

When I Think Back...

by Neville Williams

Howard Kingsley Love: From pioneer VK3 amateur to equipment manufacturer - 1

Some readers will remember Howard Kingsley Love as a pioneer radio amateur who entertained Melbourne wireless experimenters prior to the commencement of official broadcasting. Others may remember him as the man behind wartime products like the Kingsley AR-7 communications receiver. To still others, he will be recalled as a manufacturer of ferro-magnetic components and, in particular, the Ferrotune system which obviated the need for a tuning gang.

As will be apparent, this article follows as a natural sequel to our biography of Lay Cranch. In the taped interview on which that story was based, Lay set considerable store by his early association with Howard Love and left little doubt that his involvement in the Kingsley Radio enterprise was his most memorable technical responsibility.

It also transpired that George Neilson (VK3TES), who supplied a transcript of the abovementioned interview, was himself a long-term employee of Kingsley Radio, such that he was able to send me a draft account of his own period of service in their factory, much as published in *Amateur Radio* magazine for June, July and August 1993.

There was too much material to cram into one article and, to do so would, in any case, have done less than justice to the Kingsley story. But it raised another problem in that while, over the years, I had noticed numerous references in radio literature to Howard Kingsley Love, I could not recall ever having seen a collated account of his earlier years.

I may have missed something, of course, particularly if it appeared in a domestic VK3 publication, several of which came and went during the late 1920's. For the present, I can only do my best with the information to hand.

It is evident that, by 1923, Howard Love had won sufficient acceptance by Melbourne's notable wireless pioneers, to serve several terms as the WIA (Wireless Institute of Australia) Victorian and/or Federal President.

He was subsequently named as an

honorary life member of both groups and, at an engineering level, became a member of the IRE (Institution of Radio Engineers).

Radio historian Colin MacKinnon (VK2DYM) confirms that Howard Love held an Experimental Wireless licence

Flying Corps, where he trained as a fighter pilot.

Shot down behind the enemy lines, he ended up in a POW camp. Postwar, Howard retained an interest in aviation, flying Hawker Hart fighters as a member of the RAAF Reserve — a role which gave him a degree of access to the military 'establishment' via his wartime 'cronies'.

Howard Love was also allocated the callsign A-3BM (later VK3BM and VK3KU), when amateur transmitting privileges were restored after the war — a practical outlet for his technical inclinations.

An article in the April 1923 issue of *The Australian Wireless Review* tells how Messrs Hull (VK3JU), Holst (VK3BY) and Love (VK3BM) had all recently installed new low power (6W) telephony transmitters. Over distances up to five to six miles (eight - 10km) they reputedly provided signals comparable to those from earlier quarter-kw installations.

To assess their performance over greater distances, Mr H.W. Maddick, Honorary Secretary of the WIA Vic, visiting Echuca on vacation, had reportedly set up a one valve portable receiver with a 25-foot high antenna slung between two trees. Clear voice signals were received from all three of the above stations by night and day.

Howard Love's transmitter was said to be typical: a 5W BTH valve with 400V on the anode, obtained from a mains power supply using a power transformer, electrolytic rectifier and conventional

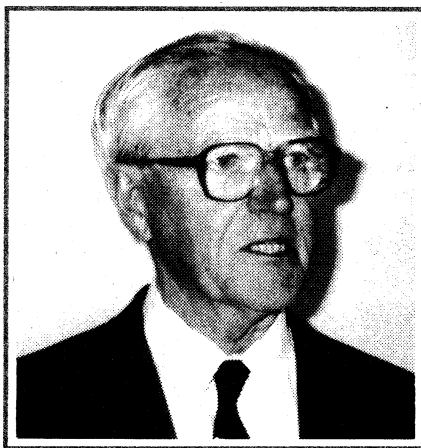


Fig.1: George Neilson, VK3TES, who provided an original draft on which this instalment is based. (Picture from 'Amateur Radio'.)

