

When I Think Back...

by Neville Williams

Stromberg-Carlson, Admiral and the battle they both lost — 2

In the mid fifties, anticipating the introduction of television broadcasting, America's Admiral Corporation set out to capture a share of the Australian TV Market. They produced a lot of monochrome receivers, only to disappear from the local scene a few years later. This second instalment begins with the development and launch of the Australian-made Admiral TV range.

In last month's article, Fred Hawkins of Castle Hill in NSW told how, after job training in the Stromberg-Carlson factory, he became only the fourth employee of the newly formed Admiral of Australia, Pty Ltd. Headed up by the late Eric Fanker, ex Thom & Smith/Tasma, Admiral had been set up on the mezzanine floor of the old General Industries Refrigerator Factory at Waterloo, Sydney, pending the construction of a new factory in the Bankstown area.

Fred's initial assignment had been to develop a range of radio receivers, primarily to give the Admiral tradename exposure on the local market. But this arrangement came unstuck, when an ex-AWA TV-trained engineer resigned after a confrontation with Eric Fanker.

Another technician 'imported' from Tasma was put in charge of the radio receivers, leaving Fred Hawkins to coordinate the TV project under the guidance of Eric Fanker — himself an experienced electronics engineer.

The plan was to develop an Australian version of the American Admiral 20Y4 chassis — a new 20-valve unit on a single vertical chassis, supporting the relevant power supplies, etc., plus printed circuit boards carrying the IF system, audio and sync separator. A large hole in the centre of the chassis accommodated the tube yoke. The VHF turret tuner was mounted

on an outrigger from one top corner, while the volume/contrast controls were also concentric and operated by cables such that two sets of dual-concentric knobs (channel selector/fine tune and

volume/contrast) protruded through the top corners of the safety glass. As such, I gather, they gave Admiral TV sets a distinctive 'two-eyed' appearance.

The auxiliary controls were fitted with long plastic extension rods, accessible behind a drop-down metal flap beneath the picture tube (the 'mouth'?).

Eminently 'buildable'

Fred Hawkins says that the chassis and picture tube mounting of the 20Y4 involved clever bracket-work, with a gold escutcheon that allowed considerable flexibility in cabinet design. The end result, according to Fred, was a more professional presentation than anything else on the American market at the time.

The designers had also managed to engineer the mechanical components such that they could accommodate both 21-inch and 24-inch picture tubes, unwittingly adding insult to injury for other Australian firms committed to their obsolescent long-necked 17-inch picture tubes.

Circuit-wise, the basic 20Y4 turned out to be an adequate performer, with the colour temperature of the mono screen a little bluer than its peers, by reason of the phosphor selected by the picture tube suppliers — Thomas.

The one questionable aspect of the design was in the sound



The only illustration we could find of one of the original Admiral TV receivers is this one from the September 1956 'House & Garden', of a 'Miami' model. Described as an attractive TV console, it had a swivel base and cost 229 guineas. The minor controls were behind a drop-down aluminium panel below the screen.

department, where 'stacking' of the B-plus line limited the effective audio HT supply to about 120V, and the power output to about one watt. (A copy of the equivalent Australian circuit, supplied by Jim Yalden, shows the plate/screen voltage of the audio output tube as 265V but the cathode line, which disappears into the rest of the circuitry, sits at 150V).

On the credit side, says Fred, the stacking technique made for an economical power supply, reflected in reduced bulk, weight and cost. With his production background, he judged the 20Y4 to be an eminently 'buildable' design; and so it turned out to be in practice.

Admiral USA assigned the Australian factory the model number AX20Y4 for their proposed version, and supplied drawings of the original 20Y4 plus two sample receivers (110V, 60Hz and USA TV standards). For the rest, the Australian factory would be 'on its own', although the US company would be prepared to help out, if necessary.

Query regarding IF

However, right at the outset, the American engineers queried the intermediate frequency designated for Australian receivers. They pointed out that it bore a mathematical relationship to the frequency allocated to our Channel 2, which could result in herringbone interference.

