

When I Think Back...

by Neville Williams

Readers have their say: What about the 'girls' in radio factories and offices?

I must confess that, based on the contents of this column, readers might well conclude that wireless/radio has been invented, developed and applied solely by men — and that 'Thinking Back' in the context of electronics is an exclusively male domain. On a simple head count this may appear overwhelmingly to be the case, but biographies without a female/family element tend to lack an important dimension.

Back in April 1992, for example, I pointed out that this very magazine owed much to the support of its predecessor *Wireless Weekly* by a woman: Miss F.V. (Violet) Wallace. As Australia's first female to gain an electrical engineering diploma, she had joined the ranks of Australia's licensed radio amateurs and had also opened a wireless shop in Sydney's Royal Arcade, which sold the first ever over-the-counter copies of *WW*.

Much later, as Mrs C.R. Mackenzie, she had made a notable contribution to the WW2 war effort by training young women as radio operators for the RAAF.

In so saying, I am reminded of male amateurs like the late Howard Kingsley Love, whose service-trained wife was reputedly a more accomplished reader of Morse code than her technically accomplished husband.

Then there was Fred Thom of Tasma Radio, whose biography appeared in the September and October 1992 issues of *EA*. Back in the early 1920s, he was a young office boy/trainee in the then very small AWA factory in Clarence St, Sydney. He tells how he happened to be in the right place at the right time when AWA decided to become involved in manufacturing triode valves.

Neither he nor anyone else in the Company knew much about valve production, so they appealed to Marconi in England for guidance. Marconi's response, says Fred Thom, was to send to Sydney a certain Miss Devaux, 'experienced in valve production', who

helped create the historic AWA Expanse-B triode.

By the time AWA decided to launch into valve production in a big way — circa 1932 — they were able to organise and train their own local team of production people, able to cope with valves far more complex than Expanse-B triodes.

When I joined AWV at Ashfield around 1936, it was to discover 50 or more youngish women, replete with workbenches and stools, assembling

valve electrodes with purpose-built spot welders. It was fascinating to watch their deft fingers — from afar — positioning the tiny nickel parts and securing them in place with the tap-tap-tapping of the pedal operated spot welders. This was without apparent effort, while listening to background music and/or engaging in small talk with their neighbours on the bench.

Women overlooked

Out in the marketplace, male personalities — the writer included — extolled the reliability of AWV Radiotrons, while the women who actually assembled them were seldom mentioned.

In the December 1992 issue, I told the story of Prices Radio, the memorable wireless/hobby shop in Sydney's Angel Place. The story featured Aub Price, Alan Falson and Daniel McIntyre, culminating in a crisis when an ageing and ailing 'Mac' was left to manage virtually on his own.

Guess who stepped in to keep your orders moving across the counter and through the mail? A very pleasant but unsung lady, Mac's sister Mary Bellfield.

You may well wonder who or what triggered this train of thought. Primarily it was the son (Gerald) and daughter (Phil) of Vincent Stanley, featured in the March '96 issue.

Having read our earlier stories on George Cookson and Stanley Newman, they had reckoned their own father to have been no less deserving as a pio-



Mrs Violet Mackenzie as pictured in 'Wireless Weekly' dated August 5, 1932. Ten years previously, as Miss F.V. Wallace, she had helped launch the magazine with the object of pressuring the Federal Government to authorise public broadcasting in Australia.

neer when AWA in particular was opening up the airwaves to national and international communication.

He had lived with his family in a staff cottage at the AWA Pennant Hills Wireless Station, had been responsible for the station's operation and maintenance, and been on call to supervise other major installations for AWA's Commercial Engineering Section. I accepted their joint submission and the story is now in print.

As it happened, they have since come across a much better photo of their father than was available at the time, and the appropriate thing to do is to reproduce it herewith.

In the meantime, I had also met the couple who set up 'The Old Time Music Machine' Exhibition in Robertson, NSW. Having written up their story in the last issue, it was evident that they were very much a team with a common interest.

If ever a woman has devoted a lifetime to 'Thinking Back' in a technological field, it would be Dawn Neels.

Phil Alston recalls

And so back to Phil Alston (nee Stanley), who enclosed her own personal contribution to 'Think Back', as one of those who introduced the feminine touch to the then-new AWA Tower building in York St. Sydney.

Her letter should be of potential interest to other women who performed secretarial or clerical work in the same environment and time period. My guess is that some of them may well share in the AWA retired employees group that still meets for lunch every few weeks at Burwood, NSW.

Phil's letter is also appropriate in that it complements the earlier stories. Having spent her childhood on the Pennant Hills Wireless Station, she obtained a position in the very department that administered the installation. As such, she saw at first hand the role that Sydney Newman played, up to and during the war.

