

## British Television and WWII – by David Gray

Prior to World War II, British television existed as a pioneering, yet highly limited and exclusive, public service launched in the 1930s. It was the world's first regular television service, yet it was abruptly shut down in September 1939 upon the outbreak of war, effectively putting the industry into a "deep freeze" for the duration of the conflict.

*(Regular, commercial television service in the **United States** officially began on July 1, 1941, when the FCC permitted commercial advertising and activated non-experimental licenses for stations like WNBT (now WNBC) and WCBW (now WCBS) in New York. While RCA introduced a regularly scheduled, electronic service earlier in April 1939, true commercial, daily broadcasting started in 1941).*

Regular television programming began in Britain on 2 November 1936 from a purpose-built station at Alexandra Palace ("Ally Pally") in North London (*right*). Transmissions were restricted to a radius of about 30–50 miles from London, meaning the service was entirely metropolitan. Initially, the BBC operated two non-compatible systems on alternating weeks: the 240-line mechanical Baird system and the 405-line all-electronic Marconi-EMI system. By February 1937, the Marconi-EMI electronic system proved superior and was adopted exclusively.



In 1937, a television set cost approximately £60–£100 (roughly several months' wages for an average worker). Although television sets were a luxury, interest was growing. By 1937, 9,000 sets were sold, and by the 1939 shutdown, an estimated 20,000 sets were in use in London. Early screens were small (*left*), often watched through a magnifying mirror, and the picture was subject to interference from electrical appliances.

Almost all programming was live from "Ally Pally" studios or via an outside broadcast unit. Content included:

- **Drama:** 1930: *The Man with a Flower in his Mouth* (*right*), early Shakespeare, and thriller plays.
- **Variety/Cabaret:** Singers, dancers, and comedians.
- **Outside Broadcasts:** The first major outside broadcast was the Coronation of King George VI in May 1937. Wimbledon tennis was also broadcast.



- **Magazine Shows:** *Picture Page* was a popular regular magazine show.
- **Last Program:** The final transmission on 1 September 1939 was a Mickey Mouse cartoon, *Mickey's Gala Premier*, (right).



### The Great Shutdown (1939–1946)

The service was closed down on 1 September 1939 as war began, due to fears that the VHF transmissions would act as a beacon for enemy bombers. Technical staff and resources were diverted to developing radar. Pre-war television in Britain was a technologically innovative "plaything for the rich" that was just beginning to establish its role as a mass medium. On the abrupt shutdown in 1939, British television entered a "deep freeze" that lasted for nearly seven years.

The service was off-air for 6 years and 9 months. Beyond the fear of signals guiding enemy bombers, engineers and resources were critically needed for radar development. Equipment at Alexandra Palace was mostly left in place, though some spare parts were harvested for the war effort.

### The Resurrection (7 June 1946)



At 3:00 PM, announcer Jasmine Bligh (left), reopened the service with the famous greeting: "*Good afternoon, everybody. How are you? Do you remember me, Jasmine Bligh?*". To symbolise continuity, the BBC broadcast the exact same Mickey Mouse cartoon (*Mickey's Gala Premier*) that had been the final item in 1939. Just one day after reopening, the BBC covered the Victory Parade in London, showcasing the power of post-war outside broadcasts.

**'Television in Weeks, Not Months – Radio Chief says Report is Absurd.'**

This was the headline in the *Daily Express* on Friday March 9, 1945. The article read:

'London should have television within nine to twelve months from the end of the war, says the report of Lord Hankey's expert committee published last night. The reconditioning of Alexandra Palace, London – from which pre-war television was radiated – will take that time. To which Mr. C. O. Stanley, Chairman of the Radio Industry Council's television committee, replies: "Absurd." He said last night:

"I think Alexandra Palace could be ready technically, in a few weeks. And if there were not enough artists, they could send out films."

### Colour Effects

Here are points from the official report: The service may include colour and stereoscopic effects. It ought to be available for an extra annual £1 licence fee, the BBC retaining the monopoly. The Government is urged to save time to resume broadcasts on the 1939 system, rather than wait for some fundamental improvement in transmission and reception.

The report makes the surprising revelation that “little information and no discovery of a fundamental character” in connection with television have been produced during the war, but adds that radio location and similar activities have built up the number of men and women expert in radio.

A year after the opening of Alexandra Palace a service might be opened in Birmingham. The pre-war plan was to have stations in Huddersfield, Falkirk and Bristol too. These would receive their programmes by radio or cable relay from London. London’s television service is estimated to cost £1,000,000 a year, and when the provincial stations are working, £1,750,000 a year with £1,500,000 capital outlay.

### The Secret Role of Alexandra Palace in the Battle of the Beams



The Battle of the Beams (1940–1941) was a secret World War II scientific conflict between British intelligence and the German Luftwaffe. Germany used radio beams (Knickebein, X-Gerät and Y-Gerät) to guide night bombers to targets with high precision. Led by scientist R.V. Jones (*left*), Britain countered by jamming and “bending” these beams, causing bombers to miss targets.

During World War II, Alexandra Palace (AP) countered the Luftwaffe's Y-Gerät (Wotan II) precision navigation system by using its TV transmitter to retransmit and distort the beam signals. As part of “**Operation Domino**,” engineers used a receiving station at Swains Lane, Highgate, to detect German signals, sending them via landline to AP to create a “howl round” effect. This jammed the system, forcing German bombers off course and preventing accurate target identification.

Key details on how Alexandra Palace countered Y-Great (*trans: Y-Device*):

- **The Technology:** Y-Gerat was a sophisticated, single-beam system that sent a signal to an aircraft, which then re-transmitted it back to calculate distance, allowing for very precise bomb releases.
- **The Countermeasure:** British engineers, specifically the Radio Counter Measures Unit, identified that the Y-Gerat frequency (~45MHz) was nearly identical to the dormant BBC television sound transmitter at Alexandra Palace.
- **Operation Domino:** A receiving station at Swains Lane picked up the signal, which was then amplified and retransmitted by the main tower at Alexandra Palace back to the German bombers.

- **The Effect:** This retransmission disrupted the return signal from the aircraft, causing it to "howl". (*Think of the high-pitched feedback sound that occurs when a guitarist in a band puts his electric guitar too close to the speaker. This is what this retransmission was causing, and all that the radar operator in the bomber and his receiving station could hear*).
- **Outcome:** The jamming was so successful, leading to up to 75% of German planes missing their targets, that the Luftwaffe eventually ceased using this navigational system.

The operation was initiated around February 1941, led by Dr. Ewart Farvis and Dr. Robert Cockburn.

### Returning Pre-War Programs

While much of the BBC schedule was fresh, several popular formats and stars returned to help the public transition back to the medium:

- **Picture Page:** The popular magazine program returned to regular slots.
- **For the Children:** This dedicated block for younger viewers resumed in July 1946.
- **BBC Newsreel:** The service began providing news in visual form again, though it still relied heavily on cinema-style newsreel formats.
- **Sports:** Live coverage of Wimbledon and cricket returned almost immediately.

### Fate of the 405-Line System

Despite being "old" technology, the 405-line system remained the British standard for decades. To save costs after the war, the government chose to stick with 405 lines rather than upgrading to a newer standard. New transmitters were built to extend this service across the UK. When BBC2 launched in 1964, it used a higher-quality 625-line system. For years, viewers needed "dual-standard" sets to watch both. The 405-line VHF transmissions were not fully switched off until January 1985, nearly 50 years after they first launched.

### Sources:

- Science & Media Museum
- Hansard
- BBC
- Baird Television.com
- Wikipedia
- Transdiffusion Broadcasting System
- md21.co.uk