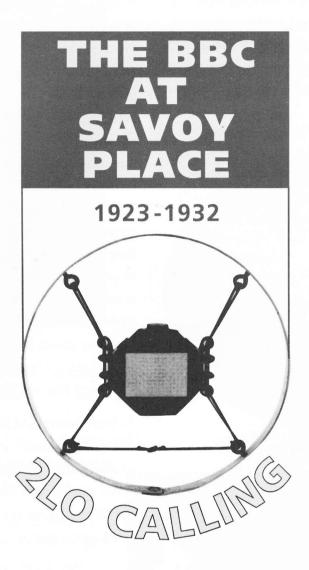




The 1998 IEE Archives Exhibition



"In this country we have only one organisation for broadcasting and it has made good progress during the past year. It is certain that, in the future, broadcasting will have an important effect on national development."

Dr Alexander Russell, IEE Presidential Address, 1923.

Seventy five years ago, in February 1923, the newly formed British Broadcasting Company moved into new quarters in the west wing of the IEE's Savoy Place building. The Company soon expanded into all available space at the IEE and into the adjoining apartment block. The entire BBC complex became known as Savoy Hill.

## The Birth of Broadcasting

By the end of the nineteenth century the basic discoveries of electromagnetism were being exploited by several people to create wireless telegraphy. Guglielmo Marconi saw its commercial potential and developed the first practical system. He founded the Marconi Company in 1897 and soon demonstrated that radio waves could travel beyond the horizon.



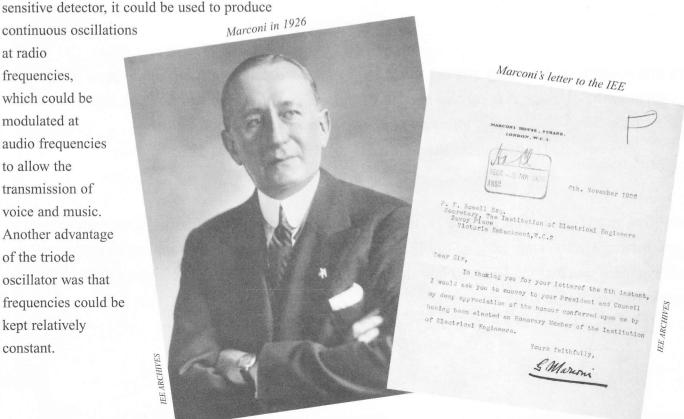
Marconi with early transmitting equipment

Much fundamental experimental work needed to be done before wireless telegraphy was developed sufficiently for transmission of speech and music. J. A. Fleming's diode valve was crucial to its development as it led to Lee De Forest's invention of the triode. Not only was the triode a sensitive detector, it could be used to produce

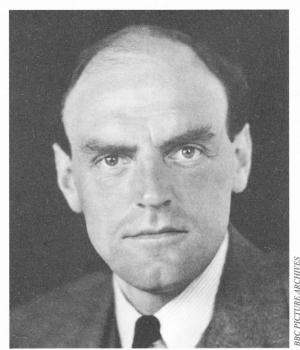
at radio frequencies, which could be modulated at audio frequencies to allow the transmission of voice and music. Another advantage of the triode oscillator was that frequencies could be kept relatively constant.

The widespread military use of radio during World War 1 led to rapid technical advances and its popularisation among amateurs after the war. Developments moved faster in the U.S.A. than in Britain. The world's first commercial broadcasting station, KDKA, began regular broadcasts in Pittsburgh in 1920. In Britain, the Post Office licensed a few large firms to begin experimental broadcasts in the early 1920s, notably the Marconi Company which in 1920 built an experimental transmitter at Chelmsford. Speech and some informal concerts were broadcast. They were heard as far away as Madrid and Rome. The Marconi broadcasts were stopped in the autumn after complaints to the Post Office that they interfered with aircraft and other communications, but in 1922 permission was granted for them to resume. However, Marconi did not have a monopoly and other firms were also given licences to broadcast. Broadcasts began from the Metropolitan Vickers station in Manchester (2ZY), the General Electric Company station at Witton near Birmingham (5IT) as well as from Marconi's stations at Writtle near Chelmsford (2MT) and Marconi House in the Strand (2LO).