XOW at the outbreak of WW1 (1914), suggesting that he would most likely have been born in the mid 1890's. At the time, the Love family were in the timber yard business and subsequently took advantage of his somewhat incongruous interest by marketing timber poles for wireless aerials.

Howard served in the first AIF from 1915 - 19, rising to the rank of Major before transferring to the Royal

L/C filtering. The filament was operated from a centre-tapped transformer, the oscillator being grid modulated and the output fed to an umbrella type aerial, 70 to 80ft (21 - 24m) high.

'Public' transmissions

Comment in the article suggests that, while such collective concentration on telephony was relatively recent, it was an indication that Melbourne amateurs, as a group, were determined not to be left behind in providing 'broadcast' style transmissions for eager experimenters/ listeners.

A second article in the same April '23 issue was by a staff member who had been despatched to Melbourne to report on amateur preparations to transmit broadcast style programs. Amateurs, he said, including those above, were currently devising a roster which would ensure that a program of speech and music would be available each evening on a wavelength of 440 metres.

The schedule, which was due to be implemented within a few days, took account of the Sydney transmissions and operators would encourage listeners to send reception reports to all stations which they had been able to receive and identify. Importantly, the broadcasts were not to be at the expense of traditional amateur type communication. A paragraph in *The Australasian Wireless Review* for November 1923 reads:

Mr Hull, the Melbourne experimenter (recently) logged 26 American Amateur transmitting stations within one hour, and Messrs Holst, Howden, Love, Israel and Cox have also 'bagged' quite a number. Mr Love received two complete messages sent direct to him by the Radio Journal of California. Mr Hull had transferred his set to Mr Love's residence to join forces with him in the (coming) Trans-Pacific tests.

According to the April 1923 issue of the same magazine, personal messages from Long Beach, USA to Howard Love had to do with the fact that, as Victorian Divisional Chairman, he had supported moves to set up the trans-Pacific tests

'by writing to a number of clubs on this coast'.

It had been agreed, incidentally, to suspend amateur broadcast-style transmissions for the duration of the tests, to clear the airwaves for trans-Pacific communication. (See also the Ross Hull story, in *EA* February 1989, page 22.)

The tests established once and for all the viability of modestly powered short-wave telephony across the Pacific. But Howard Love had yet another interest.

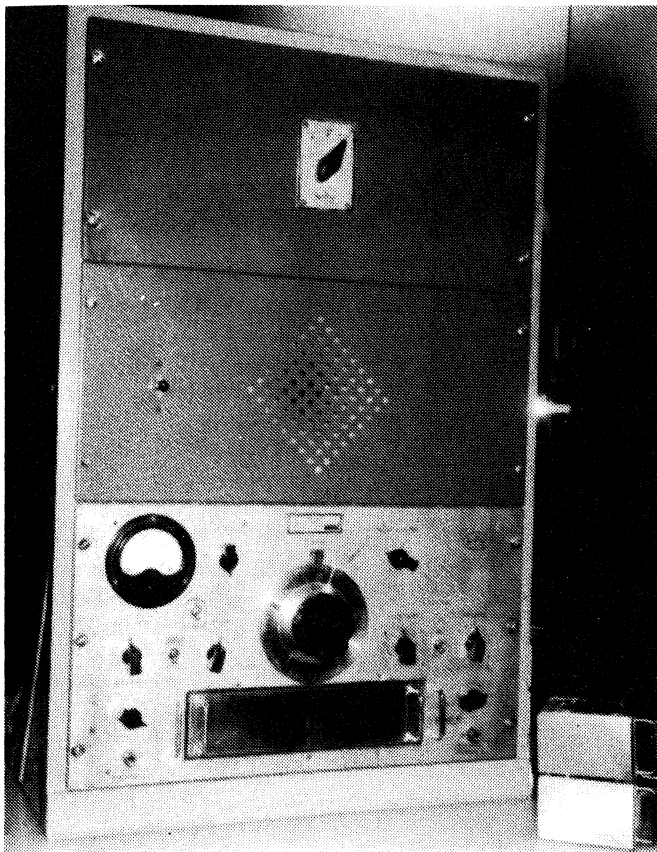


Fig.2: A rack mounted RAAF version of the AR7 receiver with loudspeaker and power supply, about a metre high. Reconditioned by amateur radio volunteers, it is displayed in the Scienceworks Museum, Victoria.

