



Radio Society of Great Britain



City of Bristol RSGB Group - G6YB

At the Bristol Lawn Tennis & Squash Club, Redland Green, Redland, Bristol BS6 7HF

Monday 30th November 1930hrs

The \$50 Satellite

Stuart Robinson GW7HPW

Not many people have built a satellite at home. Using a steel tape rule for an aerial and two 40mm square circuit boards, powered by a 3.7v lithium battery, it was in orbit for over 18 months, and only recently turned off as the battery voltage indicated the end of its life. Stuart will be bringing a full working model with him. He will also talk to us about [LoRa](#), a wireless technology that has been developed to enable low data rate communications using very low power over **Long Range** - something we will probably ALL be using soon.





Cyrus Field

The Transatlantic Cable - Part 1.

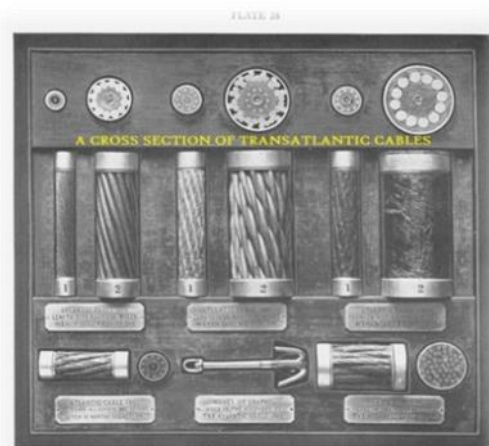
(A brief outline of an astonishing achievement).

The epic struggle to span the Atlantic with a submersible cable seemed a more impossible dream each time it failed. But a seemingly lost cause and the mighty power of the sea could not reckon with the might of some of the greatest engineers and entrepreneurs of the nineteenth century... and the dream of one man, Cyrus Field.

Even with the enormity of this event at the time, its significance in the birth of a new age of communication and impact on the future commerce throughout the world must have been somewhat beyond imagination. But had it not been through the sheer persuasive persistence that saw Cyrus Field, throughout twelve years and five attempts at laying a cable across the Atlantic, the world we know now might be a very different place.

With business and commerce of the nineteenth century, accelerating apace by the growing industrial revolution, the world was changing fast. But however voracious the appetite for this new age of industry and commerce was, its development and spread across the world would be considerably restricted by the unreliable and tremendously slow speed of communication.

The telegraph was already considerably developed overland and terrestrial engineering posed few great problems. The issue of submerging cable over short and relatively shallow stretches of sea had been achieved before, without major difficulties. Such was necessary to connect various land-forms around Newfoundland. However, laying a cable across 2500 miles, beneath thousands of feet of water and expecting it to work seemed an insurmountable challenge. Yet, in this new industrial age, the passion to make impossible things happen, in the interest of progress, made many people of wealth eager to put their dollars into such ventures. Field raised the vast but very inadequate amount for the time of US\$1.5 million.



Atlantic cables of 1858, 1865, and 1866. A short length and a section of each.

The shortest distance between North America and Europe is between the very inhospitable wilderness of Newfoundland and the rugged coast of Ireland. But it wasn't a simple matter of just laying a cable. What kind of insulation would be needed? How strong would the cable need to be considering, not least, the strain of weight of the cable itself on the drop to the ocean floor? How would such an enormous amount of cable be stored and paid out from a ship? Would it work, and carry electrical signals over such an enormous length?

The first attempt at laying the cable commenced in 1857. Two ships were needed to load paying-out machinery and the enormous amount of cable, insulated with the revolutionary flexible but hard rubber-like substance called Gutta Percha, which could withstand water without perishing. The ships chosen were HMS Agamemnon and USS Niagara along with support vessels. At this point, the two ships with their respective cable loads joined together and were able to test the continuity throughout the 2500nm length. The cable was then separated to be re-spliced halfway across the ocean. The idea was for the Niagara to lay its cable and then the Agamemnon to take over mid-ocean and onward to Newfoundland.

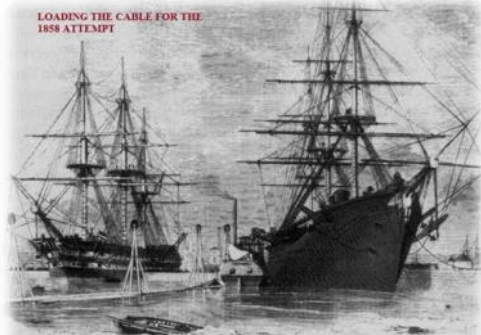
With the cable brought ashore at Valentia Bay off the Irish Coast, the USS Niagara set out trailing the cable from the stern until it snapped just five miles out. An inconvenience - but at such short distance it was not a disaster and the ships set out again having repaired the cable. Hastily designed paying out and breaking systems would cause a great deal of trouble and needed constant monitoring. However, everything was generally going to plan and a comfortable routine had set in. But with the technology in its infancy and some hasty but understandable business decisions having been made, the 1857 attempt at laying the cable was destined for failure before the cable was loaded on board the ships. At several hundred miles

from shore because of the swell of the sea and the failure in compensating the braking system, the cable again snapped and was lost. This time irrecoverably.

