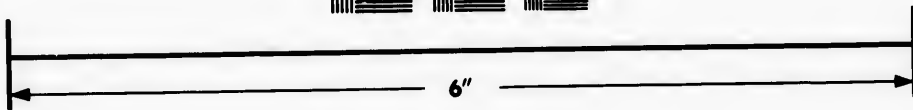
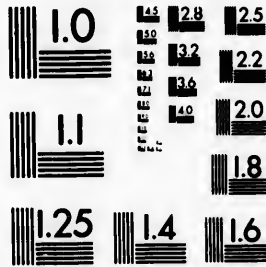


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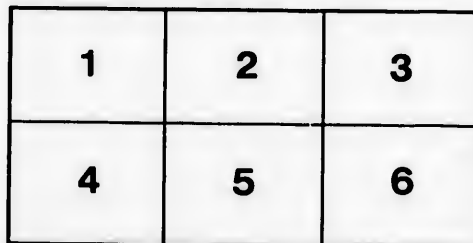
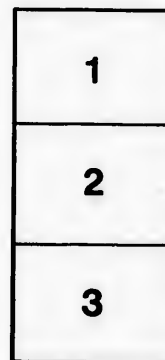
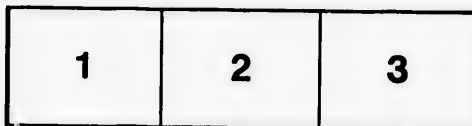
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ATLANTIC  
STEAM  
NAVIGATION.

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BY  
HENRY FRY.

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Quebec  
AND BRISTOL, ENGLAND,  
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1883.

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# ATLANTIC STEAM NAVIGATION.

BY HENRY FRY.

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THE History of Atlantic Steam Navigation is to some extent the History of the Progress of the Human Mind, and is also a proof of the fallibility of scientific men. At a Meeting of the British Association for the Advancement of Science, the celebrated Dr. Lardner stated, in effect, that it was impossible for any steam-ship to carry sufficient coals to steam across the Atlantic, yet the thing was actually done a short time afterwards.

In previous years two attempts had been made, but in neither case had the boat steamed all the way. The "Savannah" was probably the first boat to use steam at all on the Atlantic. She left Savannah for England, but arrived under canvas alone. The "Royal William" was built at Quebec and crossed the Atlantic, part of the passage having to be made under canvas, but she never returned. Both were deficient in coal capacity, and probably in steam power.

In 1837 the first steam-ship built for the Atlantic Trade was launched from the yard of Patterson & Mercer, Bristol. She was named the "Great Western," was a paddle boat, 1300 tons gross, 679 tons net; she was the first ship built with a round stern and solid bottom, and had Neptune for a figure head. She sailed on her first voyage in April, 1838, and made the passage in twelve and a half days out, and twelve days home; the passage money was fifty guineas, and she was always full; but she did not attempt to cross in the winter. It is marvellous to



think that in so short a space of time the progress has been such that the size has increased from 679 tons to 13,000, the speed from ten knots to eighteen, and the capacity for passengers from 150 to 1,500 souls; the time occupied has diminished from twelve days to seven, and the consumption of coal per horse power more than one half. The "Great Western" was followed by the "Great Britain," an iron ship of about 3000 tons gross, designed by Brunel, and built by William Patterson. During her construction a Mr. Smith made some successful experiments with a screw in the "Archimedes," which induced Brunel to alter the "Great Britain" from a paddle boat to a screw; it was driven by a very clumsy arrangement of drums and leather bands, direct action being supposed to be too slow; she was a particularly handsome model. The Directors of the Company, deeming that no man could be found in the Merchant Navy fit to command so large a ship as the "Great Western," had selected from the Navy Lieutenant James Hosken, who was promoted to the "Great Britain." Being too large to run to Bristol, she was sent to Liverpool, after an amusing incident had occurred. She had a very round side and drawing a little more water than was calculated, on being floated out of the dock in which she was built it was found impossible to get her out of the harbour, as the exit was too narrow. Ultimately the coping stones on one side of the lock had to be removed in order to release her. Leaving Liverpool for New York Lieutenant Hosken navigated her so carelessly that he failed to see the light on the Calf of Man, and whilst gazing for it ran her ashore in Dundrum Bay on the Coast of Ireland, where she remained all the winter; this accident was fatal to the Company. She was sold to Gibbs, Bright, & Co., and after receiving new engines and masts, ran for many years in the Melbourne trade, and I believe still exists in Birkenhead Dock.\* The "Great Western" was sold to the

