to in a register book of the date 1781, but there are evidences that in 1768 repairs were superintended by officers of the society. In 1799 surveyors were stationed at twenty-four ports in the United Kingdom. In 1822 the register for the first time recorded a steamship. In 1824 appeared the first “ Instructions to Surveyors ” as to the carrying out the rules for classification; and in 1834, on the establishment of the present society, precise regulations were issued regarding the survey of steamers. An iron ship was built under survey and received a class in 1837, while the first rules for the construction of iron ships were issued in 1855. ln 1851 a composite vessel was classed, but it was not until 1867 that rules for the construction of such vessels were issued. Steel was accepted in 1867, experimentally, steel being then made by the Bessemer process. Steel by the Siemens-Martin process was first used for two small steamers in 1877. Engineer surveyors were first appointed in 1874. The society is voluntarily maintained by the shipping community. Its affairs are managed by a committee of sixty-one members—com- posed of merchants, shipowners and underwriters—elected to represent the important shipping centres of the country, and there are branch committees at Liverpool and Glasgow. In technical matters affecting the rules for the construction of ships and machinery the committee has the advantage of the co-operation of a body of representatives of prominent shipbuilders, engineers, steelmakers and forgemasters, who are specially elected by the leading technical institutions of Great Britain. The society’s rules for steel ships were entirely revised so recently as 1909. The society has a total staff, at home and abroad, of 310 surveyors, of whom 232 are its exclusive servants.

In the case of a new vessel intended for classification, the plans for its construction are in the first place submitted to and approved by the committee; the building proceeds under the supervision of the local surveyor, and when completed, a *character* is assigned to the vessel by the committee upon that surveyor’s report. The society issues annually to its subscribers a register book containing particulars of classification of vessels to which classes have been assigned, together with many other details. All merchant vessels in the world of 100 tons and upwards, excluding those trading on the Caspian Sea, and wooden vessels on the Great Lakes of North America, are included in the work. This register contains particulars of the age, build, tonnage, dimensions, ownership, &c., of some 30,000 vessels. The society also publishes yearly a register of yachts, containing full particulars of the yachts of the world and other interesting information, and a register of American yachts, which gives similar particulars of all American and Canadian yachts.

All the public proving establishments in the United Kingdom for the testing of anchors and chain cables are licensed by the Board of Trade to carry out these tests under the control of the committee of Lloyd’s Register. The assignment of freeboards of vessels, the survey of refrigerating machinery, electric light installation, &c., all come within the scope of the society’s operations.

The *Bureau Veritas* was founded in Antwerp in 1828, one of its principal aims being to make known to underwriters the qualities and defects of ships frequenting Dutch and Belgian ports. In 1832 the headquarters were moved to Paris, and in due time its influence spread to all countries where shipowning or shipbuilding existed; it is now represented in over 250 districts comprising about 15∞ ports. In 1851 rules were drawn up for the construction of wood ships, and about 1867 for iron. Rules for steel came later, and also rules for the construction of machinery, and, as circumstances arose, provision was made for special types, such as oil-tank vessels, turret vessels, dredgers, &c., as well as for the testing of materials. These rules have been revised from time to time and recently have been remodelled and extended, so as to apply to vessels up to about 900 ft. in length. Special rules have been issued for vessels intended for navigation in inland waters, for yachts and for motor boats. A staff of surveyors formed part of the organization from the be­ginning; and in the earlier days the professional experience of the surveyors was the only guide as to what was necessary and sufficient. With the lapse of time, and with increased variety of construction and complication of interests, something more than individual judgment and experience became necessary, and with the Bureau Veritas, as with Lloyd's and other similar societies, definite rules were introduced, and by their means a greater uniformity of practice was attempted and secured.

The *British Corporation* was founded in 1890, and obtained its charter under the Merchant Shipping Acts for the assignment of freeboards; its first rules were issued in 1893. Its inception was due to the enterprise and influence of a number of leading shipowners, shipbuilders and engineers throughout the country, and more particularly in Glasgow and the West of Scotland, the first aim of the founders being to provide an independent society, thoroughly capable of dealing with the complicated questions which were likely to arise under the Load Line Act then coming into operation. The Liverpool Registry, which had once been independent, had been absorbed into Lloyd’s Register some years before, and it was thought that the enormous shipbuilding interests of the country demanded the existence of a society whose friendly rivalry with the great society of Lloyd’s Register would have a beneficial influence on the shipbuilding of the country. Owing to the comparative absence of small vessels the relatively small number of the vessels on the register represents 2,331,000 tons. The society is controlled by a committee of forty members—shipowners, shipbuilders and under­writers—and, in addition, there is a branch committee in ltaly. There is a staff of 135 surveyors distributed over the principal home and foreign ports.

