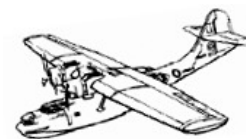


RADAR RETURNS



Signals & Echoes For RAAF Radar Veterans

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EDITORIAL

Once again, *Radar Returns* is a little later than I had planned (and hoped), though, probably, I am the only person to notice it or care about it. I hope so! My apologies, nevertheless.

This Issue

The most depressing part of the editorial work for this publication is the need to report the demise of one's contemporaries. The Faded Echoes segment has included, on average, about a dozen names in each issue for the last three years, amounting to more than 100 since I became editor not yet three years ago. A number of these had been known to me and quite a few were personal friends. In the current group, two, Jo Dunbar and Hal Porter, were people widely known and respected among the ex-radar fraternity.

Some interesting contributions have reached us and several others are, I am assured, in preparation. In past issues, *Radar Returns* has had a definite bias toward the history of ground-based radar in WWII, a tendency that was also evident in *Radar Yarns* and *More Radar Yarns*. It has been good to be able to publish some memories that bring to life the activities of those who were involved with airborne radar. In this issue, we conclude the two-part reminiscences of Don Richards, an officer in

that area who had been prompted to record them for us by his close friend, the late Hal Porter. This has been balanced by an article from Ted Dellit which gives an insight into the wartime life of an air radar mechanic.

Ground radar has not, of course, been forgotten. Ed Simmonds has continued his series on the establishment problems of some of the early radar stations with an account of the difficulties encountered in setting up 29RS at Port Moresby.

It may be recalled that I have been pressing for the inclusion of a regular section devoted to the interests of those who have served in RAAF radar in the years since WWII. A start has been made in this issue and I am hopeful that it will stimulate a steady flow of such material. So far, it has involved only one page, but I would be delighted to see it develop. In fact, of course, I would welcome the emergence of an associate editor who might take responsibility for collecting the material for and editing such a section on a continuing basis. Anyone interested? Please contact me promptly; the next issue is due in March.

In fact, it is only through some such development that I can see a future for the newsletter continuing beyond my clearly limited availability.

The Radar Returns Website

The website www.radarreturns.net.au opened in April but had little of significance on it until July. Now it is possible to consult it to view any previous issue of *Radar Returns*, to investigate the significant events in the histories of wartime radar stations and associated units or to leave a message in the Guestbook. I am looking forward to having some time over the Christmas period in which to develop the site further, with, of course, guidance from my daughter's family business, Hallmark Publications Pty Ltd, publishers of *Heritage* magazine.

It is reassuring to note that the usage of the site has been expanding; in October, there were 316 visits, and that rate has been maintained in November. I have been a little disappointed that there have not been more entries in the Guestbook, and hopefully that will build up as people come to understand how it can be used and how easy it is to use.

I would welcome any suggestions about the development of the site.

Contributions

I have indicated that there has been a pleasing response to my call for contributed articles, and there is a modest backlog which will appear in later issues. There is still room for more, especially from those among us who cannot expect to be with us for an extended period. I know that there are some fascinating snippets of history in the memories of veterans which are threatened with extinction unless something is done soon. It may be that you need help from a younger relative or friend to record those memories, but it is important to them as well as to posterity generally that you find a way.

I must also express my sincere thanks for the monetary contributions that have reached me since the last issue. In all, some 51 people have sent donations, of whom about a quarter did so for the first time. There were several very generous gifts, and the total amount was more than \$1800, which will almost cover the costs of two issues. This is most pleasing, but I am still aware that the burden is being carried to a large extent by people who have been generous in the past.

The Future

I have already mentioned the need for someone to come forward to take some editorial responsibility. Given that I am in my 84th year, it is obvious that the situation is fragile. What should happen to *Radar Returns* when I am no longer available, especially if no one has been found to take that responsibility? And what should be done with the unused portion of your money should circumstances force its closure? My own view on the latter question is that, in view of the fact that 90% of the donations are coming from WWII radar veterans, it should be used effectively to encourage the recognition and recording of the wartime history of RAAF radar. The problem will be to find a reliable organisation or authority!

Any suggestions or comments?

Warren Mann

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FADED ECHOES

The deaths of the following people have come to our notice since the publication of the previous issue. Obituaries where available will follow this listing. If you can provide further details on anyone mentioned, please send them to Radar Returns so that their histories may be more fully recorded.

Robert Cyril Barling

13/9/1922 - 11/2/2006
Qld; LAC Rad Op (ROp 12); 306RS

***Leo Eugene (Lee) Dell**

13/5/1925 - 18/8/2006
Vic; LAC Rad Op (ROp 85)

***Joyce Margaret (Jo) Dunbar, nee Lehmann**

5/6/1923 - 15/8/2006
NSW; Cpl Rad Op (ROp 17)

Valerie Lynette Evans, nee Armstrong

1/10/1920 - 29/9/2006
NSW; ACW Rad Op (ROp 31), later S/O (Cousin of Keith Tudball)

***Katherine Margaret (Kaye) Hutchison, nee Rae**

25/7/1923 - 19/6/2006
NSW; ACW Rad Op (ROp 31)

Edward John (Ted) Miller

27/8/1920 - 1/6/2006
Vic; Cpl Rad Op (ROp 25)
323RS at al

***Andrew George (Digger) Nottle**

10/1/1920 - 27/10/2006
NSW; W/O Rad Mech (RM 8G);

***Frederick Harold (Hal) Porter**

24/1/1923 - 23/10/2006
NSW; F/Lt Rad Off (B1, RO 4G)

Leonard Albert Rose

20/7/1912 - 2006
Vic; F/Sgt Rad Mech (RM 3A, 1G)

***Colin Milton Thiele**

16/11/1920 - 4/9/2006
Qld; Cpl Rad Mech (RM 35G)

Dudley Rivers Thomas

14/11/1921 - 18/8/2005
Tas; Cpl WT Op; 107RS, 45RS, 43RS,
318RS; 46RS, 105FCU

* See tribute below.

