnage shall provide a maximum of cargo space.

The close of the 18th century was marked, especially in America, by attention to the possibilities of steam navigation. A new era in shipping had dawned, and year by year and step by step, from river craft to short-voyage vessels, the new motive power gained ground. In 1833 the Canadian vessel “ Royal William” steamed throughout from Quebec to London, making the voyage in seventeen days, and in 1838 the “ Great Western ” and the “ Sirius ” arrived on the same day at New York, having crossed the Atlantic in eighteen days and fifteen days respectively (Pollock). In 1840 was founded the celebrated Cunard Steamship Company, the nucleus of its fleet being four wooden paddle steamers, also equipped as sailing vessels. Each was about 206 ft. in length and of about 1145 tons burthen. At the beginning of the 19th century American shipowners had laid themselves out to obtain command of the Atlantic trade, from which the British Naviga- tion Act did not debar them. With this aim, ships of great sailing power and carrying capacity were constructed, being provided in addition with ingenious labour-saving devices which materially enhanced their economy in working. Successful in their attempts on the Atlantic trade, the Americans now set themselves to gain predominance in the trade with China, for which they provided vessels of unexampled speed. But British owners, put upon their mettle, eventually succeeded in designing a class of sailing ship superior to any yet constructed, while the advantages of steam navigation were now proving fatal to American sailing vessels in the Atlantic (Cornewall-Jones). The use of steam was becoming general, to the gradual displacement of sailing vessels, though the Australian trade for some considerable time continued to be carried on by sailing ships of wide renown. The opening of the Suez Canal and the provision of coaling stations on the long sea routes eventually, however, placed the hulk of the Australasian carrying trade in the hands of the steamship owners, the principal employment for large sailing vessels now being in the Pacific trade. Probably in great part on account of the cost and difficulty of fuel supplies, the Californian wheat trade, and the guano and the nitrate trades of the South Pacific, are thus still competed for by sailing vessels, some of them of remarkable capacity. For some years the possibilities of iron in shipbuilding had been slowly gaining recognition, to the eventual displacement in Great Britain, though not in the United States, of wooden hulls. Partly as the result of the war between the Northern and Southern states and partly