

## THE INTERVAL SIGNAL – A VANISHING AND ENDANGERED SPECIES

Compiled by Andy Emmerson

Nostalgia's a funny thing. Even the most trivial of items can take on significance when their disappearance is threatened. The British public rose to protect the red telephone kiosk when British Telecom put this essential element of the urban and rural landscape at risk. In the event its survival was assured by public demand.

In the radio listening 'landscape' a humbler but equally common feature has all but disappeared so perhaps it's time to accord its true significance to the radio Interval Signal.

Nearly every radio listener has heard interval and identification signals, on the short waves even if nowhere else, although some older established European stations still use them on medium wave as well. Although frequently lumped together, the two sounds serve different purposes; the ident is just that—an identifier—whereas the interval signal was a filler to occupy the channel when no other programme was being broadcast, perhaps for thirty seconds before the hour or while listeners waited for another station to join the network. Many international broadcasters provided interval signals for several minutes before signing on to help listeners tune in. There are other differences too; idents are generally short chimes, fanfares or similar musical motifs whereas interval signals are a longer piece of music or sound repeated over and over.

For many British listeners, the most familiar station 'ident' was the Luxembourg gong, and even though some German stations also used a gong, the gong used by 'Luxy' was unmistakable (except when Barry Alldis or one of the other presenters confided he was temporarily in another studio, where the gong sounded quite different).

Almost as recognisable was the Caroline bell (ding-ding!) used as an identification signal and on the BBC, another ringing sound, that of Bow Bells, was used day in and day out as an interval signal until the 1950s.

"Day in and day out" sums it up really; although these audible symbols were trivial in comparison to the programmes they introduced, they were nonetheless an essential part of listening and a reassuring sign that we were tuned to the right station. You never miss something whilst it's there either—but once it's gone, it may well haunt you with its absence!

Fortunately many interval signals and idents are still to be heard daily, such as *Lilibulero* on the BBC World Service. And each signal is different, uniquely identifying its particular station. Some are musical, others are merely familiar sounds such as gongs, bells or even the ticking of a metronome.

The manner of producing these audible symbols has varied over the years; in the beginning they were purely mechanical. A German author has suggested an extremely prosaic reason for the introduction of the interval signal; he states that most of the early 'studios' were extremely small rooms and had to be aired frequently! In order not to lose the listeners' attention during the enforced break, some kind of continuous sound was created to "keep the channel open". Generally this was either a metronome or an alarm clock with a loud tick – and thus the interval signal was born!

Nearly every interval signal was different and radio stations soon realised the interval signal could also serve as an identification or 'road sign' to reassure listeners that they were tuned in on the right wavelength. Many radios of the 1920s and 30s were not endowed with proper frequency scales and with

stations crammed cheek by jowl into the medium and short wave bands, any means of distinguishing and differentiating radio stations was to be encouraged.

Early experimentation in idents were simple in the extreme and revolved around letters in Morse code, gongs, bugle calls and so on. Soon, however, stations became more adventurous and started to play short regional melodies or the first few notes of a national anthem. Musical boxes, glockenspiels and other automated music machines were ideal for this purpose. Other devices used keyed valve oscillators, others were organ pipes 'played by a rotating drum affair like a musical box, whilst yet others had metal plates struck by hammers, again under the action of a motorised drum. All this was in the days before tape loops of course.

A CD release of rare recordings from the pre-war commercial station Radio-Citadells, in the accompanying booklet, a rather more prosaic tale. Announcers were provided with a xylophone, the plates having the figures 1, 2, 3, 4, 5 and 6 painted upon them. In this way the correct musicality was guaranteed (and the set-up was never automated)!

Later on the automatic instruments became more versatile, employing pianos, traunioniums and novachords (both electronic keyboard instruments), oboes, clarinets, flutes, celestes and vibraphones. Most of these were driven by contrivances involving electric motors and were essentially acoustic, although electro-acoustic devices and tone generators were already coming in by the end of the 1920s. Subsequently gramophone records and endless magnetic tape loops came to be employed.

