

The Year That Was: 1924

Finding research material covering the Australian scene in 1924 is not easy, but I've been able to find some. However by comparison, that year saw some interesting developments from America. Perhaps the most memorable feature of 1924 is that it was a very expensive year for radio equipment...

The big issue for Australia, of course, was the festering sore of 'sealed sets', and by mid-1924 the matter was finally resolved. Sealed sets have been most eloquently covered by the late Philip Geeves in *The Dawn of Australia's Radio Broadcasting* (an EA publication), but the editorial of *Wireless Weekly* for July 18th, 1924 gives a pretty good summary. It says, in part:

The predominant feature is, of course, the fact that open sets replaced sealed ones. There can be no question but that this will mean a rapid growth in the Australian Wireless Industry, attended, it is to be hoped, by a large absorption of Australian-made apparatus...

...The vexed question of 'What is an experimenter' hinges around the clause containing particulars of the amounts to be charged Experimenters. The statement that the applicant must possess sufficient knowledge to undertake scientific research is altogether too broad to discuss.

The concern about 'experimenters' is that experimenters paid a lesser licence fee, as can be seen from the scale of fees shown in Fig.1. It seems that any 'two-bob lair' game enough to knock up some sort of receiving apparatus, using as much 'jerry-built' home-made equipment as possible, could classify himself as an experimenter. Why not?

Technically, 1924 was a milestone year for the introduction and intensive marketing of the 201-A and other 'dull emitter', or low consumption valves. The 201-A was the development of the 201, and had a filament consumption of merely 250 milliamps instead of the previous 1A. Also advertised was the low consumption 'dull emitter' types Cunningham UV-199 and Weco 'Peanut' valves. The usual run of Marconi D.E.R.'s, Ediswan A.R.'s and Philips DI and DII valves were still available; but surprise surprise — the newer types could cost half as much again as the existing bright emitters!

Seen in the United States, but not to be available in Australia for another 12 months or so were the DeForest 'DV' series of tubes, which required a filament current of only 60mA.

Prices in 1924

Prices being asked during 1924 for radio parts and receivers seem to be some of the highest ever during the vintage era. One should remember the 'conversion rates' described in this column in a previous issue.

There were the usual run of home constructor sets (see Fig.2), which ranged in price from £5/10/0 (\$11.00) to £13/13/0 (\$27.30), but presumably this price did not include a loudspeaker — which, depending upon the brand, could cost as much as the receiver itself! There were some very, very highly priced receivers, such as the 'Volmax' brand from Wireless Supplies Ltd, of Royal Arcade, Sydney. Here is what was being offered:

'THE VOLMAX RD SET: Four valve receiver (RF, detector and two audio) complete with all accessories and loudspeaker. Ideal for ranges up to 400 miles... £55/10/-' (\$111.00)

'THE VOLMAX RE SET: Five valve (2 RF stages, detector and two audio), complete as above. Giving excellent results to 1000 miles... £65/-' (\$130.00)

'THE VOLMAX RF SET: Five valve as above, but with 'push pull' audio amplification; same range as above, but gives louder operation. Price complete... £94/10/-' (\$189.00)

In 1924, £94 pounds and 10 shillings was an enormous sum of money — representing approximately four to five months' wages for the wage and salary earner. Clearly these radios were aimed at the professional person or business-



Fig.6: Awaiting careful restoration is this example of the 'British look' — a Sterling 'one anodion' of 1924. It uses a bright emitter type 'E' valve.

man, residing in his Federation-style bungalow in the leafy suburbs of the North Shore...

Other expensive receivers were the top of the range 'COL-MO' from Colville-Moore Wireless Supplies Ltd, of 10 Rowe Street, Sydney. This attracted an asking price of £75/- (\$150.00). There was also the 'Ideal Radio Set' at £95/- (\$190.00) from J. Levenson of 244 Pitt Street, Sydney.

Amalgamated Wireless (Australasia) Ltd, popularly known as 'AWA', was busy making honeycomb coils and audio transformers, and a Mr Stanley Grime headed the production division of AWA in order to prepare for the production of complete sets for the domestic market.

Typical circuits

In *Wireless Weekly* for December 19th 1924, details were given of a good crystal set. A few issues later there was published 'The Complete Set', together with a valve amplifier. There is no tuning capacitor. The tuned circuit relied upon the distributed capacitance between the individual turns of the coil...

The stations (all two of them in Sydney at the time) were tuned via the multiple close interval taps on the large coil. Such a tuning set-up is a high 'L'/low 'C' arrangement, which is the most electrically efficient and affords better selectivity. Such a circuit would probably work fairly well even today.

The American Scene

A glance through three different American publications of the same period has revealed some interesting comparisons. Firstly, prices.

America, with its quite diverse popu-

Open Sets at Last!

