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The Peculiar Case of the Electric Constable

A True Tale of Passion, Poison & Pursuit

Written by Carol Baxter

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The

PECULIAR CASE

of the

ELECTRIC CONSTABLE



A TRUE TALE OF PASSION, POISON & PURSUIT

Carol Baxter



O N E W O R L D

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Really, sir, you cannot be serious in proposing to stop the escape of a thief or swindler by so small an electric spark acting on a needle. If you had talked of sending a thunderbolt or flash of lightning after him, I might have thought there was some feasibility in it.

Sceptic to would-be electric telegraph inventor
Edward Davy, 1830s, quoted in J.J. Fahie's *A
History of Electric Telegraphy* (1884)

PROLOGUE



Of all the physical agents discovered by modern scientific research, the most fertile in its subserviency to the arts of life is incontestably electricity, and of all the applications of this subtle agent, that which is transcendently the most admirable in its effects, the most astonishing in its results, and the most important in its influence upon the social relations of mankind and upon the spread of civilisation and the diffusion of knowledge, is the Electric Telegraph.

Dr Lardner,
The Electric Telegraph (1867)

EVERY NIGHT, as the clock strikes midnight, a new date emerges from the wings, initially blind to the events that will transpire as the next twenty-four hours unfold, the events that will mark its place in history. Most days pass by unnoticed or are soon forgotten – in a particular locality, at least. Yet pluck any date from the historical calendar and somewhere on the world's stage something momentous happened. Perhaps it had long been marked for glory. Perhaps it exploded cataclysmically into view. Often, though, while seeming inconsequential at the time, its importance is recognised only when history's binoculars are refocused on that particular stage.

Tuesday, 25 July 1837 was a date that Britain's Professor Charles Wheatstone was hoping would in time be celebrated

in the history books. It was late in the evening when he entered the carriage shed at Euston Station, the terminus of the London and Birmingham Railway then under construction. Hammering had ceased in time for the station's ceremonious opening five days earlier, an occasion already marked for posterity. Yet, despite the current lack of ceremony and the dingy surroundings, Wheatstone believed that this date would be of far greater importance – if all went according to plan.

Small and slight, curly-headed, bespectacled and excruciatingly shy: the mould of the eccentric scientist might have been fashioned with Wheatstone in mind. He had long been fascinated by the workings of musical instruments and by acoustics, optics and electricity, and his inquisitive mind had led him to experiment with the possibilities of a communication system driven by electricity – a so-called 'electric telegraph'.

By the flickering light of a tallow candle, Wheatstone could see his recently patented electric telegraph machine squatting on the table in front of him. The model had a simple four-needle display that allowed only twelve letters to be indicated. Its 'clock face' was a diamond-shaped grid, with lines heading north-east and north-west from each of the four needle bases that were positioned across a central horizontal axis. When two needles were simultaneously tilted towards each other at a forty-five degree angle from the vertical, they pointed along these lines towards a junction at which a letter was inscribed. To each needle was attached a single wire along which the electric current would pass. The wires trailed from the machine and became part of a thirteen-mile circuit wrapped around a frame sitting in the carriage shed, before heading out the door and disappearing into the shadows.

Wheatstone made a last-minute check – all the wires were securely fastened to needles, all the needles moving freely – like

a teacher anxious for his prize student to shine. He then lifted his hands to the machine's controls and deflected the two needles that would signal the first letter. Obliging, the machine began transmitting his message.

A mile-and-a-half away in the winding-engine house at Camden Town sat his partner, William Fothergill Cooke, facing an identical instrument. An impecunious ex-military officer, Cooke was desperate to make money – lots of money – and had seen the commercial potential of an electric telegraph machine. Energetic and resourceful, he had the personality necessary to attract business but lacked the scientific know-how to construct a telegraph efficient enough to appeal to customers. He had approached the celebrated Professor Wheatstone for assistance.

Cooke's passion and practicality galvanised Wheatstone. Although foresighted enough to have taken out patents for some of his inventions, Wheatstone had always prided himself on being a man of science rather than an entrepreneur – until this visionary Gilbert encountered his pragmatic Sullivan. The pair imagined wires crisscrossing the countryside, with vast distances conquered in a fraction of a second but, thus far, the electric telegraph had been dismissed as just another 'newfangled thing'. Cooke, however, had identified an ideal customer for their instrument: the railways. Not only would the telegraph allow speedy inter-station communication, it could be constructed to run beside the railway tracks – an exquisitely efficient coupling.

