

The Police Signal Box: A 100 Year History

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Abstract

Within a few years of the invention of the telephone, many police forces around the world immediately embraced this new technology in the ever increasing fight against crime. By the turn of the 19th century police telephone boxes were appearing on the streets of cities for the use of officers and the general public. Within 40 years the UK had thousands of police boxes and telephone pillars in both cities and rural areas. Glasgow, Manchester, Edinburgh, Liverpool, Sheffield and London had a cumulative total of thousands of boxes. By the 1970s, however, the advances in telecommunications resulted in the signal boxes being surplus to police requirements and most have been removed. Notable exceptions are a few of the familiar "bluebox" style in Glasgow, and some of a different design in Edinburgh. In June 1993 the impending removal of the last 11 boxes in Glasgow was announced by Strathclyde Police and Fire Committee. In this paper we look at the history of police telephonic communications, and in particular at the creation of Glasgow's network, which was one of the largest in the UK, with 323 on-street police signal boxes.



The "bluebox" opposite the University of Strathclyde's Barony Hall. This box was moved to the Summerlee Museum in 1994.

1. Introduction

For more than 100 years efficient telecommunications has been essential for the management of an effective and responsive police force. Within 4 years of the invention of the telephone the City of Glasgow Police had lines installed to allow inter-station spoken communication. In 1891 the world's first police signal box was patented by a Glasgow fireman [19], and the installation of a network of on street police boxes was undertaken in Glasgow; these boxes would serve the city for more than 40 years. At the beginning of the 1930s many British police forces, including Glasgow, adopted the new standardised General Post Office Police Signal Box system [8]. In major cities and towns all over the UK, networks of 9 feet high boxes of the design shown in Figure 1 were installed on the streets. The purpose of the boxes was to improve the communications



Figure 1: A young lady using a Glasgow Police Box in 1931.

within the police, and also to provide a facility for the general public to access a telephone in order to contact the police, fire or ambulance service in an emergency. In the 1930s, 40s, and 50s the police boxes provided an invaluable service to the British public. Although police boxes of varying designs were adopted by cities all over the world the blue British GPO police signal box achieved worldwide fame and became instantly recognisable as a result of its use as a time and space travelling machine (the TARDIS) by the BBC television character, Dr. Who!

As police radios became portable and convenient to use in the 1950s and 1960s the use of the signal boxes for police communication was starting to decrease. The introduction of the 999 system in the late 1930s, and the increasing number of public telephone kiosks and private telephones resulted in the signal boxes no longer representing the only way for the general public to remotely contact the police. Therefore during the 1970s most of the boxes in the UK were demolished as surplus to police requirements. In Glasgow the removal of its vast network of 323 boxes was rather slower; the ex-Assistant Chief Constable Willie Ratcliffe recalls his decision in the 1950s and 1960s [15] that the boxes were still a rather useful place to keep police overcoats in case of inclement weather!

With modern radio communication and cellular telephones it is perhaps difficult for today's society to recall or conceive a time when an emergency situation had to be dealt with by running to the nearest police box, calling the police using the speakerphone, and waiting for the local police officer on his beat to respond to the red light on top of the box.

2. Early Police Telecommunications

In September of 1829 the Home Secretary Sir Robert Peel (later to be Prime Minister in 1834-5, and 1841-

6) started a formal group of men policing the streets from the lawlessness of London. The only available communication for the first police officers was a loud shout or a whistle. But before the turn of the 19th century the inventions of telegraph, followed by the telephone, radio communications and the teletypewriter would soon offer new forms of communication that the police would quickly embrace to increase their effectiveness and efficiency.

2.1 From Telegraph to Telephone 1837-1876

In 1876 the native Scotsman Alexander Graham Bell invented the telephone in the USA. The telephone was a major advancement on the telegraph system invented in 1837 by William Cooke and Charles Wheatstone, and further developed by Samuel Morse. (The purpose of the telegraph was to transmit written messages by wire using a standardised code.) The telegraph system was already widely used by the many private railway companies in the UK, when the telephone invention arrived in the UK. In 1870 Parliament transferred the operation of telegraphs from the many small private companies to the Post Office. By the mid-1880s a significant nationwide network of telegraphs had been installed in British Post Offices and around 40 million telegraphs a year were being sent.

One of the first uses of telegraph by the emergency services was in Boston in 1851 when telegraph was set up to allow fire stations to communicate and coordinate their activities. In 1878 the Glasgow Fire Brigade (then under the jurisdiction of the police) installed what is reported to be the first ever street fire alarm system consisting of 82 alarm boxes distributed throughout the city [20]. The action of pulling the box handle used telegraphy to send a signal to the fire station where the source location was identified, and a fire engine was sent in response. On arrival at the scene the fireman could plug in a morse style unit to communicate with the fire station. By the end of the century a portable phone could be plugged into the alarm boxes.

It is reported that when Bell's telephone invention arrived in Britain the General Post Office was somewhat ambivalent given their large investment in telegraph. After investigating the new invention the then Engineer-in-Chief, Richard Cullen, told a representative of Bell, that *'the possible use of the telephone appears to be even more limited than I first supposed it'*. Therefore in 1879 it was a private company and not the General Post Office that established the first public telephone service in Britain with just eight subscribers to an exchange in London! By the late 19th century the larger private telephone companies had amalgamated to form the National Telephone Company which remained in control of the country's telecommunications until 1911 when the General Post Office took over the 1565 exchanges that had been established nationwide [17].

