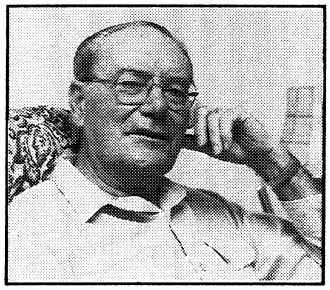

When I Think Back...

by Neville Williams

More about WA pioneer Wally Coxon and the first broadcast station in the West — 1

In response to our article in the November 1993 issue about Western Australian pioneer Wally Coxon, reader Bill Kelson of Perth has forwarded photostats of a series of articles written by Wally Coxon himself for the *Broadcaster* magazine back in 1939. Recounting his role in the establishment of radio station 6WF, the story is nicely timed for the 70th anniversary of official public broadcasting in that state.

While the articles detail the problems faced by a remotely sited pioneer broadcaster in 1924, they also shed further light on the career of Wally Coxon himself. Also to hand is a letter from John Caswell, who identifies himself as OIC Radio, Cairns Base, Royal Flying Doctor Service of Australia. John confirms Wally Coxon's link with the RFDS during the Traeger years. From Dave Hanscombe (VK6ATE) of Quinn's Rocks — himself an aspiring historian (see panel) — comes further reference material along similar lines. But more of that later.

To refresh your memory about W.E. (Wally) Coxon, you may need to refer back to page 34 of the November 1993 issue. Very briefly, he was born in the late 1880's and qualified for his experimenter's licence in 1907 — and was hence a near-contemporary of Charles Maclurcan, discussed in the last two issues.

Fortune may not have smiled upon him quite as generously as upon Maclurcan, who had ample resources to pursue his hobby and could do so within easy range of early wireless-equipped ships berthing in Sydney Harbour.

Even so, Wally Coxon built his own receivers and transmitters, used them to establish his own 'firsts' in the sparsely populated west and went on to rally other experimenters, to form what became the WA branch of the WIA (Wireless Institute of Australia).

According to *Western Wireless* magazine (October 29, 1925), Wally operated rotary gap spark equipment before WW1. He became involved in wireless research with the Admiralty during the war and studied valve technology, which he was subsequently able to share with his fellow experimenters.

This group, in turn, broadcast speech and music to attract local listener/experimenters, thereby generating an audience for future public broadcast stations. Unlike Charles Maclurcan, however, Wally Coxon subsequently became involved in public broadcasting, as the founding Engineer/Manager of Western Australia's first public broadcaster, 6WF.

Fig.1: W.E. Coxon, as pictured in 'Western Wireless' magazine (October 28, 1925) in an article 'Wonderful International DX Working — 6AG's Transmitter'.

Told his own story

It was as such that he wrote the series in *The Broadcaster* in 1939, celebrating the station's 15th anniversary. By that time, it ranked as the oldest of 14 broadcast stations then operating in Western Australia.

In the first of the articles he recalls the pre-professional — amateur — broadcasting era, making mention of A.E. Stevens (6BN) who supplemented his own efforts in Perth (6AG) and C. Cecil (6AB), who broadcast music and the occasional concert for listeners in Kalgoorlie.

The first complete 'live' wireless concert in WA, he says, was organised by the Mt Gawley Club in 1923 and was heard by listeners as far afield as Esperance and Geraldton.

When the Federal Government began planning formal public broadcasting in 1922/3, there was lively debate as to how the costs could best be covered. Having been exposed to the many conflicting implications, Wally Coxon spells out for his 1939 readers the uncertainties they had to cope with, 2000-odd miles from the seat of the political and industrial conniving.

(For a detailed account of events, see Colin Mackinnon's articles in the

December 1993/January 1994 issues entitled 'The Sealed Set Debacle'.)

Ignoring the fascination of 'dial twisting' for pioneer listeners, some contenders favoured an ultra-simplistic solution: a patchwork of listening zones, each with one all-purpose station financed by the Government or by subscriptions from listeners in the area. Others were demanding more than one station per zone: listeners because they wanted a choice of programs; interests like Fisk/AWA because multiple transmitters and more receivers would generate more sales and revenue from patents and royalties.

