

# **A History of the Telegraph in Jersey**

**1858 – 1940**

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**This edition July 2009**

## The Telegraph System.

Jersey, being only a relatively small outpost of the British Empire, was fortunate in having one of the earliest submarine telegraph systems. Indeed the installation of the first UK-Channel Islands link was made concurrently with the first attempted (but abortive) trans-Atlantic cable in 1858<sup>1</sup>.

There was some British Government interest in the installation of such a cable, since the uncertain relationship with the French over the past century had led to the fortification of the Channel Islands as a measure to protect Channel shipping lanes. The islands were substantially fortified and garrisons were maintained well into the early part of the twentieth century. Indeed, the Admiralty had installed an Optical Telegraph between the islands during the Napoleonic wars using a bespoke system developed by Mulgrave<sup>2</sup>. Optical signalling using a two arm semaphore was carried out between Alderney and Sark and Sark to Jersey and Guernsey. The main islands of Jersey and Guernsey had a network of costal stations. This system was abandoned by the military at the end of the conflict in 1814, but the States of Jersey were loaned the stations and continued to use the system for several years thereafter for commercial shipping. The optical semaphore links between La Moye, Noimont and St Helier continued until a telegraph line was installed in April 1887 between La Moye and St Helier. There is still some evidence of this telegraph network at Telegraph Bay in Alderney, where a fine granite tower is preserved, and the Signalling Point at La Moye, Jersey which survives as a private residence.

Clearly, then, an electric telegraph would be in the best interest of the defence of the realm and the government looked favourably on the enterprise. All the same, the optical telegraph continued in service for many years after the introduction of the electric telegraph and the ship to shore signalling stations remained in service until the twentieth century.

The technological advance was remarkable. It had not been long since the first electric telegraph had been demonstrated by Wheatstone and Cooke<sup>3</sup> in 1837. The first commercial telegraph was installed from Paddington to West Drayton in 1839. This used a system of 6 wires and demonstrated the feasibility of telegraphy. But it was Samuel Morse<sup>4</sup> who revolutionised communications with the invention of Morse code patented in 1838. The first commercial link using the Morse code opened from Baltimore to Washington in 1844. After this telegraphs blossomed everywhere. Most of the first telegraph circuits were constructed across land using poles and open wires, however the first successful submarine cable was laid in 1851 from Dover to Calais. The brothers John and Jacob Brett proposed in 1845 to establish a general system of telegraphic communication for Britain, and in 1847 obtained a concession from the French Government to establish a cable between England and France. The Bretts' Channel cable of 1850 quickly failed, but a second attempt between Dover and Calais

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<sup>1</sup> Atlantic Bridgehead: Story of Transatlantic Communications, Howard Clayton, Garnstone 1968

<sup>2</sup> L. L. Robson, 'Mulgrave, Peter Archer (1778? - 1847)', *Australian Dictionary of Biography*, Volume 2, [Melbourne University Press](http://www.melbourneuniversitypress.com.au), 1967, pp 267-268

<sup>3</sup> Steven Roberts in *Distant Writing – A History of Telegraph Companies in Britain between 1838 and 1868*

<sup>4</sup> Samuel Finley Breese Morse (1901), Trowbridge, John (ISBN: 0548623457)

in 1851 proved a lasting success: the world's first commercially viable submarine telegraph cable<sup>5</sup>.

By 1858 there were telegraph lines everywhere, including several submarine systems, an expansion greatly promoted by the railway companies who used telegraphy extensively themselves and also provided the routes down which telegraph systems could be erected. It was under these circumstances that the desire for a telegraph connection to the UK grew. Jersey businessmen, always keen to make use of every advantage, were greatly enthusiastic about the possibility of almost instantaneous connection with the London stock exchange or their commercial partners.

## **The Channel Islands Telegraph Company**

The first signs of a proposed link surfaced at the beginning of 1858. Local businessmen agreed that there would be considerable commercial advantages from having a telegraph at their disposal as had already been demonstrated in the United Kingdom. A report in the *British Press and Jersey Times* for 12 February said: "...a submarine electric telegraph cable seems to be a serious proposition." and a meeting was held, reported the paper on the 16th, to propose the formation of a company to undertake the provision of a cable. In order to establish a telegraph company it would be necessary to have the expertise and to establish links with an existing carrier. For these reasons the local parties turned to the Electric and International Telegraph Company<sup>6</sup> which had been formed in 1854 as a result of the amalgamation of the Electric Telegraph Company, established in 1845 and the International Telegraph Company formed in 1853 to promote cables to Holland. The Electric had a virtual monopoly on telegraph lines between major towns and cities, holding most of the railway company wayleaves.

Negotiations opened and a representation was made to Parliament to obtain cable landing rights. On 9 April the local Chamber of Commerce reported that Her Majesty's Government was prepared to contribute toward the maintenance of such a cable provided that it served all of the Channel Islands.

The idea of a telegraph link with the UK certainly fired the imagination of the editor of the *British Press and Jersey Times* as he reported on the 20th that if such a cable was in place news held over from Portugal would certainly have been published much earlier! By 14 May the news had reached London as the *Daily News* reported the proposed cable from Portland to Alderney could certainly be extended to Guernsey, Jersey and even Cherbourg which lay only a matter of 8 miles off Alderney.

By 31 May the Articles of the proposed Channel Islands Electric Telegraph Company had been drawn up at a meeting held in the British Hotel (now Barclays Bank), Broad Street, St Helier. Those present included:

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<sup>5</sup> Steven Roberts in *Distant Writing – A History of Telegraph Companies in Britain between 1838 and 1868*

<sup>6</sup> Steven Roberts in *Distant Writing – A History of Telegraph Companies in Britain between 1838 and 1868*

Mr Robert Grimston <sup>7</sup>	International Telegraph Co. (Chairman)
Mr Gamble	International Telegraph Co.
Mr C W Robins	International Telegraph Co.
Mr E M Gordon	R S Newall and Co.
Mr William Penninger	Solicitor
Mr Bennett	Company Accountant
Mr Le Breton	Secretary Channel Islands Telegraph Co.
Jurat David De Quetteville	Channel Islands Telegraph Co. (Deputy Chairman)
Philip Gossett	Channel Islands Telegraph Co.
F Carrel	Channel Islands Telegraph Co.

R S Newall<sup>8</sup> and Company of Gateshead was, at that time, virtually the only manufacturer of submarine cables. Newall's core business was the manufacture of rope. They had become cable makers by virtue of holding certain patents on the enclosure of soft cores with iron wire. They had issued an injunction in 1851 against Wilkins and Wetherly who had infringed their patents during the manufacture of the first Dover Calais cable for the Submarine Telegraph Company. The outcome of this legal battle resulted in Newall's completing the cable and thus moving into the world of cable making. The company was, however, never altogether happy with this diversion and following the failure of the Red Sea cable abandoned cable making in 1858 returning only briefly during 1870. R S Newall's representative at the meeting suggested that a return of around 6% per annum could be realised from such a venture. The formation of the company was therefore agreed. A vote approved a yearly retainer of £100.00 for the Company Accountant and the Company Secretary together with a grant of £50.00 each to employ a clerk.

The estimated capital required for the project was £25,000.0.0d, in today's terms about £1.5M, and estimated charges were 3/- for a telegram to Weymouth and 5/- for a telegram forwarded to London. These prices were well out of the reach of the working man at that time. As a result of this meeting a flotation was made and £30,000 of working capital was raised from a number of shareholders including several local businessmen. The Channel Islands Telegraph Company was effectively a subsidiary of the Electric and International Telegraph Company which already owned and operated several other submarine cables to Holland and Ireland. (In 1855 the Electric Telegraph Company and the International Telegraph Company had merged to form the Electric and International Telegraph Company<sup>9</sup>). The company was incorporated in London under the recently introduced Limited Liability Act<sup>10</sup> and its registered office was at the International Telegraph Company building in Great Bell Alley, Morgate, London<sup>11</sup>. The Company Chairman was Robert Grimstone, who was also the Chairman of the Electric and International Telegraph Company.

<sup>7</sup> Gerald M. D. Howat, 'Grimston, Robert (1816–1884)', first published Sept 2004

<sup>8</sup> <http://www.afundit.co.uk/washington1.htm>

<sup>9</sup> Steven Roberts in Distant Writing – A History of Telegraph Companies in Britain between 1838 and 1868

<sup>10</sup> Limited Liability Act 1855 (18 & 19 Vict. c133)

<sup>11</sup> Steven Roberts in Distant Writing – A History of Telegraph Companies in Britain between 1838 and 1868, the CITCo was also stated to be at Founders Court, Lothbury (1860) and in 1860 Great Bell Alley was renamed Telegraph Street City EC (1861). Note that London post codes had not been introduced in 1857.

On 15 June the *British Press* reported, somewhat optimistically:

*"Two of the directors of the Channel Islands Electric Telegraph Company returned to Jersey on Thursday last, after having terminated with the Government the arrangements for the completion of the submarine line, which it is said, will be in operation by the ensuing month - we hear the 15th."*

The company did, however, manage to get a grant from HM Government towards the installation and continuing maintenance of the cable. This grant was rated at 6% per annum of the capital cost of the cable and would be paid so long as the cable carried telegraph traffic.

At the end of June 1858 the cable manufacturer and contractor, W T Henley<sup>12</sup> of East Greenwich, arrived in Guernsey ready to prepare the trenches for the land part of the cable and he was expected in Jersey soon after. On 6 July the London *Shipping Gazette* reported: "Originally intended to go from Weymouth via Alderney to Jersey then Guernsey, the cable will now go Alderney-Guernsey-Jersey, landing at l'Anresse Bay Alderney and St Martins Point Jersey. Expected charge 5/- per telegram." The editor of the *British Press*, who reproduced this article, commented that: 'the correspondent is rather wild with insular geography.!'



Fig 1

The final sea route taken was from the Island of Portland across the portion of sea known as *The Shambles* and onward to Alderney (see Figure 1). From Alderney it was taken to Fermaine Bay in Guernsey and then from St Martins Point to Greve au Lençon (now called Plémont Bay). The cable was laid by the cable ship *Elba*<sup>13</sup> which was owned and operated by the cable manufacturer R S Newall and Company<sup>14</sup> and possibly the first ship properly fitted for cable laying having circular tanks, cones and crinolines installed which became standard equipment for cable operations<sup>15</sup>.

On 27 July the iron tubes which would cover the cable in its passage through the town streets, 'for greater

<sup>12</sup> 'William Henley, pioneer electrical instrument maker and cable manufacturer 1813-1882' by A F Anderson, 1985-07 UK0108 NAEST 045/118

<sup>13</sup> Cable Ships and Submarine Cables, K R Haigh, Adlard Coles 1968

<sup>14</sup> The Atlantic Cable access at <http://www.atlantic-cable.com/Books/Newall/index.htm>

<sup>15</sup> Cable Ships and Submarine Cables, K R Haigh, Adlard Coles 1968

security from accident', arrived in Jersey. On 3 August the *Elba* arrived from Birkenhead to lay the cable, which was "covered in Gutta Percha and rolled off a large drum into the sea and onto the shore". Gutta percha is a natural substance obtained chiefly from the latex of the Malaysian *Sapotaceae* genus of rubber trees<sup>16</sup>. It is harder than normal rubber and much less flexible. It is, however, waterproof, highly resistive to electric currents and very hard wearing and was used extensively as an insulating material in the early days of electrical equipment and continued to be used for submarine cable into the twentieth century.

The cable was manufactured in Gateshead by Messrs R S Newall and Co. who had filed a patent for the manufacture of wire rope in 1840<sup>17</sup> and on which the construction of submarine cables was based. Newall had been involved in the first abortive trans-Atlantic cable earlier that year. The cable used for the deep sea part was constructed of a No. 1 Gauge copper conductor covered in gutta percha then served in tarred yarn. This part of the cable would have been supplied by the Gutta Percha Company<sup>18</sup> of West Ham to Newall's as they were the only company at that time with the expertise to produce good quality insulated wire. The outer part of the cable was then lapped by 10 No 6 Gauge iron wires resulting in a cable that weighed 2½ Tons per mile. The shore ends of the cable, which are subject to more wear and tear because of the tidal flows and wave motion, were lapped with 10 No 2 Gauge iron wires which resulted in a thicker cable weighing 6 tons per mile. It is likely that the cable used in the Channel Islands link was similar, if not the very same, as that used in the Red Sea cable which had been laid earlier that summer as the supply contract had allowed the company to retain the unused cable<sup>19</sup>. At this time Newall's company had a virtual monopoly on the supply of submarine cables due to its patent<sup>20</sup>.

The land part of the cable was constructed in a similar manner except that the armouring iron wires were not necessary and the cable was left finished at the tarred yarn stage. The gangers installed the cable in a 20" (50cm) deep trench, in busy town areas in a cast iron tube and in rural areas into a prepared creosoted wooden trough laid in the bottom. The wooden troughing was made of two hollowed out square sections of timber treated with creosote. The upper and lower sections were identical and when laid on top of each other formed a circular duct for the cable and then secured by nails or straps. It was not intended to permit cable being drawn through but rather as a form of protection from earth movements caused by passing traffic and to protect the cable from being damaged during subsequent digging. This method of cable laying had been developed by William Henley and Charles Bright<sup>21</sup> during the laying of the underground sections of the English and Irish Telegraph Company<sup>22</sup> line from Liverpool to Manchester in 1852 and subsequently on the Manchester to London

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<sup>16</sup> John Loadman, *Tears of a Tree*, Published by O.U.P, ISBN 0-19-856840-1

<sup>17</sup> Newall, R.S. (1840) *Improvements in wire rope and machinery for making such a rope* English Patent No. 8594 dated 17th August 1840.

<sup>18</sup> *ibid*

<sup>19</sup> *The Invisible Weapon: Telecommunications and International Politics, 1851-1945*, Daniel R. Headrick, 1991 ISBN13: 9780195062731

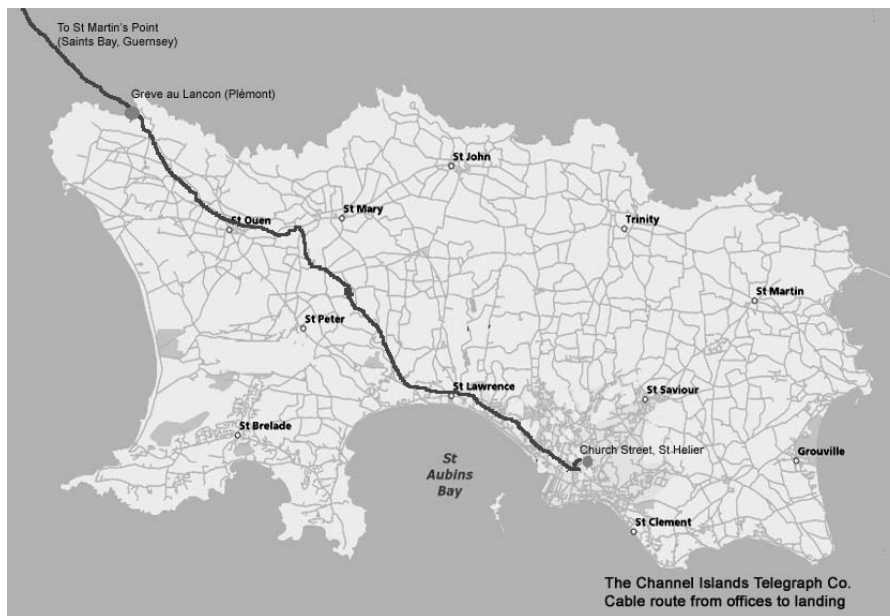
<sup>20</sup> *History of Telegraphy*, K. G. Beauchamp, Institution of Electrical Engineers, ISBN 0-85296-792-6 & 978-0-85296-792-8

<sup>21</sup> Charles Bright, *Submarine Cables: their history, construction and working* (Arno, New York, 1974 [1898])

<sup>22</sup> *The Worldwide History of Telecommunications*, Anton A. Huurdeman, ISBN: 9780471205050 John Wiley & Sons, Inc.

section where, despite it's high initial cost, had proved to be extremely reliable in service. The route taken from the telegraph office was from St Helier via Half Way House, Millbrook, St Lawrence valley, (now commonly known as Waterworks valley) and past St Ouen's manor to Greve au Lançon or Sand Eel bay (now commonly called Plémont Bay). William Henley himself supervised the installation using a workforce of some 70 men. During construction it was also reported one day that "some mischievous or malicious person had cut the cable near Salérie, Guernsey but that this would in no way impede the rapid progress", indeed by August 10th the cable was safely in place on both islands and on 17 August it was terminated in the town office at a building on the corner of Church Street and Library Place<sup>23</sup>. The Guernsey telegraph office was sited at the Guard House, South Pier, St Peter Port.

