

THE SYNCHRONOME HOROPHONES

Horophone is the trademarked name the Synchronome Company gave to its time signal receivers. These self-contained radio sets were specifically designed and marketed for horologists to receive time signals transmitted from the Eiffel Tower and from Norddeich in Germany which were sent out in a simple coded form using Morse code and received on headphones.

Frank Hope-Jones, Managing Director of the Synchronome Company, was a keen amateur radio enthusiast and advocate of the dissemination of time by wireless. Much has been written about the Horophones - a good account is given by Miles¹.

Time signals were first transmitted from the Eiffel Tower in 1910. In 1913 the generation of time signals at Paris Observatory was automated and later in 1913 two types of Horophone were launched by the Synchronome Company. They were manufactured by the Parisian firm of A. L. Chaudet (ALC) who also sold their own similar time signal receivers.

The Type A Horophone was a self-contained wireless set (unusual at that time), apart from the necessary external aerial, earth and headphone connections of course and was designed to be wall mounted, see *Figure 1*.

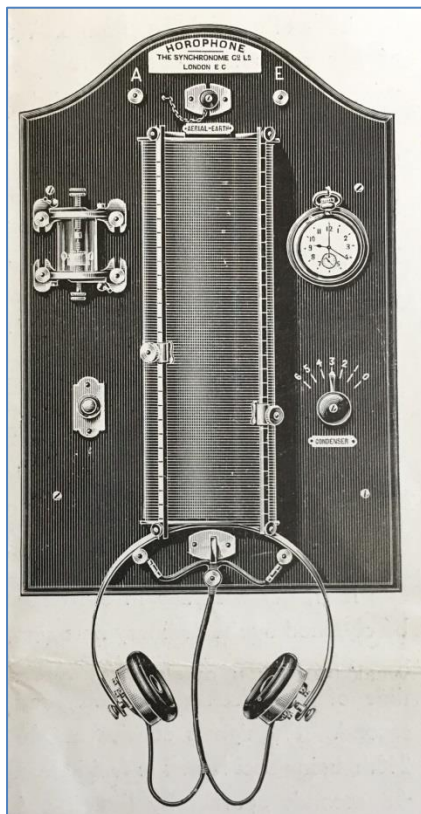


Figure 1: Type A Horophone

The large centrally mounted tuning inductance is flanked by an ALC 'Omnium no. 1' crystal detector to the left and a pocket watch hanging hook to the right. Below the watch is the variable tuning capacitor. Above the coil are the aerial and earth connections, with a shorting plug between them, allowing the aerial to be earthed when the set is not in use. Below the detector is a bell push switch that operates an internally mounted buzzer. The object of the buzzer is not to make any acoustic

¹ Miles, R. (2011) *Synchronome Masters of Electrical Timekeeping*. Antiquarian Horological Society, pp. 196-207

noise, but to act as a miniature spark transmitter that allows the detector to be adjusted for maximum sensitivity. An internal dry cell was required to operate the buzzer. The Omnium detector was also sold by ALC as a separate component, see *Figure 2*. It was a well designed and physically rigid component to reduce vibrations, but also easily adjustable and demountable.

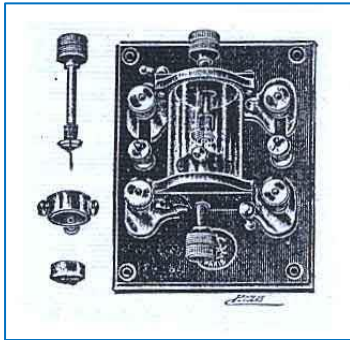


Figure 2: The Omnium no. 1 detector

A Type B Horophone was also available which had an additional electrolytic detector, with a switch to select between the two, see *Figure 3*. There was apparently no buzzer, although this set would also have required a dry cell to operate the electrolytic detector.

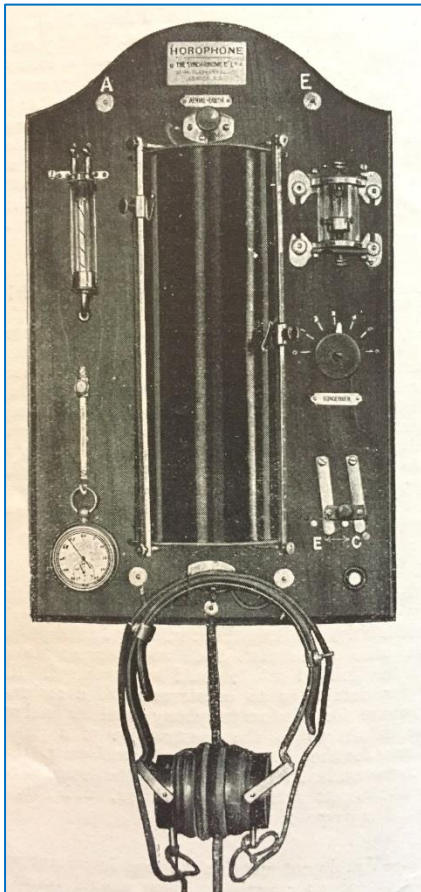


Figure 3: Type B Horophone

Whilst a Type B Horophone is not known to exist, there is one extant Type A with a known and interesting provenance.

The North Eastern Instrument Company Limited (NEIC) was set up in the early 20th century, based in Gateshead in the north east of England. The company made radio components, including Morse keys, but today perhaps their best known products are small tins containing various types of crystal set detectors under the Cymax brand name, *e.g.* Cymosite, Permanite, Hertzite.

Around 1913, the proprietor of NEIC, Norman Hall, purchased a Type A Horophone and established a subscription service whereby local jewellers and horologists could contact the company by telephone to receive an accurate time check. The Horophone remained within the company until its demise in the late 20th century. The Horophone was one of several items rescued from the company in 1980 by a Mr Geoff Robinson who was previously a supplier of components to NEIC when the Company made parts for pipe organs.

The Horophone resided with Mr Robinson for some years until, in 1991, he gave it to his son, Simon². At this stage the Horophone was missing its detector, headphone hook and rear cover, and the backboard was split, but the set was otherwise original and unmodified. Simon decided to sell the Horophone, advertising it in 'Radio Communication' magazine in October 1995.

The Horophone was purchased by a dealer of early wireless equipment who sourced the correct Omnium detector and it was subsequently sold to a private collector in the UK. The Horophone changed hands again in May 2011 and is shown in *Figure 4*.



Figure 4: Surviving Type A Horophone

² More details can be found on Simon's website: <http://www.m5poo.co.uk/the-horophone-story/>

Type A and Type B Horophones continued to be marketed after WWI until, in late 1919, a new version was announced. This was an updated and more compact, table receiver using variometer tuning with twin perikon detectors. A perikon detector consists of two different crystals (typically zincite and bornite) in electrical contact. The later Horophone also contained a buzzer, the push switch being located underneath the headphone shelf. As well as the earlier Type A Horophone, there is also an extant example of this later Horophone, see *Figure 5*.



Figure 5: Surviving Type B Horophone

By 1920 other receivers were becoming available on the market and by September 1922 early BBC broadcast sets were being marketed that could receive time signals as well as the forthcoming BBC broadcasts. The Type Approval of BBC receivers placed no restriction on their wavelength, so they could legally be used for the reception of time signals.