Government's mistake

In May 1923 the Federal Government adopted a compromise plan unique to Australia: multiple stations in each region would offer competing programs, but receivers would be individually 'sealed' to limit reception to those stations for which individual households had paid a specified fee.

Listeners could use multiple receivers — each locked to a different station — or a single special receiver 'doctored' (somehow!) to tune specified stations only.

The scheme would be administered by the PMG's Dept, who would license broadcast stations at their discretion, issue listeners' licences and ensure that individual receivers could be tuned only to the stations for which listeners had paid the nominated fee. The Department would type-approve all receivers before they could be offered for sale, both in respect to the method of sealing and to ensure that they would not radiate spurious oscillation.

Unfortunately, the scheme was seriously flawed, being the end-product of political extremity rather than practical common sense:

1. Having in mind the multi-station option, there was really no routine tamper-proof way of sealing and/or re-sealing normal receivers as licences were issued or altered.
2. The responsibility for improvising 'sealable' receivers rested squarely on local manufacturers. There would be no competition from overseas to keep the lid on prices.
3. The task facing the PMG's Dept would have been horrendous, as also would the administration costs, on top of the station fees.
4. Rather than be identified by an unacceptable licensing system, many listeners decided either to defy the law by using an unsealed receiver or simply to 'opt out' of wireless for the time being.

Amateur Radio in Western Australia.

May I ask you and your regular readers for help?

I have set myself the task of (hopefully) writing a history of the development of Amateur Radio in Western Australia — a subject inevitably destined to include commercial radio, telegraphy, VIP and coastal radio, as well as other areas in which amateurs (especially the earlier experimenters) were to become involved.

Having read with interest a number of historical 'snips' in past issues of EA, I am on the lookout for old QSL cards, references/info from other sources or anecdotal accounts of VK6s. If we do not collect this info soon, it may be lost forever.

(From Dave Hanscomb VK6ATE, Certificate Manager RFDS Award, PO Box 39, Quinn's Rocks, WA 6030, Australia).

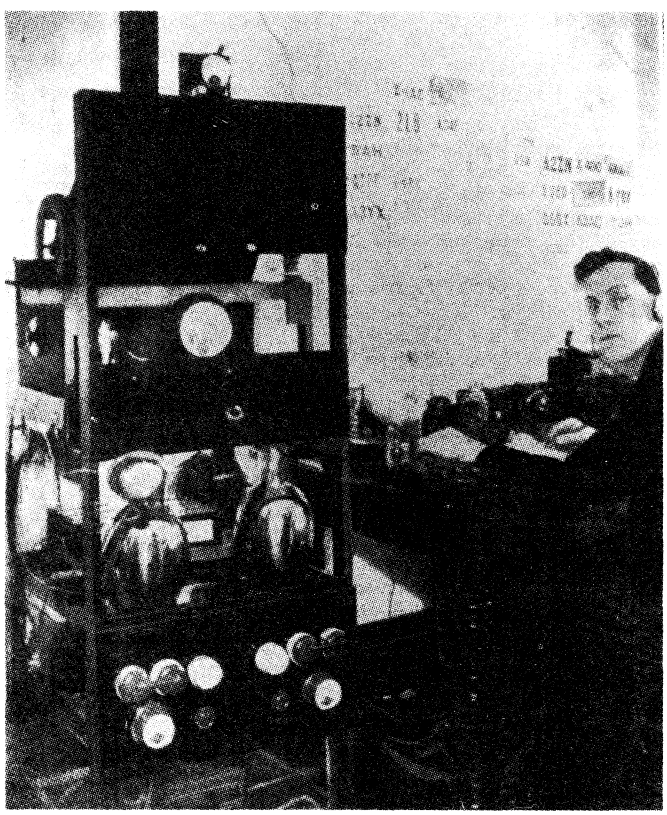

Fig.2: Also from 'Western Wireless' in 1925, this ancient print shows Wally Coxon with his short-wave transmitter and receiver. On 30-odd metres he had contacted eastern Australia including 2CM, New Zealand, America, Africa and Europe.

Two classes of station

Such was the opposition to the scheme that, within a few months, in July 1924, the Federal Government dumped it and settled for an 'open' system of A-class stations supported by compulsory listeners' licences and B-class supported by advertising revenue. Licensees were free to listen to any station as they so chose.

