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THE STEAMSHIP GREAT BRITAIN

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BRISTOL BRANCH OF THE HISTORICAL ASSOCIATION
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The Steamship Great Britain is the eleventh in a series of pamphlets issued by the Bristol Branch of the Historical Association through its Standing Committee on Local History. The author, Mr. Grahame Farr, is an authority on west country shipping and has contributed to this series an earlier pamphlet on the *Great Western*.

It was unfortunately not possible to publish in 1964 Mr. J. W. Sherborne's *The Port of Bristol in the Middle Ages* but this is now ready for the press and will appear in the course of the year. It is part of a special series on the history of the port.

In connection with the celebration of the fourth centenary of Sir Ferdinando Gorges, the Branch will publish a pamphlet by Professor C. M. MacInnes which will be on sale in May 1965. Miss Kathleen Barker's work on the later history of the Theatre Royal will also appear this year.

Other titles under consideration include Bristol Castle; the Bristol Riots; the Blue Maids' School; the Bristol Customs House; the Anti Slavery Movement in Bristol; the early history of the Quakers in Bristol; the Bristol Madrigal Society; eighteenth century Bristol as seen by contemporary travellers and writers.

The pamphlets can be obtained from most Bristol booksellers or direct from the Bristol Branch of the Historical Association. Mr. Peter Harris, 74, Bell Barn Road, Stoke Bishop, Bristol, 9, handles the distribution, and orders may be sent direct to him. It would be of great help if as many people as possible would place standing orders for future publications.



THE STEAMSHIP GREAT BRITAIN

by GRAHAME FARR

I'm Queen of the Waters — though far I roam,
Still — *still* I'll assert my island home.
Island — *Great Britain*, she
A continent both by land and sea.

Such poetic effusions were popular in the Victorian era while successive engineering wonders were planned, executed, and in time superseded. The steamship *Great Britain* of Bristol made a great impact on the public for she was several hundreds of tons larger than any ship yet built, and over one hundred feet longer than the latest line-of-battle ships. In final form she was at once the first large iron vessel and the first large screw vessel — although in fact she had started on the drawing board as a fairly conventional steamship.

Her predecessor, the *Great Western*, the first steamship built as an Atlantic liner, was in New York, half way through her fourth voyage, when plans were made public for one or more further vessels for the line. The announcement in the local Press of 29 September 1838 stated: 'The Great Western Steamship Company are about to build another vessel of equal size to the *Great Western* and she will be called the *City of New York*. A large cargo of African oak timber has been purchased for this and other ships.' As things turned out further ships 'of equal size' would have been far more satisfactory for Bristol's connection with the Atlantic trade, but we have it on the authority of one of their number that the Directors quickly decided 'that steamships of larger dimensions would offer better chances of remuneration.'

Nothing more was heard of the scheme until the following March, when there were rumours that the expected vessel was 'to be constructed largely of iron.' Captain Claxton, on the instigation of Brunel and in company with Patterson the ship-builder, had made several trips in the experimental iron coasting steamer *Rainbow*, with the result that they reported favourably on this method of construction. Patterson drew up lines for the hull, a branch of shipwrightry in which he excelled, and Brunel completed the plans with his usual flair for innovation. The fact that the *Mammoth* — the new and appropriate name — was to be of more than twice the tonnage of the *Great Western* and about twelve times the tonnage of the *Rainbow* might excite the general public, but to Brunel it was simply a logical step forward. When local ship-builders declined to tender for so large and complicated a vessel, this was but a momentary setback, and the company decided to

build her themselves. Accordingly they purchased a site at the lower end of Wapping Wharf and there built a complete works at a cost slightly in excess of £53,000. As it was thought her weight would be too great for a slipway, just one concession was made to the size of their vessel, and they excavated a dry dock in which to build her. This, for many years known as the Great Western Dock, is still in use and is now known as the Wapping Dry Dock.

All these preparations were time-consuming and it was not until October 1839 that the finishing touches were put to the premises by the installation of two hundred gas burners so that work could proceed by night and day. A start had already been made by assembling the keel, and to help in shaping the massive iron plates a large core plate had been made by the local foundry of Bush and Beddoes. It was a formidable casting for the times, weighing between five and six tons, and incorporating no less than 2,236 holes into which pegs were inserted conforming with the required curvature.

The following year, 1840, brought another major alteration. A small vessel of 237 tons, the *Archimedes*, fitted with Francis Petit Smith's patent screw propeller, had been undergoing trials on the Thames. These had fulfilled all the expectations of the inventor, but the innate conservatism of the Admiralty and of the British shipowning fraternity had produced no potential users. Almost as a last resort she was, in May, sent on a cruise around the coast with a party of naval observers on board, arriving at Bristol on the evening tide of the 29th. On the next day she performed a number of evolutions in the Harbour between Prince Street and Cumberland Basin bridges, passing up and down this distance of just over a mile six times in about 6 minutes for each run. Her powers of acceleration and deceleration and her manoeuvrability when turning were regarded as remarkable. On the 1st June many prominent citizens were taken on an excursion around the Holms and back to Portishead, the *Archimedes* afterwards leaving for Tenby, Milford and Liverpool. Brunel was not named as one of the guests on this occasion, although we may be sure he was fully conversant with the trials, and he may well have recommended that Claxton, Guppy, Patterson and Captain Hosken of the *Great Western* should participate. In any event these gentlemen must have reported favourably on their experience for a few months later the plans were again altered to embrace a screw steamer. It was typical of Brunel to assume that in spite of the diminutive size of the prototype the same propulsion would suit the largest ship in the world. Today it is difficult for us to understand how bold were these two decisions to adopt iron instead of wood and the screw instead of paddle wheels. To embody them in so large a vessel was a great leap forward in marine technology. The

steamship was indeed to be the 'stupendous progeny of the genius of Mr. Brunel.' As another writer exclaimed, 'This wonderful vessel will combine a greater number of varieties and untried principles than ever before united in one enterprise.'

It had originally been planned to use a version of the trunk engine patented by Humphries, but that noted engineer had died earlier in the year. James Nasmyth, who was to have the job of forging the massive paddle shaft, had invented his steam hammer for the purpose. The order was, of course, cancelled. To him the loss of this work was a bitter pill since, conceiving no other use for the hammer, he filed away his plans and was forestalled in construction by a similar device of the French engineer Schneider. Brunel at once set to work to design his own machinery, and Thomas Richard Guppy was removed from the Board of Directors to be appointed Superintending Engineer so that he could devote his whole time to building ship and engines at the Wapping Works.

Construction cannot be said to have proceeded apace for it was not until May, 1843, that the *Great Britain* — her third and final name — was ready to launch. The floating (perhaps a better term in the circumstances) was put off owing to some difficulty in making arrangements with the Dock Company, and was eventually fixed for 19th July. On that day the Prince Consort visited the city, accompanied by the Marquis of Exeter, Lord Wharnclyffe, and the Earl of Lincoln.⁽¹⁾ He came by the Great Western Railway from Paddington in two hours and 46 minutes, in a train personally conducted by Isambard Brunel. This time included a stay of six minutes at Bath where the Prince received an address of welcome, and made his reply, in speeches which must have been unusually concise for the age. At Temple Meads he was welcomed by the Mayor, James Gibbs, and civic officials, receiving the Freedom of the Society of Merchants in a gold casket from the hands of the Master, John Savage. The party then partook of a 'breakfast' in the Directors' private room at the station. There followed a lengthy procession through the city, skirting the Downs and descending Bridge Valley Road. We are told that 'in Temple Street, more especially, many faded and woe-begone old houses had their dusty fronts freshened up a bit,' and triumphal arches were erected at many points. Eventually crossing Cumberland Basin and driving along Cumberland Road the party came to the Great Western Steamship Company's works at about noon. The Prince first made a tour of the steamship conducted by Guppy to whom he 'put many and minute enquiries respecting her construction and capabilities.' He then attended a banquet set in the vast smithy of the works. Landell was there to sketch the scene

(1) See p. 19 for a contemporary account by a schoolboy, William Prideaux.

for *Illustrated London News*. Besides the civic party there were present the Honorable Edward Everett, American Minister; the Prussian and Sardinian Ministers; and a multitude of gentry and merchants of the city and surroundings who had eagerly purchased tickets at one guinea apiece.

