

THE LIFE=BOAT  
AND ITS WORK

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C.B., C.M.G., V.P.



*Photograph by*

*W. & D. Downey  
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# THE LIFE-BOAT AND ITS WORK.

BY

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## PREFACE

THIS little book is in substance the same as a paper read before the Royal Society of Arts on the 16th February, 1910.

At the request of the Committee of Management of the Royal National Life-Boat Institution, it has been prepared for publication in this form, in the hope that it may help to bring increased support to that noble Institution.

Any profits derived from its sale will be handed over to the Committee of Management.

For valuable help and information the Author is indebted to Monsieur GERDRET, of the Ministry of the Colonies, Paris, Senhor MARQUES DA COSTA and Senhor CONDE DE SAMODAES, of Oporto, Senhor PAULO BENJAMIN CABRAL, of Lisbon, Mr. CAVE and Mr. HARGOOD, Members of the Committee of Management of the Institution, Mr. G. B. HODGSON, of South Shields, Mr. MALCOLM and Mr. ROBINSON, Vice-President and Secretary respectively of the Tyne Life-Boat Society, Mr. HAWKEY, of Newquay, Mr. BAYLEY, Secretary of Lord Crewe's Trustees, and the Officers of the Institution and of the Royal Society of Arts.

HAMPSTEAD : 1910.

## THE LIFE-BOAT AND ITS WORK

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It is not to be supposed that lives were not saved from shipwreck before the advent of the Life-Boat. From time immemorial there had been gallant rescues by all kinds of boats; and they continue to the present day. But the Life-Boat has saved thousands of lives which would otherwise have been lost; and it has led to a concentration of thought and of effort, both in this country and abroad, which has radically changed the character of the service rendered by brave men to their shipwrecked fellow-creatures. No longer does the service depend on the generous impulse of scattered, irresponsible, ill-requited men: it is organised and under control; it has public recognition and support; it is constant in its operation, and it is inspired by as much courage and generosity as ever.

It is impossible to assign to any one person the merit of inventing the Life-Boat.

As early as 1765, a Monsieur Bernières, Controller-General of Roads and Bridges in France, invented a boat which, while carrying nine persons on board, would not sink when she was filled with water, and would not capsize when she was hove down so far that the top of her mast was immersed; but I cannot find that the invention was ever put to practical use.\*

\* Extract from a book, now out of print, entitled "Le Tableau de la Mer: Naufrages et Sauvetages," par G. De La Landelle (Paris: Hachette, 1867), p. 282 et suiv: "... Au mois de juillet



Lionel Lukin,\* with his plans for increasing the buoyancy and stability of boats, was first in the field in this country. He appears to have had no knowledge of the work of Monsieur Bernières. A coach-builder in Long Acre, he was a very worthy member of the Worshipful Company of Coachmakers, of which he became Master in 1793. Although a landsman, he had sea blood in his veins, being descended through his grandmother from Lionel Lane, one of Blake's captains. Addressing the Prince of Wales † (afterwards George IV.), whom he had frequently to see on other business, he described how, in 1784, he was led to study the subject, how His Royal Highness encouraged him, and how far success attended his efforts.

1775, on fit sur la Seine l'essai d'un léger canot insubmersible et inchavirable, dont l'invention qui datait déjà de dix ans, était due à M. de Bernières, Contrôleur général des Ponts et Chaussées, connu d'ailleurs par plusieurs autres remarquables découvertes. Les expériences, qui furent renouvelées à diverses reprises, notamment le 25 juin de l'année suivante, à St. Cloud, en présence du Prince de Conti et de Mlle. de Bourbon, réussirent toujours à souhait. Elles sont relatées dans les principales gazettes du temps. La nacelle matée et munie de deux ponts à la poupe et à la proue, c'est-à-dire de deux grandes boîtes à air, portait aisément neuf personnes, dont six assises au fond, un patron et deux rameurs. On la remplissait d'eau jusqu'aux bords et on lui imprimait des balancements violents sans qu'elle pût couler. Une foule de nageurs s'y accrochaient tous du même côté, on pesait sur le mât jusqu'à le plonger dans l'eau. 'Au moment où le mât était lâché, elle se relevait d'elle-même, avec une rapidité surprenante, comme si un corps étranger, élastique et puissant, l'eût relevée avec force. Ce succès a étonné, poursuit l'auteur de la relation, 'et a confirmé ce que M. de Bernières avait promis de faire : l'expérience d'une chaloupe insubmersible ; cette nacelle multiplie les secours contre les hasards de la mer, elle peut sauver non seulement les hommes qu'elle porte, mais aussi ceux qu'elle traîne, et ses côtés deviennent presque aussi utiles que son intérieur.' (*L'esprit des journaux*, août 1775.) Faut-il dire que, malgré la publicité donnée à l'invention du Contrôleur général de Bernières, malgré sa haute position et ses protections royales, il en fut au siècle dernier de sa nacelle insubmersible comme il en avait été 160 ans auparavant de celle du brave Razilly ?

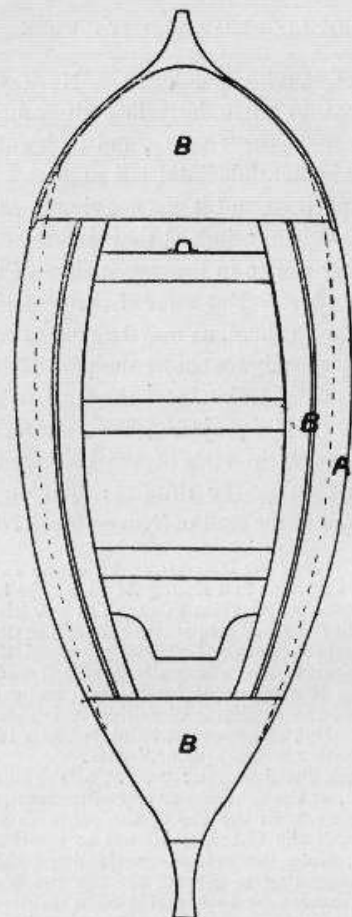
\* Born at Dunmow, 1742 ; died at Hythe, 1834.

† "The invention, principles of construction, and uses of unimmovable boats, stated in a letter to H.R.H. the Prince of Wales, by Lionel Lukin." Printed for the author by J. Nichols and Son, London, 1806.

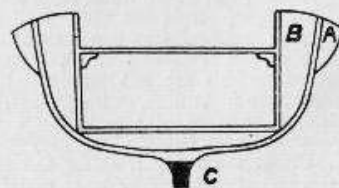
It appears that, having purchased a Norway yawl,\* he converted her into what he called an "unimmovable boat," tested her on the Thames, and took out a patent. The name "unimmovable" did not suggest a sufficiently philanthropic purpose, and it was not simple enough to be popular. It is evidence indeed that Lukin was thinking rather of making people in boats safe than of using those people to save others. But some of the essential features of a Life-Boat were there, as may be seen from the illustration. The larger figure shows the plan of the Norway yawl as converted by Lukin, and the smaller a cross section amidships. A is a projecting cork gunwale ; B, B, B, are air-tight cases at the ends of the boat, and along the sides above and below the thwarts ; c is an iron keel. The patent is dated the 2nd of November, 1785.†

\* "On the advice of the Deputy-Master of the Trinity House, Lukin entrusted this boat to a Ramsgate pilot to be tested in bad weather. He never heard from this man or saw his boat again, but he learned that she had frequently crossed the Channel when no other boat would venture out, and he surmised that she was employed in smuggling, and eventually captured and destroyed. He then had one like her built for himself, and called her the *Witch*, because of the prodigies of sailing which she performed in bad weather. But she was not employed as a Life-Boat."—*Obituary* in "Gentleman's Magazine," 1834.

† Extract from Specification: "... to the outside of the boats and vessels, of the common or any other form, are projecting gunnels, sloping from the top of the common gunnel, in a faint curve, towards the water, so as not to interrupt the oars in rowing; and, from the extreme projection (which may be greater or less, according to the size and use the boat or vessel is intended for), returning to the side in a faint curve, at a proper distance above the water-line. These projecting gunnels may be made solid, of any light materials that will repel the water, or hollow and water-tight, or of cork, and covered with thin wood, canvas, leather, tin, or any other light metal, mixture, or composition. These projections are very small at the stem and stern, and increase gradually to the dimensions required .... In the inside at the stem and stern, and at the sides (where the projecting gunnels are not necessary), and under the seats and thwarts, are inclosures, or bulkheads, made water-tight, or filled with cork, or other light materials that will repel the water: the spaces between the timbers may in like manner be filled up. .... Under the bottom, along the centre of the keel, is affixed a false one of cast-iron, or other metal; this .... will act as ballast with more power than a much greater weight



PLAN



SECTION

NORWAY YAWL CONVERTED BY LUKIN INTO AN  
"UNIMMERGIBLE BOAT."