2.2 The First Police Telephones - 1877

Within a year of its invention, the first police telephones were installed in Albany, New York, USA in 1877. Five telephones were used to communicate from the Mayor's office to the 5 city districts [5]. Other American cities such as Detroit and Chicago also installed a few inter-station telephones in 1880. By 1883, the Gamewell Company in the USA, had developed a call box (or post) that could be used by both the police and the public and was sufficiently robust to be placed on the public streets. In 1883 in Washington, D.C. the world's first call boxes were connected to the fire department and later to the police headquarters and one year later in 1884, Chicago and Detroit had both installed call box systems. In 1883 the Boston Police decided against adopting a call box system. Aside from the installation expense of \$100,000, and the yearly running costs of more than \$10,000 it was the opinion of the city's aldermen that Boston had an adequate police force compared to *"wicked Chicago"*, where a system was already in operation. By 1885 however the Board of Police in Boston decided to test out a signal system using the Gamewell system, and also another from a local company called the Municipal Signal Company of Boston. By 1886 the systems were considered to be a resounding success, and the city continued to expand the network.

Today in both Washington and Boston, many street corners in the old parts of the cities still have original call boxes standing, although not operational.

2.3 The Chicago Police Signal Box System

Within a few years of its invention, the Chicago Police installed a network of on-street call boxes. The were



Figure 2: The Chicago Police responding to a call for help from a police signal box (pre-1900).

two main objectives for the system: (1) to increase the rapidity and efficiency of the police assistance in cases of urgency, and (2) to reduce the number of patrolmen thus reducing overall police operational costs. As well as on-street call boxes, the Chicago Police adopted the use of sentry style boxes large enough for a police officer and a prisoner [21]. Police officers had a police-only key for the system, and certain trusted private citizens living near the boxes were trusted with special citizens keys which were all individually numbered. Although the citizen's keys would allow access inside the box, the key could not be removed from the lock until a police officer arrived thus allowing the alarm raiser to be identified. At central police stations in communication with the police signal (or sentry) boxes, three men, and a horse and wagon were kept in reserve. The wagon also carried a litter, bed, bed clothes and necessary articles for taking care a sick or injured person. Figure 2 shows the Chicago Police responding to a call for help from the an injured member of the public.

Inside the Chicago style sentry box there was a telephone for use by the police only, and also a dial mechanism which was for the use of the private citizen. The dial could transmit eleven different signals to the central station by placing a pointer upon the number indicating the nature of the alarm to be given. The eleven signals were:

- | | |
|--------------------------|-----------------------------|
| 1. Police Wagon Required | 7. Accident |
| 2. Thieves | 8. Violation city ordinance |
| 3. Forgers | 9. Fighting |
| 4. Riot | 10. Test of Line |
| 5. Drunkard | 11. Fire |
| 6. Murder | |

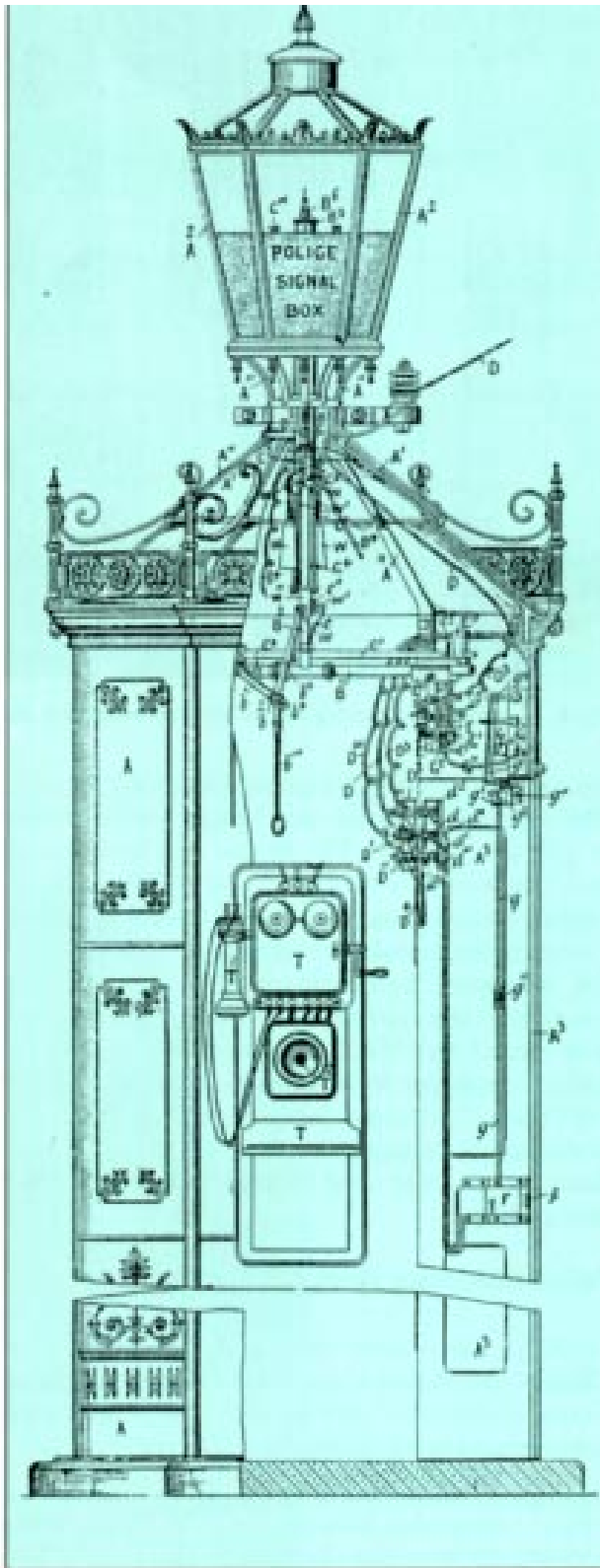


Figure 3: The UK's first patented Police Signal Box in 1891 (from Eggars original patent drawing [19]).