The cable installation was a turn-key contract supervised by the manufacturers Messrs Newall and Co. After testing it was handed over to the Channel Islands Telegraph Company ready for service. The cable was accepted on behalf of the company by Mr James Graves, who had been appointed the Chief Electrician to the Channel Islands Telegraph company and was stationed at the Jersey office. The manufacturers only



**Fig 2**

offered a 30 day warranty on the cable.

On 24 August the *British Press* reported: "An Electric Ball - mounted at Fort Regent- will be dropped to signify noon synchronised by Electric Telegraph, as is the custom in all other important ports in England, regulated to Greenwich." It is not known if this actually came into effect since Jersey did not officially adopt Greenwich time until 1896.

<sup>23</sup> Société Jersiaise Photographic Collection available at: <http://www.societe-jersiaise.org/adlib/009303.jpg>

The *Jersey Times* reporter was privileged to see on 27 August the newly installed Electric Telegraph equipment, manufactured by Siemens and Halske of Berlin<sup>24</sup>. The equipment was of the "American" Relief Recorder<sup>25</sup> design which had been proven in service with the Electric Telegraph Company for some time. It was driven by a system of springs and escapements similar to that used in clocks and reproduced the incoming Morse code in relief onto thin paper tape so that it could easily be interpreted and written on a telegraph form by the operator. At this stage of development of the telegraph, there was no automatic working and all messages had to be sent by hand. The incoming messages could be read later from the tape, but when forwarding messages, as in the case of a telegram from Jersey to London via Weymouth, the intermediate operator had to re-transmit the incoming message, inevitably there was some delay. Each 'dash' was ideally three times the length of a 'dot' and the time between 'dots' and 'dashes' should be equal to the length of a dot. The space between letters was equal to a 'dash' and the space between words equal to seven 'dots'. A skilled operator could reach speeds of up to 70 words per minute for short periods, although 30 to 40 words on average was considered very good. It was a happy, if accidental discovery, that operators could interpret the incoming messages by ear, distinguishing the 'dots' from the 'dashes', and experienced operators could even determine who was sending the code! Consequently, equipment was designed to give a good audio signal as well as recording the message on tape. This speeded up the forwarding of messages.

On 1 September the States of Jersey debated a motion proposing a celebration to commemorate the opening of the town Telegraph Office. All schools were to be given a public holiday on the day of the official opening and orders for the decoration of public places was given. Such was the local impact of the event.

The telegraph office was officially opened on 7 September and a long parade was held which wound from the Royal Square through Mourier Lane (now part of Halkett Place), Queen Street, Hilary Street, Beresford Street, Halkett Place, King Street, Charring Cross and Broad Street eventually ending up outside the telegraph office in Library Place. The route was decorated with bunting and such was the public excitement "multitudes of holiday proportions" had started gathering in King Street as early as 7 o'clock in the morning. A double archway decorated with evergreens had been erected in Charring Cross, the signal mast at Fort Regent had been decorated with flags of all nations and the ships in the harbour were all bedecked. At 9 o'clock a salute was fired and the crowds were thronging through the streets. A special morning service was held in the Town church at 10.30, with the Lieutenant Governor in attendance. The lesson, read by the Dean, was taken from the Second book of Exodus Chapter 12 Verse 26: "What mean ye by this service?" followed by a sermon extolling the greatness of this achievement. At 12:30 the band of the Royal Artillery played in the Royal Square. At 2 o'clock all the dignitaries gathered ready for the parade. The procession set off headed by the band of the Royal Artillery followed by the assembled Civic leaders and a huge crowd. On reaching the telegraph office the Bailiff, the Crown Officers, the Constable of St Helier and the Directors of the Channel Islands Telegraph Company entered the office and handed the clerk a telegram for Her Majesty Queen Victoria. Three minutes later the Weymouth office

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<sup>24</sup> From Workshop to Global Player" Siemens. 2 November 2003.

<sup>25</sup> Steven Roberts in Distant Writing – A History of Telegraph Companies in Britain between 1838 and 1868



confirmed the onward transmission of the 145 word message to London. The inaugural telegram was as follows:

To the Honourable S H Walpole, Her Majesty's Principle Secretary of State for the Home Department.

The Directors of the Channel-Islands' Telegraph Company, on behalf of the people of the Islands, Solicit that you may be pleased to lay before Her Most Gracious Majesty, this the first message conveyed by their telegraph.

Though the establishment of this rapid means of communication with the Mother Country is an event of minor importance to the Empire at large, it is one of heartfelt satisfaction to Her Majesty's Loyal and Devoted Subjects here as tending to draw still closer the bonds which for nearly one thousand years have linked these Islands to the Crown of England and more firmly to secure that connection, the foundation of their liberties and their prosperity, and which, like their forefathers, they would deem no sacrifice too great to preserve.

Jersey September 7th.

The reply from the Queen was received early on the following morning and read:

Sept 8th 1858

Earl of Derby to the Directors of the Channel-Islands Telegraph Company, Jersey.  
Holyrood Palace, Tuesday night, 7th September, 1858.

The Queen has received with the highest satisfaction, the announcement of the successful completion of a Telegraphic Communication with the Channel-Islands, and while Her Majesty congratulates the Channel-Islands Telegraph Company upon their success she rejoices in the more rapid means of communication and the closer connexion thus happily established with a portion of her dominions hitherto locally separated, but always united to her Crown by a spirit of unswerving loyalty unsurpassed in any part of them, and of which the Message just transmitted on behalf of the people of the Islands contains a very gratifying expression.

Although the line was complete the workmen did not finish for some time as it was reported in the paper on 14 September that painting and papering etc. was still being done in the Guernsey office although a fair amount of messages were being sent.

Such was the public interest in the new telegraph that a lecture was arranged at the Queens Meeting Rooms, Belmont Road, St Helier. The lecturer, a certain Mr Martin who was a representative of the company, explained the technical details of the system and noted that 'upward of 2 millions of miles of telegraph cables are laid in the UK alone.'

From the outset the new cable was beset with problems. From opening on the 7 September the first fault resulting in a breakdown of communication occurred on the 26 January 1859. The fault was diagnosed as being in the Jersey shore end of the

cable and the local representative, James Graves<sup>26</sup>, reported that serious chaffing of the cable had resulted in the breakdown. A new shore end was laid and the cable was fixed to rocks and passed through iron tubes at the worst points to protect it further. Service was restored on 22 February.

The cable again failed on the 22 April. This time the fault was diagnosed as being in the Portland to Alderney section off Portland. The Electric and International Telegraph Company chief engineer William Preece<sup>27</sup> was despatched to oversee repairs. He had some difficulty in locating a suitable repair ship but eventually secured the grappling and jointing equipment and set about repairs on board the South-Western Company steamer the *Prince*<sup>28</sup>. The year 1859 proved to be one prone to very stormy weather and repairs were often held up for several days. The fault was eventually found 4 miles south of Church Hope, Portland and the cable returned to service on the 15 May.

On the 20 May a contract for the supply of telegraphic news was announced between the Channel Islands Telegraph Company and the British Press. This resulted in a special section in the paper being devoted to the latest telegraphic intelligence.

On 7 June a lightning storm resulted in another break in service, this time the fault was found to be in the receiving equipment at the St Helier office, a coil having burnt out.

At the first half yearly meeting held in June the books showed that out of the original capital of £30,000 raised through the share issue some £25,495-14-6 had so far been spent on the initial installation and repairs. Despite the troubles so far experienced on the Company's cable, the directors felt confident enough to give a 5/6d dividend to shareholders, this representing a return of 9%. However, a vote was also passed to request further funds for repairs from the British Government.

On 20 September the cable again failed and the fault was found to be 3 miles off the Jersey shore end. A steam tug, the *True Briton*<sup>29</sup> under Captain Head, was chartered and a new section of cable spliced in. This fault was due to two kinks in the cable obviously there since the cable was laid. The new section of cable was of a later type manufactured by Messers Newall and Co that had recently been laid in the Red Sea. (The terms of the agreement with the British Government allowed R S Newall to retain any unused cable, a contractual clause which may have contributed to the failure of the Red Sea cable inasmuch as the cable was laid too tightly thus contributing to its early demise.)<sup>30</sup> Service was restored on 18 October.

During this down time the British Times continued to report telegraphic news items with the additional note that they were forwarded by mail packet from Guernsey.

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<sup>26</sup> The writings of James Graves and their historical significance D. de Cogan IEE Digest 2003, 11 (2003)

<sup>27</sup> Sir William Preece, F.R.S. E.C. Baker, ISBN-10: 0091266106

<sup>28</sup> Cable Ships and Submarine Cables, K R Haigh, Adlard Coles 1968

<sup>29</sup> Ibid.

<sup>30</sup> The Invisible Weapon: Telecommunications and International Politics, 1851-1945, Daniel R. Headrick, 1991 ISBN13: 9780195062731

The cable again failed on 4 November. The EITCo's own cable ship the *Monarch*<sup>31</sup> was despatched with Chief Electrician William Preece on board. Two faults were found at 7 and 12 miles south of Portland. The sea bed was found to be rocky and so the repaired section was shifted eastward resulting in the laying of an extra 3 miles of cable. Service was again restored on 25 November.

While the cable was out of service again, the Company half yearly meeting was held at the offices of the Electric and International Telegraph Company in Morgate, London. Despite continuing cable faults, the directors issued a slightly reduced dividend of 5/- to shareholders.

On 7 January 1860 another fault was found on the Alderney to Portland section. William Preece was again on station to do repairs aboard the cable ship *Resolute*<sup>32</sup> on hire from the recently formed submarine cable manufacturer Glass, Elliot and Company. Again, as in 1859, stormy weather held up repairs. The cable was not returned to service until 18 February, a delay of some 6 weeks. Only 9 days later it was down again between Jersey and Guernsey. A ship was chartered from the Submarine Telegraph Company and William Preece reported the cable repaired on 10 March.

On 8 June the cable again failed between Jersey and Guernsey 2½ miles off Jersey. The tug *Dumfries*<sup>33</sup> was employed. James Graves joined it on 20 June when it arrived off Jersey and the cable was restored to service that evening. It was reported that this was the first time that a cable had been grappled and repaired in one day.

The Company half yearly meeting held the same week was unable to offer any dividend to shareholders because of the expenses incurred in cable repairs. The Company reported that it owned some 123 miles of telegraph cable and employed 13 people.

The cable failed again, this time 6 miles off Guernsey on 20 July. The tug *Dumfries* was available and, because of the clement weather, service was restored on 3 August.

On 24 August Mr Ayrton MP (Conservative) raised a question in the house on the award of £1800 for the repair of the Channel Islands Telegraph Company cable. Sir G Cornwell for the Liberal Government replied, to back bench cheers, 'that it was important to keep telegraphic links to all parts of the Empire open'. This does, however, highlight the concerns felt about the reliability of submarine cables at this time. Indeed, the British Government had suffered severe financial setbacks over the failure of the Atlantic cable in 1858, after only 10 weeks of operation, and the Red Sea cable to India which had failed in March without ever carrying a single telegram<sup>34</sup>. An article in the influential industry magazine *The Builder* on 27 August raised questions on the construction of telegraphic cables and whether Gutta Percha should be replaced by India rubber for such ventures. These expensive failures prompted a change of attitude within British Government circles and as a

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<sup>31</sup> Cable Ships and Submarine Cables, K R Haigh, Adlard Coles 1968

<sup>32</sup> Ibid.

<sup>33</sup> Ibid.

<sup>34</sup> The Invisible Weapon: Telecommunications and International Politics, 1851-1945, Daniel R. Headrick, 1991 ISBN13: 9780195062731

consequence no further funding or underwriting of telegraph cables was made for over 20 years.

On 17 September a fault occurred on the Alderney to Portland section again and on 26 September the Guernsey to Jersey section failed. Both faults were repaired by the EITCo's cable ship *Monarch*, restoring service on 1 October.

The November half yearly meeting again was unable to issue a dividend to shareholders, reporting that 8 faults had occurred since the cable was opened. Shareholders voted to explore the possibility of a replacement cable between the Isle of Wight and Alderney. A further vote passed a motion to make representations to HM commissioners for an extension to the grant.

On 6 December William Preece, the then Chief Engineer of the Electric and International Telegraph Company presented a paper on *The Maintenance and Durability of Submarine Cables in Shallow Waters* to the Institute of Civil Engineers in London. His report specifically mentioned the Channel Islands Telegraph Company cable from Portland and he described in detail the construction of the cable and the route it took. The route consisted of 93½ miles of submerged cable and 23 miles of land section. The submarine cable was constructed to two standards; that required for deep water and that for shore ends. Shore ends are subjected to more wear and tear and are therefore thicker and stronger. The Channel Islands Telegraph Company had suffered some 11 faults since they had received the cable from the contractors in August 1858 and they could be classified as follows:

Two due to the careless laying of shore ends (2 kinks found in the cable off Jersey)

Four due to the dragging of ships anchors in the vicinity of the cable, these all being in the Jersey to Guernsey section

Five due to abrasion on rocks, these all being in the Portland to Alderney section.

Preece determined that the laying of the Portland to Alderney section was a mistake. The cable traversed some particularly rocky areas, although the Admiralty charts from which the course of the cable had been decided had indicated a sandy bottom. A sandy bottom is the best surface for a submarine cable as there is less likelihood of abrasion and of ships dragging an anchor. He considered that, in future when cable routes were selected, a thorough survey of the area should be carried out before laying, as it was clear that the Admiralty charts were not always correct. He also voiced concerns about the quality of construction of the cables as he had found severe corrosion on cables in areas of tidal runs off Portland. This was attributable to the high alkaline content of Portland cement stone.

A description of the methods used in finding the position of faults on the submerged cables was also given. This was done in conjunction with another telegraph engineer Cromwell Fleetwood Varley<sup>35</sup> and outlined the processes in determining wire lengths

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<sup>35</sup> Lee, A.G (1932) "The Varley brothers: Cromwell Fleetwood Varley and Samuel Alfred Varley", *Journal of the Institution of Electrical Engineers*, **71**, 958–64

from their electrical resistance. This method is still used today by electricians for fault finding on cables and is better known as the Varley Megger test.

The Channel Islands Telegraph Company troubles went on and on. On 1 January 1861 the cable between Alderney and Guernsey again failed. The tug *Dumfries* was once more called to assist and Preece joined the ship on 10 January. The bad winter weather again caused delay and the *Dumfries* was considered unsuitable to continue with the repairs after the extent of the problem was realised. The Electric and International Telegraph Co. cable ship the *Monarch* was despatched from Greenwich on 30 January but bad weather meant that she had to shelter in Southampton until 12 February. When she arrived in Guernsey the local engineer James Graves joined her and work began. Some 8 miles of cable between the islands had to be replaced. The cable was badly corroded with copper and investigations indicated that a ship laden with copper ore had sunk in the vicinity some years previously. Mr A C le Bois of the Jersey office announced that the cable had been returned to service at 2:20PM on 26 February.

The problems continued and on 27 March James Graves reported a failure yet again on the Alderney to Portland section some 18 or 20 miles south of Weymouth. Once more bad weather held up repairs and not until 23 April did the *Monarch* manage to buoy the broken ends. Preece boarded the *Monarch* and set sail for Jersey to collect spare cable and left for the repair on 29 April. The cable was returned to service the following day at 9:30PM. The same day a letter appeared in the *British Press* from James Graves announcing that he had been appointed the Chief Electrician aboard the Electric and International Telegraph Co. cable ship *Monarch*. He expressed his regret at having to leave the island after nearly 3 years but was confident that his replacement, Mr A Fields, would continue in his footsteps. James Graves replaced William Preece who was later to become Sir William Preece, the Chief Engineer of the Post Office. James Graves himself was a very able engineer who also became famous for his invention of the 'sea earth'<sup>36</sup> method of telegraph transmission in submarine cables while working for the Anglo-American Telegraph Company<sup>37</sup> in the late 1860's.