APOLOGY

The inclusion of Donald George Thomas in our previous issue as a Faded Echo was, he insists, premature. My apologies to him and to those who may have been distressed by the report.

Editor

TRIBUTES

Ross Smith, 1923 - 2006

Tennyson Ross Smith was the fifth of the twelve children in the family of Rosetta and John Henry Smith. He grew up on the family farm situated on the western escarpment of Brummies Lookout at the headwaters of the Tweed River, NSW.

At a young age he helped on the farm before walking across paddocks the 3 kilometres to the Brays Creek one-teacher school for his primary education. Later, in order to attend Murwillumbah High School, he rode a pony up the mountain and down Tyalgum Ridge some 10 km to Tyalgum village. He put the pony in the cemetery enclosure and caught the local bus to Murwillumbah, twenty kilometres farther on. The journey home in winter ended through dense forest after nightfall.

Ross left high school and later joined the RAAF at Creek Street, Brisbane in November 1941 at eighteen years of age. He trained as a radar operator and by June 1942 was bound for Milne Bay with RAAF Radar Station No 37. In December 1943 he was posted back to Australia and then as a sergeant served on radar stations at Point Lookout, Stradbroke Island and then to Fraser Island for four months and then back to Point Lookout for another four months.

In May 1945 Ross was posted overseas again with Radar Station No 337 to Manus Island. During WW11, Ross served on 25RS, 37RS, 49RS, 165RS and 337RS.

Postwar, he enlisted in the permanent RAAF with number A1 169 and went to Japan with the occupation force. Whilst there he was trained by the Americans to 'talk down' pilots landing aircraft under difficult situations such as heavy fog, snow storms and the like. He helped train many pilots at Amberley Air Base before his discharge 1 August 1958. Ross spent the rest of his working life at the telephone office of the GPO at Brisbane finishing in charge of the Complaints Section.

Ross was an affable, fun-loving person who enjoyed life. At his funeral service his family and friends eulogised him as a wonderful son and brother, loving husband, incredible father, fantastic grandfather and great-grandfather and a great mate.

Norm Smith (Ross's elder brother)

Kaye Hutchison (Rae), 1923 - 2006

Kaye Rae was born in Young NSW and enrolled in the WAAAF in June 1942. After rookie training at Bowral, she was posted to Brisbane and attached to the Volunteer Air Observers Corps. Three months later she began No 31 RDF Operators' course at Richmond NSW. She worked at No 1

Fighter Sector, Bankstown, then No 2 FS at New Lambton. In March 1943, she was posted to No 23RS, Lytton, near Manly in Queensland. From there she went to No 8FS, Brisbane then, after a period with No 2 Stores Depot at Waterloo, she took up her last posting at 134RS in Beverley Hills

Kaye married Lieutenant Harry Hutchison in November 1944 and was discharged a year later. She had lived in Port Macquarie for the last 22 years and took part in various radar and WAAAF reunions over the years. She is survived by Harry, six children, five grandchildren and four great-grandchildren. We extend our sympathy to them all.

From information supplied by Penny Moore, Kaye's daughter

Colin Thiele, 1920 - 2006

Dr Colin Thiele AC, passed away peacefully, in Queensland, on 4th September, 2006, aged 85 years.

Colin was best known as an author of children's books, poetry and novels. He was born at Eudunda in South Australia, where he attended Julia and Eudunda Primary schools and Kapunda High School. He entered the University of Adelaide in 1937, and completed a Bachelor of Arts and a Diploma of Secondary Teaching.

Colin enlisted in the RAAF in mid-1942, and completed a wireless mechanics course in Melbourne. He was sent to RAAF Richmond for radar training in May 1943, after which a posting to Metung was followed, in October 1943, by an urgent signal to report to 44 Wing HQ, Darwin ASAP. There, with a group of radar personnel, he took part in the formation of No 60 Radar Station which in December was sent to Cape Van Dieman on Melville Island. The radar was a Mk 5 COL. After his stint on Melville Island he joined a 'roving band' of three radar trouble-shooters, whose function was to fly out to radar stations and quickly repair technical problems. This was accomplished in a variety of aircraft, including Avro Ansons, Dragon Rapides, Walruses and DC 3s.

In 1944, Colin met and married Rhonda Gill and, for ten years after the war, he taught at the Port Lincoln High School.

In 1956 he returned to Adelaide, and became the Principal of Wattle Park Teachers College. His writings were prolific, with over 100 books to his credit. One of his best known stories was *Storm Boy* (1963) which has remained in print for more than forty years, over one million copies sold and translated into many languages. This was later made into an award-winning film, starring David Gulpilil.

Colin had a great sense of humour, but in later years suffered severely from

TRIBUTES (Cont.)

rheumatoid arthritis. His move to Queensland was to help relieve his constant pain, and also to be closer to his two daughters. In 1977, he was made a Companion of the Order of Australia, and in 1999, the University of South Australia conferred him with a honorary doctorate. So, another of Australia's great legends goes to the 'Great doover in the sky'. He will be sadly missed.

Howard Campbell

Colin is survived by his wife, Rhonda, two daughters, seven grandchildren and one great-grandchild. We extend to them our sincere sympathy.

Jo Dunbar (Lehmann), 1923 - 2006

Jo died on Tuesday 15 August after a courageous battle with cancer and after a full and energetic, if not always happy life.