As broadcasting developed, in order to avoid "a chaos of mutual interference", a Parliamentary Committee considered how to regulate it and proposed that the Post Office should call a meeting of the interested electrical and wireless manufacturers to discuss the creation of a broadcasting system.



#### Formation of the BBC



John Reith (1889-1971)

"So the responsibility as at the outset conceived, and despite all discouragements pursued, was to carry into the greatest number of homes everything that was best in every department of human knowledge, endeavour and achievement; and to avoid whatever was or might be hurtful." John (later Lord) Reith, 1949.

The manufacturers would have to decide how they would "share the sites, the time and the wavelengths". On 18 May 1922, interested manufacturers were invited by the Post Office to meet to consider the position. Their first independent meeting was arranged on neutral ground - at the Institution of Electrical Engineers - on 23 May 1922. As chairman, the meeting chose Frank (later Sir Frank) Gill, President of the Institution and chief engineer of the Western Electric Company. They appointed a committee of the six biggest manufacturers of wireless equipment consisting of the Marconi Company, Metropolitan-Vickers, the Western Electric Company, the Radio Communication Company, the General Electric Company, and the British Thomson-Houston Company. Frank Phillips of Burndept Ltd. was chosen as the representative of the smaller firms. Negotiations continued all summer and into the autumn; until on 18 October 1922, at a meeting in the IEE lecture

theatre, representatives of over 200 firms agreed to form the British Broadcasting Company. The BBC would be a monopoly whose profits were to be restricted to 7½ percent with capital provided by the radio industry. Income would come from annual licence fees from owners of receivers and from a royalty on every radio receiver sold in Britain. Foreign receivers were banned for two years.

Once formed the fledgling company needed offices and studios in London and both GEC and the Marconi Company offered temporary accommodation. GEC offered space in Magnet House, its magnificent new head office, built the year before in Kingsway. The allotted room was 30 x 15 feet, with a six foot square annexe. The Marconi Company offered space in Marconi House, the Strand, where the Marconi station 2LO had been operating. Here the BBC had its first small studio and on 14 November 1922 the first BBC programme was broadcast. The next day 2LO was joined by 5IT in Birmingham and 2ZY in Manchester.



# Savoy Hill

"... that bustling, crowded, rather friendly and unpretentious place." R. S. Lambert, 1940.

On 14 December 1922 John Reith was appointed General Manager of the new company. His first task was to find suitable permanent accommodation.

He found it at the Institution of Electrical Engineers which had vacant space in the north west part of its building at Savoy Place. It had undoubtedly been suggested to him by Sir William Noble, Chairman of the Broadcasting Committee and member of the IEE Council, who in October had asked Percy Rowell, Secretary of the IEE, to keep the accommodation available until the BBC was able to make a decision. As Reith recalled later "we went, I remember to inspect sundry possible sites for the launching of our enterprise, each worse than the last. Finally as dusk was falling we came to Savoy Hill. It seemed the worst of all.... What a depressing place it was. It ... had been vacated some months earlier, and much dirt and depression had accumulated