\* Since converted into a sailing ship.

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Royal Mail Steam Packet Company, and ran to the West Indies until broken up. Had the Company built three other "Great Westerns" in lieu of the "Great Britain," they would probably have got the Mail contract. and the great Cunard Company might never have existed! In the meantime a steam ship named the "Liverpool" had been built to run between London and New York, but proved a failure, and an old boat called the "Sirius" had made a few trips from Liverpool. Samuel Cunard, of Halifax, afterwards Sir Samuel Cunard, Baronet, then projected a line between Liverpool and Halifax with a branch boat from Picton to Quebec, and having induced John Burns, of Glasgow, and Charles Maclver, of Liverpool, to join him in the enterprise, obtained from the British Government a contract to carry the Mails once a fortnight in summer and once a month in winter, the ultimate destination being Boston! To accomplish this they built the "Acadia," "Britannia," "Caledonia," and "Columbia," commanded by Captains Judkins, Lott, Harrison, and Leitch, whilst the "Unicorn" ran between Picton and Quebec. They were paddle boats of about 1,800 tons gross, 1,000 tons net, designed by a very able man, Mr. Hood, of Port Glasgow, built of wood on the Clyde, and supplied with engines of about 400 horse power nominal. Both hulls and engines were admirably constructed and finished, the officers were all picked men, and the discipline and management excellent, so that the Line was a great success from the first, safety being the object rather than speed. The "Columbia" was lost on Cape Sable, and was replaced by the "Hibernia," no lives being lost. For over thirty years this was the only loss they met with, a thing quite unparalleled in the history of steam navigation. An additional boat was then built, the "Cambria," the engines of which so struck an American engineer that he declared they ought to be put into a glass case. I think the contract ran from 1842 to 1847.

The Company then made a fresh contract with the British Government for a weekly line all the year round, the boats to run alternately to Halifax and Boston, and to New York direct, with branches from Halifax to Bermuda and St. Johns, Newfoundland, the Quebec boat being discontinued. For this service they received the enormous sum of £178,000 sterling per annum, or about 900,000 dollars, and they were generally believed to have built all their boats, after the first five, out of their profits. To carry out the new contract they built the "America," "Canada," "Niagara," and "Europa," larger than the first boats but very much of the same type, adhering in a most conservative manner to the smallest details of the early boats. To illustrate this I may say that as late as 1876 they had no bells in staterooms and no water taps, and for thirty years they never altered the old fashioned type of their bills of fare, nor varied their food, but then they lost no boats and drowned no passengers. At a later date they agreed to call at Queenstown on Sundays, which enabled the Post Office to despatch the mails on Saturday night in lieu of Friday night, and to receive the homebound mails at Queenstown in lieu of Liverpool.

The "Asia" and "Africa," boats of about 2,600 tons, still wooden and paddle, with engines of about 700 horse power, were added, and they sold gradually the first five boats. They now designed two boats specially for speed. The "Arabia" was the first, a wooden boat with very fine lines and engines of great power, (1,000 horse nominal.) She was fast, but her engines drove her under water in bad weather and tore her hull to pieces. They were therefore glad to sell the second boat on the stocks to the "Royal Mail Steam Packet Company," to replace their burnt "Amazon," on a pinch. Captain Leitch had to retire through ill-health, and Captains Stone, Lang, Cleland, and Anderson joined. I may remark that two of their captains were afterwards chosen to command the "Great Eastern," Harrison and Anderson. The former was drowned in a most

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singular manner in Southampton Water, and the latter was knighted by the Queen on the successful laying of the Atlantic Cable.

