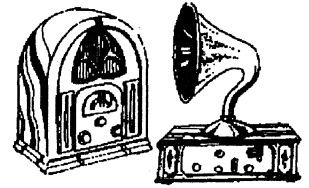


# Vintage Radio

by PETER LANKSHEAR



## The Telefunken Arcolette 3W

In 1903, German radio pioneer Count von Arco, with Professors Braun and Slaby, established the Telefunken wireless telegraph company. Telefunken, which literally means 'distance spark', rapidly came to be a world leader in radio technology and was represented in Australia and New Zealand by AWA. Their compact Arcolette 3 receiver of 1928 was an innovative design, and the fore-runner of the famous *Volksempfänger* or 'People's Radio'.

Telefunken became involved in all aspects of radio engineering — including, with the advent of broadcasting in the 1920's, the manufacture of domestic radio receivers.

In 1928, Telefunken issued a catalog of domestic radio equipment, celebrating their 25th anniversary. My reference copy, kindly lent by John Stokes, was originally distributed by Scott and Company of Queen Street, Melbourne. It lists loudspeakers, battery eliminators and six receivers — ranging from a simple little 'no cabinet' three valve battery powered set with plug-in coils, moveable for control of regeneration, to a five valve plus rectifier mains powered neotrodyne.

Intermediate in the range, and obviously named after the founder, were the three valve 'Arcolette 3' battery model and the subject here: the 'Arcolette 3W', its mains powered counterpart.

### Compact & simple

The Arcolette 3W is almost a cube, and compact — measuring only 200 x 200 x 240mm. The case has sheet metal sides, a Bakelite hinged lid and wooden base. There is no internal loudspeaker and the controls are simple, with only two thumbwheels and a slide switch visible on the front panel. On/off buttons are inside the cabinet.

Although the circuit is almost primitive, construction is typical of German-made equipment: innovative, and with considerable attention to detail and finish. There is no chassis, but instead all components other than the power supply are mounted on or under a small bakelised paxolin panel, which could almost be the forerunner of today's printed circuit boards!

However rather than being the familiar

etched foil of the modern printed circuit, the 'wiring' is stamped out of thin hard sheet copper and rivetted into place. Tabs and lugs are formed in the stampings at appropriate positions, to provide mounting clips for capacitors and resistors, and to form the spring contacts for the valve pins. There are no separate sockets.

### Three tuning ranges

The two coils are of the diamond weave 'spiderweb' pattern, popular in simple receivers during the early days of home construction but perhaps not so common in commercial radios. Although they have a substantial external field, spiderweb coils have the advantages of space savings and efficiency. A simple slide switch selects coil taps to provide three overlapping tuning ranges, from 200 to 2000 metres. In modern terminology, this is from 150kHz to 1.5MHz, and

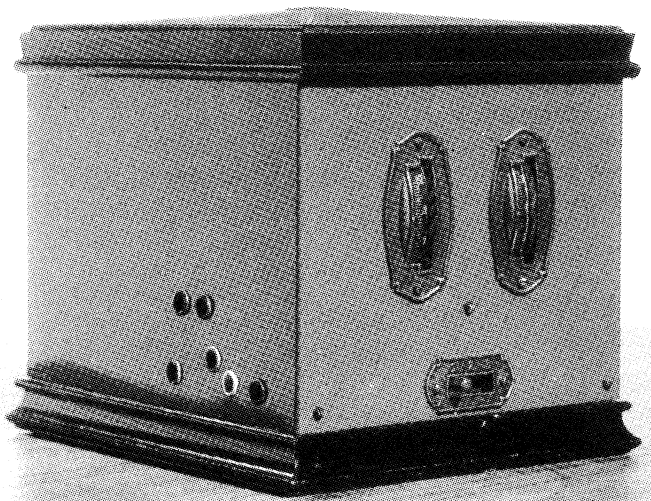


Fig.1: In 1928, radio cabinet fashion was in transition from the laboratory to something more like furniture. The Arcolette still retained a lift-up lid, but the controls were less conspicuous than the traditional calibrated knobs.

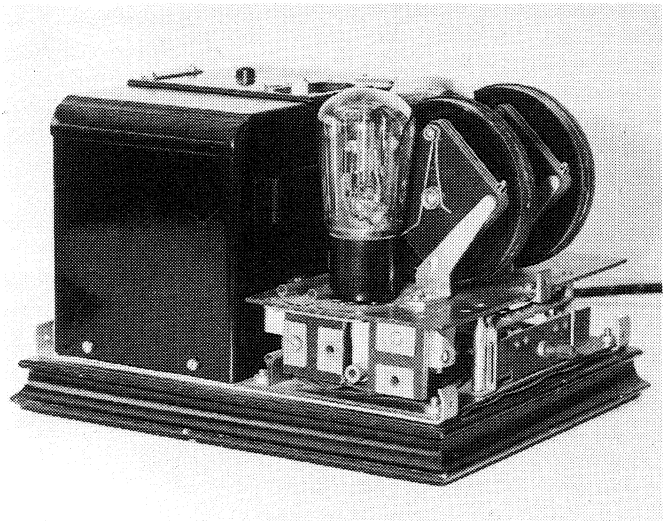


Fig.2: With the outer case removed, the solid dielectric variable capacitors attached to the sides of the thumbwheels can be seen to be very compact. The few resistors and capacitors fit under the paxolin panel.