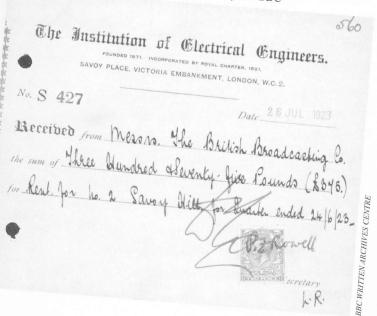


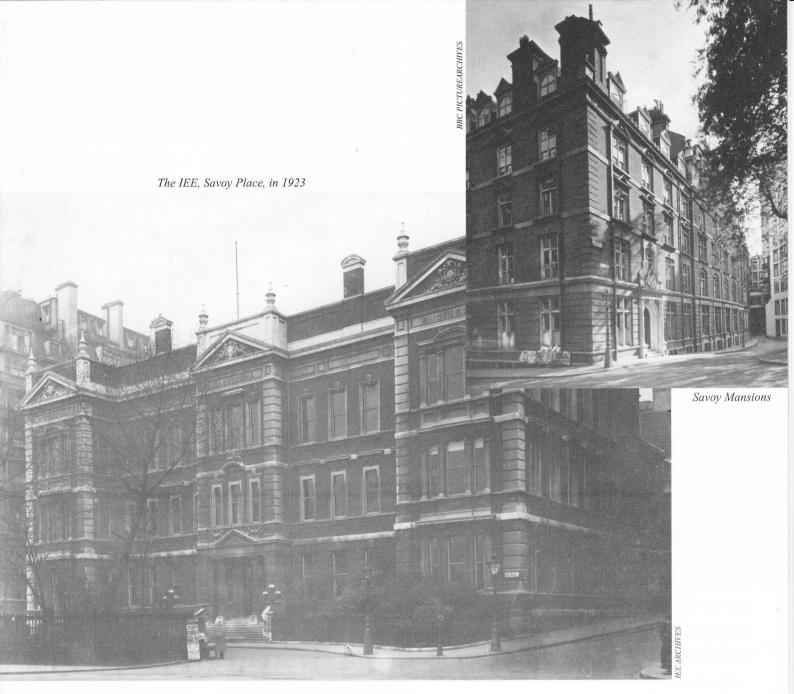
since then. It was difficult to see any convenient arrangement for studios, etc. on the one hand or offices on the other. Into this building surprisingly rejuvenated we entered in March 1923... [when] a band of thirty-one ... including a commissionaire, a cleaner and an office boy, migrated from temporary quarters at Magnet House, Kingsway, to Savoy Hill".

At first the BBC had only seven rooms on the second floor and one on the third floor for a rent of £1000, but quickly filled all available space to occupy the first, second and third floors of the west wing and part of the basement for an engineers' workshop. By the end of 1923 the Company was negotiating to expand into part of the corner block (of the adjoining Savoy Mansions, now the IEE's Savoy Hill House) "which was still in the condition in which a Zeppelin had left it" after a World War 1 bombing raid. Within a year, the company had expanded into the remainder of the Mansions, and the whole complex became known as Savoy Hill. Visitors to Savoy Hill in the early years found it a "bustling, crowded, rather friendly and unpretentious place". One critic commented that "Next to the House of Commons... Savoy Hill was quite the most pleasant club in London. There were coal fires, and visitors were welcomed by a most distinguished looking gentleman who would conduct them to a cosy private room and offer whisky-and-soda. And you could always be certain of running into great men like H. G. Wells,

Receipt for rent paid by the BBC

Bernard Shaw, G. K. Chesterton or Hilaire Belloc".





## Studios at Savoy Hill

The first Savoy Hill studio was installed on the top floor at Savoy Place. It opened on 1 May 1923. To reduce reverberation its walls and ceiling were lined with five layers of canvas at one inch intervals, with a final layer of saffron yellow netting, giving very heavy absorption. Indeed, the studio was acoustically dead, dark and oppressive, and performers and instrumentalists found it insufferably stuffy. In 1928 it was redesigned to encourage reverberation to render the sound quality lighter and more lively. Its new acoustic treatment consisted of felted wallpaper instead of the former heavy drapings and the early Marconi-Sykes magnetophone was replaced by the Marconi-Reisz microphone.

In January 1924, a second, larger, studio was converted

on the first floor immediately above the Institution Council Chamber. This room was lightly draped, as it was now realised that the excessive acoustical deadness of the original studio was unnecessary. Perhaps because of this, sound did carry beyond its walls. Percy Rowell had feared the possibility of unwanted sound from the BBC when he had the original lease drawn up. He wrote to the Institution's solicitor about one clause in it. "The reason for special provision No. 6" he said, "is that the British Broadcasting Company intend to use the 3rd floor room as a concert room from which concerts will be. broadcasted [sic] and as it is not absolutely certain that they will be able completely to prevent the sounds from being heard outside their rooms, which if it happened, could not be tolerated by the Institution on account of it interfering with the meetings in our Lecture Theatre or being objectionable to Savoy Hotel residents (our

