



OTVA NEWSLETTER

Overseas Telecommunications Veterans Association (Australia)
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Coming Events

NSW Annual General Meeting

We all know that AGMs are boring but Henry promises to keep this one short!!

Date: 16 June 2006 at High Noon

Place: CTA Club, Martin Place Sydney

Cost: \$20 plus cash bar. Please advise David Richardson (d_s_richardson@yahoo.com.au), 9487 1985 or Henry Cranfield (henrycra@aapt.net.au), 9534 1526

DATE FOR THE DIARY –

Noon on 17 November, 2006

THE OTVA GOLDEN JUBILEE CELEBRATION

Bring your partner and help celebrate the 50th Anniversary of your Association. This will be a grand affair and used to launch a DVD of the Association's history. Full details in the next issue but note the date in your diary (Midday, 17 Novemeber, 2006) **NOW**

NSW SEPTEMBER EVENT

13 September at the Telstra Museum, Kitchener Parade Bankstown at 10:30am

Followed by lunch at the Bankstown RSL. There is need to know numbers fairly accurately. Please advise David Richardson (d_s_richardson@yahoo.com.au), 9487 1985 or Henry Cranfield (henrycra@aapt.net.au) or 9534 1526

President's message,

Our coming 50th A.G.M is a milestone in our history and a tribute to those who have brought

THE OVERHEADS

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us to this point and to whom we owe a most sincere vote of gratitude. We have survived the massive changes in our society, technology; and the demise of AWA and OTC from where the bulk of our members have come. The support of OTC's management for which we are most grateful did much to further our cause. Telstra, regrettably, are not interested in supporting our organization. Nevertheless we are still solvent, producing four issues of our newsletter each year and enjoying our socials.

We have had a successful year and look to the future with confidence. With the coming elections it is your committee's fervent hope that more of the "younger brigade" will offer for office and carry forward the cause? (*Particularly for a Newsletter Editor!! Ed.*) In looking to the future, we also seek guidance on "What you the members perceive as worthwhile social events?"

It has been both a privilege and a pleasure to serve as President and my thanks to all for their support.

Let us go forward to the next half century; hopefully with the success and objectivity of those we have followed.



Who is this person? Doesn't he look young?



Robert & Judith Hall after receiving their Life Membership certificates from Kevin Shea in Dec 2004

COMBATTING FRAUD IN THE INTERNATIONAL TELEPHONE NETWORK

By John J McDermott

(An interesting insight into aspects of our operations which were necessarily kept secret at the time. Now, since CCITT #5 signalling has been consigned to the history books, the story can be told.)

Every one likes something for free, and international phone calls are no different.

When these calls are obtained fraudulently, it becomes a matter of grave concern to international carriers. Two major problems with fraud occurred in the 1990s -

One related to telecards and the other to hacking into the signalling system which was in common use at the time - CCITT #5 signalling.

Theft of telecards was extremely common in USA and in particular in New York. Cards were either physically stolen or identification numbers on telecards were recorded by people hovering around call boxes as others keyed in their telecard details. One such case involved an Australian whose telecard was stolen near the New York bus terminal. Within minutes, the details were sent as text messages to hundreds of users within USA. As a result, in the space of one weekend, over \$250,000 of international calls were booked to the Australian number - mostly calls to African countries. New telecard software had been installed that weekend by Telstra but, unfortunately checks on simultaneous calls

and excessive charges to the card had been temporarily disabled! While no revenue was collected from the card holder, the normal payments to overseas phone carriers had to be made.

The other form of phone call theft involved hackers or “Blue Box phone phreaks”, as they were sometimes called. Their technique was to dial a toll free number such as Hawaiian Country Direct, which was published in Australian White Pages directories. When the toll free number answered, they sent a tone which kept the link connected in Australia, but disconnected the connection, for example in Hawaii. By sending a further series of tones, the hacker was able to simulate the signalling used between Australia and Hawaii which then resulted in a connection to any subscriber anywhere in the world at no cost. Furthermore, the international carriers, in most cases, were unaware that this fraud was occurring.

International telephone exchanges produce detailed call records which identify the calling number (in some cases), the called number, the time of the call, its duration and much more. But when hackers established their fraudulent call, the international exchanges involved produced results which could not be matched. For example; in this case of an Australian hacker dialling the Hawaiian country direct the following call records were produced:

- 1 Telstra’s national network identified a toll free 1800 xxx xxx number to Hawaii. It set its charge at zero for this call.
- 2 The call arrived at the Telstra international exchange which connected the call to a Hawaiian circuit and noted that it was a country direct call.
- 3 When the call arrived in Hawaii, it was switched to the international country direct operator who then answered the call. The call record in both Australia and Hawaii showed the time that the call was answered.
- 4 The hacker then sent a tone which disconnected the call in Hawaii but left it established in Australia. Hawaii

recorded that the call to the Hawaiian operator had lasted around 10 seconds. Telstra did not show the call disconnection in Hawaii, It showed the toll free Country Direct call still progressing.