The transmission mechanism for the signal was morse code, which was typed on a paper tape receiver at the main police station. The Chicago police were extremely proud of their telephonic communication system and credited it with reducing on-street crime, and increasing the number of arrests.

One of the first police telephones in the UK was for the City of Glasgow Police in August 1880, when lines were introduced between the city's Western and Central police stations (a distance of about 2 miles) by the private company of Messrs Anderson and Munro [9]. A year later in 1881 the postal authorities received instructions to install a line between the Chief Constable's house and the Central Police Station. Four years later in 1886 the National Telephone Company obtained permission to link all police and fire stations in Glasgow, and the Chief Constable's house with the general telephone exchange.

2.4 The First UK Police Signal Box - 1891

The immediate success of the police telephones prompted the City of Glasgow Police to consider expanding its use of telephonic communication by introducing telephones on the streets of the city such that officers on patrol could keep in contact with the local station. The forward looking council of the day debated and subsequently approved further investigation. The first police (and fire) signal box in Glasgow can be traced back to 1891 when a local fireman, Charles Eggar was granted a patent for a police signal box [19].

The function of Eggar's new police signal box which was to provide "*communication of visible signals and establishing electrical and telephonic connection between central, town and district (police) stations*". The detailed technical plan of the police signal box is shown in Figure 3. The box itself was a cast iron structure manufactured by the MacFarlane and Co, Saracen Foundry, Glasgow. (Comparison with Figure 3 shows that the box architecture was remarkably similar to the Chicago pre-1900 signal box.) By the end of the 19th century MacFarlane and Co were one of the world's foremost companies for producing ornate iron structures in places as far afield as New York, and Raffles Hotel in Singapore. It would appear from the MacFarlane catalogues of 1890, that the hexagonal police signal box design was very similar to an on-street men's urinal then available from the company! Inside the signal box was an intricate setup of gas light fittings, electromagnetic coils,

levers, pulleys, and of course telecommunication equipment.

There were two main objectives of the signal box: (1) for a police officer to contact the station using the telephone; and (2) for the station to contact the police officer by means of illuminating the gas light on top of the box to indicate that the officer should proceed to the box and contact the station to receive instructions. The two wire line which connected each box to the local station therefore had the dual functionality of telephone line, and signalling line. When the police station wished to contact the officer on beat they would turn a telephone crank handle in the station, which would send a current down the line which went to the coils of an electromagnet that attracted an armature to free a lever allowing a wire and pulley system loaded with hanging weights to raise up a red glass lamp shade on the top of the box (see Figure 3). At the same time the gas flow to the light will be turned on, and the gaslight was illuminated automatically from a pilot light. Thus the lamp at the top of the signal box would glow red.

On arrival at a signal box in response to the light being illuminated, the police officer would insert a "constable" key to open the box. The action of the key turning changed the electrical contacts from the signalling line, to the telephone line, and by lifting the telephone from the receiver he could now speak with the local police station. Before leaving the box, the officer would reset the red light shade which would stop the gas flow and turn the gaslight off. On locking the box, once again the actions of key turning would change the electrical contacts in order that the box was now set up for signalling. There were also special "citizen" keys which were given to certain trusted individuals who lived in the neighbourhood of the box. As well as opening the box this key would also activate the red light on top of the box to indicate to the constable that he should return to his box and assist the citizen as quickly as possible.

Within a month of the first prototype box being built, the Committee on Watching and Lighting on the 7th December 1891 stated that the committee had visited the Central Station of the Fire Brigade and there examined the "ornamental cast iron structure proposed to be used for the new "Police Signal System". At the city's Central fire station the telephonic working of the box was fully explained to the Chief Constable and the Inspector of Fires, William Paterson, who was directed by the committee to prepare a report on *"the cost of installation of fourteen of the (telephone box) structures for the (city's) districts and obtain estimates of such structures."* An estimate was duly obtained from the Glasgow Company of MacFarlane and Co. for the erection of 14 police boxes. Each box would cost £ 17 7/- 6' including erection in site, but excluding foundations and painting, which was estimated at £ 2 10/- each. The cost of apparatus and lamps was estimated at £15 for each box. The 14 cast iron boxes would therefore involve a total outlay of £500. From an estimate sent by the newly formed National Telephone Company, the annual cost of rental and maintenance of the telephone equipment would be £91. The committee duly approved the costs and the 14 boxes were erected. By 1914, Chief Constable Stevenson reported that 56 signal boxes were in use in the city's then 11 divisions.



Figure 4: The National Telephone Company's 1894 advert for the Glasgow Style Police Signal Box System.

3. Police Efficiency Through Communications

In 1931, a full 40 years after their initial introduction there were 91 of the distinctive red cast iron police signal boxes in operation, with 9 more under order (the gas light mechanism having been replaced by an electric light). Also in 1931 one of Glasgow's foremost Chief Constables, Percy Sillitoe, (later Sir Percy Sillitoe) arrived. He would spend more than 10 years in Glasgow, before moving to become Head of MI5 during the tense postwar years of Communist paranoia, and the time of the infamous British traitors, McLean and Burgess.

