

# Contents

<i>List of Illustrations</i>	vi
<i>Acknowledgements</i>	viii
Introduction	1
<b>SECTION ONE: PRIVATE TELEVISION</b>	
1 The Pioneers of Television	13
2 From Experiments to Business	31
3 Television's Power Struggle	50
<b>SECTION TWO: PUBLIC TELEVISION</b>	
4 Attitudes Towards Television	65
5 Deciding on Television's Future	79
6 Television Faces the Public	90
<b>SECTION THREE: WIDER PERSPECTIVES</b>	
7 Views of Television From the Outside	111
8 A Public Launch	122
<b>SECTION FOUR: TELEVISION GOES PUBLIC</b>	
9 Programming for the Public	141
10 What the Viewer Saw	155
Conclusion	170
<i>Bibliography</i>	189
<i>Journals and Periodicals</i>	197
<i>Archive Sources</i>	198
<i>Filmography</i>	199
<i>References and Notes</i>	201
<i>Index</i>	219

SECTION ONE

# Private Television



# 1

## The Pioneers of Television

While television would ultimately be developed by national and international companies, with dedicated teams of researchers developing new and better technologies, many of the initial ideas that led to television's genesis came from private individuals. Television had been seriously, if intermittently, speculated about by scientists and engineers since the late 19<sup>th</sup> century. As early as 1879, *English Mechanic and World of Science* covered discussions of possible mechanisms for broadcasting moving pictures over a distance relying on the use of selenium cells.<sup>1</sup> These are highly influenced by light, and the principle was returned to several times over the coming decades, not least by the man whose name was largely synonymous with television during the 1920s and 1930s.

John Logie Baird remains the individual most readily associated with early television in the United Kingdom, and yet the general perception of him in academic histories is often dismissive. This is not unique to him; other individuals who contributed crucial (or ultimately superseded) pieces of technology which contemporaneously allowed television to further develop are often dismissed in favour of an emphasis on institutional developments. Andrew Crisell summed up the widely-held view of Baird amongst television historians when he wrote that:

[R]omantic tales of lone inventors and brilliant eccentrics should not blind us to the fact that the major developments in television were the result of well-funded and systematic research by the major communication companies such as Marconi and RCA. Indeed, the most romantic of the lone figures, the Scotsman John Logie Baird, pursued his ideas down a dead-end, persisting with the mechanical method of image scanning long after its limitations had become generally apparent. Nevertheless, Baird achieved one or two firsts and several publicity coups.<sup>2</sup>

Conversely, the popular perception is more generous. For example, there have been at least three children's books published within the last decade alone that

tell the story of Baird's work. These educational titles variously place him as a 'Super Scientist',<sup>3</sup> one of the 'Scientists Who Made History'<sup>4</sup> or as part of a group of 'Groundbreakers'.<sup>5</sup> As part of his analysis of the changing perceptions of Baird Donald F. McLean points to the 1966 transmission of a BBC documentary about the origins of television,<sup>6</sup> which opened with a selection of members of the public responses to the question 'who invented television?'. With the exception of three schoolboys (who came to the conclusion that Robert Louis Stevenson was the most likely candidate) all replied with the name John Logie Baird. His status is then dismissed by the narrator:

But was it John Logie Baird? It was he who sent those first flickering pictures in 1923, and it was Baird who first transmitted television programmes on BBC transmitters. But the modern television system contains nothing, not one single piece of equipment or idea originated by John Logie Baird.<sup>7</sup>

This narration is typical of many serious histories of television and broadcasting since the 1950s. Baird is mentioned only in order for him to be dismissed, as if the programme-maker feels that a history of the medium must reference the famous inventor in order to placate public perceptions of television's creation, but that his presence would be deemed a misrepresentation of its 'true' development.

It may be fairest to say that Baird's role in television's early development lies somewhere between these two extremes. Essentially, understanding his role relies on the extent to which the closure of Baird's system in February 1937 influences one's perspective on the part that he and his contemporaries had played in the development of television to this point. Although his technology put him at the forefront of television in the mid-1920s, by the next decade his work was rarely at the cutting edge. Despite this he was already being perceived by many as television's 'inventor', and the reasons for this need consideration in order to understand the popular perception of television and its origins. However, for the purposes of this book, we need to discover what Baird himself was expecting from the system. This question can be applied to the technology, but also to the medium of television as a whole. We also need to consider the attitudes of others towards his work. This section is an opportunity to not only analyse the exact influence of those working privately on television's development, but also uncover their intentions and own predictions for the medium.

On a national level, Baird played a crucial role in convincing others that television could be a workable system even if his technological developments were eventually to have little in common with the system finally adopted. In time this would lead to the BBC's system of transmissions, which had helped to motivate larger companies, such as RCA and EMI, to dedicate more

resources to higher quality systems of television, resulting in the technology that would remain in place for seventy years. Baird was far from the only person to be working on the development of television internationally at this time, as we will soon see, but his actions motivated serious discussions about the future of the medium. Baird's influence and skill in keeping television experiments an ongoing concern would extend internationally, even if his own work was to reach a dead end before the official BBC service was up and running. Tony Bridgewater, who in 1928 joined the Baird Television Development Company (which Baird set up the same year following these early experiments) has said that 'Baird used publicity a great deal and he used it recklessly – though I suppose that it was necessary when it came to going to the public for money'.<sup>8</sup> It was essential for Baird to convince the public of his technology's worth, as he initially perceived television as a wholly private enterprise that could only receive funding from the sale of sets. When Baird first came to public view in 1925 the BBC had only operated for three years, and was still running as a private company. As a result, their involvement at this stage would not have been a natural step and Baird decided to go it alone with his venture and attempt to garner as much interest as possible in his work, in order to secure a financial backer. In many ways, the location of his earliest public demonstration would indicate the crux of the problem that many would later have with Baird, in that he was often considered to be more interested in personal gain than scientific advancements.

### **Early Demonstrations**

On 24 March 1925 Selfridge's department store placed an advertisement in *The Times* to highlight a new attraction for those visiting its Oxford Street store. The commercial article bore the headline 'Television: The First Public Demonstration' before informing the newspaper's readers that:

For the first time in the world's history Television was publicly and successfully demonstrated on the stage in Palm Court at Selfridge's last week. A good deal has been written about Television but here, for the first time, this new wonder was shown in a form which proves scientifically that 'it can be done'.<sup>9</sup>

Britain was experiencing economic prosperity in the midst of the 'roaring twenties', with fashion and commercialism at the forefront of society. Increased spending power had allowed many to indulge in luxuries that would have earlier been perceived as frivolous, and this burgeoning technology could have been added to the ranks of these new items of interest.