At the outset, when Westralian Farmers in Perth had been considering applying for a licence, their reasoning was that, as a co-operative enterprise with 6000 farmer/shareholders on their books, they had a ready-made audience for a program emphasising market reports, news, weather and talks.

So, when issued with Perth's first (and only) licence, they pushed ahead with the project — only to be unsettled when the case for one 'general' station per zone appeared to be gathering momentum.

Such a policy would have conflicted with their proposed rural emphasis and, with the station more than half-way to completion, WF's management had to decide whether to call a halt, or take a punt that things would work out. Nor did the Company's problems end there, according to Wally Coxon. When the sealed set scheme prevailed, not only were prospective listeners estranged but no ready supply of type-approved 'sealable' receivers was available in Perth from either local or overseas manufacturers.

The management at Westralian Farmers faced the impasse of setting up a 5kW station to serve 6000 identifiable customer families, but with no reliable way of supplying them with legally acceptable receivers. So they decided to 'roll their own', resulting in the Westralian Farmers 'Mulgaphone' — surely the most ocker title ever allocated to a wireless receiver!

Their planning at this stage envisaged a workshop with about a dozen employees, assembling receivers from a mix of imported components and items made on the spot.

They would be produced in batches of 30 - 50, primarily for WF's own customers.

Pay up and shut up!

Available in a choice of cabinets, the basic design would involve two valves and a crystal detector — dictated in part by the fact that AWA were demanding 10/- or more per valve socket to cover patent royalties. Whether such claims were justified was open to some doubt, according to Wally Coxon, but that did not deter AWA from asserting them in no uncertain fashion:

'The licensee will not during the subsistence of this licence impeach, dispute or in any way question or assist any other person or persons or company to impeach, dispute or question the validity or subsistence of any of the said Letters Patent owned or controlled by the Company relating to electric or wireless apparatus'.

While Westralian Farmers chose not to make an issue of the matter, Wally Coxon said that AWA's royalty claims were honoured more in the breach than the observance by 'backyard assemblers' and home constructors. In fact, he continues, the same cavalier attitude was adopted to wireless licence fees, even after the sealed set scheme was dropped.

Attempts were made by the PMG to pressure dealers not to supply receivers or components unless the intending purchasers could produce a current listener's licence. At the very least, they were supposed to record the names and addresses of anyone purchasing a complete receiver, or key components to build one.

Far from complying, some dealers let it be known that they would supply receivers and components free from such constraints. It would appear that the first batch of 'Mulgaphones' were designed to cover only 6WF's wavelength of 1250 metres (240kHz), with a 10% allowance to cater for possible frequency drift. As such, they would presumably have been acceptable in WA, with fixed coils and a tuning capacitor giving only limited coverage centred on the sole local station.

Getting 6WF to air

Looking ahead to the full 'sealed set' situation, Westralian Farmers would have faced the same imponderable design problems as other aspiring manufacturers. Great was their relief therefore when the scheme was abandoned soon after 6WF came on air, and they were free to sell locally made or imported receivers covering the long and/or medium wave bands.