NEW REGULATIONS HERE AND PROVIDE FOR THE FOLLOWING

- (a) Open Sets, no restrictions.
- (b) License Fees:
 - Zone 1 (radius 250 miles), 35/- year.
 - Zone 2 (extending 150 miles beyond Zone 1), 30/- year.
 - Zone 3 (remainder of State), 25/- year.
- (c) All licenses will be obtained from the Department.
- (d) Broadcasting to be competitive; advertising to be allowed.
- (e) Experimental licenses to be granted bona fide experimenters as under:
 - Zone 1 20/- per year
 - Zone 2 17/6 per year
 - Zone 3 15/- per year

Fig.1: the scale of licence fees for 1924, taken from the July 18 issue of *Wireless Weekly*.

lation and enormous manufacturing ability, naturally had a large number of wealthy people. This 'top end' of the market was well and truly catered for by wireless manufacturers. Fig.3 shows the top of the range sets on offer from RCA Radiola. By comparison, reference to Floyd Clymer's catalog of 1924 cars shows the Chevrolet touring car with a list price of US\$490.00 — almost the same price!

Given the choice, would the reader today purchase a new Chevrolet car, or the latest thing in AM radio? That was a choice on offer in 1924... Even going one step further and comparing a new Chevrolet car with the latest thing in radio/TV entertainment falls somewhat short of the mark.

The other brand names, familiar to readers in this country, were seemingly quite well established. Grebe, Fada, RCA Radiola, Eismann, Zenith, Crosley, Amrad, Peerless, Attwater Kent and Gilfillan all had full-page advertisements and had amongst their range a selection of sets costing between US\$100 and \$200.

Also advertising heavily were the component manufacturers, such as Rola, Brandes and Magnavox speakers; Eveready, Philco and Exide batteries; and of course Cunningham valves.

Despite the ubiquitous 201-A, which was shown in practically every home construction set and specified by many set manufacturers, and costing typically US\$3.00, there were several companies advertising valve repairs. 'Save half the cost on replacement tubes' was the catchcry. Imagine — if those firms were in business today, they could probably make a fortune. How many burnt out 201-A's are there? Judging by the advertisements, the valve was disassembled, a new filament was inserted and then it was re-evacuated. A bit like the picture tube 're-gunning' firms which flourished during the monochrome TV era...

Amongst the more blatant hype that was being foisted upon an unsuspecting public was the claim that substances such as 'Bakelite' and 'Formica' improved the range and volume of your receiver! These ads were full page, by the way.

The 'Solodyne' circuit

The Solodyne was *the* circuit of 1924, for the new four-element tubes. The tubes were called just that, for it seems the name 'tetrode' had not entered the vocabulary.

The Solodyne circuit relied upon the space-charge effect, whereby the 'inner grid' acted as the accelerator, and the outer grid was the signal grid. The 'Hikers One' described in this column for October 1989 is a classic example of what was referred to as a Solodyne in 1924. These circuits operated on very low anode potentials, with the same battery generally used to provide both the 'A' (filament) and 'B' (anode) potentials.

In other words, the effective 'B' voltage applied to the valve anode and accelerator grid — relative to the filament — is merely the potential drop in the fila-

SIGNAL Home Assembly Sets

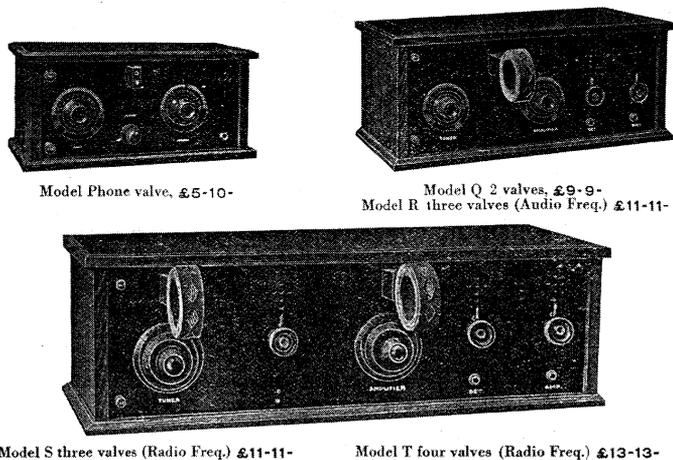


Fig.2: Again from *Wireless Weekly* for July 18th 1924, this advertisement shows the range of 'Signal' sets for home assembly.

ment rheostat. (The rheostat had to be in the positive lead, of course.) The circuits given in *Radio News* for September 1924 specify a six volt accumulator, used with a 4V tube run with 3.5V on the filament. This means that the valve(s) had an effective anode and inner grid potential of merely 2.5 volts. Not bad, eh?

What a motley collection there are. Of the five circuits described, there is (a) a one-valver laid out as an RF amplifier and with crystal detector (Fig.4); (b) a one valve reflex; (c) a two-valver with RF amp and leaky grid detector; (d) a two-valver of detector and audio; and (e) a super-regenerative circuit.

