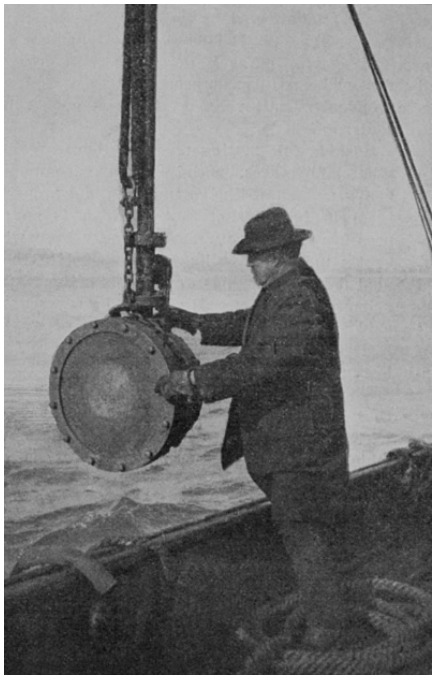
A QUIET SEA

RMS TITANIC

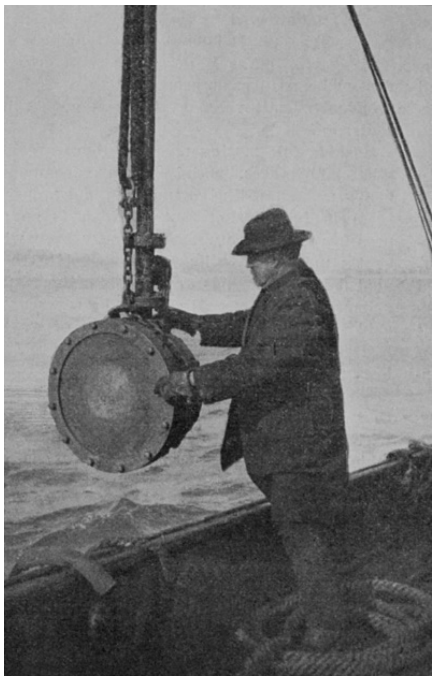


AFTERMATH

TITANIC AFTERMATH

The loss of RMS Titanic sparked numerous ideas and inventions to make ship travel safer. They included detachable sections of deck that could be launched and serve as floating rafts, a string of large buoys chained across the Atlantic so ships in distress could tie up to them. Other suggestions (e.g., have vessels sound their whistles and listen for the echo from an iceberg) were well-meaning but not very effective. More sensible solutions involved changes in ship handling and speed, improved davits and, of course, more lifeboats, some fitted with wireless sets and engines to tow the other boats away from a sinking vessel. It became the rule that all ships would maintain 24-hour wireless watches, so distress signals would not go unheard. Improvements regarding watertight subdivision also were undertaken. Titanic's sister, Olympic, was practically gutted and rebuilt to a very high standard. Structural improvements to the third ship of the class, Britannic, included huge gantry-type davits that could launch boats from either side of the ship, even with a heavy list. The Germans fitted their new superliners with red-painted lifeboats and powerful searchlights to illuminate icebergs. Although searchlights are of limited use at night due to atmospheric diffusion, the big lamps, conspicuously perched on the foremasts of German liners, at least looked reassuring. More wide-ranging efforts included moving steamship routes further south and inaugurating the International Ice Patrol in 1914, to keep watch and warn ships of the presence of ice. Flying over the Atlantic was longingly looked upon on as the most desirable way to avoid icebergs altogether. Ultimately, the British Board of Trade put out a request for inventors to develop an instrument to detect icebergs at long range.

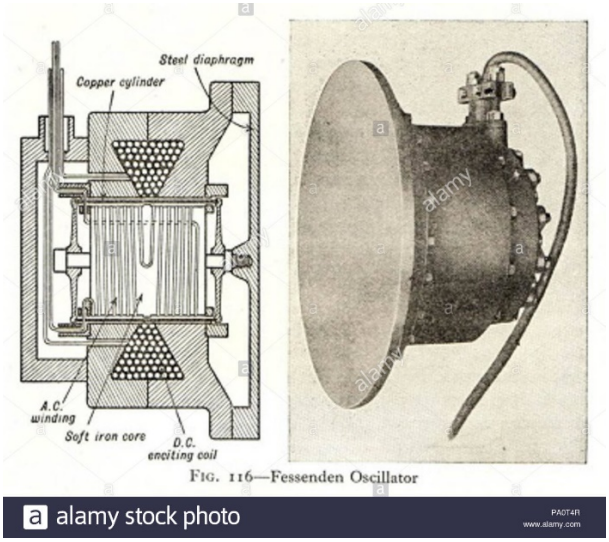
Fog was another problem, and early in the 20th Century, the Submarine Signal Company was formed to develop a system of large gongs fitted on lightships and placed underwater along the coast. Sound travels faster and further in water than in air, so ships fitted with hydrophones could receive the reverberations and determine their position. The gongs were operated by compressed air, electrically or by wave action, and each had its own characteristic sound pattern to identify its location. By 1912, when Titanic sank, there were more than a hundred bell systems in service worldwide. But even with sensitive hydrophones, accuracy in determining range and bearing were sketchy, so clearly, something else was needed. It took someone who knew radio to make this happen.



Reginald Fessenden and his oscillator
Photo credit - Wiki commons

That someone was a temperamental Canadian inventor named Reginald Fessenden. Like many others, Fessenden was shocked by the loss of life on Titanic and got to work developing a device that would detect underwater obstructions. Adapting his previous invention of a high-frequency oscillator, he was able to use his apparatus to transmit sound waves and receive the echoes at a constant frequency that provided accurate ranges and bearings. By early 1913, Fessenden submitted a patent. The Submarine Signal Company took notice and offered to work with Fessenden to perfect his apparatus. The resulting tests, conducted in 1914 from the Revenue Cutter Miami off the Grand Banks, in the vicinity of Titanic's sinking, proved entirely successful; an iceberg was located at a range of between 2 and 3 miles.

By means of this electromagnetic machine, operating a diaphragm in contact with seawater, telegraph messages could be sent by ships underway and, for short distances, speech could be transmitted. His device could also take soundings and record water depths. Thanks to Fessenden, travel by sea became far safer. The only vessel sunk in collision with an iceberg, nearly 50 years after Titanic, was the small Danish cargo liner Hans Hedtoft, lost in 1959. Tragically, she too struck an iceberg on her maiden voyage and was lost with all 95 passengers and crew.



FESSENDEN OSCILLATOR SCHEMATIC
Photo credit Alamy

The last surviving Fessenden Telegraph Oscillator can be found on the ex-USS Olympia, an 1893 cruiser preserved by the Independence Seaport Museum in Philadelphia. It's not clear when it was fitted on Olympia, but it's likely that the military demands of World War I led to the installation.

FESSENDEN OSCILLATOR
Photo by author during ex-USS Olympia survey

Following overwhelming tragedies, human complacency is shattered, wisdom is gained, improvements made and inventions fashioned, in the hope that such disasters will never happen again. The momentous loss of Titanic was one such event.