By accident Lukin was associated with the earliest known attempt to establish a life-saving service. Nathaniel, third Baron Crewe of Stene and Bishop of Durham, married the daughter of William Forster of Bamburgh, Northumberland, and acquired the estates of that gentleman. Dying in 1721 without children, he left the estates to trustees for charitable purposes. In course of time the management was undertaken by Archdeacon Sharp, an enlightened philanthropist, who not merely administered the Trust as Chairman, but furthered its objects by contributions out of his own pocket. It was owing to his initiative that the funds were partly devoted to purposes connected with the sea. He devised schemes under the Trust for the benefit of mariners and shipwrecked persons; and, in 1786, he sent a coble to London to be converted by Lukin into a safety-boat, which was afterwards employed for some years at Bamburgh in saving life from shipwreck. Thus, although only to the extent of applying his ideas to the coble which was sent to him, Lukin was concerned in the first life-saving station on the coast.\*

At about the same time, William Wouldhave,† a house painter in South Shields, who taught singing in the charity school, and eventually became parish clerk, a versatile and eccentric genius, was trying to design a boat which would neither sink nor remain upset; but his final model was not made until 1789, between three and four years after the date of Lukin's patent.

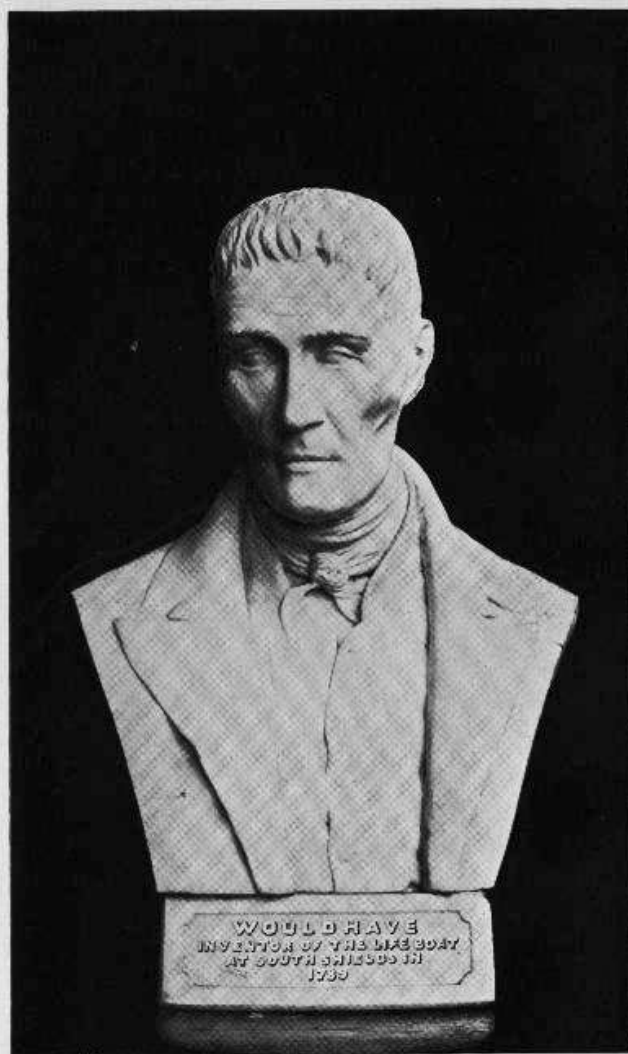
A third claimant to the invention was Henry Greathhead,‡ also of South Shields. This gentleman

in the common situation, and is . . . not liable to shift by any sudden motion of the boat or vessel."

\* The humane plans of Archdeacon Sharp have been varied from time to time, but they have never been interrupted, and the Life-Boat cause now receives from the Trust substantial support in the shape of contributions towards the maintenance of Life-Boats in the neighbourhood of Bamburgh.

† Born at Newcastle-on-Tyne, 1748; died at South Shields, 1821.

‡ Born at Richmond, Yorks, 1757; died at South Shields, 1816.



WILLIAM WOULDHAVE.

From a bust in the Public Museum, South Shields.

received £1,200 from Parliament, and a gold medal and 50 guineas from the Society of Arts, besides other rewards.\*

In the "Gentleman's Magazine" of 1806 there is a voluminous correspondence on the merits of the claimants, two Tyneside gentlemen taking up the cudgels for Wouldhave against both Lukin and Greathead, and Lukin defending his own position. The controversy has been revived from time to time, and Sir David Brewster became the champion of Lukin in an article which appeared in "Good Words" in 1863. The materials now available are perhaps scarcely sufficient for an unassailable judgment; but what emerges from the conflicting claims may be stated thus: Lukin, when he took out his patent, had not thought of self-righting qualities, and did not propose to construct a boat to be specially employed in saving life; neither did he propose to establish a Life-Boat service. His aim (and he afterwards said he thought it was a higher aim) was to make all kinds of boats safe and buoyant. Although he liked the build of the Norway yawl, he did not attach importance to it or to any particular design, but proposed that his invention should be applied to any boat.

Wouldhave, unlike Lukin, thought much of build or design. He was not insensible to the value of watertight chambers and cork; but it was on the shape of the boat that his mind kept working; and he intended that his boat should be a Life-Boat, and nothing else. He did not suppose that the owners of the vessels which frequented the Tyne could be induced to convert their ships' boats into safety boats; he was possessed with the

\* 100 guineas each from the Trinity House and Lloyd's; 5 guineas from the Literary and Philosophical Society of Newcastle-on-Tyne; a medallion from the Royal Humane Society, and a diamond ring from the Czar of Russia. The rewards were all given in 1802, and Lukin remarked that none were applied for until his patent had expired.



conviction that if life was to be saved from shipwreck, it must be by means of a boat specially constructed, set apart for the purpose, and always ready. The kind of seas encountered at the mouth of the Tyne made it im-



HENRY GREATHEAD.

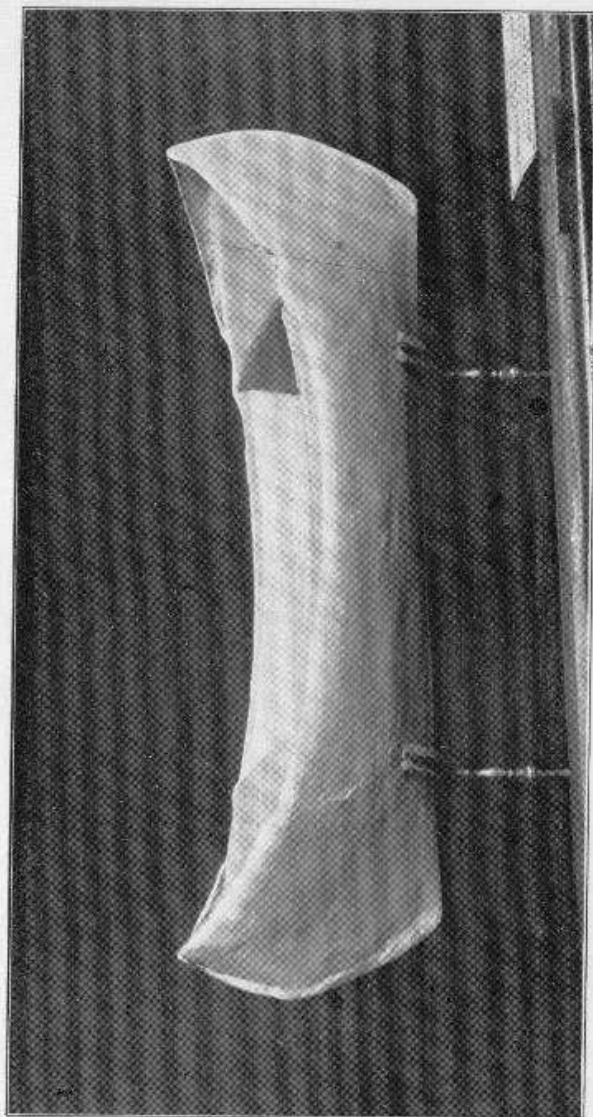
portant, he thought, that a boat stationed there should have self-righting qualities, and this gave direction to his aims. A firm of brewers allowed him to test his models in their tanks, but it was an accident which suggested the solution of the problem. In a ramble, early in 1789, he

happened to see a woman who had just been drawing water from a well. Her skeel was full, and on the surface of the water there floated the half of a circular wooden dish. While he chatted with her before helping to lift the skeel to her head, he tried to make the wooden fragment turn over, but at his every attempt it righted, and would not remain upside down. Wouldhave might have cried "Eureka," but he probably used some more homely expression as, with a light step, he went off to continue his experiments at the brewery. Presently he ran into the office of the firm, saying that he had discovered the principle he was looking for. Soon afterwards an advertisement appeared in the "Newcastle Courant" offering a premium of two guineas for a plan or model of a boat capable of living in the stormy seas at the mouth of the Tyne. Wouldhave was ready, and, on the 10th of June, submitted a model,\* which is still preserved in the Public Museum, South Shields.