She was born Joyce Margaret Lehmann at Mount Gambier in South Australia and spent her early life there. She enrolled in the WAAAF in June 1942 and, after 'rookies' at Victor Harbour, took part in No 17 RDF operators' course at Richmond, NSW, the third such course for WAAAFs. Her first posting was to No 18RS at Saddleback near Kiama, NSW, which had been the first radar station to make use of WAAAF operators. From there she was posted to 2 Fighter Sector at New Lambton and later to 1FS, Bankstown.

Discharged in May 1945 with the rank of corporal, she married, started a family and resumed her education, at first studying law with her husband, then moving to teacher training. She helped her husband in his law practice in the Barossa Valley, then, with three children and her marriage breaking up, she went into primary education.

She taught in SA, Victoria and NSW where she rose in the service to become Principal, first of Enfield Primary school and later of Bondi Beach Primary School. In this capacity, she introduced second-language teaching, especially Italian, in primary schools, an 'Aunties and Uncles' program and other innovations. She was a founding member and later President of the Commonwealth Council of Educational Administration, and represented Australia at functions in a number of overseas countries.

Jo became active in the RAAF Association quite early, first as a foundation committee member of the Double Bay Branch and later in the Radar Branch where she became a committee member in 1980 and remained so until her death. She was Senior Vice-President of the Branch for some years, active in organising tours, reunions, luncheons and other activities for the Branch. Shortly before she died, she was

elected a Life Honorary Member of the RAAF Association.

Amongst her other activities, Jo was a foundation member of the Sydney U3A, where she lectured in ancient history and took groups on study tours overseas. Other interests included the Opera Society (where her special passion was Mozart), Probus, theatre, ballet and fossicking for gemstones. Her family has calculated that in her many overseas trips she visited in all 64 separate countries.

Sadly, her two sons, Chris and Nicky, died in 1998 and one of her grandsons in 1996. She is survived by her daughter, Carla, and three grandsons. To them we extend our deepest sympathy on behalf of the many ex-radar people who have known and respected her and who will miss her greatly.

Editor

Lee Dell, 1925 - 2006

Lee was born and educated in Melbourne, enlisted in RAAF on 15/6/43 and trained as a radar operator.

His first posting was to the WA coastal town of Bussellton and from there to 325RS at Coronna Downs in early 1944.

325RS was set up some thirty miles south of Marble Bar - the doover being erected on the only hill for miles around in the middle of a spinifex desert - rather a desolate spot.

In December '44, 325 was moved to the eastern states to re-form with other RAAF units in preparation for the North Borneo landings. After disembarking at Labuan on 12th June 1945, 325 moved on to Sarawak, eventually becoming operational at Miri on 6th July. Lee stayed with the unit until it was disbanded and returned to Australia late in 1945. He was discharged from 325RS on 28/3/46.

In civilian life he pursued a career with PMG (later Telecom) and held senior supervisory positions there.

Lee kept contact with other members of 325 at their various gatherings and other meetings of radar people. His hobbies were music and reading and in particular he was an accomplished amateur carpenter.

Lee leaves Joan, his loving wife of nearly fifty years, and will be missed by his many friends and the handful of 325RS survivors who have kept in touch.

Don Parncutt

Hal Porter, 1923 - 2006

With Hal's passing I have lost a valued friend and *Radar Returns* a keen supporter. Only a week or so before his demise he was encouraging WWII veterans to send their recollections to the editor. After the war, waiting to resume his university studies, he

wrote a book about his wartime experiences. The veil of secrecy about radar that still then prevailed, and brushes with Army censors, stopped its publication. In 1988, soon after our history exercise began, his story, *Adventures in Radar*, was privately published.

This book reveals that Hal had a meritorious career in radar. Not only did he install stations but also he was Area Radar Officer in both the North West Area and Tarakan. Between those appointments Hal was the Radar Liaison Officer in Sydney, where, in addition to supervising the production of radar equipment for the Allies, he served as a member of the Radio Advisory Committee, Committee L and the Inter-Allied Committee on Standardisation.

Hal was on the first Bailey course and became one of the earliest and youngest officers to command a ground radar station. While W/Cdr Pither had no other option, it was a big responsibility to place on the shoulders of a 19-year-old.

The time has come when the story of 38RS on Bathurst Island can be told. The unit was on the front line and Hal was appointed as the second CO after the first officer, an older man, panicked. Fearing a Japanese invasion, he hid the gear in the scrub and blew through. The gear was an AW with an AW transportable tower and antenna, the latter was new to Hal. Being conscientious, and having a feeling of urgency, there is no doubt that he drove his men hard during the installation, so earning himself the nickname of 'the angry ant.' The Area Radar Officer took three months from Hal's seniority - the bureaucratic reason given was that he had installed the radar gear before completing the station's camp.

We first met at 44 Radar Wing early in 1943 when I was posted to that unit and he had just returned from Bathurst Island. We were unaware that Hal had suffered an injustice - he certainly showed no signs of holding any grudges..

Being a conscientious officer who believed that all airmen should be trained in the use of weapons he conducted training, which we loosely called 'the mad mile.' At the time the majority of airmen felt no resentment as we knew that a Japanese invasion was a definite possibility.

At 44 Wing, with a mechanic named Jack Fraser, he introduced the concept of the 'spotted dog'. It enabled Radar Wings to make an assessment of a station's coverage and effectiveness. Ultimately this innovation was adopted throughout the system.

The assistance Hal gave to the history exercise was very large and helpful. On several occasions he was used as a sounding board to what was written or uncovered. Then he made pertinent comments.

TRIBUTES (Cont.)

The early advice from his brother, Chester Porter QC, concerning defamation and libel, was particularly helpful to me.

Hal Porter will be remembered as being one of our more important radar officers during WWII.