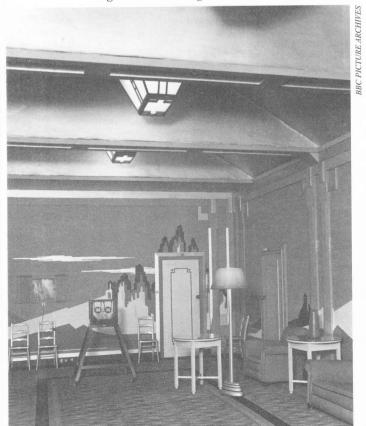


Studio 3, Savoy Hill opened 1st May 1923

neighbours), would you kindly draft a clause giving the Institution power to put an immediate stop to the concerts if they are found to interfere, etc. as here indicated: 'The tenants to undertake not to do or permit to be done in the said rooms anything producing sounds noises or smells perceptible outside the said rooms'."

Apparently that clause was not included in the lease and a year later Rowell wrote to P. P. Eckersley, the BBC's Chief Engineer, "The arrangements made for insulating our Council Room acoustically from your new Studio are still entirely inadequate for the purpose. We shall be having in a few minutes this afternoon ... a meeting ... and the sound coming from the band at present practising in the Studio is very

Original studio redesigned in 1928



strong...I therefore enclose a list of dates on which there will be meetings in our Council Room and during which I shall be glad if you will refrain from having music etc. in your Studio". He added "I understand that you are taking further steps to eliminate the travel of the sound, and I hope that you will be successful in effecting this". The BBC agreed with the Institution that during meetings music would not be played, and subsequent events revealed willing give and take on both sides.

other areas. Rowell wrote to the IEE Treasurer in 1926 that "a serious crack has recently developed in the ... staircase of the building in the portion occupied by the BBC near the place where a German bomb was dropped in 1917. I took the line that the crack was due to the BBC taking up pianos and other heavy goods on the staircase, but they assure me that the goods which they

Both lessor and tenant exercised give and take in



Studio 1 in 1924

took up were not heavy enough to have caused the damage. On the other hand they said that they felt sure that the cause was the bomb of 1917.... The BBC have offered to pay £30 towards the necessary repairs, which would cost about £60, and in view of the impossibility of definitely tracing the cause of the damage, I suggest that we agree to the compromise".

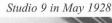
When the Daventry transmitter opened in July 1925, programmes distinct from the London ones were made especially for transmission from it. This meant a huge increase in the output from Savoy Hill, and the BBC had

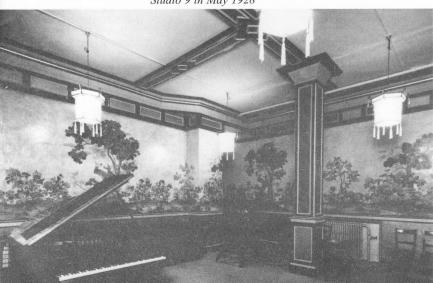


Studio 7 known as 'The Corner House' in 1927

to bring several new studios into use. One of the new studios in the basement had a Silence Room for the announcer, solid sound-proofed walls, and was entered through a sound-proof vestibule. Absorbent wall linings attached directly to the brick walls were covered by decorative wallpaper. Eventually the BBC had four specialised music studios, three drama/variety studios, and two talks studios at Savoy Hill.

The lack of space at Savoy Hill was a problem almost from the very beginning. When he signed the first lease, Reith took an option on the remaining available space in the IEE which the BBC soon filled. Indeed the pressure





was so great that Rowell wrote to the Institution's architects about the possibility of adding another storey to the building, but nothing came of the proposal. Later, when Reith realised that the BBC needed a large building of its own he considered buying Savoy Place from the Institution's landlords, the Duchy of Lancaster. In the end the plan fell through because Reith realised that by the time he had bought the building, paid the IEE to relocate



Studio 8 in 1928

somewhere else, and made the necessary alterations, he would have spent as much money as if he had built a new building. In 1927 he began the search for a new location and eventually a site north of Oxford Circus was acquired and the construction of Broadcasting House began.