With Sillitoe a new era of policing came to Glasgow which would make the fullest possible use of new technology and find success in fighting crime through rigorous organisation and discipline. When Sillitoe left the Glasgow Police Force in 1942 his legacies¹ would include the new police signal box network of communication and the development and installation of the first two way mobile police wireless communication system in the UK [1] [2] [4].

A short time after beginning his new post in 1931, Chief Constable Sillitoe addressed an assembly of officers in the Glasgow City Hall. His views were blunt and to the point; the police force was far too inefficient. The ratio of crimes committed to crimes detected was low and too many officers were acting like little more than public night watchmen. There was more cooperation required between the Uniform Branch and the Criminal Investigation Department (C.I.D) and police officers were also spending too much time as pointsmen at

1. Percy Sillitoe was also widely credited with developing the black and white diced band on police hats. Although the pattern was often referred to as the Sillitoe Tartan, it is almost certain that Sillitoe was not the innovator of the pattern, which was in fact used by a number of police forces and armies around the world. Sillitoe did however popularise the design in the UK.

traffic intersections. These could easily be controlled by the new automatic traffic signals [6].

Sillitoe's audit of the Glasgow force, led him to reduce the number of divisions in the Glasgow force, and close a number of police stations. In their place a new Police Signal Box System would be introduced. From the 1st November 1932 the number of divisions in Glasgow (a city of more than 1,200,000 population in the 1930s) would be reduced from 11 to 7. More men were to be on duty between the hours of 6pm and 2am, and the three shift system then in use was, in Chief Constable Sillitoe's opinion, an inefficient use of manpower. Men would now be held at each police station, and motor cars would be provided to allow them to attend any emergencies that arose. (Within a few years of introducing the motor cars, Sillitoe would be experimenting with two way mobile radio communications [3] [6].) The reorganisation introduced by Sillitoe would save the City £28000 a year. Sillitoe suggested this money, and more, should be spent on investments in new technology:- motor cars, the latest scientific equipment, and most importantly a new signal box system.

3.1 1930s State of the Art - Police Signal Box Networks

When Chief Constable Sillitoe arrived in Glasgow, one of the first things he asked was if the city had any signal boxes. His previous post was with Sheffield where he had just ordered the installation of a new network of police signal boxes. Sillitoe was very surprised to learn that Glasgow already had a small network of red coloured, cast iron boxes. Although these boxes had served the city well for forty years and were more roomy than the new design about to be introduced, Sillitoe had decided to introduce the kiosk design which were becoming standard throughout the UK. This style of box was first introduced in London in 1929, from a design by George McKenzie Trench. The Glasgow version of the box was a slightly modified version of the London box, most notably the front doors. The new boxes would also introduce the new Ericsson Telephones Ltd equipment which allowed public access for emergency situations [10] [11].

Sillitoe's idea of the new signal boxes was to provide each constable with a miniature police station, that had direct communication, via telephone, with the divisional headquarters. Of course, the city had used police signal boxes for more than 40 years and in 1931 the City of Glasgow Police Report on Criminal Returns [1] reviewed the use of the Signal Box System of Communication:

"At the end of 1931, 91 of these boxes were in operation, while 9 more were under order. The old boxes are of rectangular form, are built of metal, and painted a bright red colour. Each box has direct telephonic communication with one or more Police Offices. Electric grills for the use of men taking their refreshments are installed in the majority of boxes. Each member of the force is supplied with a signal box key as part of the equipment and the locks are of a uniform pattern, he can gain admittance to any box at any time. Members of the public have no access to signal boxes, as such telephones are used exclusively for police purposes. Each box is fitted with one or more red lamps for the purpose of calling the attention of the police in the vicinity. These lamps, are not necessarily fixed on top of the box, some being as far as 100 yards or more distant from it. They are usually fixed on walls, or on electric or tram trolley standards, at the converging points of a number of beats, so that they may be readily seen from one or other of the various beats. The question of the public having access to the telephones in signal boxes to be erected in the outer divisions is under consideration."consideration."

3.2 The Standard Police Kiosk Design

The standard kiosk design was first introduced by Chief Constable F.J. Crowley in Newcastle in 1929. It was on a visit to this part of the country that Sillitoe realised the potential of the signal box system, and he promptly returned to Sheffield (where he was then Chief Constable prior to his Glasgow appointment) and arranged for the boxes to be installed there.

After seeing the newly installed Police Signal Boxes in Sheffield during a visit in 1930, Sir George Abliss, Deputy Superintendent of the Metropolitan Police Force returned to London and arranged for the installation of a network of boxes. The first boxes cost the Metropolitan Police £43 each, and by 1953 there were 685 of them, making them a familiar sight on the streets of London. For many years thereafter the boxes in London were referred to as Sillitoe's boxes, although Sillitoe was neither the original designer nor innovator of police signal boxes. The boxes remained a familiar sight on the streets of London until the 1970s when

they were phased out. Today there are two preserved police pillars in Piccadilly Circus and Grosvenor Square, and a box standing in the grounds of the Police Training College, Hendon.

In June 1932 a Mr L. Simon of the General Post Office gave an address to the Chief Constable's Association describing not only the attributes of their new police box system, but also on the application of the developing telecommunications technology [7]. The box was made of a pre-cast concrete frame, with iron sides and one inward opening door. One of Mr Simon's main arguments in favour of the GPO's equipment was that it provided standardisation and easy integration to city streets and police offices. In the 1920s the Post Office had commissioned the installation of thousands of miles of underground cables thus meaning that the Post Office could easily install telephone equipment at very short notice in major towns with a minimum of construction work.

