

POST OFFICE INVOLVEMENT IN WAR-TIME TV RECEPTION *or DID THEY OR DIDN'T THEY?* *A mystery story by the Editor*

Even fifty years after the event, there are still weird 'It can Now be Revealed' stories emerging about the last war. One of them concerns the work of the Post Office in television transmission. Or at least, I believe the Post Office was involved although to be fair, I cannot find any proof. Still, following an old journalistic principle (never let the facts get in the way of a good story), I present the facts for you to consider. Who knows? You may be able to shed some light on this fascinating story!

Britain was the first country in the world to have a 'real' public service of electronic television, commencing in 1936. The war put a stop to this and the BBC television service closed down in 1939. Over in France, however, the television transmitter on the Eiffel Tower remained in operation. Under German occupation the service was continued as a propaganda exercise, and it is well known that we British set up a receiving station on the South Coast to monitor these programmes. What is now emerging is that the Post Office allegedly was involved in piping these pictures up to London so that the top brass in Whitehall could see for themselves. (Another version of the story says the pictures were shown in the Houses of Parliament - take your pick.)

I have now heard this story from several independent sources as far apart as Britain and New Zealand but hard facts are sadly lacking. Almost certainly it would have involved a coaxial circuit between St Margaret's Bay repeater station and Faraday Building in London. If the story is correct it would have beaten the first international television link-up (Eurovision) by nine years and proven the Post Office's pre-eminence in the field of international television. But so far, no-one has been able to provide chapter and verse or even some more details.

Starting a couple of years ago I had an appeal for information published in BBC, BT and Royal Signals publications for current and retired staff. Although nothing came back that supported the story it did turn up a lot of other useful information, for instance about the early development of coaxial cables. For that reason alone I think these contributions are worth publishing. If you can add any more, do please let me know - you could help to re-write history! Any replies will be printed in a forthcoming article.

The burning issue is: Is the story true? And I have to say the answer is still inconclusive but there is little evidence to support it. So with the information available at present, I have to say reluctantly that it probably is untrue. It would be nice to think there is something in it and perhaps there is, but goodness knows what!

It started about five years ago when a senior IBA engineer told me when he was an

apprentice, his boss had told this story of monitoring French television at a radar station in Kent and *sending it up to London for the top brass in Whitehall to see*. I have tracked down this man but he is very frail and remembers nothing. Either that or he feels constrained by the Official Secrets Act. His wife asked me not to press him further. There is, of course, no earthly reason why my original informant should have invented such a tale.

Mr K. A. Y. Russell sent a cutting from *Wireless World* of December 1947, which has a photo of the interval caption from the Paris television transmitter and mentions the receiving station constructed at Beachy Head. This was probably the first mention in print of the British monitoring of French transmissions during the war, but of course this was at Beachy Head, not Dover, and there was no suggestion that these transmissions were brought to London by any means. Useful background anyway. Mr R.F. Poulter of Hastings also mentioned this article.

The second mention in print was the book *Adventure in Vision*, published in 1951. The same photo was shown and Mr D. R. Waters of Windsor was kind enough to send a photocopy of the mention.

Alan Goldsmith also recounted this story, who had heard it from an ex-RAF officer.

Mr Warren of Chichester sent a cutting from *Television* magazine (September 1983) which described how the Germans had maintained the French television service throughout the occupation. He also added that he is a long distance TV enthusiast and used to watch the Paris television programmes himself. (In fact I myself recall that French television was considered quite a menace in southern England when people were trying to receive BBC programmes from Alexandra Palace. The French programmes could create significant interference and Belling-Lee even suggested a scheme for filtering out these transmissions in a advertisement in the trade press circa 1953. Of course I can't lay my hands on that advertisement now but I remember it well!)

These transmissions were on the 441-line system on 46MHz, which meant that a 405-line TV tuned to Alexandra Palace (45MHz) could easily pick up the French programmes with only the slightest adjustment. Later French transmitters used the 819-line system which Alex Clapton of Ipswich recalls. He used to stay with relatives in Hastings and says that their 405-line TV was easily swamped by 819-line transmissions from the Eiffel Tower. When presented with an 819-line signal, a 405-line set would pull itself to work at 409.5 lines, giving two elongated pictures side by side. He sent a snapshot to prove it (but I remember playing the same trick at Canterbury using just a coat-hanger aerial!).

