

Richard A Oakley (1906 – 1988)

The modern rescue lifeboat is a highly sophisticated and seaworthy vessel capable of operating safely in the most extreme sea conditions. Despite this sophistication, even the best craft can succumb to a rogue wave and capsize still remains one of the greatest fears for any lifeboat crew. The ability to self-right unaided following capsize or knock down is therefore now an essential component of lifeboat design, something that can be traced back to the work of one man, RNLI Naval Architect Richard Oakley.



For a vessel to self-right it must satisfy two essential criteria; remain afloat when inverted and possess positive righting levers throughout the full 360 degrees of heel. It must also provide a stable working platform, so modern lifeboats generally combine self-righting with high initial stability. For inherent self-righting (i.e. without any action from the crew) this usually means a large watertight deckhouse and a low vertical centre of gravity.

During the 19th and first half of the 20th century, when many lifeboats were small open boats, self-righting usually meant the vessel being fitted with high bow and stern buoyancy compartments to provide instability when upside down. Even then, effective self-righting could only be achieved by using a relatively slim hull form, which did nothing for upright stability and resulted in early self-righting lifeboats being nick-named “Roly-Polys” because of their tendency to capsize.

Richard Albert Oakley was born in 1906. Little is known of his early life, but in 1918 he started work with S E Saunders Ltd in Cowes, Isle of Wight, builder of some of the finest early RNLI motor lifeboats. Here Oakley would have gained useful insight into the construction of these specialist craft.

In 1928, at the age of 22, Richard Oakley joined the RNLI as Assistant Surveyor of Lifeboats. Although his prime responsibility lay in maintaining the 150 strong RNLI fleet, particularly the annual refit carried out between April 1st and August 31st, it is likely that, as the only permanent Assistant Surveyor, he would also have been involved with new boats. This involvement increased significantly when, in 1936, he was appointed Chief Hull Draughtsman. At this time all new RNLI lifeboats were designed by consultant naval architects G L Watson & Co, so the drawing office role was to provide detail drawings and information to supplement G L Watson outlines. In 1937 Oakley was admitted to RINA as Associate Member.

In 1940, at the relatively young age (for the RNLI) of 34, Oakley was appointed Surveyor of Lifeboats. This appointment included overall responsibility for construction of new RNLI vessels, but design of the boats still remained with G L Watson & Co. under the guidance of its Principal and RNLI Consultant Naval Architect, J R Barnett. Barnett believed that only the smallest lifeboats should be self-righting and, consequently, few were designed during his consultancy. So strong was his influence that, by the end of the war, only six small ageing self-righting boats

remained in service, the bulk of the fleet comprising non self-righting Watson, Barnett and Liverpool designs. All these boats possessed high initial stability and a capsize angle well beyond 90 degrees, which made them very difficult to capsize, but of course, once upside down, they would stay there.

During the immediate post war years the RNLI suffered a number of lifeboat capsizes, tragically resulting in loss of life. This prompted a review of the RNLI policy on self-righting and, in 1953, a team led by Richard Oakley started work on a boat combining the stability of the non self-righting type with the ability to self-right. The result was the Oakley 37, the first new self-righting lifeboat design for almost 100 years.

The Oakley 37 was intended primarily for use on open beaches where the lifeboat is transported to the launch site on tracked carriage. This type of operation places strict limitations on size and weight and it was stipulated that the all-up weight ashore for the new design must not exceed 9.5 tons (9.65 tonne). To provide stability without excessive weight, Oakley incorporated a self-filling and draining water ballast tank into the double bottom below the engine room. Bottom ballast tanks had been used before, but Oakley added a second tank immediately under the deck into which, by an ingenious arrangement of self-operating valves, ballast was transferred as the boat rolled over. The offset weight of the transferred ballast, together with asymmetry in the engine casing, provided the self-righting capability.

The prototype Oakley 37, "RNLB J G Graves of Sheffield" was launched in 1954 and went into service at Scarborough in 1958. A year later Oakley was awarded the MBE in recognition of his achievement.

In 1963 Richard Oakley was appointed RNLI Naval Architect, the first such internal appointment (all previous naval architects having been independent consultants). The same year saw the introduction of a larger boat, the Oakley 48' 6", incorporating the same righting mechanism as its smaller sister. Sadly, by this time faster lifeboats were under development, so only five were ever built, but these provided the essential link between the older G L Watson designs and the new fast self-righters that were to follow.

Despite having the classes named after him, Oakley always appeared reticent to take credit for his achievements. In a paper read to the Manchester Association of Engineers (1), Oakley states that the idea to use ballast to effect self-righting came originally from the Dutch Lifeboat Society. However, the Dutch boats used a free flooding righting tank, not ballast transfer and it was Oakley who had the foresight to put the whole concept together.

Richard Oakley retired from the RNLI in 1966 after over 38 years service. He died in 1988, the same year that the first RNLI Mersey class, the Oakley 37's successor, entered service. By then the Oakley 37 had seen service with the RNLI for over thirty years and it is fitting tribute to the genius of the design and to the man behind it that this boat, conceived in the immediate post war resurgence of lifeboat development, should remain virtually unchanged throughout its time in the RNLI fleet. Although his boats appear simple by today's standards, Oakley's work marked a turning point for the RNLI that culminated in today's fully self-righting lifeboat fleet.

References

1: "The Design, Construction and Operation of the Latest Self-Righting Lifeboat", by R. A. Oakley, MBE. MRINA.

Presented on Friday, October 23, 1959, at the 1959-60 Session of the Manchester Association of Engineers.

Suggested further reading:

Oakley Class Lifeboats: An Illustrated History of the RNLI's Oakley and Rother Lifeboats.

by Nicholas Leach, NPI Media Group, Mar 2003, ISBN-10: 0752427849