Until the move, five years later, more and more space was rented in nearby office buildings in the Savoy Hill neighbourhood. In 1929 after the regional scheme was

> inaugurated, the BBC staff found themselves increasingly cramped at Savoy Hill. By 1930 the BBC orchestra, once comprising only seven performers, had become too large for any of the nine studios at Savoy Hill and additional space in a warehouse across the river had to be rented for its use.

#### **Programmes**

"One moment, please, while we move the piano." Freddy Grisewood, 1959

"We realised in the stewardship vested in us the responsibility of contributing consistently and cumulatively to the intellectual and moral happiness of the community. We have broadcast systematically and increasingly good music; we have developed educational courses for school children and for adults... We have endeavoured to exclude anything that might, directly or indirectly, be harmful. We have proved, as expected, that the supply of good things created the demand for more. We have tried to found a tradition of public service, and to dedicate the service of broadcasting to the service of humanity in its fullest sense. We believe that a new national asset has been created ... that which down the vears, brings the compound interest of happier homes, broader culture and truer citizenship." John (later Lord) Reith, 1927

The BBC began broadcasting on 14 November 1922 with a short news bulletin from 2LO at Marconi House.

During the short Marconi House era and the early days of Savoy Hill, an atmosphere of spontaneity reigned as

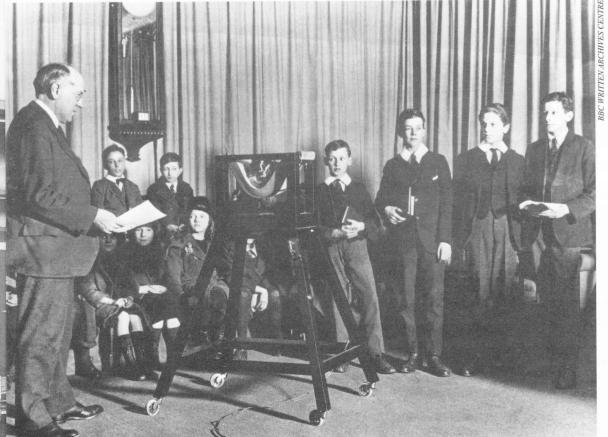
engineers struggled to make primitive broadcasting equipment function and announcers and performers coped with crowded studios and the quirks of unfamiliar equipment. Early concerts tended to be improvised and sometimes an announcer would have to say "One moment, please, while we move the piano". Initially there were only a few broadcasts in the afternoon, mainly schools broadcasts and tea-time music, and evening programmes ended at 10.30 p.m. in the studio, with dance music following until midnight from the Savoy Hotel next door. On Sundays in order not to conflict with attendance at church or chapel services, broadcasting did not begin until 3 p.m. when Bach cantatas were broadcast. On Sunday evenings an epilogue of a reading of a few lines from the Bible was broadcast just before shutdown to remind listeners that it was not an ordinary night of the week, but a Sunday night. Concerts and dance music predominated throughout the early years, although Women's Hour and Children's Hour were daily programmes almost from the beginning.

John Reith took an active interest in the actual broadcasts and sometimes acted as an announcer himself during the early years. In his diary during September 1923 he noted that "I read the News at 7.00 as Mother had not heard it last week". Again, on 17 January 1924 he commented

use and I closed down to-night". Until January 1927 no news bulletin was permitted to be broadcast before 7 p.m. because the evening papers feared that the competition might adversely affect their sales. But the papers soon realised that the radio news was complementary to their news and the short radio bulletins actually increased demand for written reports.

"The new studio is in

Outside broadcasts began early in Savoy



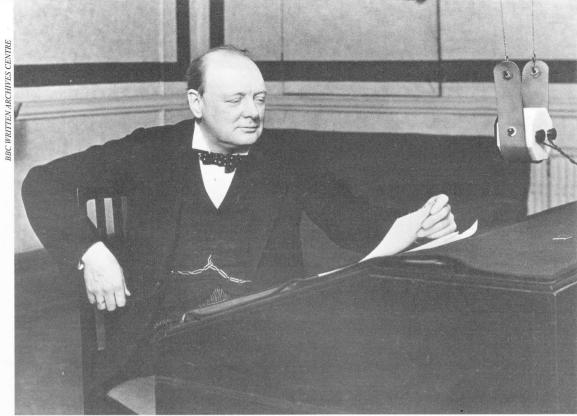
First broadcast to schools on 4 April 1924