It was made of tin; and his idea was that the actual Life-Boat might be made of iron, or preferably of copper as not being liable to tear. She was to have a straight keel, high-peaked ends fitted with water-tight cases containing cork, cork along her sides within board and above the floor amidships, and great shear of gunwale. It has been suggested that he must have known of Lukin's patent, and made use of the knowledge, but the essence of Wouldhave's invention lay in the shape of the boat, and in the high ends the value of which he had learnt from the broken wooden dish. He was evidently working independently, and he could not have learnt about the high ends from Lukin, as that gentleman never mentioned them. Wouldhave and Lukin were both men of honour and singleness of mind. One was poor and the other well off, but they were both of the same mind in desiring

\* It is 22 inches long, 9 inches broad,  $4\frac{1}{2}$  inches deep amidships outside and 3 inches inside.





WOULDHAVE'S MODEL.

to serve their fellow-creatures and in lightly esteeming monetary reward.

A careful consideration of the facts leads to the conclusion that in this country Wouldhave was the father of the self-righting Life-Boat, and Lukin of the staunch non-self-righting sailing Life-Boat.

To ascertain Greathead's part it is necessary to revert to the advertisement in the "Newcastle Courant," and to admit the testimony of Mr. Nicholas Fairles, a gentleman of South Shields, who had more to do with the matter than anyone. The advertisement originated with a body bearing the curious name of "The Gentlemen of the Lawe House." They met in a house which had been built as barracks for a battery, on an eminence called the Lawe. From their reading-room they could look on the entrance to the Tyne, and they must have seen many dreadful wrecks—among others, that of the *Adventure*, whose crew dropped off the rigging one by one, and perished in the sight of thousands of helpless spectators.

The "Gentlemen of the Lawe House" were not very solemn personages, for they playfully dubbed their Treasurer "Chancellor of the Exchequer," and they had a "Sergeant-at-Arms," who wore an imposing badge of office. But they had feeling, and they were practical and prompt. The wreck of the *Adventure* was on the 15th of March, 1789.\* In April they submitted to the Brethren of the Newcastle Trinity House a proposal to station a boat permanently at the mouth of the river for the saving of shipwrecked persons, and to erect beacons for the guidance of mariners. Their proposal was warmly approved both by the Brethren and by that important body known as the "Committee of the Coal Trade."† Thus

\* "Newcastle Courant," March 21, 1789.

† Eventually these two bodies voluntarily bore the whole of the expenses.

encouraged, the "Gentlemen of the Lawe House," in May of the same year, appointed a committee of six, who, under the chairmanship of Mr. Nicholas Fairles,\* drew up a table of what they regarded as the essential qualities of a Life-Boat, and issued the advertisement to which reference has been made. Various plans, models, and suggestions were submitted, including Wouldhave's model and a model prepared by Greathead. It was now (the 10th of June, 1789) that Greathead was heard of for the first time. The committee duly met; and we have it on the authority of Mr. Fairles, their chairman, that they did not accept Greathead's model—a model shaped like a raft which they considered quite unsuitable—and that they did not give him the premium.† How, then, did his name become associated with the Life-Boat? The answer is, that he was a skilled boat-builder, accustomed to the sea as a ship's carpenter and mate, and he was employed to build the Life-Boat.

What happened was this: not satisfied with any of the models or plans, the committee thought enough of Wouldhave's model to award him half the premium. There is a tradition that Wouldhave, after addressing the committee in what he deemed appropriate language, flung the guinea down and walked out. His friends blamed him for leaving his model in the hands of the committee, but his native goodness came out in the reply, "Never mind, never mind; I know they have sense enough to adopt the good points of my model, and, though I am poor, if they refuse to give me the reward, I shall have the satisfaction of being instrumental in saving the lives of some of my fellow-creatures."‡

\* The other members of the Committee were Michael Rockwood, Henry Heath, Cuthbert Marshall, William Masterman, and Joseph Roxby.

† Mr. G. B. Hodgson's "History of the Borough of South Shields."

‡ Mr. Hodgson's History.

Mr. Fairles and Mr. Rockwood, a member of the committee who had himself suffered shipwreck and been rescued by a Norway yawl, revolving in their minds the ideas which had been presented to them, went together into a brick-field belonging to Mr. Fairles and modelled a boat in clay. It bore a resemblance to a Norway yawl, and it is remarkable that this type of boat should enter into the early history of the Tyne Life-Boat as well as of Lukin's invention.

After making the model they instructed Greathead to build a boat like it. He suggested that its keel should be curved or "rockered"; and, according to Mr. Fairles, this was the only part Greathead had in the design.\* The curved keel was adopted, and the boat was forthwith constructed by Greathead. She embodied some of Wouldhave's ideas, but fell short of the most important, namely, that of self-righting power. She was completed before the end of 1789, at a cost of £76 9s. 8d.;† and she continued to do service until 1830, when she was dashed on the rocks and broken in two.‡ Thanks to the skill with which she was handled she never lost a single hand and she saved hundreds of persons from death. She was the first boat ever called a Life-Boat, and the first one expressly built for the saving of life from shipwreck; and we cannot but pay a tribute of respect to the memory of the "Gentlemen of the Lawe House," especially Mr. Fairles and Mr. Rockwood, to

\* Mr. Hodgson's History.

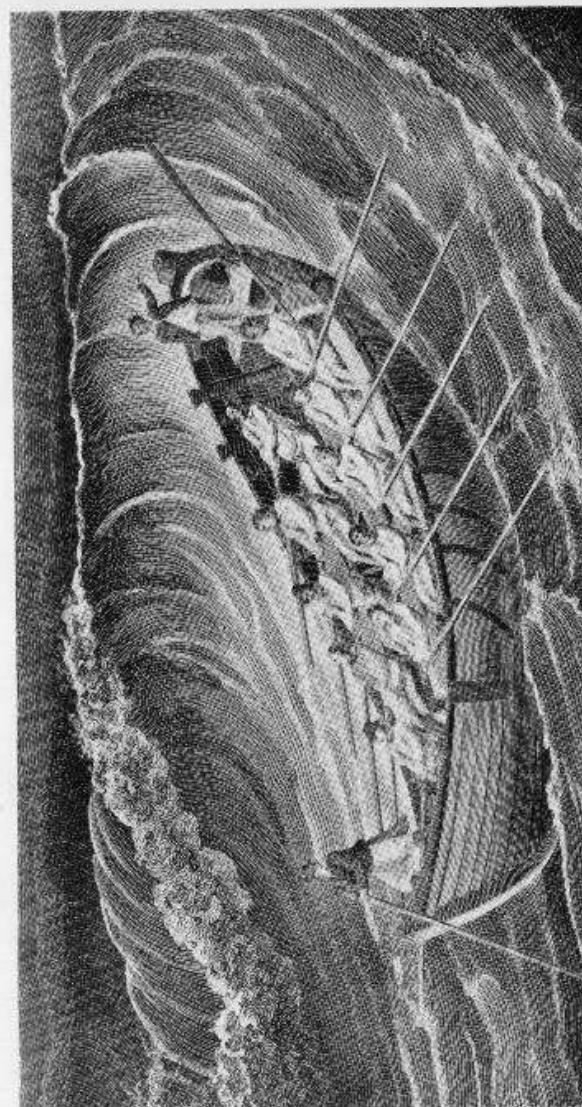
† The total bill for boat, boat-house, cork jackets, and incidental expenses was £149 13s 9d., which sum, with a "margin," which may have been intended as a mark of appreciation of the excellent work of the builder, was paid by the two Bodies at Newcastle mentioned in the text.—*Ibid.*

‡ Her name was the *Original*: she was 30 feet by 10 feet by 3 feet 3 inches, and at each end she was 5 feet 9 inches high. Exclusive of the steam boats, the largest Life-Boat now in the service of the Royal National Life-Boat Institution is 46 feet by 14. The cost of rowing and sailing Life-Boats without gear, ranges from about £800 to about £1700.

whom belongs the credit of having originated at the mouth of the Tyne a public, permanent, and organised Life-Boat service—a service which has never ceased, which has been the means of saving more than 4000 lives, and which at this day is in full activity under the control of the "Tyne Life-Boat Society." This Society, possessing four boats ready for service, maintains, with sturdy independence, a separate existence, is supported by a voluntary tax paid at the Custom House by ships entering the river, and seeks no assistance from the general public.