So far, so good but what about the allegation that the signals were picked up at Dover and relayed to London? The only person who substantiated this was George Morley, who joined the staff of the GPO at Faraday Building in 1946 after demobilisation. He heard the tale told there but has no further information. During the war he had been employed on radio countermeasures in the RAF and actually monitored these TV signals from Paris both on Beacon Hill (near Bulford army camp) and later on

Parliament Hill, London. He says the pictures were received by BBC and RAF staff at Alexandra Palace nearby.

Several people with technical or on-the-spot knowledge pointed out that it would have been well-nigh impossible to have achieved the alleged feat. This may or may not be true in the context of the wartime situation, although the technology certainly existed. The Post Office opened its London to Birmingham coaxial cable in 1936 and this was designed from the outset to carry television signals. Admittedly the bandwidth was just 1MHz, to carry the lower definition signals in use at the time of its conception, but a usable 405-line picture could be sent over this cable. Indeed, the Post Office proved it, although not until after the war. The big question is, did the Post Office install a coaxial cable between London and Dover? The big answer is apparently no, although it is suggested that the Army may have had a coax of its own, so the story is still feasible. Anyway, back to the replies from people in the field.

C.H. Hutchins of Sholden, near Deal, joined the P.O. as a youth-in-training and his first job involved the maintenance of telephone exchanges in the Deal and Sandwich area. Included among these was the exchange at St Margaret's Bay, which, he says was located inside the repeater station. That was the only equipment working there after Dunkirk. It survived a number of near-misses from the German guns in the Pas-de-Calais and did not re-open as a repeater station until after the war.

Aaron of Dartford confirmed that the repeater station at St Margaret's-at-Cliffe ceased operating from the time cross-Channel cables were cut following the fall of France. There were, he said, many misconceptions which were allowed to proliferate, such as motor cars which stopped mysteriously near Great Bromley radar station and just as mysteriously started again, also the rumour that large claws were fitted to radar masts to grab passing aircraft ("this originated from the PACU rockets being accidentally fired one morning, this happened at Dunkirk near Faversham").

The main repeater station at St Margaret's Bay is a commodious, protected affair built deep inside the cliffs. It contains very little equipment now (modern stuff is so compact) but I am informed it is still staffed round the clock, with all mod cons below the ground. First searches in the BT Archives indicate that it did not open until 10th September 1954, although it may well have been planned several years earlier. Several strategic telephone exchanges were built in deep-level accommodation, as were the Rotor radar stations and the Regional Seats of Government, so perhaps we can forgive the apparent overkill for an innocuous repeater station. My informant (who is not BT but well informed!) also indicates the future of the underground works may be in doubt, which is a shame because they apparently have considerable technical interest. I presume that the old building on the surface was used until the new station opened. There is also another query on this, since two books written immediately after the war ended refer to a new 60-channel coaxial cable installed between St Margaret's Bay and Calais (completed 11.1.45), and it is unclear in which repeater station this terminated, but presumably the pre-war one.

John Bray (Bredfield, near Woodbridge) points out that video transmission over wire-pair cable was practised before the war but only over short distances in the London

area. The BBC had a mobile radio link on 63MHz for TV outside broadcast use but to span the distance from Dover to London would have required four such links and he doesn't remember hearing of any such hook-up (nor does anyone else, of course!).

Jork Andrews (Dennington, near Woodbridge) feels there is nothing in the story and suggests it is one which has grown through repeated re-telling. He can imagine talk in pubs on the South and East coasts about the Chain Home radar stations. No doubt they had green CRTs which would have passed as TV screens to most of the population at that time. The authorities might have been pleased to have as big a smokescreen as that covering the real nature of radar work and anyway, he asks, where were we to find 80 miles of co-ax just waiting to be used for some trivial job? His guess is the whole story has as much validity as the one which went the rounds in the RAF to worry the WAAF – about radar being able to see through clothing! He signs off suggesting that I find out if there was any significant amount of co-ax in the ground at that time.