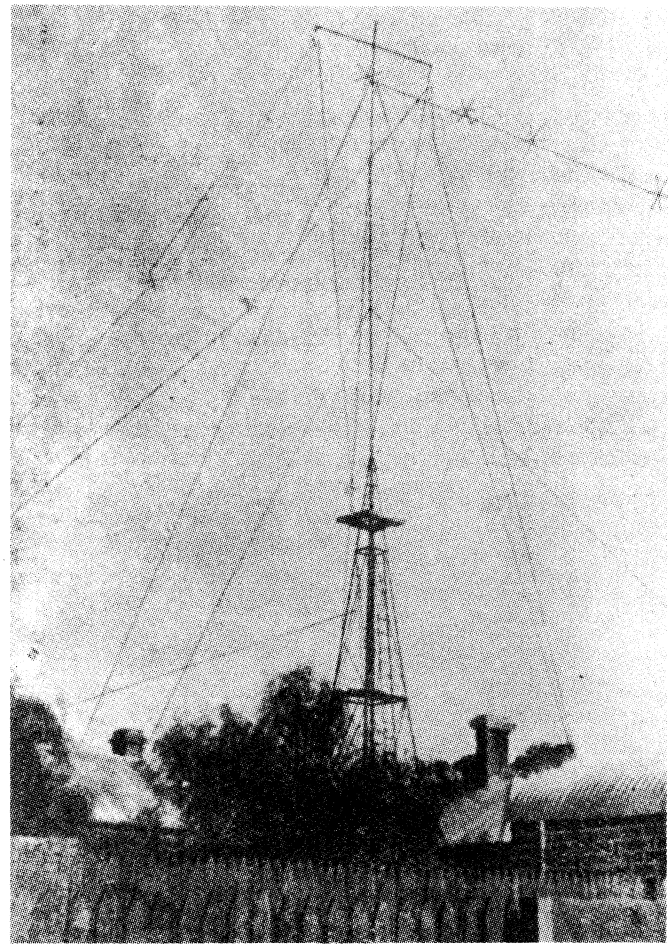

Fig.3: At best, an impression of the antenna array at Wally Coxon's 6AG — a maze of wires strung from the top of a guyed steel mast atop a large windmill type tower, which dwarfs the house.

Wally Coxon says that Westralian Farmers had set up a receiver in their showroom well before signals were available from 6WF on the floor above. Instead the receiver was tuned to his own amateur transmitter, and it fell to his lot from time to time to announce and play a few records to support prearranged demonstrations.

One publican, he recalls, became quite excited at the prospect of being able to offer music and race results to his Saturday afternoon customers. He demanded to be shown how to switch the wireless on and off, tune in a station and make the sound louder or softer. But his final question stumped them: "How do you make it (the race call?) go faster or slower?"

As completed in 1924, 6WF proved a major undertaking for a mere 'co-op' store. The transmitter room and studio were installed on the top floor of their existing building, the studio being fitted with double doors and double-glazed windows to minimise extraneous noise.

The walls were packed with a 3" (7.6cm) layer of shavings, faced on the inside with galvanised iron sheets and a layer of Celotex, plus decorative drapes. It measured some 26 x 16ft (8m x 5m), and the studio was fan-ventilated with 'washed' air through floor and ceiling ducts, with provision to add ice to the cooling water when necessary. (A second, small studio was added later to facilitate continuity of presentation).

Aerial on the roof

To support the aerial on the roof, the structure had to be strengthened to cope with two tubular steel masts, each 95ft (29m) high, stabilised by cross-arms and guy wires. The gross weight was about six tons.

Due to the proximity of the transmitter and aerial system, the microphone and associated wiring in the studio had to be completely shielded. Transmitter power at the outset was 500 watts and it was some months, according to Wally Coxon, before the 5kW output stage was added.

At switch-on, 6WF on 1250 metres shared the Australian airwaves with 2FC on 1100 metres and 2BL on 353 metres, both in Sydney. Some time later, 3LO Melbourne appeared — also on 1250 metres initially, it seems. Behind the disparity in wavelengths lay a spirited argument in the industry about the merits of longer and shorter wavelengths which was described at the time, according to Wally Coxon, as 'the battle of the waves'.

As far as listeners were concerned, it was mirrored by the use of plug-in coils (usually of the 'basket weave' or 'honeycomb' type) which made it pos-

sible to change the receiver tuning range as required.

The 'battle' continued until the PMG's Dept was empowered to implement a decision which forced all Australian stations to move to allocated wavelengths — or frequencies — in what became the present medium-wave AM broadcast band.

But back in 1924, in all good faith, 6WF went to air on 1250 metres with a licence which stipulated 'a program format to cover all tastes'.

They could include advertising of up to 30 minutes per session, but were forbidden to discriminate between advertisers. In fact, paid advertising in the early days of 6WF seldom exceeded one minute/session!

Studio professionals

If the management of 6WF had bitten off 'as much as they could chew' in setting up the station, preparing for everyday operation was no snack, either!

Initially, they could second impromptu help from the staff on site involved in the production of 'Mulgaphones', but as the opening day approached they realised that 6WF would need its own specialist staff with the imagination and ability to attract an audience as the only local station on air.

Without mentioning his own role, Wally Coxon pays tribute to 6WF's management for their choice of operators to assist him on the technical side: George ('Jack') Sutherland and Frank Elliott.