The *Great Britain* was by then afloat. As she had been built with her bottom a working height from the floor of the dock the water level had to be raised above that of the harbour by pumping before the shores could be removed. This was done without incident and she rode high, being without engines. For the sake of appearance she had been temporarily fitted with her funnel and masts, and she must indeed have been a magnificent sight, her hull painted a sombre colour, with a white line and the fashionable imitation "painted ports". She was decked over all with flags, and the features of her figurehead¹ and stern ornamentation were picked out in gold paint.

By the time the Prince Consort returned to the scene the waters had been levelled and the dock gates opened. He passed along a raised gallery to a 'pagoda' on the harbour side by the gates. The vicinity was thronged with sightseers. As one of the speakers at the banquet had said: 'He has literally clothed your hill-sides and your house-tops, not with a thousand, but with one hundred thousand loyal subjects.' On the vantage point of Brandon Hill alone there were some 30,000, and almost as many more on the heights of Clifton Wood and on Mardyke Road.

The time scheduled for the christening was 3.30 p.m. Accounts of this event differ, but it seems that at first the Prince invited Mrs. Miles to perform the ceremony for him. (She had, incidentally, christened the *Great Western* on the same day six years earlier.) Grasping the champagne bottle she swung it towards the towering bows, at the same voicing the usual message of God-speed, but unfortunately at that precise moment, the *Great Western* slewed away. The steam packet *Avon* (doubtless chosen because she, too, was a screw vessel) had been connected preparatory to towing the monster into the harbour but had begun towing before the shore warps were released, with the consequence that the rope snapped. The beribboned bottle fell about ten feet short, its cord broke, and it fell into the water intact. Within a few seconds another bottle was procured and the Prince hurled it against the iron hull, decisively smashing it and showering the spectators below with glass and wine. Then, due to delays in reconnecting tug and tow, the Prince had to return to the station and miss the end of the programme.

1. The figurehead consisted of the Royal Arms with supporters and on the trail boards there were carved representations of a beehive, a gear and cog, a dove, set square, and caduceus.

The *Great Britain* was returned to her dock for fitting out and for installation of the engines. Almost a year later, in April 1844, she was ready for trials and an attempt was made to tow her into the harbour. Mysteriously, she proved too deep to pass over the cill of the dock, although soundings could furnish no reason for the difficulty. At no small inconvenience to other shipping the water level was twice raised by 18 inches. Still she would not pass out. A diver was then sent down and he found that a piece of timber was somehow wedged under her bottom. When this was removed she passed out freely. However, measurements taken during this unfortunate episode gave rise to further alarm, for it was realised she was too large to pass through the two sets of locks to gain the river and the open sea.

Claxton later explained that it had been originally planned to move her out light and to send her elsewhere to have her engines fitted, as was done with the *Great Western*. It passes comprehension that nobody realised the dire possibilities at the time the new screw engines were put in hand, and we can only assume that in an age when a continual process of improvement in dock facilities was expected they went on, Micawber-like, hoping for something to turn up.

Many schemes were debated and rejected. Eventually, to get her through the first locks from Harbour to Basin, that is through the old communicating lock still to be seen by the Nova Scotia tavern, a massive timber cradle was constructed and sunk beneath her. When in place this gave considerable extra buoyancy and by this means she was raised high enough to pass through the locks on 26 October 1844 after nearly six months of involuntary imprisonment. However, the cradle would be of no help for the passage of the outer locks and the next high tides were awaited with no little anxiety. In the meantime her machinery was set in motion for the first time and worked satisfactorily. She was lightened of all possible stores and equipment, bunkers, topmasts and yards.

The morning tide of 11 December was high and she was taken to the locks in eager anticipation. But, on entering with great caution, she would not pass and was quickly withdrawn lest she should be jammed in the locks by the falling waters. The evening tide was expected to be fractionally higher at 33 feet, in fact, the peak of that series of tides. Without loss of time and at a cost of £1,330, an army of workmen came to the scene to tear up the coping stones and remove bodily the road bridge across the locks.¹ That night, by the light of blazing tar barrels, and under the

1. A plan by Brunel to widen this lock from 45 ft. to 54 ft. had, in fact, been approved by the Dock Company in July. For this reason the destructive work of this night was not wasted, but the reconstruction took more than four years.

personal supervision of Brunel, the giant steamship was quickly towed through to the river by the powerful paddle tug *Sampson*. Then, not wishing to navigate the river in darkness, they secured her to the outer wall so that she rested on soft mud as the tide fell. On the next morning two further tugs connected and she was taken without hitch down the river to Kingroad.

As she lay at anchor getting ready for service she had cost precisely £117,295 6s. 7d., not including £53,081 12s. 9d. for the building establishment and the £1,330 4s. 9d. for altering the locks. Of the cost of the vessel, the hull, engines and boilers accounted for about £73,000; the fittings, rigging and stores for £18,000; and the remainder was made up of rents, interest charges, and the like. In fact, as compared with the £53,000 for the smaller and more conventional *Great Western*, the cost of the new leviathan was not unreasonable.

Some dimensional and other data may be of interest:

Length: for tonnage 274 ft.; over all 322 ft.; upper deck 308 ft.

Breadth: for tonnage 48.2 ft.; over all 51 ft.

Depth of hold: 31.5 ft. Laden draught 16 ft.

Tonnage: 2936 gross; 1017 net; by old or 'Builders' Measurement' 3443 tons.

Accommodation: after saloon 110 feet; forward saloon 61 feet; after dining saloon 98 feet 6 inches; forward dining saloon 61 feet; engine and boiler room 117 feet.

Capacity: 360 passengers, in 28 state rooms with single berths, and 113 with two. Crew 130. Cargo 1,200 tons. Bunkers 1000-1200 tons.

Engines: geared type, four cylinders in two pairs, each 88 inches diameter and 6 feet stroke. Weighed 340 tons.

Boilers: One assembly 34 feet long, 31 feet wide, and 21½ feet high, divided longitudinally into three, with each of the three sections having four furnaces forward and four aft. Pressure 5 lbs. per square inch. Weight 200 tons.

Screw: six bladed, 15½ feet diameter, pitch 25 feet, built up of iron plates, weight 4 tons.

Rig: six masts known officially as — fore, main, one, two, three and four, but said to have been known familiarly by the days of the week Monday to Saturday. For registry purposes she was described as a six-masted schooner with standing bowsprit. The main mast only had yards and 'square' sails and was fixed, the others, with 'fore and aft' rig, were hinged for lowering.

The hull was built with five water-tight bulkheads. The stem was a forging twelve inches deep, tapering in thickness from five inches at its lower end to one and a half inches at its top. Similarly the stern frame was a single forging 15 feet deep, eight feet wide at its lower end and twelve feet at its upper end. The frames were angle irons 6 inches by 3½ inches, varying in thickness from 0.6 inches to 0.4 inches. The upper deck was pine planked and flush throughout, the only deck structures being the companion hatches over the saloon, cabin and engine room stairways, and skylights.

The engines had many unique features. The cylinders were disposed in pairs on each side of the ship, inclined at about 60° inwards and upwards to drive an overhead crankshaft of wrought iron. This crankshaft was carried in massive 'A' frames bolted to cross beams at deck level. The thrust bearing was primitive, merely consisting of a gun-metal plate, two feet in diameter, on the end of the shaft, bearing on a steel plate of the same size, the heat generated by these surfaces in contact being kept under control by a stream of water. A drum of 18½ feet diameter on the crankshaft was connected by four sets of endless chains to drive a drum of 6 feet on the propeller shaft below. The chains had teeth on their inner sides engaging with teak and lignum vitae blocks on the drums, the blocks making the machinery much quieter than had been the case with earlier geared engines. The propeller shaft revolved 53 times for every 18 turns of the crankshaft and was made up in three sections. The forward section, bearing the lower chain drum, was solid, 28½ feet long by 16 inches in diameter; the intermediate section was hollow, 61 feet 7 inches long by 30 inches diameter; and the after section was solid 25½ feet by 17 inches. The whole power unit gave a nominal horse power of 1000, but in practice an indicated horse power of twice that amount was obtained giving the vessel a speed of about twelve knots.

The *Great Britain* made three trial trips in the Bristol Channel; on 12 December and 10 January to the Holms, and on 20 January to off Ilfracombe. On each occasion more power was produced. She made 11 knots with engines running at 16 r.p.m. and six furnaces not in use, and finally made 12½ knots on the longer run. She performed evolutions to test the steering and 'it was ascertained that she was very completely under the command of the helm.'

