My Ocean Campaign



Irish Ocean Literacy Network

My Ocean

By Derek Cassidy

Figure 1: Cable Ship Sovereign

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“The ocean has always been a mystery to me. She leads me in with great interest as I want to know and understand her seascape or what the seabed looks like with regards to the mountains, valleys, and continental shelves etc. Her deep seas have always poked at my fear but also as what lies beneath. The history that she holds within her depths and the new technologies that are using her to connect nations and continents with submarine cables etc. The power that she has when her waves shape coastlines and her vastness with no landscapes seems endless, scary but full of character”

Figure 1: Cable Ship Sovereign

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A memoir from a Submarine Cable Technologist

I have been involved with submarine cable technology for the last 26 years, from submarine cable design, route planning, route surveys, installation, commissioning, and maintenance and repair. It has been a great 26 years, full of adventures on the ocean dealing with the many weather conditions and the everyday tasks associated with my role.

I have always been in awe of the sea, its ever-changing faces from calm seas to force storm gales, which can happen so quickly, especially in the Irish Sea, as I say is the most dangerous body of water in the world. It is always changing and before you go and have adventures on her you just first take precautions etc, making sure that you have all the equipment needed in case of emergency and of course spare batteries, clothing and food etc.

I can always remember a repair in 2011 when I was on the cable repair vessel CS Sovereign, see figure 1 below, a BT Marine Vessell that was leased by Cable and Wireless, a sister company and then bought outright. It was now registered to Global Marine who had purchased Cable and Wireless Marine.

Figure 1: Cable Ship Sovereign



It was April and the weather was calm, we had just arrived at the first repair, as the cable had been damaged twice on this occasion. This repair location or “cable ground” was 14Kms of the Irish Coast and about 7kms from the Saltee Islands. We started the repair by locating the cable and identifying the damaged location. The cable was tangled up but not cut, we did not know what caused this issue, but we had an idea. As the cable had severe bending and twisting in it that caused the optical fibres to be damaged, we decided that this was the culprit. We used the ROV [Remote operational vehicle] to cut the cable and the retrieve it. We recovered the cable to the cable ship and the cut away 50m of cable. We closed it off, sealed it from the water and attached a buoy, we then let it slip back into the water. We then retrieved the cut cable that was still on the seafloor. We recovered this section and again cut of 50m of cable. However, this time we prepared the cable for the repair process and tested it with optical testers [OTDRs] etc.

Figure 1: Cable Ship Sovereign

The cable tested all the way to the seconded damaged section, 47Km off the coast of Cornwall, UK. We started the process joining the existing cable to a new spare cable of same design [splicing and jointing]. We then tested the cable through the new spare cable and all was good. The crew then recovered the other cable we had slipped overboard and tested it with the OTDRs etc and we could see the cable station, 14Kms away, so again this cable was good. We then joined [spliced] the cable to the spare section and carried out the process of lowering it onto the seabed and using a jetting ROV to try and bury the cable in the seabed, but this seafloor is full of gravel and was muddy, so it was difficult to complete a cable burial, see figure 2.

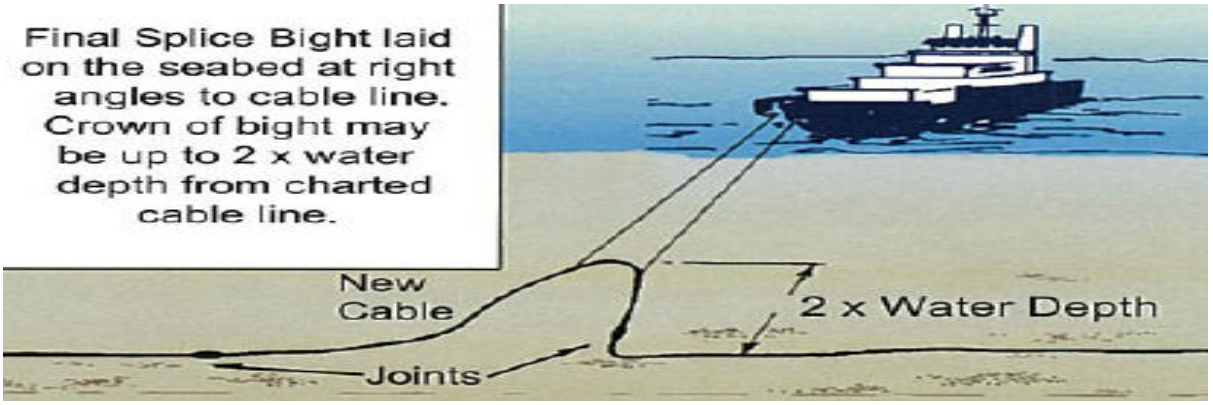


Figure 2: Laying the repaired section of cable back on the seabed

The cable station then tested the cable to make sure they could see through the fault, and they could, all was good with this repair, see figure 3.