They suggested that Admiral of Australia should alert the relevant authorities and the industry to the potential problem — and, says Fred, that's exactly what Eric Fanker set out to do. But to no avail. They didn't want to know about it. Who were these critics anyway? Australian experts had solemnly debated and settled upon 36MHz, and that's the way it was going to remain!

Rather than take the risk, Admiral Australia decided to stay with their nominal 21MHz IF channel. My former assistant Phil Watson reminded me that American TV receivers had suffered interference from CB (Citizens Band) transmissions in that country, and were themselves planning a change. But no such problem loomed in Australia where, at the time, CB was a dirty two-letter word!

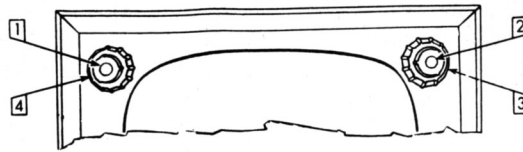
How different is all this from the accounts circulated in the 1950's, where Admiral of Australia were depicted as off-shore intruders putting buyers at possible risk by ignoring formal guidelines spelled out by Australia's technical cogniscenti!

In conversation, Fred Hawkins claimed that American Admiral's prediction came true and there was, indeed, considerable

TUNING YOUR SET IS EASY . . . SIMPLY FOLLOW STEPS ONE THROUGH FOUR IN ORDER

OFF-ON-VOLUME. Turn set on by rotating this control to the right. Adjust for desired volume after picture has been tuned in.

CONTRAST. Adjust this control for most pleasing contrast between light and dark areas.



CHANNEL SELECTOR. Select channel by rotating until desired channel number is at the top of the knob.

FINE TUNING. If necessary touch up picture by carefully adjusting this control. Note that the sound may not be loudest at this setting.

From the Owner's Manual of an original Admiral TV receiver, showing the role of the twin concentric controls. (By courtesy of John Wallace, Gorokan, NSW),

consternation when the herringbone patterns appeared, resulting in a lot of belated intermediate frequency 'nudging'!

At this point, I rang engineer A.N. (Neville) Thiele, who was talking about the phase linearity of TV IF channels at a time when most of us were having difficulty enough coping with frequency response. Did he remember herringbone effects involving Channel 2?

Plenty of discussion

Neville couldn't recall the details, but said that there had been interference problems in the early days — attributed to a variety of situations, ranging from the combination of signals in particular reception areas, to the IF response of particular receivers, and excessive radiation from the video detector circuitry in others.

It was all too long ago to recall the

details. But while he agreed that there had been considerable discussion and frequency nudging, not all of it would have been attributable to Channel 2, as possibly assumed by Fred Hawkins. In his own company (EMI), Neville said, they had positioned the picture IF carrier on 36.875MHz — a figure he remembered because it was commonly referred to as 'thirty-six and seven-eighths'!

Be that as it may, Fred Hawkins said that Eric Fanker was furious about the way his peers affected disinterest in what he and his co-founders were saying and doing. They seemingly ignored prior warnings that Admiral planned to launch with state-of-the-art technology: 21 and 24-inch picture tubes with 90° deflection, short necks and slimmer cabinets. They reassured one another with the old adage: "Let's learn to crawl before we walk"!

They refused to accept Admiral as a legitimate competitor, committed to building a large, modern factory, and also that Thomas (which also began as an offshoot of a US firm) was doing the same thing at nearby Riverwood to manufacture picture tubes. When Fred Hawkins mentioned Admiral's plans to his former workmates at Stromberg-Carlson, he says "They considered our proposed target of 200 sets a day as hilarious!"

They would not concede that Admiral posed any real threat to the established industry, pushing the line that Australian customers would support the brands they knew, rather than one they had never heard of!

Press on, regardless

So Admiral did the only thing they could do — forging ahead and establishing links with component suppliers. Their stated aim was to commence production with a local content as high as possible, with the objective of 100% within two years.