Even the time signal 'pips' are of technical interest. In Britain most people assumed they were one of the BBC's contrivances but this is not the case. In fact until recent years, they were generated by the Royal Greenwich Observatory. The equipment used a regenerative divider and a 1 kHz output from the frequency standard drove a phonic motor and gear train to give the time and the time interval signals. The six pips were produced by a photocell reading a rotating drum and the pip duration was determined by a white stripe on the drum. The complete equipment was designed by the Observatory and made by the Muirhead company; it was installed in 1948/49 and not withdrawn from service until February 1990, when the BBC took over the time service. The equipment is now in the British Horological Institute's museum at Upton Hall in the village of near Newark.

Incidentally, the six pips were generated electronically in later years but the phonic motor and switches were not removed. Finally, in case you're wondering in which year the Greenwich Time Signal changed with the emphasis on the last pip, it was 1972.

#### 5.7.1. Time Signals and Interval Signals

One of the services provided by the BBC is the broadcasting of accurate time signals. These take one of two forms; they are either the chimes and strokes of Big Ben, or the six well-known "pips". Big Ben signals are derived from a microphone and amplifier connected by line to Broadcasting House. Alternative battery supply is provided for the amplifier, and change-over is automatic if for any reason the mains-derived supply fails. It is of interest to note that it the first stroke of the hour which indicates the correct time; the chimes are quite erratic.

The six "pips" are controlled by the master clock at Abinger; this clock used to be situated at Greenwich and the signal is therefore referred to as the Greenwich Time Signal (G.T.S.). The signal consists of bursts of 1 kc/s tone; this tone, generated in London control room, is normally greatly attenuated by means of a rectifier bridge

circuit; d.c. control pulses initiated by Abinger remove the attenuation and the six well-known "pips" are the result. The pips are generated every quarter-hr and are selected for transmission in appropriate continuity suites. The final "pip" denotes the exact quarter-hour instant.

From time to time gaps occur in the programme scheduled for transmission due to errors in timing or other causes. Where these are of appreciable length they are filled by announcements or recorded items from a gramophone record selected by the Continuity Announcer, but short gaps are filled by a recorded interval signal such as the sound of Bow Bells.

From the BBC Training Manual **Studio Engineering for Sound Broadcasting** (1955).

“There Will be an Interval – “

Any station could broadcast Gounod's *Faust*, Ravel's *Bolero*, or Gershwin's *Rhapsody in Blue* without raising undue comment, but it just wouldn't do somehow for, say, the Deutschlandsender to broadcast the Bow Bells or for Oslo to give a few cuckoo calls to fill in that small gap between the programmes! The interval signal is the station's own “personal belongings”, giving it an individuality of its own, as well as providing the distant listener with an excellent and most pleasant means of identification.

The pioneer interval signal was the tick of the metronome device which is still used by Vienna and a few stations in Eastern Europe. The engineers of the Budapest station, however, went a step further and produced an instrument worked on the principle of the musical box. This type of signal, which has been adopted by most of the European stations, has the advantage of being less monotonous than the tick-tock of the metronome (unless it is used continuously for nine or ten minutes, when even the prettiest of melodies is apt to jar one's nerves), and also give each station the opportunity of using a melody which has some local connection. Warsaw, for instance, gives us the opening bars of Chopin's *Polonaise in A major*. Chopin was, of course, a native of Warsaw, and was undoubtedly Poland's greatest composer. The case at Oslo is very similar, the interval signal there being the Motif from Grieg's *Sigurd Jorsalfar*. This signal, by the way, was specially made for Oslo by the Budapest engineers.

The beautiful little melody played by the musical box at the Deutschlandsender, and also heard by listeners to the German short-wave stations, is an imitation of the chimes at the famous Garrison Church at Potsdam, where Frederick the Great lies buried and whence Adolf Hitler spoke after the Reich-Chancellorship had been entrusted to him by the late President Hindenburg. This tune is also part of the opening bars of a German folk-song which has no title but which begins with the words *Ueb' immer Treu' und Redlichkeit*. Excerpts from other German folk-songs can be heard as interval signals at various Reichssenders, including Konigsberg, Frankfurt, Bremen, Danzig, Hanover, Stettin, and Kiel.