As if the owners wished to convince themselves of her practicability, the registration formalities were not completed until 14 January 1845. The 'Subscribing Owners', holding the traditional and statutory 64 shares, were 'John William Miles and Thomas Bonville Were, esquires, of the City of Bristol, Trustees of a Joint Stock Company called the Great Western Steamship Company.' Lieutenant James Hosken, R.N. was appointed to her command

from the *Great Western*, and Henry Clements was appointed Chief Engineer.

For a 'shake-down' cruise the *Great Britain* steamed to the Thames, leaving Kingroad on 23 January 1845 with a number of distinguished passengers. In spite of very heavy weather she logged 839 miles in 39½ hours, steaming with average revolutions of 18½ per minute, indicating an average speed of 12½ knots. The weather in the Bristol Channel was particularly severe, and one mountainous sea off Lundy buckled her forecastle deck. But she forged ahead and when she rounded Land's End the weather was a help rather than a hindrance to a vessel of her size. There was a slight mishap in the Thames Estuary, where she was in collision with a collier brig. She arrived at Blackwall at 3.45 p.m. on the 26th January having made a brief stop at Cowes and having anchored for 6½ hours in the Downs.

Her stay in the Thames lasted five months, which seems an excessive time when one considers no important work was done to her in this period. She was thrown open to the public and the visitors averaged 1,500 per day. Queen Victoria and the Prince Consort visited her on 22 April, coming alongside in the Royal tender *Dwarf*, which they had boarded at Greenwich. A strong party of Directors, together with Brunel, Guppy and Smith, escorted the party round, and the Queen 'frequently expressed her astonishment at the extraordinary length of the ship.' She even descended to the engine room where Brunel demonstrated his machinery by means of a working model. Francis Smith presented the Queen with a souvenir in the shape of the propeller recently fitted to the new Royal yacht *Fairy*. The model was of gold.

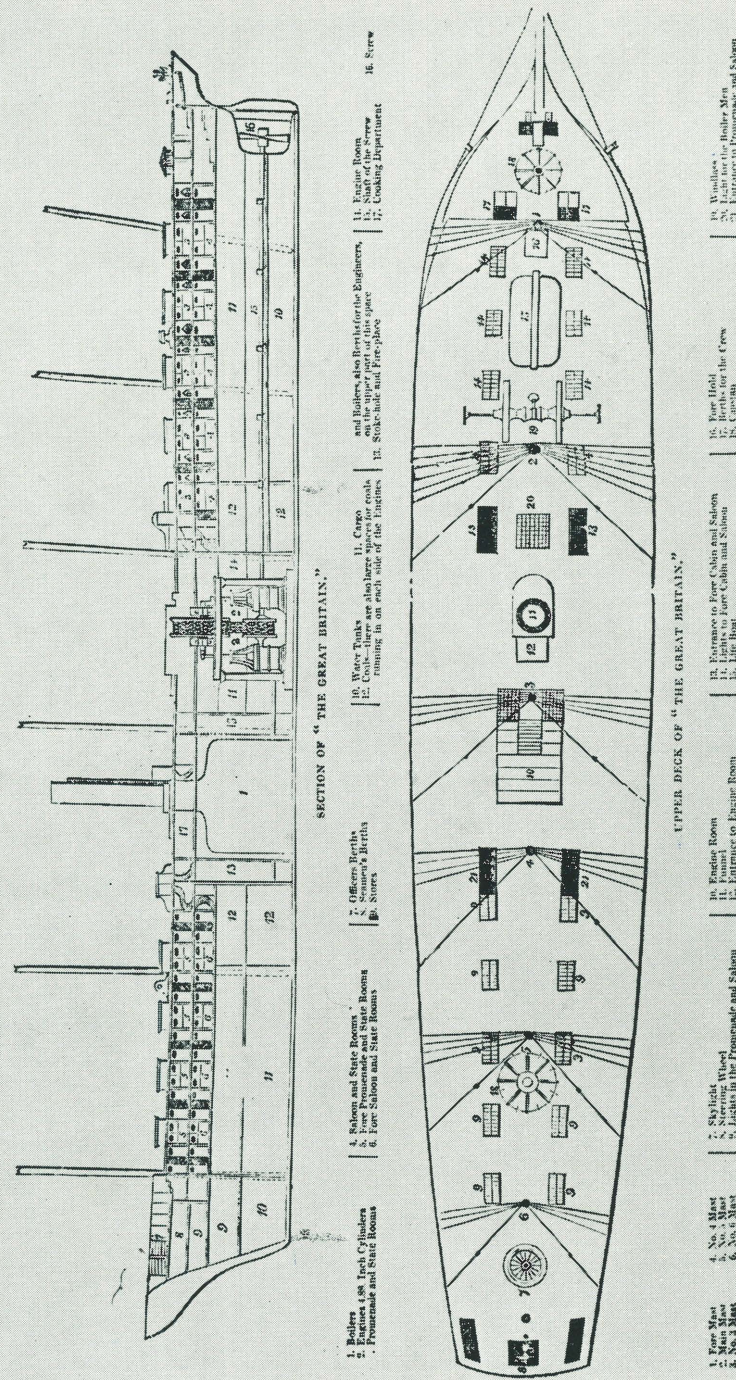
On 12 June the *Great Britain* left Blackwall at 4.30 p.m. to commence a leisurely passage to Liverpool. She carried eighty passengers and was on show *en route* at Cowes, Plymouth and Kingstown before reaching her destination on 3 July. At Plymouth she was piloted through the East Channel past the Breakwater to Millbay, her arrival somewhat surprisingly heralded by a special peal of the Saint Andrew's Parish Church bells. At Liverpool she was taken into Queen's Graving Dock for a final examination and then floated out to prepare for the Atlantic. She was again thrown open to visitors and they averaged 2,500 a day.

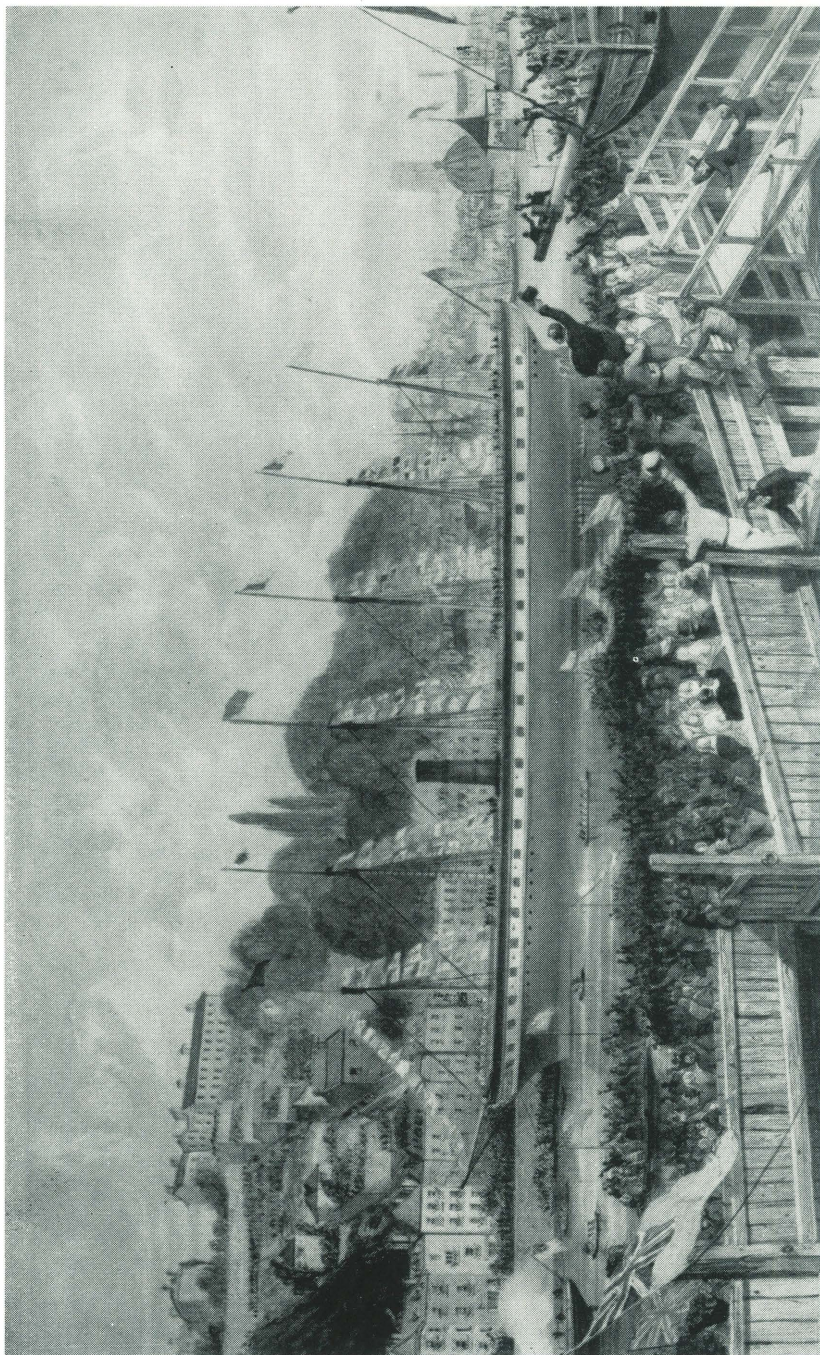
In this year 1845 there were four sailing packet lines plying from Liverpool to New York — the Black Ball, the Red Star, the Swallowtail and the Dramatic Lines, all catering principally for the emigrant traffic. As far as steam was concerned the Cunard Line virtually had the monopoly, having five vessels, with a sixth added before the end of the year. Three of the original four vessels were still in service, the *Britannia*, *Acadia* and *Caledonia*, each slightly smaller than the *Great Western*. In addition there was the

