

THE PADDLE STEAMSHIP "BRITANNIA": THE FIRST ATLANTIC ROYAL MAIL STEAMER.
1,154 tons, 740 horse-power. Built in 1840.

THE EVOLUTION OF THE ATLANTIC GREYHOUND.

BY ERNEST C. PULBROOK.

THE Ocean Greyhounds at all times exercise a considerable fascination over the landsman, but never probably have they loomed more important in the public eye than during the past few months, when the world's attention has been riveted by the amazing "deal" in trans-Atlantic boats that has recently been effected by some American financiers.

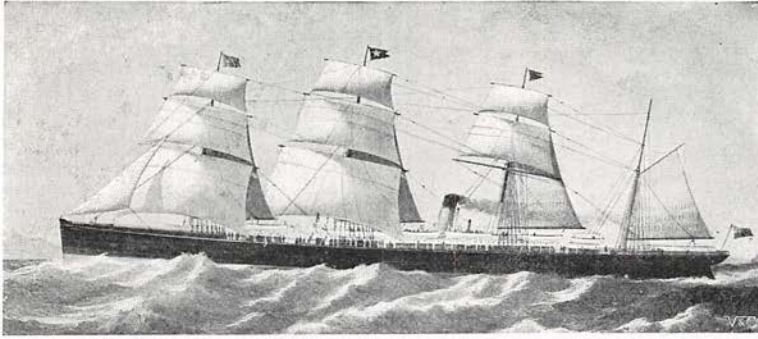
The evolution of these vessels is one of the most striking exemplifications of the tremendous march of progress in modern times.

Perhaps one of the chief characteristics of this beginning of the twentieth century is the way in which speed in any shape or form is almost worshipped. We do everything with feverish haste, and it is this, the doctors tell us, which produces that nerve-trouble from which most of us suffer at some time or another.

Now that Americans are interesting themselves so much in British industrial enterprises, they choose the fastest vessel for their voyages, so that they may keep a controlling hand on both branches of their businesses without loss of time. Undoubtedly the greatest advance in shipbuilding within recent years has been the phenomenal increase of the speed of all ships. If anyone had prophesied a few years ago that in this year of grace nineteen hundred and two, ships capable of steaming 35 knots or more an hour would be

launched, he would most probably have been laughed at for his trouble. When the torpedo boat destroyer class was started with the launching of the *Havock* and *Hornet*, Messrs. Yarrow and Thornycroft stated in the pages of a monthly magazine that it was improbable that their speed of 27 knots an hour would be improved upon—at least, not for some years. But this prediction of experts was soon falsified, as a few months later Messrs. Yarrow built the *Sokol* for the Russian Government, which had a speed of 30 knots an hour. Ignoring the question of the speed of warships of every kind (although it must not be forgotten that it was the great mercantile passenger lines which first showed the Admiralty how fast a ship could steam), let us glance back a few years and trace this gradual growth of speed, which was primarily brought about by the desire of travellers to cross to America in the shortest possible space of time, and the consequent rivalry of different trans-Atlantic steamship companies to possess the fastest vessels, in order to secure the most traffic.

The old, slow-going paddle-boats had been long in use for carrying mails and passengers to the Mediterranean before any steamer made a voyage across the Atlantic. The first steamer for which this distinction has been claimed is the *Rising Sun*, which was built by Lord Cochrane, and is said to have



THE OLD "OCEANIC": WHITE STAR LINE.
Single screw steamer; 3,807 tons, 3,500 horse-power. Built 1871.

made her trip in 1818, but the vessel authoritatively credited with this achievement is the New York clipper *Savannah*. She was a sailing packet, built for the service between that port and Havre, but while on the stocks she attracted the attention of Captain Rogers, who had a good deal to do with the small steamers which had been in use on inland waters for some time. On the captain's advice, a firm of Savannah shipowners bought her, had engines put into her, and named her after their own port. She first sailed from New York to Savannah, and left that port for Europe, where she arrived in July, 1819. When off the coast of Ireland she was sighted by an admiral of the Channel Fleet, who took her to be a ship on fire, and was much astonished when one of his swiftest vessels failed to overhaul her, although she appeared to be drifting under bare poles at the time. It is said that, according to entries in her log, the *Savannah* made the run in twenty-nine days eleven hours, but only used her paddles for eighty hours during the whole of that time. Other accounts state variously that the voyage took thirty-five days and twenty-five days, so that it is difficult to arrive at the truth. The paddles were so constructed that they could be unshipped when not in use—in fact, the engines were afterwards taken out, and she used her sails alone.

The next steamship to cross the

Atlantic was the *Royal William*, launched at Quebec in April, 1833, at which ceremony the Governor - General of Canada and other important officials were present. She was of 1,370 tons register, 176 feet long, and had accommodation for sixty passengers. She arrived at Gravesend in September of the same year, and was afterwards sold to the Spanish Government. She can thus probably claim to be the first steam warship.