Capacitors designed for printed circuit board mounting were virtually unknown in Australia at the time, so Admiral supplied local manufacturers Ducon and UCC with samples. While planning to add them to their range, they came up with an

THE AUXILIARY CONTROLS AND THEIR FUNCTIONS



From the Owner's Manual of an Admiral TV receiver of around 1957, showing the side-mounted thumb-wheel minor controls. (From John Wallace, Gorokan, NSW).

interim product contrived by doubling one lead of conventional capacitors down the side, held in place by sleeving.

Ferguson's early efforts to supply suitable power transformers were too bulky for the proposed chassis. When the problem was referred to Admiral in the USA, they introduced Ferguson to grades of stalloy that they had previously only dreamed about, and helped them to arrange supply.

Cabinets, too, posed a problem, with most of the established manufacturers fully extended by the production of radiograms and their commitments to other Australian set-builders.

So Admiral did the rounds of furniture manufacturers — but no one company could undertake quantities to match Admiral's projected requirements. The idea of settling for multiple suppliers was complicated by the fact that the firms were set up for different fabrication methods. Some were using three-ply on wooden frames, others heavy ply without frames. None was designed to withstand the internal heat generated by a TV chassis. Ultimately, Admiral secured the cooperation of three manufacturers — including Everett Worthington — who were prepared to produce suitably designed cabinets. To spread the load, Admiral took a stab at the projected sales of three anticipated models and allocated one model to each firm to match their likely capacity. Even so, says Fred Hawkins, "If anything was going to go wrong, it would be cabinet supply!"

(Bill Culbert, who with Brian Peters was a joint owner of Everett-Worthington in the 1950's, told me by phone that they

had later become exclusive suppliers to Admiral for better than 200 cabinets per day. Admiral had been an excellent company to work with, he added.)

Cartons & things

Along similar lines, a potential problem also loomed with the provision of shipping cartons, with the various carton makers living in the present with no thought whatever of the soon-to-emerge television industry. It took a lot of talking to convince them that Admiral was serious; but after the injection of new capital, they were again able to line up three initial suppliers — to spread the risk!

It was decided at the outset that tuners, yokes and horizontal output transformers would be sourced from Standard Coil in the USA, and Eric Fanker attended to this personally with the help of American Admiral. The projected quantities presented no problem.

By the end of 1955, Admiral Australia had decided that, for the time being, they would retain the American IF system and, on that basis, built two prototypes of their new AX20Y4 conforming in other respects to Australian standards. One was sent to the USA for evaluation and the other retained for test installation in the various cabinets that were, by then, being submitted.

By the end of the first quarter in 1956, the start-up team was able to move into the new factory at Bankstown. With space to work they began to hire people 'in droves'.

Josh Bayliss came in from AWA and took over the TV development role, freeing up Fred Hawkins to get the production facilities under way. Benches were built

and the associated equipment installed, after which came the job of interviewing prospective staff.

Eric Fanker and John Clarkson, the Managing Director of parent company General Industries, worked long and hard to set up Sales, Purchasing, Production Control, Despatch and Service. There was no shortage of applicants, many of them from Tasma, who knew one another and understood beforehand the relationships and procedures appropriate to an electronics factory. "We all worked together — it was a fantastic year!"

Guiding principle

Fred Hawkins says that, at the outset, he and Eric Fanker had agreed on a guiding principle for receiver production: "Mean-time-to-failure should take priority over mean-time-to-fix." Translated into plainspeak, it meant that components and constructional methods should be chosen to minimise the risk of failure, rather than the time taken to repair. In accordance with this, joints would be wrapped first before soldering. Yes, it was tedious. Of the 20 operators on each of the two final assembly lines, 18 would wrap joints. When the set was complete and checked for accuracy, two specialists would solder them.

The short-term reward was gratifying: "It was unknown for an Admiral AX20Y4 to fail as the result of a dry joint". The less fortunate fall-out was to come later!

By the end of August 1956, thousands of receivers had come off the production lines and had been performance checked on a low power TV transmitter installed in the building. There was much excitement when Channel 9's first still pictures appeared on air, and even greater excitement when they transmitted *Treasure Island* (or was it *Robinson Crusoe*?) — even though it failed in the middle.