The railways were suffering their own teething problems. Railway mania had gripped the nation after the Liverpool and Manchester line opened in 1830, but serious safety issues had yet to be resolved. A speeding train had little warning of trouble ahead. Departures were scheduled using a simple time-interval system. Train drivers had to rely upon vigilance and the occasional railway policeman stationed along the route to

run the tracks safely. Even greater vigilance was required when both the up-and-down trains used a single, meandering track. In darkness, storms or fog, the lack of an adequate warning system had proved deadly.

It was a business problem in need of an enterprising solution and Wheatstone and Cooke were keen to display their system. Cooke was not alone when he waited at Camden Town on the evening of 25 July. The Railway's chief engineers, Robert 'the Rocket' Stephenson and Charles Fox, were standing by his side. Stephenson was the son of George Stephenson, also known as the Father of the Railways, while Charles Fox would go on to construct the majestic Crystal Palace. They were accustomed to scrutinising rough prototypes and seeing the future in all its glory.

All of a sudden, two of the needles on Cooke's machine clicked and tilted. A message was coming through. Cooke read out the letter and an assistant jotted it down. Again the needles clicked and tilted, and again. When the message was completed, Cooke clicked out a reply which travelled back along the nineteen miles of wires to Euston where Wheatstone was awaiting his response.

Stephenson was delighted. 'Bravo!' he cried. 'Bravo!' He asked Cooke to send his message of exaltation down the wires – not once but twice. Backwards and forwards the messages zipped until Stephenson asked Cooke to invite his partner to join them at Camden Town.

'I will do myself the honor,' Wheatstone messaged back. Later he would write: 'Never did I feel such a tumultuous sensation before as when all alone in the still room I heard the needles click. As I spelled the words I felt all the magnitude of the invention now proved to be practicable beyond cavil or dispute.'

The world's first patented electric telegraph machine had just passed its first long-distance test. Not only had Wheatstone and Cooke proved that words could be communicated along a nineteen-mile stretch of wire at astounding speed, they had harnessed as their energy source the power of 'God's lightning', as 'electricity' was known in their day. In doing so, they had also proved that electricity could be mobilised at will and had a practical, commercial use. It was an historic moment.

But these four men were ahead of their time. Convincing the remaining London and Birmingham Railway directors would not prove so easy – indeed, the wires would later be abandoned because the directors deemed the system a flight of fancy and too costly to install across the entire network. Convincing the public would prove even harder. Until one fateful day seven-and-a-half years later ...



A steam-driven passenger train? An electric telegraph? Spare a moment to reflect upon these wonders of human achievement. With blithe smugness, we tend to dismiss the feats of the past. What's a track-hugging steam train when spacecraft blast through the universe? What's a mile-long stretch of telegraph wires when radio waves whisper to a billion computers around the globe and beyond?

Yet it wasn't so long ago that trains and telegraphs were themselves merely the dreams of glazed-eyed seers and woolly bearded prophets, as unrealistic as discovering the elixir of life. Of course, humans have long employed transportation of one form or another, and communication systems beyond the spoken word: drums that hypnotically enticed men into battle, fire and smoke signals that heralded danger, flashing shields and mirrors, coloured flags, simple pieces of inscribed parchment

carried by the fleet of foot or by messengers on horseback. For millennia, however, little changed. No new pathways were forged.

The first inkling of progress came in the 1740s when, among others, the French *abbé* Jean-Antoine Nollet tested a recent invention known as the Leyden jar – a primitive condenser that stored static electricity, the type of electricity generated by scuffing feet along carpet. After positioning two hundred Carthusian monks in a huge circle and threading a mile-long piece of iron-wire between their outstretched hands, he discharged his Leyden jar into one end of the wire. As the monks grunted and jerked, their neat circle disintegrating, he proved that electricity could travel almost instantly along a lengthy wire. In 1753 a writer to the *Scots Magazine* proposed a communication system powered by such static electricity. Later that century, the French Chappe brothers built an experimental apparatus but found static electricity too volatile: like a deadly snake it was difficult to control and, when released, discharged its fury in one explosive surge. Instead, they introduced the word *telegraphe* or ‘distant writer’ into the lexicon through their invention of a semaphore – an optical telegraph. In a short while, it was adopted by British and European military forces, however, it too had significant limitations, particularly in darkness and inclement weather.

