

South Shields Volunteer Life Brigade



Established 1866

Coast Rescue Equipment

Line throwing from early 1800's to 1948

Equipment

- Heaving Line & Stick
- Manby's Mortar
- Boxer's Shot (Mortar)
- Rogers' Apparatus (Mortar)
- Sky Rocket
- Trengrouse's Launcher
- Congreve and Carte's Rocket
- Dennett's Rocket
- Boxer's (two stage) Rocket
- Tremblay's Anchor Rocket
- Delighe's Arrow



Heaving Line and Stick

Used from the shore and from lifeboats

Heaving Line and Stick

Heaving Line

These were made up of 25 fathoms of Italian Hemp Line made up of three threads

Heaving Cane

19 inches in length loaded at one end with $1\frac{3}{4}$ lbs of lead with a leather loop at the other end

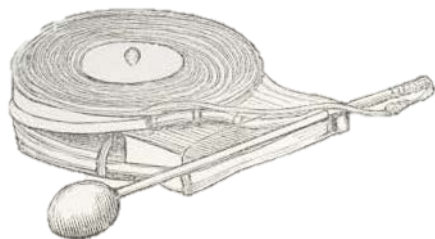


Illustration of Stick and Line being used



The background is a gradient of blue, transitioning from a lighter shade at the top to a darker shade at the bottom. There are several wavy, horizontal lines in a slightly darker blue color that sweep across the top of the image, creating a sense of movement and depth.

Mortar

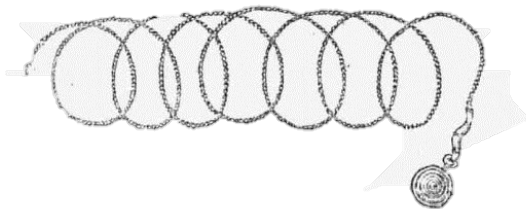
Manby's Apparatus

Manby's Mortar

Invented by Captain George William Manby of Norfolk, Manby's Mortar was first successfully used in 1808 to rescue the crew of the Brig Elizabeth wrecked on the Norfolk coast.

The Launcher was a standard 24lb mortar launcher used at that time.

The flaking system used for line carried by Manby's mortar was adopted for all other systems till the ending of shore to ship rescue
Boxer Rocket



Boxer's Mortar improvement

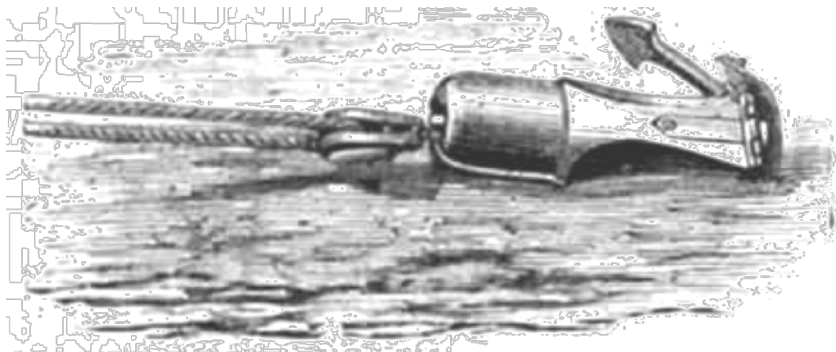
- Cylindrical shape
- Flat end at rear of the shot with 4 holes bored in to allow fuses to be placed so the shot could be observed at night
- Retained the woven hide thong of the Manby shot

Boxer's improved mortar shot



Roger's Apparatus for Ship to Shore Rescue

Roger's Mortar Apparatus



Mortar anchor and block of 1870

Widely adopted for use around the coast by the United States Life Saving Service.