The hacker then sent tones to establish a new call, say to Germany. A new call record was established in Hawaii but not in Australia. The Hawaiian record showed the call coming from someone in Australia (or beyond Australia) and being switched by Hawaii onwards to Germany. But in Australia, Telstra was still unaware of this call to Germany

- 5 The call in Germany was answered and recorded as having come from Hawaii. Hawaii records this call and sends an answer signal to Australia. But as Australia had previously received an answer signal on the Country Direct call, Telstra ignores this signal.
- 6 After, say one hour, the hacker hung up. The connection from the hacker’s phone was disconnected and this was relayed to Telstra’s international exchange, then to Hawaii and then to Germany. Each exchange recorded the call as follows: -
- 7 Germany treated the call as a one hour International Direct Dialed call from Hawaii.
- 8 The international exchange in Hawaii treated this as a one hour IDD transit call having been switched to it from Australia
- 9 Telstra saw the call as a one hour Country direct call originated in Australia and payable by a Hawaiian subscriber But no Hawaiian number would have been recorded as the call would have disconnected before Hawaiian operator could talk to the Australian caller.
- 10 Hawaii recorded two calls one following the other on the same circuit. The first as a ten second call to the country direct service followed, say a minute later, by a transit call from Australia (or perhaps beyond

Australia) to Germany. Normally this would not be treated as of any significance, whereas it was of major significance in later tracking down the hacker.

- 11 Germany expected to receive money from Hawaii for the call who then asks Australia to pay for the call.
- 12 But Australia disputed that it ever sent any calls to Germany via Hawaii.
- 13 Australia, Hawaii and Germany were then in dispute because no one's records matched and each carrier believed that the other carriers are trying to defraud them.

As can be seen, this became an international call settlement problem involving Australia, Hawaii and Germany. There was no matching of call records between any of the carriers. But the problem just did not affect Australia, Hawaii and Germany; it affected all countries around the world.

HOW DID THE PROBLEM OCCUR

The common factor in all this fraud was the use of the International Standard Signalling system, called CCITT #5. This uses "in-band" signalling" whereby the tones used for setting up the call are sent over the same circuit as the call uses for speech. The frequencies used for establishing the call are similar to those of normal speech. There were two parts to setting up of a call

LINE SIGNALLING

This uses a combination of signals 2400 Hz, 2600Hz and 2400Hz / 2600Hz combined. Under normal circumstances, the line signals would be sent on a compelled basis, This means that a continuous signal would be sent from International exchange A to international exchange B.

When B had recognised this signal after its minimum recognition period, it would then send an acknowledgement signal back to A,

Exchange A would check for a minimum duration, would then turn off the signal being sent to B.

Exchange B, seeing that the signal from A had stopped would then prepare to receive

information signals or other supervisory signals, such as the answer signal.

If a short pulse of any of these signals was transmitted by a hacker, rather than a continuous signal sent by the international exchange, then it was possible for the hacker to take control of the circuit and establish a call anywhere in the world over the top of the existing toll free call. This was achievable because the recognition time of the first two signals used in setting up a call, - the seizure signal (2400Hz) and the proceed to send signal (2600Hz) had recognition times of only 40 milliseconds compared with 125 milliseconds for similar signals used at other times during the call.

The circuit at A would be in a mode awaiting a signal of 125 milliseconds. If the pulse from the hacker was shorter than 125 milliseconds, it would result in a short signal being sent back to A. This shorter than normal signal would then be ignored by A

INFORMATION SIGNALLING

This consists of 15 different tones, 10 corresponding to the 10 numbers on a keypad and 5 other tones for special control purposes. These were generated as a combination of 2 out of 6 separate tones and sent as a stream of tones after the line signalling had prepared the next exchange to receive these tones.

HOW WAS THE PROBLEM SOLVED?

CCITT, the international body responsible for setting telecommunication standards, considered this problem and identified that the problem could be corrected by changing the timing sequences in its CCITT #5 signalling system. This meant that line signals, once detected must always send a signal of a minimum length that would be recognised at the previous exchange. Thus, if a pulse of tone was sent to clear down the toll free connection, exchange B would send back to exchange A a signal of at least 125 milliseconds so that it would force a disconnection. But in the 1990s, changes to signalling systems and protocols could only be effected every four years. Some carriers made unilateral changes to their software, but unless the corresponding change was made in all overseas exchanges, the hacker could still send

through their call. While international carriers pondered on a way to stop these calls, yours truly had an inspiration. If we sent all international toll free traffic through the exchange twice, we could then be in a position to correlate two sets of records – the Australian end and the Hawaii end. By incorporating all toll free codes with countries using CCITT # 5 signalling we could identify all potentially fraudulent calls. All international toll free traffic was routed to a special group of circuits which would loop back into our exchange before switching on to eg Hawaiian CCITT #5 circuits. But this special route would only be permitted to handle country direct numbers and any other direct dialled numbers to countries such as Germany, US or even Australia would be barred. In this way, the hacker's call would fail as soon as an attempt was made to make a fraudulent call. Legitimate international toll free traffic would pass through on these circuits and would be connected to the overseas party. Normal direct dialled traffic to Hawaii or other traffic would not use this special route. A special report was prepared to associate the calling number and the number being hacked. Surprisingly a lot of these fraudulent calls were being made back into Australia, or to the country where the hacker lived. In other words, these hackers were making local calls through the international exchanges. Stopping this U-turn traffic at the international exchanges provided an extra level of safeguard against hackers' activities.

Once we had details of the calling numbers in Australia, this information was passed onto Telecom's Fraud Investigation team. They then interviewed the main hackers and told them that criminal charges would be laid if further attempts were made to break into Telstra's network. The word was quickly passed among hackers in Australia that Telstra was aware of their activities and attempts stopped quickly.