By this time England began to wake up to the possibilities of the new force, and in 1836 two companies were formed for building large steamships for the Atlantic traffic, one being in London and the other in Bristol. The London boat was named the *British Queen*. Her dimensions were: length, 275 feet; beam, 37½ feet; 2,400 tons burthen; horse-power, 700; while her paddle-wheels were 30 feet in diameter, and she could carry three hundred passengers. Brunel designed the Bristol-built *Great Western*, whose dimensions were very similar to those of the *British Queen*. Unfortunately for the latter vessel, the contractors for the engines failed to supply them in time, so the company chartered the *Sirius* instead, although she was a much smaller vessel. The *Sirius* left Queenstown on April 4, 1838, arriving in New York after a stormy

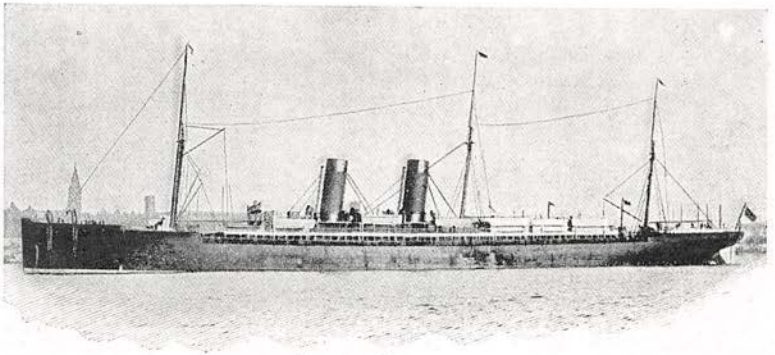


R.M.S. "SARMATIAN": ALLAN LINE.
Selected to convey H.R.H. Princess Louise and the Marquis of Lorne and suite to Canada, November, 1878.

voyage in the incredibly short time of about eighteen days. The *Great Western* left Bristol on April 8, and arrived on April 23.

These results of private enterprise attracted the tardy attention of the Government, who issued a circular in 1838, inviting tenders for the carriage of mails by steamships. This fell into the hands of Samuel Cunard, a Quaker, of Halifax, Nova Scotia, who at once saw there was money in it. Coming to England, he made the acquaintance of the late Sir G. Burns and Mr. David MacIver, and managed to make them see the feasibility of the scheme. Accordingly, the far-famed Cunard Company was formed, with a capital of £200,000, and having secured the mail contract, the first four steamers—the *Britannia*, *Acadia*, *Caledonia*, and *Columbia*—were built; they were all wooden paddle-wheel steamers, constructed on the Clyde. The dimensions of the first-named (though all four were practically sister ships) were: length, 207 feet; beam, 34 feet 4 inches; depth, 24 feet 4 inches; tonnage, 1,154; cargo capacity, 225 tons, with accommodation for one hundred and fifteen passengers. Though the *Britannia* was the first record-breaker, she could only boast the very moderate speed of $8\frac{1}{2}$ knots an hour, burning thirty-eight tons of coal per diem to keep this up. It is worth while remembering that the *Scotia* was the last Cunard liner to be fitted with paddles; when she was afterwards sold out of the service, she was converted into a screw steamer, and was employed in laying submarine cables. Even nowadays she may often be seen in the Thames, when not engaged in telegraph work.

So popular did the Cunard steamers become that soon more had to be built to keep pace with the traffic, and it was not long before America tried to obtain some of this lucrative trade. Accordingly the *Washington* was built, but in a race across the ocean with the *Britannia* she was beaten by two days. This only made the Americans the more determined, however, and in 1849 the Collins Line of American steamers started running. Being in receipt of a subsidy from the Government



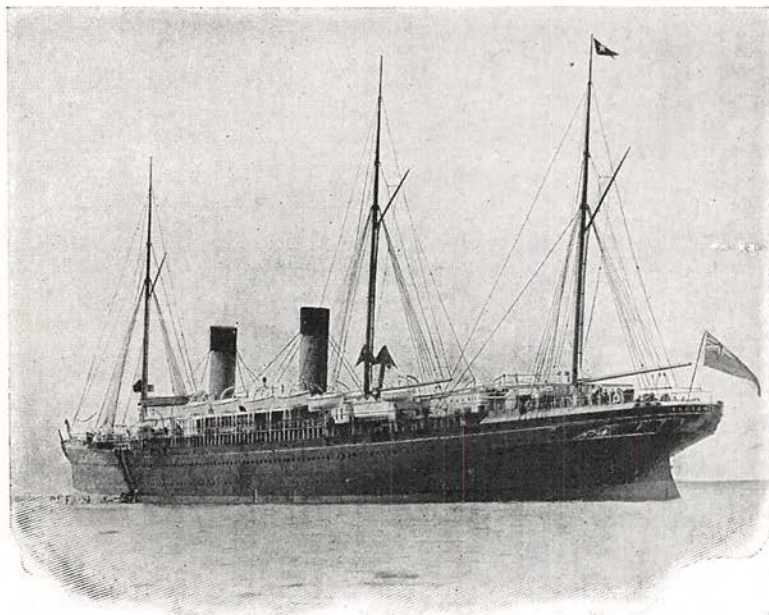
R.M.S. "UMBRIA": CUNARD LINE.