The final straw happened on 17 June when the *British Press* announced the cessation of telegraphic communication with England. The cable had again failed between Alderney and Portland but this time the Channel Islands Telegraph Company had run out of funds. They had spent all their liquid capital on the previous 13 faults and had no assets left for repair. With the cable down they also had little or no hope of redeeming the position as the major source of their income had gone. Shareholders and the British Government were unwilling to provide further funding. The Board of Trade had recently completed an enquiry into submarine cables and noted the disquieting fact that out of 11,364 miles of cable laid to date, a little more than 3,000 were working<sup>38</sup>. The Government realised that the new cable operated by the Submarine Telegraph Co from Jersey to France provided a service and it had so far proved more reliable. In addition the STC had, on the occasion of the fault in March, reduced their price for a telegram to London to that charged by the Channel Islands Telegraph Company, 5/-. The writing was on the wall as the *British Press* in its

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<sup>36</sup> Submarine Telegraphy – a Practical Manual, Italo De Guili, Sir Isaac Pitman & Sons Ltd 1932

<sup>37</sup> Baglehole, K.C., A Century of Service. Cable & Wireless 1868-1968.

<sup>38</sup> The History of the Institution of Electrical Engineers (1871 – 1931), Appleyard R, 1939

edition of the 18 June carried an advert from the STC reaffirming the reduced rates for calls to the UK.

In all, the link to England had been in place some 34 months and in that time it had been out of service for a total of 10 months; a sorry record. In fairness to the company, the paths chosen for the cable were not the best; the charts provided by the Admiralty being defective. The route taken to Alderney was also questionable in the light of experience and the original cable had not been of the best quality, a problem which should have been addressed to the contractors. Many of the faults, especially those in the Guernsey to Jersey section, were caused by the dragging of ships anchors and it is possible that some steps, possibly by the introduction of local laws, could have been taken to prevent or reduce the incidence of such faults.

The Channel Islands Telegraph Company continued, however, with its links to Guernsey and Alderney still intact. While these cables still worked there was still some hope for the company as revenue could still be generated on messages passed on to the Submarine Telegraph Company via the Jersey office. The final blow came on 24 February 1862 when the cable between Guernsey and Jersey failed. Although the Alderney to Guernsey section remained intact the *Guernsey Star*, on 21 May, announced with regret that the office in Guernsey was to close on Friday 30 May, *'the shareholders being well advised not to throw good money after bad'*. At the time of its closure about £4,010 had been paid in repairs during its short life.

An attempt to revive the company was made on 19 July 1862 when the directors of the Channel Islands Telegraph Company met with William Preece of the Electric and International Telegraph Company together with Messrs Silver and Co. (later the India Rubber, Gutta Percha and Telegraph Works Company) of Woolwich, to sound out the possibility of laying a new cable from Jersey via Alderney to the UK, utilising the remaining link between Alderney and Guernsey, which was practically a new cable. William Preece said at the meeting that a suitable course over a sandy bottom would have to be sounded before proceeding further. He also said that the Channel Islands Telegraph Company shareholders should not feel too aggrieved as many cables had foundered in the short history of submarine telegraphy. However, nothing further resulted from that meeting.

A further attempt at resurrecting the company was made in February 1863. Jurat de Quetteville made a proposal in the States that an advance of £12,000 should be made out of public funds as an interest free loan to the company. This would be repaid over the next 25 years out of the 6% annual grant on the original installation costs of £25,000 allowed by HM commissioners for the maintenance of the cable. This offer was well received by the directors and shareholders of the CITCo at a meeting held on the 4 February in the newly formed Mercantile and Commercial Club at the Union Hotel, Royal Square, St Helier. A meeting of the local Chamber of commerce held the following day also endorsed the proposal. However, there was considerable disquiet about the proposal from the public who were suspicious that the proposed loan would be used to offset the losses made by the shareholders, especially as those endorsing the proposal were shareholders in the company, including the originator of the idea Jurat de Quetteville, who was in any case an unpopular politician. There was also concerns that unless a new cable were laid, the existing cable would continue to be just as fault prone as it had already proved to be. The loan of £12,000 was not

sufficient to replace the cable and HM commissioners were not forthcoming in offering to fund the difference and, as the 6% grant depended upon the cable remaining serviceable, there were grave concerns that the public funds would indeed never be repaid. The company was, however, not wound up officially and remained on the companies register for a further 8 years.

## Cable Faults

### CITCo 1858 - 1861

Date out	Date repaired	Days	Reason	Repair Ship
26 January 1859	22 February	27	Jersey Shore End	?
22 April	15 May	23	Off Portland	The Prince
20 September	18 October	28	3 miles off Jersey	True Britton
4 November	25 November	21	Off Portland	Monarch
7 January 1860	18 February	42	Off Portland	Resolute
27 February	10 March	12	Guernsey – Jersey	Contractor's ship
8 June	20 June	12	2½ Miles off Jersey	Dumfries
20 July	3 August	14	6 Miles off Guernsey	Dumfries
17 September	1 October	14	Off Portland	Monarch
26 September	1 October	1	Guernsey – Jersey	Monarch
1 January 1861	26 February	56	Alderney-Guernsey	Dumfries/Monarch
27 March	30 April	34	Off Portland	Monarch
17 June	Abandoned			
<b>Total outage at Jersey (days)</b>		<b>283</b>		

**Table 1**

## The Submarine Telegraph Company

As early as 1858 there were rumours that a cable would be laid from Jersey to France. The Submarine Telegraph Company, founded by Thomas Crampton, had laid the first successful telegraph cable across the English Channel in 1851. By 1858 it was already an established international telegraph carrier and had several cables connected to France and held a license from the French Government to carry telegraphs across French territory.

During the summer of 1859 the Submarine Telegraph Company made applications to the UK and French Governments for permission to run a cable from Jersey to France. At first, the Channel Islands Telegraph Company and their parent company the Electric and International Telegraph Company, who were rivals of the Submarine Telegraph Company, raised objections to the laying of a shore end in Jersey. As a consequence, the States were initially advised by the British authorities to prevent any cable being landed in Jersey. After further negotiations, however, the Channel Islands Telegraph Company withdrew its objection and the Submarine Telegraph Company was granted a license by the British Government. During September Her Majesty's Government appointed the Earl of Malmesbury to head negotiations with France on behalf of the Submarine Telegraph Company to renew the license to operate on French soil and for permission for the Jersey cable. The French Government was at first reluctant to renew what was a virtual monopoly but in the end conceded and

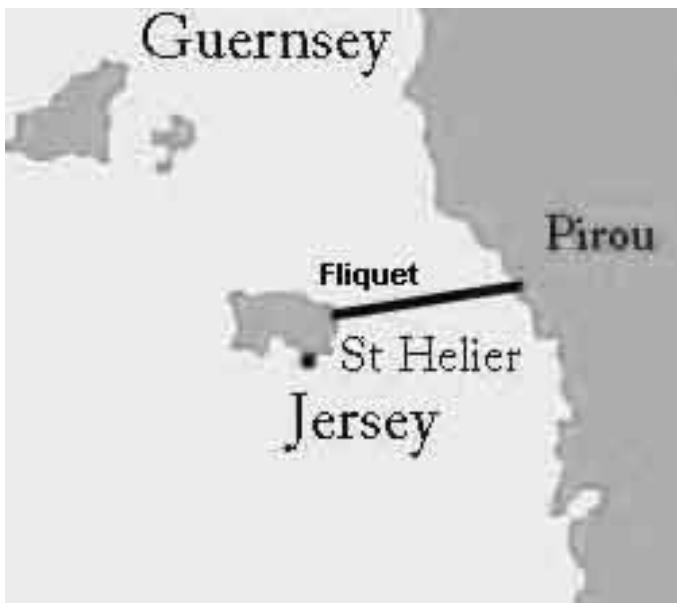


Fig 3

Elliot and Co. arrived off St Catherine's with the cable and landed the shore end at Fliquet and proceeded to pay out the cable to Pirou. The cable used on this route was more substantial than that used by the Channel Islands Telegraph Company. A contemporary description said that the cable consisted of 7 copper strands covered with gutta percha up to a diameter of  $\frac{3}{8}$ " , having the same dimensions as the (abortive) Atlantic cable laid in 1858. The outer cover is made up of 12 No.5 gauge iron wires. The resulting cable was slightly more substantial than that of the Channel

renewed the license for 25 years, half the period initially requested. This, in effect, opened the way for the French cable.

The route to be taken by the new cable was from Fliquet Bay in Jersey to Pirou, on the Normandy coast south of Lessay, and on to Coutanches. On the 10 January 1860 the cable ship *Resolute* owned by the independent telegraph cable engineer W France and chartered to the contractors Glass,



Islands Telegraph Company. The cable was laid under the supervision of Mr Canning on behalf of the contractors with Captain Bright of the Submarine Telegraph Company in attendance.

The land line in Jersey was laid underground by the cable manufacturer and contractor, W T Henley of Woolwich, from the shore landing at Fliquet, via St Martins Church, Five Oaks, St Saviours Road, James Street, Colomberie, Hill Street to the Church Street telegraph office (figure 4). The STC were obviously more parsimonious than the Channel Islands Telegraph Co., as the cable was laid directly into the ground without protection. The friction between the Submarine Telegraph Company and Channel Islands Telegraph Company must have been greatly lubricated as, in the event, they shared the same office. The cable laying was completed by 30 January despite appalling weather, the trenches being continually filled with rain water.

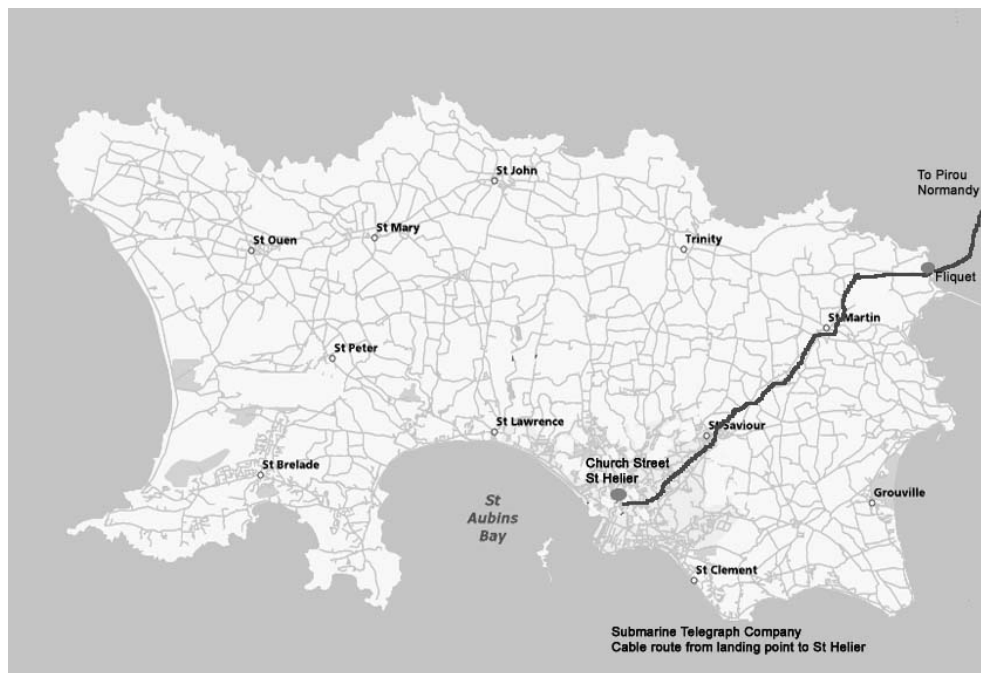


Fig 4

A celebration dinner was held for the contractors and guests at the Royal Yacht Club Hotel.

The French cable link opened for business on 7 May 1860, the connections at the French end accounting for the delay. An advert in the British Press announced the call charges:

## The Submarine Telegraph Company

Jersey to Coutances	2/6
Avranches, St Malo, Caen, Grandville & Cherbourg	3/6
Harvre	5/-
Paris, Bolougne	6/-
Bordeaux	7/3
Marseilles	8/6
To Great Britain (via Paris) 20 words	11/6

In conjunction with the British and Irish Magnetic Telegraph Company.

As can be seen, these were substantial charges, the cost to London was more than twice the Channel Islands Telegraph Company charge. This being in the light of the direct connection provided by the Channel Islands Telegraph Company, however, even at this time the directors of the Submarine Telegraph Company must have had their suspicions about the long term integrity of the northern cable. They were right, as on 20 July the Channel Islands Telegraph Company cable failed again. The Submarine Telegraph Company entered the following advert in the British Press on 22 July:

## The Submarine Telegraph Company

Telegrams to England 11/- per 20 Words

The opportunity to take business from their rival had prompted a reduction of 6d in their rate!

An earlier failure (7 June) prompted a letter from Mr Charles Gerhardi<sup>39</sup>, the local Superintendent of the Submarine Telegraph Company (STC), to be published in the British Press dated 22 June. This referred to a telegram received by the famous French writer Victor Hugo. It had been claimed that it had arrived too late, however the letter explained that it only took 4½ hours for the telegram to be delivered having been sent from London via Paris.

The Submarine Telegraph Company cable proved to be more robust than that of the Channel Islands Telegraph Company. The area of sea that it crossed was shallower, the bottom sandy and it was less susceptible to the stormy seas and tidal flows of the Channel. It also had the advantage of being newer and using more up-to-date technology. The Submarine Telegraph Company also took more care of their investment, regularly warning fishing vessels of its presence through notices in the local press. They were thus able to take financial advantage of the periodic failures of the Channel Islands Telegraph Company cable and by March of 1861 had reduced the cost of 20 word telegrams to 5/- in direct competition with the Channel Islands Telegraph Company. Throughout the troubles of its rival, the Submarine Telegraph

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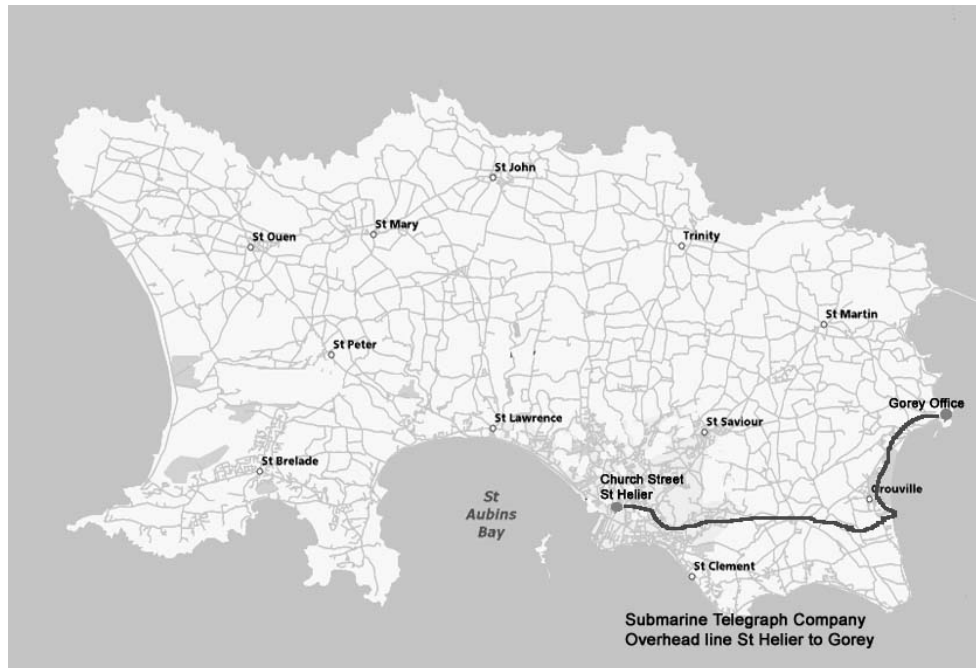
<sup>39</sup> GERHARDI, Charles Alexander 1837 - 1905 – Obituary -Journal of the IEE Vol.35 1905

Company cable held firm. The final failure of the Alderney to Portland section must have come as an unexpected bonus to them as they now had unrivalled access to all telegraphic traffic leaving the island. Following the break in the remaining Jersey to Guernsey section the Submarine Telegraph Company signed a contract with the *British Press* to provide telegraphic news services commencing on 23 April 1862. On 17 June it opened a sub-office in Guernsey, appointing Mr S Barbet of the High Street, St Peter Port as their agent. Telegrams were passed via steam packet for onward transmission from the Jersey Office.