The problems inherent in the use of static electricity were solved around the turn of the century when Alessandro Volta invented the voltaic cell battery (similar to batteries still used today), which provided steady and controllable low voltage currents of electricity. In the decades that followed, scientists learnt more about electricity and then electro-magnetism. Each discovery pushed science along the inexorable path towards the invention of a practical and commercial use for electricity: an ‘electric telegraph’.

With communication still limited by transportation systems, terrain, visibility and the weather, life had continued to amble along as it had for millennia. News travelled slowly; decisions were made leisurely. Patience was not only a virtue but a necessity. Then, in the 1830s, the world began beating to a different, faster drum.

Initially, the quickening was infinitesimally slow, frustratingly slow for those who foresaw social metamorphosis. Yet none could have imagined that the unexpected events of one day would prove pivotal in a paradigm shift, and that these events would kick-start what we now call the Communication Revolution.

The

PECULIAR CASE

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ELECTRIC CONSTABLE

Part 1

ALARM

Such a machine reveals a new power, whose stupendous effects upon society no effort of the most vigorous imagination can anticipate.

The Times

(25 November 1837)

CHAPTER 1

*A display of brilliant electric experiments ... never fails
to afford ample gratification.*

William Sturgeon,
Lectures on Electricity (1842)



PADDINGTON STATION was the usual whirl of noise and activity on New Year's Day 1845 as travellers prepared to board the Great Western Railway's steam trains, the iron horses that thundered across the countryside westward to Bristol. Bells pealed, passengers scrambled into carriages, porters stuffed cases into luggage vans, doors clanged, flags flapped, the locomotive chugged slowly from the station, the visitors hastened from the platform, and for a moment, too short a moment, there was blessed silence ... until it all began again – just another day in one of London's modern transportation hubs, the vast cathedrals paying homage to the newly exalted gods of science and industry.

Perched atop the carriage sheds a short distance from the busy passenger platforms were the railway offices, their doors slammed shut against the insidious soot and distant noise. The first door at the top of the stairs opened into the humble abode of Thomas Home. It was a room bereft of the usual green-visored clerks scratching away at ledgers or corpulent directors breezing charm and schemes. Instead, Home stood in front of a peculiar wire-trailing contraption, peering intently at some

dials. It was his job to monitor this clock-like object which had a face unlike anything most people had seen.

Thomas Home wasn't employed by the Great Western Railway although he practically lived at Paddington Station. Chest puffing with pride, the young entrepreneur would announce to anyone who asked – and those who didn't – that he was licensee of the world's first commercial electric telegraph, a new technology that allowed instantaneous communication across great distances. Admittedly, such communication was limited by the availability of the machines and their connecting wires. His own operation had only two machines: the one he manned at Paddington Station and another manned by his brother Richard at Slough Station, eighteen miles away. The machines themselves were connected by wires strung alongside the tracks of the Great Western Railway. Messages were infrequent; nevertheless, it was their job to be ready when they did come through – even on New Year's Day.

As the clock ticked off the evening's hours, the peal of the telegraph's alarm sounded. He signalled back that he was ready then picked up a pencil and began to jot down the letters.

'A murder has just been committed ...'

In the now-ecree quietness, he read over the words. The needles kept lurching, one way then another. His brain decoded the letters while one hand flicked the necessary acknowledgements to the sender and the other raced across the page forming the new words.

'... at Salt Hill ...'

The village of Salt Hill lay about a mile west of the railway station at Slough and was policed by the local parish constabulary. Why was he being informed?

'... and the suspected murderer was seen to take a first-class ticket for London by the train which left Slough at 7.42 p.m. ...'



Murder?

Of course, Home had communicated important messages in the past. He had manned the Paddington office for twenty-three interminable days and nights prior to the birth of a royal prince at Windsor Castle five months previously – ‘a prisoner during Her Majesty’s pleasure,’ he would later quip. He had even passed on a police message: that London’s notorious pickpocket, Fiddler Dick, and his cohorts were on the train to Slough intending to ply their trade at the annual Montem Day celebrations held by exclusive Eton College. He relished the gleeful response: ‘Several of the suspected persons are lurking about Slough uttering bitter invectives against the telegraph.’ As a stepping stone in these communication streams, he felt strangely connected to the events and individuals, and rather proud and important – a pleasant change to the tedium of the daily message exchange. But to communicate information about a murder? Now that was disturbing, almost as if he carried the power of life and death in his own hands.