This re-entrant loop was inserted on all toll free and country direct CCITT # 5 routes. Later when the route was upgraded to CCITT # 7 signalling which used a separate signalling path to establish the calls, fraud calls, attempting to use this code would fail. This

technique was publicised among overseas carriers who were able to implement it quickly and thus stop the hackers in their network.

While it was not possible to measure the level of hacker activity prior to it being switched off, it was estimated that over 250,000 minutes of traffic were hacked just by Australian hackers. The hackers had been beaten at breaking into international exchanges, but probably then turned their attention to computer fraud or developing viruses.

(Having had my time on international exchanges at that period, I must remind people that the intelligence of the exchange was lodged in a set of relays. Thus a change in the logic meant that a group of relays would need to have some of their interwiring altered. The design of these changes had to be achieved so that the desired effect was achieved, without any undesirable side effects – easier said than done. Often the changes had to be made then tested to ensure that the desired result was achieved. If not, further changes were needed. Having proved a result, the identical modification had to be implemented on many other relay sets in the exchange. Very delicate, time consuming and costly!!

Contrast that with the methods of change these days where someone types an update into a software table and the modification can then take effect immediately. Ed.)

PAL:

(Another of those hilarious gems from Dennis Grant)

The Plant officer (Charlie Grasby) lived behind our house across one of the empty blocks of land. He had a blue cattle dog and as a favour to us his wife used to mind our young son Darren while my wife worked and I was either on shift or too tired to look after him. At this stage he was about two years old. One morning I had just come off night shift and as my wife had gone to work Jackie Grasby had Darren. I was just about to get into bed and I heard Jackie screaming at the back fence. I raced out to find little Darren being held in her arms with blood all over his face. Jackie screamed that the dog had bitten Darren in the eye, but it was hard to

tell the difference with all the blood. I prayed that it was not the actual eye. Apparently Darren had been standing beside the dog while it was eating and patted it. The dog whipped its head around and bit at the interference and as Darren was short the contact point was the face.

I raced Darren to the hospital, which was only about 300 metres away and held him while a doctor wiped away the blood to reveal that the eyelid had been torn but the eye was undamaged. A little local anesthetic and two stitches and apart from the trauma, all was repaired.

The dog was banished to the earth station and became a faithful watchdog. Charlie fed the dog on PAL but kept in his locker many other tins of food to satiate his own appetite.

Others of us who had similar appetites would occasionally bludge a tin (of human food) from Charlie. One of our number who had a voracious appetite at this stage of his life had a reputation for such requests. We plotted to "fix" the problem. At this time Campbells Bounty Meat Balls were also a canned delicacy. We steamed the labels off two such cans and using Araldite, as it was waterproof we glued the two labels over a can of PAL and set it to lurk in Charlie's locker. The two labels were needed to fully disguise the yellow of the PAL label. No other obvious choices were now available in the locker.

After several anxious days Charlie was approached. "Any chance I could borrow a can?" "Sure, help yourself". "The Bounty Meat Balls look good" Bingo! At this stage the lunchroom was full of techs and the manager who was using the one saucepan to heat up something for his lunch. Comments such as "Be my PAL" and "Woof Woof" became prevalent in the lunchroom banter. The "target" asked the manager for the saucepan and was quietly refused until becoming more hungry and desperate virtually grabbed the saucepan from the manager who was taking inordinate care in washing the saucepan this day. On to the stove goes "The can". After a few minutes of warming the can is opened with relish and attacked by the target. "HHMM, not so good Charlie" " Might need more heating or maybe more salt". "Ahh! Some of both then".

Minutes pass as the can is reheated, salt is added to a rising crescendo of "woofie" type comments but the result is the same,"MMMM, still not so good Charlie". "Honestly mate I don't see what you see in these meatballs. I don't think I can handle this, Sorry". "That's okay says Charlie I will just give it to the dog."

It might have been the heat, it might have been the salt but the dog rejected this meal as well.

Many years later all was revealed.

Who was in the photo on page 96? It was taken more than 70 years ago.



(On loan from Judy Holland, Scottie Hamilton's daughter, is this wonderfully preserved copy of the AWA staff magazine for May 1930. I have dipped into it as below Ed.)

ANYONE FOR POETRY??

“IF” FOR WIRELESS OFFICERS

(With apologies to Rudyard Kipling.)

If you can keep your nerve when all about you
Are stations jamming hard and blaming you,
If you can "hold the air," though others flout you,
Until you get the longest message through,
If you can send and not grow weary sending,
Nor overtime the man who has to read,

If your mistakes are rare, but prompt their mending,
If you believe that haste is never speed.

If you can calmly contemplate the chatter
Of Greenhorn Operators fresh from school,
If you can sit with messages that matter
And wait until they're finished and be cool,
If you can read through half a dozen stations
The weaker stations that are meant for you,
And pick 'em out with few interrogations
Yet never feel ashamed to ask those few.

If you're "Jack of all trades," tinker, tailor,
If there's scarce a thing you cannot do,
If you're an electrician and a sailor,
Telegraphist, accountant, lawyer, too.
If you're propelled by energy that's tireless,
If you don't fear the job that's never done,
Then take my word, you're fit to work at wireless
And anything you get you'll earn, my Son.