Although many police forces did adopt the standard kiosk design, many police forces had their own design and only used the GPO equipment. The city of Edinburgh's signal boxes, many of which survive today (indeed at least five are listed buildings) were of a larger size than the standard design and had a sloped roof. Many rural police forces used wooden boxes, and in a few areas special double sized boxes to accommodate more than two people were introduced [8] [16].

3.3 Public Access to Police Signal Boxes - The Speakerphone

For the standard police signal box of the 1930s, an important feature was the installation of a telephone that could be used by the public. In London, the Metropolitan Police adopted a hand held telephone inside a cabinet at the front of the box. By 1933, with 221 boxes installed in London, there were only 2461 calls made in the year. In 1936 a special police box was set up at the Radiolympia exhibition to encourage members of the public to make more use of the boxes.

In the 1930s the telephone would have been an unfamiliar piece of equipment to the vast majority of the general public and therefore the Post Office also offered connection to the system designed by Ericsson Telephones Ltd who had developed many small and large area networks for ships, mines, factories and general public use. The new loudspeaker-telephone developed for the would allow [8] [11]:

"....even a person who has no knowledge of how to use an ordinary telephone can make use of to obtain immediate speech with the Police Station by following the simple directions displayed

Pull door and hold open door.

Wait for the station to speak.

Speak here."

The door would not be fitted with a lock, but would be self closing on a heavy spring mechanism. When the door opened a simple switch would close to connect the speakerphone with the police station switchboard operator. Behind the door only a metal grill was visible, into which the member of public would speak and through which the police telephonist would reply. After the call, the door would close when released. Figure 1 shows the Ericsson speakerphone in use.

An early model of the new Ericsson speakerphone system was first demonstrated in Glasgow in 1930 at the police headquarters where it was inspected by a large number of senior police officials of Scotland. The innovation of the Ericsson system was to introduce dual telephonic facilities. A microtelephone (hand held) was available only to police or other authorised persons in possession of a key, and a loud speaking telephone was available to the public at large upon simply holding open a door which was self closing but non-locking. Following this demonstration the Renfrewshire Constabulary (near Glasgow) became the first police force in the UK to use the new dual speakerphone/telephone system in 1931.

The GPO provided assurances that the dual use of the telephone line was indeed secure, in that the members of public would not be able to listen in to any police telephone calls that may already have been taking place on the line should they try to access the speakerphone while a police call was in progress.

Another interesting telephone system was patented by a Captain Peter Doig, and later licensed to Ericsson

Telephones Ltd. This invention was for a telephone for the public use inside a kiosk that would only function when the entry door to the kiosk was closed. The caller would then only be able to leave the kiosk when a police officer arrived at the box, or by means of a remote mechanism the door lock was unlatched. The aim of the invention was to discourage false alarm calls. Given the problems the police had encouraging even the use of the speakerphone, it is hardly surprising that this system was not adopted by any of the major UK police forces.

3.4 Line of Sight Communication

In the early 1930s radio communication was not advanced enough to equip police officers with any form of radio pager (although by 1936 in the USA, Motorola had developed the innovative Handie-Talkie portable radio!) and therefore the only way for a police officer to communicate with his box was by line of sight. Therefore as part of the standard equipment, a red light was fitted on top of the box (as first patented in Glasgow in 1891 [19]) which could be turned on as an indication to an officer within sight that a member of the public was seeking assistance, or that the Divisional Headquarters wished the officer to contact them as soon as possible.

A dedicated circuit from the controlling police station allowed lamps on the police box to be illuminated and flashed to indicate to the beat constable that he should return to the police box and make contact with the police station. There was therefore a considerable reliance of line of sight communications, whereby officers on the beat required to check their light as often as possible. The domed top of the light fitting was also a gong, and could be used to give an audible signal on the addition of a hammer mechanism to ring the gong.

The GPO also cited an incidental advantage of the red light being illuminated when the phone was accessed by a member of the public was that:

"the type of fiend who likes to make bogus calls to the Fire Brigade is less likely to indulge in his evil propensity if he cannot do so without being at once greeted by a voice from the Police Station and he may bring a nearby Constable into undesired proximity!"

Inside the new kiosks the GPO would also provide a telephone handset that could only be accessed by police officers. The police officer would be able to contact the switchboard by simply removing the telephone from the switch-hook. In his address to the gathering of Chief Constables in 1932 [7] Mr Simon was keen to point out that "only one hand was necessary for this operation leaving the other hand free for writing or any other purpose, such as holding a culprit by the collar." It is probably a sign of the times that the "culprits" in the 1930s came quietly and only required one hand of a police officer!