On 19 January 1863 the STC set up an experimental link between its office in Jersey and the London office in Threadneedle Street by connecting its lines through France via Coutances, Caen, Harvre, Dieppe and Beachy Head in a continuous metallic circuit of 380 miles. Those present in the Jersey office included the Manager, Charles Gerhardi, Mr W H Le Feuvre, who was also a director of the CITCo and Mr M V Wardley of the *British Press*. The circuit worked perfectly and a call was set up between officers at the London office and Jersey. It is interesting to note that the times recorded for the connexion were 6:33PM in London and 6:27½PM in Jersey, synchronisation to Greenwich not being in place at this time. By coincidence two of the clerks at the London office were young Jerseymen Messrs Gavey and Prichard, who had recently completed their training. The conversation consisted of general chit-chat about the weather and a remark about the recently opened Metropolitan underground railway.

In December of 1863, Gerhardi announced that a telegraph line would be laid from St Helier to Gorey pier at the east of the island. At this time Gorey was beginning to be used as a commercial port and there was also a large number of boatyards in the area. In variance to the lines so far installed on the island, this new line was constructed using poles and open wire. The probable route taken by the new line which left the offices underground and thereafter began its overhead route from a pole at the bottom of Belvedere Hill, Georgetown, was through Longueville, past Grouville mill to Verclut, across Fauvic Common and down to Tower Number 5 where a reference was made to a very long span of wire, some 430 yards, from the tower to a pole on a small hill on Gorey common. This route is unsubstantiated but is based on the most direct route between the known points, see figure 5. The poles then continued along the common to the office on Gorey pier. The pole at Belvedere Hill was connected to the office in Library Place by underground cable. The project was overseen by Charles Gerhardi and construction took place during December 1863 and January 1864. The overhead construction seems to have been carried out on a strict budget as the poles were placed on average 220 yards apart. This is considerably longer than modern construction where 55 yard to 80 yard spans are more normally used, but given that only one wire needed to be suspended, this was probably entirely satisfactory. The work was also punctuated by incidents of stone throwing damaging the insulators, which prompted a notice to be posted in the local press. The project was completed on 20 January and the line was opened for service on Saturday 23 January with this inaugural telegram sent to HM Lieutenant Governor:

I take this liberty to address to your Excellency this, the first telegram to be transmitted by the new line between St Helier and Gorey, to inform his excellency that the line is from this moment open to the public.



**Fig 5**

The company charged 6d for a telegram from Gorey to St Helier.

The integrity of the STC cable was such that the submarine section only failed 7 times in the period 1860 to 1870 on each occasion due to dragging anchors or oyster trawling. These failures were often followed by a considerable delay in repair as the STC usually placed the Jersey link at the bottom of its priorities, having several more commercially lucrative cables between England and various continental countries. There were occasions where the cable remained out of service for months at a time, September to November 1864, December 1865 to February 1866 and April to July 1869 were notable occasions. These protracted delays caused much inconvenience to both business traffic and the dissemination of news in the local press. The company always used its two cable ships the *Retriever* and the *Resolute*<sup>40</sup>.

In September of 1865 came what must have been the first local dispute between public utilities. On 22 September the cable failed. At first it was thought to be a submarine fault but after investigation it was discovered to be in the land line between Fliquet and St Helier. Because the fault was a clean break it was not possible to discover the exact location of the fault with the testing equipment to hand. Consequently, Charles Gerhardi relocated the office temporarily to the shore station at Fliquet and arranged a pony express service from the town office while further testing took place. On 28 September after further investigation the temporary office was relocated to the St Saviour's Inn near St Saviour's church, a more convenient location closer to the town. Four days later the cable fault was located in Colomberie outside the premises of a certain Miss Hemery. Apparently she had just had a gas pipe

<sup>40</sup> Cable Ships and Submarine Cables, K R Haigh, Adlard Coles 1968

installed and during the works the trenchers had severed the cable. Charles Gerhardi called Mr Morris of the Gas Company to the scene to show him the damage and explaining that the STC would expect recompense for the damage. It was estimated that the total cost would be in the order of £30 to £40 which included the cost of getting a Gutta Percha cable jointer over from England. Meanwhile the temporary station was set up in Westaway's Yard in La Motte Street.

Following this incident, a close watch was kept on the Gas Company's activities and during the laying of a new main down St Saviour's Road, Charles Gerhardi arranged for the cable to be encased in bitumen covered wood ducting.

On the 30 July 1866, the STC arranged a special illuminated star, lit by gas, outside its offices to celebrate the connection of the new Atlantic cable. The attraction drew a crowd of some 500 who gazed in wonder until it was extinguished when the office closed at 11:00PM. The following day the Stars and Stripes and the Union Jack were raised outside the office. Charles Gerhardi had more reason than most to celebrate this occasion as he had been involved on the first attempt at laying an Atlantic cable in 1858 having been with the Newfoundland party on board the cable ship *Niagara* which had laid the western half of the cable<sup>41</sup>.

In March 1867 the UK government proposed the Telegraph Bill which would bring all the telegraph companies into the ownership of the General Post Office. This was largely based on a paper by Edwin Chadwick<sup>42</sup>, a noted social reformer and sponsored by the eminent civil servant Frank Ives Scudamore, which extolled the virtues of the Post Office running the telegraph system noting that it had over 10,000 offices compared with the private telegraph companies 1900. There was also an underlying tone of national security in that the telegraph network could be used for military purposes.

In August the STCo company secretary announced increases in telegram charges from Jersey, 6/8d to London and 7/8d to elsewhere in the UK. Charges to France remained unchanged.

In June 1868 the Electric Telegraph Bill was presented to parliament. It was estimated that the nationalization of the telegraph companies would cost between £3 million and £4 million. The STCo cable from Jersey to France, however, did not come into the remit of the bill since it had no landing on the UK mainland.

In October STCo adjusted their pricing again lowering international rates to Italy from 13/6d to 7/6d, Constantinople 20/6d to 10/10d and to Malta from 22/- to 10/-. These reductions were due to a new agreement with the French authorities and reflected the continuing development of the European telegraph network.

During May 1870 the STCo decided to replace their French cable from Pirou to Fliquet. This replacement was carried out under the agreement signed with the French authorities when the original cable was laid in 1859. The new cable was manufactured

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<sup>41</sup> History of the Atlantic Cable website available at: <http://atlantic-cable.com> last accessed 30/06/09

<sup>42</sup> Edwin Chadwick, Nineteenth-century Social Reform, ed. David Gladstone, Routledge (1997) ISBN 0415168716

by Bullivant and Allen and laid by Stoffel and Co. of London. At the same time, the landings at Fliquet and Pirou were improved with the construction of cable huts.

Business was good for the STCo as for some time they had had the monopoly on telegraph traffic from the island. Reductions in international prices had stimulated growth and their strangle-hold on UK traffic had maintained revenues. But during 1870 the Jersey and Guernsey Telegraph Co was formed to take advantage of the generous terms offered by the Post Office under the extension bill to the Telegraph Act which incorporated the provision for purchasing the assets of the Isle of Man and Channel Island telegraph companies. The likelihood of a rival would mean that UK telegram prices would drop. The Post Office had a flat rate charge of just 1/- for 20 words anywhere in the UK and it was likely to be extended to the Channel Islands following the takeover.

Despite the opening of the new UK cable, the STCo continued to fare well. The company announced a 15% dividend at their half year AGM in August 1871. The company had also commissioned a new purpose-built cablesip to be named the *Lady Carmichael* after the wife of the company chairman, Sir John Carmichael. The reduced price to the UK impacted on that traffic but new business was obtained by onward transmission of telegrams through the Post Office. In order to protect their investment in the new cable the company commissioned a cable tower to be constructed at Pirou to mark the course of the cable for the navigation of fishing boats.

The company continued to pay 15% dividends for the next few years as international business continued to grow and as they secured a better business relationship with the Post Office. In August 1872 the company opened offices in the Post Office Threadneedle Street telegraph office. Business boomed to such an extent that the company was able to increase dividends in the year 1876 to 16½% and the following year to 17½%. The new Jersey to France cable proved to be a worthwhile investment as the number of cable faults decreased. Between 1870 and 1889 (when the company was taken into the ownership of the General Post Office) only 9 submarine faults occurred. On one of those occasions, in December 1877, a telephone was used during testing between the *Lady Carmichael* and the Fliquet shore end. This was just one year after the Bell patent had been filed.

During some of the prolonged cable failures on the UK link, the company provided services for the Post Office as well as news reports for the local press. No doubt they used these opportunities to their financial advantage. Messages to the continent were gradually reducing but it seems that telegrams to the UK via France remained high since in February 1881 they reduce charges to the UK via France by 2/6d to 8/6d to London and 9/6d elsewhere.

With the consolidation of the telegraph network and the growth of the telephone, the General Post Office decided to incorporate many of the Anglo-Continental international cable circuits into its network. Thus the European operations of the STCo were to be absorbed into the GPO telegraph service. Terms for the sale and transfer of the STCo infrastructure and employees were agreed during 1888 and the sale was finalized in 1889 at a cost of £67,163. The Jersey operation had its own licence extended until 31 March that year in order that the final arrangements could be

made locally. On 29 July, the STCo office equipment installed on the corner of Church Street and Library Place was transferred to the main Post Office building at Grove Place. The company cable ship the *Lady Carmichael* was renamed *Alert* by the GPO in 1894 and finally scrapped in 1915.

The STCo's overseas operations continued and the company flourished abroad, eventually comprising a substantial part of Cable and Wireless which was formed on the 1 April 1929 from a number of British overseas cable companies.

## Submarine Telegraph Company Cable Faults 1860 - 1889

Date out	Date repaired	Days	Reason	Repair Ship
23 Jan 1863	3 Feb 1863	11	Fault off Pirou	Retreiver
15 Feb 1863	24 Feb 1863	9	Fault off Fliquet	Retreiver
30 Sept 1863	1 Dec 1863	61	Fault off Fliquet	Retreiver
13 Sept 1864	11 Nov 1863	59	Fault mid channel	Retreiver
1Dec 1865	19 Feb 1866	80	Fault off Pirou	Resolute
28 Apr 1866	15 May 1866	17	Fault off Pirou	Resolute
12 May 1868	27 May 1868	15	Fault off Pirou	Resolute
15 Sept 1868	15 Oct 1868	30	Fault off Pirou	Retreiver
24 May 1869	5 July 1869	42	Fault mid channel	Resolute
			Cable replaced	Resolute
11 Nov 1870	28 Nov 1870	17	Fault off Fliquet	Resolute
7 Feb 1871	14 Feb 1871	7	Fault off Fliquet	Resolute
21 Oct 1871	23 Jan 1832	94	Off Fliquet	Lady Carmichael
23 Mar 1872	12 April 1872	20	Off Fliquet	Lady Carmichael
8 July 1873	8 July 1873	1	Fliquet and Pirou ends	Lady Carmichael
4 Nov 1877	5 Dec 1877	32	Off Fliquet	Lady Carmichael
16 Mar 1878	7 April 1878	22	Off Fliquet	Lady Carmichael
6 Feb 1884	28 Feb 1884	22	Off Fliquet	Lady Carmichael
1 Jan 1885	23 Jan 1885	22	Off Fliquet	Lady Carmichael
<b>Total Outage</b>		<b>561</b>		

**Table 2**

## **The Jersey and Guernsey Telegraph Company Ltd.**

The history of this company is as brief and controversial. Before proceeding with the description of the company it will first be necessary to describe the state of the telegraph industry at the time. In 1867 the British Government decided that the private telegraph businesses in the Kingdom should be nationalized. The driving force behind this policy was the eminent civil servant Frank Ives Scudamore who sponsored the ideas of Edwin Chadwick, who had also been responsible for the development of public health policies. It was claimed that the telegraph companies often worked in cartels and the larger companies had monopolised the most profitable routes with wayleave agreements which were often not implemented. As a consequence of telegrams between smaller towns having to pass through many hands the cost of such messages was often prohibitive. Businessmen, who were fully aware of the trading advantages of the telegraph, were keen to establish a more uniform tariff system throughout the country. The government appointed a commission to examine the issue and at the end of that year the resulting report suggested that the telegraph system should be consolidated under the direction of the Post Office, who was the officially appointed government messenger.

The government report resulted in the Telegraph Act of 1868 which provided for the Post Office to purchase, at its discretion, any telegraph company operating on the UK mainland. The terms for compensation were extremely generous. They included the capital costs of installed lines and equipment and also a formula which allowed for loss of profits over a 20 year period. The announcement of the bill resulted in a rush by speculators to install telegraph lines wherever none existed, for example, to the Scilly Isles which had long been considered an unprofitable venture. The 1868 Act, however, excluded foreign cables and thus, for the purposes of the Act, that included the Channel Islands and the Isle of Man.

Since the Electric and International Telegraph Company was mainly concerned with routes within the British Isles, the directors protested to the government that they would be marginalized by the bill leaving them with only one route, to Holland. The government therefore amended the Act the following year to include the special case of the Dutch cable. The Post Office subsequently sold this cable to the Submarine Telegraph Company. This enabled the Electric to be fully wound up and thus released capital for speculation in overseas ventures.

With the door thus opened, the directors of the Isle of Man Telegraph Company, which had been effectively a subsidiary of the Electric, and the Channel Islands Telegraph Company, could see a way of making capital out of the sale of their companies to the Post Office. Therefore representations were made to the government. The CITCo was, of course, a moribund company but nevertheless still registered. After talks with the Post Office during July 1869, the local directors approached the parent company with a view to reviving the company and thus profiting from a subsequent sale to the Post Office. However, the Electric chairman, Robert Grimstone<sup>43</sup>, was now more interested in overseas development and refused to

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<sup>43</sup> Robert Grimston prepared and published "The Statement of the Case of the Electric & International Telegraph Company against the Government Bill for Acquiring the Telegraphs" in 1868



fund any new cable out of the Electric sale. This left the local directors with two choices; to fund the venture themselves or to seek funding elsewhere.

Two of the directors Phillip Gossett and F Carrel decided to try and revive the company and approached the Globe Telegraph Trust, a venture capital company with offices in Nicholas Lane off Lombard Street, London, which provided funds for speculative cable projects. The Globe at first seemed willing to pursue the venture and on behalf of the CITCo opened negotiations with the Board of Trade for landing rights. A front company was formed calling itself the Channel Islands Telegraph Association based at 7 Great Winchester Street, London. The new association opened talks with William Henley Telegraph Works for the provision and laying of a new cable.

At the same time two other directors decided to form a new company. This company, which was called the Jersey and Guernsey Telegraph Company (JGTCO), was founded by William Henry Le Feuvre, a flamboyant locally born civil engineer and entrepreneur who also had interests in the Jersey Waterworks Company and the Jersey Railway and Tramways Company, as well as several ventures in the UK, and the infamous Jurat David De Quetteville. The company issued its Articles of Establishment on 26 January 1870 but not before opening tentative negotiations with the Board of Trade during the latter part of 1869. Among the shareholders was William Preece, a personal friend of William Le Feuvre, who, following the demise of the Electric, had been appointed Chief Engineer (Southern District) of the Post Office telegraphs. The company was incorporated on 4 February 1870 with an issue of 15,000 £2 shares, just 2 days before the expiry of the lodging of a purchasing option deadline imposed by the Post Office and 2 days after receiving a cable landing license from the Board of Trade. The new company board consisted of

Mr W Le Feuvre	Chairman
Mr C E Philips	
Mr Hemery Le Breton	
The Rt Hon E Haviland-Burke MP	
Captain Thomas Carr	
Mr ? Gauntlet	Secretary

William Preece was appointed the company's chief engineer.

Meanwhile, due to a clerical error by a junior clerk at the Board of Trade, the Globe received a letter which implied that a landing license would be granted exclusively to them. This led Nathaniel Holmes and Louis Stoffel, two of the principles of the company, to conclude negotiations during February with William Henley on the laying of a new cable. However, during the following few weeks the Globe apparently got cold feet and failed to come up with the expected funds. Nevertheless, William Henley started manufacture of the necessary cable and made plans for the laying of a cable from Start Point to Guernsey.

