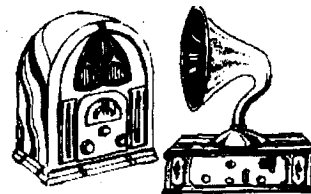


Vintage Radio

by ROGER JOHNSON



The Year that Was... 1923

For his first contribution to our Vintage Radio column, our new writer Roger Johnson has decided to give readers a 'snapshot' of a particular year — with particular emphasis on the development of Australia's fledgling radio industry. The year he's chosen is 1923, a particularly important one as it marked the official start of radio broadcasting.

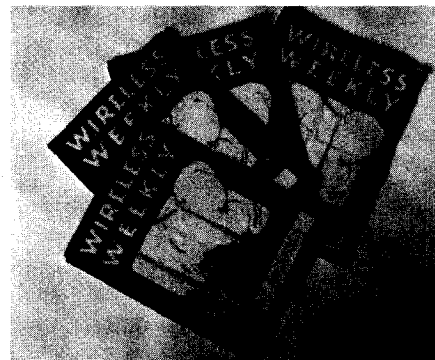
1923 can be regarded as the year in which radio, or at least radio *broadcasting*, had become established in Australia. Just who can claim to have been the first broadcaster is really a matter of definition and debate. According to the late historian Phillip Geeves in his book *The Dawn of Australia's Radio Broadcasting*, although transmissions were carried out during the interval 1919-1922, it was quite clear to listeners, experimenters, dealers and the Government that by 1923 radio was here to stay.

Licences, 'sealed sets'

In 1923 everybody, it seems, was concerned with licences. Listeners paid a licence fee, as did experimenters, and in 1922 a further category was estab-

lished for the 'Broadcasting Station'. This fee was set at five pounds per annum. In addition, dealers paid a licence fee to parent companies for the purpose of incorporating patents, where applicable, in the receiving sets that they sold.

At a conference in Melbourne in May 1923, there was unanimous adoption of a proposal by AWA's E.T. Fisk, later to be known as the 'sealed set' scheme. It was argued by Fisk and other notables from within the industry that those who purchased a wireless set should contribute to the cost of providing the transmission, via their licence fee, and that only those listeners who paid the fee could and should receive a transmission from the particular broadcaster to whom the fee was paid.



Some sample copies of Australia's Wireless Weekly magazine from 1923. The ancestor of this very magazine, it sold then for three pence a copy.

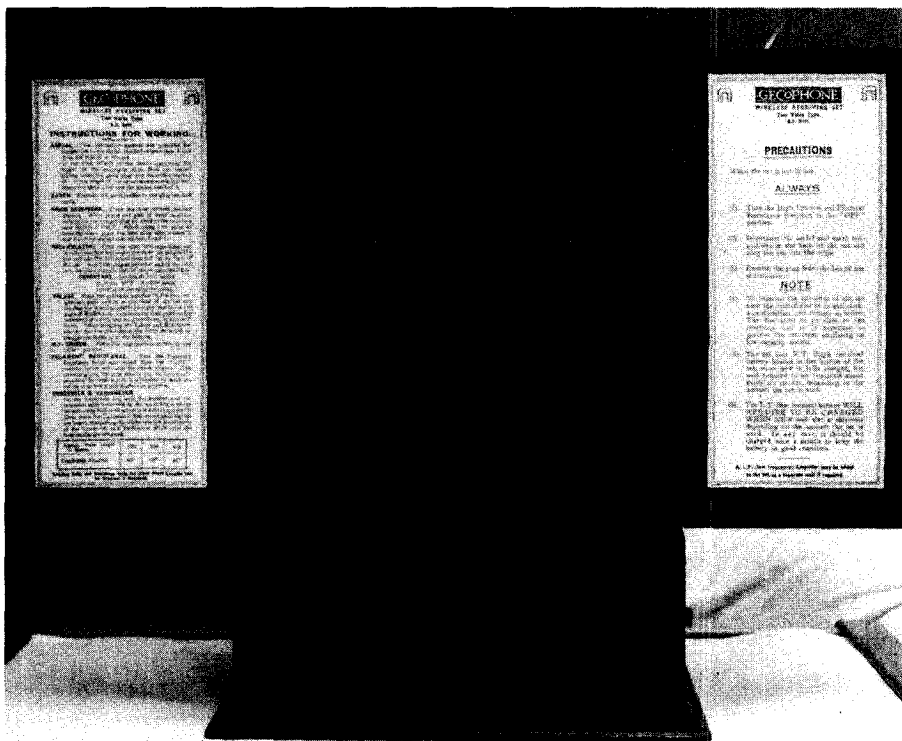
The way to ensure this state of affairs was to sell a receiver supposedly pre-tuned and 'sealed', to receive only the given broadcaster's wavelength. Any listener who wanted to listen to more than one station would be obliged to purchase another receiver, duly licensed and 'sealed' to the appropriate wavelength!