I quote Fred here: "By opening night, there were Admiral sets in dealers' windows all over Sydney, and the production line (at Bankstown) was running flat out".

"All told, that first year was little short of a miracle for us. Virtually nothing went wrong. Fanker was busy filling out the organisation. He was now able to get the best people and he paid them well."

"He was working towards making our own tuners, yokes and horizontal output transformers. He was looking at automating the printed circuit assembly."

"I was now managing chassis assembly and testing, with the objective of pushing production to the 200 per day target. We made it on odd days during the first year, and it became consistently achievable in the second year."



Once owned by the parents of Mrs Fran Wallace of Gorakan, NSW, this late 1957 21" model still works well. Note the 'two-eyed' look. It is destined for Sydney's Powerhouse Museum. (Photo by Fred Hawkins).

Startling figures

Fred Hawkins continues: "On the first anniversary of the start-up of TV, management revealed the company's position to the staff and we learned that, although there some 19 players in the TV manufacturing game, we had achieved 85% of the sales!"

"Further, we had been able to remit a handsome first-year profit (I seem to recall it was about one million pounds) to our joint parents, General Industries and the Admiral Corporation."

"On the other hand, our competitors were in confusion. Their 17-inch sets (at the same price as our 21-inch models) looked positively puny by comparison in the shops."

Fred says that it was about this time that the hassles about the choice of IF came to a head. As far as the public was concerned, Admiral had been painted as the 'bad guys' but it was the established brands that suffered herringbone interference — for whatever reason. The roles had now been switched, and it was the one-time good guys who were in trouble — with post-mortems and the IF nudging mentioned earlier.

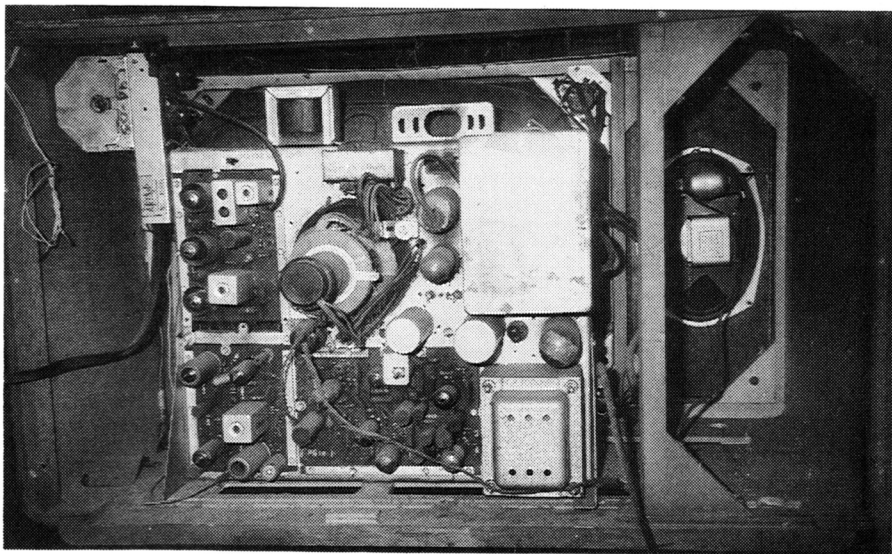
But Admiral Australia was not in the clear, either, for a quite different reason. American manufacturers were in the throws of abandoning their 21MHz IF standard, partly to dodge CB interference and partly to adopt a new figure around 40MHz as being more appropriate for VHF/UHF TV services.

Admiral Australia had been tooling up to produce their own version of the American tuner, convertible to a 30MHz IF. Should they simply persist with an imported tuner and an IF that was fated to become an orphan in the foreseeable future, or repeat the whole exercise and follow the Americans up to 40MHz? Or use the occasion to switch to 30MHz — in the hope that the local standard would have been tweaked sufficiently to overcome their earlier objections?

Having stated Admiral's intention to come into line with Australian Standards at the first opportunity, Fanker decided that the time had come. But their tuner wasn't ready. Fortunately, Philips tuners were available and could be used in the interim by fitting them with extension shafts — which Admiral was able to do.