At the same time the JGTCO appointed Bullivant and Allen Ltd of Millwall as prime contractors for the laying of the cable. This was a strange choice as they were mainly rope manufacturers not cable makers. In fact Bullivant and Allen approached William Henley for a quotation on the supply of a cable. Henley offered them the Globe cable

after adding a percentage to the £25,000 that he had already quoted. Eventually, Bullivant and Allen purchased the cable from Henley's rivals Glass, Elliot and Company of Greenwich<sup>44</sup>.

The Bullivant and Allen quotation to the JGTCo stated that:

The cable shall be made of three copper wires of No 16 BWG covered in three layers of gutta percha No 4 BWG served with well solutioned yarn.

The deep-sea section shall be covered in 9 iron wires of No 4 BWG and the shore ends in No 0 BWG<sup>45</sup>.

The terms of supply stated that 90 nautical knots would be provided for the sum of £25,000 - 0 - 0d and that if the final cable should exceed that, Bullivant and Allen could elect to make up the difference in JGTCo shares. They also quoted 5 years maintenance at the sum of £1000 - 0 - 0d per annum.

At the end of April the land-line contractors, Warden and Co of Birmingham arrived in the islands to lay the local cables. The new company acquired offices in Hill Street and a cable was laid in iron pipes down to the site of the new railway on the St Aubin's Bay seafront. The JGTCo and the Jersey Railway Co<sup>46</sup> shared a number of directors and no doubt this fortunate relationship led to the ready usage of the Railway

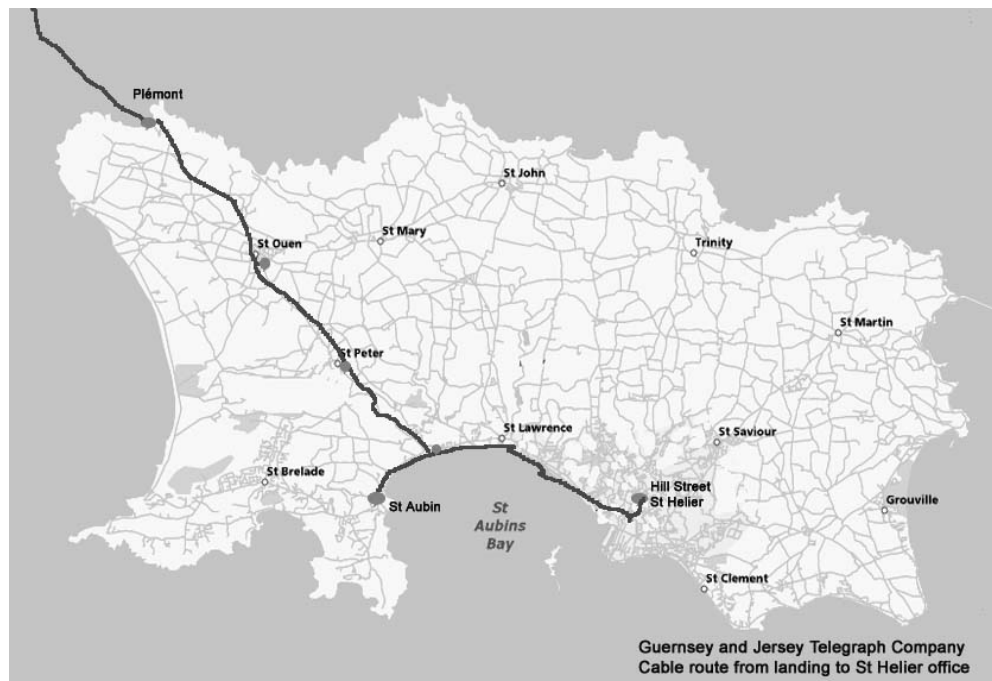


Fig 6

<sup>44</sup> Glass, Elliott and Co merged with the Gutta Percha Company in 1864 to form the Telegraph Construction and Maintenance Company.

<sup>45</sup> BWG is the Birmingham Wire Gauge. No 16 is 0.0625" diameter, No 4 is 0.2253" and No 0 is 0.3240".

<sup>46</sup> The Jersey Railway (J.R. & T.), N.P.R. Bonsor, Oakwood Press 1986

Company's land for telegraph poles for the routing of the overhead wires. From this point the line was taken overhead along the course of the railway to Beaumont. From here a new route of telegraph poles took the line on to Plemont via St Peter and St Ouen (see figure 6). The railway also had its own private telegraph lines along this route which continued on to St Aubin. As a result the St Aubin's post office was also linked to the telegraph circuit from the beginning of operations.

While the JGTCo were busy laying land lines, William Henley's cable ship the *Caroline*, a paddle steamer which had been used in the laying of the shore end of the first of the two new Atlantic cables laid in 1865/6<sup>47</sup>, arrived in St Helier Harbour with the new cable on board. Due to a combination of bad weather and legal problems the ship laid up until the end of the following month.

On the 20 May 1870 the JGTCo held its first ordinary shareholder meeting. Here, under questioning from the shareholders, the directors refuted the claim of the Globe to landing rights claiming that they had applied two years previously for a license. This is strange since as at that time the CITCo was still moribund and presumably, therefore, still entitled to the original license. William Le Feuvre admitted that technically he was still a director of the old company, an admission which must have put him into a tricky position; nevertheless, the meeting produced the necessary two-thirds majority to carry the proposal to sell out to the Post Office.

On the 6 June, the *Caroline* left St Helier harbour to the sound of McKey's band and made way to Greve au Leçon (Plémont) to attempt to lay the cable. However, the British government had sent a small warship, *HMS Dasher*, to the spot and together with the men of the 17th Regiment on shore prevented the landing of the shore end. All these events were watched by a small crowd of locals. The *Caroline* eventually backed off and retired in the direction of Guernsey.

On the 8 June yet another strange event occurred. A certain Henry Jones was arrested by the Constable of St Ouen at Plémont, charged with the cutting and taking away of a telegraph cable. He came before the magistrate on the 21 June to answer the charge. His Advocate claimed that he had been carrying out instructions issued by a Mr Bennett of the CITCo. The magistrate was unable to immediately determine this and so called for witnesses, the case being remanded until the 12 July. When he next appeared the witnesses included William Le Feuvre who substantiated the defendants claim that a letter signed by Mr Bennett was genuine and that as company secretary must have had authority to order the cutting. The case was therefore dismissed. There appears to be no reason for this action. Certainly, Mr Bennett was still secretary to the moribund company but what possible advantage could be gained from cutting the cable remains a mystery. It could be that it was a vain attempt to prevent the new company from making use of the land portion of the old cable but as the new overhead line was already in place at that time it makes that proposal unlikely.

On the 1 July the parliamentary Select Committee enquiry into the compensation claims associated with the Channel Islands cable was opened in London. The claimants were the Channel Islands Telegraph Company, the Jersey and Guernsey Telegraph Company, William Henley, the Globe Telegraph Trust, the Jersey Railway

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<sup>47</sup> Cable Ships and Submarine Cables, K R Haigh, Adlard Coles 1968

and Tramways Company and the Submarine Telegraph Company. The case of the Jersey Railway was dealt with quickly the chairman ruling that as they had no telegraphs connecting directly or indirectly with the Post Office their claim was invalid. The rest of the cases were far more protracted. The Globe claimed to have had exclusive landing rights granted to the Channel Islands Telegraph Association (CITA). The Post Master General, Mr Frank Ives Scudamore, refuted this claim suggesting that this must have been a clerical error. The only licence was held by the JGTCo. They denied any connection between the CITA the CITCo while admitting to sharing directors. William Henley argued that he had gone to considerable expense in producing a cable and keeping a cable ship on station for several weeks while the government procrastinated. The STC argued that the 1868 Telegraph Bill defined the Channel Islands as 'islands off Europe' and this identified the islands as foreign under the law thus they were due compensation for loss of traffic due to the new direct cable. The Jersey and Guernsey Telegraph Company sought to establish themselves as the only legitimate company serving the islands.

The commission was to last a long time, indeed very many months. At the time of the first hearing the law extending the terms of the Bill to include the Channel Islands and the Isle of Man was only just passing through the House of Lords. The initial sitting defined the Telegraph Companies to be included in the Telegraph Bill (1870) for consideration. By the end of the month, however, the Bill had passed through its final parliamentary stages and passed into law. There now only remained the matters concerning the terms under which the JGTCo would be transferred to the Post Office. The Globe, and the CITCo were not included.

Incredibly, at the time that these negotiations were going on the telegraph cable connecting the JGTCo had not even been submerged. There was some disquiet about this back in Jersey where the Chamber of Commerce accused certain States members in complicity by excluding the former company from the Bill extending the Telegraph Act to the island<sup>48</sup>. The chairman of the company, W H Le Feuvre tried to pacify the local business community by publishing a letter in the British Press explaining that the land line portions were already working and that the equipment for operation was installed.

Meanwhile, undeterred by the legal complexities of the compensation question, William Henley proceeded with his planned cable. The *Caroline* once again set sail from Henley's Cable Works at Woolwich on 17 September and headed for the Channel Islands. His intention was to lay the Alderney to Guernsey section after which the ship would go on to complete the link between Guernsey and Jersey which had been interrupted in the spring. The deep sea section had already been laid. The *Caroline* was going to pick up the submerged section to splice and land the shore ends to complete the route. At 7:00pm on 26 September the *Caroline* docked in Guernsey having completed the Alderney to Guernsey section. The boat laid-up until Wednesday 28 September because of fog, but arrived off Greve au Leçon at 12 noon. A cable of 20 tons per knot with a diameter of 3½" was landed. The British Press reported:

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<sup>48</sup> Telegraph Act 1870, 1870 CHAPTER 88 33\_and\_34\_Vict, An Act to extend the Telegraph Acts of 1868, 1869, to the Channel Islands and the Isle of Man.

“Sixty men swimming and in boats brought the cable ashore. Scrambling like cats they hauled the cable up the cliff in a great feat of engineering and tied the cable to the post of the JGTCO. The chairman W H L Feuvre was present along with William Preece and a very few spectators. The event was recorded by the camera of Mr Sharpe of King Street. The toast was drunk with the master of the *Caroline*, Captain Galelio representing Mr Henley”

The cable was tested by the local electricians Mr Mayo, Mr Winter with the STC electrician Mr Gerhardi present.

By 18 September the *Caroline* had finished all the shore ends of the Guernsey to Jersey and Alderney to Guernsey sections both cables having been tested ready for connection. It seems, however, that William Henley decided not to proceed with the cross channel cable to Start point.

On the 8 October the *International* left the Thames under command of Captain Beesley having collected the ‘official’ cable from Glass, Elliot and Co of Greenwich. On October 11 it picked up Captain Carr, one of the JGTCO directors, from Dover and set sail for Dartmouth. Bad weather intervened and the ship had to shelter in Portland until 22 October. On that day Mr Bullivant of the official contractors, announced that the ship had set sail for Dartmouth but because of more bad weather had to hold over in Plymouth. The *International* was a new ship of 1,381 tons and 240 feet long which had been specially built for the India Rubber, Gutta Percha and Telegraph Works Company<sup>49</sup> entering service at the beginning of 1870. The Dartmouth to Guernsey cable was her first contract. The route had been chosen because of the favourable conditions afforded by the sea bottom across this route. The first cable had suffered serious damage because of the rocky bottom at Portland and indeed in the intervening years the technology of cable construction had greatly improved. Nevertheless it is always important to use the best route for any submerged cable to minimise potential failure.

The *International* eventually arrived at Dartmouth on 26 October and dropped anchor in Stonehole Bay between Salcome and Bolt Head. Again there were delays as the original route for the cable shore end had run into wayleave problems. Further delays resulted when the *International* lost her anchor and had to dock in Dartmouth harbour for repairs. At last, early on 2 November, the deep sea cable laying began. The cable was landed at l’Anresse bay at 8pm that evening and buoyed (see figure 7).

When the ship arrived at l’Anresse Bay it was joined by W H Le Feuvre and his electrician Mr Winter. The next section was from St Martin’s Point to Plémont. It was decided to lay it from Jersey and so the ship set sail for Plémont the following morning. On arrival a telegram was sent to town to invite Mr Gerhardi of the STC and Mr Edward Le Couteur of the South Western Co to join the vessel. The shore end was landed and hauled up the cliff with the aid of two horses. There was a minor accident witnessed by the Rev P A LeFeuvre (the brother of the chairman) and a few ladies who had come to watch. One of the workmen slipped and fell into the cable tank on board the *International*. The Lt Governor, Major General Guy CBE, also arrived

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<sup>49</sup> Cable Ships and Submarine Cables, K R Haigh, Adlard Coles 1968

during the morning and the events were recorded by Messrs Asplet and Green, photographers. The cable was eventually landed and secured and the end sealed whereupon the men repaired to the Picnic Room, half way up the hill, for grog. Afterwards there were cheers for the Governor and for Mr Vincent who had loaned the horses. The men rejoined the ship the injured man having hurt his ankle.

The ship set sail for St Martin's Point at 3:00pm and secured the sea section to a buoy. A new shore end was laid alongside the Henley cable. The ends were spliced; "first the copper ends were brazed together then covered using gutta percha and Chatterleys compound to complete the joint." The protective wires were spliced over the joint and the cable buried. The Henley cables are shown as dotted lines in figure 7.

The first telegram was sent on the 8 November from Compass Bay to l'Anresse Bay, it read:

Preece Exeter to Winter Guernsey. It will be at least a fortnight before the land line will be ready. I should like to see you in Southampton as soon as Clarke (*the local linesman*) has started the Alderney line and you can get away.

Shortly afterwards, a dispute arose between a landowner at the Dartmouth end who objected to the cable passing over his property. It was decided to move the shore end to Dartmouth harbour but during the move the coastguard arrived and drove the workmen away with his cutlass. Apparently, the Government order issued in April to

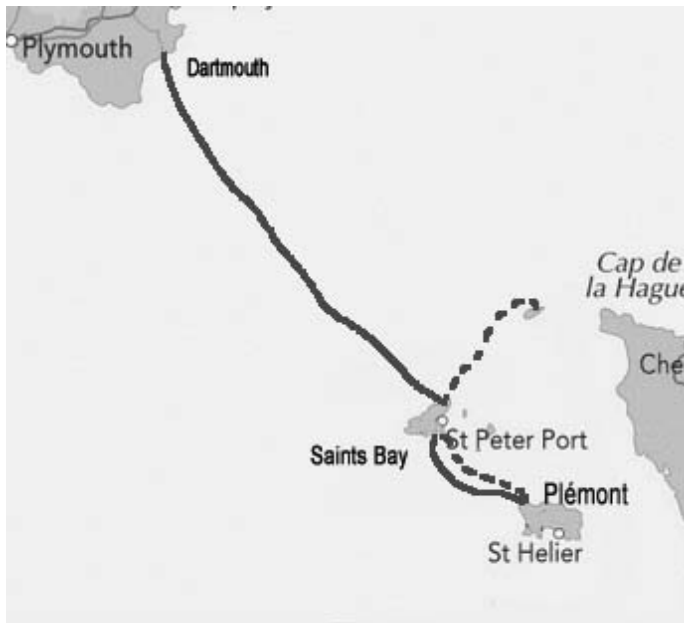


Fig 7

prevent the *Caroline* (Henley's ship) from landing a cable had not been recinded!

On the 16 December the new telegraph was installed at the JGTCO offices in Hill Street. The official opening was planned for the 21 December but meanwhile a celebratory dinner was held at the Royal Yacht Club Hotel (now called the Royal Yacht Hotel) at the Weighbridge, St Helier. The 120 guests included the officers of the company, the Lt

Governor Major General Guy CB, the Dean Rev W C Le Breton, the German Count von Maltke, Jurat Le Bailey and the Bailiff. In the evening an exhibition of the electric light was presented by a Mr Browning. Inaugural telegrams were despatched

to Queen Victoria at Osborne, the Marquis of Hartington, the PMG and to Mr F Scudamore.

At the dinner Robert Pipon Marett<sup>50</sup>, a shareholder and well known local Advocate and later Bailiff of Jersey, made a witty speech mentioning the cost of installing the cable which was estimated at £30,000. He also referred to the recent incident of cutting the old CITCo cable and looked forward to the success of the new venture. Also mentioned was the fact that since the GPO takeover of the telegraph service over nine million messages had been sent netting £250,000 for the government, this being more than that raised through the postal service. The telegraph office would open with a uniform message rate of 1/- for up to 20 words, except for messages to Sark. The GPO had also agreed to purchase the Henley cable from Guernsey to Alderney.