Television was offering something new and innovative to the general public, and while the cinema may have offered the spectacle of *The Lost World* (d. Harry Hoyt, US: First National, 1925) and *Ben Hur* (d. Fred Niblo, US: MGM, 1925), this new medium was a markedly different prospect. It was far from a competitor to the cinema, at this point at least, given that it was only at the very beginning of its development. As with early film, the marvel was the technology itself, and the placement of such a series of demonstrations within a department store was less unusual than it may initially seem. Selfridge's had carved itself a reputation for putting on exhibitions and demonstrations that could entice customers into its store ever since its opening in March 1909. Its founder Harry Gordon Selfridge had aimed for the building to be more than simply a faceless department store. He said that he wanted 'to make my shop a civic centre, where friends can meet and buying is only a secondary consideration,'<sup>10</sup> and such exhibitions enabled him to cultivate this exclusive atmosphere. At its opening the store displayed over £1,000,000 worth of diamonds in its windows, while later the same year it housed Louis Blériot's famous monoplane which had been the first powered craft to cross the English Channel.<sup>11</sup> These were just two of several talking pieces that would attract publicity as well as contributing to the uniqueness of the store, a tradition that continues today. The exhibition of this television system sat alongside an array of marvels and achievements and was a guarantee of interest in both the store and the technology.

It was John Logie Baird who had showcased this basic system of television within the department store. Baird had spent much of his life trying to incite interest in his inventions. Born in Scotland in 1888, Baird showed an interest in basic engineering from an early age, including creating his own small telephone exchange as a child.<sup>12</sup> He studied at the University of Glasgow but suffered from many bouts of ill health, which he attempted to alleviate by temporarily moving to the West Indies before eventually relocating to Hastings in Sussex.<sup>13</sup> Most prominent amongst his earlier efforts was his work on the Baird Undersock, which he hoped would eliminate the problem of cold feet being caused by damp socks. Despite his claim that advertising was not 'the key' he publicised his undergarments in any way possible, including women patrolling the streets with sandwich boards.<sup>14</sup> This created some interest in the local press, a device which Baird called 'editorial publicity' that in turn led to 'considerable profit'.<sup>15</sup> This was a precursor to his later emphasis on garnering as much attention as possible for his work on television, and Selfridge's was to become just the first of many times when he courted the press.

Baird's own journey was just beginning. He had first created a mechanical system of television in 1923 and continued to refine it for many years, but Selfridge's was to be its first public demonstration. His television device was to be just one of many items of interest on show at the store that year, and

even the flyer, distributed alongside Baird's demonstration at the department store, makes it clear that there were no commercial ties between Baird and Selfridge's. It read:

We should perhaps explain that we are in no way financially interested in this remarkable invention; the demonstrations are taking place here only because we know that our friends will be interested in something that should rank with the greatest inventions of the century.

Selfridge's was correct in its prediction, but television's dominant role in culture and society in the second half of the twentieth century would not come about through Baird's technology. Selfridge's unambiguous distancing from Baird's work should not be taken as a slight against it, but rather an indication of exactly how early in the process this was. Selfridge's had no financial links with the product, but then few people did. Indeed, had Baird been able to offer television as a commercial concern at this time then it is unlikely that he would have been granted the privilege of publicising his effort in Oxford Street without coming to a financial arrangement with the store. In fact, Selfridge's offered Baird a fee of £20 per week for his time,<sup>16</sup> an indication that the system was being shown as an entertaining curiosity, akin to a sideshow, rather than a presentation of a serious business venture. Despite this seemingly generous offer, Baird's associate Will Day would write to the store on 20 April 1925 in an attempt to hasten payment, while also suggesting that the payment could be increased to 75 guineas.<sup>17</sup> Day himself had earlier bought a one-third interest in the invention for the sum of £200 after he had seen mention of it in the *Daily News* earlier that year.<sup>18</sup> There is nothing to indicate that the amount paid by Selfridge's was increased in accordance with the request, but Baird had made his first profit from the medium. He was not to make much more.

If Baird had anything on his side, then it was the initial timing of his invention. The mid- to late-1920s were a strong period for the British economy as a whole. As A.J.P. Taylor has put it, 'Englishmen drew closer together; class conflicts were dimmed; the curves of production, wages, and the standard of living, which had previously oscillated widely, now moved soberly upwards.'<sup>19</sup> The economic recovery following the 1914–1918 war had been relatively swift, and by the mid-1920s there was prosperity akin to that experienced at the end of the nineteenth century.<sup>20</sup> Indeed, the country actually seemed to be on an upward trajectory in terms of wealth, following the inevitable economic blip of the First World War. For example, it had been reported in 1899 that 15.46% of the working population of the city of York were living in borderline poverty, but thirty years later this had reduced to 6.8%, a figure that was indicative of increasing levels of personal wealth.<sup>21</sup>



**Fig. 1.1:** *Baird demonstrating his apparatus in Selfridge's in April 1925*  
(Courtesy of the Royal Television)

There is a need to be careful when describing television while dealing with these earliest experiments. There are many potential pitfalls of using the word television to refer to both the medium and the technology, especially in a history that considers both elements. The peculiarity of the device operated in Selfridge's in the spring of 1925 only adds to the confusion. Photographs demonstrate the extent to which the system is unlike the technology that is now so familiar.

They show members of the public viewing the image through an apparently cardboard triangular viewfinder, at the end of which is a spinning disc (accompanied by a 'Danger' sign). This is a Nipkow Disc, a circular piece of card that has many holes cut in it, developed by German inventor Paul Gottlieb Nipkow and patented in 1885 (although this had lapsed shortly before the turn of the century).<sup>22</sup> Nipkow discs were a fundamental part of many of the early mechanical systems of television. They were spun at both the transmitting and receiving end of the apparatus, which could be physically connected or communicate through radio waves. Each tiny hole would pick up a small portion of the object being transmitted, although it could only really indicate whether the relevant part of the image was light or dark. The more holes drilled in the discs, the higher the quality of the transmitted image. There were always practical difficulties with the technology, not least the

requirement that the discs operated directly in sync with each other. However, at this point in his experiments, Baird had an additional problem. He had not yet managed to produce an image with an appreciable greyscale. Instead, there was only light and dark, resulting in the transmission of shadows. As the scientific journal *Nature* said at the time, 'Mr Baird has overcome many practical difficulties, but we are afraid that there are many more to be surmounted before ideal television is accomplished.'<sup>23</sup>

