

When I Think Back...

by Neville Williams

Maxwell Howden: the first two-way amateur radio link to USA & Britain (1)

Born around the turn of the century, Max Howden was one of the true pioneers of wireless/radio in Australia. Based in Melbourne, he could justifiably lay claim to having been the first experimenter to achieve direct two-way voice communication with the USA and Britain. In more recent times, he was better known throughout the industry as a manufacturer and supplier of quartz crystals for frequency control.

I must confess that, during my own career, Max Howden was best known to me in the latter role: as a supplier of precision quartz crystals, made to order for magazine projects. To be sure, I had seen his name in experimenters' magazines dating back into the 1920s. But, in terms of long-term publicity, he seems to have been overshadowed by high-profile Victorian contemporaries such as Ross Hull, Howard Kingsley Love, John Moyle and AWA's Lionel Hooke.

Now, thanks to his son John, we are able to give Max a more equitable place in the records — including recognition of his important role in supporting the Royal Flying Doctor Service.

Writing from his home in Hull Road, Lilydale (Victoria), John Howden says that his father Max was born on April 18, 1899. Sadly, Max was only two years of age when his own father, Thomas Montague Howden, an hydraulics engineer, died (in 1901).

Max's widowed mother — nee Alice Celeste Whitby of the locally prominent Whitby family — assumed the responsibility of bringing up Max and his elder brother Edward Montague (Jock) Howden (b. 1897), who later trained as an automotive engineer.

Max, as a youth, proved to be a scholar of some note and is on record as having been equal-Dux of the Brighton Private Grammar School in 1916. He continued his education at 'The Working Man's College' (now the Royal Melbourne Institute of Technology), and subsequently married Edith Lois Greenwood, who bore him four children.

John remembers his father as man of



Max Howden at age 25, as pictured in *Radio magazine* for 25/7/1923, approaching the peak of his activity as a 'DXer' from amateur station 3BQ. In later years he supplemented his moustache with a full beard!

many and varied interests, at which he generally excelled: tennis, golf, trout fishing, chess, bridge and, in later life, lawn bowls. He loved music and played the flute.

More to the point, Max was profoundly interested in wireless, as was his brother by association. Max was a keen reader of wireless/radio magazines, and at one time or another contributed articles to most of them, bearing his byline. Included was *QST*, published in the USA by the ARRL.

Max worked as a design engineer

for Corbett, Derham and Co, and in association with his brother Jock, also built and sold 20s-style wireless sets, on the side.

Interview on tape

Thanks to John, I have to hand the transcript of a taped interview with Max, conducted by Mel Pratt for an oral history program on behalf of the National Library of Australia. This was climaxing some 50 years' involvement in wireless (described as 'the English term') or radio ('the American term').

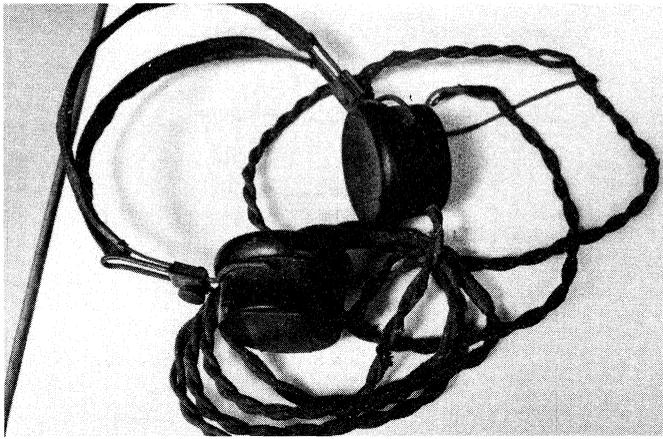
John, incidentally, was subsequently issued with his late father's amateur radio callsign.

In the interview, Max confirms his educational record but explains that it was interrupted around 1909 by having to care for his brother who "couldn't get around like other boys", having to wear splints. Whether it was due to an injury and/or an untimely episode of poliomyelitis seems never to have been resolved...