—J. J. CHAMBERS, Wireless Officer, s.s. "Nirpura."

*(I guess one would have a little time to spare
when on radio watch in those days!)*

BALLAN BEGINNINGS.

*(By Frank C. Exon.) (Don't lose sight of
the fact that this was written in 1930!)*

THIS is the tale of the Ballan Beam Station—
of its early days—before it developed into the
snug, comfortable and pretty garden village it
now is.

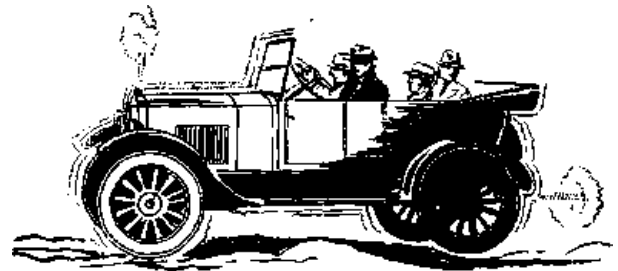
Early in December, 1926, the nucleus of the
present technical staff was given its first
glimpse of Ballan. It was not an encouraging
sight. It was, I remember, a drizzling day—raw
and cold — astonishingly so to our New South
Wales conceptions of summer; yet, we were
soon to learn, no unique instance of the
vagaries of the Victorian climate.

A Depressing Scene.

The railway station was deserted, so, after
discussing the advisability of sending out a
search party to see if the natives were
friendly, we risked it—and plodded up
Main Street in search of accommodation.

We found it, of a sort, in that most
depressing of all institutions—the country
hotel. Here we slept—when we slept—in
the privacy afforded by hessian walls; and
here we ate— when we ate—in a dim and
draughty dining-room, where the food was

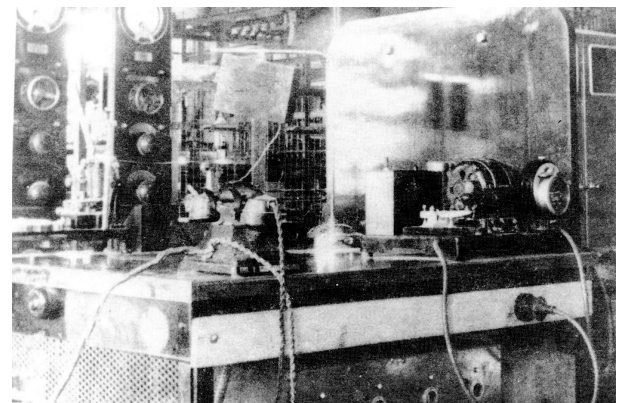
an offence against all the senses, and where
our esthetic sense was catered for solely by
the whisky advertisements on the grubby
mirrors. Mine Host, of those days, was a
courtly 'gentleman' with whom carpet
slippers were "de rigueur" at all times and
whose vocabulary was limited to some
seventeen words—twelve of which, at
least, were unprintable. The Beam Station
itself was seven miles distant; seven miles
of then unmade road which the AWA
Ford— every part of which made a noise
except the horn—negotiated at all times of
the day and night. A whimsical lady was
that veteran Lizzie. So comprehensive was
her gait that her number plate should have
been fitted on her running board—
inverted!



The cottages and the single men's quarters
were as yet unfinished, and the grounds
were quagmires scarred by the wheel ruts
of the construction waggons. The station
itself, though all the gear was installed, was
far from being shipshape.

Beam Successfully Launched.

But the Beam was launched! Already the first
oscillation had been flipped from those
gleaming- aerials and its successful reception
acknowledged from the other side of the
world.



Original transmitter control position, Ballan, c1927

What mattered it that hours were long and sleep was scant—and that life was devoid of all comfort? What mattered it that the roads, the weather and our country Menzies grew daily more impossible, so that we now preferred to sleep on the gallery above the engine room, and live on Gruyere cheese and gingernuts and bath in the engine cooling pond? For was not the Beam a success?

Things gradually improved. The construction work was finished, and the married folk took possession of the cottages.. A comfortable mess was started, and, most cheering of all, the weather improved. But, with the appreciated hot spell, grass and scrub fires threatened the station, and the SOS of some unfortunate neighbour would bring all hands tumbling out to assist. Came, too, a water shortage, when for months all water—or a passable imitation of it—had to be carted from Ballan. The lot of the womenfolk in those days was not enviable ; they had been set down in a desolate and unfamiliar wilderness, with far-from-ideal domestic conditions, and, worst of all, complete isolation.

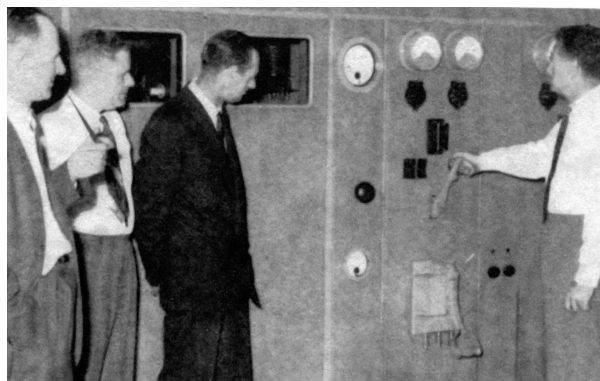
The Undeveloped Sixth Sense.