Having worked in the York St building in its early days, I personally remember it as a very formal place, characterised by business-suited men, who communicated with the world outside with meticulous official documents produced by a bevy of trained 'girls' in a typing pool. Phil's letter gives a rare glimpse of life behind its front counter (barricade?). What follows is substantially in Phil's own words:

I started work at AWA, 47 York Street, in January 1941 as a junior in the Correspondence Department on the



Around 1920 the Marconi company in London sent AWA a Miss Devaux, to provide the production know-how necessary for it to produce the first Australian valves. Here Miss Devaux is seen operating a valve capping machine in the Clarence Street factory.

fourth floor. Mrs McCullough was the Head of the Department, as well as being in charge of the female staff. She was regarded by many of the juniors as something of a dragon, but it was a facade which hid a very kindly nature, as I found when I inadvertently mixed up some of the outgoing mail and was reduced to tears.

My first job was as Distribution Clerk, which involved taking correspondence, memos, etc. from the Mailing Desk where they had been sorted, delivering them to the various departments in the Building, collecting from the 'out' baskets and returning it for sorting prior to the next round.

E.T. Fisk & friends

Shortly after starting work at AWA, I entered the lift one day, complete with mail basket, and noticed a very small man in the corner. He drew himself up to his full height and looked at me sternly, as much as to say: "What are you doing in this lift? Don't you know who I am?"

Such was my ignorance, but he was Sir William (Billy) Hughes, on his way to visit Sir Ernest Fisk! (Tut tut! One of the things I learned by observation of the staff and the uniformed doorman was that Sir Ernest and distinguished guests were normally granted priority in use of the lifts — WNW.)

Phil continues: *After my initial trial*

period, I was sent to relieve in the Purchasing Department for a short period, then transferred to the Sales Credit Department at 72 Clarence St.

In 1941-42 there was still a number of young male office staff, so there were lots of social activities. We even had lunch-time dances in the 2CH Auditorium, to music supplied by Desmond Tanner at the Hammond electric organ, supported at times by a drummer.

(The 2CH Hammond was one of the first of the breed to enter Australia, and in my own day was featured by 2CH in the lunchtime 'AWA Staff Show' — variety and sing-a-long led by Des Tanner.)

In 1941-42, Phil says, a group of young juniors from various departments met regularly on Sundays for bushwalks and there were occasional tennis days. These activities lapsed as the male staff reached the age of 18 and, as often as not joined the forces.

Mrs McCullough called me one day and said that she was transferring me to the Commercial Engineering Department, to work for Mr Norm Foxcroft. I duly reported to the head of the department, Mr J.C. ('Draf') Draffin, and was told not to be concerned about 'Foxy's' occasional 'damns' and 'blasts'.

I assured him that I had already been initiated by Mr Bert Lewis in the

Purchasing Department. (Much amusement on Draf's part, who promptly relayed my observation to Bert Lewis...)

AWA in its prime

After some months with 'Foxy', I moved to work for Mr Sid Newman, whose 'phone rang incessantly with calls from Purchasing Officers from the Forces and from other companies in the radio field, requesting quotations for equipment, spares, etc. for use in AWA transmitters and receivers; later, in radar. Delivery was required immediately, if not sooner! Orders were commonly placed by 'phone and the confirming paperwork would turn up later.

In the same department were also Jack Chesterfield, Murray Johnson, Reg Baird and Fred Stevens. As the volume of work increased, more staff appeared quite regularly and the desks were just moved closer together.

Despite the serious times, there was a cheerful atmosphere in the department. Draf had a great sense of humour and from his glassed-in office, he kept an eye on all of us.

His secretary at the time, Rene Watson, used to keep him supplied with tit-bits of gossip, which caused him to laugh heartily on occasions until the tears would run down his cheeks.

Murray Johnson had a habit, when pondering a technical problem, of leaning back in his chair with his glasses pushed up on his forehead, eyes closed. At times, Draf could not

resist the temptation to send a messenger in to inquire whether Murray was sleeping comfortably!

When the war in the Pacific was almost finished, we came into the office to the sound of a constant news relay from the Beam Radio room. The moment the official surrender announcement came through, all work stopped. Some of the girls had a novel idea and rushed from floor to floor gathering rolls of toilet paper. They persuaded one of the lift drivers to take them up to the lower platform of the tower, which was duly dressed with toilet paper streamers...

From then on, things slowly changed to a smaller office. The name Commercial Engineering Department was changed to Engineering Sales Department, and some of the staff who had been in the Forces came back into senior positions. Ken Logan, who had been Draf's office boy was one such, as also was Adrian and Basil Brown. About that same time I became Draf's secretary.

The 'good old days'

The Department then became busy tendering with the supply and installation of broadcasting equipment, not only in Australia but also New Zealand and the Pacific Islands. Tensions would mount as the closing date for tenders approached. Draf would tell us not to make any dates for the week, as we might have to work overtime.