### **Other Early Innovators**

Baird was not the only person to be working on a system of television. For example, there was the work of Leon Theremin in the Soviet Union, who had worked on developing a mechanical system that would achieve 100 lines of resolution by early 1927, and so was a world leader for the time, albeit one shrouded in secrecy by the government and consequently little acknowledged for many years.<sup>24</sup> More famously, just three months after Baird's first demonstration in Selfridge's, Charles Jenkins of the United States gave a similar demonstration of a moving image (in this case, a toy windmill), with the added advantage of synchronous sound, which Baird had not achieved due to practical limitations.<sup>25</sup> Born in Ohio in 1867, Jenkins had long been fascinated with the technology of moving images, and first published his own theories on television in 1913.<sup>26</sup> Jenkins' system was based around the Nipkow disc in the same manner as Baird's own work. Jenkins had first been able to show moving images on 14 June 1923, but took until this 1925 transmission to make his first public demonstration.<sup>27</sup> Compared to Baird, Jenkins was perhaps more modest in his ambitions as he targeted radio enthusiasts rather than making claims for his technology as a long-term solution to the 'problem' of television, as Baird would. Jenkins' more understated approach has allowed him to largely escape the accusations of vague details and hyperbolic claims that would come to dog Baird. As it was, Jenkins would initially find success for his work, just on a smaller scale than his rival was aiming for.

While Baird was excitedly fine-tuning his mechanical apparatus, work on all-electronic television had reached a breakthrough. As early as 1907, the Russian scientist Boris Rosing had suggested that a television system could exist with a cathode ray tube (CRT) as a receiver for the images.<sup>28</sup> CRTs are vacuum sealed glass tubes, with a screen at one end, utilising electron guns at the opposite end to project an image on to the screen. The principle was easier than the practicalities of

constructing such apparatus, but nevertheless the following year saw British scientist Alan Archibald Campbell Swinton offering his own suggestion in the journal *Nature* which expanded the idea into electronically capturing images, as well as receiving them.<sup>29</sup> Various practical limitations stood in the way of work on this theory, including the manufacture of cathode ray tubes to a sufficient standard. However, the work of an apprentice of Rosing, one Vladimir Zworykin, was to change this.

Zworykin's work with Rosing had shown results as early as 1911,<sup>30</sup> when they managed to show what they confessed was a very crude image, but it was one that proved that Rosing's idea that it could reproduce high quality images was more than just a theoretical one as it improved on the results of his earlier work. In 1919, Zworykin moved to the United States where he became a naturalised citizen and by 1925 he had constructed a basic but complete working electronic television system.<sup>31</sup> Unfortunately for him his then employers, the Westinghouse Electric and Manufacturing Company, were unimpressed and elected to move him away from his work on television. This would not be the end of Zworykin's contribution to the medium, but the sidelining of his innovative work on electronic systems of television would allow the lower quality (but more easily constructed) systems to flourish in its stead.

Many of Baird's later problems had their roots in this earliest work. He would find it difficult to move away from the mechanically-based systems of television, as this is where his strengths lay. When high quality all-electronic television developed by Marconi-EMI was slowly unveiled in the mid-1930s it demonstrated the strength of a purely electronic system in contrast to Baird's work. By the time of the 1936 broadcasts Baird Television had started to move towards electronically-based methods in part, but other aspects remained mechanically complex. However, perhaps it is telling that by this point Baird was no longer controlling the technical direction of the company. The journey from this earliest demonstration to the launch of the BBC service over a decade longer was not to be a straightforward one.

### **From Experiments to Business**

While the overall impression of television's development may be that Selfridge's was Baird's breakthrough moment, after which he managed to gradually strengthen his business as a result of the initial publicity, this was not the case. Rather, there was no serious interest expressed in his work. As

Briggs has put it, 'From the glare of publicity, Baird passed yet again into the twilight world of insecurity.'<sup>32</sup> In a move symptomatic of wider views of the feasibility of (and interest in) television Baird was forced to borrow money from his family in order to continue his work.<sup>33</sup> It seemed that television was less desired than Baird had hoped, although he did receive some *ex gratia* free products from companies to help him further his efforts, including £200 worth of valves from the General Electric Company.<sup>34</sup> While this demonstrates a general sense of goodwill towards his efforts, it also indicates that he was not particularly seen as a serious businessman – nor, perhaps, television as a serious business concern. Instead, this seems to be an example of Britain's love affair with the principle of a lone inventor working on bizarre inventions, a relationship that has continued with individuals such as Clive Sinclair and his C5 electric scooter/car hybrid. Baird had already attracted some private investors, however. In 1925 he had been joined by Captain O.G. Hutchinson as a business partner alongside another friend Captain Broderip; together, the three men had bought back Will Day's share in the company.<sup>35</sup>

On 2 October 1925 Baird had managed to substantially improve upon the shadow images that he had earlier demonstrated at Selfridge's. The head of a ventriloquist's dummy, called Stookie Bill (sometimes spelt Stooky Bill), was the first object to be seen with proper variation of greyscale and as a moving image, although initially it was only five frames per second,<sup>36</sup> which was far too low for a convincing illusion of movement.



**Fig. 1.2: Baird and 'Stookie Bill'**  
(Courtesy of the Royal Television Society)

By early the next year Baird's system had advanced to the point where it allowed the viewer to clearly make out objects, movement and half tones. On 26 January 1926 he showed this system to the Royal Institution and the press, keen that the new developments were widely seen and known about.<sup>37</sup> This was not simply because of interest in personal acclaim, but some savvy

business thought. Hutchinson and Baird realised that publicity was the only way to attract financial interest, making such demonstrations to the press of paramount importance.