Figure 1: Cable Ship Sovereign

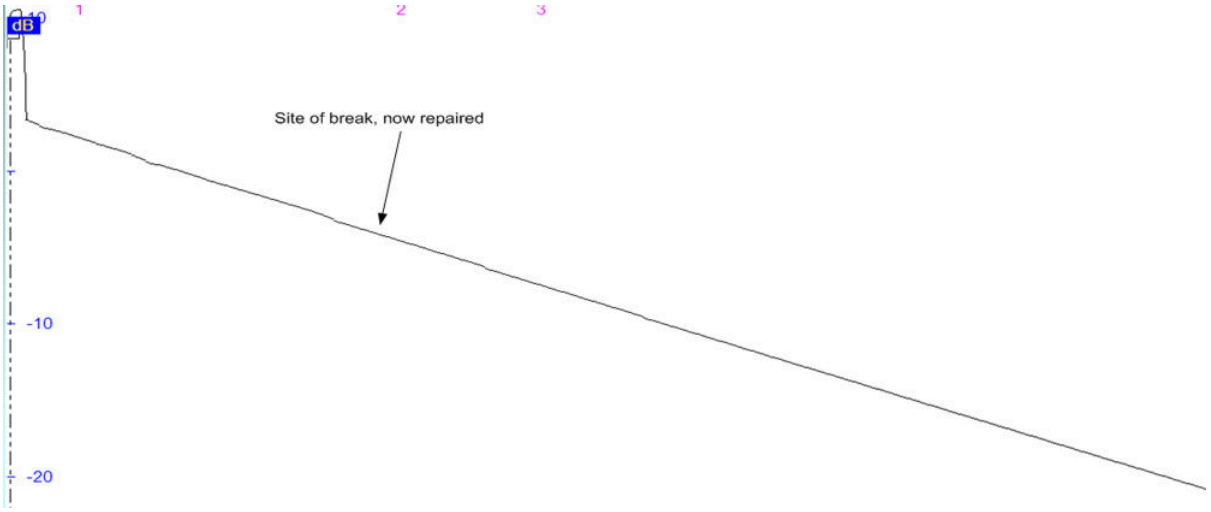


Figure 3: OTDR test from cable station, testing through the original fault.

Over the two days that the repair took place the weather was great, the sea was calm, and you could see the Irish coastline and the Saltee Islands very clearly. We were joined on a few occasions by very curious fishermen who were asking what we were doing as a cable-ship has not been seen in these waters for about 10 years. We had great conversations and banter etc. They knew the importance of the submarine cables on the seabed, and we knew the importance of the fishing industry, we were both acknowledging each other's industry and right of access to the seabed.

We then left the cable ground after the cable repair had successfully passed all the tests and agreed by the Cable station staff. We were only two to three hours into our voyage towards Cornwall, about 48Kms from the Saltee Islands we experience very bad weather. The CS Sovereign could withstand a 12+ force gale, and it was decided to continue the journey to the next repair, in hopes that the weather would get better.

Figure 1: Cable Ship Sovereign

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We were into our second day of travelling from the first repair and the weather was still the same, so we decided to travel to the Isles of Scilly and take cover until the very bad weather cleared. We were there for three days, on board the vessel. We are allowed to leave the vessel and tour the main island of St Mary's where the ship was at shelter.

Then on the third day the weather cleared, and we immediately set sail for the second repair ground. The weather stayed calm for the voyage and throughout the repair, only turning bad when we were entering Portland docks to unload the cable.

All in all, we truly experienced what the Irish Sea and the Celtic Sea could offer, calm seas, heavy if not tremendous horrifying seas to landscapes and scenes of natural beauty and colour. We managed to see pods of dolphins and whales and of course the sea birds who always saw us a resting place and as feeding stations.

Derek Cassidy