Ed Simmonds

Hal Porter - Another View

Hal was born and educated on Sydney's North Shore, starting an engineering degree at Sydney University in 1940. He joined the RAAF in September 1941 as a 'radio-location trainee' in the first Bailey course in radio physics at that university. He was commissioned a few weeks after his 19th birthday and, after a short period at 18RS, Kiama, was sent as a radar officer to Darwin during the dangerous days of 1942. There, he commanded two air-warning stations as one of the youngest officers with such responsibility, before being given technical control of the nine stations in the area early in 1943, still just 20 years old. An interesting and self-deprecating account of his experiences is given in his book *Adventures in Radar*, written shortly after the war and privately published in 1988. It is still, as far as we know, the only published memoir from a WWII radar officer.

After a distinguished career in the RAAF (see Ed Simmonds' tribute above), he returned to Sydney University to graduate in electrical and mechanical engineering. At the end of 1947, he joined Technico Ltd as a project engineer then, in 1953, became a consultant with W D Scott & Co, a leading firm of management consultants, with whom he made a satisfying career. He spoke and wrote on management subjects, designed and led senior management courses and lectured part-time at the University of NSW.

Hal had wide-ranging private interests. Sailing was one of them; in 1948, he sailed as a crew member on a friend's yacht in the Sydney-to-Hobart. The yacht had to pull out of the race and put in to Bateman's Bay, where at a dance he met a young nurse who a year or so later became his wife. They bought a block of land in Killara and built the house in which he lived for the rest of his life. In doing so he developed real skills as a handyman, and later became a skilled craftsman in making and restoring fine furniture and valuable antique and specialty clocks, and in wood-turning. His family has many reminders of these skills.

A perfectionist in everything he did, Hal was a man of the highest values of integrity, quality and fairness. He was a dedicated family man who retained a close involvement with his children and

grandchildren until the last. In accordance with his wish, he died peacefully at home with Sybils's constant support and his family around him.

We want them to know that the many friends that he made in radar are thinking of them with the deepest sympathy.

This note has been prepared with the assistance of a copy of the notes to the eulogy delivered by his son Michael, for which our sincere thanks. Editor

Digger Nottle, 1920 to 2006

During October, WWII veterans lost a conscientious radar mechanic when Digger Nottle passed away. When, in 1941, he found that he was in a reserved occupation and unable to enlist, being a patriot, he changed his job to become a nightwatchman – no longer a reserved occupation. He enlisted in the RAAF on 9 September 1941 and was on No 2 RMs at No 1 STT and No 8G course at Radar School. There he had an interesting experience:

On Fridays radar school normally went on leave at 1300 hours. However, one Friday oranges had been handed out during the morning break. Soon, orange peel was being pelted around the classroom and the inevitable happened: the Chief Instructor appeared. He immediately demanded that the offenders to step forward.

There was a general reluctance by the class to 'own up' as they feared that the whole lot might have their weekend leave stopped. So Digger and a mate stepped forward to be told to report to S/Ldr Chilton in working dress – 'goon skins.' This they did, and were surprised to find that the Chief Instructor had arranged two flights for them. One went on coastal patrol in an Avro Anson and the other had a flight in a Wirraway. On their return they had to report once again in their 'blues.' Naturally they followed orders. They were given their weekend leave passes and told to get into a 'limousine' which was complete with driver. They sat in the back with the Chief and conversed. They were taken to a first-class hotel in Sydney where they had a first-class meal before going on leave.

After graduating from Radar School Digger went to 13RS at Cape Otway as one of the first mechanics there. Then he had a short stint at No 44 Wing before going to 38RS on Bathurst Island. Here he fell foul of the CO – not Hal Porter – and was reduced to the ranks, placed under close arrest and sent back to the Wing for punishment. His crime was that he had written the monthly report in indelible pencil instead of ink. Luckily the new Wing CO, who happened to be S/Ldr Chilton,

knew Digger and asked him for his version of the incident. Digger had his rank restored and he was sent to No 309RS on North Goulburn Island. Before being discharged he was at No 18RS at Kiama.

When we met at No.44 Wing we quickly established that we were very distant relatives. After the war, when I started my local government career at Wallerawang, I was pleased to find him living there. Postwar, he put his RAAF electronic training to good use by wiring up an elaborate model train set in his basement. It replicated the operations and electronic signal systems in use on the NSW railways.

He was a keen supporter of our radar history and also a person whose friendship I highly valued.

Ed Simmonds

CAN YOU HELP?

Eric Manning is keen to gather memories of 208RS, Mine Camp, NSW, or of the interiors of igloos at other ACO stations, not only from 208 veterans but others with stories about 208 or other ACO stations. Eric lives at 243 Lawson Street, Hamilton, NSW 2303 (phone: 02 4961 4149).

His efforts so far have helped get the surviving igloos of 208RS put on the waiting list for NSW Heritage classification, and he hopes to shape its story into a booklet. Eric's brother, Arthur Manning, who died in 2003, was a radar mechanic who visited 208 while serving at 20RS, Tomaree, NSW, after postings at 339RS, Yule Is., PNG and 336RS, Tufi, PNG.

John King, who made his career in the RAAF from the mid-60s, is trying to find out if there has ever been a symbol, emblem, badge, cloth patch, etc. that was worn service wide by RAAF personnel of air defence radar 'establishments'? Or, failing service-wide, by personnel of front-line radar units?

His address is 29 Clift Street, Heddon Greta, NSW 2321; phone 02 4937 4033; email: john.king@hunterlink.net.au

PERSONAL NOTE

Ed Simmonds was rather chuffed to find the following comment in a letter from the Minister for Veterans Affairs:

"Echoes Over the Pacific is an interesting factual record of the allied air warning system in the Pacific during World War II and Mr Simmonds and Mr Smith are to be commended for publishing it.