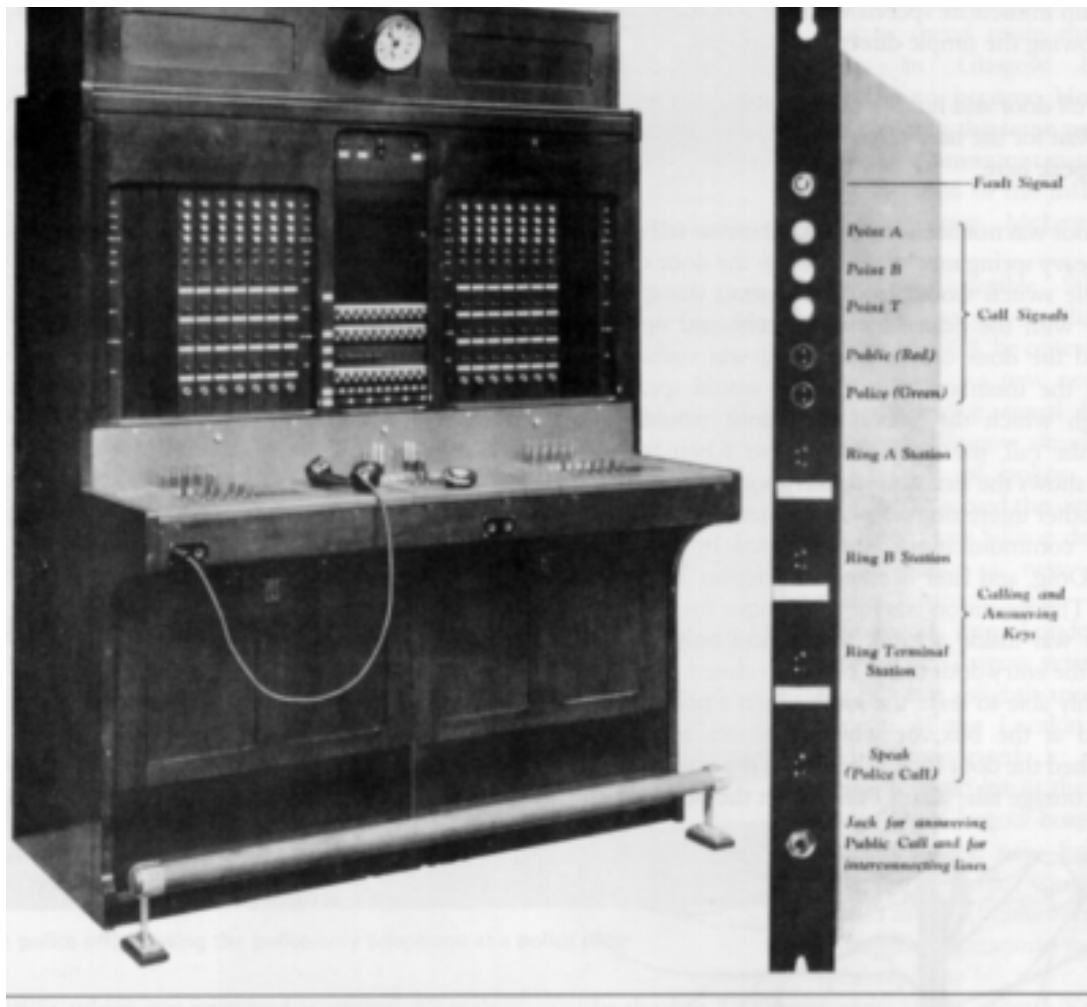


Figure 5: The switchboard for the Police Signal Box system.

3.5 The Controlling Switchboard

The switchboard for the police box system would be located at the divisional headquarters and hosted the controlling circuitry for the majority of the communications facilities. Figure 5 shows the layout of a divisional police signal box switchboard. Signalling and speaking to a street point (police telephone only) could be done by ringing the telephone, or illuminating the light on top of the box directly from the switchboard. Also, a police officer inside a signal box could also be connected via the switchboard to the public telephone exchange and thereafter to virtually any telephone in the city, and beyond. When the speakerphone was accessed on street by a member of the public, a corresponding lamp on the switchboard would be illuminated to indicate to the switchboard operator which signal box was being accessed. The switchboard was designed on the "jack in" principle, whereby the telephonist would use jack plugs to make appropriate connections.

Connection to the headquarter's switchboard could either be through direct lines, or via a party line method. The General Post Office were keen that the police should adopt the party line method as it meant dedicating fewer lines to the network. In 1939 the standard rate for rental of a telephone line was 20/- (shillings) per furlong (about 200 metres). The Post Office pointed out that by adopting the party line system, almost 40% savings in line rentals could be achieved, with very little decrease in efficiency.

Figure 5 summarises the various levels of police communication in the 1930s.