On the 23 December the new office was decorated with a gaslight display of the Prince of Wales' Feathers and the words "Ich Dien". Mr Waterman was appointed the first telegraph clerk.

On the 11 March 1871 the following statistics were published in the *Jersey Times and British Press* showing the traffic from the opening to 1 March:

Station	Date of Opening	Receipts	Messages Sent			Received Messages
			Through	Local	Total	
Guernsey	21/12/70	£126-18-6	1716	359	2075	2452
Jersey	21/12/70	£298-12-7	3947	308	4255	5264
St Aubin	21/12/70	£3-6-0	49	14	63	80
St Ouen's	21/12/70	£1-1-0	7	14	21	14
St Peter's	21/12/70	£3-12-3	49	18	67	62
St Saviour's	21/12/70	£13-13-1	166	48	214	251
Alderney	18/1/71	£11-7-1	85	113	198	151
		£458-10-9	6019	874	6893	8274

**Table 3**

This illustrates the popularity of the lower rate, which enabled more people to take advantage of the service. It also showed the considerably more boyant Jersey market which accounted for almost 3 times more traffic than the other two islands together.

On 12 May a further statistical analysis of the traffic was published for the 4 weeks ending 18 March:

Government Messages	20
Shipping	558
Banking and Stock	154
Butter	22
Fishmongers	9
Greengrocers & Fruiters	28
Cattle	32
General Trade	1101
Domestic	1031

<sup>50</sup> Balleine's History of Jersey Balleine, G. R.; Syvret, Marguerite; Stevens, Joan (ISBN: 0850334136 / 0-85033-413-6)

Continental	85
Prepaid	31
Non-classified	51
Racing and sport	2
<b>Total</b>	<b>3124</b>

**Table 4**

This further illustrates the importance of the telegraph to business but also shows that it was becoming popular for domestic messages too, with over one third of all messages.

This increase in traffic was about to lead to changes in the technology used. A good Morse key operator could average about 35 words per minute but the current rate of traffic was beginning to strain the operators. In addition there was only a single line to the UK which was shared with Guernsey; therefore it was decided to update the equipment to the Wheatstone automatic telegraph which could send over 100 words per minute by use of punched tape. This enabled the messages to be prepared “off-line” and then sent in batches when the line was free. Preparation was carried out on a Wheatstone “stick” punch<sup>51</sup>. This was a perforating instrument which was operated by the telegraphist using rubber hammers, rather like playing a xylophone with only three notes. Each punch represented either a “dot”, “dash” or space. This would be installed only at the main office. Incoming messages are recorded onto tape in Morse code and then transcribed by hand onto the telegraph forms for delivery by the telegraph boys.

On the 16 June the refurbishment to the main Post Office in Queen Street was complete and a new entrance was also provided from Hill Street. The following day the J&GTCO office was relocated to the Head PO.

In the meantime, the J&GTCO were in intensive arbitrations with the Post Office commissioners regarding the purchase of the company equity under the Telegraph Act 1868 which would be soon extended by the 1870 Order to include the Channel Islands and Isle of Man<sup>52</sup>.

The arbitrations with the Post Office were held before the Rt Hon Russell-Gurney, the Recorder of the City of London and were completed by 24 May 1871. This enabled the board of the J&GTCO to call an Extraordinary General Meeting on 27 July at St Antholins Chambers, 26 Bridge Street, London. The chairman, Mr F W Lefeuvre, read the board report, minutes were taken by the company secretary Mr Gauntlet.

The company had been formed 18 months earlier and had progressed to the situation where it was viable and thus available for purchase by the Post Office. The negotiations with the PO had resulted in a settlement of £54,920 plus any accumulated interest. The expenses of the arbitration were to be paid by the Post Office, this amounted to £2,500. In addition there was expected to be tax due to the sum of £1,000 to £1,500, the company solicitor Mr G Bristow would resolve this issue. Once the taxes are paid, the company could be dissolved and a final dividend paid to shareholders. Mr E Haviland-Burke MP seconded the chairman’s proposal and the

<sup>51</sup> Post Office Electrical Engineering Journal, Telegraphy Vol 49 p166 - 171

<sup>52</sup> Telegraph Act 1870 CHAPTER 88 33\_and\_34\_Vict An Act to extend the Telegraph Acts of 1868, 1869, to the Channel Islands and the Isle of Man. 9th August 1870



resolution was carried. The meeting complained that the actions of the “buccaneering” Mr Henley may have affected the final payment, which, the meeting felt, was not as generous as earlier settlements. It was also noted that other companies had experienced “some difficulties” in receiving the money from the Post Office.

Mr Bennett was appointed auditor and Mr Buchan announced that the final return could be as much as £1-7-6d per share.

That might have been an end to it as the company had been formed as a speculative venture to capitalize on the generous terms offered by the Post Office in the nationalization process. The original Bill did not include the offshore islands and it was only by vigorous campaigning that the law was extended. The company chief engineer was William Preece, who was also a substantial shareholder. At the time the company was formed Preece was also employed by the Post Office and was chief engineer of the southern region. In these days of closely regulated financial dealings that would almost certainly be classed as insider dealing. It is extraordinary that even in Victorian times that Preece’s dual role was not scandalized in the press. The public enquiry had highlighted this issue but when Preece was questioned in the witness box, he refused to divulge his financial associations with the company, merely stating that he had been employed as an “Engineer Consultant”.

However, the company was not wound up following the transfer of assets to the Post Office. There remained a continuing dispute between the board and the Post Office over the allowance made by the Post Office for the “Good Will” on takeover and the forecast in traffic growth. The company claimed that the GPO had undervalued this and they continued to press for a further settlement. The sum settled on by the principals was £11,118 – 10 -5d, and, in addition, a further £300 – 0 – 0d in legal fees. This dispute continued for many years. The Post Office made an offer of £6,350 – 17 – 4d on the 15 April 1874. The company refused to settle for this sum and continued pressing for the full claim. Eventually, in January 1879, the board accepted the Post Office offer on the grounds that the legal fees were paid. The company was finally liquidated on 29 January 1879.

## The Telegraph under the General Post Office 1872 - 1914

The Jersey and Guernsey Telegraph Company (J&GTCo) finally ceded operations to the Post Office in August 1872. At the half-yearly meeting of the J&GTCo the Chairman, W H LeFeuver stated that writ against the Post Office claiming approximately £12,000 expenses due to the protracted enquiry was still outstanding, but the PO had paid £6000. After expenses a sum of £1,000 was announced and a bonus dividend to shareholders of 2/6d per share was proclaimed. The witnesses to the enquiry had to be paid out of the £6,000 and one single witness had claimed £600 of which the J&GTCo had only paid 300 Guineas, the witness had threatened litigation. After further discussion the final dividend was settled at 4/- per share.

Since the adoption of the 1/- rate, over 600 messages per day were now being passed and as a result the profit margin achieved by the company was greater than under the old 2/6d rate. Shareholders carried the Directors recommended motion, decided at the board meeting 16 July, to wind up the company in favour of the GPO takeover. The meeting was closed with that resolution and the company's operations be passed into GPO control, however the company remained active while outstanding settlement matters continued (see above).

Despite the new cables, there were still faults, although rather less frequent than under the CITCo. Interruptions were frequently caused by faults on the UK mainland, the first such failure being reported on 9 august 1873.

The first fault under GPO ownership occurred on the 27 February 1874 when the cable between Guernsey and Jersey failed. The *Jersey Times and British Press* announced that telegraphic news had been despatched via the Steam Packet from Guernsey. On 5 March an announcement in the GPO, Queen Street, St Helier read:

*“Cutters will be despatched either from St Helier’s or Plemont, about 5pm daily during the interruption of the telegraphic communication between here and Guernsey. They will be sent by telegraph to Plemont .(where a temporary office had been established) The cutters are expected to arrive in Jersey on the return trip at about 6 or 7pm daily”*

And on 11 March a letter from Chas E Winter Superintendent Post Office Telegraphs was published in the *Jersey Times and British Press*:

*“I have tested the cable submerged by the steamer Caroline and it is broken about 2½ miles off Jersey. The other cable submerged by the steamer International is broken 4 miles off Jersey. The PO has engaged the services of the International which is currently in the Firth of Forth and should arrive within the week”*

Note that the W T Henley cable was now being used by the GPO as a spare. It is not known whether Henley ever received settlement for his cable. Since both cables were damaged, it is likely that this was caused by trawling or a dragging anchor. The GPO utilised the services of the Steam Packets for forwarding telegraphic messages to Jersey. A newspaper report from Guernsey asked:

*Why do the cutters delivering telegrams have to pay  
7/- harbour fees? Surely they could levy such a duty  
on telegrams too!*

Note the use of the word “telegram”. The press was full of alternative suggestions including the use of carrier pigeons!

The *International* arrived in Guernsey on 6 April and the cable was restored on the 19 April.

A further interruption occurred on 31 May 1876 and was restored on 24 June. However, when the cable between Alderney and Guernsey failed on 2 September the GPO engineer, Mr Powers, announced that “it was unlikely that the GPO would despatch a ship to repair the cable.” The local press called for the War Office to intervene. Nevertheless, the cable remained unrepaired until the 7 May 1877 when the GPO despatched the *International* to make the repair. Unfortunately the GPO engineer, Mr Power, was unable to detect the exact location of the break and the fault remained unfixed. In the same 31 May 1876 edition a note on the invention of the telephone was recorded in the *Jersey Times and British Press*.

On the 14 May the Guernsey – Dartmouth link failed; telegrams were despatched via the offices of STC. The *International* was again despatched and on the 27 July the cable was returned to service. The urgency for repair seems to be somewhat mitigated by the presence of the STC cable. The French route enabled continuity of service throughout breaks with the mainland.

The cable failed again on 23 February 1878 between Dartmouth and Guernsey. Once again, the Submarine Telegraph Company came to the rescue. The GPO showed no sign of urgency and Guernsey’s Lt Governor tried to intervene to hasten the progress. On the 12 March the GPO announced that the *International* would be despatched after repairs to the Scilly Islands link. It duly arrived on 27 March and after extensive testing announced on 2 April that the cable had failed in 3 places. Meanwhile, on the 16 March the STC cable failed, resulting in total loss of communication. The local newspapers now had to rely on despatches received via the Steam Packet service. The STC cable was returned to service on 7 April. The PO cable was restored soon afterwards.

A further fault occurred on 29 November off Dartmouth. The cable was repaired on 16 December.

In July 1879 the cable ship *Dacia* was despatched by the War Office and the Guernsey – Alderney cable was returned to service, according to the press, by Corporal Bowden, a military engineer.

It was some time before the next failure on 2 February 1881. The fault was diagnosed as being near Dartmouth and it was repaired just off Compass Cove 23 March. A further fault in the river mouth at Dartmouth had the cable out of service from 20 to 27 October.

In the meantime, the main PO in Jersey relocated from the Queen Street office to Albert Hall in Grove Place (Halkett Place – now the home of the Mechanics Institute). A new 42' long counter lit by gaslight was installed and special compartments for the writing of telegrams were provided. The refurbishment was carried out by Messrs Fallaize and Tostevin, builders. Speaking tubes were installed between all floors. The number of overhead telegraph lines was growing and this seemed to provide sport for local youths since in March the Post Master General issued a warning of prosecution for “The throwing of stones at the Telegraph Lines”. Telegraph insulators are quite fragile, being made from porcelain or glass, and can easily be shattered with an accurately aimed pebble.

The next major fault was on 11 February 1884. This time, the GPO decided to upgrade the route by replacing the cable entirely. The *Monarch* was despatched on 1 March with new 3-core cables. The entire cable system was to be replaced, the upgrade in anticipation of the new proposed 6d rate. In the meantime, the *Monarch* repaired the old cable and service was restored on 21 March.

Between the 12 March and 4 September the *Monarch* laid the new cables between Jersey and Guernsey and in August between Guernsey and Dartmouth. This job was done in sections, as on 26 March the *Monarch* was sent to Scotland for repair duties. The new cables were completed by 4 September and the 3 core system allowed direct connection for both Guernsey and Jersey to London and a shared section to Exeter. The *Monarch* recovered the old cables before leaving the area, including, presumably, the W T Henley cable. This appears to be the first time that the recovery of old cables was performed in the Channel Islands; formerly, faulty cables had simply been abandoned. This probably reflects the maturing nature of the submarine cable technology industry, since recovered cables could provide valuable scrap metals

The new cable brought much needed stability to the telegraph service and with the introduction of the new Inland 6d rate (for up to 20 words), traffic increased 48% by 2 October 1885. After this replacement, submarine cable failures became less frequent. There were no major cable faults on the UK section until 7 January 1894, the *Monarch* repairing the cable on 24 January. The long-time failed Alderney-Guernsey cable was repaired at the same time.

A freak accident occurred in the main post office; during building work on 22 March 1886, 5cwt (250Kg) of mortar fell upon the telegraph equipment. Fortunately, no-one was injured and there was no loss of service reported.

From 5 April 1886, the Post Office adopted Greenwich Meantime (GMT) for the timing of all telegraph transmissions. This brought the Channel Islands into line with the UK and removed confusion over the timing of telegrams. This may seem trivial, but could have resulted in legal disputes had the difference in time not been taken into account with telegraphed instructions, for example, purchases of shares on the stock market. The States of Jersey did not officially adopt GMT until 21 November 1896.

Meanwhile the local Jersey network was being augmented. The telegraph was extended to local postal sub-offices. Improvements in technology meant that new telegraph equipment required little skill to operate. The Wheatstone ABC telegraph, for instance, could be operated with little training and although slow in operation, about 15 words per minute, it was reliable. This made the deployment of equipment easier as staff could be readily trained to operate the sender and receiver. The telegraph was extended from Millbrook sub-office to St John by a new overhead telegraph route opening on 12 March 1894. Havre des Pas was added on 18 April.

On 29 September 1896 HM Public Building and Works Department accepted a tender for the erection of cable house at Plémont from Messrs Dart and Son of St John, Jersey, who had recently carried out works at the Head PO as noted above. The hut was constructed in dressed granite and completed with a Welsh slate roof. The construction of the cable hut enabled a more convenient place for engineers to effect tests. This cable hut survives today, although it has subsequently been converted into a public convenience.

The military telegraph, which was administered by the GPO, was also extended from Government House (then located in Stopford Road, St Helier) to the arsenals in the north and west of the island. There were extensive telegraphs operated by the local garrison extending from Forth Regent to the signal station at Corbière and serving establishments between.

St Martin's PO was connected to the telegraph on 12 June 1895 using poles erected along the railway to Gorey. This pole route also carried the line for the Fliquet cable which had replaced the earlier underground cable installed by the STCo. This wire was brought down by snow as reported in the *Jersey Times* on 25 January 1897.

On the 21 January 1902, the GPO installed a Wireless Telegraphy transmitter at Fort Regent on behalf of the Admiralty. This was to provide both ship to shore and communication with the UK. The popularity of the telegraph continued, as on the 3 June 1902, the GPO reported that they had handled over 30,000 words in messages following the declaration of peace in the Boer war.

The GPO advertised on 3 October 1903 for a new site for the head main post office. The site at Grove Place had become too small for the growing business. The advert placed in the local press by WS Rushton, the GPO Surveyor for the Portsmouth district, requested responses by 15 October. The site should provide a minimum of 9,000 sq ft (840 sq metres) of accommodation. On 15 December the Chamber of Commerce noted that "a very suitable site" in Broad Street had been offered. The Postmaster General confirmed this rumour on 16 February 1904, stating that the new building would be on the site at 15 and 17 Broad Street.

From the late 1880's onward, the GPO had provided a temporary telegraph office at various locations around the Weighbridge to provide services for exporters during the potato season. This was a popular facility and there were often calls for this to be made a permanent office. The Chamber of Commerce frequently petitioned for this but received little response from the PMG. In 1903 a new sub-post office was opened at Hulbert & Co, Conway Street. From then on the temporary telegraph facility was

operated from there, but no permanent telegraph office was established. The telegraph traffic during the short potato season, which usually extended from early May to the end of June, was considerable. A report in the *Jersey Press* from 6 June 1906 illustrates this well. The GPO installed two duplex machines at the office which could handle 500 messages per hour at a transmission rate of 27 words per minute. Up to 4,000 messages were handled each day and the local telegraph office was supplemented with 16 extra staff brought in from Portsmouth and Southampton, making a total of 27 in all. This office closed permanently for telegrams when the new office at Broad Street opened on 22 June 1909. That year a temporary office was operated from the Commercial Street entrance of the new building prior to the official opening.