"Please convey my appreciation to Mr Simmonds for his interest and commendable efforts in commemorating the important work of the RAAF ground radar system in his book *Echoes Over the Pacific*."

RADAR IN THE AIR Part II

Here we conclude Dr Don Richards' memories of his time as an air radar officer in the RAAF in WWII

Darwin

In February 1943 I was posted to No 2 Squadron at Bachelor, NT, which was then flying Lockheed Hudsons. Most of the space was fitted with large fuel tanks and they had a range of about eight hours at 130 knots carrying several bombs. They were fitted with ASV II, and their major functions were ship convoy and patrol of the sea between Darwin and the Japanese-occupied islands to the north and north-east. They had a gun turret, forward-firing machine guns in the wings, and side-firing Vickers GO (gas-operated) guns in the waist that were fired through the open windows. The crews regarded the aircraft as reliable but slow and limited in manoeuvrability, but they were fitted with fully-feathering Curtis propellers, which was a big plus.

The Hudsons provided full-daylight coverage to ships in and out of Darwin, in an area west from the Wessel Islands. Coverage started from first light at the ship, so the aircraft would leave Bachelor in darkness and quite often the convoy appeared on the radar before visual contact was made. The first aircraft would be relieved later by a fresh one, which would probably land back at Bachelor in darkness.

I flew on many of these patrols and worked with the radar-operator WAG on the ASV. As well as normal operations, both the morning and afternoon flights gave the opportunity to trigger the local ASV beacon.

The other main 2 Squadron duty was a search patrol well into enemy sea and air space. This was obviously more dangerous than ship convoy duty and pilots were not always happy about having another body on board. However, I managed to do several of these patrols and was given instruction, as we entered the danger zone, in setting-up and firing the Vickers guns. They were not restricted in arc, so it was possible to shoot the tail or wing off your own aircraft. I managed to avoid doing this, and I was never in an aircraft that was intercepted by enemy aircraft; nor did we find any enemy convoys steaming for Darwin. It was another opportunity for ASV training, though there was a distinct shortage of targets.

In mid-1943 I moved from No 2 to No 13 Squadron at Hughes, which had just re-equipped with Australian Beauforts. Many of the crews had converted from Hudsons and, initially, were not happy with their new aircraft. The Beaufort was more cramped inside so it was harder to move around and, at least initially, they were not fitted with

fully-feathering props. But they were faster and much more manoeuvrable than the Hudsons, and eventually I think the crews realised their advantages. It was here that the poor performance of the Beaufort homing antennas (mentioned in Part I) became apparent. I was with convoy patrol, working with the WAG radar operator on homing. I switched to the homing antennas as the pilot was flying towards a target of some sort and handed over to the WAG. He immediately switched back to the search antenna and I suggested that we should be on the homing antennas. The WAG said 'No, look at this.' and switched between the two antennas. Clearly, the signal was better on the search antennas, despite the target being directly ahead; the signal from a side-lobe of the search antennas was stronger than that from the homing antennas. On our return we checked the leads and junction boxes etc. to the homing antenna, but it was not possible to do the job properly, so I duly reported it. I later heard that there had been a manufacturing error in setting up the harness for the coaxials feeding the homing antennas, which had to be rectified when the aircraft were withdrawn for periodic service.

Late in 1943. I was posted to No. 44 Radar Wing at Coomalie Creek, in charge of the airborne radar section. My training had covered both ground and airborne radar so, as I had time for other activities, I got experience from time to time as Acting CO of a radar station during CO changeovers or when the CO of a distant station came to the Wing for a break or further technical training.

Another job was to install an ASV beacon on Bathurst Island near No 38 Radar Station, which would supply the power to operate it. The beacon was sent to the island by sea, and I flew from Bachelor a few days later with F/Lt (Doc) Fenton in a tiny De Haviland Communication over the separating strait, landing on the hard, white beach near the doover on Bathurst Island.

I had been briefed by the Wing CO, S/Ldr. Rex Wadsley, on the amount of 'sag' that should be allowed when stringing 240v cables between trees leading from the power supply to the site of the beacon. Rex was undoubtedly the best authority available on the subject as he had built power lines all over Tasmania using huge cables, spanning vast distances, carrying thousands of volts and held up by steel columns.

An aborigine had been allocated to me to help get the insulators up and attached to the appropriate trees, and I set the 'sag' and finished the job from a ladder. I have forgotten my helper's name, but he was certainly very agile and climbed trees with style. Together, we built the power line, installed and connected the beacon and

switched on. Valves glowed confidently but the keying motor refused to turn. It vibrated, which was a sign in that at least voltage was getting through. Checking the voltage, I found it well below 240 volts. A brief calculation showed that we could not have lost 40 volts through the power line, so I checked the generator, and it was indeed delivering well below 240 volts. After more queries, the Station Technical Officer told me the voltage was set at that level because the closer the voltage got to 240 volts, the more unstable the transmitter became. I signalled the Wing, and the reply came to set the voltage at the designed 240 volts. The STO was unhappy, to say the least, but there wasn't much I could do about it.

When the beacon was working properly. I had to send a super-secret signal to RAAF Headquarters and (so far as I could see) all possible users of the beacon in the South Pacific, using a standard format in which I had to give its latitude and longitude. I had a RAAF chart of the area which carried a note to the effect that Bathurst Island may lie 20 nautical miles to the east (or west) of its shown position. This was disconcerting, so I looked in the station files for more information. There we found a chart dated the early 1800s. It was beautifully drawn, I think by Lt. Hunter, and carried the signed authority and presentation of a British Admiralty chart, but it differed from the RAAF chart as to the position of Bathurst Island and carried no qualifications. It had to be right; think of what Captain Cook had achieved with similar charts. But then what was the point in advising all concerned of coordinates that fell in the ocean miles from anywhere on the RAAF chart? What was I to do? There was no space in the required format that allowed a Chart Identification Number to be included and I had already got into enough trouble for not following procedure. I duly signalled that the beacon was in operation giving a lat. and long., but I have forgotten now who won the argument. This did not worry the beacon; so far as I know it operated happily thereafter.