Trained as operators in the British Navy, both had migrated to WA with the idea of going on the land. But when presented with a possible alternative, both decided in favour of the skills they had already acquired.

For the studios, A.J. Leckie Mus. Bach. was made responsible for the musical side of the programming, while Harold Wells was appointed as announcer, with Evelyn Willis ARCM as accompanist.

The station was officially opened on June 4, 1924 by Premier Mr P. Collier, before an audience of 500 people assembled in the Social Hall of Westralian Farmers on the floor below the studio.

The radio audience for the occasion included 200-odd families who had purchased 'Mulgaphones', plus as many others who had been able to modify their mainly home-made receivers intended originally to listen to the amateurs on 200 - 400 metres.

In his address Mr Collier, as a politician, professed support for wireless

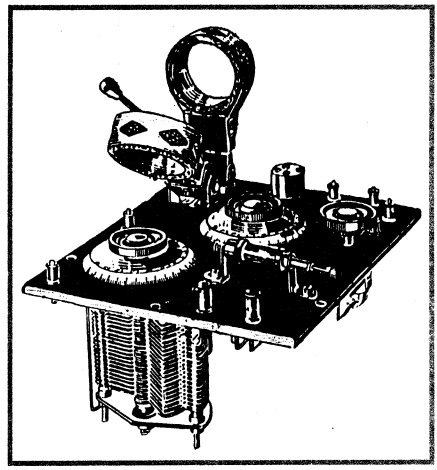

Fig.4: Described as 'A special offer for State School Boys only' the parts to build this basic receiver were advertised by Westralian Farmers on the cover of 'Western Wireless' (October 25, 1925) for £2/5/-.

on the grounds that, if his listeners tried to interject, neither he nor anybody else could hear them!

Subscribers & 'pirates'

As already noted, Wally Coxon says

Program of Station 6WF (1250m) for Tuesday, November 2, 1925

12.30	Tune in.
12.35	Musical Items.
12.47	Markets, News, Cables, Weather Reports.
1.0	Time Signal from the Perth Observatory.
1.1	Items from the Studio Orchestra's Repertoire.
2.0	Results from the Melbourne Cup, Close Down.
3.30	Tune in.
3.35	Pianoforte Selections by Mr Ron Moyle ATCL to:
4.0	Items from the Studio Quintette's Repertoire.
4.30	Close Down.
7.0	Tune in.
7.5	Children's Corner.
7.30	Markets, News, Cables and Weather Reports.
	Concert Night
8.0	Address by Lord Burnham (President of the Empire Press Conference) from Queen's Hall.
8.45	Vocal Items by Wendowie Quartet. Mr Rhys Francis, Tenor.
9.30	Lecturette by Dr J.S. Battye, BA, LL.B.

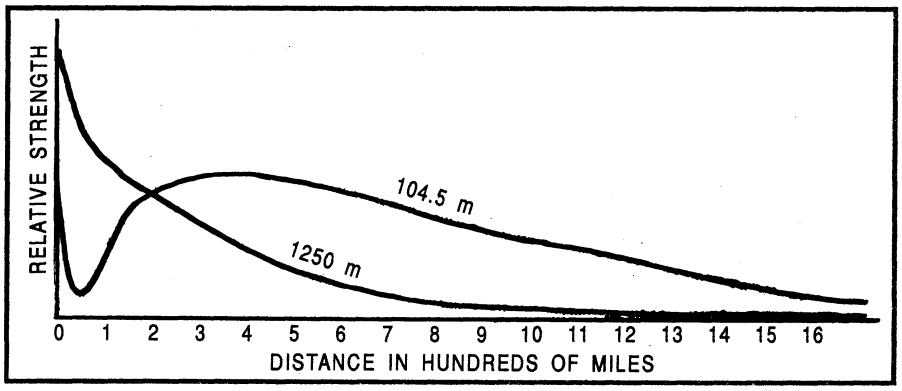

Fig.5: From 'The Western Wireless', a plot of the relative strength of signals against distance in hundreds of miles, from the long and short-wave transmitters operated by 6WF.

that 6WF had no sooner commenced broadcasting than the sealed set scheme was scrapped, giving way to licence fees payable to the PMG's Dept. Things were complex at first, but subsequently rationalised to the relief of all concerned.