The new office at Broad Street was built by contractors Corbett and Co of Gray's Inn Road, London. The building is still the site of the main post office today and the building is substantially the same, save for the unfortunate alterations to the entrance made in the early 1970's. The original building had fine Edwardian features which are still retained on the upper floors. Entrance was by two double oak doors to the left and right of the edifice which is constructed of Portland stone. The building is over three stories at the front and to the rear, backing onto Commercial Street where there is a yard for vehicle storage. The main activities of the postal authorities have long since been transferred away from the building to more suitable sites, firstly at Mont Millais, St Helier and now at Rue des Pres, St Saviour. The telegraph was transferred to a second floor office, which was 40 feet square (150 sq metres) and contained all the telegraph equipment and printers. The battery room and connection frame were located on the ground floor and the cables trunked up through the building. A pneumatic tube system connected the counter area to the telegraph clerks' office.

The telegraph equipment was also updated at the time of the move to the new premises. The Wheatstone "stick" perforators were replaced by the more modern hand operated "Gell" type which appeared more like the familiar typewriter keyboard and was faster to operate. At the same time a "gummed paper" system was introduced using a Wheatstone Morse printer, which directly transcribed the incoming Morse code signals onto gummed paper tape in text form<sup>53</sup>. This allowed for the operator to cut up the tape and stick the message onto the telegraph form without the need to transcribe the code first. This was seen by the traditional telegraph operators as an affront to their skills. Nevertheless, it increased production and accuracy and was a boon, especially during the busy potato season.

Wireless telegraphy was already in the Channel Islands. Alderney had a station operated by the Admiralty and there had been a station at Fort Regent since 1902. The Post Office opened its first ship-to-shore wireless coast station at Bolt Head, Devon on 14 December 1908. Bolt head is a promontory some 450 ft above sea level and a high mast was erected with an equipment room for the transmitter and receiver for the princely sum of £2,000. Tests made to the Fort Regent station at that time demonstrated that the circuit was reliable. The Post Master General in announcing the new service stated that although its primary function was for ship to shore traffic, it could also be used in the case of cable failure to the Channel Islands. This feature was tested only 3 months later when one of the regular cable failures interrupted traffic

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<sup>53</sup> The Telegraph and Telephone Journal, October 1914

between Jersey and Guernsey on 10 March 1909. The normal procedure in these cases was to divert urgent traffic via France or use the mail boat to transfer written scripts to Guernsey. However, on this occasion, the Fort Regent station was used to provide the service. This was noted to be a considerable saving on the cost of telegrams, which via France were charged at 2d per word while from the wireless station the charge was just ½d per word.

These frequent cable interruptions had long been a bone of contention with local businesses. There were regular demands for the cable to be replaced from the local Chamber of Commerce and others. There was even a petition presented to the PMG in April 1905 by the Lt Governor. This was rejected by the PMG, and in a statement he said that the maintenance services offered to the Channel Island was sufficient and that alternative routes (via France) ensured continuation of service. The cable continued to exhibit trouble for some time after, but the alternate routes did alleviate the problem.

The next major development on the telegraph was the introduction, in the spring of 1914, of the new Creed reperforator system<sup>54</sup>. This was an advance on the existing system enabling speeds of up to 200 words per minute. These machines still used Morse code, but the keyboard was similar to the modern equivalent and the operator produced an output tape encoded immediately into code. This output tape could then be sent on the line using a Creed sender. The existing Gell and Wheatstone systems were retained as backup. The introduction of the new system enabled a 10% increase in traffic during the busy potato season to be realized.

When the First World War began in August 1914, a two additional telegraph cables were laid to the UK and to France (see below). These were primarily for the use of military communications but were also available for domestic traffic.

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<sup>54</sup> The Telegraph and Telephone Journal, October 1914

## Submarine Cables and Telephone Trunk Circuits

### The 1914 Telegraph Cable

#### The military telegraph circuit

Immediately after the declaration of war against Germany on 4 August 1914, the British government decided to cut the German telegraph cables in the Baltic, the North Sea and the English Channel as a strategic move against the enemy. The operation was completed between the evening of 4 August and the morning of the 5 August 1914. The Channel section was probably cut by the cable ship *Alert*, although this is not completely clear from the available records<sup>55</sup>. This action effectively isolated Germany from the rest of the world outside Europe, especially with North America, where it had maintained a close relationship with the United States government. This also forced the German government to either use telegraph cables controlled by British interests (such as the Great Northern Telegraph Company which ran through Russia)<sup>56</sup> or to signal to the USA using recently developed wireless telegraphy, which was wide open to interception by the British intelligence services.

It is interesting to note that all this activity went unreported in the national and local press, although the cutting of other cables, such as the Germany-Sweden cable, was covered at length.

The cable, which ran from Borkum to New York via the Azores through the English Channel, was picked up a few days later by the Post Office Cable Ship, *Monarch*, and the ends were diverted to provide a new link between Dartmouth and Plémont. This was in addition to the existing 3-core cable, which had proved to be somewhat unreliable over time, and was used to provide a back-up in case of its failure. The German cable was of substantial construction, because of its length, and consisted of a 500lb/mile copper core insulated with 300lb/mile gutta percha insulation, the final cable being armoured with 10 No 2 gauge galvanized wires.

Jersey was extensively garrisoned at the outbreak of war and later prisoner-of-war camps were provided on the island. This second cable, therefore, was of immediate importance to the War Office in order to maintain regular and consistent communication with its forces based on the island.

The cable was terminated in the cable hut at Plémont along-side the existing cable and had been hauled up the beach along the same path such as the two cables lay together along most of the shore end. The circuit was connected to St Helier Head Post Office at Broad Street with an additional circuit along the existing overhead route to the Western Railway terminus at the Weighbridge. There it was connected via a short underground cable to the post office building in Broad Street. A duplex telegraph circuit was supplied, connected via Creed relays.

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<sup>55</sup> Engineers reports and memos, BT Archives

<sup>56</sup> The Invisible Weapon: Telecommunications and International Politics, 1851-1945, Daniel R. Headrick, 1991 ISBN13: 9780195062731



In the following weeks, it was decided to install a further link into France via St Malo. This was as a result of the interruptions to cables across the Channel in northern France. Considerable correspondence between the War Office and the Post Office<sup>57</sup> suggests that this decision was made on both military and commercial bases. The proposed cable was to be provided in conjunction with the French authorities who would fund half of the expense. The French authorities had decided that St Malo would be a better point of interconnect with their network than Pirou and so it was agreed that the cable would be laid across that stretch of sea. Initially, it seems that a telephone circuit was proposed but as the work was urgent and the only available cable ship was the Eastern Telegraph Company's *Electra*, it was decided to use a single core cable which was also immediately to hand<sup>58</sup>. Correspondence between the southwest region and PHQ indicates that two-core cable could have been sourced within a fortnight, however, the *Electra*<sup>59</sup> was an old ship and could not carry the heavier load. The cable laying was started on 9 September 1914 and completed within a few days. The cable was actually laid from Cancale, near St Malo to Greve D'Azette in Jersey and connected to the Head PO via the existing telegraph poles along the Jersey Eastern Railway to its terminus at Snow Hill, St Helier, thereafter using existing telephone cables and wires.

A letter from the South West area superintendent to PO headquarters<sup>60</sup> confirmed that the circuit was working on 27 September, having been extended to Rennes, using a Wheatstone omnibus circuit and a Hughes telegraph relay in Jersey. The French indicated that they would extend the circuit to Bordeaux. Further correspondence between the regional superintendent and PHQ showed the breakdown of the cost of the circuit provision as £12,826 – 12 - 4d, half of which was to be recovered from the French, however, this part of the exercise appears to have been postponed “pending cessation of hostilities”. It is not known if costs were eventually recovered. The total length of cable used was 39.71 knots for deep sea and 2.89 knots at the shore ends.

The circuit being provided over a single core submarine cable meant that it could be operated only as a telegraph circuit. Although it was originally intended to route the old German cable via Guernsey, this was not pursued and the circuit operated from London via Bristol and Dartmouth through Jersey (although a breakout was made at the St Helier telegraph office) and on to Rennes.

### **The first telephone circuit**

In early 1928, following enquiries from the States of Jersey and States of Guernsey Telephone Departments, the General Post Office directed its research department located at Dollis Hill in north London, to investigate the feasibility of providing a telephone circuit on one of the submarine telegraph cables. Initial tests were carried out and the results of the survey were reported in a research document published on 26 March of that year<sup>61</sup>.

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<sup>57</sup> Engineers reports and memos, BT Archives

<sup>58</sup> *ibid.*

<sup>59</sup> Cable Ships and Submarine Cables, K R Haigh, Adlard Coles 1968

<sup>60</sup> Engineers reports and memos, BT Archives

<sup>61</sup> *ibid.* Document reference 22/79/5

Tests showed that of the two cables, only the German cable could be utilized as a telephone circuit since the 3-core telegraph cable exhibited too much cross-talk owing to its method of construction. The German cable, however, responded well in tests, and although it had been extensively repaired since 1914 with 10 new sections of various cable types being spliced in along its route (see table 5 below), it seemed to be satisfactory for the provision of a telephone circuit. Transmission tests indicated an overall characteristic impedance of approximately 70 ohms at 800Hz, the standard frequency for measuring voice frequency circuits.

The only significant problem encountered during the tests was a degree of cross-talk from the 3-core cable which lay along-side the German cable at the shore ends. This problem was, however, somewhat mitigated, by removing the earth bonding at each terminal. The engineering report indicated that an end-to-end speech test had been made from London to Jersey and that apart from the fact that the circuit was “drummy”, an intelligible conversation was possible. The reference to the term drummy would be on account that the submarine cable section, which was some 91.62 nautical miles following the latest repairs in 1926, was completely unloaded and thus its higher voice frequency transmission quality would not be good. The tested section from Jersey to Dartmouth was unamplified but the UK shore end circuit was connected over existing amplified trunk circuits from Taunton to London which would have helped the overall quality. The cable itself was, of course, a single wire with an earth return path, effectively an unbalanced co-axial pair.

Although these tests were carried out in 1928, it was some 3 years before the telephone circuit was finally provided to the States’ controlled island networks. The reason for this delay was possibly due to the continued use of the telegraph circuit for military purposes. However, in November 1928 PMG Sir William Michell-Thompson, in answer to a question in the House of Commons, stated that there were still ‘some financial and technical obstacles’ which were being assessed by the GPO.

Then in March 1929 the question of telephone circuits to the Channel Islands was raised again in the Commons by Sir Nicolas Gratton-Doyle. The PMG, now Viscount Wolman, replied that the ‘the GPO was still testing cables and that more information may be available at Easter’. The local press and both the States of Jersey and States of Guernsey were keen for the GPO to provide a telephone circuit to the UK and Guernsey wished to also have a circuit to Sark.

Coincidentally, at the beginning of 1930 the GPO telegraph department announced its intention to abandon the telegraph circuit via Jersey to France, thus relieving the single core cable<sup>62</sup>. The tests on the cable were revived and an investigation was established to determine the stability of the overall circuit. A test circuit was first set up on a London to Newport (Wales) circuit using an artificial submarine cable to test out the practicality of the project using 2 to 4 wire amplifiers and voice-operated stabilizers. These latter devices are necessary to prevent “singing” on the amplified sections of such circuits where transformation from 2 to 4 wires is required. Two wire amplified circuits are notoriously difficult to balance and the stabilizers effectively switch off the receive path of the circuit when speech in the send direction is detected. This prevents “spillover” occurring at the 2/4 wire termination and thus prevents the

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<sup>62</sup> Engineers reports and memos, BT Archives

circuit from singing. These devices are similar to modern “echo suppressors”. Later, the tests were carried out on the cable itself between Compass Cove and Jersey.

Before the circuit could be fully utilized the cable would be diverted via Guernsey. It was first necessary to pick up the submarine section west of Guernsey and splice in suitable lengths in order to loop the circuit via Saints Bay in Guernsey. This increased the overall cable length from Dartmouth to Jersey to 98.63 nautical miles, 79.8nm to Guernsey and 18.83nm from Saints Bay to Plémont. Tests showed that the core resistance of the total cable was 78.6 ohms. The experiments continued throughout much of 1930. On 5 September the *CS Monarch* laid a ‘sea earth’ at Plémont to ensure adequate earthing arrangements for the audio circuit to prevent crosstalk between the telephone and telegraph circuits. This was in the form of a 2-core submarine cable bonded to the deep-sea section of the telegraph cable sheath about a mile offshore. Similar arrangements were carried out at Guernsey and Dartmouth. The Jersey Evening Post reported that the shore ends of the cable necessary for the diversion were dropped by the Guernsey States’ tug *Sarnia* on 15 September. After the changes to the cable had been made, the equipment was installed on the cable ends to finalize the circuit tests. The circuit was constructed using low pass filters to separate the telegraph circuit from the telephony circuit. Inter-operator signalling was achieved by the use of a “ring-down” circuit using 16/500 Hz ringer converters at either end of the trunk.

The submarine section was terminated on line matching transformers at either end of the circuit to match the unbalanced 70 ohm cable to the land sections of 600 ohms in order to reduce the line noise and cross-talk with the adjacent telegraph circuits on the 3-core cable. Ringing was extended via the centre-tap “phantom” circuit. In order to make a trunk call for most Jersey Central exchange subscribers, and those outside the Central exchange area, it was necessary for users to visit the telephone exchange to use one of the recently introduced “advanced” telephone sets manufactured by Siemens Brothers and designated Telephone No 162 by the GPO. These telephones had sufficient transmission quality to enable a reasonable conversation to be maintained with a distant subscriber, albeit by shouting!

The German cable makeup at the time of the feasibility test is detailed below:

	Status	Original	New	Reinserted	Original	Original	New	Reinserted
<b>Dartmouth</b>	<b>Core/insulation</b>	500/300	107/150	500/300	500/300	500/300	107/150	500/300
	<b>Armouring</b>	10/2	10/2	10/2	10/2	10/2	10/2	10/2
	<b>Length (nmi)</b>	0.425	0.188	0.743	0.186	5.358	0.383	0.094

Original	New	New	Reinserted	Original	New	Original	New	Original
500/300	107/150	500/500	500/300	500/300	107/150	500/300	107/150	500/300
10/2	10/2	10/2	10/3	10/2	10/2	10/2	10/2	10/2
28.143	0.576	5.596	4.076	0.100	0.527	7.304	0.067	7.259

Original	Original	Original	Replaced	New	New	Reinserted	Original	Original	
500/300	500/300	500/300	500/340	500/320	500/250	500/300	500/300	500/300	<b>Jersey</b>
10/2	10/2	10/2	10/2	10/2	10/1	10/2	10/2	10/2	
5.518	5.045	15.804	0.519	0.695	0.044	1.377	0.330	0.670	

**Table 5**

As table 5 shows, the cable had been extensively repaired with both recovered lengths of the original cable and other sections using any available cable type at the time. This

must have had a detrimental effect on the overall impedance matching of the cable, but as it was only intended to use this section at voice frequencies, that probably was not of major concern, especially with the overriding importance of having any voice connection from the islands.

The circuit was terminated at the Head Post Office on each island and then extended to the States' exchanges over local circuits. In Jersey the overhead route from Plémont to St Helier had originally been requested from the States Telephone Department. However, the GPO engineers decided that the route chosen was unsuitable because of the potential for crosstalk with local telephone circuits and a new construction of wires was taken from the Plémont cable hut via the GPO telegraph poles to St Helier. Amplifiers and 2/4 wire terminations were installed at the Guernsey HPO and the circuits extended to the Guernsey States' exchange. It was reported that the tests were complete at the end of December 1930 but the circuits were being delayed by the installation of a new exchange in Guernsey<sup>63</sup>.

Meanwhile, correspondence between the various telephone departments and the GPO indicated that an opening ceremony was extensively planned, with dignitaries in both islands, including the Bailiffs of both islands and Lt Governor of Jersey Major-General the Lord Ruthven CB, CMG, DSO, taking part in an initial call with the Lord Chancellor. Special telephones were provided including amplifiers so that all present could hear the inaugural call. A letter from J Stanhope, who at that time was still at offices in the former Central exchange at 2 New Street, written to the Post Office authorities requested that this call should be "free of charge".

