

Vintage Radio

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Peter Lankshear: vintage radio from the other side of the ditch

The title “Vintage Radio by Peter Lankshear” headed an accurate, informative column that ran in “Electronics Australia” magazine from June 1988 until September 1996. The column was highly respected on both sides of the Tasman due to the author’s vast knowledge of the subject.

I have corresponded intermittently with Peter over the years and late in 2003 I had the opportunity to visit him in Invercargill, New Zealand. The weather in Invercargill at the time was cold, wet and windy – a complete contrast to the warm reception I received.

Peter was born in 1928. His father actively encouraged his interest in things electrical and radio and by the

time he was 11, he knew that his life’s work would be in this field. Around this time he built his first radio, a single-valve tetrode model “Hiker’s One”, using a 49 valve. According to Peter, he has had a soldering iron in his hand ever since.

Peter has a very inquiring mind and this has stood him in good stead throughout his career in electronics, television and radio. He qualified as



NZ vintage radio enthusiast Peter Lankshear.

a Registered Engineering Associate in Electronics, and with his enthusiasm and ability he eventually became the Broadcasting and Television Transmission Superintendent for Southern New Zealand with the New Zealand Broadcasting Service. He held this position for 15 years.

Quartz Hill Receiving Station

Among his many and varied work activities, he was closely involved with the New Zealand government’s Quartz Hill Receiving Station during the 1950s. This station would have been equivalent to the Australian Communications Authority’s Quoin Ridge monitoring station near Hobart.

Primarily, these stations monitor shortwave radio transmissions from around the world. They can hear stations we can only dream of hearing due to their superior receivers, high-gain antennas and low noise locations. They also have facilities for direction finding of radio transmissions.

At Quartz Hill, the search radios were Eddystone type 680 communication receivers. As a result, Peter developed a keen interest in Eddystone



Shown here are just two of Peter’s Atwater Kent receivers, the Atwater Kent 317 (left) and the “Golden Voice” 84. The 317 used all metal valves and was one of the last models made, while the “Golden Voice” 84 (1930/1) was the first Atwater Kent receiver to use an arched cabinet.

receivers and has quite a few in his collection (see photos). He also belongs to the Eddystone Users Group and often writes articles for their magazine, which is called "Lighthouse".

During the course of our conversation, Peter informed me that he is now gradually reducing the size of his collection because, as he pointed out, he isn't getting any younger. He subscribes to the view that as we get older, we should each look at ways of reducing our collection so that it is not left to people who have no interest or knowledge of our radio heritage. If that's not done, our collections could easily end up in the rubbish tip.

I mentioned to him that I had recently written an article on this very subject, in the May 2004 issue of SILICON CHIP. That said, Peter is keeping his favourite receivers, mostly Eddystones and Atwater Kents – he is only disposing of the sets that hold less interest for him.

Atwater Kent receivers

Atwater Kent receivers form the most impressive section of Peter's collection. In Australia, the importation of foreign-made radio receivers was allowed until 1932. However, after 1932, the popular Atwater Kents and all other imported sets were no longer allowed entry. This denied Australians the opportunity to purchase some of the very advanced receivers that became available in the following 4-5 years.

By contrast, New Zealand did not prohibit the importation of foreign receivers until 1936, so some quite advanced receivers did find their way into that country, particularly the later Atwater Kents. The cabinets of these receivers were quite elegant, as can be seen in the photographs, and the electronic design of the sets was cutting edge – just two of the reasons Peter concentrated on this particular manufacturer for his collection.

He described the Atwater Kent receivers and their manufacturer (Arthur Atwater Kent) in considerable detail in the September 1996 issue of "Electronics Australia".

She'll be right

If we were to go through the Australian Official Radio Service Manuals (AORSM), we would see that many Australian receivers made up until the 1940s lacked AVC/AGC and



Shown here are an Atwater Kent 217 at left and at right, an Atwater Kent 165. The latter featured an 8-inch speaker plus the American "Police Band", which was around 1700-1800kHz. Tuning the "Police Band" usually involved using tapped broadcast band coils, to achieve a slightly higher frequency tuning range than available with the standard coils.



