

Appendix G

SOCKET DISTRESS SIGNALS IN 1912

As far back as the early 1880s, the British Board of Trade (BOT), citing Section 18 of the Merchant Shipping Act of 1876, authorized the use of socket distress signals by passenger steamers and emigrant ships for indicating signals of distress in lieu of carrying guns and rockets. Passenger certificates issued by the BOT to foreign-going vessels (such as No. 1415 issued to *Titanic* on April 4, 1912) included under the heading *Equipments, Distress Signals, &c*:

- One cannon and twenty-four cartridges or other approved means of making signs of distress.
- Twelve rockets or other approved signals for distress.

Socket distress signals met the requirement of “other approved means” for signaling distress. In keeping with the requirements listed on her passenger certificate for a foreign-going steamship, *Titanic* was listed as carrying 36 socket distress signals in lieu of carrying guns and rockets.

In the 1880s, the manufacturer of these socket distress signals, The Cotton Powder Company, Ltd., supplied them in boxes of 24, 12 and 6 for shipboard use. The box of 24 measured 9x15x8 inches. The rail sockets, from which these signals were fired, measured 2½ inches in diameter by 7 inches in height.

Socket distress signals made by the Cotton Powder Company were described in an article written by E. Price-Edwards dealing with “Signaling by Means of Sound” in the January-June 1881 issue of *Van Nostrand’s Engineering Magazine*. This description is reproduced in Figure G-01 below:

<p>One other form in which explosive signals are now used may here be mentioned. I have alluded to the gun fired at intervals of about a minute being the authorized signal of distress for ships at sea. Mr. Gardiner, of the Cotton Powder Company, has sent me particulars of a kind of signal which may be fired more easily, expeditiously, and effectively than the gun, thereby obviating loading every minute, an important consideration with a vessel in distress. This consists in a small charge of tonite made up in a sort of cartridge. When required to be used, one of these cartridges is dropped into</p>	<p>a socket, and by pulling a lanyard attached to a friction tube, a small quantity of powder at the base of the signal is ignited, which blows the charge up into the air about 600 feet, where it explodes. At the moment of explosion some brilliant stars are also shot out, and thus the signal represents either a gun or a rocket, both distress signals. I am informed that many vessels have been supplied with these rocket signals, that their effectiveness is undoubted, and that the Board of Trade have sanctioned their use in lieu of either guns or rockets.</p>
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Fig. G-01. From *Van Nostrand’s Engineering Magazine* (Vol. XXIV) 1881.

In accordance with BOT requirements, *Titanic* was equipped with two gunmetal rail sockets for firing these signals; one was located on the starboard side of the forebridge on the rail close to emergency boat No. 1, and the other on the port side of the afterbridge over the poop. We also know that *Titanic* carried a total of 36 distress socket signals. Some were kept on the forebridge and some were kept in a quartermaster’s locker under the poop.¹

At the time *Titanic* was sending up these distress signals, quartermasters George Rowe and Arthur Bright each brought a box of these signals from under the poop to *Titanic*'s forebridge at the request of Fourth Officer Joseph Boxhall. This was after Rowe, who was stationed out on the poop, called the bridge on the loud speaking telephone to ask if they knew that a lifeboat was seen in the water. At the time, Boxhall happened to be coming back into the wheelhouse having just fired off one of these signals. Boxhall answered the phone and said he did not know about a boat in the water, but asked if Rowe knew where the "detonators" were kept and to bring them forward to the bridge. Rowe and Bright each grabbed a box and brought them forward. Rowe once wrote that he thought the box he carried held 9 or 12 of these signals.²

An opened decaying box containing 17 unfired distress signals was found on the seabed at the *Titanic* wreck site. It was apparently large enough to easily hold 4 rows and 6 columns worth of these signals, or a total of 24, plus room to hold the firing lanyard, cleaning hook, and friction tubes needed to fire the signals. As can be seen in the photograph shown in Figure G-02,³ there appears to be a great amount of corrosion and marine growth in what is left of the box. The distinctive shapes of the socket signals themselves are easily recognized. The hole in the center of their conical shaped heads are the top end of a long brass tube that ran all the way down the center of the signal to a powdered charge in the signal's base. According to *Titanic*'s Second Officer Charles Lightoller, the hole down the center came blocked up with a peg. This would be removed prior to firing, and a friction tube would be inserted into the brass tube as far down as it would go. Then a lanyard would be hooked to a wire loop at the top end of this friction tube. When this lanyard was pulled, it would fire the charge in the signal's base and light a timed fuse. The shell would then be propelled to a height of about 600 feet where it would burst "throwing out a great number of stars."



Fig. G-02. Box of signals found at the *Titanic* wreck site.

The following is a description of the socket distress signals that were supplied to *Titanic* from Second Officer Charles Lightoller:⁴