8,127 tons.

of the United States, the Line managed to beat the Cunard Company, although the latter company's steamers were still pronounced the most comfortable. The best-known Collins ships were the *Arctic*, *Baltic*, *Pacific*, and *Adriatic*; in the heyday of their success there came the wreck of the *Arctic*, followed by a series of other disasters, and while the Line was recovering from their effects two new Cunarders were launched. The new vessels completely outclassed the American ships, which finally ceased running in 1858.

In the meantime other lines had come into existence, and, as speed gradually increased, wood was slowly giving place to iron in the construction of the hulls of steamships, while screws were being used instead of paddles. The first company to build all its ships of iron was the old Inman Line; its ships now sail under the American flag, and the company is known as the American Line. The Inman Line was also the first company to carry steerage passengers by its better vessels. The steamers belonging to this line were all christened after a city, and one of its earliest ships, the *City of Brussels*, accomplished the phenomenally fast run for those days of 7 days 22 hours 3 minutes for the distance between New York and Queens-town.

Another famous old line is the Allan, which was started in 1852, and whose steamers sailed to Quebec. During the Crimean war these liners were used as transports by the Government, and in 1873-4, at the time of the first Ashanti expedition, the *Sarmatian* was chartered to convey troops to Cape Coast, which she did in the most speedy and satisfactory manner. When the Duke of Argyll (the Marquis of Lorne) sailed to Canada as Governor-General, he chose the *Sarmatian* to sail by, and the whole



H.M. MERCANTILE ARMED CRUISER, "TEUTONIC": WHITE STAR LINE.
10,000 tons, 18,000 horse-power. Built 1889.

saloon accommodation was placed at the disposal of his party. Messrs. Allan's steamship, the *Buenos Ayrean*, was also the first Atlantic liner constructed of steel, and this company introduced another innovation in shipbuilding when it adopted a flush covered-in deck in place of the old open one.

In 1869, when Mr. Ismay founded the Oceanic Steam Navigation Company, which was formed out of the old Australian "White Star" mail clipper line, the race for the Ocean Record began in earnest; and it is from that time that we may date the beginning of that increase in the speed of steamships which has been such a feature of the last two decades. The first vessel was the old *Oceanic*, which created a sensation when she entered the Mersey for the first time in 1871. She was built by Messrs. Harland and Wolff, of Belfast, who have constructed all the White Star liners, and made them famous for symmetry of outline on both sides of the Atlantic. She was 420 feet long, and of 3,807 tons; she soon showed her speed by reducing the passage from an average of nearly ten days to one of about eight and a half.

When the Inman Line found that travellers preferred the much greater comfort and better speed of the White Star boats, it determined to improve its service; accordingly, in 1874, the *City of Berlin* was

launched, which was larger in every way than the first *Oceanic*, and reduced the passage to 7 days 14 hours.

But the youthful blood of the White Star people was not going to give in without a struggle, and the Belfast firm was again commissioned to do its best. So the *Germanic* and *Britannic* were launched, with the result that, in 1877, the latter lowered their rival's record by three hours. It is interesting to note that these two vessels steamed still faster as they grew older; when

thoroughly overhauled and re-engined a few years ago, they were found to be as sound as ever, and though now over twenty years old, they still carry the mails and make the passage under seven days. The *Germanic* is to be withdrawn from the Atlantic service, to be employed in carrying mails in the Pacific between Vancouver and Australia.

While the Inman and White Star lines had been engaging in friendly rivalry, another competitor was preparing to enter the lists, and 1879 saw the *Arizona*—the "Greyhound of the Atlantic," for it was to this vessel that the term was first applied—belonging to the Guion Line, reduce the time by eight hours. This line was the first to use compound engines for propelling its steamers; but these were only of the two-cylinder type, and not the triple-expansion engines at present exclusively used, though the most modern of these latter type have four cylinders instead of three. Within the past few months the *Arizona* has been used as a transport in troop service between the United States and the Philippines.

The Cunard Company had been resting on its laurels for some time, till at length, finding so many formidable rivals, it was determined to restore its supremacy once again, so the *Servia* was built in 1881. This vessel was considerably longer than any other steamer sailing from the Mersey.