Be that as it may, their mutual interest in wireless/radio was triggered by a visit to Brighton Grammar by a former 'Grammarians' — Mr (later Sir) Lionel Hooke, who had just returned from an expedition to the Antarctic where he had served as radio operator. Hooke graphically described the stringent conditions they had had to cope with, and went on the talk about radio generally.

That talk, plus a natural interest in physics as a subject, was all that was needed to capture the Howden brothers' attention!

At the time, radio transmission involved spark technology. But during



Max Howden not only won the Trans-Pacific competition to log US amateur stations, he also led the drive to achieve two-way contact with the USA and UK. His award: this pair of Nathaniel Baldwin headphones.

On the back of a Nathaniel Baldwin headphone (one of a pair), the plaque reads: Presented to W.F.M. Howden Esq. by the WIA Vic. Div., to commemorate two way working with USA and GB 25.11.24.

days, experimenters had to contrive their own tuning capacitors and make sure that they would be easy to adjust and keep in tune. Too many stages and too many controls made tuning a slow and tedious procedure.

"With only three valves, that I was using in a reflex arrangement, I was much more mobile over the spectrum and was able to pick up all these other stations".

Ham shack/workshop

Questioned by the interviewer, Max said that the Howden home was situated in what was then open country, with wild rabbits visible through the open door of the den/workshop used by Jock and himself. He and Jock had tried out wire cage aerials, but for the American tests they had a single wire supported by a 15-foot (5m) mast lashed to the top of a handy pine tree.

As a hobby, amateur wireless at the time wasn't unduly expensive, although the open orders they had won for the USA tests undoubtedly helped. Adapting and making parts was the greater challenge. Professionally, at the time, they were functioning as per their letterhead: 'Howden Bros, Automobile and Electrical Engineers. Magneto Experts'.

While Max was most familiar with amateur radio in Victoria, he said that activity in other Australian states was more or less in proportion to their population. Overall, however, Australia was way behind the USA — where it was said that there were some 200,000 amateur transmitting stations cluttering the airwaves on the most accessible frequencies. I quote (abbreviated):

"It didn't take me long to realise the need to lower the capacitance of my equipment, so that I could put a signal through on a higher frequency, clear of this concentrated interference. It wasn't until November 1924 that I got my signals through to 6AHP in America, who had been in contact with New Zealand shortly before."

"That contact with 6AHP on November 2, 1924, was the first direct two-way communication between Australia and America".

A couple of days later — Tuesday November 4, 1924 — the Melbourne *Evening Sun* announced that 'Last night Mr F.M.W. Howden made wireless history by exchanging messages with Mr W. Williams, an experimenter at Tomona, California. They continued:

Early morning Morse!

Sending at between 12 and 15 words a minute, Mr Williams sent greetings to all Australian amateurs, and briefly described the set he was using. Mr Howden reciprocated the message of greeting, described his own set and arranged with Mr Williams for another tryout tonight. Messages were exchanged for 40 minutes.

Afterwards Mr Howden kept an appointment with his contact at Gisborne, who, with several other New Zealanders heard both sides of the Australian-American contact.

Mr Howden used a wavelength of 86 metres and a power of 120 watts. The American used a wavelength of 75 metres.

Between 2.45 and 3.45AM today (Tues. Nov. 4, 1924) Mr Howden and Mr Cox, another Melbourne experi-

menter, also heard ACD, the Rome wireless station, and POZ, the station at Nauen, Germany.

Max Howden made the headlines in the Melbourne Herald the next day (Nov. 5, 1925) under: **WIRELESS FEAT: Melbourne to Boston, (Massachusetts). Mr Max Howden of Box Hill (3BQ) added to his wireless records again last night by exchanging signals with an American amateur station at Boston. Owing to bad atmospheric conditions touch was held only for one quarter of an hour.**

Mr Howden also exchanged signals with Mr Litten of Temona, California (AHP). Calls were noted from Texas, Maine, Vermont and Ohio.

A strange fact noted was the entire absence of New Zealand signals, which Mr Howden attributes to the peculiar atmospheric conditions obtaining.

