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assisted with his own hand in the saving of three hundred and five lives, and felt the horrors of shipwreck so keenly that he resolved to stir up public men and the nation generally to a sense of their duty in regard to this matter. Eventually, in conjunction with two members of parliament—Mr Thomas Wilson and Mr George Hibbert—he founded the “Royal National Institution for the Preservation of Life from Shipwreck.” This, perhaps the grandest of England’s charitable societies, and now named the “Royal National Lifeboat Institution,” was founded on the 4th of March 1824. The king and many of the nobility and gentry patronized it. The archbishop of Canterbury presided at its birth; the most eloquent men in the land—among them Wilberforce—pleaded the cause; the institution was launched under the most favourable auspices, and began its noble career with a sum of only £9826. In the first year twelve new lifeboats were built and placed at different stations, besides which thirty-nine lifeboats had been stationed on the British shores by benevolent individuals and by independent associations over which the institution exercised no control though it often assisted them. In its early years the institution placed the mortar apparatus of Captain Manby at many stations, and provided for the wants of sailors and others saved from shipwreck. The latter duty is now efficiently discharged by the “Shipwrecked Fishermen and Mariners’ Royal Benevolent Society.” At the date of the institution’s second report it had contributed to the saving of three hundred and forty-two lives, either by its own life-saving apparatus or by other means for which it had granted rewards. With fluctuating success, both as regards means and results, the institution continued its good work from year to year—saving many lives, and occasionally losing a few brave men in its tremendous battles with the sea. District or branch societies were established in most of the coast towns. Ultimately it began to be recognized that inland towns owed something to the lifeboat cause, as well as towns on the coast, and now such cities as Manchester, Liverpool, Glasgow, Edinburgh, &c., have presented lifeboats to the institution and become annual contributors. Since the adoption of the self-righting boats, loss of life in the service has been comparatively small and infrequent.

Towards the middle of this century the lifeboat cause appeared to lose interest with the public, though the life-saving work was prosecuted with unremitting zeal, but the increasing loss of life by shipwreck, and a few unusually severe disasters to lifeboats, brought about the reorganization of the society in 1850. The late Prince Albert became vice-patron of the institution in conjunction with the late king of the Belgians, and afterwards Her Majesty the Queen, who had been its patron since her accession, became an annual contributor to its funds. About the same time its present secretary, Mr Richard Lewis, barrister-at-law, was appointed. The following year (1851) the duke of Northumberland became its president, and from that time forward a tide of prosperity set in which is literally unprecedented in the history of benevolent institutions, both in regard to the great work accomplished and the pecuniary aid received. Its flow of prosperity has never since been checked. In 1850 its committee undertook the immediate superintendence of all the lifeboat work on the coasts, with the aid of local committees. Periodical inspections, quarterly exercise of crews, fixed rates of payments to coxswains and men, and quarterly reports were instituted, at the time when the self-righting self-emptying boat came into being. This boat was the result of a hundred-guinea prize, offered by the president, for the best model of a lifeboat, with another hundred to defray the cost of a boat built on the model chosen. In reply to the offer no fewer than two hundred and eighty models were sent in, not only from all parts of the United Kingdom, but from France, Germany, Holland, and the United States of America. The prize was gained by Mr James Beeching of Great Yarmouth, whose model, slightly modified by Mr Peake, one of the committee of inspection, became the foundation of the present boat, which, having been still further improved as time and experience have suggested, is now probably as near to perfection as can be attained.

The shortest way, perhaps, to exhibit the progressive work of the institution is to contrast the report of 1850 with that of 1880. In the former year the receipts had dwindled down to £84 of subscriptions and donations, which, with £270 of dividends (on a capital of £9000) and a balance of £476 on hand, gave an available income of £830. The expenditure was £590, and the lives saved were about one hundred. In 1880 donations and annual subscriptions amounted to £29,240; dividends and interest (on a capital of £231,000) amounted to £9266. The total income was £38,506, besides legacies in the same year to the amount of £40,782. The expenditure, including liabilities, was £40,586, and the number of lives saved was about seven hundred. In the past unusually disastrous year (1881), the institution has saved 966 lives by its boats, and granted rewards for the saving of 155 more, besides rescuing 33 vessels from destruction. The total number of lives saved either by the lifeboats, or by special exertions for which the institution has granted rewards, since its formation, is 28,724, for which services 95 gold medals, 939 silver medals, and £69,000

in cash have been granted as rewards. So highly are the services of the institution appreciated that donations of boats, gifts of money, acknowledgments, and legacies come in from nearly all quarters of the globe, in sums varying from a shilling to £10,000.