The *Norske Veritas* was established in 1864 by the various marine insurance clubs of Norway. Previously each club had its own separate staff of surveyors, on whose report to their club depended the class of the vessel and the premium to be paid. As ships rose in value and reinsurance became the rule, something had to be done for mutual protection. By the establishment of the *Norske Veritas* one uniform system of classing and valuing was substituted for the older methods. ln the matter of rules this society kept pace with the changes of the mercantile marine; it provided, as the occasion required, for the introduction of iron and steel in place of wood, and of steam in place of sails.

The *Germanischer Lloyd* was established in 1867, and reorganized as a joint-stock company in 1889. Its functions are carried out by officers at the central office in Berlin, assisted by a staff of 50 ship and engine surveyors in Germany and 120 at the principal foreign ports, the latter under control of agents, who are mostly consuls. “ In all foreign parts in which the *Germanischer Lloyd bas* no representative, the German consuls are required by order of their government to exercise the functions of an agent of the *Germanischer Lloyd.”*

The *Registro Nazionale Italiano* was formed in 1910 to take over the Registro Italiano, which was founded in 1861. The society has adopted the rules of the British Corporation Registry, has a staff of surveyors in Italy, and has an arrangement with the British Corporation which enables them to utilize the services of the surveyors to that society in British and foreign ports.

The *Record of American and Foreign Shipping* was established in 1867 by the American Shipmasters' Association (now called the *American Bureau of Shipping),* and is the standard American authority. Its rules for the construction and classification of vessels, as published in 1889 and amended in 1900, received the approval of the U.S. Navy Department and of the several boards of American underwriters. It has agents and surveyors in many of the principal ports of the world.

The present rules and tables of most of the above societies apply to construction in steel. If iron is to be used in the construction of vessels, the material must be increased in thickness from 10% to 25 %, dependent upon the part for which it is to be used and the quality of the iron. In some cases separate tables for steel and iron accompany the rules, and in a few cases the societies provide rules for construction in wood. The latest rules of *Lloyd's Register* provide only for steel ships, but vessels of wood and iron are still classed.

The highest class assigned, upon completion of a ship by the societies referred to, is as follows :—

Lloyd’s ∣∣⅛ 100A I fr∣^L.M.C

Bureau Veritas .... 3/3L I.I.

British Corporation . B.S. M.B.S.

Norske Veritas .... **∣J(** 1A1 1 **∣J∣** M & K.V.

Germanischer Lloyd . **∣∣( 100 A** ⅛⅛ M.C

Record of Amer. Shipping A1 M.C.

The star or cross in each case denotes special survey. In *Lloyd's Register* 100A refers to conformity of scantlings with the tables; the figure I, to the efficient state of the equipment, including anchors and cables; L.M.C. denotes Lloyd’s Machinery Certificate. In the *Bureau Veritas* the large I expresses first division of classification (out of three) ; [the two rings around the I denote that the ship is divided into a sufficient number of water-tight compartments to enable her to float in still water with any two of them in free communication with the sea. Very few ships in the register have the double ring, but some have a single ring denoting power to float in still water with any one compartment in free communication with the sea; 3/3 expresses completeness and efficiency of hull and machinery; the letter following 3/3 indicates the navigation for which the vessel is intended; the first 1, that the wood portions of the hull are entirely satisfactory; while the second 1 has the same significance in respect to the equipment of masts, spars, rigging, anchors, chains and boats. In the *British Corporation Register,* B.S. signifies conformity with all requirements, these letters standing for British Standard; M.B.S. signifies that the machinery also conforms. In the *Norske Veritas* 1A1 denotes compliance with rule requirements as regards the hull. M & K.V. signifies that the vessel has a Norske Veritas certificate for engines and boilers. The third figure 1 denotes the efficient state of the equipment. In the *Germanischer Lloyd* the mark 100 A signifies that the ship which bears it is, including her equipment, up to the requirements of the highest class of the society. The figure 4 signifies that the class is to be regularly renewed after special surveys held in periods of four years each. M.C. signifies