H.K. Love — publisher

In *EA* for April 1992 (page 46), by courtesy of Colin Mackinnon, I summarised moves in the technical publishing field which led to Howard Love also becoming involved in *that* area during the 1920's.

Back in 1923, AWA's popular science magazine *Sea, Land and Air* was re-styled and re-issued under new management as *Radio in Australia and New Zealand*. As part of the revision, routine reports from individual WIA Divisions were replaced by general amateur notes compiled, by the then newsworthy Charles Maclurcan.

In that form, the magazine was taken over by Wireless Newspapers Ltd in 1925, becoming a virtual stablemate of our own ancestor *Wireless Weekly*. The title was effectively reduced to *Radio* but, despite promotion, it ceased publication in December 1928, being officially 'absorbed' by its more vigorous companion.

However, with *Wireless Weekly's* programs, personalities and technicalities all slanted towards broadcast listeners, the amateur fraternity felt even further disadvantaged — the WIA in particular lacking a committed outlet for Divisional Notes.

Right at the outset, in 1923, the Victorian Division had considered publishing its own official *Proceedings*, but ended up with a less formal 32-page magazine entitled *Radio Experimenter*, edited by its President Howard Love and with Ross Hull as Technical Editor.

In May 1924, at the first Australian WIA Convention in the Melbourne Town Hall, a plan to adopt the magazine as the official national journal lapsed. Without sufficient financial support, it was surrendered to its commercial printer and re-styled as a wireless retailing journal, only to cease publication anyway in June 1925.

Not to be deprived, the Victorian Division started yet another publication in 1924 entitled *Experimental Radio Broadcast News*. In the following year, it was renamed *Radio Broadcast*, the responsibility of the WIA (Vic) Publishing offshoot, with Howard Love as Managing Director and Ross Hull as

Managing Editor.

It had about it the hallmarks of a determined effort, and was formally adopted by the second National Convention (Perth, 1925) as the official national organ of the WIA.

But it was not to be. The venture suffered from disruptive changes in location and personnel, and in 1927, Ross Hull headed overseas to seek and accept a position with the ARRL (American Radio Relay League) — an appointment that brought both international recognition and ultimately a tragic death by electrocution.

Radio Broadcast lapsed in January of

WHEN I THINK BACK

that same year, and state divisions resorted to their own home-grown bulletins during 1927 - 9.

To further complicate matters for the WIA, the rival 'Amateur Radio Transmitters League' was formed. About this time, it would appear, Howard Love finally abandoned any aspirations he might have entertained to become a publisher.

Love the engineer

According to last month's biography, it was also about this time (1929) that a 19-year old amateur, Lay Cranch, entered the radio industry.

After working for few months at the Edison Shop in Melbourne and later at Brashes, he found himself in the lab at Firth Bros, as the personal assistant to their resident engineer — none other than Howard Love.

Whether Lay had known Howard Love beforehand is not clear, but he was certainly flattered by the appointment. He goes on to say how they jointly developed a successful mains powered superhet which, if not the first, was certainly among those which ushered in the '1930's-style' genre. This was around 1931.

From Firth Bros, they both moved to Radiovision in St Kilda Road, Melbourne and as described in the last issue, developed what was claimed to be the first mass-produced autodyne type superhet using mains type pentode valves.

However, when Radiovision subsequently decided to re-locate and concentrate on the 'vision' aspect of their business, Lay Cranch resigned and, as previously noted, spent the next six-odd years as Chief engineer of Essanay in South Melbourne.

What happened to Howard Love during this same period, Lay does not say; but it would appear that he established his own independent radio factory. Although this is not listed in Mingay's *Radio Trade Annual* in the late 1930's, Colin MacKinnon gives the start-up date as 1931.

