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Collecting Philips Artefacts in Brazil ☐

Collecting Antique Philips Electronic Artefacts in Brazil 1927–1957

by Carlos Alberto Fazano

In the history of science and technology, the development of electronics is a prolific research field for a serious-minded historian or collector; his activities can start in several ways.

According to the author's personal experience, the study of antique topics or collecting antique electronic-electric artefacts based on the evolution of a brand-name or manufacturer is a rewarding approach. Many of the aspects involved, such as technical, economical and scientific ones or even serendipities can be evaluated as a complete matter. The purpose of this article is to introduce in an objective and pictorial manner this type of procedure, using as the basic theme the well-known Dutch company Philips.

The Philips company started its activities in Brazil in the mid-1920s. Since the beginning the company's product line was quite extensive comprising radio sets, loudspeakers, components and test instruments, as well as electrical parts and related items. See **Fig. 1**.

In order to cover the technological evolution of Philips products sold in Brazil from 1925 to 1957, the electric-electronic artefacts are presented in an objective and pictorial sequence starting with vacuum tubes.

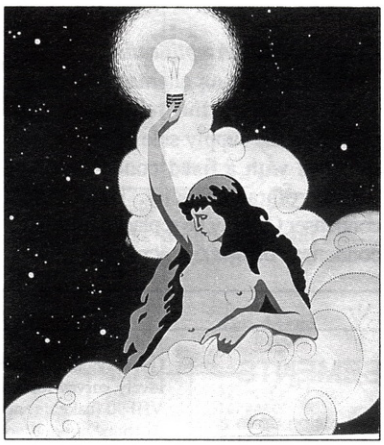


Fig. 1 - The first advertisement in the Brazilian press for Philips incandescent lamps (1925)

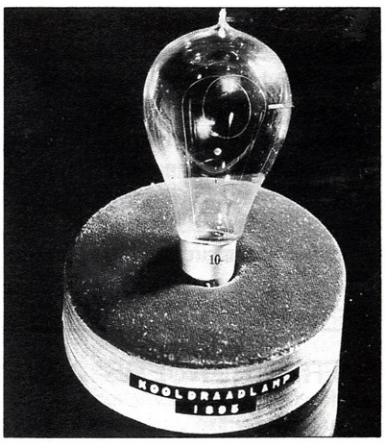


Fig. 2 - Incandescent lamp with carbon filament manufactured by Philips, Holland, about 1895

Vacuum Tubes

Thermionics is always related to lamp manufacturing, the way Philips started in 1891 (**Fig. 2**).

In 1917 the first Philips vacuum tubes appeared on the market under the name IDZ. During the twenties the manufacture of vacuum tubes expanded and the company introduced the famous trade-name 'Miniwatt'.

In the beginning of the radio era, Philips imported to Brazil vacuum tubes from Holland, and eventually started local production. Unfortunately the vast quantity of imported vacuum tubes, the most rare ones, were thrown away after burning out of the filament or probably broken during storage and use. However, collectors can still find some types of antique vacuum tubes similar to the ones shown in **Figs. 3, 4 and 5**.

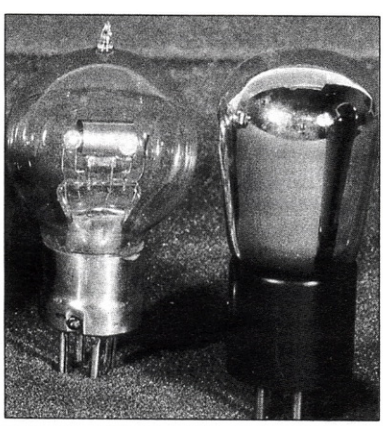


Fig. 3 - Extremely rare antique Philips vacuum tubes

Radio Sets

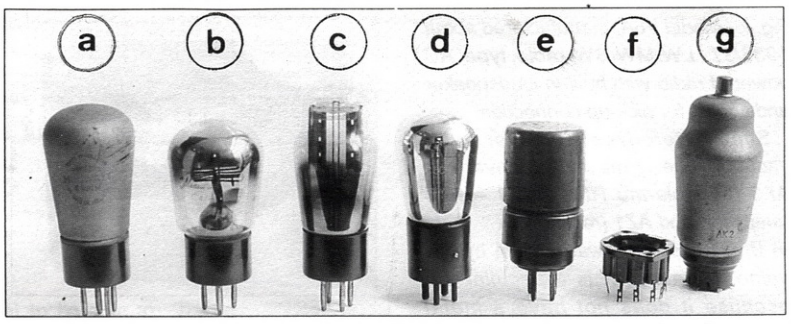
Philips started the manufacture of radios during the twenties and over the years their products became well known due to peculiar electro-mechanical component arrangements, fine craftsmanship and advanced cabinet design.