The Herald quoted Max's transmission as a power of 120 watts, radiation current 1.2 amps and a wavelength of 8.5 metres. The Americans were using wavelengths between 70 and 80 metres. I would assume that 3BQ's wavelength was actually 85 metres, and that the figure had been corrupted by the inadvertent inclusion of a decimal point.

To Britain, direct

Reverting to the taped interview, Max revealed that, having bridged the Pacific Ocean with what were then regarded as shortwave signals, his objective was to bridge the Atlantic as well to reach Britain — if the waves chose that route. I quote:

"From there it was just a logical step to work out or find out the likely hours

in which amateurs in England would be listening. Having done so, I started getting up at four o'clock and calling CQ, on Morse. On the following Friday week, which would be November 13 (1924), I was delighted to hear acknowledgement from 2OD, about to become G-2OD, from Buckinghamshire in England. This, I believe, was the first two-way radio link between Australia and England."

On this occasion, the announcement was published by the Melbourne Age on Saturday, Nov 15, 1924: **MELBOURNE TALKS TO ENGLAND — An Amateur's Success — Mr Max Howden's Achievement.**

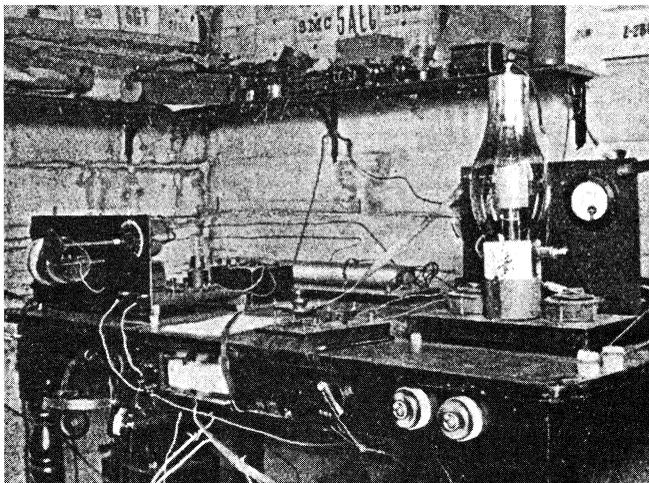
Referring to the occasion, Max Howden said: "After that, we used to work regularly every morning and I was quite surprised on one occasion when Mr Simmons had to close down earlier than usual because he had to go out. What should happen but that Mr Leon de Loy, from 8EX in France, broke in to tell me that he had been following my experiments with 2OD, but had missed out one night. Could I tell him about our results on that occasion?"

"I answered his question and since the signals were still good — to keep things going — I asked him 'what he did for a crust?' His reply amused me: 'Please signal slowly, old man, my American is not too good!'"

"After 2OD, I worked with the Partridge brothers on 2KF, Goyder 2LZ and Jerry Marcuse 2NM, who was later the President of the Radio Society of Great Britain — RSGB." (All of these callsigns subsequently gained the prefix G-, denoting the station's location in the UK.)

Max went on to explain that commercial companies at the time were

Max Howden's amateur transmitting 'shack' in 1924, as pictured in his article in Radio. This was the equipment he used to make the first contacts with England and the USA.



not interested in the shorter wavelengths, and his licence from the Australian PMG was for operation from 340 to 300 metres and from 250 metres downwards.

Round-the-world talk

To this point in time, his contacts had all been in Morse code, and the logical next step was to attempt voice contact. Accordingly, he fitted the transmitter with a grid modulation system and arranged with 2OD to stand by for a voice transmission. To his delight, 2OD's reply was "speech audible, mostly intelligible". As Max recalled, the date was February 9, 1925.

In this context, he said, Australian amateurs had an advantage in that the powers-that-be hadn't restricted telephony on the lowest frequency segment, because of Australia's isolation. So, thanks in considerable degree to Australian amateurs, commercial interests got involved and stations like KDKA Schenectady (USA) and PCJ (Holland) became a feature of night-

time listening.