Not surprisingly the scheme was short lived. Anyone with the most rudimentary knowledge of radio was able to modify their sets to receive the full frequency range. Not only this, but anyone who purchased components was able to assemble their own set and overcome the restriction...

Radio magazines

It is difficult to imagine the interior of a 1923 newsagent, if indeed there was such a thing. But it is a pretty safe

A 'Gec-O-Phone' model BC 2001. Officially listed as the 1922 model in the UK, a few of these sets made their way to Australia. It is unusual in that it has an RF amplifier and detector only. A separate two-valve audio amplifier could be purchased if desired.



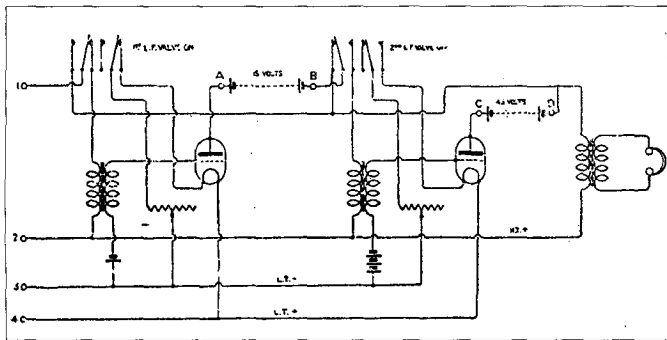


Fig.2: A typical circuit and panel layout for a receiver designed for the home constructor, taken from *Wireless Weekly* for August 24, 1923. Great emphasis was placed on a symmetrical layout.

bet that there may have been but 10-20% of the number of magazine titles on offer today. Amongst the magazines and periodicals dealing specifically with radio which were on offer were the Australian produced *Wireless Weekly*, founded by W.J. MacLardy in 1922, and imported titles such as the weeklies *Amateur Wireless and Electrics* and *Popular Wireless* from the United Kingdom, and the monthlies *Radio News* and *Radio* from the United States. The American monthlies had a US cover price of 25 cents, and apparently sold here for 1/9 or 2/- Australian (18c or 20c in modern parlance).

Just what did these publications contain?

Well, *Radio News* was a superior production, with around 160 pages of almost A4 size on quality paper. Advertising featured very heavily indeed, particularly for 'factory built' radios. Brand names which are household words to vintage radio collectors, are there in abundance. Brands such as Grebe, Atwater Kent, Crosley and Radiola command full page advertisements.

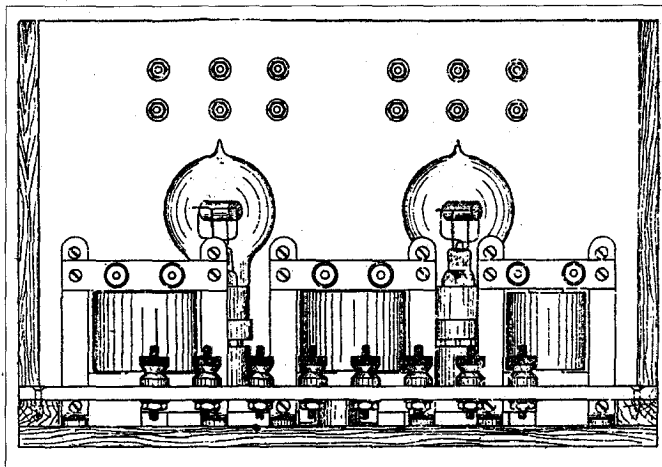
There is also the run of educational and technical articles, with question and answer pages and of course quite detailed articles on set construction. One description is of a superhet with seven valves, but using one tunable intermediate frequency stage, and a five-stage resistance coupled audio amplifier. The mind boggles!

The English weeklies were of a similar page size but consisted of 28 pages. Advertisements were not quite so plentiful. There were some quite good photographic reproductions.

Australia's *Wireless Weekly* was quite modest by comparison, comprising 20 pages measuring only 7-3/8" x 9-5/8". The occasional photograph or two are mainly those of advertised items. There was news of radio clubs, and discussion of where the industry was heading (see cartoon in Fig.1). Other popular items were concerned with caring for your apparatus: e.g., 'Don't burn your thoriated filament tubes too brightly — the correct current for a C301a or the UV201a is 1/4 ampere'. In the same issue there's also 'a talk on the care of the telephone'.

The articles on home construction had great emphasis on symmetry and geometry of the front panel layout, and also the component parts (Fig.2). The casual observer could be forgiven for mistaking the illustrations to be an exercise in line drawing and draughting techniques, rather than radio building.

There were of course a liberal sprinkling of advertisements, which are rather essential for research and identification purposes. Notable by their absence, though, were advertisements for complete sets!



Radio receivers

In Australia in 1923 it certainly appears that the only factory built radio sets were imported. In fact, a feature photograph in *Wireless Weekly* for September 7, 1923 has the caption 'MAKING BROADCAST SETS: An industry about to commence in Australia'. The photo shows young women in long pinafores assembling Marconiphone V2's.