The illustration, taken from an engraving in Volume XX. of the "Transactions of the Society of Arts," may be regarded as a faithful picture of the first Life-Boat. Her ends were alike, she had no rudder, but a long steering oar at each end, and she could be rowed in either direction. She was clinker-built, and, where the overlapping planks ceased to be visible, there was the wale of cork which was one of her essential features. The cork was held in position by copper straps. Mr. Greathead, himself, submitted this picture to the Society in 1802 along with the accompanying explanatory diagram.

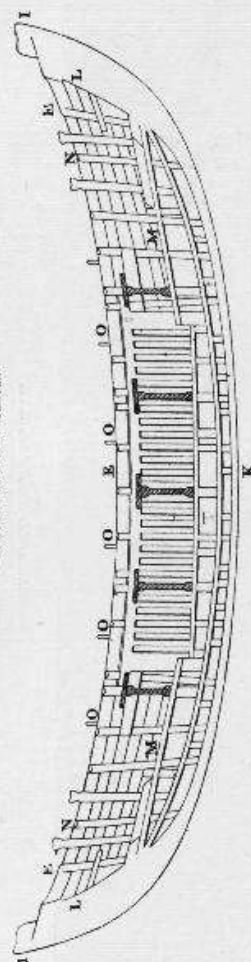
There were no air-chambers, no compartments at the ends, and no means of getting rid of water except by baling. There is a model at the office of the Royal National Life-Boat Institution which correctly shows her general design, but it does not represent what she was like inside when she first came into use. It shows water tubes and other modifications which were introduced at a later date. A sister boat, built in 1800, and placed at Redcar in 1802, performed a service as late as 1880, when, in the absence of other Life-Boats, she saved the crew of the brig *Luna*. Rescued from the breaking-up yard, she is now carefully preserved as an historic relic. Her name is the *Zetland*. All the boats of this type had



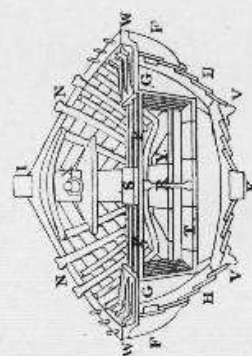
GREATHEAD'S LIFE-BOAT.  
Drawn from a Model presented by Mr. Greathead to the Admiralty.



LONGITUDINAL SECTION.



CROSS SECTION.



E E E.—The sheer or curve of the boat.  
 I I.—The two stems or ends.  
 K.—The keel.  
 L L.—The aprons, to strengthen the stems.  
 M M.—The sheels, or places for passengers.  
 N N.—Timber-heads, or boat-fastenings.  
 O O O O.—The tholes on which the oars are slung by grommets.  
 P P.—The outside coatings of cork.  
 Q Q.—The inside cork filling.  
 R R.—The outside planks of the boat.  
 S.—One of the stems of the boat.  
 T.—The keel.

N N.—The timber-heads.  
 P.—The thwarts, or rowers' seats.  
 R.—One of the stanchions under the thwarts, each being thus firmly supported.  
 S.—A section of the gang-board, which crosses the thwarts, and forms the passage from one end of the boat to the other.  
 T.—The floor-heads, or platform for the rowers' feet.  
 V V.—The two bilge pieces, nearly level with the keel.  
 W W.—The gunwales.  
 X.—A ring-bolt for the head-fast, there being also another at the other end.

DIAGRAM OF GREATHEAD'S LIFE-BOAT.

the curved, or "rockered," keel, suggested by Greathead; and the Tyne Life-Boat Society, for local reasons which they deem sufficient, keep it up in a modified degree to this day, but it is not to be found in Life-Boats elsewhere, and is generally regarded with disfavour. The *Bedford*, the newest boat of the Society, has air-cases at the ends but not up to the level of the gunwale, air-cases along the sides within board, and a closed water-ballast tank in the centre. She is steered by oars,

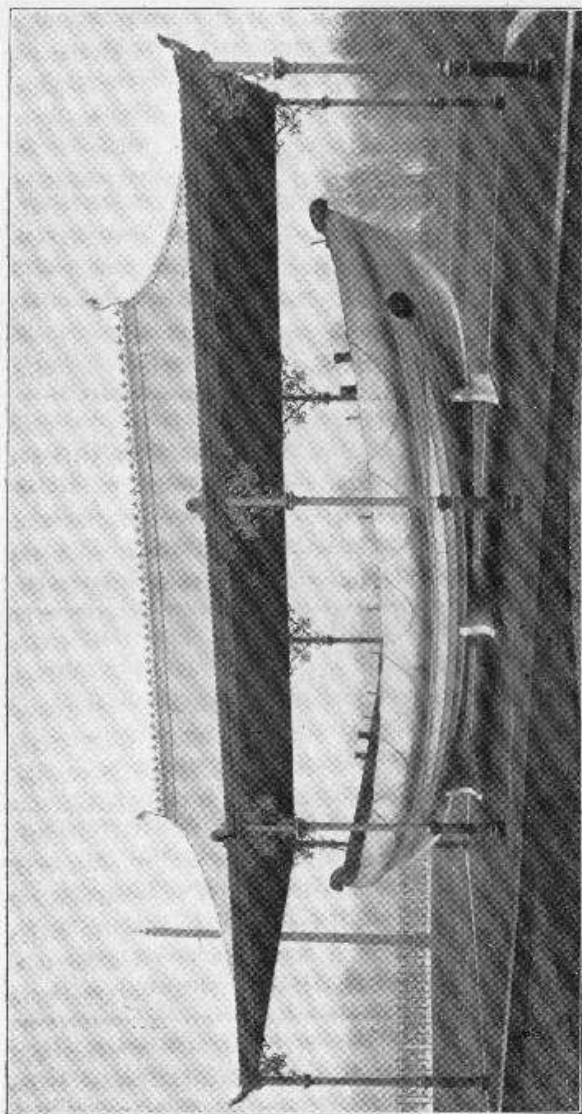


THE "ZETLAND."

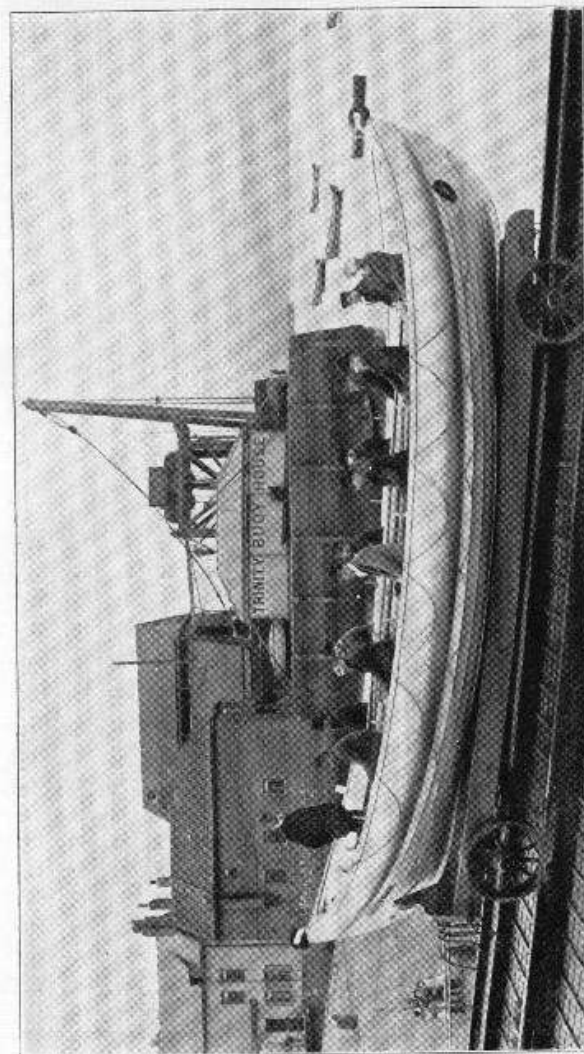
and is fitted for rowing only. With all the modifications which have been made in internal fittings, it is wonderful to see how closely her builders have adhered to the general design of the "original" boat. If we glance at the *Bedford*, built in 1886, then at the *Tyne*, built by Oliver in 1833,\* then at the *Zetland*, and then at Greathead's *original*, we can see how small has been the change.