INTERIOR OF "THE GREAT BRITAIN" STEAM-SHIP.

This stupendous steam-ship has been inspected by crowds of visitors during the past week. She continues moored off Blackwall, close to the terminus of the Railway, of which economical access thousands have availed themselves.

Although we have already illustrated the construction of this "interesting monster" see Nos. 63 and 125 of our Journal, there remain to be described her interior fittings. Their style partakes of that plainness and simplicity which characterizes the entire vessel. In this respect consists her claim to admiration, as well as in the vastness of her proportions, and the rigid utilitarianism with which not *one inch of space* is thrown away. In illustration of the latter, we annex two engravings, in which the situation of the machinery, and the general interior accommodations, are clearly seen at one view





The 'Launch' of the *Great Britain*, 19 July 1843.

By Courtesy of the City Museum and Art Gallery, Bristol.

Hibernia of 1843, slightly larger, shortly to be joined by her sister ship the *Cambria*. Having the mail contract on its files the Cunard Line looked upon the Great Western Steamship Company with amused tolerance, and the prospect of a second vessel of great size and considerable novelty-value did not alarm it. It even helped by making up a shortage of bunker coal for the *Great Britain's* maiden voyage.

In regard to fares the normal practice at that time on the Atlantic routes was to charge one rate. This was done by Cunard, and by the *Great Western* at 30 guineas. The *Great Britain*, however, began the fashion of various rates for her 'Saloon' and 'Promenade Saloon' decks, forward and aft, and charged 20, 22, 25 and 28 guineas, with 35 guineas for state rooms.

The long awaited first sailing began, amidst much acclamation, at three on the afternoon of 26 July 1845. She carried 600 tons of cargo but, curiously, the contemporary newspapers seem uncertain as to the number of passengers on board, variously giving figures of 45 and 60. The weather was unfavourable with fresh westerly gales for the greater part of the crossing, and then thick fogs as they approached the American continent. It was, however, without untoward incident although the ship was found to roll heavily and also to suffer from excessive mechanical vibration. She arrived at New York at noon on 10 August, having made the passage of about 3,300 miles in 14 days and 21 hours at an average speed of about $9\frac{1}{4}$ knots. It is unfortunate that the logs of her first voyage have not survived and we do not even know how much coal she consumed. (This had been estimated at 70—80 tons per day). The *New York Herald* thus described her arrival:

'The monster of the deep, a sort of mastodon of this age, the *Great Britain*, arrived on Sunday afternoon, the 10th. She was telegraphed precisely at noon; the announcement threw the city into a state of great excitement and thousands rushed to the Battery, to the wharfs on the East River, to the Brooklyn Heights, and to the Atlantic Steamship Pier at the foot of Clinton Street, to get a sight of her . . . This magnificent steamer came up the Bay in beautiful style . . . The great problem whether or not a steamer of the magnitude and construction of the *Great Britain*, and incorporating her principle of propulsion, could make a successful trip across the ocean, is now satisfactorily and happily solved. The engines were never stopped until Captain Hosken had occasion to sound on Saint George's Bank.'

At New York the *Great Britain* was open to visitors for the greater part of her stay of twenty days at 25 cents per head, and $12\frac{1}{2}$ cents more for the engine room. Here she averaged about one thousand per day. Civic hospitality was lavish and at a dinner in Captain Hosken's honour the first toast was: 'The Merchants

of Bristol — the first to risk their wealth in Transatlantic steam navigation. The thanks of both nations are justly their due.'

On her first homeward passage the *Great Britain* left New York at 4 p.m. on 30 August, and arrived in the Mersey at 8 a.m. on 15 September, a comparatively leisurely passage of 15½ days. Her best days run was 287 miles, barely approaching the best of the *Great Western*, but she did better later, when various teething troubles, principally caused by her propeller, were put right.

At this early stage, however, it was necessary to make a quick 'turn round' in order to show her potentialities. Her stay in port was of only twelve days. She left Liverpool at 4 p.m. on 27 September, with 102 passengers, and arrived at New York on 15 October, a passage of 18 days. For the first ten days she met westerly winds of strong gale force, and heavy seas. In a squall from the north-east on 2 October her foremast was carried away. On the 11th it was found by soundings that she had encountered a strong set to the northward, and by the 13th she was over the shoals of Nantucket. On the same day she ran into Vineyard Sound and sheltered for 10½ hours at Holmes' Hole. Having obtained a pilot, she left at 2.30 p.m. on the 14th and reached Sandy Hook at 11 p.m. the same day. She there had to await the tide and steamed into New York early on the 15th. On 18 October she was put in the 'sectional' dry-dock and it was found that serious propeller trouble had developed. Two arms and one blade were missing, and practically all the rivets were loose. The rivets were tightened and one blade was removed to preserve the balance. She was refloated the next day.

The *Great Britain* left New York at 2 p.m. on 28 October with the small number of 23 passengers. All went well until 11 p.m. on the 30th when, to quote the captain's personal log, as given in the local Press, they 'found something wrong with the propeller and striking the stern post very hard.' The situation must have been frightening in the extreme, especially to the passengers, and drastic action was called for at once. Captain Hosken wrote that he then 'Reversed the engines, and, after two or three good thumps, the arm broke off.' By the greatest of good fortune the massive wrought iron stern casting had stood up to this drastic treatment. Thereafter they pushed ahead with very low steam and steered by the sails at times making as much as 9 knots, until 3 p.m. on 1 November. when another propeller arm broke, leaving only one and a half. They then went on under sail alone, keeping the engines turning just sufficiently to avoid any drag caused by the propeller, and in this manner made 10 knots. On 3 November the wind fell calm and they were reduced to 5 knots, while on the following night they were further reduced to 3½ knots by contrary winds. On 6 November the wind changed southerly and they

made 8½ knots as close as she could lay to the wind with fore-and-aft sails and a reefed topsail and mainsail. Later that day the remaining arm of the propeller broke off, and they continued two more days with the engines running slowly before they decided to stop the shaft with the remaining half arm in the vertical position. This proved an advantage, and on succeeding days several ships were passed at a speed of 10—11 knots. At 8 p.m. on the 17th she anchored off the North-West Light-vessel in Liverpool Bay, and engaged tugs and a pilot. The passage was of 20 days, creditable in the circumstances and doubtless made possible only by the long experience in sailing ships and auxiliary steam ships of the ship's officers.

After discharging the cargo it was decided to lay up the *Great Britain* for the winter and to make a thorough overhaul. In the course of this she was fitted with two bilge-keels, 110 ft. long and 2 ft. deep, to reduce her rolling propensities. Her rigging was altered by the removal of the mast officially known as 'one', which was stepped immediately abaft the funnel. The next aftermost mast, originally known as 'two', was fitted with yards for square sails. The original wire rigging was replaced by rope. These alterations were evidently calculated to improve her sailing powers if need be, and it is an intriguing fact that whereas the paddle *Great Western* had relied on her sails to a lesser and lesser degree as time went on, screw propulsion was still regarded as being more suitable for auxiliary use. A new propeller of four blades, weighing 7 tons, was made at the Bristol Works. In March 1846 this was sent up to the Mersey in the *Great Western* as she returned after her own winter refit.