Through the glass

A tedium for the whole industry at the time was the perceived need to safeguard householders from flying glass, in the event of the picture tube 'imploding' as the result of mishandling or bumping. Modern tubes are much less vulnerable



A rear view of the late 1957 Admiral receiver pictured elsewhere. Note the printed circuit boards, and the tuner attached to a bracket at the top left hand corner of the vertical chassis. (Photo by Fred Hawkins).

but, in the 1950's, it was mandatory to cover the screen with a sheet of laminated or armoured safety glass.

In the late 1950's, virtually all Australian TV manufacturers sourced their safety glass, directly or otherwise, from Pilkingtons in the UK. Unfortunately, the supply was suddenly interrupted, presumably due to industrial trouble. Local TV set-makers were in deep trouble, particularly those who were working 'hand-to-mouth' (of necessity) or 'just-in-time' (by choice).

Once again, Admiral came out on top. Because they needed clearance holes for their dual-concentric controls, they had to place large orders, early, to get the holes cut at the glassworks. As it happened, Admiral had sufficient glass on hand to maintain production while many of their competitors ground to a halt.

But there had to be an end to their unique flying start. Fred Hawkins says that, inevitably, other manufacturers 'got their act together' — particularly Stromberg-Carlson and Kriesler, and came up with 21-inch models. What's more, they homed in on superior sound, exploiting Admiral's vulnerability in this area.

Updated models

The time had clearly arrived to update their successful 1955 designs. In the shorter term, the now somewhat tired two-eyed look was softened by different knobs. Table model TV cabinets were further restyled with rounded corners, vacuum formed from one-piece seven ply. Planning also began to follow the parent factory into 110° deflection picture tubes, with a new company decal and a totally different layout of controls.

Two new models were announced incorporating a record changer, manufactured by the Lithgow (NSW) Small Arms factory to a design by the Admiral Corporation. One of these shared the TV audio system; the other incorporated a radio receiver with a push-pull audio amplifier, offering 'a quite presentable performance'.

They also made a tentative move into stereo radiograms, using a simple — if somewhat gimmicky — circuit attributed to American *Electronics* magazine.

Their one mistake, it seems, was to add two lightweight 'portable' TV sets to their range. Using a 'hot' (transformerless) chassis in a two-tone painted metal cabinet, one had a 14" screen, the other 17". Unique in the market, they failed to find a niche. They also proved to be the one troublesome item in the Admiral of Australia range, tending to tarnish, be less than reliable and nasty to service!

They underscored growing unrest in the engineering team. Fred Hawkins says that it was an uncomfortable period which 'continued for too long' and ended only when Allan Scott left Stromberg-Carlson and joined Admiral as a specialist Chief Engineer.

It was very much a case of Stromberg's loss becoming Admiral's gain, and probably coincided with Les Bean's re-involvement in the daily running of Stromberg-Carlson.

The 'honeymoon' ends

But quite suddenly, says Fred Hawkins, the marketing honeymoon was over! Demand began to slacken off and Admiral's stock of finished TV sets, radiograms and mantel radios began to ac-

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cumulate, totalling something like 5000 units. Admiral's management couldn't quite believe it and maintained production — until fate took a hand.

In the USA, the Admiral Corporation had actively supported the US Government's move against 'communists' who, in turn, had set about making things difficult for Admiral connections, wherever they could be found. In Australia, union 'stirrers' managed to initiate industrial action to do with 'unsafe' working tools (see panel). But Admiral's problems didn't end there, and it is best if I let Fred Hawkins tell his own story:

"It was late in 1958, I think, when Admiral made its big mistake. From humble beginnings, the H.G. Palmer organisation had become part of the industry. They had done so by heavy advertising of irresistible deals, complete with a maintenance insurance policy from their own service company and finance from their own finance arm."

"They had a central service and administrative complex at the corner of Canterbury and Chapel roads (Banks-town), and a branch shop in every major suburb and town. At the time, the price of

It's not cricket, brothers!