Looking to South Shields as the place where the word "Life-Boat" was first used, where the earliest boat

\* The *Tyne*, built in 1833 to replace the first Life-Boat, was reconstructed in 1845, and was withdrawn from service in 1887. She had saved 1024 lives.



THE "TYNE."



THE "BEDFORD."

designed for the saving of life from shipwreck was built, and where public-spirited men did so much to establish a Life-Boat service, you will not be surprised to learn that the town, on receiving its charter of incorporation, chose the Life-Boat for its coat of arms and the words "Always Ready" for its motto; or that the townspeople went the length of placing a model of a Life-Boat in their parish church. In France the churches on the coast often receive and preserve votive offerings in the form of models of fishing-boats and other craft; but probably St. Hilda's Church in South Shields is alone in this country in having a model of a Life-Boat suspended from the ceiling in full view of the congregation. It is there as a testimony to the interest which the people of the town take in the Life-Boat service; it stirs the minds of the young; and it helps to keep alive the fame of the men who have worked and suffered for the cause.

It was not until 1798 that Greathead built the second Life-Boat. She was ordered by Hugh, Duke of Northumberland,\* the father of the "sailor duke," and he placed her at North Shields with an endowment for her maintenance. Greathead's third boat went to our old allies the Portuguese, being presented in 1800 by the Duke of Northumberland to the town of Oporto.†

In the same year Mr. Cathcart Dempster, a magistrate of St. Andrews, had a boat built for that place; and Greathead, with a reputation now well established, found orders pouring in from all sides. Before the end of 1803

\* Born 1742; succeeded 1786; died 1817.

† The reason for this gift was no doubt recorded in the archives of the British Consulate, but they disappeared in the siege of Oporto during the Peninsular War, and a careful search, kindly made by high Authorities, has failed to reveal any vestige of a record of the Duke's generosity, although, in a pamphlet of 1832 which is preserved in the Public Library, it is stated that a Life-Boat, sent at an early date from England to the care of the British Consul, was taken as a model for a new one built in 1828.

he had built 31 boats—18 for England, 5 for Scotland, and 8 for foreign countries.\* All were fitted for rowing only, and were not provided with sails.†

After 1803 there was little or no advance until 1807, when Lukin, the coachbuilder, again appeared on the scene, and made mankind his debtor by the part he took in designing and constructing a sailing Life-Boat. Consulted by the Suffolk Humane Society, he gave them advice and superintended for them the building and fitting of a boat which is held to be the true forerunner of the Norfolk and Suffolk type—a type still most popular with the Norfolk and Suffolk fishermen, and represented at this day by eighteen examples on the coast. Admirable under sail, Lukin's powerful boat could search the outlying sandbanks as no other Life-Boat then in existence could. Here, therefore, we see Lukin, I will not say abandoning his overmastering idea of making boats of all kinds unimmergible, but taking a part, a notable part, in directing the construction of a boat expressly designed for the saving of life from shipwreck and adapted to the seas in which she was to do her work. Her dimensions were 40 feet by 10 feet by 3 feet 6 inches. She was built by Bareham, of Lowestoft, at a cost of £200, and she lasted 43 years, during which she saved 300 lives. Thus Lukin established a double claim to be regarded as the father of the sailing Life-Boat.

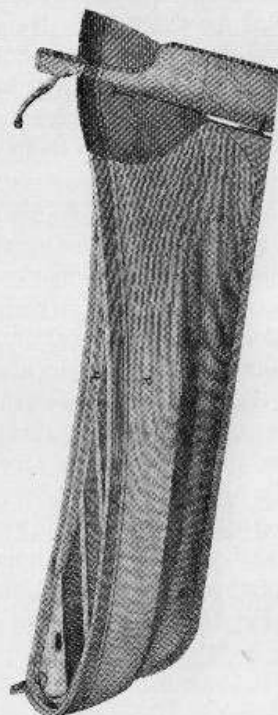
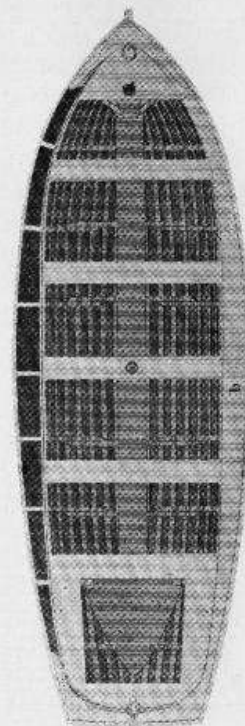
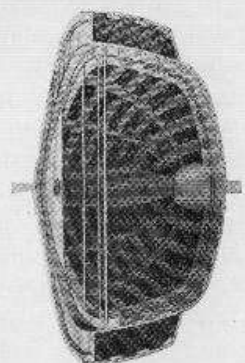
For the next important event, we must look to the year 1824.

But meanwhile the Society of Arts had not been idle.

\* One built in 1802 was purchased by Lord Crewe's Trustees for Bamburgh, and it may be gathered that the old coble fitted up by Lukin in 1786 was no longer of any use.

† He told the Society of Arts in 1802 that he could convert them into sailing boats by fitting them with sliding keels, and in the model which he submitted to the Society he professed to show how this could be done. But it may well be doubted whether they would have been of any use as sailing boats in bad weather.





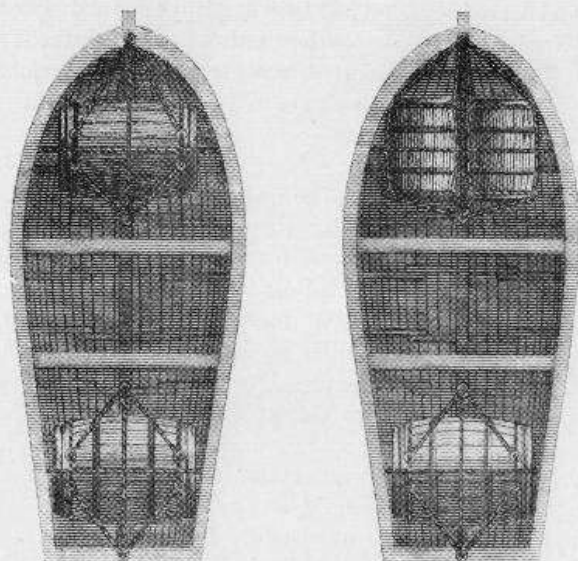
WILSON'S LIFE-BOAT.

We saw that in 1802 it gave a reward to Greathead. In 1807, it awarded a gold medal to Christopher Wilson, of London, for a "neutral-built, self-balanced boat." The sides of this boat had outer and inner planking with an air space between.\* Wilson, like Lukin, intended that his system should be followed in the construction of "all open boats of whatever form or use ;" but a boat to his design had been specially built and placed at Newhaven, in competition with one of Greathead's Life-Boats, and apparently it was her excellent behaviour in a heavy sea which won for Wilson the reward of the gold medal.

The Society gave three other rewards, in 1810, 1814, and 1817 respectively. The first was one of 20 guineas and the silver medal to Mr. Bremner, Minister of Walls and Flota, in the Orkneys, for his plan of converting any ship's boat into a Life-Boat by means of empty casks lashed inside the boat, one forward and the other aft, and packed in with bundles of cork covered with pitch, the operation being completed by the attachment of a bar of iron or lead to the inside of the keel. The second was one of 10 guineas and the silver medal to Mr. Boyce, of Dean-street, Fetter-lane, for an elaborate buoy, to be held suspended at the stern of a ship and dropped if a man fell overboard. It carried a mast and sail, which, if set up, would enable it, so Mr. Boyce said, to follow a ship or reach the shore. The third was the silver medal to Captain Gabriel Bray, for his plan of making ordinary boats buoyant by means of wooden air-boxes to be fastened by copper clasps under the thwarts, and long air-cases to be lashed fore and aft outside. The inventions were no doubt presented in good faith as original, and they were certainly ingenious, but they were not novel in principle ; and it is difficult to restrain a smile at the details of two of them.

\* The outer planking was carvel, and the inner, clinker.

What occurred in 1824 was the birth of "The National Institution for the Preservation of Life from Shipwreck," which now exists under the name of "THE ROYAL NATIONAL LIFE-BOAT INSTITUTION." No one heard of this event with more satisfaction than Lukin. Greathead had died in 1816, and Wouldhave in 1821;



REV. MR. BREMNER'S LIFE-BOAT.