The *Great Britain* came out of dry-dock on 16 April and trials indicated that the new propeller was quite satisfactory. She left Coburg Dock, Liverpool, with 28 passengers, at 9.55 a.m. on 9 May and steamed well for four days until a part of the after air pump broke and the engines had to be stopped. While a temporary replacement was being made she sailed for six days with the screw disconnected. Thanks to the new rigging plan they made 9½ knots close hauled, and 11¾ knots a point or two free. Ironically, when the machinery was again set in motion, she could make only half speed and they limped past Sandy Hook at 9.15 a.m. on the 29th, having taken twenty days.

Permanent repairs were executed at New York and she left on her third homeward passage on 8 June, with 42 passengers, passing Sandy Hook at 5 p.m. It seemed that her teething troubles were finally over and she was under power for the whole passage, the winds being contrary for ten days and light for the remainder. All concerned were gratified to find she made up to 12 knots and averaged 231 miles a day, with a best day of 280 miles. She

arrived at Liverpool Bar at 3 a.m. on 22 June. The passage of 13½ days was similar to the average of some forty passages made by the *Great Western*.

The *Great Britain's* fourth voyage, both outward and homeward, was also a creditable performance. She left Liverpool at 9 p.m. on 7 July, with 110 passengers, and arrived at Sandy Hook at midnight on the 20th, a passage of 13½ days. This was remarkable as she had been delayed by fog and had at one time been in grave danger, getting away after scraping a bilge keel on a reef off Cape Broil, Newfoundland. The homeward passage, between 1 and 15 August, was accomplished in 13 days 8 hours, even including a stop of 18 hours to repair a driving chain.

At Liverpool the *Great Britain* was dry-docked and it was found she had sustained no damage as a result of her contact with the reef. The mishap had a certain amount of publicity value as it was thought a wood-built vessel could not possibly have survived this and earlier misfortunes.

Perhaps this also had something to do with the rising passenger bookings, for she set out on her fateful fifth voyage at 11 a.m. on 22 September with 180, her highest number to date. The wind being favourable she squared away from the Mersey Bar with practically all her canvas set. Later the Calf of Man was seen by those on deck before visibility became restricted with rain. At about 9 p.m., the weather having deteriorated and the seas being high, a considerable shock was felt throughout the ship. It was found that she was aground in Dundrum Bay, close to Tyrella Coast Guard watch house. Although the passengers were considerably alarmed it was decided to keep them aboard until daylight and there was a sleepless night for all while the great ship bumped heavily, damaging her rudder and propeller blades. At dawn she was found to be resting on a sandy beach, having narrowly missed the dangerous reefs known as the Cow and Calf rocks. Every horse and cart in the neighbourhood was requisitioned to carry the passengers and their luggage to the nearest towns.

Hosken blamed his chart. He said he 'had been betrayed through the omission of a notice of Saint John's light in the chart of this year, by which he was navigating, and the want of knowledge on his part of such a light having been established.'

Many experts visited the scene and many plans were produced for refloating the *Great Britain*. Some were frankly fantastic, and those which were tried proved fruitless. Patterson, Brunel and Captain Christopher Claxton, R.N., Secretary of the Company, were quickly on the scene and the last named made his headquarters at Tyrella, preparing to stand by as long as necessary. The salvage expert James Bremner was called and on his advice the idea of refloating her was abandoned for the winter, a break-

water of logs being built around her. An October gale had already swung her almost broadside to the beach and next a November gale practically swept away the breakwater. Captain Claxton's devotion to his charge was immense, and many times he was called to exercise his ingenuity to prevent further damage. By ceaseless efforts he almost restored the breakwater, but it was obviously not strong enough for the task. Brunel thereupon designed another, and for once that genius was compelled to work with materials readily to hand.

The ideas communicated to them were faithfully interpreted by Claxton and his band of local labourers. Close to the stern quarter, which was exposed to the full force of the sea, they drove birch trees seven feet deep into the sand, down to the rocks, in a double row about sixty feet long. Next, more than five thousand faggots of brushwood were stacked against the trunks and held in place by piled stones, chains, and pieces of iron from the ship. Outside, to break the initial force of the waves, they built a flexible bulwark of interwoven saplings. Within this construction the ship lay firmly. Soon after stranding she had been purposely holed in the bottom to admit the sea, and by now some three hundred tons of sand had collected in the holds. These were flooded to a depth of from fifteen to seventeen feet at each high tide. The tidal action, moreover, had caused her to sink right through the sand, and to 'quarry' a hollow in the rocks below so that she was buried about thirteen feet.

The collection of materials and the assembly of the breakwater was a slow affair, frequently interrupted by storms, and particularly so in January, when a succession of on-shore gales prevented the tides from ebbing their usual distance. Then February gales carried away hundreds of the faggots at a time, but after each tide Claxton indefatigably led his men to repair the damage.

The tremendous task of refloating began in the spring with measures to lift her from the sand pit. This was superintended by James Bremner and his son, Alexander. Twenty large boxes each containing thirty or more tons of sand were suspended on tackles from her decks. When they were lowered to the ground lifting could commence, and while the tide surrounded her they were hoisted back into place to prevent undue movement. The lifting was accomplished by levers and counter weights. Amidships, long stout timbers were driven under her bilges, and piles of stones were built up to act as a fulcrum. At the outer extremities of the timbers every possible weighty item was piled, rocks, her anchors, pieces of machinery, and much else. On the inshore side they used one of her large iron lifeboats filled with sand. At her bows a similar lever was rigged. As each tide loosened the ground, the sand boxes were lowered and the ship

was allowed to lift by the action of the levers. Many tons of stones were directed by shutes into the hole left beneath her, and as each tide fell she rested again a little higher. Eventually immense wedges could be driven under her and by 29 July she was raised high enough for a team of boilermakers, from Portsmouth naval yard, to patch the holes in her bottom. These included six main ones, varying in size from 2 feet by 1 foot to 6 feet by 1½ feet, and a number of smaller ones.

On the spring tides of August 1847 the sand boxes were emptied and used for their alternative purpose as lifting camels. By these means they were able to move the *Great Britain* a short distance on to a level ridge of rocks. H.M.S. *Birkenhead* (Commander Ingram, R.N.) and H.M. Bomb-ship *Scourge* (Commander Caffin, R.N.) then arrived and sent aboard large numbers of men. With ground tackle they moved the great hull about three fathoms, and on 26 August the *Birkenhead* was connected in an attempt to tow her away. This failed, as a northerly wind kept the tide down and she failed to float. However, success was achieved on the following day and she was moved eighty fathoms to sea and then anchored. She was found to be leaking considerably, and the original plan to take her straight to Liverpool was abandoned in favour of a call at Belfast. She arrived there on the 28th and further attention was given to her wounds before she left, again in tow of the *Birkenhead*, on the 29th. Her passage across the Irish Sea was uneventful, save for the three hundred perspiring ratings who manned her pumps, until she was within a short distance of the Mersey Bar, when the wind suddenly increased to half a gale. The tow ropes snapped like thread, the leaks increased with the working of the ship, and it looked for a while as if the effort of eleven months was to be wasted. Luckily further connections were made and, with infinite patience, she was tugged gently to the grid-iron at Prince's Dock and there allowed to rest.

After survey by Fawcett, Preston and Company, of Liverpool, it was estimated that the cost of putting the *Great Britain* in order again would be £15,886 for the hull, rigging, etc., and £5,808 for the machinery (the engines and boilers having been forced up out of line), a total of nearly £22,000. This the company was totally unable to pay, their last source of revenue, the *Great Western*, having been sold to the West India Royal Mail Company. It is interesting to note, however, that the surveyors reported: 'we do not conceive it would have been possible under similar circumstances, to stop holes of the size mentioned, in the bottom of a wooden vessel; and we may further remark, that the iron of which the frames and plates are made must have been of most excellent quality.' This was praise indeed from an experienced Merseyside shipyard.

The *Great Britain's* stores were sold by auction at Liverpool on 13 April 1848, and some wonderment was expressed in the Press at the numbers of articles for sale. They included, 228 hair mattresses, 406 feather pillows, 580 blankets, 970 linen sheets, 1556 towels, 781 pillow cases, and much besides. Efforts to find a private bidder failed and the ship herself was auctioned on 11 September 'as she lay' at Coburg Dock. The reserve figure of £40,000 was not reached, although only about a third of her original cost, and it is said the highest bid was £20,000.