The service opened, and hours and conditions became less chaotic. Naturally it, had not, at first, the smooth, machine-like precision it has to-day. For one thing, the apparatus— singularly well-behaved as it was—was new; for another, ours were virtually "prentice hands". That sixth sense, born of experience, of forestalling trouble, or of quick diagnosis once trouble had occurred, had not developed. And there were unforeseen factors. The inquisitive field mice, for instance, could cause havoc; scampering beneath the transmitter they would, sooner or later, foul and earth a lead carrying some thousands of volts, and for a few seconds thereafter—until our panic-stricken hands could find the controls—the transmitter room would be in uproar. To inexperienced ears the vicious roar of the arc, the splintering of glass insulators, and the hiss of burning insulation, were paralysing sounds.

Then would follow a hectic period of reconstruction and replacement, broken at

regular intervals by the imperative ringing of Central Office —who had not then learned forbearance — acidly wishing to know whether he might ever hope to be on the air again,

Another early vice of the transmitter was the sudden fracturing of an oil gauge-glass. Then gallons of kerosene intended for cooling the transmitting valves would go hurtling skywards, flooding the transmitter and soaking the unfortunate whose task it was to trip the power and shut off the oil-supply wheel-cocks.



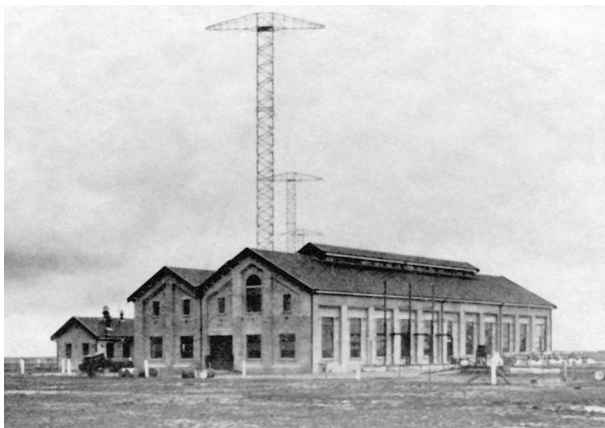
Transmitter No 1 at Fiskville when switched off in 1960. Personnel unknown.

Unenviable Experiences.

With the autumn came nor'westerly gales, bringing down the weaker units of the aerials or displacing roofing tiles that the driving rain might more easily find its way to the oscillators—which dislike water more than does the proverbial small boy. And later came snow, coating the aerial insulators and throwing the radiating system so out of resonance that the magnifiers, relieved of their normal load, would wax exuberant, and indulge in noisy firework displays. Or, perhaps, with the sudden cold snap, the feeders would contract beyond the limits of their expansion joints, thus completely opening the load circuit. Then one would take a lantern and a megger, and, like Lucy Grey, trudge bravely forth into the snow, and, eventually, from a multitude of expansion boxes, locate the erring one. Meanwhile, Central Office, perhaps himself "snowed-up," would pass the time wringing (a) his hands, and (b) the Ballan 'phone. These were times when we contemplated requisitioning a couple of St. Bernard dogs,

and the far-sighted cached a biscuit at intervals along the snowy trail — for depots in case the blizzard increased!

Admittedly, even in that first winter, there were compensations. With impish perverseness, after a series of wicked gales (any one of which would flatten your hard won beginnings of a garden) would come a glorious day—clear and still—bringing with it a genial sun to temper the keen, bracing air, and, perhaps by chance, the Heads on an inspection visit. Breathing deeply of the mellow air, they would grow expansive. "What a glorious climate," we would be told. "You lucky people to be living here!" Yes, there were compensations !



Transmitting Station, Ballan, c1930. Note the towers for the Franklin Uniform Array aerials and the absence of the wind break trees!

A Changed Scene.

If I have seemed to labour the earlier demerits of Ballan, it is that I may the better enhance the contrast between them and the benefits of the present day. Now, the ugly litter of the construction camps, of temporary sheds, of raw earth and unformed roads, has given place to smooth, freshly-green lawns, gay with flower beds; to trim hedges and thriving native shrubs and cypress trees; to gravelled paths and flowered borders. Each cottage is now snug and private behind a rose or creeper-covered trellis, and, with an unlimited water supply, each man's garden has become his pride. Light and power have eased the burden of domestic tasks; and telephones and radiola "supers"—functioning efficiently though a powerful beam sweeps right overhead—have

lessened the isolation, as have, to a greater degree, better roads, for each family now owns a car—must own a car, however humble, or know the lot of the exile. And each car has its own garage; a unit in two sizeable buildings supplied by the Company and erected by volunteer labour. An electrically-lit tennis court, also built by the staff, is another splendid asset. Tree plantations, to deal with possibly our greatest discomfort, the vicious winds, have been planted; and others are planned. A roomy social hall, with its player piano—another of the Company's gifts—makes enjoyable dances possible, at which, though the district is but sparsely settled, there is never a lack of guests.

But, frankly, we are not content; we still have aspirations. Did we not, progress would cease. "We want, say, a nine hole golf course (there is ample room) and a cricket pitch; and, from present indications, shall soon want a school.

A bright journalist once called our little settlement a "Tabloid" village. It is. We aim to make it a sugar-coated tabloid.

(This was the AWA view in 1930. Others have gathered further material on the history of Fiskville so watch in coming issues to see what arises.