Fortunately, the personal memoirs of George Neilson, VK3TES, go a long way towards bridging the gap. They also indicate that Kingsley's success with Ferrotune technology was a much more protracted exercise than might be

deduced from the Cranch interview. (For those who may have known George personally during the relevant period, he can be reached at 48 Garden Street, Blairgowrie, Vic 3942; phone 059 889 171.)

George says that his own interest in radio began in the mid-1920's at age 8, when his father brought home a crystal

AUSTRALIA has NOT, up to the present, produced a Receiver for the "HAM"

"KINGSLEY" have completed the developmental work on a "Ferrotuned" HAM BAND RECEIVER KIT.

THE FEATURES ARE

1. IRON TUNED
2. TURRET COIL CHANGE
3. TUNES BAND SPREAD 40-20-10-6 Metre Bands.

Provision for Voltage Regulation Crystal Filter

Accurate Calibration and Stability

KINGSLEY
Radio Pty. Ltd.

380 St. Kilda Road,
MELBOURNE VICTORIA
Phone MX 1159

Fig.3: To the best of our knowledge — a receiver that never was! Advertised in Mingay's 1947 'Technical Topics Radio Handbook' it was scheduled for production about the time that Kingsley Radio was 'wound up'.

set. George poked around inside it but, while he didn't learn much, it still stirred his curiosity. At age 14 (1933) he completed his schooling to year 10 at Northcote High, his education being fortuitously rounded off with a fill-in hobbies class covering the rudiments of radio.

In early 1934, George managed to obtain an interim job at a local hardware store, which provided him with the means to buy a few radio 'bits and pieces'. His main interest at this time was in amateur radio stations which, he said, "often popped up on the broadcast band on Sunday mornings".

His interest was shared by a scout colleague by the name of Ron Pollock and the two pooled their resources to build their own shortwave receiver.

Manufacturer and explorer

Ron had gone one better, by signing up with a Melbourne business college for their radio course. It transpired that the college had sub-contracted Kingsley Radio to provide coaching, which took the form of on-the job training in the Kingsley factory, in Spring St Melbourne, supervised by factory staff.

In the process, Ron Pollock obtained a full-time job with Kingsley, and when George's own employer decided in 1938 to 'shut up shop', Ron alerted him to a vacancy in the Kingsley factory.

Thinking back to 1938, George recalls that the Managing Director was Howard Kingsley Love, universally referred to as 'HK'. He was widely known in the trade, as well as being an active amateur radio operator with the callsign VK3KU. (Earlier references show his callsign as VK3BM, confirmed by the *Wireless Weekly Callsign Supplement* published on July 18, 1930).

George says that HK's secretary at the time was a personable lass with the Irish sounding name of Mollie Malone; while his Chief Designer was Jack Gostalow, who was later to join AWA.

The field serviceman was Johnnie Bremner who, much later, went to Ross Morris in South Melbourne; and the Foreman Norm Connell, who subsequently set up his own business making taxi meters.

Other Kingsley old-timers whom George recalls from the late 1930's include Brian Irwin, Max Downes and his brother Charles and Harry Fuller (VK3HF), who left just before George joined the staff.

Harry had gained his commercial 'ticket' and went to work for 3SR Shepparton, subsequently moving to 3YB at Warrambool as Chief Engineer. His next paragraph came as something of a surprise:

H.K. Love and Harry Fuller were notable in that they went on the Donald McKay expedition to Central Australia in the 1930's as radio operators. This expedition was noted for the first use of both radio and aircraft and has been referred to, rightly or wrongly, as 'The Last Great Expedition in Australia'.

'Direct coupled' amps

Therein obviously lies another story. But, back to electronics, George Neilson says that, during the 1930's, Kingsley Radio had built up a reputation 'amongst the gentry who were so inclined' for high fidelity radio — employing what was then a 'hot potato' in the industry, namely direct coupling. His favoured configuration for hifi models used a 2A3 power triode, with its grid connected directly to the anode of the preceding voltage amplifier.