NW Area HQ

In December 1943 I was posted to NW Area HQ as Area Airborne Radar Officer, more of a desk job than my previous jobs. I tried to encourage Squadron crews to make full use of the radar beacons we could access, and keep their radar in search mode when on patrol. I did this by letter, and thinking back, I probably sounded more like a base wallah sounding-off than someone trying to persuade from his own experience.

One morning when the Area Radar Officer was away a very senior Admin Officer came into our tent/office and told me that in future he wanted us to site any new radar stations

Radar in the Air - Part 2 (Cont.)

in places where it would be easier to service them, (preferably, no doubt, along the North/South Road), instead of putting them in remote locations (eg Bathurst Island?). I quickly dismissed from my mind any response like 'Yes Sir, we'll try to arrange something with the Japanese' and promised to pass his message to S/Ldr Grout-Smith when he returned. I realised that I should have explained why radar units were sited where they were, but he seemed in a hurry.

RAAF Command – Brisbane

I had met S/Ldr. Roger Choate during a visit he made to NWA HQ. He was in charge of Radar at RAAF Command and reported to G/Capt 'Stiffy' Wiggins who was in charge of Radar and Signals, reporting to A/Comm Bill Bostock, who in turn reported to General MacArthur. At MacArthur's command, the RAAF had been split into RAAF HQ, which handled administration (supply, equipment, personnel, etc), and RAAF Command, which was responsible for operational orders, tactics, planning etc, and reported to General MacArthur. Roger Choate had asked that I be posted to his Section when I completed my service in Darwin. So in June 1944 I moved to RAAF Command, Brisbane.

Part of my job there was to pass on to RAAF operational units, by way of Signal Instructions, operational and other procedures relating to airborne radar (including the new keyed-IFF), originating usually from MacArthur's Command. I also had to report on the operational use and capabilities of airborne radar equipment for aircraft that the Australian Government was considering buying or had already purchased from the USA or Britain. As a result of this, in September 1944, I was attached to the 868th Bombardment Squadron, a US Army B24 (Liberator) Squadron operating out of Noemfoor Island, North New Guinea, to report on the operational use of the search radar and low-level radar bomb-sight carried by the aircraft.

Noemfoor

I can recall clearly two events from my convoluted passage in a variety of aircraft to get to the US squadron on Noemfoor. One was the sight of MacArthur's invasion fleet being assembled at Manus Island for his next step to Japan. The very large, sheltered harbour was filled with a host of impeccably anchored ships, all no doubt with guns at the ready in case we were a spy plane. The pilot kept his distance, but we did have a good view. The other event was at a small American base on an isolated island where we landed to deliver some packages. An

American officer ran out to our aircraft and asked me excitedly through the open cabin door, in a deep southern accent, whether I had the 'gen'. I thought that he meant 'the good gen', a term used then to describe the latest news of how the war was going. I was about to tell him about our great view of the assembling invasion fleet, when the pilot intervened and explained that he was asking whether we had brought the 'gin' with us. We shook our heads sadly; he really was a long way from anywhere and must have been overlooked.

At Noemfoor the land around the airstrip was a terrible mess; it had deep pockets of bomb craters in its yellow, clayey soil and was quite desolate. I was allocated a large, comfortable tent which I shared happily with the squadron padre, who also had a deep southern accent. I met the Radar Officer, with whom I spent most of my time in the following weeks. Fortunately he did not have a deep southern accent and I had no trouble following his detailed explanations of the radar equipment; he also knew his job very well.

The search radar on the B24 aircraft was high-definition with PPI presentation, the low-level bomb-sight being a separate unit. The search radar may have been electrically linked to the normal high-level bomb sight, but in any case there was a repeat display in the Bomb Aimer/Navigator's cabin forward, so radar data was available to him. The low-level bomb-sight was a sophisticated unit, one of its features being that once it was locked on to a target, it stayed locked on.

I went on a number of training flights around the area and, late in September, I flew on a night-bombing attack carried out by a single aircraft on an installation on a Japanese-occupied island. I don't recall the height from which we dropped our bombs, but as we didn't need oxygen it would not have been very high, perhaps 5,000 ft. I operated the search radar some of the way to the target, and then the crew operator took over. It was a beautiful clear night; flying over the moonlit ocean was superb and there were no anti-aircraft guns or fighter interception. During my time in front of the screen I saw islands in great detail and several 'mets', either storms or moisture-laden clouds. The echoes from these could be quite strong, but the navigator confirmed my sightings on his repeat screen. We took off at about last light and returned at first light, so it was a long flight; almost 10 hours. The Liberator was a roomy aircraft, with a cot in the radar compartment, so the crew radar man had a sleep on the way back and I had a good go at the radar. Apart from searching for enemy shipping on the way to and from the target, the use of the radar was to set the course for the target sight.

I became familiar with the low-level bombsight in the workshop but, as there were no suitable sea-targets in the area, I could not experience it in operation.

Lancaster

Another interesting job given to me at RAAF Command was to report on the radar of a visiting RAF Lancaster. This aircraft was in full operational mode, except for armaments, and had been sent to Australia to tour the capital cities and encourage public investment in War Bonds. I joined the aircraft in Darwin and flew in her to Perth, mostly along the coast line. The search radar was magnificent; a good-sized PPI and a high frequency. At this time of the war the British had installed in their heavy bombers either H2S (10cm) and H2X (3cm) radar; on this aircraft we had H2S. The definition of the shoreline and the immediate inland area, including small towns, was far greater than anything I had seen. It was a fine experience to fly south along the coast of WA with a chart, watching the screen, and trying to apply it and compare it to my memories of flying out of Darwin. Over Perth, streets and buildings were easily recognised.