On such occasions, Draf would never

allow female staff to accept the regulation three shillings tea money — saying: "I know you girls; you'll just buy a pie and keep the change." He'd insist on taking us all out to 'have a proper meal', although I suspect that the extra cost would come out of his own pocket.

From time to time, Joe Read would come in from the Ashfield works, bringing the circuit diagrams, etc., which were to be incorporated in the finished tender. He usually had a story to tell before settling down to work, and we girls used to wonder how late it would be before we before we actually finished for the night. I can remember falling into the train at Wynyard and going off to sleep before it even left the station!

The Senior Telephonist, Miss Gibbs, decided that in the new competitive environment, it was high time to overhaul the established telephone answering techniques. A memo was accordingly circulated forbidding the blunt question: "Who's calling?" Instead, we should say: "May I tell him who is calling?"

This was too much for Advertising Manager 'Tiny' Larkins, who would almost spit out: "Is he there or isn't he?" If the reply was "No", the phone would be slammed down in your ear.

I left AWA in 1948, as I felt it was time to move on, but I have very happy memories of the years there and of the very good friends I made.

Thank you, Phil Alston, and it is refreshing to get a female reaction to what I recall as a predominantly male environment.

Philips-Miller system

It so happens that the March '96 issue which carried the original article on Vincent Stanley also carried a follow-up letter by George Paterson, to his account of the bomb-proof ABC radio studio complex constructed in Forbes St, East Sydney. George told how he had since revisited the historic site, which was in the process of demolition, to make way for a new 43-storey apartment building.

In his original article (EA December 1995), George had referred to a radically new recorder which had been installed in the 'bunker' studio at the time. Described as the Philips-Miller system, it managed to combine elements from the disc system, movie sound film and magnetic tape — the latter still in the developmental stage.

The medium was a spool of quarter-inch wide film, rather like optical film except that it had a two-layer lacquer



In 1924, AWA began valve manufacture on a larger scale in its premises in Knox Street, Chippendale. As this photo shows, virtually all operations were carried out by women.

coating — a transparent under layer and an opaque outer layer. Recording involved drawing the film under a triangular cutting stylus, vertically modulated, as for a hill-and-dale disc recording.

In so doing the stylus penetrated the opaque layer, producing a transparent variable area track in the film, which can be played back in exactly the same manner as variable area optical track on a sound film.

At a time when broadcast stations were largely dependent on shellac discs, the Philips-Miller system offered lower noise, better fidelity, longer playing time and the possibility of dubbing on to photographic film by contact printing.

While the system was illustrated in the December '95 issue, I was dependent on a 50-year-old impression of how it rated in the sonic scale. I am therefore most grateful to Victor Jukes of Penhurst NSW, for a brief note and a few centimetres of the original 'tape' salvaged from the ABC studios.

Vic says that he was in the Middle East in 1941 when a friend mentioned the system to him in a letter. He gathered that the ABC had broadcast some operatic programs, presumably from Britain and despatched to them from the BBC by the then flying boat mail service.

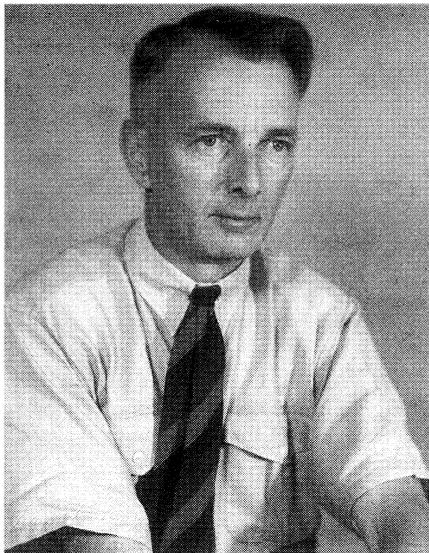
The scrap of film is relatively thick and stiff and, as such, has far more in common with movie film than magnetic tape — even some of the old thickish tapes, which used to produce lumps and bumps on the rewind spool. It is no surprise therefore that George Paterson should have remarked that Philips-Miller spools were bulky, having in mind the space-economy of modern magnetic tapes.

The other point of note was that the end result was a single mono track. Audio has come long way since 1941. It has also gone a long way since the arrival of digital technology!

Vic Harris and MBH

To round off this instalment, I quote from a letter to hand from Hank Goris, of 57 Weir Rd, Warragamba, NSW 2752; phone (047) 742 090. This is in response to my article on Victor Harris/MBH in October last. Mr Goris was especially interested, having worked for Vic in his ill-fated Homebush factory.