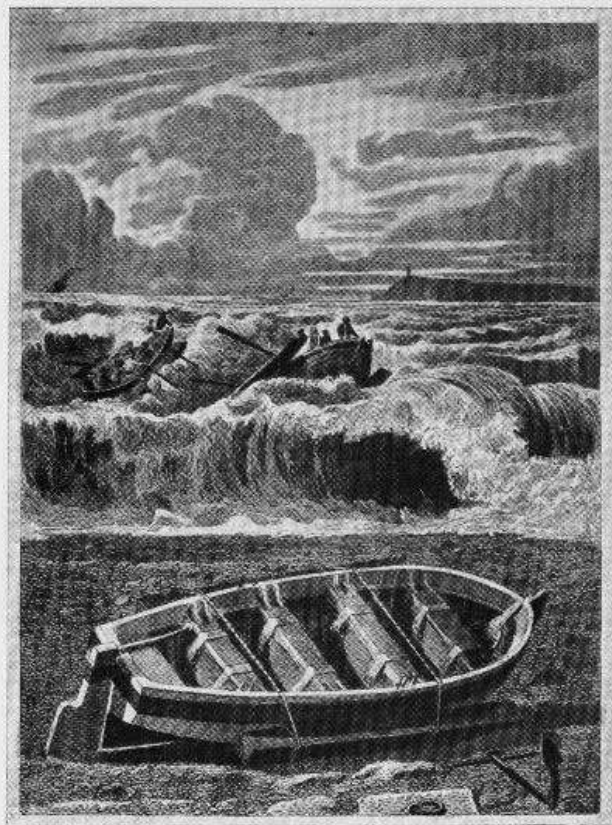
but Lukin, who was 82 years of age, and had still ten years to live, wrote to congratulate the chairman of the Institution, and sent him a copy of a pamphlet containing a description of the sailing Life-Boat which he had designed in 1807.\*

The founder of the Institution was Sir William Hillary,

\* Lukin's letter hangs in a frame on the wall of the Committee Room of the Institution.



BOYCE'S LIFE-BOAT OR SAFETY BUOY.



BRAY'S LIFE-BOAT.

Baronet, a resident in the Isle of Man, whose heart was moved by the terrible loss of life on our coasts, and who roused the public by his appeals. At a preliminary meeting in the City of London Tavern, promoted by Sir William Hillary, and presided over by Mr. Thomas Wilson, one of the members for the City, it was resolved to convene a general meeting for the formation of the Institution. This general meeting was held on the 4th of March, with Dr. Mannors Sutton, Archbishop of Canterbury, in the chair. Wilberforce moved one of the resolutions, and the Institution began its course under Royal patronage, with the Prime Minister (the Earl of Liverpool) as President, and Peel, Canning, Lord John Russell, and other eminent men, as Vice-Presidents. Mr. Wilson was elected Chairman of Committee, other officers were appointed, and offices taken at 12 Austin Friars. In the forefront of the resolutions adopted at the meeting it was declared that the objects of the Institution "extend to all without distinction of country, in war and in peace;" and the Institution has always acted in the spirit of this declaration.

For some years its work embraced the care of mariners after their rescue from shipwreck, and the establishment of mortar and rocket apparatus. But the former was taken over in 1854 by the Shipwrecked Fishermen and Mariners' Society,\* and the latter was transferred to the Board of Trade in 1855. From the earliest days the Institution cared for the families of men who perished in going out in boats to save life; and in its very first year it made grants to widows and orphans at Redcar, Yarmouth, and Carnarvon. In that year it received contributions amounting to £9,706, and arranged to establish 11 boats in England, 2 in Scotland, and 2 in

\* That society possessed several Life-Boats, which it transferred to the Institution, and the two bodies have always worked together with the utmost harmony.





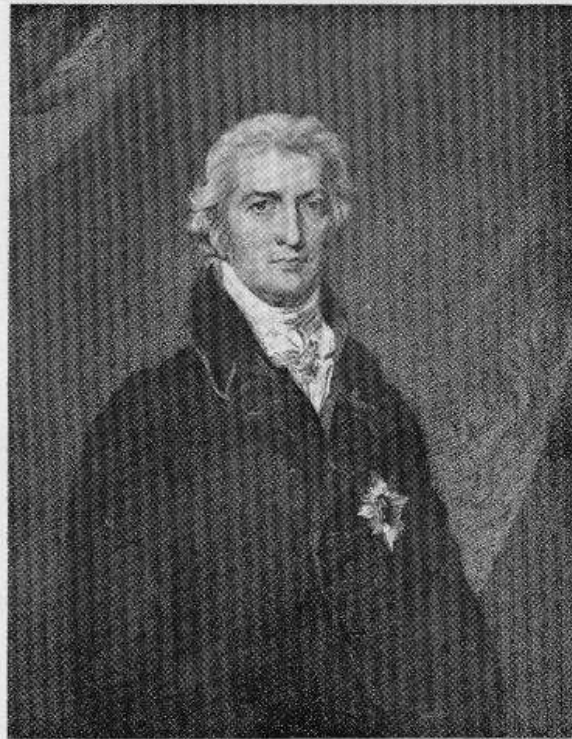
SIR WILLIAM HILLARY.



MR. THOMAS WILSON.

Ireland. Twelve were built by Pellew Plenty, of Newbury, and 3 by Skelton, of Scarborough.\*

The committee recorded the fact that, before they began operations, there were already 39 Life-Boats on



THE EARL OF LIVERPOOL.

the coast. They claimed that in the first year three whole crews and 124 other persons had been saved by

\* The latter were probably of the Greathead type. The former were designed by Plenty himself; they were of great breadth amidships, had upright stem and stern, straight keel, bilge pieces, a mass of cork on the bottom for protection from stony beaches,

exertions which they had rewarded.\* Subsequent annual reports exhibit a fluctuating but diminishing revenue from donations and subscriptions. In the year 1832-33 it was as low as £319, and in 1837-38 it went down to £254.

Deploring the inadequate support of the public, and seeing no prospect of the establishment of sufficient Life-Boat stations, the Institution incessantly recommended the adoption of methods for rendering ships' boats safe, and of appliances for sending lines from wrecked ships to the shore. The deputy-chairman, Mr. George Palmer, M.P., an able and devoted friend of the Institution, had designed a Life-Boat, which was superseding Plenty's, and, on his suggestion, they issued circulars, showing how, at small expense, all kinds of shore-boats could be made safe. There is reason to believe that the Society of Arts lent its aid in the distribution of these circulars. Mr. Palmer's ideas do not seem to have been in advance of Lukin's, but his position in the Institution and his reputation as a sailor† lent authority to his suggestions, and they met with a favourable reception.

From 1841 to 1850 the Institution published no Report and made no appeal to the public. Various local associations‡ helped to keep the cause alive; but in 1849 it had reached its lowest ebb, and there is reason to doubt whether, among the Life-Boats then on the coast, there were as many as twenty in an efficient condition.

and small internal capacity for holding water. Buoyancy was secured by air-cases built along the sides within board. The boats had good qualities, and were selected after careful trials of various types by distinguished naval officers and other experts.

\* By the 31st of December, 1909, the number had risen to 48,627.

† He had been a commander in the service of the Hon. East India Company. A model of his boat is preserved at the office of the Institution.

‡ For example, on the Tyne, in Lincolnshire, in Norfolk and Suffolk, and in the Isle of Man where Sir William Hillary made his powerful influence felt.

It may seem strange that a cause launched with so much enthusiasm, and supported by such influential men, a cause appealing so strongly to the feelings of our countrymen, should have languished and almost died. But



MR. GEORGE PALMER.

the nation was going through a time of deep distress and agitation, and many people thought the State itself was on the verge of shipwreck. In 1825, the very first year

after the foundation of the Institution, there was a panic, the Bank of England refused accommodation to its best customers, and money was so scarce that Mr. Huskisson said, "We were within twenty-four hours of barter." Dr. Arnold, of Rugby, writing in February 1833 to a friend who was on the eve of leaving for India, said, "You are going from what bids fair, I fear, to deserve the name of a City of Destruction." Glance at the table of contents of any history of the period:—

- 1826. Bloody riots. Power looms destroyed. Drought.
- 1829. General distress.
- 1831. Agitation for repeal of the Union. Rejection of the Reform Bill. Outrages. Cholera.
- 1832. Reform Bill. Strike of pitmen and murder of Mr. Fairles, of the Tyne Life-Boat Society.
- 1835. Agricultural distress.
- 1836. Paralysis of trade.
- 1839. Rebellion in Canada. Chartist riots. Cotton strike and organisation for murder in Scotland.
- 1840. War with China.
- 1841–1843. War in Afghanistan.
- 1845. Irish Famine.
- 1849. Close of the Corn Law agitation.