The text was from the AWA Radiogram, the pictures from "The Beamers" an AOTC publication. Ed)

THE USES OF TECHNOLOGY (II)

I am advised that the approach adopted in Engineering (see "The uses of Technology" in the February issue) was considered too genteel by senior members of the technical staff. One, not wishing to have the problem of re-tuning as the radio user tuned to a new station, had a multitransistor device which included a multivibrator. This created hash across the whole broadcast band so did not need to be re-tuned. A springset from a 3000 type relay provided a sensitive push switch, to enable it to be operated from deep within a pocket. The results were equally satisfying!

EL PRESIDENTE'S BIRTHDAY

One sunny Sunday recently, Ray Hookway, Kerry Adams and your editor joined a few of Henry's old friends and family to see whether the secret of his birthday party had actually been kept from him. It did appear so and Henry enjoyed meeting friends from his first day at school in Australia as well as members of his family who had gathered secretly to help him celebrate his 80th birthday.



Henry, the cake and the conspirators, (his wife Barbara and daughter Elizabeth)

Keeping the secret had been hard, since he had rung me on his actual birthday (Friday) and told me it was his birthday. I had to bite my tongue to avoid saying "Well I'll see you on Sunday!" Kerry and Henry share the same birthday anniversary but I don't think they share the same year.



Henry with Kerry Adams and Ray Hookway in the background

The photo on page 96 was taken more than 70 years ago before Henry left Shanghai!

"TAKING STOCK"

By Ian Davis (Canberra Times, 29 Dec, 1988)

(This commentary on the sacking of George Maltby is worth re-reading.)

IMPROVED EFFICIENCY IS NOT WELCOME

WITH the dismissal of George Maltby, managing director of the Overseas Telecommunications Commission, the Government has sent a clear message to its business enterprises: do not improve efficiency, do not streamline operations and whatever you do, do not reward staff and executives for the improved efficiency achieved.

No chief executive of a languishing, lazy, lackadaisical, loss-making, statutory authority has ever received the peremptory treatment meted out to Mr Maltby for approving salary increases for his executives in return for loss of Public Service employment conditions, including loss of permanency of employment.

Indeed, it was largely thanks to the elimination of permanent employment for executives in the OTC that the Minister for Transport and Communications, Ralph Willis, was able to demand Mr Maltby's resignation rather than transferring him elsewhere in the service, with loss of prestige but no loss of salary.

The salient point about the OTC is that it is widely regarded as one of the most—if not the most — technically innovative and organisationally efficient government business enterprises. Professor Henry Ergas of Monash University, an acknowledged expert on the economics of the telecommunications industry, an OECD consultant in the area and author of the 1986 government report *Telecommunications and the Australian Economy*, says the OTC has a "productivity gap" or lead over Australia's other telecommunications organisations notably Telecom. According to Professor Ergas there has been a real increase in the OTCs output of 30 to 35 per cent per year since the mid-1970s.

In 1986-87 increased efficiencies enabled it to reduce staff numbers by 175 to 2077 and pay a dividend of \$39.8 million on the Government's \$50 million investments well as paying normal taxes.

Mr Maltby, OTCs managing director since 1985 and a senior executive for many years before that, has been given much of the credit for the organisation's dynamism.

Though the OTC is protected, from the cold chill of competition through its statutory monopoly, the telecommunications area is being slowly opened up by the Government meaning that the OTC may face some inroads and, equally important, increased competition for its trained staff.

In order to retain those technicians, the OTC felt it necessary to reclassify them, granting them pay rises of around \$90 a week in the process.

There is some dispute as to whether there were significant productivity trade-offs at well as reclassification. This is now being examined by the Arbitration Commission, which has already made it clear it does not like the look of the pay deal.

It was highly embarrassing to the Government to have a statutory authority flouting wage guidelines. But embarrassment on wages policy is not the only issue at stake. The need to improve efficiency in government enterprises must also be taken into account.'

Though it is unusual for government bodies to breach the principles of central wage-fixing the OTC was not the first to do so, either within the public sector or in private industry. The Tax Office has paid wage increases to some clerical and technical employees which at the very least are of dubious validity so far as current wage-fixing principles are concerned

It is vital that any general wages breakout be avoided this year as wage restraint is important for successful domestic economic management but guidelines are just that, guidelines, and there may be sound corporate reasons for maintaining competitiveness which warrant an increase in the rewards paid to the OTC technicians. There has been no claim by the Government that the increase was paid as a result of an industrial threat from the technicians' union and according to Professor Ergas there is no necessary reason why the rise should flow on to other organisations such as Telecom, which has too many technicians.

Though the technicians' pay rise was the real reason for Mr Maltby's dismissal, Mr Willis gave the executive pay rises — not the technicians'— and Mr Maltby's failure to

inform him of them as the reasons for his action. Interestingly, the OTC board felt no need to intervene over the executive or technicians' increases negotiated by Mr Maltby. The board includes Helen Williams, an Associate Secretary of Mr Willis's department, who one assumes is responsible for ensuring OTC operates within government policy. She apparently felt no need to report adversely on the rises. Only when there was public controversy did the Government — urged on by the ACTU ~ find a need to act.