As in other states, he says, most listeners in WA country areas took out licences, if only because the presence of a mandatory outdoor aerial was a dead give-away to local postmasters and village 'dobbers'.

In urban areas, it was commonly possible to get by with an indoor antenna or even contrive to pick up signals from the power mains.

In 1925, for example, licences in the Perth area totalled 1200, yet one firm alone had sold 4000 'Ducon' adaptor plugs, designed to provide a mains/aerial connection. The assumption at 6WF was that 85% of their audience in the Perth area were 'pirates', which prompted announcer Harold Wells to address them on occasions as "Good afternoon, subscribers and listeners".

Wally says that, based largely on subscribers' letters, they had to work out for themselves what was meant by a 'general interest program format to the satisfaction of the Postmaster General'.

Subject to certain time restrictions, they had access to news by arrangement with the Australian Press Association, Reuters and the Perth daily papers. They could also borrow gramophone records in exchange for publicity, such that they had no station record library and rarely more than 20 or 30 records on site at any one time — a situation that would have been unthinkable in 1939.

Back in the mid-1920's, however, 6WF listeners showed a marked preference for 'live' broadcasts, which posed a major problem because of the city's remoteness from major cultural centres and its limited telephone access. They therefore had to rely heavily on local personalities and artists, in particular those prepared to 'drop everything and help out in a program emergency'.

'Yer gotta laugh'

In the circumstances it wasn't always possible to observe the niceties of programming, as when inadvertent repetition of a recording of 'I Look Into Your Garden' brought comment that listeners disliked having vocalists peering too frequently over their garden wall!

On another memorable occasion, a stand-in guest speaker was part-way through his talk when a gong sounded in the studio, operated remotely from the Observatory as an on-the-hour time signal.

With no prior warning and thinking he had been 'gonged', the speaker apologised to his listeners for exceeding his allotted time, picked up his papers and headed for the door. He had to be intercepted and re-introduced by the duty announcer to complete his address!

Among letters of complaint when they had to suspend temporarily a Saturday afternoon session came on which commended the decision. The correspondent said that he would now be able to do other things without fear of missing something interesting!

The technical naivety of the population at the time was illustrated by a minister of religion who bustled into the studio with a letter addressed to a distant mission field. He wanted it sent by 'aerial mail'!

In part V of his series of articles, Wally Coxon repeats the tale of the Perth Town Hall clock appearing to strike a 24-hour midday, as in the original November 1993 article. He adds that the traffic noises picked up by the microphone in the Town Hall Tower proved to be of interest to country listeners by way of City 'atmosphere'. From time to time announcers were even despatched to the site, to add a word picture of what was going on!

In the matter of atmosphere one of 6WF's popular sessions in the early days was a musical 'afternoon tea party', where visiting artists were broadcast against a background of audience noise and the clatter of teacups.

On the technical side

1926 saw the introduction of overseas rebroadcasts via short waves, as we now understand them. The first for 6WF involved Wally Coxon's own station and a New Zealand amateur.

This was followed by a number of rebroadcasts from 2XAF, an experimental station operated by the General Electric Company at Schenectady, USA. Received between 6.30 and 8.30am, planned broadcasts would often include greetings and news of interest to WA listeners.

PCE, the Philips station in Eindhoven Holland, was also putting a good signal into WA and Wally Coxon, with other station staff, often spent long nights compiling reception reports for this and other stations.

In June 1926, by arrangement, PCE re-broadcast a signal picked up from the BBC — enabling 6WF listeners to enjoy a concert from London, along with the chimes of Big Ben.

Wally says that 6WF's initiatives in the area gained it a reputation for its contributution to short-wave technology, and added to pressure on the British Government to become active in Empire broadcasting.

6WF added directly to propagation technology by installing a second transmitter to supplement the main transmission — and hopefully involving much less power. The main 1250m transmitter, according to Coxon, gave excellent daytime coverage but could be compromised at night by distant thunderstorm activity.

Using a quartz crystal imported from the UK, 6WF set up a supplementary 200-watt transmitter on 104.5m — Australia's first crystal controlled broadcast transmitter. It operated for several years and clearly outperformed the long-wave transmitter at night, for ranges between a couple of hundred and a couple of thousand miles. (See graph).

(To be continued) ❖