Hill's history. The first outside concert in the Central Hall, Westminster, was broadcast on 13 February 1924 to Reith's great satisfaction. He was especially pleased at the success of an early broadcast from the Old Vic Theatre across the Thames from Savoy Hill. Operas were relayed from Covent Garden, dance bands from the Savoy Hotel, and church services from St Martin-in-the-Fields. These live broadcasts and those

from further afield, such as those from the Palm Court of the Grand Hotel, Eastbourne, were carried by land line back to the studio. Land lines were weak links as most were in underground cables with a limited frequency response and could become noisy at any moment. The remedy was to provide a stand-by line as a backup. Another notable early broadcast was King George V's address when he opened the British Empire Exhibition at Wembley in April 1924. It was carried by all the BBC stations and nearly ten million people heard the broadcast. Once the Daventry transmitter had opened on 27 July 1925 events of national importance could be heard by virtually the entire country. After the BBC achieved corporation status on 1 January 1927, Parliament allowed it to organise its own evening news service instead of merely reading brief bulletins prepared by Reuters and other news services and to broadcast 400 running commentaries per year of official ceremonies, public gatherings and sports events. The first sporting event to be covered with a running commentary was the Boat Race. Other sporting events covered that year were the Cup Final, the Derby and

Indeed one notable early BBC programming coup was to adopt the Promenade Concerts, then still under the direction of Sir Henry Wood himself. The previous sponsors had decided to drop the concerts, but early in 1927 the BBC gave a contract to Sir Henry which

Wimbledon Finals.



Winston Churchill broadcasting at Savoy Hill in April 1923

effectively saved the concerts from extinction. The concerts became more and more popular and today the Proms are a staple of summer radio and television broadcasting and "The Last Night of the Proms" has become a national institution.

Children were catered for from the very earliest days of the BBC. By March 1923 the "Children's Hour" was the first regular speech and music programme of any length. It usually lasted for forty-five minutes and played a large part in the life of the early broadcasting stations. The presenters, known as "uncles" or "aunties" were household names by the end of 1923 and very high-quality programmes were made. The first play written especially for radio was by Arthur Burrows for Children's Hour; the first orchestral piece broadcast by a BBC ensemble was Roger Quilter's Children's Overture; the first stories told over the air were stories for children; and in 1924 the first broadcast of zoo noises was part of a children's programme.

On 16 February 1923 drama broadcasts began with a programme of extracts from Shakespearean plays featuring Robert Atkins as Cassius and Basil Gill as Brutus in *Julius Caesar*, and scenes from *Henry VIII* and *Much Ado About Nothing* were also included. In May other full length dramas were broadcast. Beginning in August 1924 plays of all types were broadcast during the week, such as Reginald Berkeley's grim war play



"How's that Revue" with Tommy Handley in Studio 3

The White Chateau and Vernon Bartlett's chilling Dweller in the Darkness, but on Sundays the BBC broadcast scenes from classic plays performed by well-known actors who were not available during the week. One Sunday Sybil Thorndike and Lewis Casson broadcast scenes from Euripides' Medea. Late one evening in 1925 Noel Coward gave the BBC's first broadcast cabaret performance.

Other notable performers who were visiting London from abroad came to the BBC to give concerts or interviews. Paul Robeson came to the studio after his theatre performance one evening to sing African songs and Negro spirituals. Most impressive of all was a performance by Chaliapin of songs from *Boris Godunov* and the "Song of the Volga Boatman". Tom Mix, dressed in an oversize Stetson and complete cowboy kit, including spurs, was interviewed as was Will Rogers, the American cowboy humorist. A charming man with a dry wit, during his interview he commented that "we in the States are rather interested in a man you've got over here

called George Bernard Shaw. We think him rather amusing, some folk think he's really funny", and after a long pause, he added "but we haven't got to live with him like you have".