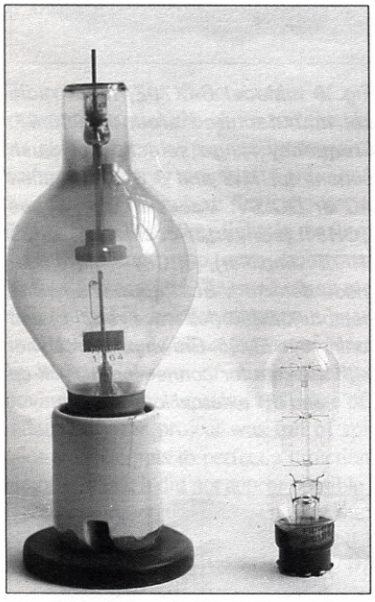
From a collectors point of view it is rewarding and surprising to discover the sensitivity, selectivity and even the quality of sound reproduction of many Philips radios manufactured around 40–50 years ago.

Some representative examples of Philips radios sold in Brazil from 1929 to 1957 are shown in **Figs. 6, 7 and 8.**

Posn.	Type	Year	Base Type	Description
Left	E	1923	Brass	Power tube, filament 4.0V 0.68A, plate 60–100V. This was a direct equivalent of the popular British and French 'R' tube. The tube had a spherical envelope, with 55mm diameter and 105mm length
Right	C509	1925	UX English	See details on Fig. 4

Fig. 4 - Antique types of Philips receiving vacuum tubes ▶

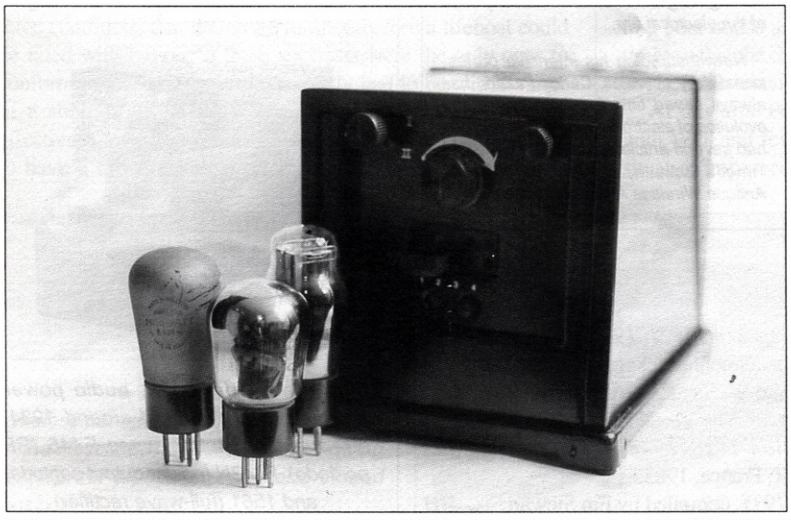




▲*Fig. 5 - Antique types of rectifier tubes, resistance lamps, baretters or voltage regulators (see table below)*

Posn.	Type	Year	Base Type	Description
(a)	E424N	1929	UY, 5 pins English/European	Triode,filament 1V, 3.5A, plate 200V, 6mA
(b)	C433	1930	ditto	Power ouput pentode, filament 4.0V, 0.25A, plate 300V, 200mA
(c)	506	1927	English	Full wave rectifier, filament 4.0V, plate 300V x 2, 75mA
(d)	C509	1925	UX English	Amplifier triode, filament 5.0V, 0.25A, plate 150V, 10mA
(e)	A414K	1929	English	Special metal shielded triode detector, filament 4.0V
(f)	–	1933	Side-contact	Side-contact base, used in vacuum tubes known as 'Golden Range'
(g)	AK2	1933	ditto	Octode converter, filament 4.0V, 0.65A, plate 250V, 1.6mA

Posn.	Type	Base Type	Description
Left	1163	Candelabra	Gas-filled rectifier with heated cathode, or Tungar rectifier tube filled with argon gas; graphite anode and thoriated tungsten heater. Mean anode current 6A
Right	C1	P	Voltage regulator, baretter or resistance lamp. Minimum voltage 80V, maximum voltage 200V, current 220mA



Sound Reproduction Equipment

In the beginning of the radio era, the wireless receiver audio section was a simple headphone set.

Like many other basic radio components, such as valves and batteries, the first cone type loudspeaker was not included in the set but had to be bought separately as an accessory to be connected to the binding posts generally provided at the back of the radio.