The Atwater Kent 627 also featured an arched cabinet.



The Atwater Kent 708 was a high-performance receiver, built in 1933. It tunes from 550kHz to 20MHz in four bands & features separate local oscillator & mixer valves, an RF stage & a 2-stage (472.5kHz) IF amplifier.



An Eddystone 750 double-conversion 5-band communications receiver. The set tunes from the broadcast band to 30MHz.



Above: this Western Electric moving-iron speaker measured about 2'6" (760mm) in diameter and was used in the original New Plymouth radio station in 1928.

Left: built in 1934, the Atwater Kent 447 console receiver tuned from 550kHz to 23MHz in four bands. A split stator tuning capacitor is used to provide band-spread on the shortwave bands. The set also features an RF amplifier and a number of refinements to assist in accurate tracking and dial scale calibration. These include semi-circular dial scales that are raised or lowered with the band-change switch, so that the appropriate scale is visible through the dial escutcheon. The window at the bottom of the dial escutcheon is for a "tuning" meter.

had poor selectivity. Or to put it more bluntly, they simply lacked good design features. It really was a shame that some Australian manufacturers didn't venture out into the world (either in person or via magazines and books) to acquire good electronic designs for their radios.

Of course, we did have some very good design engineers but overall, there was too much of the "she'll be right, mate" attitude. However, let's not bag just the mediocre designers in Australia. There were also plenty in America and New Zealand whose designs left a lot to be desired.

As noted in my article on the Astor OZ in the March 2004 issue, the design of valve receivers in the USA at least had almost reached its zenith by the mid 1930s. The only improvements from then on were in valve types, the use of permanent magnet speakers, and smaller and more efficient components and coils. However, the circuitry did not change to any great extent, even towards the end of the valve era.

Philips Theatrette

Although it is quite evident that Atwater Kent and Eddystone receivers hold particular importance to Peter, he also has some other very interesting receivers. These sets include a Philips Theatrette V7A, a Browning-Drake, a Majestic, an RCA (Radiola 20) and the New Zealand-made Bell Colt. All are very collectable receivers, with perhaps the Bell the odd one out because it's a 50s/60s Bakelite mantel receiver.

In fact, this set was manufactured between 1951 and 1971, being New Zealand's best selling radio ever. Naturally, a large number of Peter's sets appeared in his articles for "Electronics Australia".

I remembered the Philips Theatrette



Another Eddystone receiver, this time a model 640. This was one of Eddystone's first post-war receivers (1947) designed for amateur radio operators and covered from 1.8-31MHz. It boasts electrical band-spread, two dial pointers and a total of nine octal valves.



The bottom receiver in this photo is an Eddystone 940, a 13-valve 5-band communications receiver which tunes from the broadcast band to 30MHz. This was the last of Eddystone's valved receivers and used a twin-triode cascode RF amplifier for low noise. The top unit is an Eddystone 870, a 5-valve ship's cabin receiver covering 150-300kHz and 510kHz to 24MHz in four other bands. This receiver was not considered a communications receiver, as it was used solely for entertaining the ship's crew.



Made from 1925, the Radiola 20 was RCA's first TRF receiver. It uses the UX199 and UX120 valves, along with three ganged tuning capacitors plus adjustable trimming capacitors for tweaking the tuning. The righthand thumbwheel dial is the regeneration control.

from Peter's article and in fact, had the opportunity to acquire one some time back. However, I declined the offer as the set had been "ratted" for some parts and I didn't have a circuit to help with the restoration. Peter commented that the wiring was like a "dog's breakfast" and there was no chassis! However, they worked well, sounded good into an 8-inch (200mm) loudspeaker and rarely required servicing.