Nor did the BBC neglect science. John Reith, having heard Sir William Bragg lecture at the Royal Institution, engaged him to give a similar series of lectures for the BBC. Sir Oliver Lodge lectured frequently on scientific subjects. On 12 December 1931, exactly 30 years after Guglielmo Marconi proved that radio waves could be broadcast across the Atlantic, he and his two assistants G. S. Kemp and P. W. Paget described their excitement when they realised that they had succeeded. They tapped the historic signal on the original tapping key and coil used in the 1901 transmissions.

## **Broadcasting**

"Only the engineers were then, as they are now, a race apart, working under conditions that the rest of their colleagues knew little about."

R. S. Lambert, 1940.

"Time went on, and from out of chaos, late nights, and hard work from many engineers emerged at last a coherent system. Now there are many voices and many sounds, but each one is under control."

P. P. Eckersley, September 1923.

In February 1923 John Reith appointed a Chief Engineer, P. P. Eckersley, one of the Marconi engineers who had been instrumental in the early Chelmsford broadcasts. He commented that when he joined the BBC in February 1923, he "was obviously the chief because the only engineer". When he left the BBC six years later, there were between three and four hundred technicians working for the BBC. Reith's vision of the BBC as a public service which should be available to anyone who wished to listen shaped its future as a national service, while P.P. Eckersley's technical expertise and stamina created its national broadcasting network.

At first the BBC used the Marconi Company 2LO transmitter. It was constructed in May 1922 in the laboratory of C. S. Franklin, one of Marconi's most senior engineers. By autumn a more powerful transmitter

had been built and was adapted over the next few months into a four-panel 1½ kW transmitter - the prototype for the Marconi O transmitters installed in the BBC's stations at Newcastle, Cardiff, Glasgow, Bournemouth and Aberdeen. The 2LO aerial first ran from Marconi House to Bush House, but was modified into two parallel aerials slung between masts on Marconi House. In April 1925 the Marconi House transmitter was replaced by one installed on the roof of Selfridges store in Oxford Street. It had an output of 2 kW, thus extending London coverage further into the Home Counties.

In the early days "improvisation and flexibility were regarded as necessaries, if not virtues" in technical matters as well as in programming. Even so, glitches did occur. In May 1925 only weeks after the BBC had switched to the Selfridges

**3BC PICTURE ARCHIVES** 

transmitter, it went off the air for 19 minutes while engineers worked frantically to find the fault. Eventually they found the charred remains of a mouse which had wandered between the terminals of the high-power transmitter.

In May 1923 simultaneous broadcasting was introduced via the telephone trunk line network. By October 1923 eight main stations had been opened providing signals strong enough for about half the British population to receive broadcasts on crystal sets. The Belfast station was opened in 1924. Each station used its own studios to produce its own programmes. In order to extend reception



## Television at Savoy Hill

"The whole subject is still in its infancy; but a good start has been made, and it is not too much to prophesy that within ten years "television" will be as far advanced as wireless telephony is to-day."

"An Inventor", Radio Times, 1924.

Like radio, television has roots in the nineteenth century, although it took until the 1920s to achieve the instantaneous transmission of movement. Still pictures were transmitted over wires by Alexander Bain around 1850 and in 1865 the Abbé Caselli, a French engineer, instituted a commercial fax service between Paris and Lyon based on Bain's device. In this system a two-dimensional image was reduced to a single stream of information for transmission as an electrical signal.

The discovery in 1873 that electrical conductivity in some materials increased with exposure to light meant that a signal could, theoretically, be derived from an actual scene and several inventors proposed systems for "seeing by electricity". In 1884 Paul Nipkow patented a spiral perforated scanning disc which, 40 years later, John Logie Baird used for his television system.

In March 1925 Baird demonstrated the reproduction of

shadow images in the electrical department of Selfridges store in London - the world's first public demonstration of television. A few months later he scored another notable first when he reproduced a recognisable image by reflected light. His next improvement was to use a mirror-drum scanner in the light projector, which scanned the subject with an intense spotlight, and a photo-cell served as a pick-up device. By 1928 he was able to use this "flying spot or spotlight" system. The subject sat in a blackened studio in front of a hole in the wall through which shone a brilliant pinpoint of light. The light scanned the subject in sequential vertical strips and photocells recorded the level of reflected light. The whole picture was made of only 30 lines and Baird designed a "televisor" to transmit and reproduce the image. (A modern television signal consists of 625 lines.)