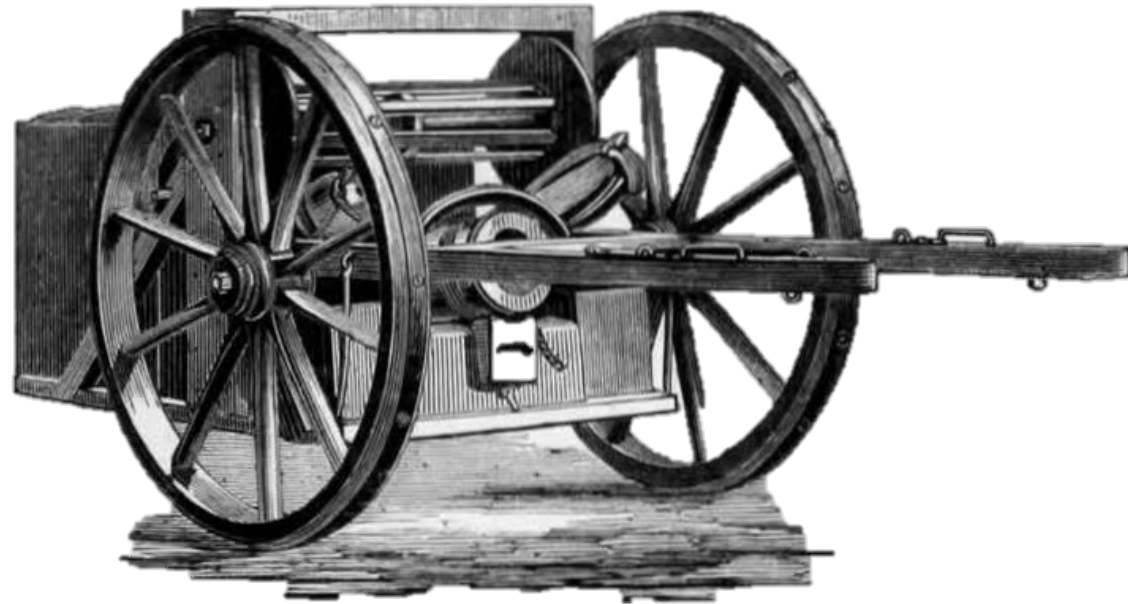
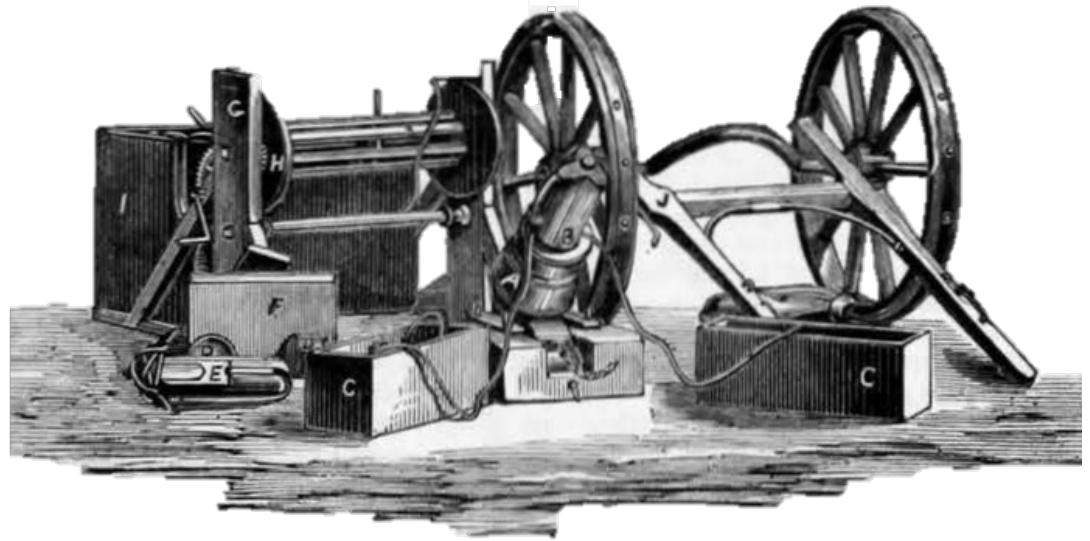


The inventions of Mr. John B. Rogers, of London, for saving life, the principal feature of which was a projectile anchor, said to weigh 112 lbs., it had three folding flukes, and is to be fired. It had attached to it had block of peculiar construction, said to be free from all danger of choking by weeds, etc. This block was carried with the anchor and a whip or hauling line to the wreck. Without the intervention and loss of time of getting off a small line by mortar or rocket, or the anchor is to be planted outside the surf, to haul out a boat. Mr. Rogers also has a cone shaped projectile of wood, to be thrown with the block, when not necessary to throw the anchor.