They also had the rather unusual intermediate frequency (IF) of 125kHz. However, it must be pointed out that



this wasn't considered so unusual in Europe. It also simplified the circuitry, as "up-conversion" to 455kHz (or a similar IF) was not necessary.

Peter and I also discussed the attributes of "space charge" tetrodes such as the A141 and in particular the 49 valve, which was used in a number of configurations. The 49 was not really designed as a space charge tetrode but experimenters and hobbyists found that it worked well in that mode. It was used in the Hiker's One and Alf Traeger used it in some of his pedal radios which were used in the Australian outback.

I had commented in my soon to be published book "Outback Radio - from Flynn to Satellites" that I felt Traeger had not used the valve to its

Left" a Philco 18B 8-valve arched-top 1934/5 receiver. Peter retrieved this set from a country rubbish tip in a very sorry condition. The audio output section of this model was a cut above most, boasting a pair of 42 valves connected as triodes in class AB2 and driving a 200mm (8-inch) loudspeaker. This output stage was driven by another 42 valve.

Photo Gallery: 1933 Van Ruyten B14



Manufactured by Tilbury & Lewis Pty Ltd, Melbourne, in 1933, the Van Ruyten B14 circuit was conventional for the time, except that the high-tension voltage for the rectifier was obtained direct from the mains rather than via a separate winding on the power transformer. As a result, one side of the mains was connected directly to the chassis. The valve line-up was: 6A7 frequency changer; 78 IF amplifier; 6B7 audio amplifier/detector/AVC rectifier; 42 audio output; and 80 rectifier. Photo: Historical Radio Society of Australia, Inc.

data books can be extremely valuable; so don't throw them out.

AC power supply

I mentioned to Peter that the AC power supply for battery sets that he described in "Electronics Australia" had been quite popular with vintage radio enthusiasts. It used the power transformer from an old black and white TV set.

According to Peter, the PC board for this project should still be available from RCS Radio. It is well made and has silk screen printing on the non-foil side to assist component placement.

Peter's small micro-powered broadcast transmitter has also been built by a number of enthusiasts. However, if you do build one, make sure that no transmissions can be received outside your premises!

Books & magazines

As expected, Peter has an extensive library of good books on vintage radio and on many other subjects that he's interested in. Books and magazines are well worth retaining, particularly the better quality ones. But even the not so good ones are worth keeping – they are all part of our radio history.

Peter is a life member of both the New Zealand Vintage Radio Society (NZVRS) and the Historical Radio Society of Australia (HRSA). He still writes for a number of publications, including the NZVRS "Bulletin", the HRSA "Radio Waves", the American "Old Timer's Bulletin", the British "Radio Bygones" and the Eddystone User Group's "Lighthouse".

He also has a number of other interests besides vintage radio. For example, he is the Southern Vice-President of the New Zealand Railway and Locomotive Society. He is also active in his local church, where he looks after a comprehensive sound reinforcing and recording system and produces the weekly "Church Bulletin".

Of course, it's not surprising that he became involved with the sound system as another of his electronics interests involves designing and building audio amplifiers.

In the end, my time with Peter was too limited and I would have liked to have spent many more hours with him discussing radio, electronics and vintage radio in particular. And I learnt quite a number of things from our very interesting discussion. **SC**

full potential. However, Peter showed me an early valve data book which set out how the valve could be used to achieve various outcomes. As a result, I had to amend a small section of my book prior to publication.

By the way, short-form valve data books such as Philips' "Miniwatt

Technical Data" are extremely useful for obtaining the standard operating parameters of a valve. However, they generally do not give some of the more obscure parameters which can make a valve adaptable to a variety of other functions.

It just goes to show that old valve



The Eddystone 680 is a 15-valve 5-band communications receiver, again tuning from the broadcast band to 30MHz. This is one of the search receivers used by Peter at New Zealand's Quartz Hill communications station in 1950-1.