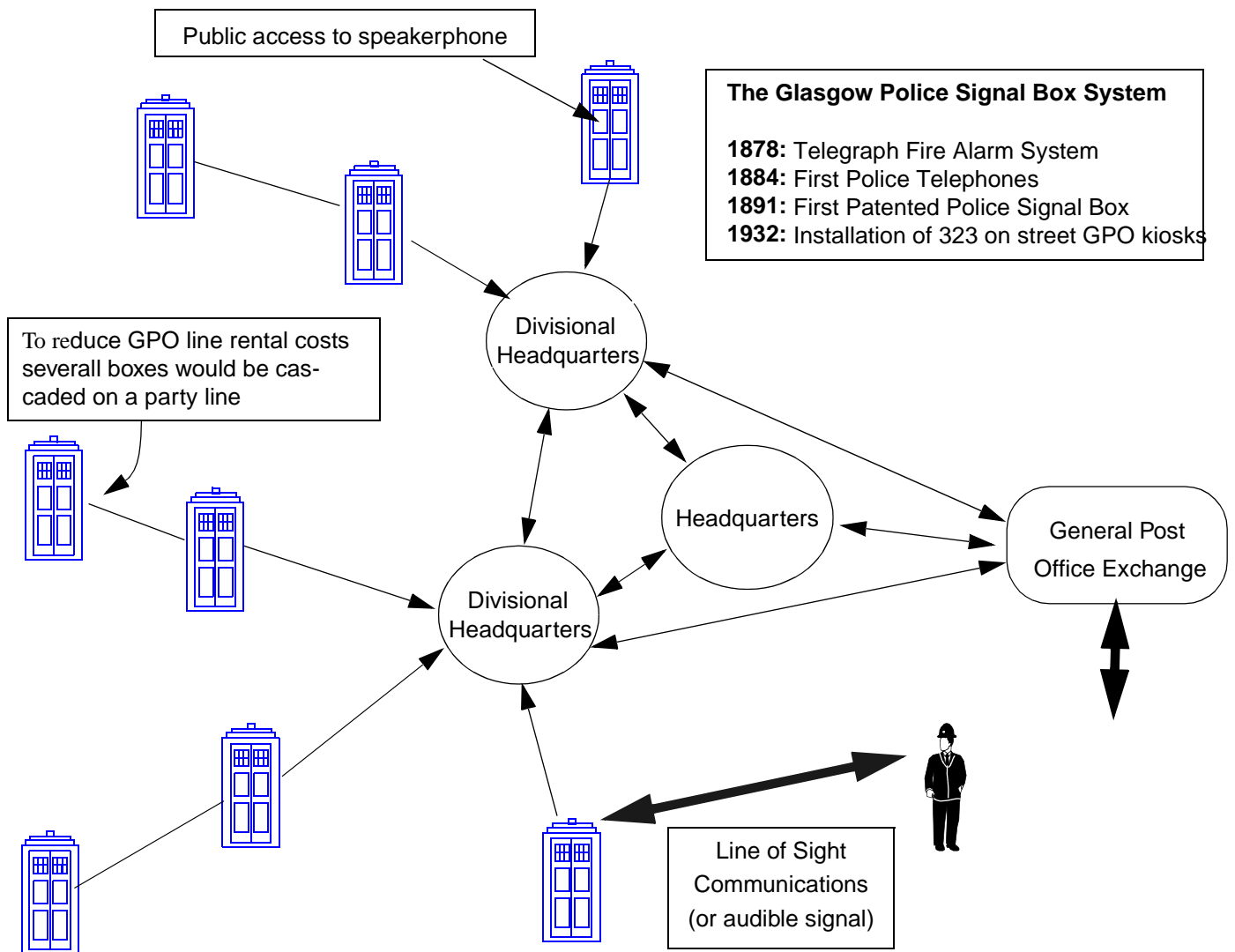


Figure 6: Police Communications in the 1930s

4. The City of Glasgow Signal Box Network - 1932

The installation of the new boxes in Glasgow was to be spread over a period of 6 years from 1932. A total of 323 boxes would be installed each with the capability to communicate with Divisional headquarters, the public telephone network and any other police station or box within the boundaries of the Glasgow force. During the 1930s, Glasgow's population was almost 1,200,000, and the City of Glasgow Police Force employed around 2200 men of all ranks. There would therefore be almost one box for every beat. After a year with Sir Percy Sillitoe as Chief Constable, the 1932 City of Glasgow Report on the State of Criminal Records and the Police Establishment, the objectives of the new Police Box System was summarised for use by the police and by the public. For the police the signal box would be:

1. To communicate information to, or obtain advice, information or assistance from the station and for dissemination of urgent information and messages requiring immediate action;
2. To report to the Station at certain prescribed intervals;
3. As a place in which Sergeants and Constables will take their refreshments during prescribed periods;

4. To prepare, when necessary, reports on occurrences and
5. For emergency signals from the Station.

The new boxes would serve the public:

1. To make enquiry or obtain advice on any matter within the range of police duty; and
2. To make enquiry or obtain advice on any matter within the range of police duty; and
3. To obtain assistance in cases of urgency for humanitarian purposes or other legitimate purposes.

The total cost of setting one of the new police boxes, including all telephone equipment was 55 [1]. From May to December of 1933, 75 boxes were erected and commissioned into service. The Glasgow Police quickly realised that the boxes had greatly improved the police response time by affording an almost immediate response to many cases of gang fights, fires, housebreakings. The facilities provided a real means of co-operation and a point of interaction between public and police.



Figure 7: One of Glasgow's remaining Police Signal Boxes.

By 1938 the installation of all boxes in the City of Glasgow was complete. In the UK, Glasgow easily had the highest ratio of Signal Boxes to police officers (1:7) and there was almost one signal box for every 3000 people in the city. On average there were 10 police signal boxes for every square mile of the city. In highly populated areas and in the city centre, there were up to 20 boxes per square mile, with some boxes only a few hundred yards apart. A photograph of one of Glasgow's surviving boxes is shown in Figure 7. The Glasgow signal boxes were originally red, and only painted blue in the late 1960's; the box in Figure 7 is now under preservation order and has been painted red.

Chief Constable Sillitoe believed that with a police box on virtually every beat, officers could go straight from their home to their beat, and therefore "prevent criminals from being able to count upon an almost certain lull in police patrols in every 24 hours when for about 10 minutes at 6pm, 2pm, and 10pm all constables were busily making their way to or from the police station on their way on or off duty." On arrival at their beat the officers were required to call headquarters from the police signal box and report to the station that he has started work.

4.1 A Lifeline to the Public

The importance of the Signal Box system in Britain of the 1930s and 1940s should not be underestimated. Most homes did not have telephones, and few families had the luxury of a motor car. Therefore if a member of the public saw a crime in progress, an accident, or required police assistance, the only way to contact the Police was using the Signal Box system. In 1930s Glasgow some ex-police officers recall that it was particularly common for pregnant woman and their husbands to make for the police box at first sign of labour, realising that the telephone facilities would allow them to summon an ambulance, and failing that hope that the officer on duty knew more about child birth than they did!