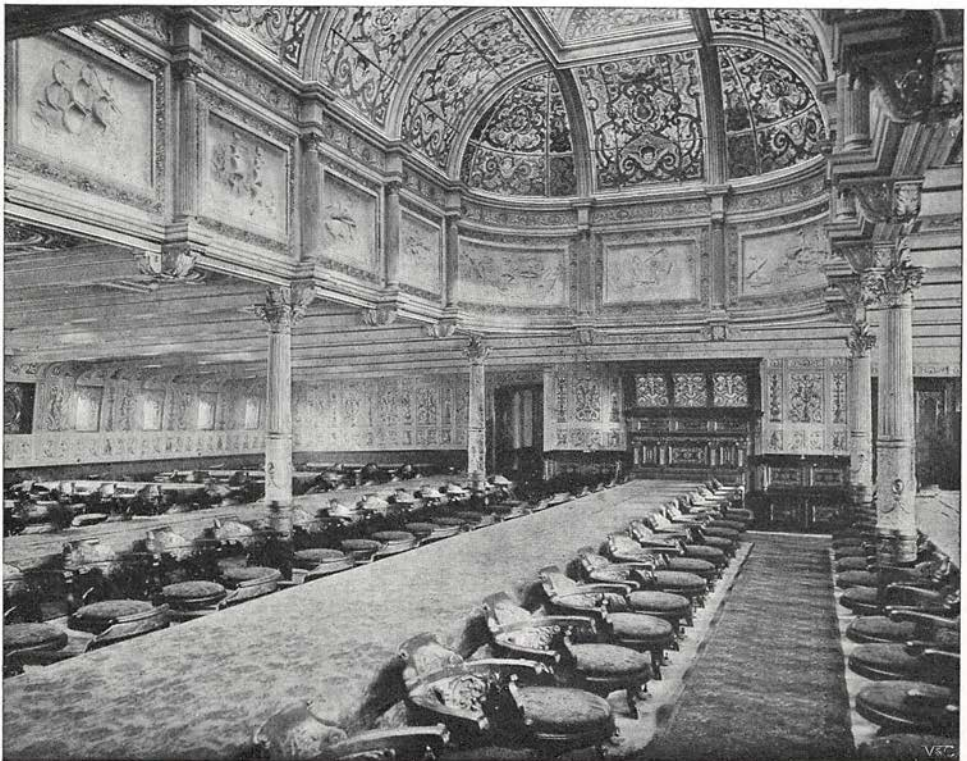
People were still talking of the *Servia* and were looking forward to her doing some great performance, when the Inman Line challenged her with a new *City of Rome* (the first vessel of this name was returned to the builders by the Company as being unsatisfactory), which reached a speed of twenty-one statute miles an hour on her trial trip; she was even larger than the Cunarder, and beat the latter's record by nearly three hours.

Hardly had the new liner settled down comfortably to work ere the Guion *Alaska* appeared and obtained the proud distinction of being the first vessel to bring America within seven days of Europe. Her fastest trip took 6 days 18 hours 37 minutes, against the *City of Rome's* 6 days 21 hours 4 minutes. Until a few weeks ago the *Alaska* served as a workmen's hotel in Messrs. Vickers, Maxim's yard at Barrow-in-Furness.

During these years of the early 'eighties the battle for the Blue Ribbon grew tremendously exciting, for one week one of the competing companies would manage to secure the record by a few hours, only to lose it the next by a few minutes. Thus the *Alaska* soon had to cede pride of place to the

America, of still another line—the National. Though somewhat smaller than her rivals, the *America* made the passage in 6 days 14 hours 18 minutes. However, the Cunard Company was having several new ships built, and the *Oregon*—transferred from the Guion flag—reduced the time by another 3 hours 27 minutes. Then in 1884 appeared the famous sisters, *Etruria* and *Umbria*. Though slightly smaller than the *City of Rome*, their engines were of the triple-expansion type, indicating 14,500 horse-power, with a boiler pressure of 110 pounds to the square inch. Steaming at between eighteen and nineteen knots an hour, the *Etruria* easily broke the record by eight hours, the time being 6 days 1 hour 50 minutes.

We are now coming to modern history, for these fine vessels maintained their position till the appearance of the two Inman liners, *City of Paris* and *City of New York*. These were built by Messrs. Thompson, and were guaranteed for a speed of at least twenty knots per hour. Though still larger than the Cunarders, the lines of these steamers are more beautiful than those of the older boats, while their construction



