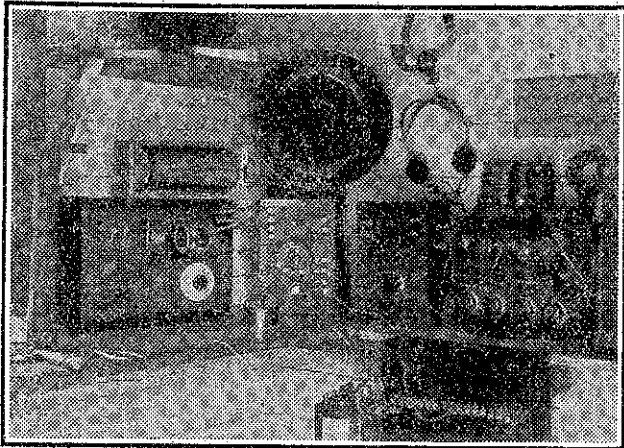




# 10 YEARS IN ENTERTAINMENT



## A Decade Of Sets And Circuits



This "old-timer" was built over ten years ago by Mr. Morton W. Coutts, owner-operator of 2AQ—a station that was very popular in those days. On the left is the tuning box; next is the detector unit (with a variable grid leak in front). The next two units are one and two-stage audio amplifiers.

### Most Early Models Looked Like Heath Robinson Cartoons!

Often no tuning condenser was used, but in its place was a variometer or a loose coupler consisting of a pair of coils, one sliding within the other to provide for tuning in stations on different wavelengths. Multi-tap coils with two rows of studs and two switch arms to give coarse and fine tuning were also very common.

In those days, flexibility was the aim of every dyed-in-the-wool constructor, next to the ability to receive signals. Sometimes it came first. Consequently a set with any pretensions whatever simply bristled with knobs and switches, and occupied a considerable amount of space—so much that the possession of a wireless set usually meant that a room had to be set aside to house it. The appearance of a home-built radio in 1925 was usually strongly reminiscent of a Heath Robinson cartoon.

As time went on, more stations came on the air, and radio began to be accepted as a new medium of entertainment rather than as a hobby for "cranks." With the formation of the Radio Broadcasting Company in 1925 more stations came on the air, and more licenses were taken out, but it was still several years before set prices began to fall. There are quite a few listeners in New Zealand to-day still using 1926 and 1927 sets for which they paid over £100, solely because no dealer can afford to allow them a trade-in value of more than several pounds.

The most popular circuits of that time were the neutrodyne and other tuned radio frequency types, which often used cumbersome three-coil tuners with plug-in honeycomb coils. The superheterodyne had only a limited following then, for it had several serious drawbacks that were not eliminated until years after. One of these was the interference this type of set created with the reception of other listeners for miles around; in fact, on this account the Government actually framed a regulation forbidding the use of superhets with outside aerials.

Nevertheless, with all their failings, some of these old sets put up surprising records for long-distance reception. Years before the first completely a.c.-operated set reached this country, experimenters and others interested in DX listening were regularly tuning-in to KFI, Los Angeles, on three, two and even one-valve sets.

Headphones were much more generally used than they are now, though the old horn speakers were also very popular with those owning multi-valve sets. Compared with present-day standards the tone they gave was execrable, though their owners were quite happy as long as they picked up something that sounded like music or speech.

Home constructors in 1925 really were constructors—instead of buying components ready-made as nowadays, they actually built most of the parts they used. Often an experimenter would buy only a valve, a pair of phones, and perhaps a variable condenser, and devise the remainder of the parts himself.

In the valve class, one and two-valve "straight" and reflex circuits were favourites among home builders. Some of the reflexes were very critical in operation, and would howl like a "banshee" at the slightest provocation! Crystal sets were also far more popular than they are nowadays.

On the technical side, radio engineers were steadily forging ahead with improvements to circuits and valves. In 1928 one of the most important advances that have ever been made in radio took place with the introduction of the screen-grid valve. With its advent, all the neutrodyne circuits which had proved so popular till then were discarded. On the home construction side, circuits such as the Browning Drake and Hammarlund Roberts, which had been built in thousands by experimenters throughout the country, began to lose favour, and sets using screen-grid valves in the r.f. stages began to take their place.

Next came the output pentode. Like most innovations, it met with a cold reception at first, but when engineers fully realised its tremendous advantage over the triode power valve it became universally popular. Then came the all-electric receiver and moving coil dynamic speaker, and with their introduction licenses began to mount rapidly. Set designers still favoured the tuned radio frequency type of receiver, however, and it was not until 1931 that they were forced by the rapidly-growing need for high selectivity to turn their attention to the superheterodyne.

The next milestone along the path of radio progress was passed in 1932, which saw the introduction of the six and seven-pin type valves. These with their tremendous gain and improved flexibility were far superior to their fore-runners. Special types were also developed for superheterodyne operation, and to give diode detection, automatic volume control and noise suppression control. Visual tuning and automatic tone control were two more refinements that helped to make the 1933 model far superior to those of earlier years.

The next radio season found almost every radio manufacturer concentrating on dual-wave and all-wave sets, designed to bring in shortwave stations from all over