### **International Developments in Television**

While Baird was sometimes at the forefront of the technology across the globe, during this period international developments occurred so rapidly that pole position in the quest for a high quality practical system continually changed. Additionally, some of those working in the field were playing the long game of steady investment, the exact opposite of Baird's approach of gaining investment for new innovations, rather than producing a stable solution to the problem of television. For example, across the channel Édouard Belin and Fernand Holweck demonstrated CRTs to French officials on 26 July 1926.<sup>38</sup> Although the demonstration could only show outlines and operated at a mere ten frames per second with screen resolution of 33 lines, it was a rudimentary step in the eventual direction taken by television.<sup>39</sup> The short term results may not have been particularly impressive, but Belin and others felt that further refinement would show it as the way forward for television. Just two weeks after Belin and Holweck's demonstration, on 2 August 1926, Dr Alexandre Dauvillier (also of France) demonstrated a superior CRT system showing 40 lines of resolution, once more at ten frames per second.<sup>40</sup> Later that year, on 25 December, Kenjiro Takayanagi of Japan independently demonstrated the electronic display of a symbol on a CRT, captured using a Nipkow disc mechanism.<sup>41</sup>

Work on mechanical television was not entirely abandoned, however. For example, the Hungarian Denys von Mihaly would demonstrate a system akin to Baird's at the Berlin Radio Exhibition in 1929, with a 30-line resolution.<sup>42</sup> Mihaly would later try to introduce his system to the UK, including discussion with the BBC, but his attempts were met with disdain similar to that encountered by Baird.<sup>43</sup> Germany showed some interest, but actually ended up collaborating with Baird for a time, as Baird Television was invited to help form a company that was essentially a consortium of those working in the field, which was named Fernseh AG.<sup>44</sup> Their work continued until 1935, when Hitler instructed the removal of Baird Television from the company.<sup>45</sup>

Such work on mechanical television would eventually be superseded by all-electronic systems, work on which was beginning to show results, and would eventually dominate the technology of television.

One of the best indications of Baird's and Hutchinson's personal hopes for the system lies in their approach to one of the biggest problems that needed tackling before television would be able to launch. This was not an issue related to television content, or even to necessary advancements in the technology, but to the question of infrastructure. It would not be fair to say that Baird was naive to overlook the role of the BBC at this point considering its youth and then status as a private company. However, a letter written to the Post Office by Hutchinson on 4 January 1926 indicates that they certainly hoped for a more straightforward process of setting up a system of television than was to be the case. In the end, Hutchinson's letter would begin a series of correspondence that would last for several years, such were the problems presented by it. It read:

Sir,

Having completed and patented a machine with which vision can be transmitted instantaneously by wireless. [sic] We beg to apply for a licence to broadcast same from London, Glasgow, Manchester and Belfast.

We have been informed that there is no necessity for a licence to transmit vision, but before going to the expense of opening these stations we submit the above application to keep ourselves in order.

Should there be any restriction, of which we are at present unaware we would be pleased if you could acquaint us with the same at the earliest moment.<sup>46</sup>

This letter appears to have created a degree of confusion at the Post Office, with the request coming as something of a surprise as there had been no decision regarding the technical specifications for broadcasts of television over the air. It may be that Baird and Hutchinson hoped that such an application would simply be approved by a junior official as a matter of course, such is the tone of the letter in its attempts to underplay the question. However, the letter manages to contradict itself when, following a request for a licence, it also states that 'We have been informed that there is no necessity for a licence to transmit vision'.<sup>47</sup> Had the company genuinely believed this then it is rather more likely that such correspondence would never have been entered into.

It is also significant that while Baird had perfected some form of moving image, the practical implementation of the system was little considered, with Baird and his colleagues expressing little interest in issues of content. The most ambitious claims of possible uses for the principle of seeing live images from a distance could hardly be satisfied by Baird's groundbreaking but primitive receiver. Baird had made what was then an important technical leap, but it needed considerable refinement and development before it could be used as anything other than a novelty, as had been seen in Selfridge's the previous year.



**Fig. 1.3: Captain O.G. Hutchinson**

*(Courtesy of the Royal Television Society)*

As it stood, television was an unknown quantity, and Hutchinson's expectation that the Post Office would be in charge of licensing any transmissions (should a licence be required at all) was not necessarily shared by the organisation. The request prompted a degree of correspondence within the Post Office as, for the first time, the crucial question of what television was expected to be was asked by a public body. Such discussions highlight the extent to which Baird's role in television's development was an unwitting one. Hutchinson's dogged persistence in presenting a fully functioning official television system, with the resulting opportunities for making money, forced considerations of how television was to be dealt with. At the Post Office, staff members internally

pointed out that the body held responsibility for any messages or other communication by telegraphy, with 'communication' being the key point of discussion. 'The material question is, therefore, whether the transmission of "Vision" by etheric waves amounts to the transmission of a message or other communication,' reads one message. It goes on to say:

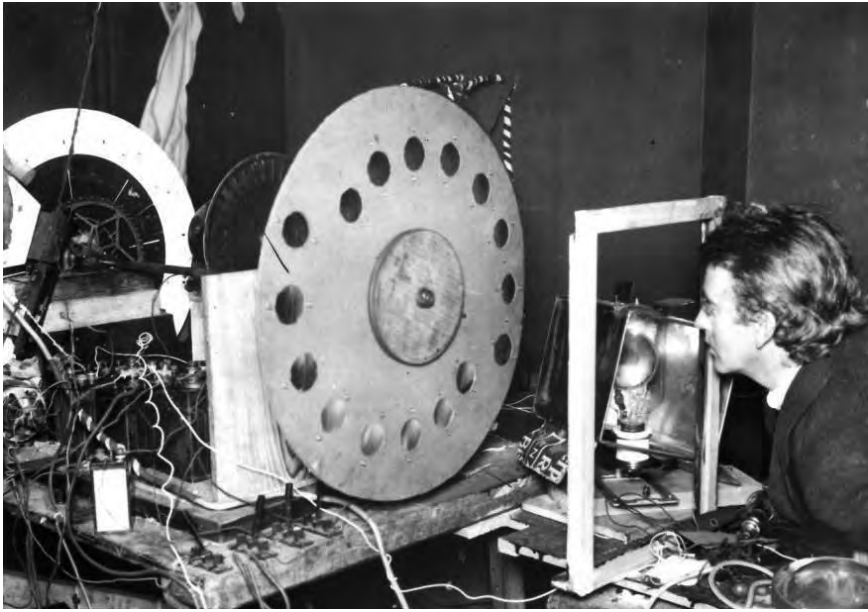
I assume that by the transmission of "Vision" the company means the transmission of a photograph that is, the reproduction at the receiving end. If this be so, then, in my opinion the transmission of "Vision" by itself cannot be regarded as the transmission of a message or communication. But it would appear to be quite impracticable for the company to transmit "Vision" by itself; they would, I should imagine, be compelled to send some kind of signal to the person receiving the "Vision" indicating either some step in the process, or the time when the process was about to commence, or the nature of kind of "Vision" which was being sent, e.g., the name of the person whose photograph was transmitted.<sup>48</sup>