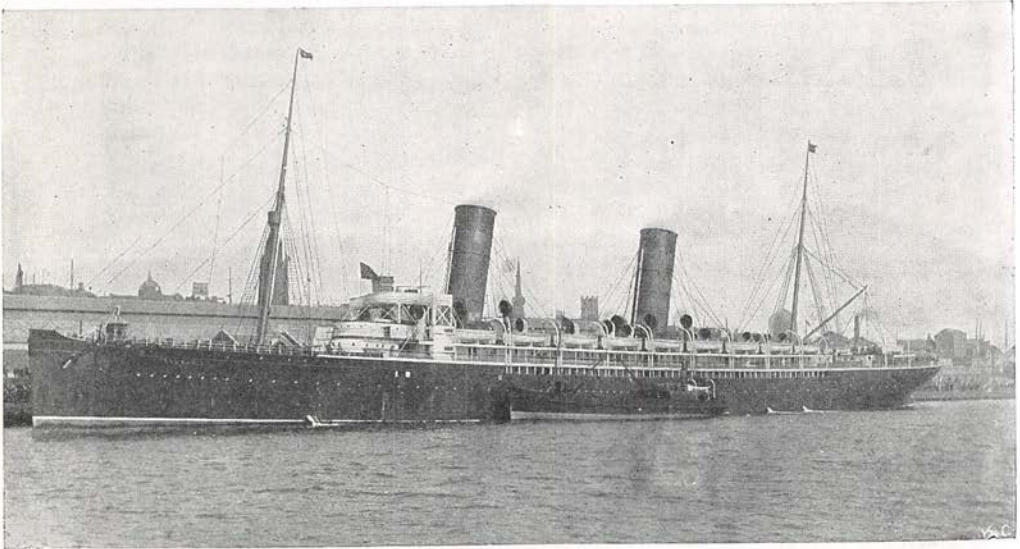
SALOON OF THE "TEUTONIC."

marked still another improvement in ship-building, they being the first Atlantic liners to be fitted with twin screws.

Almost identical in speed with the *City of Paris* are the two White Star sisters, *Teutonic* and *Majestic*, which held the record in 1891-2, a fact all the more remarkable as they are said to have been practically designed by their builders, Messrs. Harland and Wolff, of Belfast, so long ago as the early 'eighties. In one or two neck-and-neck races across the Atlantic with the *Paris* and *New York*—for the designation "City of" was dropped when the Inman Company became an American concern and sailed under American colours (the *Paris* is now known as the *Philadelphia*)—a few years ago, the British steamers again proved themselves

cruiser, with some of her guns mounted, may be seen on page 770. Again, in June, 1897, the owners withdrew her from the regular service, mounted her guns, put her Naval Reserve crew on board, and sent her to the Diamond Jubilee Review; she carried sixteen guns—eight four-inch quick-firers and eight smaller machine guns.

Up to the time that the Inman Line changed hands, in 1893, and was transferred to the American flag—at the same time altering the port of sailing from Liverpool to Southampton—no foreign company had seriously threatened British supremacy since the days of the Collins Line. The Hamburg-American Company's two fine steamers, *Fuerst Bismarck* and *Columbia*, it is true, held the record between Southampton and



THE CUNARD LINE: "CAMPANIA."

slightly superior in speed. Until the *Campania* and *Lucania* appeared, the *Teutonic* possessed the best day's running of any ship, it amounting to 483 knots, but since then the same ship has made 517 knots in the twenty-four hours. These vessels were specially built to Admiralty requirements, so that they can be used as armed cruisers, are of 18,000 horse-power, the machinery is placed below water-line, each can carry 1,000 cavalry with their horses, or 2,000 infantry, and can steam 10,730 miles in twenty-two days without re-coaling. The *Teutonic* was the centre of attraction at the great naval review held in the Solent in honour of the German Emperor in 1889, just before she started sailing regularly. An illustration of her as an armed

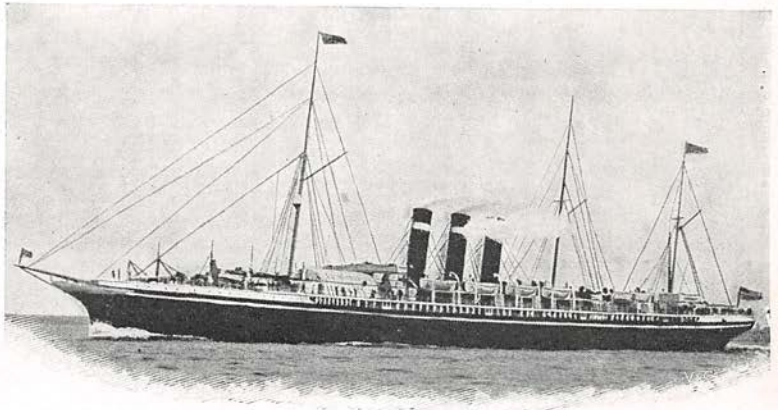
New York, but both these vessels were constructed in Britain, and when the *Paris* and *New York* sailed from the same port they left the German ships hopelessly behind.

But the American Line soon ordered new ships, and Messrs. William Cramp and Sons, of Philadelphia, constructed the *St. Louis* and *St. Paul*. The first plates of the *St. Paul* were laid in October, 1893, and she was launched eighteen months later. Her record passage from Southampton to New York took 6 days 31 minutes, showing an average speed of 21.08 knots an hour, while her sister ship, the *St. Louis*, has taken a slightly longer time.

These two steamers, and the *Paris* and *New York*, were used as armed cruisers during

the Spanish-American war, the names of the two latter being temporarily changed to *Yale* and *Harvard*.