Like Professor Charles Wheatstone and William Fothergill Cooke, the inventors of his machine, Home had long realised that the electric telegraph’s ability to send rapid messages could offer unprecedented power to those who used it and boundless wealth to those who controlled it. Unfortunately, the world at large hadn’t quite grasped the electric telegraph’s importance. Or forked out the money to use it. To most people, it was little more than an amusing novelty – like watching circus magicians pluck pigeons from hats! True, during his one-and-a-half-year tenure as licensee, he had promoted the telegraph’s attractions as if they were worth seeing as well as using: eye-catching posters plastered to the walls of Great Western Railway stations and

in the windows of tradesmen's shops; bold advertisements in London's newspapers. He'd even financed a regiment of sandwich men whose billboard-bedecked forms trudged London's streets thrusting leaflets into the hands of passers-by. For the 'low' cost of a shilling, the leaflets grandly proclaimed, they could visit the telegraph office at Paddington and see the amazing electric telegraph in action.

The curious had come knocking. He would take them outside and point up to the wires stretching into the distance, the arteries channelling the lifeblood of this new species of communication. Then he would usher them into his office and bustle over to a bench-mounted machine, about the size of a small china cabinet. Flexing his hands slightly – an artist about to paint, a surgeon to operate – he would grab hold of the two handles and twist his wrists, showing how the left handle deflected the left needle and the right handle the right needle, and that moving the two handles produced coded letters that formed words and sentences, even paragraphs.

He would then flip the butterfly switch on the side of the instrument, changing it from telegraph to alarm, and turn one of the handles. This alerted his brother at the Slough office that a message was about to zip down the wires. When a shrill ring erupted from his own machine a moment later, he would explain to his startled guests that the alarm was meant to wake a deeply slumbering operator – although, in this instance, it was signalling Slough's readiness to receive London's message. He would flip the switch back to telegraph mode. Glancing at the words on the page in front of him, he would begin twisting the handles. Eighteen miles away at Slough, a needle would tilt and a letter form. Communication was under way.

Some found the concept confusing. One man complained that his message mustn't have been sent because the telegraph

operator was still holding the piece of paper. A woman grumbled because her bowl of special soup couldn't be sent down the wires to her sick friend.

Most of his visitors were intrigued. He'd had many proud moments as he explained its workings to inquisitive European kings and princes and to pompous British dukes and parliamentarians. The shillings had trickled in, but they were not enough, not when he was paying £170 annually for the licence to operate the telegraph. Another £170 would soon be due – a hefty investment that hadn't yet made his fortune. It would need more than the birth of a Royal babe or a few felons warned off by the Peelers before the world would truly appreciate the value of his wondrous machine. These 'singing wires' were not just a siren's lure but the future whispering its secrets. What would it take to convince everyone of its worth?

He and his governors had overcome many challenges in the seven years since the directors of the London and Birmingham Railway had spurned their system. Ever the entrepreneur, Cooke had not only approached Stephenson and Fox, he had also met with Isambard Kingdom Brunel, Chief Engineer of the Great Western Railway. At a Directors' Board Meeting, Cooke extolled the virtues of the electric telegraph, explaining how the manager of the Paddington office would be 'like a spider, live along the line'. While some of the directors laughed at the simile, the Napoleon of Engineers applauded. Brunel agreed to trial an electric telegraph along the thirteen miles of track between Paddington and West Drayton stations.

Cooke and his team of workmen pushed the insulated rope of copper wires through small-bore iron pipes and secured them to rails sitting six inches above the ground, parallel to the railway tracks. When the line was activated in July 1839, it became the world's first operational electric telegraph – God's

lightning permanently tapped and now in the hands of mere mortals.

While the railway authorities found it useful, its short distance limited its potential. Gradually, as the rubber insulation decayed and the wires shorted, the telegraph stopped working. The costs outweighed the benefits of fixing it.

In 1842, Cooke suggested extending the telegraph line to Slough, five miles further along the track from West Drayton, as Slough was a more commercially viable location because of its proximity to Windsor Castle. The Great Western Railway directors were reluctant to agree until Cooke offered to take responsibility for the telegraph's operations: he would carry railway messages for free and charge a fee to the public. Cooke reduced costs by replacing the old system with a two-needle cipher-based instrument. He pushed galvanised iron wires through glazed pottery insulators and suspended them from iron posts rammed into the ground alongside the railway tracks. He also built a telegraph cottage on a mound near the almost-completed Slough railway station. The new Paddington-to-Slough electric telegraph commenced operations in May 1843, with Thomas Home as licensee.