Intense interest around the World saw the formation of the Radio Society of Great Britain (RSGB), the Amateur Radio Relay League (ARRL) in the USA and the International Amateur Radio Union (IARU).

Against this background came a surge of interest in the use of quartz crystals to control transmitter frequency. When relying on an ordinary tuned oscillator circuit, transmitters would drift randomly up and down the band, as often as not, suffering interference from adjacent transmissions. With receivers none too stable, either, it was a very frustrating situation.

Just when Max Howden was wrestling with this problem, he said, fate dealt him a cruel blow when the Howden brothers' workshop was burnt to the ground. He lost all his gear and most of his paperwork. Fifty years on, he could only apologise for his inability to resolve possible lapses of memory.

Crystal oscillators

It took him about two years to re-equip and re-tool, by which time he was due to marry and to move from Box Hill to Canterbury (Vic). In the meantime Harry Kauper 5BG in Adelaide had come up on air with a — literally — 'rock steady' crystal-locked signal, followed by Wally Coxon 6AC in Western Australia, with his own 3BQ further down the list. Max explained that, having once heard Harry Kauper's signal, "I did not consider myself ready to reappear on air until I could do likewise!"

In the late 1920s, when American Naval ships visited Australia, the *Seattle* carried two prominent amateurs, Lt. Snell and Ed Willis, equipped with an experimental crystal-locked transmitter under the call-sign NRRL. They were

Work of Years Gone Up In Smoke!

An indication of Max Howden's credibility, even in his early days, is given in a brief extract from a much longer article in *The Listener In* for July 5, 1927:

Fire has caused havoc with Mr Max Howden's House of a Thousand Voices at Box Hill. Only a white painted building in appearance, it was in reality a magic cabinet.

When he pressed the button, dwellers in Melbourne were able to hear the voices of people alien in language, nationality and mode of living from countries all over the globe. The building which is now a fire-scarred survival of the outbreak... was the wireless house of Mr Max Howden and his brother... Inside a confused accumulation of melted glass, twisted wire...

"There goes the work of years", said Mr Max Howden as he looked upon the wreckage. "I started it in 1921... I had been improving this instrument... It had not been out of action all that time."

"This installation was the very latest thing in wireless science... There is hardly a country of any consequence that I have not managed to pick up in this little shack: Great Britain, Canada, United States, France, Germany, Belgium, Holland, Italy..."

"In future, amateurs will be operating on a wavelength of approximately 80 metres. This activity should give radio a decided filip, and will be hailed with enthusiasm by the thousands of listeners who will regularly tune in these amateur stations."

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somewhat surprised to find that 5BG, 6AC and 3BQ were already on the air in Australia using the same technique.

Max's remarks about his early efforts to produce an appropriate RF piezoelectric slab from a lump of crystalline quartz are quite fascinating:

“After much trial and tribulation hacking quartz crystal about with a carborundum strip on the reverse side of a hacksaw blade, I put a little diamond saw in our lathe — much to my brother's disgust. He had visions of the diamond dust getting into the bearings and ruining them.”

“So, between us, we made up a separate grinding head to take the drive via a belt, to keep any dust well away from the lathe. With that I hacked my way through various pieces of quartz until I achieved a satisfactory one”.

Royal Flying Doctor

As it happened, Max's venture into crystal control for the restored 3BQ had

a surprising outcome. Around 1930, he was visited at Canterbury by the Rev. John Flynn and Alfred Traeger, of the Royal Flying Doctor Service. Max was lavish in his praise of Traeger, (a) for his resourcefulness in devising the pedal generator to power the RFDS's emergency transceivers, and (b) for adapting a typewriter keyboard to produce Morse code from such a transceiver, intelligible to a central operator.

Anyone who could switch on a transmitter and spell out the necessary words could send a distress message in Morse. What the RDF needed now was a means of stabilising the transmitter frequency, so that scattered transceivers would all come up on the allotted spot on the band — notwithstanding temperature extremes and/or how erratically the generator was being pedalled.

At that point in time, Max Howden undertook to do his best to provide Alf Traeger with the crystals he needed. More about that in the next issue.
(To be continued) ♦

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