For the first time, a fixed definition of television was being sought. It is telling from Hutchinson's original letter that no specific use of the system was

offered, and it may be this that caused the most confusion at the Post Office. Without being clear exactly what the licence was to be used for, and precisely what the accompanying technical requirements were, the Post Office was circumspect of the request. When it requested clarification, Baird and Hutchinson seemed once more to sidestep the issue of television usage, instead sending a clipping from the *Daily Telegraph* detailing the successful transmission of a doll's head in his experiments earlier that year. It seems unlikely that they were being coy. Rather, Baird and Hutchinson do not seem to have formulated their own idea of what their technology could be used for. Certainly Baird gives no concrete indication in the press reports around this time, other than to vaguely compare the system to radio. This comparison appears to be a technical one, however, regarding the transmission over the air, and the question of content is not touched upon. Considering the low resolution of the pictures when compared to the transmissions ten years later, the possibilities would certainly have been limited, but it is clear that few knew what uses would be found for Baird's work. What were to become elementary aspects of the medium are unclear to the Post Office at this point. Most strikingly, we can see from the above letter that the first expectations of television do not even touch on the use of sound alongside moving images. Additionally, it fails to consider the underlying issue of programming, with its expectation of content being limited to static images and preceding messages, potentially an indication that personal communication may be its principal use. Much of television's development in the next thirteen years would not only be technical, but also related to expected uses of the system itself once established.

Despite this lack of focus regarding the possible uses of the technology, Baird and Hutchinson not only claimed to be ready to set up these four transmitting stations but issued a follow-up letter outlining their business intentions more clearly. Written just seven days after the earlier letter, this missive implored the Post Office to give its permission for broadcasts as soon as possible so that a planned 500 sets could be manufactured, stating that 'At the moment we are held up awaiting your reply'.<sup>49</sup> That this letter is also signed by Hutchinson, doubtless a man keen to recoup some of his investment in Baird's work, is unlikely to be a coincidence. However, it is representative of Baird's attitude that as soon as he achieved the absolute basics of a television service, the transmission of a doll's head with sufficient clarity to be identifiable, he felt it should be rushed into mass production.

The Post Office eventually decided to be cautious in its response to Hutchinson, but not dismissive. After a demonstration to one of their engineers, it decided that Baird and Hutchinson's venture was small scale but required permission to use radio wavelengths in order to improve its current 'rudimentary' wireless aspect.<sup>50</sup> The Post Office's official reply trod a careful line between condoning such a service and denying Baird any prospect of



**Fig. 1.4:** *Baird looking into a Nipkow disc in 1925*

*(Courtesy of the Royal Television Society)*

television transmissions. After first clarifying the technicalities, the Post Office agreed to licence no more than two transmitting stations at a specified wavelength of between 150 and 200 metres, outside normal radio broadcasting hours. ‘It would be a condition of such licences that the stations should be established on private premises and be used for experimental purposes only,’<sup>51</sup> said the letter to Hutchinson, sent on 28 January 1926. This was an important clarification, as the original request had made no indication of the experimental nature of any broadcasts; instead, there was an implication that such broadcasts would be a fully fledged, independent television system. The Post Office appeared to be unsure of its own power over this new technology, stating that the permission would only be granted ‘with the concurrences of other Government departments concerned,’ although it is not made clear which departments this was referring to.<sup>52</sup>

The main reasoning behind the Post Office’s unwillingness to assign any wavelengths to Baird on a more permanent basis would have had its roots in the problem it faced in 1922. When radio became a service that utilised transmissions to a wider audience, rather than as a form of communication between two persons, several companies lobbied for licences to broadcast. However, the spectrum of wavelengths was finite, and so broadcasters would need to be either limited or conglomerated. In the end, the latter option was

taken, with the six major wireless manufacturers joining forces to create the British Broadcasting Company. Indeed, Paddy Scannell highlights the limited wavelength available for such transmissions as a reason for the emergence of radio as a public service.<sup>53</sup> Undoubtedly aware of these problems, Baird's company (at this point simply called Television Ltd.) agreed to the letter's terms and requested two licences, call signs 2TV and 2TW, each costing £3 a year. However, their technology undoubtedly limited what they would be able to show, resulting in marked differences to the system that eventually launched a decade later.

### **The Technology of Baird's Early Television**

Much of the internal correspondence regarding television at this time relates to the question of how its broadcasts could be accommodated within the existing bandwidth allocated for radio transmissions, but there was a more pertinent question to be asked of the technology. Later in this book there is an examination of early television programming and in part this is because the programming was often very different from later television content. By the same principle, the early technology of television transmissions was very different from that later adopted. The Nipkow Disc formed the basis of the technology, which initially did not use a television screen as we might know it, but a small hole through which the image could be viewed. Existing photographs of Hutchinson's face as transmitted by Baird's system in early 1926 also demonstrate the poor clarity of the image, with individual lines of resolution highly visible and no fine detail. However, we should consider exactly what Baird's system was at this point. It was a mechanical, thirty-line system of broadcast at five frames per second. Baird points out in his memoirs *Television and Me* that the image as seen by a user of television would be of higher quality than the existing photographs,<sup>54</sup> but it was still a system that required modification in order to be assured of public acceptance and investment.

It is difficult to assess exactly what television could be used for from such scant, and sometimes contradictory, evidence of its overall quality and usefulness. In actual fact, except for the brief press reports and Baird and Hutchinson's own claims, it is not easy to get a sense of exactly how usable Baird's system was at this point. Certainly it is the basic principles rather than the real effects that Baird and Hutchinson understandably focused on. That is to say, the achievement of a moving image at a distance, rather than the usefulness of such an image when the camera was static, the resolution low, and the viewing area small.

If we are to understand the reasoning behind the perception of television from those viewing Baird's apparatus then we need to gain a better impression



**Fig. 1.5:** *The first photograph of a television image, showing the system as it operated in 1926. The face is O.G. Hutchinson's.*

*(Courtesy of the National Media Museum/Science and Society Picture Library)*

of exactly what they were presented with. We are fortunate that an engineer with no vested interest in the project on either side was to view the experiments and later provide a detailed demonstration of both his own views of the technology but also, crucially for this study, a recollection of Baird and Hutchinson's privately discussed plans for the system, where they were rather more forthcoming than in their carefully written formal letters.