Although the partners had installed telegraphs along other railway lines in the intervening years, most were signalling systems that rang a warning bell or used a small vocabulary of codes; they were unable to communicate random messages. The government had at last recognised the benefits of a 'speaking' electric telegraph for military purposes and in August 1844, in partnership with the London and South Western Railway Company, contracted Cooke and Wheatstone to string a private telegraph line from the Admiralty Office in Whitehall to the naval headquarters in Portsmouth. The pair were also promoting and patenting the electric telegraph

in Europe and planning to test a submarine cable in Swansea Bay, Wales.

Over in America, their arch rival, Samuel Morse, had constructed an experimental telegraph line between Washington, DC, and Baltimore. He successfully sent his first message – ‘What God hath wrought’ – in May 1844, and other messages on special occasions in the months that followed. Many would later honour Morse as the Father of the Electric Telegraph, conveniently ignoring the fact that Wheatstone and Cooke had the first electric telegraph patent as well as years of commercial operations before Morse’s evocative yet tardy message was sent. When the new year dawned on 1 January 1845, the eighteen-mile stretch between Paddington and Slough still remained the world’s only ‘speaking’ electric telegraph in regular use, the only ‘wires’ that at a moment’s notice were capable of sending a detailed message of warning that could outpace a train and outrace a fugitive.



Thomas Home glanced at a nearby clock. The second hand jerked inexorably onwards. The telegraph message had said that the murder suspect’s train left Slough at 7.42 p.m. It would reach Paddington in less than half an hour.

The message hadn’t finished. ‘... He is in the garb of a kwaker,’ it continued, the left needle moving once to the right to indicate that the word was completed.

Home hesitated then flicked the left needle twice to the right, twice to the left. ‘No,’ he was telling his brother in Slough. ‘I don’t understand the word.’

‘k-w-a-k-e-r,’ his brother signalled back.

‘Kwaker?’ Home mouthed. Of course. The two-needle telegraph didn’t include all twenty-six letters of the English alphabet, and contained no code for the letter ‘q’ despite the

fact that their ruler was a queen. His brother was reporting that the suspect was dressed in the distinctive, old-fashioned attire of the supremely respectable and conservative Quaker religious movement. Home deflected the needle twice to the left, twice to the right to acknowledge that he understood. The needles continued to click as more details came through.



Home dashed out of his room and into the office of Deputy Superintendent De May, the man in charge of Paddington railway station that evening. De May read Home's scrawl then sent for Sergeant William Williams of the Great Western Railway Police.

The 7.42 from Slough was due at 8.20. They had little time. They had to make plans. The message didn't order them to apprehend the 'kwaker'. That was understandable. The man was not suspected of committing a crime against railway staff or passengers. Nor had the message been dispatched by the Slough police, as far as they could tell. It simply alerted them to a suspect's presence in the train's first-class compartments and provided a description to help identify him. So that's what they would do.

Still, they mustn't risk alarming the man by showing their interest. De May and Williams were familiar faces at the railway station, and Williams was dressed in the Great Western Railway Police uniform: trousers, boots, dress coat and varnished leather top-hat modelled on the outfit worn by the London Metropolitan Police. If they were seen hovering around the first-class carriages, the suspect might notice and bolt. Thomas Home, however, was largely unknown, as he spent most of his working day closeted in his office above the carriage sheds. He would serve as lookout.

The three men hastened to the platform where a familiar rumble alerted them to the imminent arrival of the up-train from Bristol. The superintendent and sergeant found a protected spot near the station entrance. The first-class carriages were tucked behind the engine so these choice customers had the shortest distance to walk along the platform and under the arches to reach the horse and carriage-filled square. There would be little time to find their man before he blended in with the crowds entering and exiting the station. Thomas Home eased his way through the eager throng to stand right beside the tracks. The train chugged into the station and, with a final demonic scream, ground to a halt.

Home had worked at the station long enough to know the drill. The Great Western Railways' large, lofty first-class carriages were designed to resemble stagecoach compartments in order to ease the adoption of railway travel. Each carriage contained a set of isolated compartments, with two rows of seats that faced each other and doors granting its inhabitants immediate access to the platform. Home walked towards the last compartment of the second first-class carriage, where the suspect was reportedly ensconced, and opened the door as though he were an usher. Would the suspect still be on the train? There were three stations between Slough and Paddington. If the man had alighted at any of those stations ...

And disturbing his concentration was the biggest question of all. What dreadful happenings at Slough had prompted the telegraph message to be sent in the first place?