

# NOVA SCOTIA'S FIRST TELE- GRAPH SYSTEM

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ONE of the secrets of French success in the so-called Napoleonic Wars was a system of visual telegraphy developed by Claude and Ignace Chappe and adopted by the National Assembly in 1792. In 1793 Claude Chappe was made *ingenieur-telegraphe*, and the system was extended all over France and in later years across Europe in the wake of the conquering French armies. It was what we should call nowadays a semaphore system, each station consisting of an upright post with a cross-piece on which two revolving arms could be fixed in certain positions. The stations were placed on hills, each visible by telescope from the other, and it was claimed that a brief message could be sent 150 miles in 15 minutes.

In Britain it was soon known that the French possessed a rapid telegraph system and efforts were made to develop one in southern England, chiefly for Admiralty use. Up to this time visual signalling had been more or less confined to ships at sea. About the year 1780 Admiral Kempenfelt had introduced a code of flag signals by which a whole message could be transmitted. It was crude and unsatisfactory in many ways, but after Kempenfelt's tragic death in 1782 other naval officers worked on the problem, notably R. Hall Gower and Home Popham. About the year 1801 Sir Home Popham produced a code of flag signals that was formally adopted by the Admiralty in 1803, and it was Popham's code, still comparatively new, that Nelson used to convey his famous signal at Trafalgar.

In Britain itself little or nothing had been done to improve upon the ancient system of beacon fires until the French produced their semaphore telegraph in 1792. In 1793 Lord George Murray brought to England a Swedish invention that was modified and put into use by the Admiralty between London and the south coast ports. Each station consisted of six large shutters, hung in a frame upon a hilltop or a windmill or some other prominent feature of the landscape, the shutters being turned by pulleys connected with cranks below, so that they might present their whole surface or only an edge to view. This machine was capable of making 63 distinct signals and was readily adapted to the use of the alphabet. The Admiralty used this shutter system until 1816, when the indefatigable

Popham devised what he called the Semaphore System, modelled on that of the French; and the Admiralty used Popham's semaphore from 1816 until the electric telegraph was perfected in the 1850's.

But in the meantime, indeed while the Admiralty was still experimenting with Murray's Swedish shutters, an efficient and rapid system of visual telegraphy had been devised and installed in Nova Scotia, on the far side of the Atlantic. Its inventor remains unknown, but its builder was none other than Prince Edward, Duke of Kent, at that time commanding the forces in Nova Scotia, and chiefly known in history as the father of Queen Victoria. For at least two years his telegraph was in active use between Halifax and Annapolis, a distance of 130 miles, and the system was in course of extension around the Bay of Fundy and up the St. John valley to Fredericton when Prince Edward withdrew to England and the scheme fell through. Had he remained in North America it was his evident intention to continue the line to Quebec and perhaps beyond, where it would have made an important difference to the lonely British struggles in Upper Canada during the War of 1812. But that was not to be.

From an early time in Halifax there had been a flag-signal on Thrum Cap, near the harbor mouth, to announce the approach of ships. But this was superseded, with a great many other things, after the energetic and ambitious military son of George 3rd, Prince Edward, arrived in Halifax in the spring of 1794 and took command of the garrison. At once he began to extend and improve the fortifications of the port. The efforts of the regular troops with pick and shovel were not enough to satisfy him, and from time to time large bodies of the provincial militia were summoned to assist in the work. Citadel Hill he made into a real citadel of hewn stone and mortar, comparable with that of Quebec, where he had spent four years; and amongst other works in the outlying wilderness he built a fort on the steep bluff opposite McNab's Island, calling it York Redoubt in honor of his brother, the Duke of York, newly appointed Commander-in-Chief of the British Army.

Until this time there appears to have been no military station on the west side of the harbor mouth except a small observation post on the hill above Portuguese Cove, just inside Chebucto Head. (This post seems to have been established during the American Revolution. Coins bearing dates as far back as 1775 have been found on the site. When I was a wire-

less operator in the station there in 1922 a fisherman dug up in his garden a cross-belt plate of the 17th Foot, which was stationed at Halifax from 1783 to 1786.)

The unbroken tide of French victory rolled across Europe all through 1795, '96 and '97; there appeared no limit to French military ambition, personified in the invincible young general Buonaparte. Prince Edward, acutely conscious of his responsibilities as C-in-C, Nova Scotia, and dreaming always of military glory, became obsessed with the notion that a great French fleet and army sooner or later would descend upon Nova Scotia intent upon the recovery of the old French possessions in Canada. He had once commanded Gibraltar, and now he saw himself as another Heathfield, sustaining a famous siege in this outpost of Canada. His eager mind buzzed with schemes, and from 1794 to 1800 the rocky forest towards the harbor mouth rang with the exertions of his troops.