At last Cunards were driven to iron, (other companies having long previously adopted it,) and in 1856 they launched the celebrated "Persia," still obstinately adhering to paddle engines which sometimes consumed 130 tons of coals per day, so that she was so deep on starting that she made only ten knots; as she lightened, however, she gradually increased to sixteen knots and thus made some rapid passages, and for years was the most popular boat in the trade. She was about 3,000 tons and 1,000 horse power. Their last paddle boat succeeded her, the magnificent "Scotia," nearly 4,000 tons, and 1000 horse power nominal, probably the finest paddle boat ever built. Having a longer floor she drew less water than the "Persia" and was much faster on starting, making 12 and 12½ knots, and was a great favourite with the public. She was the last boat commanded by the veteran Judkins, and Lott succeeded him. Burns and MacIver at last discovered that they could not compete successfully against the screws, and reluctantly yielded; but I never found any boat equal in comfort to the "Scotia." The "Persia," which must have cost them over £100,000, was sold for £10,000, and her splendid engines broken up for old iron. The "Scotia" was sold to a Telegraph Construction Co., and converted into a twin screw. The "Arabia" was broken up. The "Niagara," "Canada," and "Asia" ran for some years as sailing ships. During the Crimean War several of the boats were employed as transports, two conveyed troops to Canada in 1861-2, and three went to the Cape in 1878. The first screw they ran was a purchased boat—a failure, and the most wretched boat I ever crossed in, the "Australasian," re-named the "Calabria." She rolled like a cask, and once rolled a passenger overboard, and her vibration was so great that it was hard to sleep. They put new engines in her, but I do not know what

became of her ultimately. The first screw they built was a very fast boat for her time, the "China," followed by the "Cuba" and "Java," both very fine boats; but the introduction of compound engines and incessant improvements soon made their engines obsolete, and they were sold for sailing ships.

\* *The time now had arrived when the Government declined to continue the subsidy, and it became necessary to study economy.* So long had they enjoyed the carriage of the mails, and so proud were they of the prestige, that they at last offered to carry them free rather than be deprived of the honour. Then followed the "Russia," a very fast and successful boat, but she too had to be sold, and went to Holland, so rapid were the changes in engines. Length of hull, too, was constantly increasing, and other companies having excelled them in speed and luxury of fittings, notably the "White Star" Line, with midship state-rooms, bells, and hot and cold water taps, they were compelled to follow or give up the race. One company actually spent £80,000 in lengthening hull and renewing engines and boilers of one boat. They soon added two very fine boats, the "Scythia" and "Bothnia," selling the "Abyssinia." Still they were beaten in speed, especially by the "White Star" boats, but never stayed their hands. The "Gallia" is a considerable advance in size, speed, and fittings, and is a popular boat, but she has been eclipsed by their latest effort, the "Servia," than which probably no finer boat exists. She is 8,500 tons, and 1,500 horse-power nominal. Engineers seem to think that in her the limit of single screw boats has been reached. Their latest additions are the "Catalonia" and "Cephalonia," both of smaller size than the "Servia."

Judkins died at 69. Lott, after receiving an ovation on completion of his 500th passage, had a slight paralytic stroke, and was compelled to retire. Lang succumbed to the sailor's great enemy, rheumatism, Stone and Anderson retired early,

\* On the renewal of their contract at a very reduced rate, they built the "Algeria," "Abyssinia," and "Parthia," boats of no great speed, and hardly up to the times, and they added some smaller boats for freight and stowage passengers.

and the leaders are now Cook, Haines, McMicken, and Murphy. The "Tarifa" was wrecked on the Tuskar rock, and a small branch boat from Havre near the Lizard rocks. These comprise all their fatal disasters during 40 years. What a testimony to the skill, the energy, and the care of builders, owners, and officers! Cunard and his son Edward are gone, but Burns and McIver remain. They are both old men, and have found it necessary to convert their property into a "limited liability company." The company have never lost their prestige for safety, and still carry more first-class passengers than any other line.