In such a period we need not wonder that the Life-Boat Institution received little public attention. But it kept the flickering flame of pity for the shipwrecked mariner alive, and in its worst times it was the means of encouraging and rewarding heroic deeds. Every now and then the gloom was relieved by some act of gallantry or self-sacrifice. Thus, on the 20th of November, 1830, when the Royal Mail Steamer *St. George*, under the command of Lient. Tudor, R.N., was wrecked in Douglas Bay, Sir William Hillary, the founder of the Institution, performed a brilliant service as leader of a party of rescue. The vessel arrived on the evening of the 19th



and anchored in the Bay, the weather being stormy. In the night the storm increased in violence; at 5 a.m. her cable parted and she began to drive in between two dangerous rocks, on one of which she presently struck. The Life-Boat (one of Palmer's) was new, and was not ready for service, as she was still without her stern air-case. Nevertheless, Sir William, with the help of two other gentlemen and a crew of fourteen men, put off and rescued the whole company of twenty-two persons. He and three others were washed overboard, but were got on board again, and he stuck to his task although he had his chest crushed and a rib broken. This is only a sample of the brave deeds performed by Sir William. A second gold medal was awarded him, and it will be agreed that it was well bestowed.

Looking further through the records of the Institution, we find the following entry:—

"1838. William Darling, Lighthouse Keeper, Silver Medal. Grace Darling, his daughter, Silver Medal."

These medals were given for the rescue, in an ordinary boat, of nine persons from the wreck of the *Forfarshire*, an exploit which, as every one knows, gained for Grace Darling a name that is not likely to die.

The year 1849 closed with a tragedy at the mouth of the Tyne which made a deep impression on the public mind. A Life-Boat named the *Providence*, seven years old, went out in a heavy sea to the brig *Betsy*, of Littlehampton, which had stranded on the Herd Sand. She reached the wreck, and was lying alongside with her head to the eastward and a rope made fast to the quarter; but through some error her bowfast was not properly secured, and a wave recoiling from the bow of the vessel caught the Life-Boat's bow and threw her on end, causing her crew and the water she had shipped to fall into the stern sheets. The bowfast not holding, the Life-Boat in this condition drove astern of the vessel,

and, the ebb tide then catching her, she turned end over end and drifted ashore bottom up. Out of her crew of 24\* of the finest and most skilful pilots of the Tyne no fewer than 20 were drowned; and there can be little doubt that it was owing to her being without the self-righting qualities which Wouldhave had proposed. This event not only created sorrow for the families of the brave men who had sacrificed their lives, but directed renewed attention to the claims of the Life-Boat service.

The nation was now emerging from the agitation and distress in which it had been plunged; prosperity was returning, and people had time to think of the wrecks which were constantly occurring round the coast. Her Majesty Queen Victoria and the Prince Consort came to the aid of the Institution; and their heartfelt interest, sustained and steadfast, finds its generous counterpart in that of His Majesty King Edward and His Royal Highness the Prince of Wales, who are now respectively Patron and President of the Institution.†

There had been no President since the death of the Earl of Liverpool in 1828; but in 1851, Algernon, Duke of Northumberland, the "sailor duke,"‡ became President; and, under the impulse of his powerful and sympathetic nature, the Institution began a new and uninterrupted career of usefulness, in the course of which it has absorbed all the local Life-Boat associations, except those of the Tyne and two or three other places; has increased its fleet until it now numbers 282, including a steam-tug; has attracted a large, although I

\* This was a double crew.

† This was written before the death of His beloved Majesty King Edward.

‡ Second son of Hugh, second Duke; born, 1792, succeeded his brother Hugh, 1847; died, 1865; entered Navy, 1805; Acting Captain *Caledonia*, Lord Exmouth's flagship, 1841; Rear-Admiral, 1850; First Lord of the Admiralty, 1852; accompanied Herschell's scientific expedition to the Cape, 1834; supported study of Egyptian antiquities and Lane's gigantic work, the Arabic Lexicon.

fear I must say insufficient, income;\* has left no clearly indicated danger-spot unprotected, and has become in fact, as well as in name, a National Institution.

Time would fail me to tell of all that has contributed to this result, but I cannot refrain from mentioning the help given to the Institution since 1891 by the Life-Boat Saturday Fund, and the unselfish labours of the late Sir Edward Birkbeck, who for twenty-five years was chairman of the Institution. He was concerned in its management for more than forty years, and up to within a few weeks of his death he ceased not to devote himself to the promotion of its aims and the defence of its interests. He was largely instrumental in persuading the Government to sanction the system of Coast Telegraphs, designed and carried out by the Post Office, which affords communication with coastguard stations, lighthouses, and light vessels, and adds so much to the efficiency of the Life-Boat service.

When the Duke of Northumberland became President in 1851, realising that the "first and most obvious step was to endeavour to introduce an improved Life-Boat," he offered a prize of 100 guineas, and appointed a committee of experts, under the chairmanship of Captain Washington, R.N., to report on the models which might be sent in. Boat-builders and others in all parts of the United Kingdom, and in France, Germany, Holland and the United States responded, and no fewer than 280 models and plans were received. Fifty of these were sent to the Great Exhibition, and there contributed to the awakening of public interest.† After a patient and exhaustive examination, the com-

\* In 1909 the receipts were £126,215, including £37,318 from investments, £19,352 from the Lifeboat Saturday Fund, and £47,513 from Legacies and special gifts in Trust. But for the Legacies, the income would have fallen far short of the expenses.

† At the suggestion of the Prince Consort, lectures on the results of the Exhibition were delivered before the Society of Arts in the winter of 1851-2. One of these, on "Naval Archi-



ALGERNON, DUKE OF NORTHUMBERLAND.

mittee awarded the prize to Mr. James Beeching, of Great Yarmouth, whose model may still be seen in the Museum of the United Service Institution.

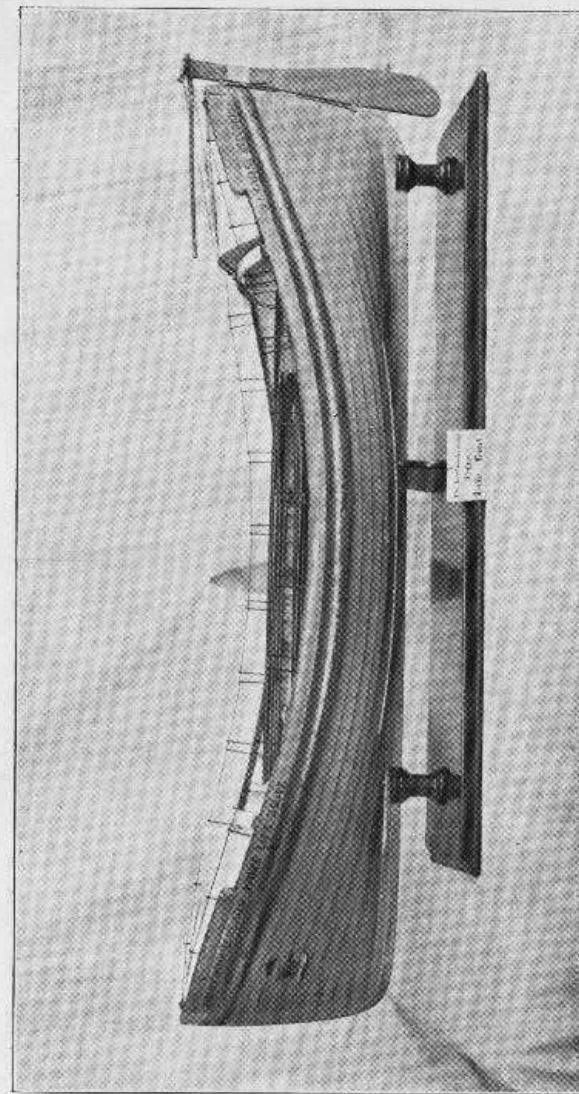
He at once built a boat, which was purchased by the Harbour Trustees of Ramsgate, and there did splendid work for many years. She embodied most of Would-have's ideas, with improvements of which that gentleman probably never dreamt. Coming sixty-two years after he sent in his model to the committee at South Shields, she was the first genuine self-righting boat ever built.\*

The Duke of Northumberland's committee, while giving the prize to Beeching, could not bring themselves to adopt his device of air-chambers and a water-ballast tank in the bottom of the boat. They thought the partitions would be certain to be injured, and that the water-ballast would make its way into the air-chambers. So they got one of their number, Mr. Peake, assistant-master-shipwright of Woolwich Dockyard, to design a boat with a very heavy iron keel, cork instead of air-chambers along the bottom, and no water-ballast.† This

teecture and Life-Boats," was given by Captain Washington, and he described the work of the Duke of Northumberland's committee and the state of the Life-Boat service.