The origin of this written account is somewhat unusual in itself. In 1948, the Gas Light and Coke Company, later to become part of British Gas following the nationalisation of the industry in 1949, sent the BBC a typed appraisal of one of Baird's 1926 demonstrations that one of their employees, E.G. Stewart, had recently re-discovered. 'It might prove useful for some coming of age programme!'<sup>55</sup> said the covering letter, and it is certainly

extremely valuable as an independent person's view of the system. Following his meeting with Baird and Hutchinson, Stewart defines television by saying that 'It is claimed that such an invention will have a public appeal in that pictures may be shown of subjects in movement at the time of their occurrence, either in public, as in a cinema, or in the home as an attached supplementary to a broadcast receiver.'<sup>56</sup> The potential of television sets in public would be one explored by other countries, such as Germany, as well as by Baird, but it was broadly seen as something that could complement a domestic service rather than the principal use of the technology.

Mention of television as a supplementary device for the radio receiver indicates that close parallels were starting to be drawn between the systems; indeed, later there would often be clarification of the placement of television as a potential alternative to radio rather than a system designed to supplant it. In the early years of broadcasts there was even an option from some manufacturers for a

'vision only' television set which could be connected to a radio receiver in order to provide sound, an attempt to reduce the cost for the potential purchaser. It may be telling that it was not the involvement of the BBC that invited comparisons with radio, and that some time before their involvement this connection was already being made.

Stewart goes on to point out another potential use that was referred to by Baird's company during the demonstration. 'Further, that pictures may be sent by telephone and photographed at the arrival end for newspaper work with less risk of being spoilt by electrical faults than is the case with existing picture transmission methods.'<sup>57</sup> This is such a specific use that it surely must have been suggested by Baird or Hutchinson, and it has similarities to many of the ideas in the magazine for enthusiasts of the new medium, *Television*. In that periodical, those who had taken an interest in television would fill the pages with more than just technical news and developments. They would also speculate on potential uses, from televising plays to its potential as a spying device.

Considering that picture definition was the most significant concern with Baird's television system, it is curious that the transmission of static images was being touted as a potential use for a system that, as he acknowledged above in reference to the photograph of Hutchinson through his receiver, only becomes poorer in quality when photographed. However, this suggestion is just one of many that Baird used in order to give a wider range of potential uses of his new invention so as to attract interest and investment. Baird frequently did this, tailoring the uses and advantages of his technology to appeal to those currently viewing it or expressing an interest. Certainly there is no evidence of this claimed use being based on any of the work undertaken by Baird for a moving picture system. Nevertheless, the Fultograph system, developed by German scientist Otto Fulton, has similarities, being a primitive precursor to the fax machine in its method of transmitting still images across a distance. This system was in the later stages of its development at this time and was even trialled by the BBC, to the ire of Baird.<sup>58</sup>

Stewart also highlights one aspect that was to come to dog Baird's work, that of the usability of his undoubtedly innovative technology. 'I found it possible to distinguish between two images I had previously seen in the life,' he wrote, before pointing out that 'At the same time it would be very difficult to recognise an individual previously unknown from the television representative.'<sup>59</sup> Not only were the images unclear, but the experience of watching the apparatus at work was far from a comfortable one, as he goes on to say: 'I found that after about half an hour's watching of the screen that ocular distress was noticeable.'<sup>60</sup> Such 'ocular distress' is likely to be the result of the very low framerate of five frames per second (which would exhibit considerable flicker) rather than the low resolution. While Baird speculates

on ways of increasing the quality of the images, this is an example of his non-lateral appreciation of the problem. It would simply be impossible to gain a high quality system using this method of transmission, but Baird suggested quadrupling the detail by splitting the image into four separate squares, although Stewart remained unconvinced. 'I believe the apparatus will be considerably complicated by this idea and I am of [the] opinion that four wavebands instead of one will be required for wireless transmission which in view of the already congested stated [sic] of the ether is not likely to be practicable.'<sup>61</sup> It was not, and such a usage never came to pass.

The underlying impression of Stewart's assessment is that he found the demonstration to be of interest, but he also clearly believed that there were limitations to the fundamental approach of Baird to the question of television. Stewart could not perceive how the approach taken by Baird could be furthered so as to be appealing to the public at large. This is a problem that would fatally affect Baird's company in the coming years, but at this point he was still at the forefront of the field of television. However, the refining of the technology itself was just one of the problems faced by Baird at this time. His company was in an unstable financial state, in dire need of continual ongoing investment in order to continue its work. With private backing increasingly difficult to obtain, there was only one option left open.

# Index

- 24 (2001–10) 178
- Abramson, Albert 3, 57
- Adam, Kenneth 187
- American Idol* (2002–?) 178
- American Telephone and Telegraph 34
- Angwin, A.S. 87
- Appleton, E.V., Prof. 72
- Ariel* 99–104, 143, 150–1, 167
- Ashbridge, Noel 47, 71, 81–3, 87, 93–4, 130, 176
- AT&T *see* American Telephone and Telegraph
- Baird, John Logie
- attempts to obtain licence for television broadcasts 5, 9, 23–7, 36–7, 45, 66, 71, 174–5, 182
  - attempts to gain financial backing 17, 20–1, 31–4, 41, 45–6, 47, 84, 173
  - contemporary criticism of his work 36, 48–9, 54, 58, 79–80, 174
  - demonstrations of television 1, 5, 15–19, 21–2, 69, 92–95, 112–21
  - early experiments in television 4–5, 15, 18–19, 20–2
  - early life 16
  - further developments in television 35, 54, 58, 119, 127
  - international developments 34–5, 51–2
  - relationship with Baird Television 52, 56
  - reputation 13–15, 53, 54, 59–62, 79–80, 111, 170, 174–5
  - technology of his television 18–19, 21, 27–30, 39, 41, 45, 47, 103, 156–7, 186
  - understanding of television's potential uses 32–34, 48, 59, 79, 159, 180, 181–4
- Baird, Margaret 59
- Baird International Television 51–2, 176
- Baird Television Development Company 15
- Baird Television Ltd 20, 22, 27, 32, 38, 40, 41, 43, 58, 62, 71, 82, 105, 107, 131, 132
- cessation of broadcasts (1937) 58–9
  - finances 45–6, 47, 82, 84
  - publicity 72, 73, 74, 77
  - television broadcasts 43, 44–6, 48–49, 56, 70, 71–8, 80–9, 156–7
- Barr, Charles 7, 185
- Barrington, Jonah 135
- Bartlett, Jean 155–6, 158, 168, 177, 181
- BBC *see* British Broadcasting Company/Corporation
- BBC Annual* *see* *BBC Yearbook*
- BBC Handbook* *see* *BBC Yearbook*
- BBC iPlayer 184
- BBC Yearbook* 103–4
- Belin, Édouard 22, 44, 58, 115
- Ben Hur* (1925) 16
- Birkinshaw, Douglas C. 48, 84
- Birmingham Daily Mail* 117
- Blériot, Louis 16
- Bligh, Janet 161, 187
- Blumlein, Alan 68