The importance of quick communication between the outposts and Halifax citadel impressed him from the beginning. There was no practicable road to the harbor mouth. York Redoubt was separated from the Citadel by the north-west arm of Halifax harbor and four straight miles of rocky bluffs and scrub forest. The only communication was by boat—much too slow. Yet at four miles York Redoubt was easily visible from the Citadel, and at six miles more the post at Portuguese Cove was in clear sight of York Redoubt. That the French had some sort of visual telegraph was well known to the British staff, and Prince Edward ordered his engineers to devise a system for the Halifax forts. How soon they succeeded we do not know. We do know that the system was working between York Redoubt and Halifax dockyard in November, 1797, for in that month the frigate *Tribune* was wrecked in the harbor entrance under the very nose of Sir Brenton Halliburton, at that time a subaltern commanding the post at York Redoubt, and that alert young officer communicated news of the tragedy to Halifax, together with a request for help from the dockyard, by means of "the signal staff" at the redoubt.

Apparently the outlying signal station at Portuguese Cove was then under construction, for upon completion it was given the name of Camperdown in honor of Admiral Duncan's famous victory over the Dutch in October, 1797, the news of which could not have reached Halifax much before the New Year of 1798. By the fortunes of war and peace the Camperdown signal station survived—indeed remained in use—until about 1925.

When I was stationed at Portuguese Cove in the radio service in 1922 the old signal station on the hill was still manned by a detail from the Halifax garrison, a corporal and three signallers of the Royal Canadian Regiment, who maintained a watch in the tower during the daylight hours, reporting the passage of ships in and out by means of a military telephone line direct to Citadel Hill. Soon after this the garrison ceased to man the post; in fact, it was abandoned in a spasm of post-war economy along with the small wireless station on the lower shoulder of the hill, and when I re-visited the spot in the early 1930's both buildings were falling into ruin. During the war 1939-45 all trace of these old buildings vanished, and Camperdown hill was covered with an extensive modern signal station, radio and visual, with attendant barracks, store-sheds, and so on.

In the spring and summer of 1922 I had many opportunities to examine the ancient military signal station, and I still have a snapshot of the building with a fellow wireless operator and one of the army personnel standing on the signal platform. At that time the villagers of Portuguese Cove said the building was "well over a hundred years old" and that it was "built in one of the old-time wars."

It consisted of a narrow rectangular wooden barrack about 50 feet long, with a smaller annex jutting at right angles from the rear and thus forming a short-stemmed T with the main structure. These buildings were single storey with steep hipped roofs. Upon these roofs, centering exactly where they joined, rested a stout wooden platform about 25 feet square, and in the middle of this platform stood a sexangular watch-cabin, reached by an outside stairway. The cabin had a window in each of its six sides, and each window consisted of six square panes. The average diameter of the cabin was about 15 feet, but much of the interior was taken up by a huge chimney, 4 feet square, which passed straight up from the lower quarters, through the platform, through the cabin and finally protruded four or five feet above the steep six-sided roof of the cabin itself.

From the ground to the chimney top was about forty feet. The whole structure was shingled and painted white. The interior walls of the barrack room were covered with thick and very hard plaster or mortar of the 18th century sort, upon which were scratched the names of bygone soldiers, nearly all rendered illegible by successive coats of limewash. In my time the soldiers lived in the spacious barrack-room, took turns at cooking in the kitchen-annex, and thoroughly enjoyed their

freedom from drills and parades, as I daresay their predecessors had done, all the way back to 1798.

At that time (1798) Prince Edward was living with his French-Canadian mistress, Alphonsine Therese Bernadine Julie de Montgenet de Saint Laurent, Baronne de Fortisson (usually known as Madame St. Laurent) in the elaborate love-nest he had built on Bedford Basin, a good six miles outside the town of Halifax along the Great West Road. He travelled back and forth by horseback and in winter turned out the whole garrison to shovel the snowdrifts along the way, but the establishment of the signal system, with a station on the hill above his lodge, enabled him to keep in close and constant touch with the citadel and outposts while spending pleasant hours in the company of his *chère amie*. And it must have been about this time (the spring of 1798) that he declared in a despatch to London, "A telegraph has also been fixed upon and brought so far to perfection that I am enabled from Citadel Hill by means of it to give orders to the different outposts . . . every exertion has been made to guard against surprise."