The Danish stations stand out as being the most interesting among the group which use the gong system of interval signal, and Copenhagen can proudly boast of the fact that its interval signal is the only one with a dark and mysterious past! It is part of a contemporary Danish ballad, the original music of which was discovered in an old Danish law book known as the *Codex Runicus*. The exact date of origin is unknown, but it is thought to be somewhere about the beginning of the fourteenth century. The conductor of one of the radio orchestras at Copenhagen used the melody of this interval signal as the foundation of a symphony which was broadcast with great success last year. The first few bars of a song by a Belgian composer are played by the chimes at the Brussels station, and carillons are also broadcast at Cologne (an imitation of the Cologne Cathedral chimes), Beromunster and Z. . . Basle uses the

Westminster chimes, and a gong is struck during intervals at Istanbul and Strasbourg.

An attempt to symbolise the iron and steel industry, for which Upper Silesia is so famous, was made by Katowice when it adopted the clanging sound of a hammer striking an anvil as its interval signal. At first, the sounds heard by listeners to this station were actually the steady strokes of a hammer on an anvil! It was the duty of one of the porters at this station to come into the studio during each interval and wield the hammer. Eventually, the anvil was done away with, and Katowice resorted to its present signal, which consists of two tuned steel bars struck alternatively by two small hammers, the sound being picked up by a microphone fixed directly above the bars.

The most ingenious signal of all, in my opinion, is the cuckoo call at the Ljubljana station, which is produced entirely by electrical means. The station's chief engineer designed and built this signal. It is operated by two valves, which, by oscillating in turn on different audio-frequencies each give a note of the cuckoo call. There is a stuffed cuckoo hanging in front of a dummy microphone in the studio, put there, I suppose, to relieve the disappointment which visitors to the station might feel at seeing for the first time the ultra-modern appliance which produces the interval signal. Wilno also uses a cuckoo call, but regular listeners to these stations will not have much difficulty in recognising the different "cuckoos".

The device at Wilno is simple compared with the very sophisticated Ljubljana cuckoo, although it is quite as ingenious in its way. A small box has been fitted with two tiny bellows, driven by an electric motor. Attached to these bellows are two miniature organ pipes which give a surprisingly lifelike cuckoo call by "cucking" and "cooing" respectively into the microphone.

The song of the nightingale, undoubtedly the *prima donna* of birds, is used to denote an interval at various Italian stations, while, by way of contrast, listeners can sometimes hear the crow of the cock from Riga and Prague. Short-wave listeners will be quite familiar with the interval signal of the Portuguese station CT1AA, which, although described by the station authorities as the "cuckoo call", sounds suspiciously like our feathered friend of Ljubljana and Wilno!

T. P.

*Sadly we don't know who T.P. was but we know he (or she) wrote this delightful article for the BBC publication World Radio in 1936.*

## HOW TO IDENTIFY STATIONS

Our French contemporary *Le Haut-parleur* faces a problem of primary importance, to which we wish to draw our readers' attention. The Board of the International Broadcasting Union met some months ago in Budapest without issuing a report concerning the results of the meeting.

The Hungarian press informed that the renowned representatives were invited to sumptuous banquets, to magnificent theatrical performances and to pleasant outings. But we are not particularly interested in these details. The radio licence-holders of all the member countries the International Union would have been infinitely happier to learn that finally the board had resolved to order the broadcasting stations to reveal their identity as frequently as possible in order to avoid thousands and thousand of listeners being confused in front of their radio sets by the impossibility of giving a name to the stations they listen to. This important issue concerning the identification of the broadcasting units has been discussed for a long time. In spite of the expertise of the people involved, none of the solutions have seemed to be sufficiently practical to be adopted. It seems as if a solution – perhaps not ideal, but at least satisfactory

– is possible by means of rather simple and, most of all, inexpensive provision.