In 1929 television programmes produced at Baird's Long Acre studio were broadcast through the Savoy Hill control room after normal radio transmission had shut down for the day. On Tuesdays and Fridays they followed the dance band broadcast which ended at midnight "and those listeners who did not switch off heard the peculiar warbling note characteristic of the 30 line vision signals". They consisted of tiny 30-line pictures, which flickered at  $12^{1/2}$  pictures per second. These signals were heard on the





Baird TV caravan at the Derby, 1931

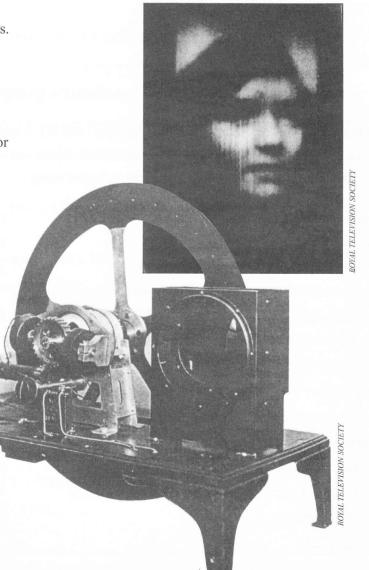
Continent and even as far away the island of Madeira and some listeners were so intrigued that they sought a means to turn the noises into a picture. Although the broadcasts were for a maximum of four half hours a week, viewers enjoyed being able to see as well as hear entertainers. Performers included singers, dancers, and instrumentalists, augmented by educational programmes. Gracie Fields, Jack Hulbert and Cicely Courtneidge, pianist Cyril Smith and Jack Payne and his dance orchestra were transmitted. Once, in a notable outside broadcast from Epsom through Savoy Hill, the 1931 Derby was televised by the Baird process, using a mirror drum to scan the scene.

The novelty of the television process itself attracted

viewers, although pictures were extremely crude compared to modern television. No improvement was possible while the vision signal was confined to the narrow band of frequencies possible in contemporary medium-wave transmissions. The transmissions continued from Broadcasting House after the BBC left Savoy Hill, but finally ceased in 1935 when tests began on what was then called a high-definition television service. However, only a few thousand Baird Televisor kits were sold and fewer than a

thousand ready-made receivers.

The 1930 'Tin Box' Televisor, and picture taken from the screen of the Televisor in 1928

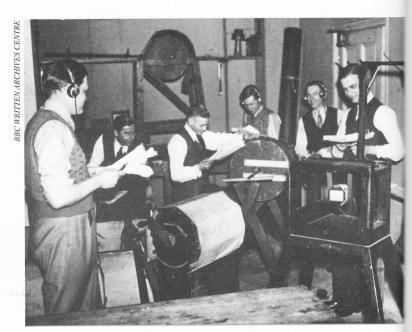


#### End of an Era

"Yes, it was a chummy atmosphere in the old Savoy Hill days." Jack Payne, 1947

When Reith moved into Savoy Hill in March 1923 the entire BBC staff consisted of 31 people. By the end there were nearly 400 people involved with every aspect of broadcasting and the range of activity gave an air of "improvised spontaneity" to Savoy Hill. The move to purpose-built Broadcasting House was spread over four weekends in April 1932, leaving only the engineering staff who would transmit the final programme. That final programme "The End of Savoy Hill" was broadcast on 14 May 1932.

Almost immediately after the move to Broadcasting House people began to look back to Savoy Hill as a golden age. John Reith commented that "I have an affection for the old place; it was the scene of great labour and some achievement on the part of those who worked there..." Indeed, Savoy Hill was the cradle of the BBC. The meeting of the manufacturers which created



"The End of Savoy Hill"

the British Broadcasting Company in 1922 was held in the IEE lecture theatre and a few months later, the infant organisation moved into office space in the IEE building. Here the company became a public service corporation creating programmes covering almost all forms of human activity and developing a sophisticated national broadcasting network.

#### Acknowledgements

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Dr Patrick Wilson

Lenore Symons

Tim Procter

Sarah Barnard

**IEE Archives Department** 

July 1998

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