In August, 1798, Prince Edward was thrown from his horse in Halifax and suffered an injured leg. The injury was not serious, but he deemed it a good excuse to go home to England in order to press his claims for a parliamentary grant, a title in the peerage, and the post of Commander-in-Chief, North America. In October he sailed with Madame for England, generously turning over the lodge at Bedford Basin to Lieutenant-Governor Sir John Wentworth and his lady—whose modest country lodge had occupied the site in the first place.

How far the Prince's chain of telegraphs had proceeded before cold weather and snow stopped the work for the season we do not know. In April 1799 we find Wentworth urging the building of a new government house, stating that the old one was unfit for use and that of necessity he was living at the Bedford Basin lodge, adding carefully that he could be informed of any occurrence in the town in five minutes by telegraph. He does not mention the fact that the Prince had left orders to extend the telegraph along the Great West Road towards Windsor, although by April the labor must have been resumed.

It was a Herculean job. The road from Bedford Basin to Windsor does not pass many solitary hills of the sort required to give an unobstructed view in both directions. Rather it is rolling country, a succession of low ridges, in those days covered

with tall virgin forest. It was necessary to cut long avenues through the trees in many places to provide such a view. The reports of the engineer who later carried the line up the St. John valley show that signalling distances up to 17 miles were contemplated, but he makes clear that the average was only 7 miles.

There must have been at least six, and probably more signal stations between the Bedford Basin shore and Windsor, with long sections of forest to be cleared, and at each of these places there was a small barrack and tower to be erected, with its important mast and yard-arms, and a party of military signallers installed with their stores and equipment. Of course there was plenty of labor available. The garrison of Halifax in the spring of 1799 consisted of the Prince's own 7th Fusiliers, the Royal Nova Scotia Regiment, Dillon's Irish Brigade (1200 strong) and large detachments of Royal Artillery and Royal Engineers. In addition to these there were the periodical assemblies of provincial militia, and finally there were hundreds of wild negro Maroons from Jamaica, brought north in '96 to keep them out of mischief and promptly put to work on the Halifax defences. It would be interesting to know how many of these troops were employed in cutting the line and building that chain of telegraph stations at such speed that the whole would be in working order by the time the Prince returned. He was a terrible disciplinarian, sparing neither the whip nor the hang-rope, capable of making or breaking an officer at his pleasure, and so his slightest whim was law, to be carried out with the utmost speed and efficiency.

When the Prince arrived off Chebucto Head in H. M. frigate "Arethusa" on September 6th, the news was signalled from Camperdown to the Citadel, and thence to the Bedford Basin lodge (where it must have set Sir John and his lady packing in a hurry!) and so on along the Great West Road. The signalling apparatus at each station consisted of a mast and yard-arms, on which were hoisted flags, pennants, black wicker-work balls and drums in various combinations. (For night signalling, lanterns were hoisted.) We are told that word of the Prince's arrival was sent to Windsor in less than twenty minutes. If so, it must have been a pre-arranged message, communicated by the hoisting of a single code signal, for we must consider that there were at least nine stations between Chebucto Head and Windsor, each of which had to read the signal from its south-easterly neighbor and pass it on to the next,

fastening into the halliards the necessary flags and pennants, or the big unwieldy wicker balls and drums, and hoisting them up to the yard-arms. Each of these signals had to be read at a distance of several miles by telescope, and acknowledged by hoisting a "Received" signal, before it could be relayed to the next station. Considering these circumstances it must have taken a good five minutes to transmit the simplest sentence from one station to the next—a good three-quarters of an hour from Chebucto Head to Windsor. And all of this would depend on the visibility and on the strength and direction of the wind between any two stations. For good signalling the air had to be clear and the sun well up, and the wind had to have the right force to stretch out the flags and the right direction to keep them stretched at a broad angle to the receiving station.

The Prince arrived in triumph. He had his parliamentary grant, his peerage—he was to be known henceforth as the Duke of Kent—and his long-sought command of British forces in North America. Also he had (or thought he had) *carte blanche* for further military expenditures. Said Wentworth in a letter written at this time, "The Duke of Kent has entered upon his command with infinite activity and ideas extremely enlarged since his departure from hence. The arrangement in contemplation promises a plenteous circulation of money and improvement to this province. He is now residing chiefly at my house near town (i.e. the Bedford Basin lodge) which he has requested to re-occupy."