That made me sit up, because it was the very subject that kick-started the 'Let's Buy An Argument' column in this magazine, which was later dignified with the present title 'Forum'.

In its most convincing form, the 'Lof-tin-White' circuit used a type 50 high powered triode, with its grid connected directly to the anode of the preceding voltage amplifier. Because of the high voltages involved, it was a demanding configuration; but the big husky triode delivered more power than was available from less pretentious types or from characteristically distortion-prone tetrodes or pentodes.

Unfortunately, some publicists spread the word that the merit of the scheme rested in the direct coupling, and that 'hifi' could therefore be achieved by merely re-arranging a conventional pentode amplifier to eliminate one inoffensive coupling capacitor. As the late Fritz Langford-Smith showed in A.W. Valve Co literature in the late 1930's, the appropriate answer to the hifi quest lay either in the use of power triodes or the application of negative feedback to power tetrodes or pentodes.

But direct coupling notwithstanding, in his choice of 2A3's Howard Love was handling the 'hot potato' correctly.

In addition to the hifi models, George Neilson says that Kingsley also produced conventional five and six valve D/W mains receivers, and four and five valve battery and vibrator sets "Which were noted for being very economical". Included in the range was also "the odd 32V model" for use with farm supply systems.

On the job training

Although 19 years of age, George says that he started as the 'boy', doing all the menial jobs first and learning the essentials of sheet metal work in between times. At Kingsley, this involved a foot treadle guillotine, hand operated bender and a manual bench-mounted 'nibbler'.

The factory boasted a bench mounted drill, but no punches to cut holes — just

A VERY LONG DOG!

Johnnie Bremner, Kingsley Radio's Serviceman/Engineer, is remembered for the following pearl of wisdom:

"How does radio work?"

"Imagine a very long dog with his head in one country town and his tail in another..."

"Yes."

"Imagine that if you twist his tail in one town, he will bark in the other!"

"You mean to say that that's how radio works?"

"Well it is, if you take away the dog!"

a cutter in a hand brace. In the absence of a spot welder, chassies were assembled with bolts and nuts, and spraying effected with the aid of a motor car hand pump attached to a small air tank — this was on a stairway landing, in lieu of a spray booth.

Old-timers may well recognise George Neilson's description as applicable to any number of small start-up radio factories in the early thirties! Similarly, his progress through the pecking order:

From messages and metalwork, George worked his way up to assembly, wiring and (you beaut!) testing. His mentor was the abovementioned Johnnie Bremner, who had meanwhile graduated from Serviceman to Chief Engineer (see panel).

In word and deed, 'Johnnie' was always good for a laugh. At the time, Kingsley were also making diathermy machines — basic but fairly powerful RF oscillators, which were used by the medical profession to create internal heat in various parts of the body, or to speed coagulation in surgical situations.

Johnnie had just finished adjusting one of the machines when his Uncle Fred shuffled in. Down from the country, he had been sampling the service offered by pubs in the area and was somewhat the worse for the effort.

When Johnnie explained the nature of the machine he was working on, Uncle Fred wondered whether it would do any good for his 'crook' (rheumatic) knee. To find out, he was installed in a chair, attached to the various pads and cables

and told not to move when the gadget was switched on.

Unfortunately, Johnnie got involved in something else and completely forgot his uncle. When he finally did remember him, he found him uncomplaining but very red in the face, although it was unclear whether it had to do with his intake of RF or alcohol.

Said George: "I never saw him again, so I cannot report whether his leg fell off, or his rheumatics were cured!"

Special orders

As a small company, Kingsley Radio tended to pick up quite a few special orders in the early days, which provided work and also a pleasant break from factory routines.

For the filming of (as George recalls) *Captains Courageous* with Spencer Tracy, a sloop had to be fitted with two-way marine radio. Designed by Jack Gostelow and built in the factory, it was taken to Williamstown for fitting and proving — which George remembered as a pleasant diversion from everyday factory work.