Fortunately **W.L. Newman** (ex-Dollis Hill) simplified this task since he was one of the three people in the Post Office involved in commissioning coaxial cable systems during the period. He confirmed the sole pre-war coaxial cable were London-Birmingham (1936) and Birmingham-Manchester (1939). Manchester-Newcastle followed about 1943. These were all planned P.O. schemes. In addition there were some frustrated export orders which were applied to British routes: these included Liverpool-Colwyn Bay (circa 1940), Colwyn Bay-Holyhead, Inverness-Wick (c. 1941), London-Salisbury, Salisbury-Exeter, Bristol-Exeter-Plymouth and a number of smaller schemes in the Midlands. He adds that whilst the total bandwidth of, say, L-BM was 3MHz (or Mc/s in those days!), it was split into blocks of 3kHz bandwidth and re-assigning it to video transmission would not have been a simple matter.

A retired **City Area man** rang up to say that he was called to an emergency job during the early part of the war when a bomb exploded close to the Old Bailey. There was a large crater with damaged cables and he was told the highest priority repair jobs were the coaxial tubes. The talk was that they were for experimental television purposes, but this is probably idle speculation based on the fact that coaxial cable was most uncommon in those days and associated in most people's minds with television. In fact, these cables were very probably part of the L-BM route approaching the London terminal in Faraday Building. **W.L. Newman** (mentioned above) added that coaxial cables were not very popular in some circles, since one cable break put paid to a large number of speech circuits. But, his people retaliated, repairing just one joint immediately restored an equally large number of circuits! He says the L-BM cable ran down Eversholt Street, alongside Euston station, and was damaged on at least one occasion as a result of German bomber attacking the railway station there.

Mr Geoff Ellis wrote from Newhaven. "There was never any suggestion that the television signals were viewed other than at Beachy Head itself as far as I am concerned, and speaking as an ex-Brighton Area GPO employee, I would be prepared to state quite categorically that in those days the only circuits that left Eastbourne were strictly audio. Eastbourne was a CB1 exchange with a very small repeater station of audio equipment of the 'Up to Down IN' and 'Down to Up OUT' variety.

Mr Maurice Gill, TD, C.Eng, BSc Eng, MIEE, wrote from Mapledurham: "There must be several pensioners, who were members of the Post Office Engineering Radio Branch at the time, who would be far better qualified to comment on this than I am, but I can make a small contribution.

"My late father Sir A.J. Gill was Deputy Engineer-in-Chief to the Post Office during World War II and his responsibilities included radio matters. Furthermore his chief in the early thirties was Sir Stanley Angwin, who was a member of the Selsdon Television Advisory Committee, which recommended the adoption of the Marconi-EMI system. My father, in consequence, was involved in assessing television systems being developed in the UK and Germany in order to brief his chief Sir Stanley Angwin. In those years (1933-36) my father was very much involved in television developments and at our home we had a TV set when the service started in November 1936.

"If any transmission were made between Paris and London involving the P.O. I am sure my father would have known about it, but he never spoke of any such incidents and I am sure he would have done over the years had they occurred (He died in 1976). At the time (1943) there were no trunk cable systems capable of carrying the 405-line system."

Jack Gray of the BBC (retired) asked Tony Bridgewater, the doyen of the BBC's engineering staff what he knew. Tony had many years earlier met the chief involved with the Beachy Head receive station and retained the impression that the set-up there lasted only a week or so and was considered a very experimental try-out. Jack does point out that the pictures may have been filmed and sent to London (even though the results would probably have been very poor) and it would have been technically feasible (though unlikely) to send the programme sound to London on a telephone circuit.

Donald Wray (Bushey Heath) says the story is new to him and adds that when TV outside broadcasts re-started after the war, they were run over equalised telephone lines. "We also laid down a number of short coaxial cables in the late 1940s to such places as Lords, Wimbledon, The Oval and Wembley Stadium. So I had thought in my innocence that I was the first person to design portable equipment for OBs over coaxial cables. I should have learnt by now, there's never a first!