#### THE COLLINS LINE.

The first line subsidised by the United States Government was the "Collins" line. It was projected by E. K. Collins, and consisted of the "Atlantic" (Capt. West), the "Baltic" (Capt. Comstock), the "Pacific" (Capt. Nye), and the "Arctic" (Capt. Luce.) They were built to run against the Cunard line between New York and Liverpool, and were heavily subsidised for carrying the mails. Built of wood, with powerful paddle engines, they were very fast. They had luxuriously fitted drawing rooms underneath the dining saloon, music, and French cooks; but they had neither the solid comfort, the discipline, nor the safety of their competitors. The line had but a short existence. The "Pacific" was matched against the "Persia" in January, 1854, and was never seen or heard of after leaving Liverpool. In the same year the "Arctic" was sunk by collision with the "Vesta" near Cape Race, with a great loss of life, including Mrs. Collins, her son, and daughter. The "Adriatic" had in the meantime been built, but the loss of two boats and so many lives in one year was fatal. The "Adriatic" was sold to the Galway line, and the "Atlantic" and "Baltic" converted into sailing ships, sailing successfully in the Californian trade. Mr. Collins was ruined, and at a later date a public subscription was made for him.

### THE INMAN LINE

was commenced with iron screws. The "City of Philadelphia" and "City of Glasgow" were, I think, the first boats. They ran to Philadelphia at first, but like other lines, were ultimately transferred to New York. The first was lost on Cape Race; the latter was never heard of. Other "Cities" followed; the "City of Baltimore," "City of New York" (lost on Daunts' Rock, near Queenstown), "City of Boston" (never heard of), "City of Antwerp," "City of London," "City of Dublin," "City of Bristol," and the "City of Montreal." Their latest boats are another "City of New York," "City of Brussels," "City of Ber'lin" (5,500 tons), and "City of Rome" (8,800 tons.) Most of them were built by Tod and McGregor, of Glasgow, very handsome in model, but very unfortunate in breaking their shafts. The "City of Rome" was built at Barrow, and is said to be quite equal to the "Servia," built by J. and G. Thomson, of Glasgow. For many years they carried no mails, and depended alone on goods and passengers. Recently, however, they have carried mails for a very small remuneration, and have made some rapid passages. The Line was commenced by Mr. William Inman and friends as a private affair, but has been converted into a limited liability company. Mr. Inman recently died, and his son is now manager. Their heavy losses and breakdowns have always prevented their possessing the confidence enjoyed by the Cunard Line.

### THE WHITE STAR LINE

is a more recent venture, and was a great advance in point of size, speed, and accommodation. It commenced with the "Oceanic," "Atlantic," "Baltic," "Adriatic," and "Celtic," boats of about 4,500 tons, built by Harland and Wolff, of Belfast, and engines of great power, by Maudslay, Son, and Field, of London. From the first they were driven at a high rate and made rapid passages. Their midship saloons, electric

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bells, hot and cold water taps, &c., made them popular, but the loss of the "Atlantic" near Halifax with a great sacrifice of life was a heavy blow. They have added the "Republic," "Britannic," "Germanic," "Arabic," and "Coptic," but some of the boats are now running between San Francisco and Japan. They are largely patronised by first-class passengers, and with the one exception named have been very fortunate.