Roger's Mortar Apparatus

The first illustration shows the apparatus ready for use.

- **A** is the mortar,
- **B** the anchor in the mouth of the mortar, with two lines attached and ready for use in the pin boxes **C**,
- **C**. Wooden caps or sabots **D**,
- **D**, are placed in the mortar behind the anchor to protect it against any injurious effects from the powder.
- **E** is a grapnel for throwing over a ship in distress,
- **F** a metal box which contains powder, sabots, and friction tubes, etc.
- **G** is the frame of the carriage,
- **H** the windlass which having multiplying gear, winds in the whip line rapidly to pass out a hawser which would be delivered from box **I**.

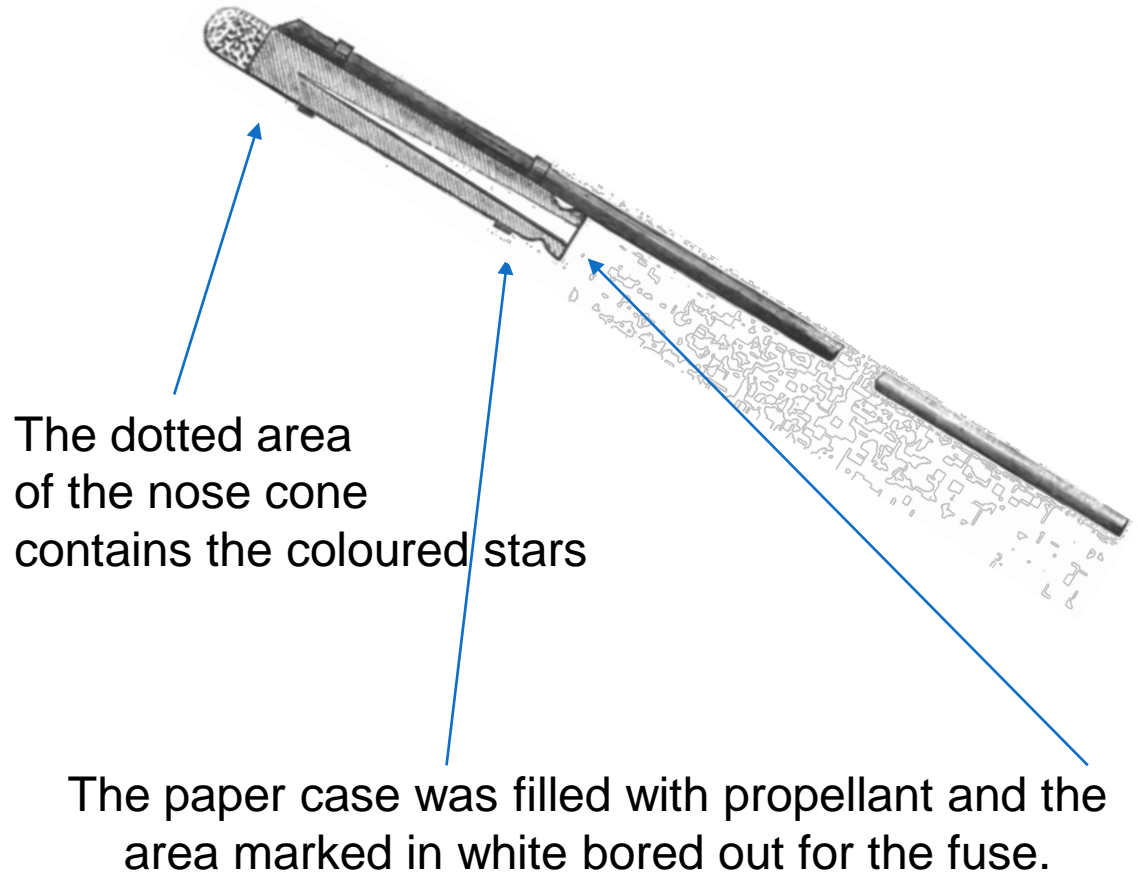


Rockets

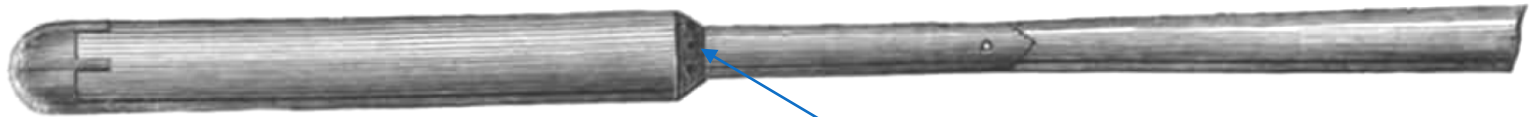
Early Rockets

The Sky Rocket

Was used for public firework displays and provoked the idea of using a rocket for ship shore rescue.



Congreve Rocket



Vents

This was designed as a war rocket and had the stick (pole) centrally placed with six smaller vents around the outer edge of the stick instead of centrally as in the case of other rockets

Henry Trengrouse Apparatus

Early Rockets

Trengrouse's invention is credited with saving the lives of many thousands of people. Inspired by the wreck of HMS Anson which he witnessed, Henry Trengrouse of Helston Cornwall made a rocket capable of carrying a