- Box and Cox* (1928) 37  
*Breakfast Time* (1983–89) 146  
 Bridgewater, Tony 15  
 Briggs, Asa 2, 4, 8, 21, 40, 45, 58, 74, 86, 88, 103, 135, 174  
 Britannia High 184  
 British Broadcasting Company (1922–6) 26–7, 65–7, 68, 97  
 British Broadcasting Corporation (1927–present)  
   caution towards television 5, 38, 50, 55, 57, 71–8, 79–80, 172, 182  
   formation 26–7, 65–7, 68  
   publicity for television 72–3, 90  
   radio broadcasting 1, 66–7  
   television tests and trials 29, 36, 37, 43–5, 70, 71–78, 80–89  
   understanding of television's uses 38, 48, 49, 77–8, 86, 155, 172, 174, 179–81  
   written archives 7–9, 61, 144  
 British Postal Museum *see* Post Office  
 British Thomson-Houston 85  
 Brown, O.F. 87  
 Bruller, Jean 186  
 Brüning, Heinrich 51  
 Burns, R.W. 3, 42, 60, 68, 73, 83–84
- The Cabinet of Dr Caligari* (1920) 144  
 Cadman, Sir John 87  
 Canadian Broadcasting Corporation 97–8  
 Campbell Swinton, Alan Archibald 20, 36, 39, 45  
 Cantor, Eddie 187  
 Carpendale, Charles 87, 100–101  
 Caughie, John 7, 101, 143, 152, 159, 185  
 CBC *see* Canadian Broadcasting Corporation  
 Channel Four 171–2  
*Checkmate* (1939) 160–4  
 Chignell, Hugh 103  
*Clive of India* (1938) 158–9, 166  
 Cock, Gerald 90–1, 93, 94, 100–3, 143, 150–1, 155, 168
- Columbia Graphophone Company 67  
*The Constant Nymph* (1938) 156  
 Cooke, Lez 144  
 Corner, John 3  
 coronations, TV coverage *see* Elizabeth II; George VI  
 Cowell, Elizabeth 100, 187  
 Crawford Committee (1926) 32, 69  
 Craygy, Cyril Andrew 77  
 Crisell, Andrew 3, 13, 66, 103, 178  
 Currie, Tony 68, 80, 95, 100  
*Cyrano de Bergerac* (1938) 156
- Daily Chronicle* 120  
*Daily Express* 111, 114, 126, 133, 134–135  
*Daily Graphic* 117  
*Daily Herald* 126  
*Daily Mail* 39, 119, 129, 130, 131  
*Daily Mirror* 117, 118, 128, 133  
*Daily News* 17, 115, 116–117, 118  
*Daily Star* 128  
*Daily Telegraph* 25, 77, 114, 118, 119, 126, 128, 129, 133–134, 135  
 Dauvillier, Alexandre 22  
 Day, Will 17, 21  
 Deutsches Fernsehen (First Channel) 97  
 Dinsdale, Alfred 53, 54, 58  
 Dixon, Adele 145  
*Doctor Who* (1963–?) 178, 184  
 Dunn, Kate 2, 151–2
- Eccles, W.H., Dr 72  
 Eckersley, Peter 37, 38, 39, 41, 43–4, 47, 61, 71–4, 79–80, 81, 85, 87, 105, 174, 176  
 Electric and Musical Industries Ltd 67–8, 80, 84, 87  
 Elizabeth II, coronation of (1953) 150, 169, 179  
*Elstree Calling* (1930) 122–3  
 EMI *see* Electric and Musical Industries Ltd  
*English Mechanic and World of Science* 13

- Evening News* 118  
*Evening Standard* 113–14, 134, 135
- Farnsworth, Philo 36, 44, 68  
 Federal Communications Commission(FCC) 96  
 Federal Radio Commission 34  
 Felix, Edgar H. 53, 54, 112  
 Fernseh AG 22  
 First World War 17, 66  
 Fonteyn, Margot 147  
 Friese-Greene, William 113  
 Fultograph 29, 50, 85–6  
 Fulton, Otto 29
- Gander, L. Marsland 128, 134  
 Gas Light and Coke Company 28  
 General Electric Company 21, 96  
 George VI, coronation of (1937) 150, 179, 180  
*The Ghost Train* (1937) 153  
*Glasgow Herald* 120  
*Gone With the Wind* (1939) 154  
*Goodbye, Mr Chips* (1939) 154  
 Gramophone Company 67  
*Grange Hill* (1978–2008) 172  
 Greer, Sir Harry 131  
 Grisewood, Edgar Norman 53  
 Grout, James 156  
*Guardian* see *Manchester Guardian*
- Hancock, Stephen 177  
*Hancock's Half Hour* (1956–60) 177  
 Handley, Tommy 123  
*Hats Off* (1927) 7  
*Here's Looking At You* (1936) 3, 92  
 Hitchcock, Alfred 122–3, 152  
 Hitler, Adolf 22, 51  
 HMV (His Master's Voice) 67, 84–85  
*Hollywood Revue of 1929* (1929) 123  
 Holweck, Fernand 22, 44, 58  
 Hutchinson, Oliver George, Capt. 21, 22, 23–6, 27, 28, 29, 31–2, 33, 36, 37, 38–9, 40, 41, 43–4, 56, 72, 75
- ITV (Independent Television) 88, 171, 184
- Jacobs, Jason 2, 5, 7, 142, 158–9, 185  
 Jenkins, Charles 19, 34, 35, 58, 115, 170  
 Jewesbury, Edward 176  
 Johnson, Paul 99  
*Journey's End* (1937) 156  
*Juno and the Paycock* (1938) 159
- Karlin, Miriam 151–2  
*The Kid* (1921) 144
- Lazell, David 2  
 Leishman, Marista 167  
 licence fee 1, 32, 84, 85, 89, 98, 124, 130, 184  
*London After Midnight* (1927) 7  
*Lost* (2004–10) 178  
*The Lost World* (1925) 16  
 Low, A.M., Prof. 115
- MacDonald, Ramsay 45–6  
*The Man With the Flower in His Mouth* (1930) 45, 156–7, 176  
*Manchester Guardian* 77, 115, 116, 118–19, 127, 128, 129  
 Marconi Company 67–8, 85  
 Marconi EMI 5, 20, 32, 46, 50, 56, 58, 61, 62, 66, 82, 84–6, 107, 132, 176, 183, 186  
 background 67–8  
 demonstrations and tests 47–8, 87, 57, 92–5  
 technology 48, 57, 59, 88, 93, 105, 141, 170–1, 176  
 Marconi, Guglielmo 66  
 Mazdon, Lucy 178  
 McArthur, Tom 119  
 McGee, J.D. 68  
 McLean, Donald F. 3, 14, 35, 111  
 Mitchell, Leslie 187  
 Mitchell-Thompson, William 43  
 More, Kenneth 187