#### THE ALLAN LINE

was started in 1853 by five brothers, James and Alexander Allan, of Glasgow; Bryce, of Liverpool; Hugh and Andrew, of Montreal, assisted by a few friends in Quebec, Montreal, and Manchester, whom they afterwards bought out. The first boats were the "Canadian," "Indian," "Anglo-Saxon," and "North American," boats of about 1,700 tons and 300 horse-power. Mr. Lamont, of Liverpool, had previously started a Line to carry the mails, but it was a dead failure, and the Government cancelled the contract, and gave it to the Allans in 1855. Lamont ran the old "Sarah Sands," "Cleopatra," and built the "Ottawa." The Allans were singularly unfortunate at first. The "Canadian" was lost in the St. Lawrence by a pilot, the "Indian" near Halifax, and the "Anglo-Saxon" near Cape Race. They afterwards entered into a contract with the Canadian Government to run a weekly line to Quebec and Montreal, and built the "Nova Scotian," "North Briton," "Bohemian," and "Hungarian," boats of 2,200 tons and 400 horse-power. To show how very clever men sometimes change their ideas, Hugh Allan stated at a dinner given to him in Quebec in 1857 (I think) that in his opinion boats of 1,700 tons were the proper size for the trade. He has now got to 5,100 tons, and is building one of 6,100. The "North Briton" was wrecked on Mingan Islands, the "Hungarian" on Cape Sable with every soul on board, and the "Bohemian" off Portland. The "Norwegian" and "Hibernian" followed, but the former was lost on St. Paul's.



Then came the "Canadian," lost in the ice outside the Straits of Belle Isle. They bought the "Jura" from Cunards, but she was wrecked entering the Mersey. They also bought a German boat, the "Hammonia," and re-named her the "Belgian." Afterwards they built two very fine boats of 2,400 tons, the "Peruvian" and "Moravian," both of which were subsequently lengthened. Then came the "Scandinavian," "Nestorian," and "Austrian," three very successful boats of about 2,400 tons, followed by the "Manitoban" and a third "Canadian." In 1871 they built a magnificent boat of 3,600 tons, with four cylinders, the "Sarmatian," which proved very fast, and has had some celebrity in connection with the Ashantee war and Princess Louise. She was followed by the "Polynesian," a somewhat similar boat, but longer, the "Circassian," of 3,600 tons, and the "Sardinian," of 4,200 tons. Their most recent addition for the mail line is the "Parisian," of 5,100 tons, with every modern improvement, and they are said to be building the "Numidian," of 6,100 tons. They have a good share of the passenger traffic, and still carry the Canadian mails.

Early in their career they established a Glasgow line, the "St. Andrew," "St. George," "St. Patrick," and "St. David." The "St. George" was wrecked on Brazil Rock, and the "St. Patrick" converted into a sailing ship, the "St. Andrew" re-named "Waldensian," and "St. David" "Phœnician." These boats are small, and they have added for general freight business the "Buenos Ayrean," "Grecian," "Lucerne," "Corean," and "Hanoverian," all of about 4,000 tons, the whole line now consisting of 22 boats.

The Allans first commenced business many years ago with wooden sailing vessels of about 400 tons, among the first being the "Canada," "Cambria," "Caledonia," "Albion," &c. These have now grown into iron ships up to 1,700 tons, some with four masts, and form a line of 13 ships, viz., "Gleniffer," "Glenbervie,"

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of 800 tons; "St. Patrick," 900; "Abeona," 1,000; "Ravenscraig," "Pomona," and "Strathblane," 1,200; "Strathearn," "Romsdal," "Glenfinart," "Glenmorag," "Glencairn," and "Ardmillan," of 1,700 tons. The "Glencairn" and "Romsdal" are four-masted ships of great length, and all very fast.