When fitting picture tubes into Admiral's cabinets, it was necessary to use a lever of some kind to elevate the tube while the holding bolts were installed. The lever needed to be strong, tapered and springy — but not of metal, in case it should damage the glass.

Some genius suggested that the handle of a cricket bat should fill the bill, and so it did. Better still, Admiral managed to organise a supply of handles from a bat manufacturer and they were used over a period to fit thousands of tubes, without incident.

Looking for a cause, union 'stirrers' fastened upon the bat handles: Admiral management was requiring unionists to perform work, but had failed to provide a professional tool custom designed for the job. They managed to pull out half the staff in a strike that lasted six weeks.

Normal production ceased, but the remaining staff was kept busy with maintenance around the factory, fixing faulty sets that had been off-loaded from the assembly line etc., and building new product samples.

At the end of six weeks, the entire surplus and dead stock had been cleared, the strikers had lost six weeks' pay and were duly ordered back to work — using the cricket bat handles as before!

a 21" table model was 219 guineas (\$481.80), the equivalent of around \$6500 in today's values — a significant purchase decision. A console was 239 guineas. The cheapest 'unbranded' set ('Southern Cross' or 'Precedent' 17") was 169 guineas. This was the type of set HG's had been pushing."

"Now they wanted to go up-market, and accordingly proposed a deal to Admiral: They would take a guaranteed number of sets (about half Admiral's production), and they would get them at a very low price. Admiral needed only to truck them around the corner to HG's warehouse and they would do the rest. Admiral accepted the deal."

"Palmer started to advertise Admiral in a big way. Business regulations in those days forbade advertising major discounts, but Palmers evaded them by offering to trade in anything of little (or no) value on a TV set."

"Normal dealer discounts at the time were about 30%, and a good talker might win 10% off the retail price. It was evident, however, that HG's were offering sets for little more than a normal dealer had to pay in the first place. So dealers deserted Admiral, and began to promote other brands."

"Worse still, HG's discounting diminished the image of Admiral but HG didn't or wouldn't accept unbranded sets. They needed the credibility of what had been a big-name supplier. It was an un-

comfortable situation, but Admiral got by for a while on the strength of sets still sold on normal margins."

"By then, Stromberg-Carlson had commissioned their conveyer belt assembly line and had a production facility much greater than their normal sales could support, and they duly made H.G. Palmer a counter offer."

"Presumably there wasn't much to it in terms of price, but Strombergs were able to demonstrate that their chassis was easier to service than the Admiral. It was capable of being withdrawn from the cabinet in half the time, and the components were easier to replace (no twisted leads!). Strombergs got the deal, leaving Admiral out in the cold; but pretty soon, another company outbid Strombergs!"

"Then in 1957 - 8 came a major credit squeeze. Dealers found it difficult to finance their potential customers, and repossessions became the order of the day. Many crashed, as did H.G. Palmer and their imitators."

"Stromberg-Carlson and Admiral both finished up with far greater production capacity than their residual market share could support. There was no scope for badge engineering and little hope of wooing back disenchanted dealers and customers. What's more, the market that remained had become selective, conservative — and turned to Pye, Kriesler, Philips and AWA, with traditional names and 'walnut' cabinets.

"Looking ahead, Admiral Australia's parent companies could see no light at the end of the tunnel. Colour was a long way off and the Japanese would be in the act by then, anyway. Besides that, the factory was valuable in its own right — the more so when their refrigerator factory next door burned down."

"In the case of Strombergs, the banks were getting restless."

Fred Hawkins concludes:

"Australia was just getting its first computers. To me, it seemed like a good time to change careers and get in on the ground floor. A lot of people did so."

"I jumped the gun and left Admiral at the end of July 1958, to join IBM where I stayed for 31 years — the rest of my working life."

"I am not sure when the doors closed for the last time at either Stromberg-Carlson or Admiral, but it was very early in the 1960's.

"That's the way I remember it, when I think back!"

Thanks, Fred, for a story that might otherwise have remained untold — submitted in text that befits your 31 subsequent years at IBM! ♦

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