Curiously enough, there is no mention of the actual valve type to be used. Neither does there appear to be any mention of a four-electrode tube in any of the advertisements. The ads for tubes are either 201-A's or UV199's...

The naivety of some of the reader queries in the American magazines were only exceeded by the over-simplification of the answers provided. It is a bit like the *Monty Python* sketch giving instructions on how to play the flute: 'Simple, you blow through this little hole up one end, and twiddle your fingers over the holes at the other and then you get a tune'!

Here is an example from a reader identified as R.H.D. from Seattle, Washington State, who asks: "How do I add one stage of radio frequency amplification to my honeycomb coil set, indicating the necessary switches for cutting out the radio frequency stage when it is not required?". The answer from

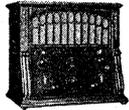
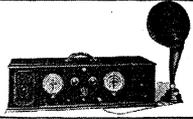
	Radiola X with four WD-11 Radiotrons.* Loudspeaker built-in.	\$245	Loudspeaker operation up to 2000 miles under favorable conditions.	Outdoor or indoor antenna.	Extraordinary selectivity. Non-radiating.
	Radiola Super-Heterodyne with six UV-199 Radiotrons* and Radiola Loudspeaker. Same without Radiotrons or Loudspeaker.	\$286 \$220	Loudspeaker operation up to 2000 miles with internal loop. With external loop up to 3000 miles under favorable conditions.	No antenna. (Concealed small loop built into set.)	Super-selectivity. Non-radiating.
	Radiola Super-VIII with six UV-199 Radiotrons.* Loudspeaker built-in.	\$425	Loudspeaker operation up to 3000 miles under favorable conditions.	No antenna. (Concealed large loop built into set.)	Super-selectivity. Non-radiating.

Fig.3: Some of the more expensive sets on offer in America by RCA in 1924, as part of their Radiola range. A Chevrolet touring car was priced at US\$490 at the time — not much higher!

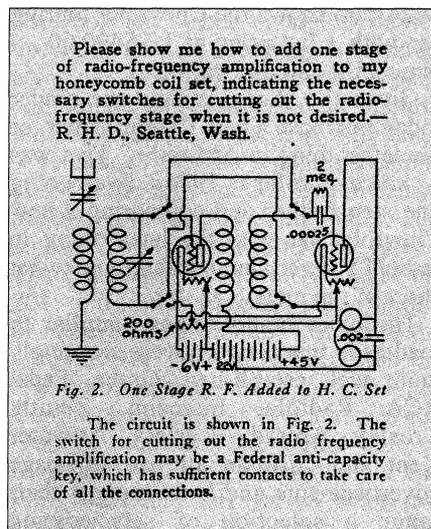


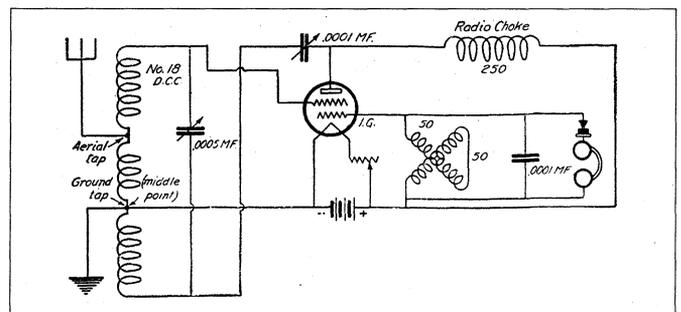
Fig.5: A simple answer to a simple question! How to add an RF stage to a set, as explained by Radio Magazine's Gerald M. Best in April 1924.

Radio's Gerald M. Best, with all of a dozen words of text, is shown in Fig.5. What could be simpler?

The English scene

One thing that became apparent from

Fig.4: One of the Solodyne circuits published in the US magazine Radio News for September 1924, to suit the new dual-grid valves. Note the single 6V battery.



glancing through the illustrations in the American publications is that practically all advertised sets in 1924 were of the familiar 'coffin box' variety, or designed into a piece of drawing room furniture. The same could not be said of English sets, though.

A glance through the illustrations in British magazines of the period show that the American style 'coffin box' was very much in the minority. Typically, a British set had externally mounted valves and coils, on either a flat, vertical or sloping panel, and in the case of an enclosed set, the front panel was more often square, and not oblong. Fig.6 shows a 'Sterling' one-valve set which rather nicely illustrates the point. Two and three-valvers were extremely common, and British sets tended to be more compact than their American (or Australian) counterparts.

British sets of 1924 had quite the appearance of a piece of scientific apparatus, and could be described as quaint rather than functional. Many collectors find that the British style of externally mounted valve(s) and perhaps coils as well, is somewhat pleasing to the eye, but I guess it's all a matter of taste. ♦