A rather similar diversion followed when Kingsley was commissioned to provide radio communication equipment for the Melbourne Harbour Trust, to use with and on their fleet of hopper barges, dredges and tugs. Preliminary testing involved setting up a control centre at 'Dockhead' between North Wharf and Victoria Dock, with mobile equipment on the barge *William Cooper*.

Although not a romantic craft, several days spent 'swanning up and down the Bay' in perfect weather were not exactly hard to take!

On another occasion, HK set out to convince the Army that they needed new communication equipment. Prototype portable transceivers were developed and loaded aboard HK's and Johnnie's cars. Between Mt Dandenong and the Mornington Peninsular (respectively) contact was made — but in this case, while the Army were convinced that they needed updated equipment, somebody else got the order.

But all was not lost. The RAAF contracted to buy portable HF equipment, which came to be known as the ATR1; and followed it up with a specification for an Australian-made high performance communications receiver. This was on behalf of the Armed Services.

HK decided to give the receiver his best shot, and George Neilson says that: "We let our heads go. Never have I seen so much effort devoted to the design of a receiver ... with everybody on our team contributing". Detailed

FOR OR AGAINST?

A young recruit was said to have accosted an old soldier outside the Kingsley Radio factory.

"Excuse me Dig, I'm looking for the Victoria Barracks. Can you tell me which side they're on?"

The old soldier thought for a moment, then said:

"I'm not rightly sure, son, but I think they're on ours!"

WHEN I THINK BACK

design was in the hands of Jack Gos-telow, Johnnie Bremner and Norman Connell — with HK looking over their collective shoulders.

Kingsley's KCR-11/AR7

With his background in amateur radio, HK personally decided that their submission would be based on the concept of the well known American National HRO receiver. Designated the KCR-11, it was to become best known as the RAAF's AR7.

Instead of using either built-in switched coils or separate plug-in coils, the HRO coils for each band were mounted in a drawer-like metal case, with internally shielded compartments and contacts distributed along its rear face.

It was designed to slide into a large matching recess along the lower front of the receiver panel, with internal contacts complementing those on the rear of the drawer to connect each of the coils into circuit.

Changing bands simply involved selecting and plugging in the appropriate coil box or drawer.

A graph on the front face of each drawer indicated its coverage and the dial setting for any given frequency within its range.

In the Kingsley version, the box was formed from sheet copper, nickel plated. A set of four coils in each was mounted on a steel front plate, carrying two handles and a stainless steel engraved graph, as above. The normal complement for an AR7 was five coil boxes, one for the range 150 to 430kHz and four others covering from 535kHz to 25MHz.

In terms of circuitry, the design involved two RF stages, a mixer and two IF stages with BFO (beat frequency oscillator) and crystal filter, plus an audio power amplifier. The crystal filter was designed and pre-assembled in house, using crystals supplied by Max Howden (VK3BQ) mentioned earlier. In the field, the receiver could be operated either from the 240V AC mains or from a 12V DC supply.

With ruggedness, precision and stability as pre-requisites, a traditional glass-and-string dial was presumed to be unacceptable. Kingsley, accordingly, arranged for an 'HRO' style mechanism to be manufactured by H. Alger & Sons, who were experienced in

precision work allied to the movie projection equipment. The work was later taken over by Messrs Bryant & Hunter, from a similar background.

Using a precision worm drive, the dial provided 20:1 vernier tuning with twin photo-engraved circular scales offering 500 distinct reference positions.

Successful endeavour

George Neilson says that his personal involvement in the design was detailed layout of the chassis and an appropriate wiring pattern for the prototype.

He adds that the Kingsley submission was accepted by the RAAF. They placed a pilot order for an initial 20 receivers, but this was followed by orders for hundreds more.

The old factory in Spring Street soon become too small and Kingsley moved into new premises in St Kilda Rd, opposite the Shrine and only one block from the RAAF headquarters — now their principal customer.

The RAAF, in turn, was next door to the Victoria Barracks, headquarters of the Army and Navy (see panel 'For or Against?').

(To be continued) ♦