I do remember setting up a TV circuit over a coaxial cable from St Margaret's Bay to London in the 1950s but I can't recall whether that was for the inland connection to the BBC's celebrated microwave link to Calais or for an early Eurovision exercise [almost certainly the latter -AE]. At that time the routine OBs in the London Telecomms Region were run by a chap called Bert Moore; he loved sending television over telephone lines and was somewhat jealous of this new-fangled coaxial nonsense. At the end of the enclosed article [*Electronic Engineering*, October 1955] it is stated that five such sets of equipment can be used in tandem to give distances of up to five miles. Bert managed to get together enough sets of gear and odds and ends of spare plant to establish a video link (i.e. baseband, non-carrier) in parallel with my coaxial link. It was a splendid achievement but highly unstable!"

Last (for the time being) but by no means least, comes a letter from **James S. Kendall** of Birmingham, who writes: "So the old story has come to light again after so many years! It was a good laugh at the time..."

"Yes I remember the story of the French to Britain TV very well. The story, when I went to the E-in-C's Office Radio Branch in 1944, was that with the height of the masts at Rugby and the height of the Eiffel tower, the two were in visual distance. This was of course backed by the number of old TV chassis being modified by various members of the staff. It made a good story at the time when many places like Rugby Radio Station were thinking up various items of propaganda. (The 'false' argument used for the TV feasibility was that the masts were over 800 feet high, so if you could see three miles out to sea from five feet up, you could see 450 miles from the top of the masts. With the Eiffel Tower higher than that, it would be obviously easy to work as visual distance.

"I remember arriving at Rugby Radio and seeing these chassis and asking what they were. I was told the 'story' that many other people were told also. They were part of an experimental Secret (and highly confidential) TV link. It used Rugby Masts and the Eiffel Tower. Fact: even with the heights of the two structures, they would NOT be in visual sight. The distance Rugby to Paris is about 150 miles, and if the two structures were not more than 100 miles apart, then they would be in visual distance. The chassis certainly were old TV chassis from just before the War. The firm that had them decided, that in view of more modern valves and developments, they would not be re-usable and so they were sold off. Many of us bought then and broke them up for scrap parts. Parts were short and these had loads of components. The sale of these chassis I understood was started the year before I went to the Station, i.e. 1943!

"We did a lot of hush-hush work, and during the battle for Paris, the uprising in 1945 that is, I was in contact with Paris lining up a transmitter and receiver. The receiver as I remember it was an Eddystone 358X. I forget which transmitter it was in the Rugby Short Wave Building. It was morse out and speech back. We also did some propaganda work - lies if you like based on truth. I remember one particular one as I was concerned in it. I used to do a bit at the Toc H Forces Club at Rugby as did some of the others. Checking the toilets one Friday night I noticed that some one had smashed up the lightning protector for the telephone in the billiard hall on the floor above. I thought nothing of it at the time. The following morning, there was a moan about some one not being able to get through to the Hall to book a table. They were getting ringing tone but no reply. I mentioned what I had seen the night before, and one of the Inspectors decided that we might be able to make something out of it.

"So a large scale map was obtained and measurements taken. Then a telephone call via the operator was made. We said that - 'it was top secret and urgent; secrecy was of the essence; the call had to go through to the Top Man in charge of maintenance of Lines and Subscriber's Equipment.' We said that we were trying out a top secret device for the location of faults. Our equipment had found the fault so many feet above the ground, and so many yards from the pole. It was essential that the information we had was checked thoroughly and treated as secret. Well naturally it proved highly accurate. For months the Rugby Telephone Engineers were after the

information from the Station Engineers! Of course no one knew anything! The more it was denied the more convinced every one was that some secret equipment existed. Shortly after peace in Europe, I was asked again about it. I said yes, such a highly technical piece of equipment did exist. It was the human eye! The man I spoke to was sure it was something else! Trusting that this information is of some use. It does account for the story, and the Eiffel Tower is common to both stories. We did do a lot with the Allied Forces of the Interior and the Free French Forces of the Interior. Also odds and ends like Arnhem radio links, I was working on that. Also the battle for Warsaw with the uprising there, I worked on that as well."

That is where the story ends at the moment. Whilst I may not have established what I set out to, these people have uncovered many other interesting details. If anyone has any further thoughts, please get in touch, and if anything more comes to light here I will let everyone know.