## VINTAGE RADIO

at this time for simple little regenerative receivers, one of the best known in this part of the world being the Philips 2515/2516 or 'QP', which was built into a battery eliminator case! With only a detector, pentode output valve and rectifier, the QP was even simpler than the Telefunken midget, which was itself to have a famous successor.

In 1933, the Nazi Government commissioned the first model of the inexpensive 'Peoples' radio' or *Volksempfänger*. With only three valves, the *Volksempfänger* was strictly a local station receiver, with a regenerative detector and basic audio amplifier and with volume controlled by variable aerial coupling. It went through several developments, and by 1938 had been simplified to a rectifier and triode/pentode valve — and incidentally, with a thumbwheel tuning control.

Eventually more than three million *Volksempfänger*s were made, and served well their intended purpose of providing the German workforce with an affordable receiver having limited ability to receive foreign broadcasts. Today they are prized collectors' items.

### A mystery

There is an unexplained coincidence surrounding the battery version of the Arcolette. In Britain, the General Electric Company was at the same time selling its Victor 3 model, and by comparing Figs.5 and 6 it will be seen that there is a remarkable similarity between the two.

Although I have not been able to make a side by side comparison, the similarities

*Fig.5: Which of the firms made which set? John Stokes found this interesting advertisement for the GEC Victor 3 in a 1928 copy of the UK magazine Wireless World. The similarity to the Arcolette is even more marked when viewed from other angles...*

NOVEMBER 14TH, 1928.

THE WIRELESS WORLD

ADVERTISEMENTS.

EVERYTHING **The G.E.C. your guarantee** ELECTRICAL

# Well named!

## GECOPHONE

REGISTERED TRADE MARK

# VICTOR 3

**WINS**  
**W.W.**  
**Popular Vote!**



*The hit of the Season*

MADE IN ENGLAND.  
Sold by all Wireless Dealers.

**In the "Wireless World" Olympia Ballot—the 'GECOPHONE' Victor 3 came first in Class 2 for Receiving Sets of 4 Valves and less**

WRITE for Folder BC 4762 or full particulars of the "VICTOR 3" and Brochure BC 4766 for information regarding all the new season's GECOPHONE Radio Receivers, Loud Speakers, etc. **SENT POST FREE.**

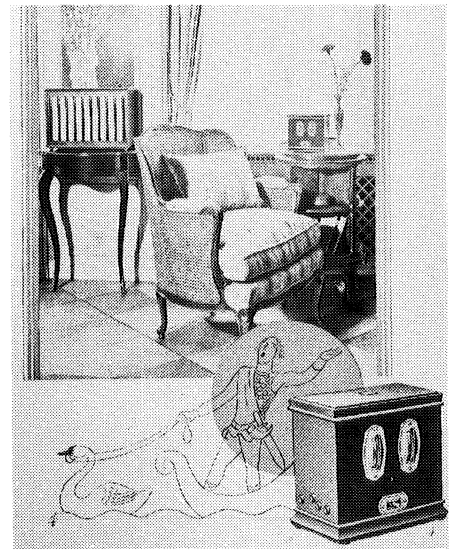
**PRICE**  
Complete with  
**Osram Valves**  
**€ 6.17.6**  
INCLUDING  
**ROYALTY**

Advt. of The General Electric Co., Ltd., Magna House, Kingsway, London, W.C.2

ties have been confirmed by various pictures and descriptions. Although there are some minor differences such as the paint finish and the British model having a wooden lid, the resemblances are remarkable, even to the paxolin panel and the hard rolled copper wiring.

One's first reaction would be to assume that Telefunken made the Victor 3 for GEC. But in his book *Radio Radio*, English writer Jonathan Hill states categorically that 'most of the components were specially made for the receiver by GEC itself and not just bought 'off the peg' from component manufacturers'.

On the other hand, given the state of Germany's economy in 1928, and that Telefunken itself was a major manufacturer, it seems most unlikely that the Arcolette would have been contracted out to a British firm. So what really did happen, and who made what, have yet to be explained. ❖



**Fig.4: This illustration of the battery Arcolette was copied from the 1928 Telefunken catalog.**

## Valve Electronics

*Professional sales and repair services for valve radio, audio and communication equipment.*

*12 month warranty on all work.*

*Parts sales, circuits, advice & custom construction of valve based equipment.*

# VINTAGE WIRELESS RADIO CO.

60 Australia St Camperdown NSW 2050  
Phone: 557 2212

### Collectors please note: old instruments available

Trevor Stahlfest-Moller, of the Electrical and Computer Engineering Dept. at James Cook University in Townsville, has three old test instruments that are available to anyone who will take them: a Philips PM5140 audio generator, a Marconi TF 885A/1 video oscillator, and a Boonton 160A Q meter. His phone number is (077) 81 4459.