Undeterred, Cyrus Field went back and skilfully encouraged further investment into a second attempt the following year. With improved machinery and cable, the two ships would start laying in mid-ocean joined together by the cable, with one ship heading for Newfoundland and the other to Ireland.

However, this attempt too, proved to be in vain. Before the ships made their rendezvous, the Niagara chose a different tack and ran before the wind as opposed to the Agamemnon, which headed straight into the most tempestuous storm imaginable, which nearly wrecked her and threatened to send her to the ocean floor. The Captain risked his ship and crew to save cutting the cable but sustained considerable damage to the ship and at the cost of many casualties. When the storm finally abated and the ship put back into some order and with the deck cable recoiled the rendezvous was made and the cable successfully spliced. Good providence, it seemed, might prevail. Yet, the sea still snatched defeat from the jaws of victory. Paying out began from the Niagara and Agamemnon. It snapped on two occasions on the Niagara and was re-spliced a third time. Everything went smoothly for the next couple of days until it yet again snapped and disappeared irrecoverably over the stern of the Agamemnon. The cable, it seemed had been damaged by the storm. Though the Agamemnon attempted to rendezvous with the Niagara again, it appeared that the Niagara had sailed for Ireland as previously agreed under the circumstances. Agamemnon turned about and headed home too, in defeat.

Part 2 follows next month - Bob G4BWB



Loading the Atlantic cable at Plymouth for the 1858 attempt. The yacht-like lines of the United States' Niagara (right) contrasted with the solid bulk of the Royal Navy's Agamemnon (left).

Take a Handie with you !

A few weeks ago my wife and I visited our son and daughter-in-law near Seattle, Washington.

We had been to visit twice before, but this time we were thrilled to see our lovely twin granddaughters for the first time .

After the usual DIY tasks that “Dad” is expected to do, and helping with baby-sitting/entertaining, and taking the twins out in the “stroller” I decided to



have a look at contacting some of the locals on the radio. I had with me my £30 TYT UVR 8D - 70cm/145Mhz handie which I had programmed with a couple of the local repeater and simplex channels (illegal frequencies in the UK!). After listening to the [Snoqualmie](#) area repeaters I

called in and spoke to several amateurs as G3TKF/Portable W7 . After a QSY to a simplex channel a few of them were keen to meet up so I suggested the local “Tavern” (there’s a surprise), an easy walk for me without a vehicle. I met with KG7MXB, KA7GPP and Mike KA7GPP who very kindly offered me his spare radio (A \$25 Baofeng UV-5) which had more than 150 other channels programmed in. I discovered that my charger, in spite of being 110/230v, wouldn’t charge my own radio and so Mike lent me his which worked on both units .

I couldn’t have hoped to meet with a more friendly bunch of chaps - and I intend to go along to the local club only a short distance from my son at the local Fire Station on my next visit ! As we were coming home via an old friend in Bermuda (still 110v) Mike told me to keep his charger unit until my next visit !

One of the subjects discussed was [HamWan](#) a non profit making high speed amateur built and maintained data network . Take a look at the link .

More on the Bermuda trip next time.

Robin G3TKF



I recently visited the [Military Wireless Museum in Kidderminster](#)

Ben Nock G4BXD has one of the largest collections of military kit that I have ever seen ! With rows of R1155 and R1154s and a room dedicated to the Eddystone range and just hundreds of others, I can highly recommend a visit . He works on donations to keep his collection up together and supplies excellent tea, coffee and chocolate biscuits !

Make a note to visit perhaps in the spring when things warm up a little !

47,Oakfield Road , Kidderminster DY11 6PL

John Weston G3LYW from Old Newbridge Hill, Bath passed away on Monday 9th November .

John had been active for over 50 years on 160m and was probably one of the best known stations in the country on that band. He was mentor to several members of the group including Tom G3OLB and Phil G3SWH .

Always commanding large nets, his loud signals will be missed.

John was 80 years old. RIP

Coming soon to the Bristol Group

Nov 30th : Stuart Robinson GW7HPW The \$50 satellite

December : No Meeting “ On Air Night ”

January : AGM

Bath and District ARC <http://badarc.webs.com/>

Chepstow and District ARC <http://www.gw4lwz.org.uk/>

Chippenham & DARC <http://www.g3vre.org.uk/archive.asp>

MidSARC www.midsarc.org.uk/

North Bristol ARC <http://www.nbarc.org.uk/>

Shirehampton <http://www.shirehampton-arc.org.uk>

South Bristol ARC <http://www.sbarc.co.uk/calendar/>

Thornbury and South Gloucs ARC <http://tsgarc.uk/>

Trowbridge and District ARC <http://www.radioclubs.net/trowbridgedarc/events.php>

Any “Wanted” or “For Sales” ?

[Robin G3TKF](#)

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<http://www.g6yb.org>