By 1937, the City of Glasgow Police Annual Report [2] noted that the requisite number of boxes in the city was nearing completion despite considerable difficulty being experienced in finding sites suitable. Aside from the congestion that the boxes created in pavements, the boxes also required electricity and telephone connections. There was therefore a decision made to erect Police Pillars rather than the full sized boxes. These pillars would include telephone facilities as well as a first aid cabinet. In 1937 ten of these pillars were erected in the city centre.

A breakdown of the public calls in 1938 from the city's the police boxes is given in Table 1. It is interesting to note that back in 1938 drunkenness caused fewer problems than people playing football in the street! There were also more dog related problems than there were indecent exposures! Time have indeed changed. In 1939 the annual report of the City of Glasgow Police noted that there was one murder in the whole year. The contrasts starkly, and rather sadly with the recent figures of more than 40 murders a year in the city.

5. Police Communications - 1993

In the last 10 years a worldwide explosive expansion in communications technology has occurred. Police forces throughout the UK now make use of the latest personal secure communications radios and cellular phones to ensure that every officer on the street can maintain constant communication with headquarters or other officers. Inside the police station the humble police signal box switchboard and teleprinter has moved aside to allow FAX machines, computer terminals, even satellite links to ensure that information is properly managed and disseminated quickly and efficiently.

It is perhaps difficult to realise that only fifty years ago the police signal box network of telephones was the state of the art, and as recently as 1970 was still in operation to provide communications for some officers on the beat. The luxury of a to day's hand-held radios or cellular telephones, is in stark contrast the police officers of the 1930s, 40s and 50s who had to walk the few hundred yards to the police signal box when the red light on top became illuminated.

Purpose of Call	Number of Calls				
	1935	1936	1937	1938	1939
Number of Police Signal Boxes	222	282	299	323	323
Accidents	173	494	610	-	820
Ambulance attendants reporting	147	-	-	-	-
Breach of the Peace	116	169	348	-	331
Housebreaking	69	148	176	-	208
Assaults	26	64	168	-	239
Miscellaneous Complaints	8	43	-	-	132
Fires	35	-	164	-	192

Table 1: Public Calls using the Glasgow Police Signal Box System.

Purpose of Call	Number of Calls				
	1935	1936	1937	1938	1939
Number of Police Signal Boxes	222	282	299	323	323
Sudden illness	-	14	115	-	49
Sudden Death	-	-	-	-	19
Thefts	17	40	72	-	49
Missing persons	-	-	53	-	18
Burst water and gas pipes	2	16	47		32
Malicious mischief	7	22	34		-
Assistance required for officers	2	30	28	-	12
Suspicious persons loitering	32	24	28	-	18
Strayed children	-	18	24	-	18
Persons drunk	-	7	20	-	50
Broken windows	-	-	19	-	-
Football playing on streets	-	-	17	-	-
Lost property	-	-	16	-	13
Stray dogs	-	-	13	-	3
Attempted suicides	-	-	12	-	-
Insecure premises		14	11		11
Indecent exposure	-	-	6	-	-
Traffic lights out of order	-	-	5	-	-
Persons requiring directions	-	-	5	-	-
Injuries to dogs	-	-	4	-	-
Dog bites	-	-	4	-	-
Abandoned motor cars			4		
Drowning			2		6
Unshaded Lights					6
Miscellaneous	142	74	224		457
TOTAL	776	1285			

Table 1: Public Calls using the Glasgow Police Signal Box System.

Epilogue 1994

Ten of the original 323 police signal boxes still stand on the streets of Glasgow. The boxes are no longer operational and are in various states of disrepair. Although they are permanent structures and the last of their kind in the world, there are no firm plans to retain any of them on-street, despite their obvious historical, technological, and 1930s architectural design. Historic Scotland, (an executive agency of the Secretary of State for Scotland) who are responsible for ensuring preservation of important buildings and monuments have refused to list the structures to prevent them from being removed, stating that they are not of great enough significance [18]. The concrete and cast iron boxes are therefore likely to be demolished, offered to preservation trusts or sold to private collectors.

Epilogue 1996

Three boxes now remain on the streets. Two are listed buildings and have been upgraded (Buchanan Street and Wilson Street) and one remains in a state of disrepair (Byres Road). The University of Strathclyde has one box in storage which is likely to be put on campus with an internet terminal inside, in the near future.

One box was saved for the Glasgow Transport Museum, one for Summerlee Museum and two boxes are in the hands of private collectors.

Appendix: Dr Who and the TARDIS

In 1963 the BBC were producing a science fiction series called Doctor Who. The Doctor was to be a rather eccentric character, perhaps not of this planet, and with a wealth of scientific knowledge. He would also have the ability of space, and eventually time travel. The first four part series was aired in 1963, and titled "An Unearthly Child". To facilitate his time and space travel the Doctor, the programmes main character, required some kind of time and space vehicle. It was scripted that the Doctor's vehicle could land in any space or time and have the ability to change its exterior appearance to blend in with the surrounding area using chameleon circuits. In the 1960s the police signal box was a familiar site on the streets of Britain and was therefore

the perfect choice. When Dr Who proved popular and further series were planned it was scripted that the chameleon circuits had jammed and the Doctor would never quite get round to fixing them. Another significant factor (perhaps apocryphal!) in the decision to use a blue police signal box (aside from budgetary constraints) was that the BBC props department had a wooden full scale model of Police Box available that had earlier been used in the very popular Z-Cars police series!

The blue police box soon became better known as the TARDIS (Time and Relative Dimension In Space) and was many times larger inside than it appeared from the exterior. From 1963 until the series postponement in 1990, the blue police signal box has appeared on a wide variety of planets and times in the Earth's history.

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