At the same time, the audio or vacuum tube amplifier appeared on the market

Fig. 6 - Model 2515, manufactured about 1925, frequency range 200–2000m. Table type AC powered radio with plug for external loudspeaker. Its regenerative circuit is housed in an enamelled metal cabinet with three vacuum tubes, types E242N, C443 and 506 (see Fig. 4). This model is one of the first AC powered radio sets sold by Philips in Brazil

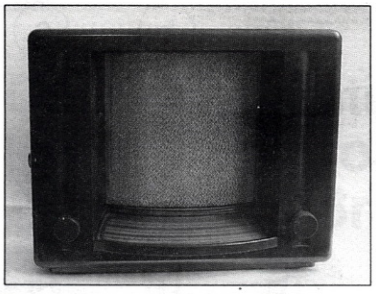
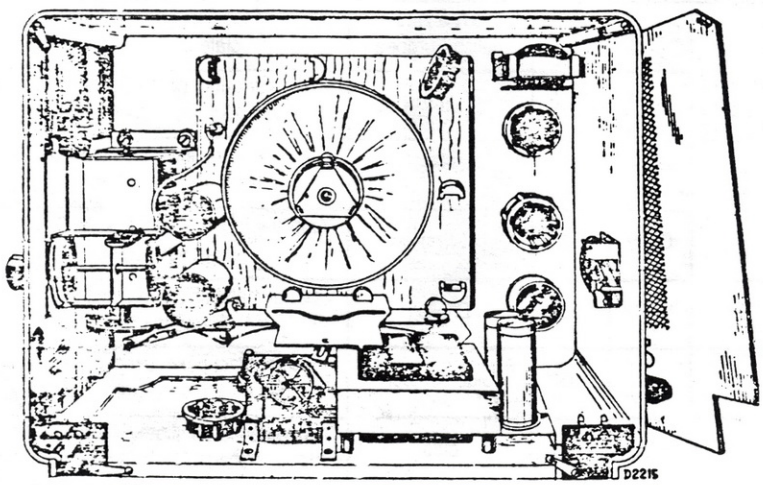


Fig. 7 - Model V6A, manufactured about 1936/37, LW/MW/SW table type AC powered radio with built-in loudspeaker and socket for pick-up connection.

Superheterodyne receiver with vacuum tube types AK2 (converter), AF3 (variable-mu RF), ABC1 – AL4 (amplifier) and AZ1 (rectifier).
In Brazil this radio was known by the name 'Matador'. It is a peculiar set because it does not have a metal chassis; all components are glued inside the plastic cabinet. Trade-name 'Philite'



due to the continued development of output tubes and transformers. Some Philips components of the 'golden age' of sound reproduction, sold in Brazil, are shown in **Figs. 9 and 10**.

Conclusion

Certainly many other topics and aspects of Philips antique electronic artefacts could be mentioned, but the purpose of this article is solely to give some guide-lines on starting a representative thematic research work or collection in the prolific field of 'History of Electronics'.

About the Author

Carlos Alberto Fazano, a Brazilian, has a degree in chemistry and has published two books on laboratory instrumentation. As a lifelong enthusiast of high quality sound reproduction and a short wave listener, he studied electronics by assembling vacuum tube radios and audio amplifiers, so starting his great interest in the early days of the electrical era.

Notwithstanding his intensive professional daily activities, Carlos Fazano has always saved time for the study of the evolution of electronic technology, and has had several articles published in The Old Timer's Bulletin, *official journal of the Antique Wireless Association of the USA.*

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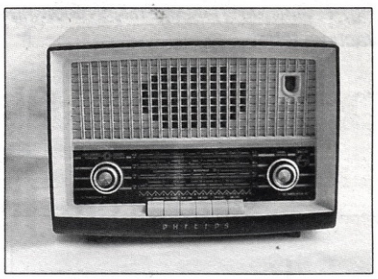

Fig. 8 - Model B4X76Z, table radio set manufactured around 1956/57. Frequency range selection by push buttons for MW and 3 SW, operation AC or DC 6V. Vacuum tubes types ECH81 (converter-oscillator), EF89 (RF-IF amplifier), EBC81 (twin diode-triode detector), EL95 (power amplifier pentode), EZ80 (full-wave rectifier) and tuning eye EM80. Brown plastic cabinet with sockets for connection of pick-up and 5Ω external loudspeaker

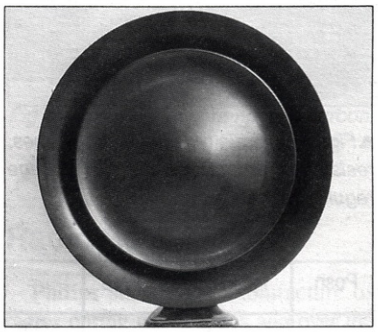

Fig. 9 - Model 2007, manufactured around 1928, moving-iron paper-cone loudspeaker, brown bakelite bowl and cast metal base

Fig. 10 - Model 5926, audio power amplifier, manufactured around 1934, three vacuum tubes types E446 (RF pentode), F443N (power output pentode) and 1561 (full-wave rectifier)