The disciplining of the OTC has set back moves toward efficiency and independence for government business enterprises. Unless the management of statutory authorities are given the discretion to take management decisions within the framework of corporate goals approved by the Government, without having to constantly look over their shoulders, Australia will be doomed to second-rate government business enterprises which follow a policy of not doing anything wrong by not doing anything at all.

BEAM OPERATING PROCEDURES — 1927-1940 - C.R.O. SYDNEY

(by QPee)

There were very few changes in procedures between 1927 and 1940. The Operating Room equipment was mostly wood and brass with a number of lamps, morse keys, Morse sounders etc. The room was known as the Central Operating Room, a title which did not change until 1950 with the closing of the Beam Room in 47 York Street, and the opening of the combined radio and cable room in Spring Street. The new room was known as the Sydney Operating Room (SOR). The following relates only to the Beam Room in York Street.

The Beam Wireless Telegraph Service was opened in 1927 with direct High Frequency Circuits to London. Australia's Transmitting station was located at Ballan in Victoria and the Receiving Station was at Rockbank, also in Victoria.

The collective term for telegrams, cables, messages was Traffic .

TRAFFIC ACCEPTANCE

The Head Office of AWA was at 47 York Street, the site of the present AWA Tower. On the ground floor was the main accepting office, locally known as the Counter. Cables were accepted by Counter Clerks (Messrs Breakwell, Wells, Wheeler and Miss Casey) who counted the number of words in the cable, calculated the price and timed the message. It was also date stamped. Calculating the price was assisted by a special ready reckoner as a majority of the prices per word were at fractions of a penny.

The cable was then passed to the Invoice Typist where its details were recorded on a Counter Sheet for action by the Accounts Branch. From 1927 until 1934 the Counter Sheet entry was done in ink by hand. Debit notes on continuous stationery were then typed up by the Typist for delivery the next day to the client. Clients not having an account, paid cash to the Counter Clerk. Debit notes were delivered by the Beam Messenger service.

Clients could phone for a messenger to call to collect cables. These phone calls were directed to the Beam Despatch, where a clerk would enter the details of the clients name and address on a docket, which was timed. As soon as possible a messenger was detailed for the job and the docket was marked with the messengers number and the time of his despatch. The client was requested to advise the number of cables given to the messenger and to sign the docket. On arrival of the messenger back to the Despatch, the clerk would signify the time the messenger returned and confirm the number of cables attached. The docket and the cables were then passed into the Counter, who also checked the number of cables notified by the client, then initialled the docket and returned it to Despatch. The Counter clerk then processed the cable/s as detailed above.

Clients could also lodge cables by telephone. The call was diverted to the Service Clerk who was equipped with a typewriter and earphones. On completion of the cable, the Service Clerk repeated it to the client, using the phonetic alphabet for code messages or any unusual

words. Phonograms were also passed to the Counter clerk for processing.

A further method of acceptance, was carried out with the cooperation of the PMG's Dept. Clients were able to lodge cables at any Post Office in the Country and these were passed to the Sydney GPO by telegraph. A special section of the GPO called the Cable Clerk, checked all these cables for word and price check. They were then delivered to the Beam Counter in York Street for onward transmission. The Counter clerk was required to confirm the word count. The PMG's Dept received one penny per word for this task!

We had a Branch Accepting Office in the Royal Exchange Building on the corner of Pitt and Bridge Sts. This office was open from 9am to 5pm, whereas York Street was open 24 hours per day, 7 days per week. The Clerk at this office did all the functions of the York St counter, wrote up the Counter Sheet, but at the end of the day sent the sheets to York Street for the Invoice Typist to prepare the Debit Notes. All messengers passing this office were expected to call in and take the Traffic to the Despatch for passing to the Outward Circulation Clerk

The Cable Company, Cable & Wireless, operated a similar Branch Office in Liverpool Street, which accepted Traffic for the Beam. Similar procedures to the Royal Exchange operated with messengers collecting from that Branch.

To avoid delays in getting Branch traffic to York Street, should no messengers call in at suitable intervals, the Clerk would phone the Beam Despatch, and a messenger would be sent to the Branch. During the evening peak a Beam Messenger bicycle messenger was based at Liverpool Street to collect cables from clients phoning from Pymont, Central, Surry Hills and Broadway.. (to be continued)

(It is fascinating to look back with 20/20 hindsight at the procedures which we all accepted at the time as being perfectly reasonable. Ed.)

PIONEERS, HARDSHIPS & DEEDS

By Gordon Cupit.

In this our 50th Anniversary Year it is time to think about some of those real pioneers in the Communications Industry.

Sir Ernest Fisk, in early days was Australian rep for Marconi Company and subsequently formed AWA Ltd. He organised experiments with Marconi for radio contact between Australia and Great Britain. A number of these were from his own home at Wahroonga. Originally long wave transmissions were planned, but before services were finalised experiments with Marconi and two of Fisk's Engineers, Eric Burbury and Syd Newman in Australia and Marconi Engineers in Great Britain with short waves in 1924 resulted in the Beam Wireless Telegraph service opening in 1927 using short waves. A Radio Telephone Service followed in 1930 and a Facsimile Service in 1934. Burbury was also involved in the first Broadcast Service to be held in Sydney. Fisk formed a group of Engineers who were solely experimenting in many radio fields. All significant results were known as Fisk Inventions.

World War I saw a number of our Radio and Cable Pioneers in uniform. I cannot recall all of those who served, but here are a few.