Considering the indifference of the Board with regard to this issue, it is important that the radio licence-holders demand an improvement of the current situation. What happens now? Listeners are lost as soon as they attempt international listening. A great number of broadcasting stations are there, in some part of the world, lost in the unknown without revealing their identity with words or notes on a part of our dials. What is the name of these stations? Sometimes we listen for a long time, hoping that they may wish to reveal their identity, but, more often than not, when the conversation or piece of music ends, other parts of the programme follow, without it being possible to identify the broadcasting station. Patient and methodical listeners must perform a whole range of minute recordings.

First of all, identify the position of the unknown broadcasting station on the dials, between two already known ones, in other words the direction in which the station should be according to the orientation properties of the dial. It may also be useful to identify the language presumably spoken at the microphone and the special features of the programme broadcast at certain times. However we regret to have to say that all these elements are aleatory. First of all, the stations do not respect strictly the wavelengths they have been assigned by the Control Office in Brussels. In addition, the orientation properties of the dial are not extremely precise. For what concerns the language spoken at the microphone, not many radio-amateurs know the difference between Czechoslovak, Polish, Hungarian and the four or five languages of the Baltic republics. All these languages can be spoken during a broadcasting from a location in Eastern Europe.

On the other hand, it is extremely difficult to identify a broadcasting station according to its programmes, since they are followed very irregularly by the stations and at the most favourable time to listen foreign stations, i.e. at about 10.30 pm, you can be delighted by jazz from almost everywhere. When the indication of the broadcasting station is provided and this does not occur all the time – it frequently is hard to understand and our readers know that by experience. For example, Hilversum is announced once as "Hier Hilversum", once as "AVRO", another time as "Hier Algemeene Vereniging Radio Omroep". Apart from the first, the other three indications are conventional words that have to be known. For Langenberg the announcement is "Achtung . . . westdeutschen Sender" and the name of the station is not even pronounced. For Katowice someone yells: "Allo! Allo! Polskie radio Katowice," with the name of the location drowned in other words, etc. etc.

Sometimes, we must say, the name of the broadcasting station is emphasised, at least for what concerns listeners of the same nationality, and even too much emphasis is laid on the name. However, considering the common ignorance of other languages, the main word is lost in a stream of other foreign words, unknown to our ears. This very serious problem requires a remedy. A proposal has been forwarded to make each broadcasting station adopt a typical motif and have it repeated frequently during broadcasting. Some stations have accepted the idea but the solution would be useless if the system became generalised. Each listener would be obliged to know from 100 to 150 musical motifs to identify the European stations. Someone suggested to adopt a special instrument, such as a bell, a fife, a flute or bagpipes, etc. It would be marvellous, but definitely not practical. At the end, it has been decided to number all the stations, a system that in theoretical terms is perfect. All that is needed is to indicate the number of the station to know immediately which one it is.

However, if Warsaw is given number 56 which is announced in Polish, we know as much as before, in other words nothing! Therefore, it would be advisable to transmit the number in Morse code like telegrams. But even in this case only a tiny part of the listeners knows telegraphic numbers. Therefore, the various solutions proposed are all hardly feasible. So we naturally return to what should have been proposed right from the start and that consists in the pure and simple announcement of the station's name,

without adding any other words. Nobody has trouble in recognising in the original language Paris, Milan, Vienna. We know that the latter is announced as "Radio-Wien" and this is essential. Nothing else is needed to understand the announcement. Why don't other nations follow this example?

When radio listeners know, for example, that Munich, Helsingfors or Warsaw in their original language are München, Helsinki and Warschawa, identification will not be at all difficult. Listeners can be educated through the press. It is easy to remember that Cologne is written Köln in German and pronounced Keln. All that is needed is to emphasise completely these signal words of the broadcasting location that should be heard separately from any other communication or conversation. Our French colleague suggests to isolate the name between two alarms or two tolls of a bell or other sounds that can be easily produced in front of a microphone. However, this little reform must be accompanied to another that will be made easier by the first. The indication of the broadcasting station shall be repeated frequently. At least every quarter of an hour during varied programmes, as prescribed by the new American regulation, and at least once during intervals between one act and another of a theatrical performance, of repeat broad castings or of an important opera. This is an easy and costless solution. All that the stations need to do is to take individual initiatives, without waiting for the tardy action of the International Radio Union.

*L' Antenna (Italy), 1931.*