- Morning Post* 115, 128–9  
 Moseley, Sydney 40, 43, 45, 50, 53, 55, 56, 70, 81–82, 83  
 Murray, Gladstone 38, 40, 45, 74–76, 81, 87, 105–106
- Natan, Bernard 51  
 National Broadcasting Company 96  
 National Education Television (see Public Broadcasting Service)  
 National Television Standards Committee 96, 97  
*Nature* (magazine) 19, 20  
 NBC *see* National Broadcasting Company  
*Nineteen Eighty-Four* (1954) 166, 177  
 Norman, Bruce 3, 152  
 Norman, Ronald 101–2  
*Nottingham Evening Post* 118  
 NTSC *see* National Television Standards Committee
- The Observer* 119
- PBS *see* Public Broadcasting Service  
*The People see Sunday People*  
 Percy, J.D. 58, 59  
 Phillips, F.W. 87  
*Picture Page* (1936–39, 1946–52) 145, 149, 151, 159  
 Pirandello, Luigi 45, 156, 166, 176  
 Plew (television set manufacturer) 49  
*Popular Wireless* 53, 79–80  
 Post Office  
   archives (British Postal Museum) 9  
   licensing of radio broadcasts 66–7, 68–9  
   licensing of television broadcasts 23–7, 32–3, 36, 40, 41, 43, 57, 59, 71, 173–5, 182  
   understanding of television 9, 24–7, 35  
   programming *see* television programming  
 Public Broadcasting Service (PBS) 96
- public service broadcasting 1, 5, 31–3, 38, 41, 48, 51, 66–7, 69–70, 105–7, 124, 142, 171–6, 181, 183  
*Puppet Parade* (1939, 1946–48) 161–4
- Quatermass and the Pit* (1958–59) 165–7  
*The Quatermass Experiment* (1953) 165–7  
*The Queen's Messenger* (1928) 34
- Radio Corporation of America (RCA) 13, 14, 45, 46, 68, 80, 96  
 Radio Manufacturers' Association 38–9, 90–1, 126–7  
*Radio Times* 7, 72, 80–1, 99–104, 144, 149, 155–156, 177, 181, 187  
 Radiolympia 9, 90–5, 101, 111, 124, 126–30, 134, 135, 136, 141, 145, 149, 178–9, 180  
 Radioscope 86  
 RCA *see* Radio Corporation of America  
 Reith, John 45, 69, 71, 73, 74, 84, 87, 106, 155, 167, 171  
 RMA *see* Radio Manufacturers' Association  
 Robb, Eustace 84  
 Roberts, J. Varley 87, 92  
 Robida, Albert 132  
 Robson, Neil 128  
*Rope* (1939) 152–3  
 Rosing, Boris 19, 20
- Sallis, Peter 187  
 Samuel, Raphael 8  
 Scannell, Paddy 3, 27, 33, 106  
 Scophony 58, 126  
*The Scotsman* 115  
*Sea Stories* (1937) 168  
 Second World War 6, 8, 51, 58, 97, 117, 119, 177, 181, 186  
 Selfridge, Harry Gordon 16  
 Selfridge's 15–19, 20, 21, 23, 37, 39, 69, 113, 180  
 Selsdon, Lord 1, 56, 70, 87, 131

- Selsdon Committee *see* Television Committee (1935)
- Shaun the Sheep* (2007–?) 172
- Sheldon, H. Horton 53
- Shoenberg, Isaac 67
- The Silence of the Sea* (1946) 186–7
- Sinclair, Clive 21
- Spottiswoode, R.J. 124
- State of Play* (2007) 178
- Stewart, E.G. 28–30, 33
- ‘Stookie Bill’ (dummy) 21
- Sunday Express* 126
- Sunday People* 77, 119
- Takayanagi, Kenjiro 22
- Tallents, Sir Stephen 125
- Taylor, A.J.P. 17
- Tedham, W.F. 68
- Telefunken 51
- Telephotography 86
- Television* (periodical) 42, 50, 53–56, 86, 133
- Television Advisory Committee 57, 92–93
- Television Comes to London* (1936) 145
- Television Committee (1935) 1, 56–7, 70, 82, 87–9, 90–1, 92–3, 105, 124, 134, 136, 141, 143, 170–1, 173–4, 175
- Television Demonstration Film* (1937) 146–149
- Television Ltd *see* Baird Television
- television programming  
  general 4, 5, 92–5, 100–7, 141–54, 155–7, 167–9, 185, 186  
  missing programmes 7, 143–5  
  role of drama 152–4
- see also* entries for individual programmes
- Television Society 42, 50, 54, 55
- Theremin, Leon 19
- Thorne Baker, Thomas 41, 50, 86, 118
- Thorpe, Andrew 85
- Tierney, C. 42–3
- The Times* 15, 36, 39, 73, 116, 119, 124, 125, 126, 128, 129, 130, 131–133, 134, 186
- Tryon, Geoffrey, Major 132
- Turner, L.B., Prof. 72–3
- Vienna lamps 86
- von Mihaly, Denys 22, 58
- Waddell, Peter 119
- West, A.G.D., Capt. 56
- Western Morning News* 129
- Westinghouse Electric and Manufacturing Company 20
- Westminster Gazette* 115, 116, 118
- Whitehouse, J.H. 38–9
- Wireless Pictures Ltd. 86
- Wireless Trader* 134–5
- The Wizard of Oz* (1939) 154
- Wood, Kingsley 84, 87, 88
- The X Factor* (2004–?) 178
- The X-Files* (1993–2002) 178
- Yorkshire Post* 115
- ZDF (*Zweites Deutsches Fernsehen*/Second German Television) 97
- Zworykin, Vladimir 20, 44, 45