Brands such as Crosley, Atwater Kent, RCA Radiola and Grebe from the US; Stirling, Gec-O-Phone and Brown from the UK; and Telefunken and Siemens from Europe do date back to 1923, but genuine surviving examples are rare and highly prized.

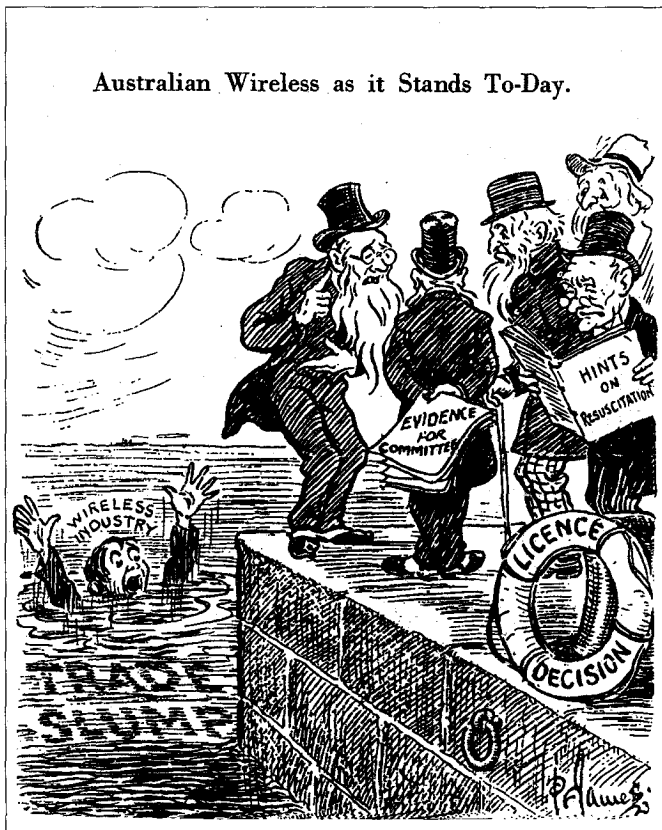


Fig.2: This cartoon commenting on the current status of Australia's radio industry appeared in the September 7, 1923 issue of *Wireless Weekly*. The politicians seemed to be more interested in imposing a licensing system...

VINTAGE RADIO

Radios were not cheap. A popular and economical alternative was the crystal set. However, even these could cost a week's wages, with headphones costing half as much again if purchased fully assembled from a dealer. Tuning, such as it was, was invariably by a 'loose coupler' or a tapped inductance with a fixed capacitor.

There is little doubt that many crystal sets were home made, using a variety of makeshift components such as 50 or 60 turns of bell wire tapped every five or 10 turns wound around a cardboard cocoa 'tin'. Often a razorblade and a nail were used for a makeshift detector, with capacitors made from interleaving layers of tinfoil and wax-dipped tissue paper, and the 'receiver' being an earpiece from a telephone.

It seems that valve radios, whether factory built or home assembled, were of the one, two or three valve variety consisting of a single tuned detector stage followed by one or two stages of transformer-coupled audio. One and two valve amplifiers for crystal sets were also popular.

Variometers featured heavily in 1923. These consisted of two coils, with one

mounted inside the other on a spindle, so that it could be rotated to vary the inductive coupling between them.

If a set used it, reaction or regeneration was most likely achieved by varying the coupling between the tuning coil and the reaction coil — the so-called 'double tuner'. A 'triple tuner' had a variably coupled aerial coil in addition to the other two mentioned coils.

The valves used were more likely than not the 'bright emitters'. These valves — triodes of course — had a filament which lit up like a motorcar tail light bulb. The voltage was generally three or four volts and the current 0.4 - 0.8 amps, with a μ (amplification factor) of about 10 and a gm (transconductance) of in the vicinity of 500 micromhos (500 μ A/V, or 500 μ S). The so called 'dull emitters' such as the 201a, etc., were being advertised, but at a cost of twice that of the bright emitters.

Summarising 1923

It is difficult to provide either absolute accuracy or great detail in so short a space, but hopefully this snapshot of the year 1923 has given you a

feel for where things stood in the fledgling radio industry.

There was lively debate amongst the industry, consumers and the Government, centred around the issue of licences — to whom they should be paid, for what and how much.

Crystal sets were popular and could be easily constructed by those with a flair for invention. A typical radio receiver could cost from 3 to 10 weeks wages; had a variometer or multi-tapped coil with a stud switch on the panel; one, two or three bright emitter valves and filament rheostats of 2 ohms to 5 ohms, one for each valve. The front panel was often more square than oblong in frontal appearance.

Radio transmissions from 'broadcasters', only lasted for a couple of hours at a time, with three or four daily sessions. Broadcast stations as we know them today were few and far between, with perhaps half a dozen only in the mainland states. Many broadcasters were radio amateurs, transmitting from the living room of their homes on about 10 watts for a couple of hours per week, and their contribution to broadcasting in those early days cannot be underestimated — particularly in terms of providing entertainment ♦