In June 1849 it was reported that the Collins Line had bought her for £20,000, and proposed to spend a further £23,000 in refitting her to run between Liverpool and New York. This important American line was on the threshold of a period of expansion during which it seriously competed with the Cunarders, but the *Great Britain* purchase fell through, probably because of nationalistic pressures to buy or build American. Eventually, in December 1850, having incurred a considerable debt in dock dues, the unfortunate Bristol steamship was sold for £18,000 to Gibbs, Bright and Company through the agency of Patterson, the ship-builder. Gibbs, Bright and Company, running sail and steam services to Australia, were a Liverpool offshoot of an old Bristol concern. The formal Bill of Sale for the *Great Britain*, dated 2 January 1851, shows that the partners were at that time George Gibbs and Robert Bright of Bristol, and Tyndall Bright of Liverpool. The Great Western Steamship Company, having sold its ships, was wound up in February, 1852.

The new owners expended a large sum of money on refitting and on the installation of new engines by John Penn and Sons, of Greenwich. These were of oscillating type with two cylinders of 82½ inches diameter and 6 feet stroke. They drove the shaft through a train of toothed gearing. An unusual feature was that the four pairs of wheels and pinions were placed side by side, but with the teeth staggered, so that each were advanced a quarter of a tooth. This arrangement ensured smooth running. The engines had a nominal horse-power of 500, and drove a three-bladed cast-iron propeller 15½ feet in diameter and of 19 feet pitch, giving a speed of ten knots.

The old saloon was made into a cargo space and passenger accommodation was made in a new long deck-house. This provided for 730 passengers, including 50 first-class. The economy of space, coupled with the fact that her new engines and boilers were more compact, resulted in an increase of cargo capacity of nearly 1000 tons. Her rig was altered to four masts, normally carrying 300 square yards of canvas with square sails on 'two' and 'three'. The rig was still officially described as that of a schooner and, contrary to her earlier arrangement, the third mast, abaft the

funnels, was the tallest or main mast. The funnels, each serving three boilers, were unusual in being placed side by side. The alterations left her gross tonnage figure as before, at 2936, but the smaller engine space had the effect of increasing her net, or deadweight, tonnage to 1460.

The *Great Britain* began her new life with a further voyage to New York, leaving Liverpool on 1 May 1852 in the command of Barnard Robert Matthews, late of the *Great Western*. The passage took 13 days and 7 hours, which was satisfactory if not spectacular. She returned to Liverpool in June.

Her first Australian passage commenced on 21 August 1852, when she sailed with 650 passengers, a crew of 138, and a full cargo including gold and silver specie to the value of one million sterling. All went well until they were in latitude 24° 21' S., when the engineer reported the coal was running short. They were then 850 miles from Table Bay, but a heavy southerly gale was blowing. They therefore returned to St. Helena, a distance of 1036 miles, under sail and reduced steam. Having refuelled, they again proceeded south and called at Cape Town. Leaving that port on 17 October, they arrived at Melbourne on 12 November, thus making the passage in 82 days. Her best day's run was on 2 November, when she did 286 miles, or an average of nearly 12 m.p.h. From Melbourne she went to Sydney, arriving there on 20 November, and then back to Melbourne. She left Melbourne in January 1853 and, calling at Table Bay, St. Helena and Vigo, arrived at Liverpool in April.

To obviate a recurrence of the coal trouble her boilers were altered, incidentally again reducing the funnels to one. Her masts were also cut down to three, but with square rig on them all, so that she became technically a 'full-rigged ship'.

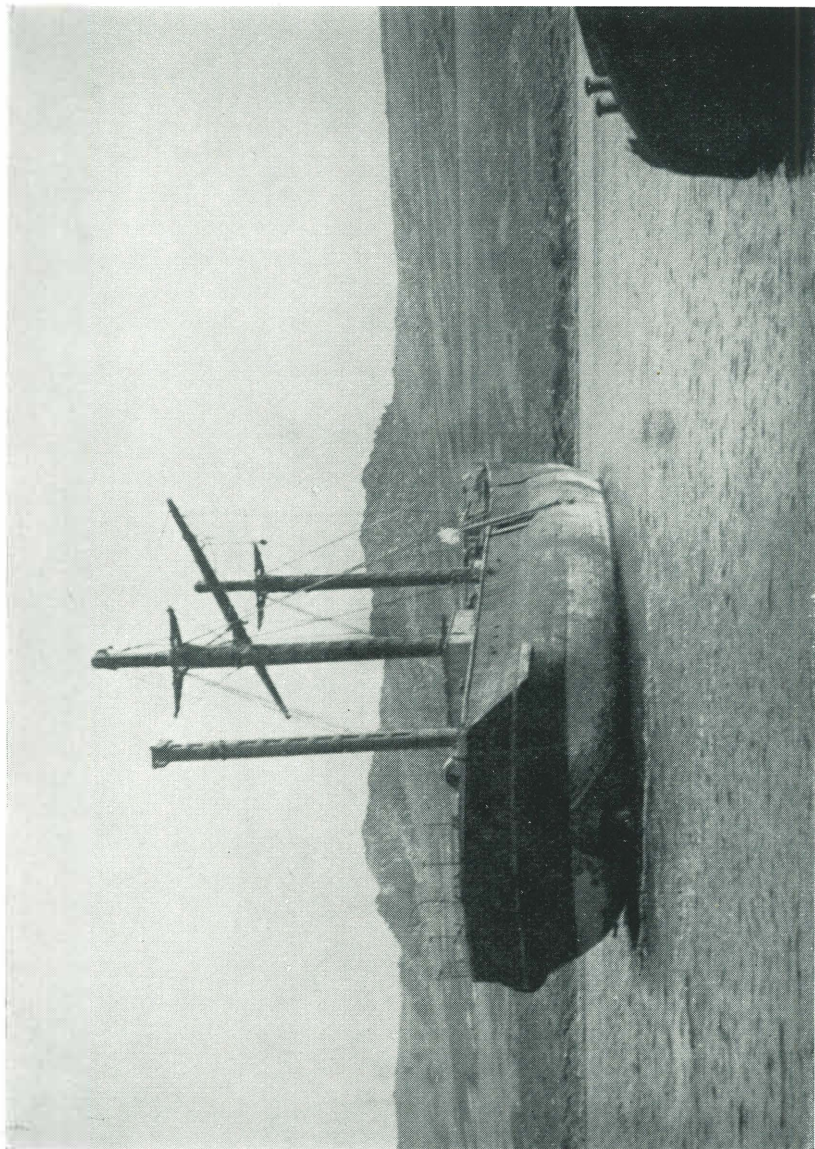
The *Great Britain's* second Australian passage, 11 August to 16 October, 1853, calling at St. Vincent, was accomplished in 67 days; and the return, 24 December 1853 to 24 February 1854, calling at the Falkland Islands, in 63 days. For the third voyage Captain John Gray assumed command, from his former position as Second Officer.¹ This voyage commenced unpropitiously, for she left Liverpool on 28 April 1854, and had to put back with her screw fittings deranged. She left again on 13 June and arrived at Melbourne on 17 August, a passage of 66 days. While she was away, on 24 July 1854, she was formally transferred to the ownership of the Liverpool and Australian Navigation Company, for

1. John Gray was an extremely popular commander and at the same time something of a mystery man, popular belief having it that he was the runaway son of a peer. He was in command of the *Great Britain* until towards the end of 1872, when he disappeared from his cabin when at sea, thirty days out of Melbourne.



A Nautilus shell trophy carved by C. H. Wood in 1844.

By courtesy of C. F. M. Young, Esq.



The *Great Britain* at her last resting place in Sparrow Cove, Falkland Islands.

Photo: K. Lellman.

whom Gibbs, Bright and Company were managers, with Tyndall Bright as its Secretary.

It is interesting to note that, following the *Great Britain's* arrival in 66 days, the Black Ball clipper *Lightning* left Melbourne two days later, and arrived at Liverpool in 64 days, 3 hours. This meant that replies were received to letters in 132 days, a course of post which was not equalled for many years. This 'record' is mentioned by an authority on sailing ships, the late Basil Lubbock, in his *Colonial Clippers*. The *Lightning* was evidently one of the fastest of her class. With reference to this extremely controversial subject Lubbock claimed that she held the all time 'record' for 24 hours sailing, having logged 436 nautical miles while crossing the Atlantic from the building yard at Boston to her home port of Liverpool.