The full scope of these extremely enlarged ideas we do not know, but one of them certainly was the extension of his telegraph beyond all previous imagination. In view of his new responsibilities as C-in-C, North America, the Duke had determined not merely to complete his original project, a line to Annapolis, but to carry the telegraph around the Bay of Fundy, along the shore to Saint John, up the river to Fredericton and thence to Quebec. By November 1799 the telegraph had reached Annapolis, for on the 25th of that month we find Simeon Perkins recording in his diary that news of peace with France (the news was false, incidentally) had reached Halifax by the packet from England, and had been sent from Halifax to Annapolis in six hours by "telegraph". Note the time taken—six hours to send a message 130 miles. November with its rains and fogs is a trying month for signallers.

The Duke was delighted with his new toy, and he kept

it busy. At the age of 32 he was tall and athletic, a keen horseman, a most zealous soldier. Amongst other activities he made a mid-winter journey to Annapolis and stayed some time at Fort Anne, receiving a stream of reports by telegraph from Halifax and sending a stream of orders in return. On February 3rd, 1800, Captain Lyman wrote from Halifax to his friend Edward Winslow: "The Duke returned on Saturday. I am told they have established telegraphs all the way to Annapolis so that there was a continual communication of orders and counter orders while he was away, even to the approval of courts martial and ordering men to be flogged. I was at the barracks and out of the window I saw preparations that I did not understand. Expressing my surprise at it during the Duke's absence, I was told the men were to be flogged by Telegraph. So though the Duke was a hundred miles off he was still acquainted with what was going on and giving orders the same as usual. You will have this mode of communication all the way to Fredericton very soon. I hear it is to be communicated across from the high grounds back of Cornwallis to the Isle of Haut, thence towards Pleasant Valley (i.e. Sussex Vale). I suppose our friend Leonard will have one atop his windmill."

It had been a comparatively simple matter to carry the telegraph along the Great West Road from Halifax to Windsor and Annapolis, but when the soldiers began the branch line from Windsor towards New Brunswick they entered upon an almost trackless wilderness. On May 31st, 1800, Lieutenant Clements wrote from Sussex Vale to the officer commanding the Royal New Brunswick Regiment: "Sir, on the evening of the 29th inst. Sergeant McFarling arrived at this place from Cape Chignecto, where he left Mr. Schwartz with his party erecting the Telegraph and necessary buildings at that place. Schwartz expects the officer commanding the detachment has every necessary implement (such as glasses, axes, compasses, spades, pickaxes) for forwarding the erection of the Telegraph from Martin's Head (the high land on this side the bay) to Sussex Vale, tho' at the same time don't appear to be aware of the difficulty in transporting those things 20 miles through a wild and woody country. I shall endeavor to get a few axes at this place and send Sergeant McFarling with a party to commence clearing the gap that may be necessary, without which you will not be able to see across the Bay at that place, the distance being seventeen miles."

And so the work went on. Apparently the chain of stations



was completed to Fredericton, for several places on the route bear the name of Telegraph Hill to this day; but whether or not the line was actually operated in New Brunswick remains an open question. Dr. Clarence Webster thinks it was not. Certainly the section between Windsor and Saint John, including the leap across the upper end of Fundy Bay, proved utterly impracticable because the impetuous Duke had not reckoned with the famous Fundy fogs. Apart from this, the garrison of New Brunswick at this time consisted of 290 men of the Royal New Brunswick Regiment, and as the operation and maintenance of the chain required an average of ten men per station, and there were nine stations on the stretch from Saint John to Fredericton alone, Governor Carleton of New Brunswick could not have manned them without abandoning some of the most important posts in the province.

But now the Duke's ambitions took another turn. About the time that Lieutenant Clements was writing his glum letter to Major Murray, the Duke of Kent was writing (or rather one of his six hard-driven secretaries was writing) a surprising letter to England. Edward had entertained hopes of being appointed Governor-General, as well as C-in-C of British North America, but these hopes had been dashed. But now, early in 1800, hearing of the proposed union with Ireland, and fancying the post of C-in-C there, he dashed off a letter to London asking to be recalled for the benefit of his health. He had no injured leg this time, but he discovered a convenient biliousness, "brought on by application to business, which had deprived him of exercise." The summer was well advanced before he received the wished-for recall, and on August 3rd he departed with Madame, amid great pomp and ceremony, leaving eleven of his soldiers under sentence of death for mutiny and desertion.

The Duke of Kent did not get the appointment in Ireland. He was kept cooling his ambitious heels in England until the spring of 1802, when he was appointed Governor of Gibraltar, a post he had held before coming to Canada in 1791. The old king, having in mind Edward's lavish military expenditures in Nova Scotia, said to him on departure, "Now, sir, when you go to Gibraltar do not make such a trade of it as when you went to Halifax!"