\* Her dimensions were 36 feet by 9½ feet by 3½ feet, and she could carry about 70 persons. The cork employed in her construction was confined to the fender below the gunwale. Apart from her general design, her buoyancy was secured by air-tight cases at the ends, along the bottom and partly round the sides; and her self-righting power by the height of the end cases, by the absence of side air-cases amidships, by 2½ tons of water ballast, and by an iron keel. The Life-Boat which capsized in 1849 at the wreck of the *Betsy* had water ballast, but it was in an open tank, and, when she turned end over end the water ran out and the tank became an air-space—an air-space in the wrong place—which simply increased her tendency to remain bottom up. In Beeching's boat the water-ballast was confined in a closed tank, and could not shift or run out. She had ample means of freeing herself of any seas that might come aboard, which none of the early Life-Boats had. There was some controversy as to who first thought of closed tanks. Farrow of South Shields and Greener of Birmingham both claimed to have proposed them in 1841. Probably they thought of them independently.

† The earlier builders of Life-Boats had a great fancy for cork, but it went entirely out of favour, except for fenders, because it was found that it became sodden and lost its buoyant qualities.

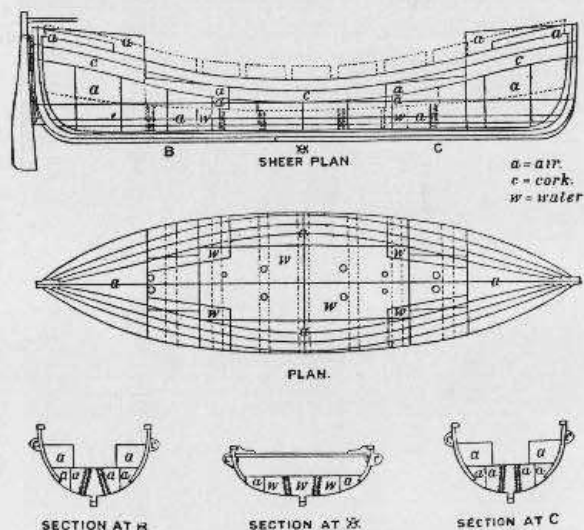


MODEL OF BEECHING'S BOAT.



type underwent a long series of trials and alterations, and eventually the self-righting Life-Boat of the present day was evolved.

She is practically a reversion to Beeching's model. There is no cork about her except the fender under the gunwale; and the risk of injury apprehended by the Duke's committee is guarded against by the ex-



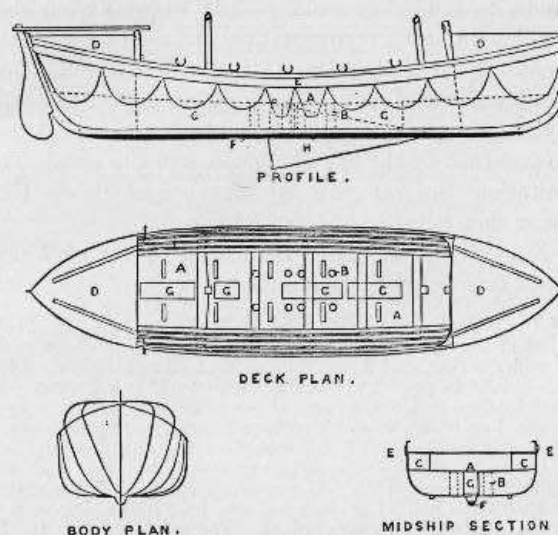
DESIGN OF LIFE-BOAT, BY JAMES BEECHING,  
GREAT YARMOUTH.

ceedingly strong structure of the boat,\* the use of numerous air-cases† which are fitted into the hold, and the division of the closed water-ballast tank into four

\* Canada elm frame, and double mahogany planking put on diagonally, and copper fastened.

† The number of separate cases ranges from about 70 in the smaller boats to more than 100 in the larger. They are made of white pine, served inside with a preservative against decay, smeared outside with mastic, covered with strong calico, smeared again with mastic, and then painted twice with white lead.

compartments. One advantage of water-ballast is, that when the boat is placed at a station where she may have to be transported some distance by road, the water need not be admitted until she is launched, and she is, therefore, lighter to transport. In some cases, where the boat



SELF-RIGHTING BOAT OF THE PRESENT DAY.

- |  |   |
|--|---|
| A.—The deck.   | E.—The "wale" or "fender."  |
| B.—Relieving valves for the automatic discharge of water off the deck.                       | F.—Iron keel ballast, important in general stability and self-righting. |
| C.—Side air-cases above deck.  | G.—Water-ballast tanks.   |
| D.—End air-compartments, usually called "end-boxes," an important factor in "self-righting." | H.—Drop-keel.   |

is never transported by road, the iron keel is made heavier and water-ballast is dispensed with.

Remark the high air-case at each end, and the drop keel, which, since 1884, has been adopted for all boats intended to carry sail.\* The tests which a self-righting boat has now to pass before being sent to her station are

\* The larger boats, both of this type and of the non-self-righting types, carry two drop keels.

of the utmost severity, and they make it certain that if she capsizes she will self-right immediately.\*

There are 182 self-righting boats in the service, which shows how popular they are with the Life-Boat crews.† These men are always consulted as to the type of boat they would like, and before making their wishes known they are allowed to elect representatives and send them, at the expense of the Institution, to inspect boats which have to work under similar conditions. The choice is naturally governed, to a large extent, by such conditions, but it is also governed by the likes and dislikes of the men. The Institution does not give any crew a boat unless they express themselves satisfied with her.

Non-self-righting boats number 99;‡ the most prominent type being the Watson boat, designed by the late

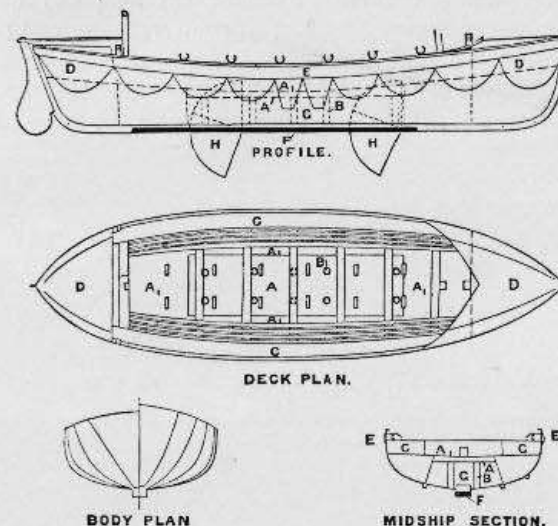
\* In 1887, after some serious Life-Boat accidents, the whole subject of the self-righting power of the Institution's Life-Boats was under review, and it was decided that all self-righting Life-Boats should be proved to "right" with their full crew (represented by dead weights, taking 11 stone as the average weight of a man) on board, in addition to all their gear; and further, that they should "right" with their sails set, but the foresheet not belayed. The Life-Boats had to answer this test with the water-ballast tanks both full and empty, and no self-righting Life-Boat built in 1887 or since has ever been sent to her station without passing this severe ordeal. The great increase in the self-righting power of the Life-Boats involved a considerable increase in the weight of the iron keel and in the capacity of the end air-chambers, these latter being made longer, higher, and wider. The weight of the boat was consequently much increased, and the space for the crew considerably encroached on. As great "beam" is a factor *against* self-righting power, new boats were built with beam of less proportion to length than had hitherto been the rule.

† This number includes some boats designed by Mr. Rubie, the surveyor of the Institution, to meet demands for Life-Boats of specially light weight.

‡ Non-self-righting boats:—

Steam Life-Boats . . . . .	4
Cromer type . . . . .	1
Liverpool type . . . . .	32
Norfolk and Suffolk type . . . . .	18
Tubular . . . . .	1
Watson . . . . .	41
Whale boats. . . . .	2
	99

consulting naval architect of the Institution, Mr. G. L. Watson, the famous designer of yachts and other craft. Broadly speaking, it may be said that, with large sailing Life-Boats intended to go well out to sea, it is better to set aside the self-righting principle and aim at great buoyancy, stability and speed. This is what Mr. Watson



WATSON BOAT.

- A.—The deck.
- B.—Relieving valves for the automatic discharge of water off the deck.
- C.—Side air-cases above deck and thwarts.
- D.—End air-compartments.
- E.—Wale or fender.
- F.—Iron keel ballast.
- G.—Water-ballast tank.
- H.—Drop-keels.

did, and his boats have beautiful lines, are safe, weatherly, quick in stays, and of great speed, and they are prime favourites on many parts of the coast. The diagram shows wherein they differ from the self-righting boat. The breadth amidships is greater; the ends are lower; the heavy iron keel does not extend so far; and there are air-cases along the sides, not only between the deck