In Perth the crew were welcomed as heroes, with myself, for a short while, basking in their reflected glory. Then on to a more conventional plane and back to Brisbane to write a report.

Lockheed Neptune

The RAAF had taken delivery of a squadron of Lockheed Neptunes and, in about my last job of this nature, I was sent to Cooktown, Qld. to report on the operational use of the US radar installation. The Neptune appealed to me as a beautiful aircraft, designed obviously as a war plane, as compared to the Hudson. The radar display is best described as a flat horizontal PPI, stretched across in front of the operator and covering an area of perhaps 60 degrees on either side of the centre-line. This meant, of course, that there was some distortion at the extreme edges of the sweep, but this did not appear to be a disadvantage once you got used to it. The aircraft was said to have an endurance of only six to seven hours and as the squadron was due to move to Darwin, I wondered whether it was to be used for some purpose other than ship convoy.

I had a flight of several hours along and away from the coast. The Neptune was a comfortable and roomy aircraft and the radar was excellent. Definition was very clear, ground features were easily recognised and shipping targets stood out beautifully at good range. The display seemed to encourage concentration on the view ahead, which may not have been desirable in all circumstances, but it was certainly user-

Radar in the Air (Cont.)

friendly. As we turned and picked up the coast again, we flew along it for a while and I described the coastline, which I could not see from my position, to the pilot. As we flew along a length of beach I could see on the screen that it had creeks entering the ocean from each end, which I duly described to the pilot. We flew back and landed at the Cooktown strip, and as we were walking back to the Mess the pilot said to me "I'm glad you described that beach with the two creeks to me. I was beginning to wonder where we were and I recognised that beach from your description".

Conclusion

I was discharged from the RAAF in March, 1945, after about four years of service. The war in Europe was over and MacArthur was well on his way to Japan. A signal from RAAF HQ advised that any member whose university course was interrupted to enlist could apply for early discharge to resume studies. This I did, and went back to Sydney University, graduating in engineering in 1947. Then, after an interesting career in engineering, I retired in 1976.

I was prompted to put these recollections into writing by my lifelong friend, Hal Porter, and also by the feeling that, the older you get, the more precious become your early memories.

Don Richards

29RS at Port Moresby.

In our last issue, Ed Simmonds reviewed the recorded history of 31RS, Dripstone Caves, both written and oral, and reached certain conclusions which represent what is probably as near as we can hope to get at this time to what actually happened there in the frenetic first three months of 1942.

It will be remembered that the equipment installed under such difficulties at Dripstone Caves was an experimental air warning set, one of three produced, in an urgent response to the entry of Japan into the war on 7 December 1941, at the CSIR Radiophysics Laboratory (RPL) by a group under the direction of a senior researcher there, Dr Jack Piddington. The second set of the three was too late for its intended destination Rabaul, and was sent instead to Port Moresby where it became No 29 Radar Station. Ed takes up the story:

The equipment had been rushed to Port Moresby at a time of great uncertainty with virtually no time to check the availability of some necessities such as a power supply and IMS. Also the RAAF had almost no experience with this cutting-edge technology. The personnel sent to Port Moresby had probably never even seen a radar station. The unit was to be located on

the top of King Spur, 690 ft above sea level, three miles east of Port Moresby town and overlooking the Murray Barracks.

F/O Rex Wadsley with four radar mechanics and eight radar operators arrived at Jackson's airstrip on 19 February 1942 (the day of the first raid on Darwin).

The men were billeted initially in Port Moresby. The equipment, which had arrived by ship, was unloaded bit by bit as the ship had to leave the wharf during air raids. Then came the problem of finding the crates, etc since they were not adequately marked, due to the 'burden of secrecy'. After the gear was moved to Murray Barracks the station personnel took up residence in vacant quarters. Bill Harnath, one of the radar mechanics, said:

When we finally moved into the huts at Murray Barracks, we found some new loose ends. First, no one wanted to victual us. Secondly we had no cooking facilities or cooks. There was no power, no reticulated water, no guards and no sanitation.

Drastic situations demanded drastic action. The 13 radar men 'liberated' a stove and utensils from the town and took turns at cooking. They simply took stores from a cache dumped in a shed at the Barracks when a ship, destined for Rabaul, was redirected to Port Moresby. They did not ask permission to tap into the Barracks water supply line, or to connect to the live overhead 240-volt power lines, which ran alongside the main road; but they did that.

Life was made no easier when the personnel had to vacate the buildings in Murray Barracks so that Japanese prisoners could be held there. By then thousands of Allied troops were staging in the area and water supply became another problem. Supply of water was a daily run with a water cart. Other minor problems arose such as the need for a camp boundary to stop transit troops from using the unit's ablutions block.

Meanwhile air raids were a continual menace and slit trenches were occupied during raids despite the hordes of ever-present mosquitoes. The trenches were

covered as shrapnel from the anti-aircraft guns fell at random.

Scrub was cleared up a steep ridge to the site. ANGAU provided welcome native labour and the Royal Australian Army Engineers assisted in laying the concrete block on which the ShD cube, the basis of the aerial, was erected. A comparison of the photo of 31RS at Dripstone Caves with Alan Cook's sketch of 29RS shows that both sets were erected in a similar fashion.