He says that he himself came to Australia in 1931 at age 20, and started work as a fully trained watchmaker. On the side, he was very involved in radio/electronics, held an amateur licence and was interested in broadcast



Vincent Edward Stanley, our subject in the March 1996 issue. This picture turned up after the article went to press. As indicated in the present article, his daughter Phil also worked in AWA.

receivers, amplifiers and loudspeakers capable of better than average quality. Not surprisingly, he started to buy and read *Radio & Hobbies*.

Living in Croydon NSW, he got to know Vic Harris, who invited him to work for him, on completion of the new factory at Homebush in October 1954. Almost at once, he was introduced to the assembly of MBH 'D' type heads and 12-, 14- and 16-inch tone arms.

The previous heads had used a two-pin configuration and Vic had just

changed over to the three-pin type. This allowed the pickup arm to be grounded to a different point from the signal circuit, as well as providing a firmer socket for the head. Says Hank:

I wound the coils, assembled the head base with contact pins, then put the whole lot together.

I also made the styli. A watchmaker's lathe was available to cut the shank material and finish it to length, and there were sapphire tips to fasten to the shanks. Vic used to use glue to attach the styli to the metal shanks; he liked glueing things together.

I don't, and proposed and duly developed a method of pressing the tips into the shanks, much as jewels are press fitted into watches.

I made some aluminium punches with a clearance hole for the sapphire tip. In fact, I still have a few of them today, along with examples of my early attempts. Vic used to take developmental heads home for testing since, at the time, he didn't have suitable equipment set up at the factory for the purpose.

A watchmaker's touch

In the ultimate, Vic admitted that the press-fitted tips offered a perceptible improvement in frequency response and resonance.

The early type of pickup arm had an aluminium finger grip and arm rest, and a metal base to fit the bearing column. The latter was assembled and lubricated with colloidal graphite.

At the time, Vic was the importer of the Barker Duode 12-inch hifi loud-



Another photo of the Stanley family, with daughter Phil on the left. In the 1940s she became secretary to 'Draf' Draffin, the executive virtually heading AWA's Commercial Engineering Department.

speaker. To save freight, it came without a magnet; but a powerful magnet was manufactured and fitted here. Vic also designed an eight cubic feet cabinet, which was produced by a professional cabinet maker and sold with the loud-speaker fitted.

The MBH range also included an 8-inch model Duode, which came out fully assembled from England and could be fitted into a smaller cabinet.

Vic also designed a three-valve pre-amplifier and an unusual power amplifier which delivered 30W RMS power output from three large valves, without using an output transformer.

I subsequently left Vic's employment and returned to watchmaking, which offered me a much better income. However I kept in touch with him and purchased equipment from him which I installed in schools and private homes. During this same period, I was also assembling Mullard 5/10 amplifiers, based on A&R kits, some of which were supplied to Vic for sale under his own brand.

Later on, Vic purchased an injection moulding press for plastic and made various noteworthy improvements to the physical presentation of his heads, arms, finger grip and support, and the bearing assembly. As you mentioned in your article, the

Equidyne was also developed about this time.

Hank's further remarks on MBH pickup heads require a first-hand knowledge of the range, and I repeat them verbatim:

MBH pickup heads

When stereo discs started to appear, a 'D'-type head for stereo was developed. I did not like it much. Then Victor re-designed the heads completely.

The L-type is a totally enclosed item that could not be opened or serviced. It



A scrap of Philips-Miller film (tape?), sourced from the ABC. Photographically enlarged to show up the modulated track, the original film was 1/4 inch (6.35mm) wide.

has a square channel into which the cantilever type stylus is placed. The stylus is fitted with a diamond and is available with a round or elliptical tip in sizes to suit 78s, mono LPs, early stereo LPs, late stereo LPs, and some in-between sizes. Quite a large range!

These 'L'-type and subsequent heads were made in mono and stereo, various impedances and tracking weights. The performance is much better than the 'D'-type. It is very easy to change the stylus. If the head was dropped on the

record, again the stylus moved up out of the way and the smooth surface of the head slides over the record without doing damage to the record or head.

The models Victor developed after the 'L'-type had only small improvements.

Hank concludes his letter with the observation that Vic Harris was very versatile, having designed and assembled many equalisers, amplifiers, turntables, loudspeaker systems — and the popular 'Saraband' player.

He regards it as regrettable that Vic never took the opportunity to launch MBH equipment on the world market, at a time when enthusiasts would have welcomed the MBH approach.

Hank concedes that the analog disc system is now obsolete but, having reached retiring age himself, he is content to stay with his existing collection of LPs and his predominantly MBH playback equipment — plus a couple of Nakamichi cassette recorders which give him the option of dubbing anything he particularly fancies on to tape.

Thanks, Hank, for your letter, which in general supports the information on which we based the original article. It demonstrates that MBH equipment was evolutionary rather than revolutionary, and that Vic just wasn't the kind of person who could 'freeze' a design and commit himself to mass marketing. ♦