life-line to a wrecked ship. Because the rocket's velocity increases gradually it did not break the line. It was also much cheaper and lighter than the mortar system then being tried. Trengrouse's equipment included a chair to bring the crew and passengers ashore. Rocket and chair packed into a chest small enough to be carried.

More information and exhibits are available at the HELSTON MUSEUM.

http://www.cornwalls.co.uk/history/people/henry_trengrouse.htm

Henry Trengrouse father of the rocket life saving apparatus



Small rocket fired whilst rested on a launcher attached to the barrel of a musket

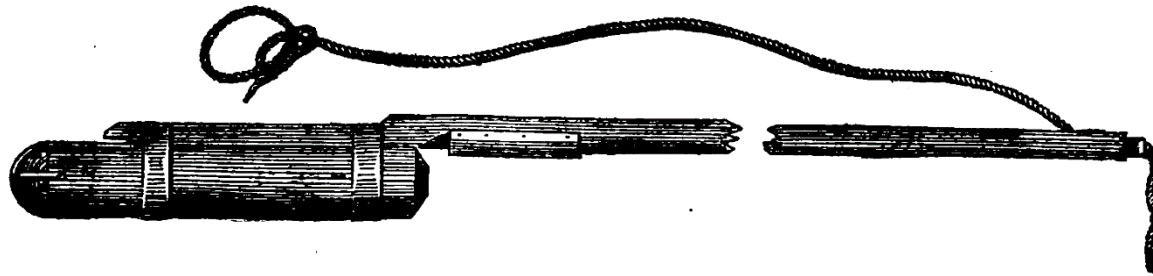
Rocket Rescue

- The first time a rocket was ever really used in saving life from shipwreck was at the wreck of the Bainbridge on the southern coast of the Isle of Wight in 1832.
- This rocket was manufactured by John Dennett
- Mr Dennett had originally been employed in the manufacture of war rockets. But he soon turned his attention to using the same for use in ship to shore rescues.

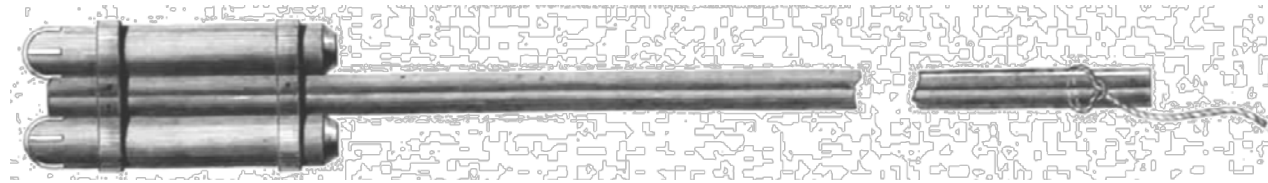
Dennett's Rocket



Method of securing a line to Dennett's Rocket



Dennett's Coupled Rocket



The distance of longitudinal travel of a rocket had always been a problem when used rather than the mortar.

In 1855 the apparatus came under the Government's supervision and methods of improving the range were sort.