Just as people began to think that finality had at length been reached came the announcement that the White Star Line had again commissioned Messrs. Harland and Wolff to construct a new passenger steamer for the American traffic. As her designers intended her to be an epoch-making ship, it was decided to give her a famous name, so the new leviathan perpetuates the designation of the first White Star liner—the *Oceanic*. But while all sorts of sensational rumours were afloat concerning the probable speed of the new vessel, and before she was even launched, another vessel had appeared, which proved herself even more speedy than the famous *Lucania*, and a ship not easy to beat. All this time German shipbuilders had been making gigantic strides, and one day newspaper readers were surprised to learn that the North German Lloyd Company, previously famous all the world over for the comfort of its ships, was going in for mammoth liners built with an eye to speed. First of all came the Australian liner of 10,000 tons, which was the largest passenger-ship that had ever sailed to the Antipodes, and then, a few weeks later, the *Kaiser Wilhelm der Grosse* entered Southampton Water in September,



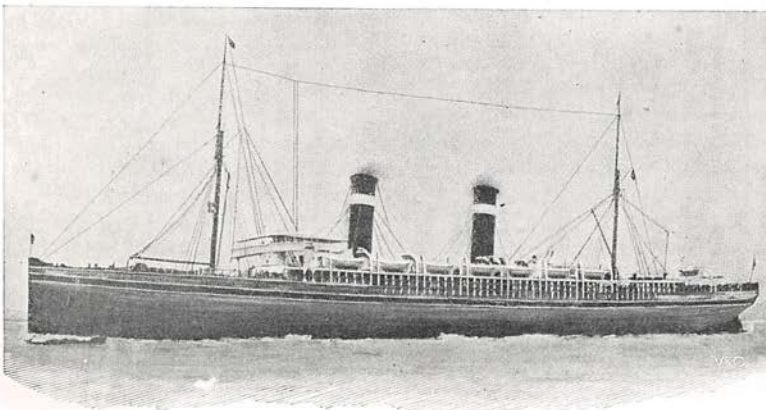
"NEW YORK": AMERICAN LINE.

1897, on her maiden voyage to New York. Her highest run for one day is 584 knots. She was built by the Vulcan Company at Stettin, and despite her large size she is as beautiful in appearance as she is fast in speed. Her length is 649 feet, her breadth 66 feet, her registered tonnage is 14,350, and her indicated horse-power 28,000.

To the North German Lloyd Company also belongs the credit of having first used triple-expansion engines on the big liners. But the firm of Wilson, of Hull, had placed a steamer of 3,709 tons on the Atlantic trade in 1884, the *Martello*, which was fitted with triple-expansion engines, so that this vessel was the real pioneer.

During the months that the German flyer was thus piling up records, Britons were anxiously waiting for the first voyage of the *Oceanic*, concerning the details of which so much secrecy had been maintained that all sorts of rumours were afloat. When her dimensions were first published, at the time

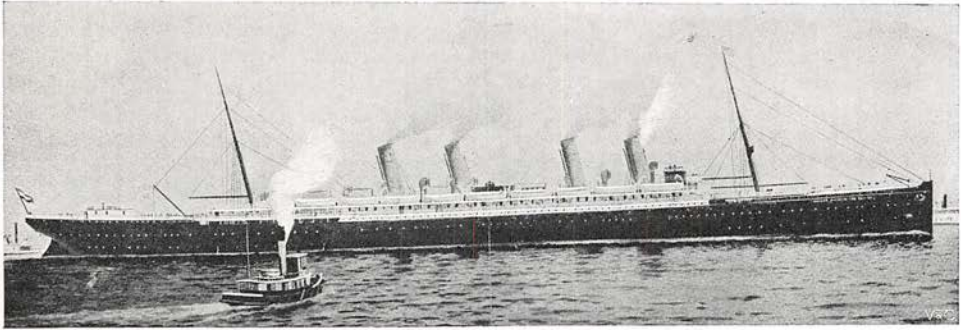
of her launch, on January 14, 1899, everyone was sure that the latest addition would break the record as easily as her namesake had done thirty years before. In vain did her owners state that she was built for the reliable speed of twenty knots an hour, and that there was no intention of making her a record-breaker. When



"ST. LOUIS": AMERICAN LINE.

the *Oceanic* appeared in the Mersey for the first time, on August 27 of the same year, she created as great a sensation as her namesake had done; so perfect were her lines that one failed to notice her huge size till some

cent White Star mail boat sails to and from America in just under six days. Now and again, just to show what she is made of, she indulges in a spurt; she has crossed to New York in 5 days 19 hours 40 minutes, her best



"KAISER WILHELM DER GROSSE": NORTH GERMAN LLOYD COMPANY.
14,350 tons, 28,000 horse-power. Built 1897.

other vessel passed her at close quarters. Then came her first voyage to New York, a day or two later. People eagerly scanned the newspapers in the hope that the *Kaiser Wilhelm der Grosse* would find that she could no longer call herself Queen of the Ocean. But alas! Messrs. Ismay's announcements with regard to speed were quite correct; the captain of the new liner had received orders not to push his vessel unduly, so she took over six days on her

day's run being 508 knots. Her best homeward passage took 5 days 20 hours 55 minutes. Her sister, the *Celtic*, is even bigger, but she is no flyer, merely a thoroughly reliable, comfortable vessel, which is also easily the largest liner afloat.