During this idle period in England the Duke retained his post as C-in-C, North America, and his orders regarding the telegraph remained in effect, but in the meantime something

occurred to blight the whole ambitious scheme. In October, 1801, an armistice was arranged with France, and peace was confirmed in the spring of 1802. The Duke's expenditures in Nova Scotia had appalled the British government no less than his father, and they made haste to cut his trans-Atlantic enterprises to the bone. In Halifax alone three whole regiments were disbanded and the bristling forts were left with little more than a corporal's guard. As for New Brunswick, Governor Carleton already had come to the conclusion that operation of the Duke's telegraph line was impossible, and in a despatch dated February 10th, 1802, he gave some blunt reasons:

As regards establishing telegraphic communication from Saint John to Fredericton, and on the coast at Cape Musquash, Point LePro and on the southern Wolf, the orders of His Royal Highness (cannot be carried out) because the fogs in the Bay of Fundy during the principal part of the summer are so thick and impenetrable that objects cannot be discovered even at a very small distance. Nine stations are required from Saint John to Fredericton, most of these on heights difficult of access and not cleared. It was necessary to clear away places for erecting the buildings and also to open view through the forest. A hundred men (at least) would be required to attend such a chain of telegraphs. The telegraphic stations are far apart. Some of them were fixed on prominences in the Bay formed entirely of rocks. From these inhospitable spots it would have been impossible to prevent desertions, especially as American vessels are constantly fishing in the Bay and might take them off with the utmost facility. An instance of this kind happened on the coast of Nova Scotia with a sergeant and party of the 66th Regiment in July, 1800, who were never recovered.

Some of the "inhospitable spots" about the Bay of Fundy, mentioned by Carleton, are set forth in a report by Captain Bartlett of the Royal Engineers, dated July 19th, 1800: "General Carleton wishes to know the distance of the different stations. From Partridge Island to the high ground near Mispec, 4 miles; from the high ground near Mispec to Cape Musquash, 12½ miles; from Cape Musquash to Point LePro, 13 miles; from Point LePro to the south end of the southern Wolf (the best situation for a lookout down the Bay) is 17 miles. The land at Point LePro is very low, and on the Wolf too low for the distance."

After 1802 a cloud of mystery as impenetrable as the Fundy fog descends upon the Duke's great telegraph system. Its operation beyond Bedford Basin must have been abandoned when the troops were disbanded in the spring and summer of

1802. But why, when the war with France was resumed in May, 1803, were the stations not manned again! If they were, there is no account of it. Yet there stood the chain, built at great cost, and despite the missing Fundy link an asset of military importance; for a fast sloop could carry a message swiftly from Annapolis across to Saint John, where the telegraph resumed its course to Fredericton. Of course as we know, and as the British government saw in 1802, the Duke's notion of a French invasion of Canada via Nova Scotia was absurd so long as Nelson and his immortal "band of brothers" kept the sea. But as we know, and as the British government failed to see in 1803, a telegraph between Halifax and Quebec was of vital importance to the defence of Canada in the event of the United States entering the war on the side of Napoleon, as they did in 1812. But by 1812 the stations had fallen into disrepair, the long avenues in the forest were choked with new growth, and the corps of expert signallers had vanished. Britain, locked in the death struggle with Napoleon, could afford neither the troops nor the money to rehabilitate the Duke's great scheme.

For it *was* a great scheme. With all his faults the young Duke was a keen soldier, and his plan of a telegraph to Quebec was far in advance of its time. His was the first real telegraph system in America, where (apart from local telegraphs at the seaports) nothing like it was attempted until Morse perfected the electric telegraph in the 1850's. So far as we know, none of the Duke's signal stations remained in use after 1803 except the original ones at Halifax—Camperdown, York Redoubt, Citadel and Dockyard—which continued for many years. When Charles Powell began to publish a newspaper in July, 1807, he gave it a significant name, the *Halifax Telegraph*, and there is good evidence in the shipping reports of other journals that the visual telegraph between the Citadel and the harbor mouth remained in use until Morse's invention killed it with a tingle of electricity. Even then, the Camperdown station remained in service as a signal post down to 1922 (as I have pointed out).

Unfortunately for history, the Duke's telegraph was a military secret, and all we know about it must be gleaned from the chance observations of a few civilians at the time and a mention or two in military letters. It would be interesting to know what code the Duke's engineers worked out for telegraphic use by

day and by night. We should like to know who actually devised the system—was it Captain Bartlett of the Royal Engineers, who apparently had charge of its erection? We should like to know exactly where the up-country stations were, for antiquarian research on the spot. The answer to these and many other questions must repose in the vast files of the War Office in London, where some day they will be found and made known.