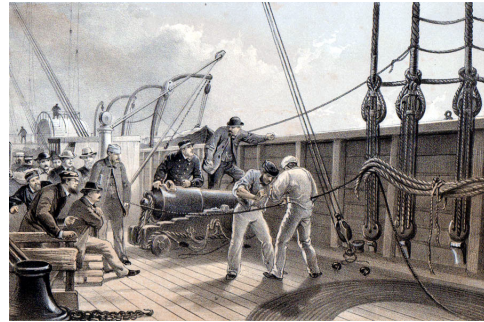


# The Galvanometer

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The telegraphic cable-laying ships, the *Agamemnon*, and the *Niagara*, finally met in mid-Atlantic on July 29, 1858. Professor Thomson was stationed aboard the *Agamemnon*. It is rather an exciting occupation to watch the tell-tale signals on the Professor's galvanometer as the cable pays out. Indeed, it is almost impossible to realize the anxiety and *heart-interest* everybody manifests in the undertaking. Few, but the crew, even sleep soundly. Professor Thomson frequently does not put off his clothes at night.

To-night, but a few hours after starting, there was an alarming crisis. The *Agamemnon* had signalled to the *Niagara*, 'Forty miles submerged,' and she was just beginning her acknowledgment, when suddenly, at 10 P.M., communication ceased. According to orders, those on duty sent at once for Dr. Thomson. He came in a fearful state of excitement. One of the crew overheard him muttering to himself as he came: 'I shall have to use the bridge arrangement of Professor Wheatstone'. He supposed the fault might lie in a suspicious portion, which had been observed in the main coil, as, indeed, the tests confirmed. Not a second was to be lost, for it was evident that the damaged portion must be payed



Splicing the Cable

overboard in a few minutes; and, in the meantime, the tedious and difficult operation of making a splice had to be performed. Nearly all the officers of the ship and of those connected with the expedition stood in groups about the coil, watching with intense anxiety the cable as it slowly unwound itself nearer and nearer the joint, while the electricians worked at the splice as only persons could work who felt that the life and death of the expedition depended upon their rapidity. When the splice was finished, the signal was made to loose the brakes, and the repaired section of cable passed overboard in safety.

Attention now turned to the electrical room where the scene was such as those present shall never forget. The two clerks on duty, watching, with the common anxiety depicted on their faces, for a propitious signal; Dr. Thomson, in a perfect fever of nervous excitement, shaking like an aspen leaf, yet in mind clear and collected, testing and waiting, with half-despairing look for the result. Behind, in the darker part of the room, stood various officers of the ship. Round the door crowded the sailors of the watch, peeping over each other's shoulders at the mysteries, and shouting 'gangway!' when any one of importance wished to enter. The eyes of all were directed to the instruments, watching for the slightest quiver indicative of life. Such a scene was never witnessed save by the bedside of the dying. Things continued thus. After some minutes, Dr. Thomson and the others left the room, convinced they were doomed to disappointment. Suddenly one sang out, 'Haloo! the spot has gone up to 40 degrees.' The clerk at the measuring instrument bolted right out of the room, scarcely knowing where he went for joy; ran to the deck, and cried out, 'Mr. Thomson! the cable's all right; we got a signal from the *Niagara*.' When the first stun of surprise and pleasure passed, each one began trying to express his feelings in some way more or less energetic. Dr. Thomson laughed right loud and heartily. Never was more anxiety compressed into such a space of time and never was there more relief. The entire incident of signal failure lasted exactly one hour and a half, but it did not seem a third of that time. Afterward, we learned that a faulty sand battery aboard the *Niagara* had prevented them from responding to our signals immediately. (Adapted from Thompson, 1910, pp. 361-363 and Bright, 1903, pp. 119-121)