Len Thorndike and Dave Fleming, serving on HMAS Sydney, and on board when she sank the German Raider EMDEN at Cocos Islands.-
- Charles Donne and Jim Shore RAN.-- Ted Bishton in the Light Horse in the Middle East.-
- Jim Blemings, British Army served in France and India (Also in RAAF World War II) — Bob Inglis, Gallipoli ~ Tom Finch, Egypt, Gallipoli,— Alf McMurray, British Army, France, India.--John Ponsonby, Italy, France. ~ Nat Clifford, France. ~ Fred Davis, France — Charles, Elms, British Army, France, India.-- Don McIntosh served with AN&MEF a force formed to capture German Territories in New Guinea --An outstanding record was Sir Lionel Hooke who at age of 18 joined the Shackleton South Pole Expedition, which was iced in at Antarctica for 10 months, and had no communication with the outside world for 6 months of this time. During World War 1, he went to Britain and served with the British Navy, firstly in submarine chasers, then took command of Armed Rescue

Patrol Boats in English waters, following as a Pilot in the Royal Navy Air Service including Air Ships. During World War II he was appointed Chairman of the Manpower Board. He succeeded Sir Ernest Fisk as Managing Director of AWA Ltd.

Operators in the Mercantile marine ran the risk of Raiders and submarines, were manning very slow ships which made a good target.

Cocos and Fanning Islands were shelled by Raiders. Staff did a remarkable job getting the stations going again.

We must think of all staffs and families on outstations in those early days. Conditions were not good. Tropical diseases such as Malaria and Dengue. Long distances and poor means of transport. Fresh food problems. Willis Island only had one food ship per year. Fanning Island with a larger staff and families relied on a ship every six to nine months. There was no wharf and everything, including families had to be loaded on to boats, with the ship heaving on the swell. A sailor on the gangplank and another in the boat to help the wives and children. New Guinea still had head hunters. How stations were built in those days was a miracle of endurance. Masts were tall and no modern cranes or helicopters. Medical and Hospital facilities practically nil. Unfortunately, I do not have much information on the early cable men to mention deeds and names. If you have any stories about these guys please let us know.

The Rabaul Volcano in 1937, and good work done by the staff under terrible conditions.

The many members who served in World War II, in all fields of conflict, with special mention of those who did not return, and those returning home wounded. The Mercantile Marine, The Darwin bombing. The capture of the Papua/New Guinea stations. Those heroes who served as Coast Watchers. Those in the Z Special Units. The long hours worked by all staffs, who were unable to enlist due to their reserved occupations.

Later Cyclone Tracey and the horrors suffered by our members involved.

The staff in those days must be remembered as Adventurers, Pioneers and Heroes.

CHEERIO CALL

We send our best wishes to James (Jim) Cameron Kennedy who is not in the best of health at present. He is gravely ill with cancer in the liver and lung and is finding breathing difficult.

VALE.

WATERHOUSE, Gordon Lawry . (1 August 1929 to 6 March 2006)

Gordon was well known in the communications industry and in the early days worked for OTCA as a telegraphist in S.O.R, where he became a Morse expert. He was a current member of the OTVA.

During the technical part of his working life he set up a radio receiving station at Wahroonga for UPI. He worked for the ABC on television broadcasting, was involved in communications work with AAP, sold technical equipment for Siemens, formed his own company (AC&E) which manufactured and sold technical equipment.

On a personal level, he was educated at Sydney Boys High School and had very diverse interests. He spoke fluent German, and was a deeply religious man. For some fifty years he sang in church choirs. He also sang in Hebrew at the Woollahra Temple Emanuel. His considerable musical skill won him a scholarship to study the bassoon and the organ at the Sydney Conservatorium of Music.

His other interests were in vintage cars, steam trains, (he rode on the footplate and fired the C38 locomotive on its historic trip to Perth).

Gordon was a director of the now-defunct 729 Club, President of the Chatswood Club, Past President of the Rotary Club of Chatswood for which he received a Paul Harris Fellowship, one of Rotary's highest honours.

A Requiem Mass was held for Gordon on Wednesday 15 March 2006 at the Christ Church St Laurence in Sydney.

McCarthy, Miss Lilian Florence (passed away on 23rd May 2006, aged 91)

Lilian started work with AWA in January 1939, then later OTC(A), serving mainly on the Queen Street and Lonsdale Street Counter Services until retirement. A funeral service was held at the Sacred Heart Catholic Church in Yea, Victoria on 26 May 2006.

REMEMBER!

(A final word from the Radiogram.)

The thing that goes the farthest
Towards making life worth while;
That costs the least and does the most
Is just a pleasant smile.
It's full of worth and goodness, too,
With genial kindness blent;
It's worth a million dollars,
And doesn't cost a cent.

THE LAST WORD

It is always nice when I get to this point since it means I have just put together another newsletter. It is a task I enjoy as I have to read so much material which brings back nostalgic memories of the past. There is a lot which while of interest might not appeal to all the readers.

Getting to this point was a little harder this time since I didn't think I had a QPee contribution. However, shuffling through my pile, I found that he had not let me down. Thus this issue has a strong beam wireless flavour and a reminder of those who went before but left a tradition of which we should all be proud.

Thank heaven for the modern compositor's tools the scanner and the computer. Without them I certainly would not be an editor!



The Conspirators