John Dennett hit upon the idea of coupling two rockets together improving their range at level of fire at 35° to 400 yards.

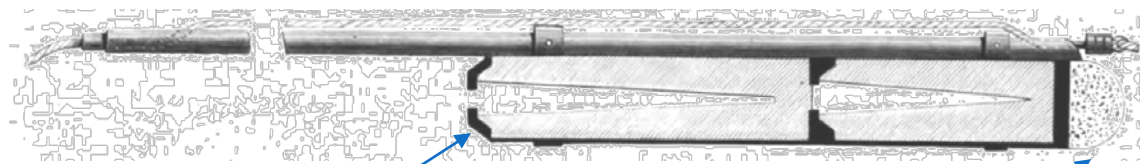
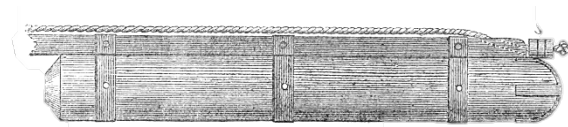
However this proved unreliable under field trials the problems being;

1. Lighting of both rockets simultaneously
2. Parting of the rockets during flight

Boxer Rocket

The Boxer Rocket

1. Colonel Boxer was requested to carry out experiments to see if he could solve the problem of distance flown.
2. He hit upon the idea of putting two rockets in one case.
3. The first rocket propels the line to its maximum height.
4. The second rocket then carries the line forward.
5. This was the first two stage rocket and became the standard life saving rocket from 1865 until 1948
6. Colonel Boxer served for 30 years in Royal Artillery and died in Ryde the Isle Wight on January 1st 1898.



Wrought iron case
and internal
partitions

Head cone
made of
hardwood



Firing



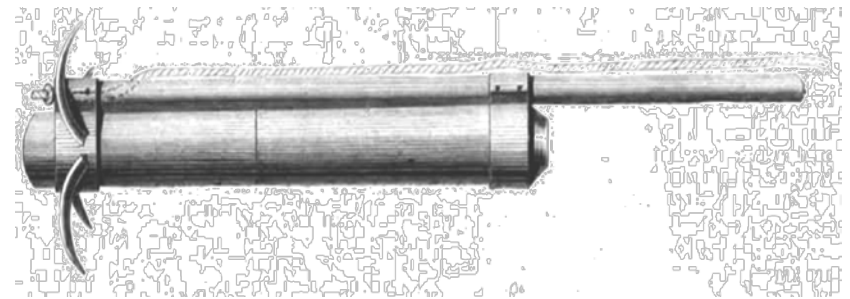
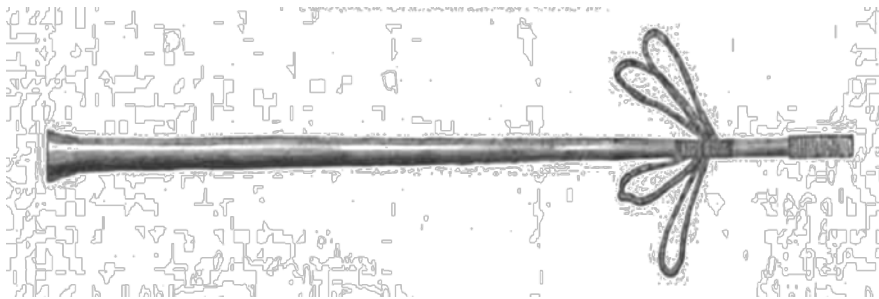


Some of other Ideas Trialled

Other Ideas Trialled

- Colonel Delvigne of the French army hit upon the idea of using arrow fired from a rifle with a copper line however in trials was found to part from the arrow.

Mons. Tremblay fitted a large rocket with an anchor head fire from ship, however this may have been a means of saving those on board, but was more likely to kill those on shore and therefore abandoned.





Acknowledgements

We would like to thank Graces Guide for use of the illustrations used in this presentation.

For further information on Victorian and Edwardian Engineering please go to:

<http://www.gracesguide.co.uk>

We would also like to thank Tyne and Wear Archive and Museums for the use of the pictures of Dennette's Rocket

The End

If you would like to
know more please visit:

<http://WWW.thehistoryssvlb.co.uk>