Bryce Allan died first and James has followed. Hugh was knighted by the Queen about 1871, and was a very able man.\* The boats run through the Straits of Belle Isle from July to October, and make rapid passages, calling at Moville in Lough Foyle, in the North of Ireland, to land and embark mails. The subsidy was at one time \$416,000 a year, but is now very much reduced. Sir Hugh had a large family, and was anxious to have a baronetcy, but Lord Lisgar or the Home Government refused to give him anything beyond a knighthood, which seems strange, inasmuch as Mr. Cunard for similar services was created a baronet. Lady Allan took very much to heart the loss of life in the early boats, and died in 1881. During all this time many new lines for freight and passengers have been added, and the development of steam traffic has been wonderful. There is the Guion Line, now owning two of the fastest boats afloat, the "Arizona" and "Alaska;" and the National Line, both from Liverpool. The North German Lloyds, with a large fleet to Bremen and Hamburg two French lines, Havre and Bordeaux, and one to Antwerp. The Anchor Line, with some very fine boats, the Dominion Line to Canada, the Philadelphia Line, the Great Western Line between Bristol and New York, and the Cardiff Line, the State Line between Glasgow and New York, the Lake Line between Liverpool and Canada, the Danish Line from Copenhagen to New York. Then there have long been running two lines from England to the West Indies, two from England to Brazils, two to Cape of Good Hope, and one to Chili and Peru. The old

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\* Since dead.

Peninsular and Oriental maintains its high reputation to India, China, and Japan, as does the Messageries Imperial from France. There are also several lines from London and Glasgow to Calcutta and China, and the Orient Line to Melbourne. This passage has been reduced to 34 days *via* the Cape, and the "Stirling Castle" just built to run between Glasgow and China has attained the extraordinary speed of  $18\frac{1}{2}$  knots. It is thus evident that the days of sailing ships are over, and that with the exception perhaps of a few trades, such as the wood and guano, steam will be universal. But in all probability the days of steam as a motive power are nearly over. Electricity will certainly take the place of coal, if not of steam, within a very few years, and the great difficulty is the constant changes going on as science advances, and consequently the rapid depreciation of shipping property. Compound engines is an example. The substitution of the screw for the paddle at once rendered all the latter useless, and such magnificent specimens as the "Persia" and "Scotia" were reduced to the value of so much old iron, hardly worth the cost of breaking up. The next change will probably be from steam to electricity, and will be a very sweeping one, though it may be hoped that the existing ships may be easily converted, for it is possible to build iron ships almost indestructible, witness the "Great Britain," run over 40 years old. The introduction of double bottoms has added much to their safety, though water ballast tanks in the bottom have caused the loss of several, making them top heavy, witness the "George Cairns" and "Escambia." It is probable that in the first instance electricity will be applied to existing boilers as a heating power, and that it will be long ere it is made a substitute for steam. If this is the case the loss will be light. It is, however, a very serious question, as the cost of a modern steamship is very large, the "Servia" for instance probably costing a million of dollars, and the "City of Rome" as much.

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The "Great Eastern" was designed by Brunel, and built on the Thames by Russell about 1859. She is 18,000 tons gross, 13,000 net, 680 feet long, with paddle and screw. Losing or breaking her rudder, she became unmanageable, and was a failure as a mercantile speculation, but succeeded in laying cables. Brunel was always ahead of his age, and his ideas were too grand to allow his creations to pay. He designed the Great Western Railway from London, and instead of going round Box Hill he bored through it a tunnel of two miles long. He frightened the directors with proposals to build a 9 feet gauge, with engines weighing 80 to 100 tons, with 10 feet driving wheels and a speed of 80 miles an hour. They, however, compelled him to adopt a 7 feet gauge (altered after his death to 4 feet 6 inches), and 9 feet wheels, but his express engines weighed 80 tons (Iron Duke, Lord of the Isles, &c.) and reached a speed of 65 miles an hour. The "Great Eastern" has done but little work, and was resold at about one-sixth of her original cost. In a few years her size will excite no wonder, and there will probably be many such with twin screws. She has laid two Atlantic cables. Brunel's father, Isambard, designed and carried out the Thames Tunnel under the river, but it did not pay, and is now I believe used by a railway line. He was an Italian, and the work twice nearly cost him his life through the river breaking in.



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