Rocket Apparatus.—This, next to the lifeboat, is the most important and successful means by which shipwrecked persons are rescued on the British shores. Many vessels are cast every year on the rocky parts of the coasts, under cliffs, where no lifeboat could be of service. In such places the rocket alone is available. It is worked by the men of the coastguard, with the aid, in a few places, of volunteer rocket brigades. The courage and skill displayed in its use are evinced by the saving of many lives every year, and by the fact that a large proportion of the medals given by the lifeboat institution for heroic conduct are awarded to the men of the coastguard, who, besides managing the rockets, frequently man the lifeboats and also effect rescues in their own boats. The number of lives saved by means of the rocket apparatus in the year ending 30th June 1881 was 657. This, however, is the greatest number saved in any one year since 1856, at which date the life-saving rocket apparatus was placed under the entire control and management of the Board of Trade. The rocket stations on the coast at the 30th June 1881 numbered 288. The Board of Trade now gives a sum of money for each life saved, besides awarding silver and bronze medals for acts of special gallantry.

The apparatus consists of five principal parts, viz., the rocket, the rocket-line, the whip, the hawser, and the sling lifebuoy. The mode of working it is as follows. A rocket, having a light line attached to it, is fired over the wreck. By means of this line the wrecked crew haul out the whip, which is a double or endless line, rove through a block with a tail attached to it. The tail-block, having been detached from the rocket-line, is fastened to a mast, or other portion of the wreck, high above the water. By means of the whip the rescuers haul off the hawser, to which is hung the travelling or sling lifebuoy. When one end of the hawser has been made fast to the mast, about 18 inches above the whip, and its other end to tackle fixed to an anchor on shore, the lifebuoy is run out by the rescuers, and the shipwrecked persons, getting into it one at a time, are hauled ashore. Sometimes, in cases of urgency, the lifebuoy is worked by means of the whip alone, without the hawser. A tally-board with instructions to wrecked crews, printed in English and French, is sent off with the whip, as ignorance in regard to the mode of working the apparatus has been the cause of much loss of life. Such ignorance is culpable, because the Board of Trade issues enamelled plates with instructions, which are supplied gratuitously to shipowners and masters to be placed on conspicuous parts of their vessels, and are fixed in public places along the British coast, while every certificated officer in the mercantile marine is required to understand the working of the rocket apparatus.

The late Captain G. W. Manby, F.R.S., in 1807 invented, or at least introduced, the mortar apparatus, on which the system of the rocket apparatus is founded. Previously, however, in 1791, the idea of throwing a rope from a wreck to the shore by means of a shell from a mortar had occurred to Serjeant Bell of the Royal Artillery, and about the same time, to a Frenchman named La Fère, both of whom made successful experiments with their apparatus. In the same year (1807) a rocket was proposed by Mr Trengrouse of Helston in Cornwall, also a hand and lead line as means of communicating with vessels in distress. The *heaving-cane*, a fruit of the latter suggestion, is now used at every station in the kingdom. In 1814 forty-five mortar stations were established, and Manby received £2000, in addition to previous grants, in acknowledgment of the good service rendered by his invention. Mr John Dennett of Newport, Isle of Wight, introduced the rocket, which was afterwards extensively used. In 1826 four places in the Isle of Wight were supplied with Dennett’s rockets, but it was not till after Government had taken the apparatus under its own control, in 1855, that the rocket now in use was adopted. It was invented by Colonel Boxer, and its peculiar characteristic lies in the combination of two rockets in one case, one being a continuation of the other, so that, after the first compartment has carried the machine to its full elevation, the second gives it an additional impetus, whereby a great increase of range is obtained. The rocket has now entirely superseded the mortar in England.

The *United States Life-Saving Service* is chief among the lifeboat societies of other nations, both as regards the extent of coast embraced and the amount of work done. There are several points of difference between this service and that of England which are noteworthy. In the first place the whole or nearly the whole of its