On her return from Australia for the third time the *Great Britain* was hired for trooping to the Crimea. She had a refit during which her accommodation was altered and enlarged, and in February she severed all connection with Bristol when she was re-registered at Liverpool. Her extended accommodation had the effect of increasing her tonnage to 3209 gross, 1734 net. Between 7 March 1855 and 7 January 1856 she carried some 44,000 men, mostly British and French, and visited Marseilles, Gibraltar, Malta, Genoa, Smyrna, Constantinople, Balaklava, Spezia and Kertch. Understandably, after this she needed yet another refit, and this time she was in the shipyard for nine months, emerging with her accommodation restored to comparative luxury, her old cargo capacity, and her tonnage figures as in 1852, that is to say 2936 gross and 1460 net.

She was able to make only one further Australian voyage before she was again hired for trooping, this time in connection with the Indian Mutiny. This was, however, for one voyage only. She left Cork on 8 October 1857, and arrived at Bombay on 17 December. On her return she left Bombay on 20 January, 1858, called at Table Bay, and arrived at Liverpool on 10 April.

Between 1855 and 1859 the *Great Britain* ran in conjunction with the *Royal Charter* of the same line. The *Royal Charter*, which is known chiefly for her disastrous wreck on the Anglesey coast in 1859, had a strong relationship with her slightly larger consort, for both hulls came from the same drawing board. This happened because the builder who contracted to build a sailing vessel at Sandycroft, near Hawarden in Flintshire, became bankrupt when little more than the keel had been laid down. Gibbs, Bright and Co., for the Liverpool and Australian Steam Navigation Company, bought the materials and the embryonic vessel on the stocks. They called in William Patterson of Bristol to start afresh by designing and building an auxiliary steam vessel, and she was launched on 31 August 1855, being afterwards engined on the Mersey. She

proved to be considerably faster than the *Great Britain*, touching 18 knots under steam and sail, and 14½ knots under sail alone with the propeller raised from the water.

After one more round voyage to New York, the *Great Britain* went to Australia for the fifth time, then another New York voyage, and then settled down to the Australian run for the rest of her career under steam. In the next fifteen years she made a further 27 Australian voyages, becoming a very popular ship and even reaching the stage where she was frequently described as 'a household word'. Her best outward run was 55 days in 1860, and on two other occasions, both in 1873, she made the passage in 57 days. Probably the most noteworthy incidents of this period were the storm of 11 January 1866, when she was in the Bay of Biscay at the time of the sinking of the auxiliary steamship *London*, with terrible loss of life; and the homeward passage in 1867 when she was beaten by a sailing vessel. This was the celebrated Black Ball line packet ship *Marco Polo* of Liverpool, 1626 tons, which had, however, made all her record breaking passages when new some ten or fifteen years earlier. In January 1867 both vessels left Melbourne at the same time and parted company in the following night. A week later the crew of the *Great Britain* were amazed to find the sailing ship ahead. They overhauled her, however, and drew out of sight. On taking a pilot off Cork they asked for news of the *Marco Polo* and found, to their chagrin, that she had arrived eight days before, having made the passage in 76 days.

The *Great Britain* arrived at Liverpool on 1 February 1876, at the close of her thirty-second Australian voyage, having made the passage in 66 days. She was then laid up at Birkenhead. After several years of idleness, with no private purchaser forthcoming, she was auctioned in 1881, but withdrawn at £6,500. About the beginning of 1882 she was sold privately to Anthony Gibbs, Sons and Company, for the South America trade. She was taken to the yard of H. and C. Grayson, Ltd., stripped of her machinery, and turned out as a three-masted full-rigged ship. Her iron hull was, for reasons never established, sheathed with wood externally. Her tonnage as a sailing vessel was 2735 gross, 2640 net, and she could carry nearly 3000 tons of bulk cargo, such as coal.

Under sail she made two voyages from Liverpool to San Francisco, out with coal and back with wheat. Her master at this period was Henry Stap. On the first occasion she set out from Liverpool on 9 November 1882, but had to put back on the 25th to stop leaks. Sailing again on 2 December, she met heavy weather in the south Atlantic, having to put into Montivideo to re-stow the cargo. She eventually arrived at San Francisco on 2 June 1883, in 205 days. The return passage, from 30 August 1883 to 31 January 1884, was of 153 days. Her second voyage was less marred

by untoward happenings; outward (11 May to 19 October 1884) she took 160 days, and homeward (12 February to 12 July 1885) 150 days.

She loaded coal at Penarth for her third voyage, sailing on 6 February 1886, but met heavy weather off Cape Horn, was damaged, and returned to Port Stanley, Falkland Islands, for repairs, arriving 25 May 1886. Here, after survey, and bearing in mind the remoteness from major repair facilities, she was abandoned by the underwriters and condemned for a hulk. She became the property of the Falkland Islands Company and at various times was used for storing wool and coal.

In 1933, having outlived her usefulness, it was proposed to tow her up one of the creeks of the island, sink her, and use her as the foundation of a bridge for a sheep crossing. This was found to be impracticable, however, probably owing to her draught. On 14 April 1937 she was towed to Sparrow Cove, Port William, and there intentionally holed so that she rested on the sea bed without bumping. Much of her decking was torn up and used for a bridge over the Fitzroy River and for a jetty at Port Stanley. Photographs which have been published from time to time show little visible deterioration and at over one hundred and twenty years old the *Great Britain* remains a testimony to the skill and workmanship of Bristol shipbuilders.

A VICTORIAN SCHOOLBOY'S ACCOUNT OF THE LAUNCHING

Among the letters and papers of the Prideaux family in the Bristol Archives Office are two letters from William Prideaux to his brother Francis containing an eye-witness account of the launching and some comments on the difficulty in getting the ship through the locks. These have not hitherto been printed and they are now reproduced by the kindness of the City Archivist.

1. William Prideaux to Francis Prideaux. Bristol Archives Office: 20535(123).

Merriott Vicarage.

July 28th, 1843.

My dear Brother,

Though I do not fancy I can fill this large sheet of paper, yet as I have not written you for a long time, I shall do my best to let you know what has lately taken place at Bristol, the launching or rather floating of the Great Britain Iron Steam Ship . . .

I must now tell you about the Launch. On Tuesday 18th inst it rained nearly all day, and many were the taps the Barometer received, still during the whole day there seemed to be no sign of a clearing and many were the doubts and gloomy forebodings which people entertained respecting the morrow; the first thing enquired after the next morning was the weather which proved to be dull and misty but which they said was all for heat, however it did clear up afterwards, and soon after breakfast we all set out for Mr. Surrage's to see the Prince Albert and his train, he set off from London about six a.m., and arrived at the station about ten, where he received several addresses, one from the Clergy, and a beautifully chased gold snuff box from the Society of Merchant Venturers [,] he was accompanied by the troops of Yeomanry and in his Carriage by the Mayor, Mr. Gibbs, Lord Somebody and somebody else, then the Prince took off his hat repeatedly, I think he must have tired his arm, he is a very handsome young man though he looked rather pale and tired. I should wonder how it could be otherwise as he had been travelling ever since six o'clock, there was very little cheering I thought, though in the newspapers of course it said, that he was received with the loud and continued acclamations of the multitude; I do not remember his route, except that it lay through the most fashionable parts of Clifton and under the rocks, there were several triumphal arches erected covered with evergreen, V As and Crowns, one, opposite the Exchange, on the draw Bridge at the Bottom of Park Street, in York Crescent and others; a handsome Pavillion was erected in a Yard by the vessel where there was a cold Banquet, tickets 1 Guinea each, the Vessel was covered with Flags of all descriptions also a great number of houses, the windows and roofs of all of which were covered with people, as also were all the elevated situations were (sic) the least view of the proceedings could be obtained, as Brandon Hill where were assembled several thousand [,] this was about half past one o'clock, but first I must tell you that we went home to lunch between Prince Albert's passing through the town and the launch, Betsey and Hester both went out and the home was taken care of by old William, Mr. and Mrs. Shapland and the three little ones were with us but just as we were going it began to rain a sharp storm so the ladies put back

and we proceeded, the rain soon stopped but we had several storms afterwards and it was such a curious sight to see several thousand Umbrellas twisted all together, the hill in fact looked like a large ant's nest; however it was not a very good place so by Mr. Cross's influence we got admission to a range of seats placed just outside the Clifton National School room where there was a nice view of the Vessel, but we had to wait a long time, more than an hour I think, during which time, down came a very heavy storm which thinned the seats so taking an opportunity I slipped down front; next to me sat a fat old lady or rather respectable person who as she happened to have no umbrella, very kindly offered to hold mine for me, which I was silly enough to let her do, by which means I got wet through on one side, I wished I had not been so kind; it cleared up just as the vessel was being towed out by a little steamer the Avon worked like herself by the Archimedian Screw, as her own works were not used; the papers say, she was christened by the Prince hurling a bottle of Champagne at her but in reality Mrs. Miles tried to perform the operation, and being clumsy or nervous instead of throwing the bottle let it drop out of her hands into the water; so the vessel was not christened at all, perhaps it is a bad omen, she is now to be seen at a shilling a head . . .