The circuit to London was eventually opened at a special ceremony in both islands at 14:25 on the 26 March 1931. After the inauguration, during which it was reported that the Lord Chancellor's speech was practically inaudible as he was reading from a script and not talking into the microphone, the circuit was opened for public traffic at 14:50. The public were quick to use the service as there were already pre-booked calls waiting; 14 from Guernsey subscribers and a further eight from Jersey.

The trunk was shared between Jersey and Guernsey Telephone Departments by using an elaborate system of delay working. This was termed "modified special attention working" in the GPO switchboard operator instruction manual. This was necessary as there being only a single circuit there was no possibility of using an "order wire" which was common practice elsewhere on the GPO network. The Jersey calls were transited via the Guernsey switchboard operator. Calls between the islands could be managed while Guernsey-London calls were in progress. Although only a limited service, it was much in demand, being the only means of communication other than via the telegraph, which remained the main means of business messaging for some considerable time.

The following table 6 shows the charges levied by the GPO at the time of opening for each call of a minimum period of 3 minutes:

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<sup>63</sup> *ibid.*

Rate Code	Distance miles	Call Charge Periods		
		0700 – 1400	1400 – 1900	1900 – 0700
I	75 - 100	3/9	3/-	2/-
K	100 – 125	4/5	3/5	2/3
L	125 – 160	4/9	3/9	2/6
M	160 - 200	5/9	4/5	3/-
N	200 – 250	5/9	4/5	3/-
O	250 - 300	6/9	5/-	3/6
P	300 – 350	6/9	5/-	3/6
Q	350 - 400	7/9	5/9	4/-
R	400 - 450	7/9	5/9	4/-
S	450 – 500	8/9	6/6	4/6
T	500 - 550	8/9	6/6	4/6
Irish Free State	-	T + 1/-	T + 9d	T + 6d
Person to Person	-	+ 1/-	+ 6d	+ 6d

**Table 6**

Note that these charges were as charged by the GPO to the local Telephone Departments. Subscribers in Jersey paid an additional 3d per call which covered the Telephone Department administration costs. The GPO repaid Jersey and Guernsey 2d for every call originated or terminated on their systems to cover the cost of the operator and equipment used for the trunk connection in each island.

Inter-island calls were charged by the PO to the local authorities as in table 7:

Call Charge Periods		
0700 – 1400	1400 – 1900	1900 – 0700
1/9	1/3	1/-

**Table 7**

In addition each island administration charged 3d for call handling, thus a full rate call charged to a Jersey subscriber was  $1/9 + 3d + 3d = 2/3$ . An addition of 1d per minute or part thereof for calls over 3 minutes was charged in addition to the GPO charge.

## **Post Office Telegraphs and Submarine Cables 1923 – 1940.**

After the sale of the telephone system to the States of Jersey, the Post Office retained control of the telegraph system and all submarine cables. Although all the telephone overhead and underground plant was handed over to the States, the Post Office retained much of the main telegraph distribution network. Some of the minor post offices were, however, connected to the central telegraph office using line plant now owned and operated by the States Telephone Department (STD). Therefore a relationship with the STD was necessary albeit somewhat strained at times.

The Post Office thereafter relied to a greater or lesser extent on the STD for the provision of new overhead plant, since they did not retain sufficient engineering staff to carry out such works locally. Where special circuit requirements were necessary, however, engineering staff from Bournemouth were drafted in to carry out such works.

The telegraph system continued to be the only means of off-island communication and, as a consequence, came under pressure from business to be more accessible. Petitions were occasionally raised to extend telegraph services to minor post offices but were usually resisted by the Post Office. This situation became easier after the agreement in the summer of 1923 between the Post Office and the STD to permit telegrams to be dictated by telephone.

At this stage the development of the telegraph system had almost peaked. Although printing telegraphs had been introduced in the 19<sup>th</sup> century, and they had been introduced into Jersey before the Great War<sup>64</sup>, the system was not yet fully automated. The only major change to the system had been the introduction of the through circuit to France for military purposes which had been operated by the GPO and used for overflow traffic when not required by the War Department.

In 1925 the Post Office resisted an organized petition demanding a new telegraph sub-office in Beresford Street. The Postmaster claimed it was too near to the Broad Street office and that 50% of the petitioners were businesses with access to the telephone and so could use the service provided in conjunction with the States of Jersey Telephone Department. The STD had negotiated an arrangement with the GPO shortly after it took over the telephone system to enable subscribers to send telegrams by dictation over the telephone. Surprisingly, although the GPO had itself used this method from minor post offices since it took over the telephone system from the NTCO in 1913, it had not offered this service to its telephone subscribers.

In 1927 the Post Office adopted the new Creed teleprinters for the telegraph system first introduced in 1922 by the Creed Company of Croydon. This was what is called a start-stop machine and it used a different transmission code from the previous Morse used in the Wheatstone and earlier Creed machines. This new machine which the Post Office designated the Model 3 operated at 65.3 words per minute and printed the messages directly onto the gummed paper tape. The new code was based on the Baudot code which had been modified by Murray and finally incorporated into the Post Office's own version for the Inland Telegraph Service. Unlike Morse, which used

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<sup>64</sup> The Telegraph and Telephone Journal, October 1914

between 1 and 5 elements for each character, the new code used a standard of 5 elements per character. This enabled the machines to work asynchronously and without supervision, thus greatly improved the efficiency of the service and naturally reduced the number of operators required at each station.

The new printers were introduced into Jersey during October 1928 and installed only at the HPO, Broad Street. This required minor changes to the transmission equipment on the submarine cables to ensure that higher speeds could be successfully transmitted. At this time the sub-offices now used the telephone for the passing of messages rather than the slower old ABC telegraphs. The same year the unreliable Guernsey to Alderney cable was replaced with a wireless telegraphy circuit from Fort George, St Peter Port. This work was completed on the 9 February 1929.

The Post Office's attention was now turned to the problem of connecting the local telephone systems to the mainland. Questions on the matter had been raised in Parliament during 1928. Developments in telephone technology enabled the Isle of Man to be connected to the UK telephone trunk network in July 1929. This raised hopes in both islands that a solution could soon be found. However, this was not a matter for the local officials, since there were no suitably qualified personnel to work at what was at that time leading edge technology. Instead, the issue was passed to the Post Office research department, then based at Dollis Hill, north London.

More fundamental issues diverted the attention of the local postal authorities. A great storm during early December severed both northward telegraph cables including the inter-island link. This meant that all traffic had to be diverted via the Fliquet-Pirou cable to France. The French network was also badly affected and thus extreme delays of up to 14 hours were experienced. In response the Post Office opened a temporary wireless service from Fort Regent (see below), this enabled the service to be restored to near normal. The service operated until the cables were restored on 16 January 1930.

Meanwhile, the Guernsey Press reported that Deputy Kitts was in negotiations with the Post Office and that the "secret" former German Borkum to the Azores telegraph cable was being tested for its suitability as a telephone circuit. This cable would be diverted via Saints Bay to provide a link to Guernsey as well as Jersey.

At this time the research department engineers were testing the cables in order to ascertain whether they would be suitable for telephony. The earlier cable laid by the Post Office in 1884 was considered unsuitable because of the cross-talk problems. The cable construction was three-core which meant that it was difficult to balance either between cores or between any core and earth. Therefore, it was not possible to use it for telephony because of the interference from the telegraph circuits which would continue to share it. However, the German cable, formerly used for the Borkum-Azores telegraph route until captured by the British at the outbreak of World War I proved to be suitable. This cable was a single core cable over which an unbalanced circuit between the core and earth could be constructed. Tests on this circuit had begun as early as 1928 but at this stage many of the necessary sophisticated amplifiers and building-out circuits were still in development. Tests continued throughout 1929 and 1930 in order to make suitable arrangements for the cable's usage for telephony.

A component part of the delay was the continued use of the German cable for military purposes. This cable was linked with the cable from Greve D'Azette, St Clement to St Malo and carried traffic to Rennes. However, during the early part of 1930, the PO Telegraphs Department indicated that they would not require the cable for telegraphs after the middle of the year. This enabled plans to be made for the conversion of the cable for telephony. Part of these plans included the diversion of the cable via Saints Bay, Guernsey in order that the cable could serve both islands.

The *CS Monarch* assisted by the Guernsey States' tug laid the necessary cable lengths at Guernsey during the autumn of 1930. *Monarch* also laid suitable 'sea-earth' sections at all cable ends to ensure a good low-noise transmission path.

The final cabling changes were carried out before the end of the year. Testing of the new cable sections was completed by mid February 1931 and the necessary final balancing of the amplified section was continued during March, ready for the opening later that month. The telephone circuit was finally opened in the early spring of 1932.

Meanwhile, the state of the northern cables continued to cause concern, there were frequent faults and interruptions, often noted in the press when the news links failed. The telegraph continued to have priority over telephone and whenever it was necessary, the trunk circuit was suspended in favour of the telegraph. To improve the availability of the telegraph under fault conditions it was decided to provide a sub-audio telegraph circuit on the German cable. This would ensure that both the trunk circuit and the telegraph could remain in service under fault conditions on the old three-core. This work was carried out in late 1932.

This effective "spare" circuit gave the telegraph division comfort in the event of a cable failure and enabled the news telegraph circuit to be permanently connected through to both islands. The receiving telegraph machines were located in the offices of the local newspapers. This service was effectively unidirectional, although an uplink to the London agency was possible using a Morse circuit. The system used the latest Creed 7B page printer teleprinter machines that had been introduced into the Post Office telegraph service in 1931.

The number of telegrams began to decline after the opening of the telephone trunk service. This was because of the relative cost compared to the available information channel width. A phone call of three minutes could deliver more data density than an equivalent cost telegram. In reality, this led to the long slow decline of the telegram as a means of business and domestic communication in common with other areas of the developed world. This process was exacerbated as the Post Office followed a policy of continuous reduction in the cost of trunk telephone calls.

Later in November 1933, further investigations were carried out into the possibility of providing a further inter-island telephone circuit over the 3-core cable. Earlier tests had ruled this cable out over the mainland section but tests by the Dollis Hill research team concluded that it would be possible to provide a single circuit over any two of the 3 cores but that cross-talk problems precluded the use of the sea-earth return circuit which had worked satisfactorily on the German cable. It was noted that at the time of the tests the following circuits were operated over the three-core cable:



TS(Taunton) – JE1 – Duplex teleprinters VF circuit connected straight through at the Guernsey terminal and terminated at Jersey HPO

TS – JE2 as above

TS – GY Duplex teleprinters VF circuit terminated at Guernsey HPO

GY – JE Inter-island circuit, at night the TS-GY circuit extended to Jersey HPO over this circuit

The TS1 – JE circuit, over the German cable, was connected at all times to the Central News service and terminated on automatic printer receivers in both islands.

This circuit was substantially the same as that employed on the German cable, except that it used wire 1 and wire 2 of the 3-core cable. Line filters separated the telegraph sub-audio circuits from the voice circuit. The new junction was used by the two island telephone authorities for inter-island traffic and in the evenings and night, when the Guernsey HPO telegraph was extended to Jersey, telegrams were passed to the duty telegram boy via the telephone. No amplification was employed on this circuit.

On 30 May 1935 the first reduction in telegram charges since the introduction of the flat rate of 6d for 20 words was introduced in 1885. Previous rate changes had been upwards, in 1915 it was increased to 9d while in 1920 it was further increased to 1/-. The new rate limited the telegram to nine words, with additional words charged at 1d. This was no doubt in response to the decline in the use of telegrams which had begun with the introduction of lower trunk telephone charges and had been further exacerbated by the economic depression of the 1930's.

The first telegram under the new rate was sent from the wife of the Lt Governor, Mrs Mary Martelli, to HRH Prince of Wales. The telegram (which exceeded the nine word limit!) was written with a silver pen produced for the King's Jubilee and read:

*I have the honour to address to your Royal Highness the first telegram from Jersey at the new rate of nine words for sixpence. Mary Martelli*

This received a suitable response from the Prince and was followed by an exchange of nine word telegrams between the PMG, Sir Howard Kingsley Wood, and the JEP.

However, on the 31 July the Post Office celebrated its 300<sup>th</sup> anniversary. The JEP reported receiving a commemorative telegram from the new PMG George Clement Tryon. The telegram read:

*Greetings from the Post Office on its 300<sup>th</sup> birthday. Tryon PMG*

Note that this succinct message conformed exactly to the new nine word limit.

Meanwhile, questions were being raised in Parliament over the long delays in trunk calls to the Channel Islands. The Rt Hon CWH Glossop (Conservative) asked the PMG what was being done about the two hour delays currently being experienced.

This question was somewhat fortuitously coincidental with the introduction of a new wireless telephony service to Guernsey and an upgrade to the inter-island circuit that provided an additional channel (see below).

The existing three core cable continued to give trouble; it was by now over 50 years old and had been subject to continuous and frequent repair. This cable was, however, maintained in service and with the improvements in technology its useful life was extended. The inclusion of a telephony circuit in addition to the telegraph improved its utility between the islands, although it was not possible to extend telephony over the Guernsey to the UK section.

Eventually it was decided that a new cable would be necessary. In April 1938 the provision of a new coaxial cable was approved. The cable laying began in August and the sea sections were completed by early September. Further civil works were required to connect the cable from the shore cable huts to the main termination equipment. The Guernsey cable transited the island from l'Ancrese Bay to Saints Bay via the States' exchange at St Peter Port. This work was not completed until 1939.

In February 1939 a prolonged outage of the cable resulted in disruption of the Creed Direct teleprinter service to the local newspaper offices. The GPO engineers set up a temporary service using one of the wireless telephone circuits at Fort George. This circuit was further extended to Jersey using the newly completed land sections in both islands. This circuit used only the voice frequency capacity of the coaxial cable.

The next month the long anticipated abolition of the Cable Charge identified in Bridgeman Committee report<sup>65</sup> on the efficiency of the General Post Office as being an impediment to commercial development of the telephone system was announced. The Assistant PMG Sir Walter Wormersley declared its abolition in a speech while opening a new Head PO in Scunthorpe. During the speech he announced the investment of £4M in new underground cables and that the charge would be removed for calls to the Scottish Islands from 1 April and to the Channel Islands from 1 May. This would have a significant impact on the cost of trunk calls to and from the Channel Islands. It was in anticipation of this abolition that the GPO Engineering Department was given approval for the installation of the new cable. Table 8 illustrates the effect of this change.

Radial Distance	9am – 2pm		5am – 9am 2pm – 7pm		7pm – 5am	
	Old Rate	New Rate	Old Rate	New Rate	Old Rate	New Rate
Guernsey	1/9	1/-	1/3	9d	1/-	6d
75 – 125ml	3/3	2/-	3/-	2/-	1/9	1/-
Over 125 ml	3/9	2/6	3/6	2/6	1/9	1/-

**Table 8**

The above rates include the removal of the 1d per minute terminal charge as per the new GPO Inland Call Tariff.

<sup>65</sup> Report of Committee of Enquiry on the Post Office (1932) Cmnd 4149. (The main recommendations in this report were largely ignored until the 1960s when the Wilson government revisited the matter of incorporation of the Post Office and splitting it into separate post and telecommunications divisions.)

On 30 June 1940, the German Army occupied the Channel Islands and all telecommunication traffic northwards ceased. The cables to Pirou were cut by departing GPO engineers, but quickly repaired by the German army engineers and both them and the cables to Guernsey remained in service throughout the war carrying German military traffic.

Prior to the occupation and because of the deteriorating situation, the GPO decided to withdraw all staff from the islands, clearly such skilled workers would be of use in the war effort. However, the local authorities on both islands insisted that at least a skeleton staff remained. All installation staff and some of the local engineers were withdrawn with the exception of one engineer on each island. The staff sailed for Southampton aboard the *SS Biarritz* at 9:00am on 20 June. On 2 July an attempt to withdraw the remaining Guernsey linesman, L Le Hurray, was made by an RAF speedboat supported four *Blenheim* aircraft, but because of reports of German strafing the officer making representations to the Bailiff for the staff release was forced to withdraw without success. Two of the escorting aircraft were lost in the attempt. The linesman remaining in Jersey was Mr P G Warder.