Another ship which has set the world talking in still more recent days is the Hamburg-American *Deutschland*, which is absolutely the fastest liner in the world, as everyone knows, for writers have said all

that there is to say about her. To bring this account of the evolution of the Atlantic greyhound up to date, it is necessary to mention her performances. In order to give some idea of the huge increase of horse-power necessary to give a slightly higher rate of speed, it may be said that the *Deutschland* is only about a knot faster than the *Kaiser Wilhelm der*

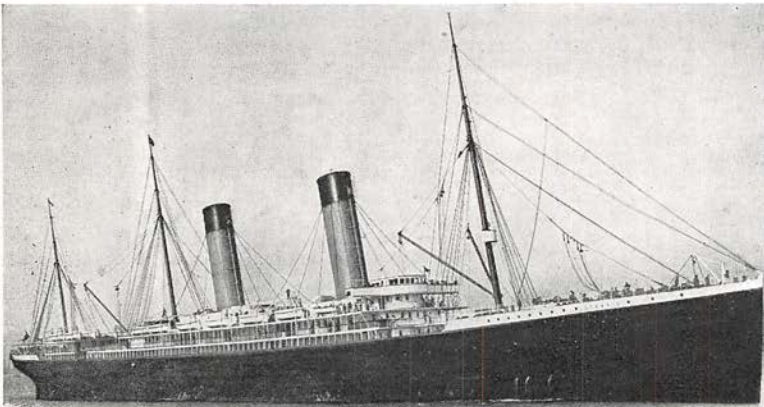


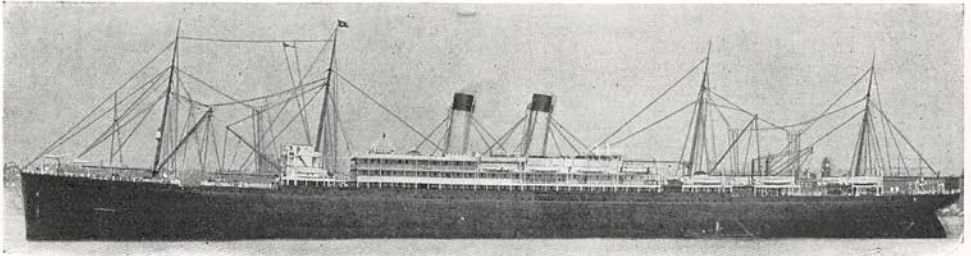
Photo by]

"OCEANIC": WHITE STAR LINE.

[Bedford Lemere, Strand.

maiden voyage. However, since then she has done much better; and many people have still a lurking idea that she could do great things if put to it. Week in, week out, in storm and in sunshine, the magnifi-

Grosse, yet to obtain that advantage her engines have to work up to 5,000 more horse-power. The engines of the latter vessel work up to 28,000 horse-power, and those of the newer ship 33,000; but on her fastest



Copyright photo,]

WHITE STAR LINE: "CELTIC."

[White Star Steamship Co.

trip she averaged only 1·57 knots an hour more than the average of the North German Lloyd liner for all her voyages during 1900. It is rather interesting to note the difference in speed between the two German ships and the Cunarders, which are seven years older. Of the two latter, the *Lucania* has crossed the Atlantic in the shortest time, but the yearly average of the *Campania* (for all trips, westwards and eastwards) works out at 20·95 knots an hour, and that of the *Lucania* at 20·90 knots, while for five years it is only a fraction lower. During her first twelve months the average speed of the *Kaiser Wilhelm der Grosse* for all her trips was 21·94 knots, an increase of one knot in seven years. The fastest voyage of the *Deutschland* is only 2·56 knots faster than the British ships, and 1·57 faster than her German rival. Her best day's run up to the present has been 601 knots.

These comparisons are worth going into, as it will be found that during the past ten years the greatest speed has only increased

by about a knot and a half. The average speed of the *Lucania* on her fastest trip is 22·01 knots per hour, her longest run in twenty-four hours 562 knots; the *Kaiser Wilhelm der Grosse's* figures are 23 and 584 knots; the *Deutschland's* 23½ and 601; while the latest aspirant (*Kronprinz Wilhelm*) for record honours has up to the time of writing achieved 23·21 and 565. When we take the duration of the average trip per fleet, Britain is easily first; a recent calculation showed that the average passage of the Cunard Line from America lasted 6 days 8 hours 7 minutes, while the Hamburg-American vessels could only do it in 6 days 14 hours 8 minutes, because the British ships are all moderately fast, and the German fleet has only one vessel far ahead of all the rest. The *Lucania* has done twelve outward voyages at an average of 6 days 29 minutes against the *Deutschland's* 6 days 1 hour 28 minutes for seven trips, although the Hamburg-American flyer did better on the return passages.