2. William Prideaux to Francis Prideaux. Bristol Archives Office: 20535(134) 13 January 1845.

The Great Britain is at last got out of Dock, a nice laugh against the Bristol people for building a vessel they could not get out of Dock; they had some disappointment before she got clear, for she tried one morning at 7 o'clock and the highest tide and found she was just too wide for the lock Gates at Cumberland basin, unless she got out that evening she must stay till March, so they set to work and pulled down the gates and posts and got her through with the evening tide under the guidance of Capt. Holken late of the Great Western, she is now in Kingroad and has been [on] an experimental trip to the Holmes and will soon go to London to be shown to the people. I should think they will get a great deal of money by the expedition; I do not know for what part of the world she is destined but certain it is she has bid goodbye to Bristol for ever, and will most likely make Liverpool her resting place in future. It is considered that paddle wheels ere long will be entirely laid aside as the Archimedian Screw seems so much better in point of speed and appearance. You would hardly know Clifton were you to see it now, it is so overbuilt . . .

MEMORIALS AND RELICS OF THE GREAT BRITAIN

Various buildings connected with the Great Western Steamship Company, and its leading personalities, were mentioned in my pamphlet on the *Great Western* (No. 8 in this series). The only other construction specifically connected with the *Great Britain* is the dry dock in which she was built and which is now used for ship repairing. It can be viewed from Hotwell Road, but closer inspection is, of course, obtainable at the discretion of the occupiers.

There are no important relics of the fabric of the *Great Britain* in the United Kingdom. The National Maritime Museum has a portion of a taffrail, and the Bristol Shiplovers' Society has an acorn-shaped finial from a stairway.

Models: The Science Museum, South Kensington, has a contemporary model to the scale of 1:48, which was presented by T. R. Guppy. (Inv. No. 1878.125).

The Museum of Science and Engineering, Newcastle-on-Tyne, has a model, probably contemporary, which was presented to the Royal United Service Museum by King Edward VII, and moved to its present location on the closing of that Institution. (R.U.S.M. Catalogue No. 7100).

The Liverpool Museum has a recent model, made in 1934, to the scale 1:96 and based on the Science Museum model. (Inv. No. 34.93)

Plans: A folio of 25 Plates with various plans and details was published anonymously in 1847 (printed by John Neale, London), entitled '*The Great Britain Atlantic Steam Ship of 3,500 tons . . .*'

The National Maritime Museum has a sheer draught; also the papers connected with her Lloyd's Survey at Liverpool in 1882, including plans.

Illustrated London News, for 15 Feb. 1845, p. 112, published a deck and internal plan.

Medals: At least three commemorative medals were minted: (a) of 27 mm. diameter, commemorating the launch and bearing a representation of the *Great Britain*, with some data on the reverse. (b) Of 33 mm., commemorating the maiden voyage to the Thames, and bearing the same picture, with an 'address' and list of passengers on the reverse. (c) Of similar size, commemorating the Royal visit of 22 April 1845 and bearing the heads of Queen and Prince Consort, with the *Great Britain* on the reverse.

Log Books: The National Maritime Museum has two Logs (a) Third voyage, Liverpool-Australia-Liverpool, 12 June 1854 to 22 January 1855, and (b) Second voyage Liverpool-Crimea-London, 4 September 1855 to 4 June 1856.

Nautilus Shells: A number of these unusual trophies were carved by C. H. Wood in 1844 and subsequently mounted and capped with silver. Five have been traced, viz. one at Windsor Castle, three at the National Maritime Museum, and one in the possession of C. F. N. Young, Esq., of Wenlock.

Paintings, etc.: Many lithographs, aquatints, etc., of the *Great Britain* were published, but the frequent changes of rig and other external features often misled the artists. Probably the best representations are the following:

- 6 masts and 1 funnel. A. Launch, coming out of the dock. Coloured lithograph. Picken, Day and Hughes, after J. Walter. Pub. G. Davey, 1843.
- B. Launch, at Mardyke. Coloured lithograph. Day and Hughes, after Thos. Dunhill, jr.(?) Pub: Philip and Evans, 1843.
- C. At sea. Tinted Lithograph. G. Hawkins, after Joseph Walter. Pub: G. Davey.
- D. At sea. Coloured aquatint. H. Papprill, after J. Walter. Pub: Ackermann, 1845.

- 5 masts and 1 funnel. E. At sea. ('D' Altered and republished, 1846.)
- 4 masts and 2 funnels. F. Off the Mersey. Coloured lithograph. T. G. Dutton, after S. Walters. Pub: Ackermann, 1852.
- G. At sea off Sandy Hook in 1852. Coloured lithograph. Eng. and Pub: N. Currier, 1852.
- 3 masts and 1 funnel. H. At sea. Coloured lithograph. H. Aitken, after C. P. Williams. Pub: J. R. Isaac. (Also published incorrectly with 3 masts and 2 funnels.)
- I. Hove-to for pilot off Port Philip Heads. Coloured lithograph. T. G. Dutton. Pub: W. Foster, 1864.

Photographs: Two early photographs are in existence. One was taken by Fox Talbot as the *Great Britain* lay in Cumberland Basin, waiting to be released, in 1844. Another, showing her in her last months as an Australian liner, was taken by one Gould, on 14 August 1875, presumably in the Mersey.

Ship Newspapers: (a) Printed on board.

The Great Britain Times, Nos. 1—5, printed at Table Bay 14 Oct. 1852. (Nat. Mar. Museum).

The Great Britain Gazette, Nos. 1 (6 July 1861) to 4 (3 Aug. 1861). (Bristol Ref. Lib.)

(b) Handwritten on board, later printed.

The Great Britain Magazine, or Weekly Screw, Nos. 1 (16 Mar. 1861) to 7 (27 Apr. 1861), reprinted by Mason and Frith, Melbourne, 1861. (Bristol Ref. Lib.)

The Cabinet, Nos. 1 (9 Nov. 1861) to 4 (19 Dec. 1861), edited by Alun Reid, reprinted by the *Colonist* Office, Nelson, 1880. (Bristol Ref. Lib.)

Note: The three sets at the Bristol Reference Library were presented by Mrs. le Francois, of Rondesbosch, daughter of Dr. Thomas Morland Hocken, Ship's Surgeon of the *Great Britain*, who later settled in Dunedin, where he died in 1910.

The *Great Britain Gazette*, strangely, makes three major mis-statements. (a) That the ship was built by Patterson and Son. (b) 'Her keel was laid down on the same site (the *Great Western*) was launched from.' (c) The *Great Britain* 'made two trips to New York before stranding.'

SOURCE MATERIAL AND FURTHER READING

Claxton, Capt. Christopher, R.N. 'A Description of the *Great Britain Steam Ship*, Built at Bristol . . . ' (Bristol: Mirror Office, 1845).

Custom House Registers, Bristol and Liverpool.

Felix Farley's Bristol Journal.

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Sea Breezes (principally Old Series, 1922—39).

Wells, Charles. *A Short History of the Port of Bristol*. (Bristol: Arrow-smith, 1909). (N.B. On p.77 it is erroneously stated that the *Great Britain* went to the Thames for fitting out, and that she was lost on her second voyage.)

Bonsor, Noel R. P. *North Atlantic Seaway*. (Prescot: Stephenson, 1955).

Lubbock, Basil. *The Colonial Clippers*. (Glasgow: Jas. Brown and Son, 1924.)

The Mariner's Mirror, xxiv, No. 2, Apr. 1938 (*Great Western*); xxxvi, No. 1, Jan. 1950 (*Great Britain*).

ACKNOWLEDGEMENTS

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PREVIOUS PUBLICATIONS

1. *The Bristol Hotwell* by Vincent Waite (out of print).
2. *Bristol and Burke* by P. T. Underdown.
3. *The Theatre Royal: the first seventy years* by Kathleen Barker.
4. *The Merchant Adventurers of Bristol in the Fifteenth Century* by E. M. Carus-Wilson.
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