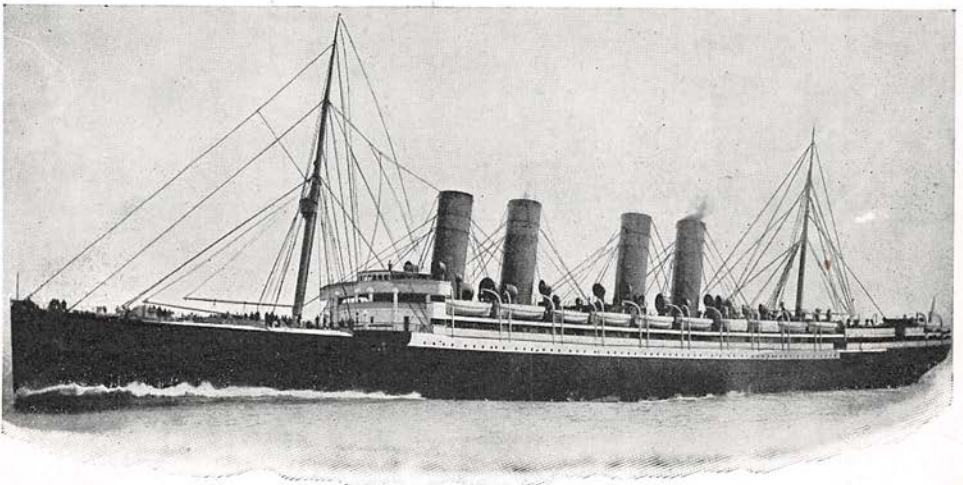


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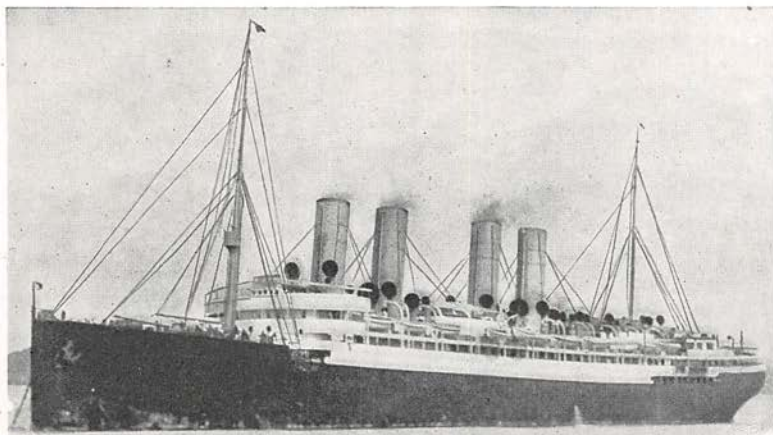
"KRONPRINZ WILHELM": NORTH GERMAN LLOYD COMPANY.

[West & Son, Southsea.

Within the last few months the North German Lloyd Company has brought out the *Kronprinz Wilhelm*; she is smaller than either the *Oceanic*, *Celtic*, or *Deutschland*, but her indicated horse-power is much greater than is that of the two first named, and is 2,000 more than that of her German rival. The dimensions of the *Deutschland* and *Kronprinz Wilhelm* are worth comparing; those of the former are: Length, 684 feet; breadth, 67 feet; depth, 44 feet; indicated horse-power, 33,000; registered tonnage, 16,200; displacement, 23,200. The newer vessel is 663 feet in length, 66 feet in breadth, 43 feet in depth; her gross tonnage is 14,800, and her indicated horse-power 35,000. These figures show that she was built for speed. If she does not beat her rival, the North German Lloyd Company has the *Kaiser Wilhelm II.*, which will shortly appear. She will be a veritable monster, rivalling the two White Star liners in size (her tonnage is to be 20,000), and simply dwarfing them

in horse-power, which is to be 38,000 or 40,000!

At the beginning of last century the Americans appear to have crossed the Atlantic by steam first and in the shortest time; at the beginning of this the Germans hold pride of place for speed. We beat the Americans; why should we not beat the Germans, in spite of the enthusiasm of the Kaiser and the subsidies by which a paternal Government fosters maritime enterprise? Happily an attempt will shortly be made to do so. The Cunard Company is going to have built—if the work of construction has not already begun—a liner which will even be able to tackle the coming *Kaiser Wilhelm II.*, while there are rumours that a new trans-Atlantic service is to be inaugurated with turbine vessels able to steam at 25 knots. The American Line is also anxious to enter the lists, so that the German ships are unlikely to have matters all their own way for very much longer. Apparently we are still as far off finality in the matter of speed as ever.



Photo, Gregory & Co.]

[Stuart, copyright.

“DEUTSCHLAND”: HAMBURG-AMERICAN COMPANY.