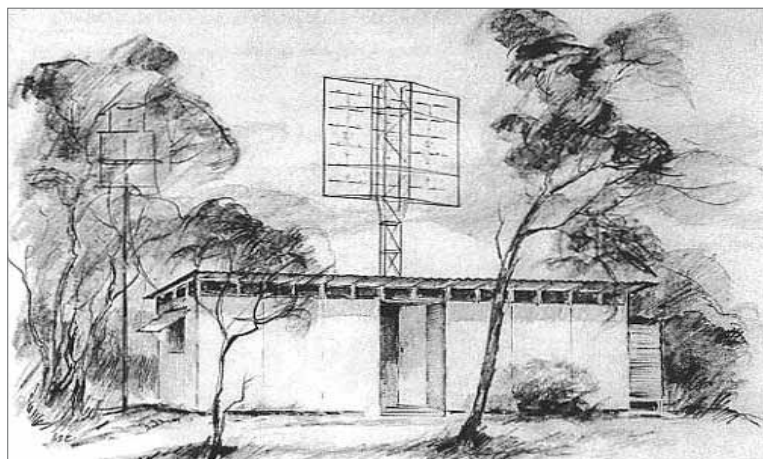
It was a risky business winching the AW cube, which included heavy turning gear, to the ridge top especially when small trees were used as an anchor - the turning gear almost careered back down the slope.

Despite the many problems encountered installation was duly completed and the station was on the air on 18 March 1942. Plots were by landline to the Operational Room at Port Moresby. A fighter sector had not yet been established. A telradio was on standby for emergency communication.

Power tapped from the mains proved most unsatisfactory because overloading of the system resulted in very poor voltage regulation. Suitable heavy cables were not available to run the distance to the site in order to reduce the voltage drop. Instead bare wire was used on supports attached to convenient trees. Electric motors driving the heavy turning had high starting currents, which the lines could not supply. Not only did it give rise to erratic turning gear operation but also resulted in too much variation for other electronic circuits.

After scrounging around the wharves in Port Moresby a dismantled 15 KVA power unit was found. With the help of the fitter from the RAAF communications section, an emergency power supply was set up. Unfortunately voltage dropped from 240 to 180 when the aerial turning gear was in operation. W F Evans, in his *History of Radiophysics Advisory Board 1939-45*, states that "Finally the aerial had to be rotated by hand."

The supply and transport position was



29RS, 1944
Sketch by
Alan D Cook

(Courtesy,
Morrie Fenton)

29RS at Port Moresby (Cont.)

such that the power problem was not totally solved until 3 February 1943 when two 20 KVA diesel-driven units were installed.

29RS was sent to Moresby with the wrong coaxial feeder lines. Without an IMS the aerial could not be matched and phased. Consequently, the station operated at low efficiency for a number of months.

Complaints were received that aircraft, both friendly and enemy, were arriving at Moresby undetected. Test flights revealed an unsatisfactory lobe pattern and poor field strength of the system. In an effort to improve the performance the transmitter and receiver were replaced in October 1942, but there was no improvement.

Whilst RPL was asked to match and phase about six of the early AW stations, 29RS was not included. RPL procedure was to tune the transmitter and receiver to one frequency and have a separate crew match the array and TR switch using Pawsey's IMS set with the local battery oscillator tuned to the same frequency. It is alleged, but not so far substantiated, that Dr Piddington and Brian Cooper of RPL had made a visit of only a few hours to 29RS before saying that things were okay and leaving. They flew to Port Moresby in a Hudson escorted by a Kittyhawk and left the same day. It is not certain whether the wrong coaxial dated from when a new Tx and Rx were installed in October 1942 nor when the open-wire feeders were installed. But the RAAF found the TR switch used 55W coaxial cables, which were unnecessarily long; the feeders should have been 85W coaxial. It is surprising that the error went undetected by the station's technical staff for so long.

At that time the RAAF used 55W coaxial cable only in Catalinas centred at Rathmines NSW. RAAF Base Richmond, NSW, was the assembly point for the early ground stations and did not stock 55W cables. As suggested earlier, it seems likely that an RPL storeman was responsible for this mistake, since that body then controlled the stock of all coaxial cable in Australia.

On 21 December 1942, F/Sgt P Williamson, RAF, and Cpl A Field arrived from 1RIMU to install open-wire feeders to the antenna and match and phase the antenna. This work was followed up by test flights carried out by F/O Don Kennedy on 18, 20 and 22 January 1943. At last, the radar was operating at full efficiency. Further calibration flights by a Beaufighter, on bearings 180 and 225 degrees at altitude 10,000 ft, gave the very satisfactory maximum range of 140 miles. Ranges of echoes to the north were much lower because of the mountains running from east to west across New Guinea.

An ASV beacon was set up on a high hill just north of the radar station and was regularly serviced by the mechanics. On New Year's Day, 1943, there was an unfortunate accident in which a guard, LAC Ted Lewis, was electrocuted when he came in contact with a power line to the beacon after it had fallen to the ground from its tree support.

Situated at the hub of the early Allied operations in Papua New Guinea, this station was plagued by visitors both official and otherwise. People entering operational areas of the radar distracted duty personnel so it was found necessary to restrict access even to personnel of high rank. On 28 May 1943 special passes were issued to those who were allowed to enter 29RS's buildings.

This station provided constant and reliable information to No 4 FS (later 104 FCU) until its disbandment at the end of November 1945.

Incidentally, the original transmitter and receiver were overhauled and given to 306RS where they performed satisfactorily.

Sources; *Technicalities and Generalities* and research by Norm Smith and the late W/Cdr Pete Smith; *Golden 306; a History of RAAF Radar Station 306* by Len Ralph.

Ed Simmonds

Hit on the Head by a Flying Boat

After an air mechanics' course at Richmond, I was posted to 11 Squadron on 2nd April, 1943. It flew Catalinas and, with 20 Squadron, had its base on Trinity Bay Inlet, Cairns. At that time the two squadrons were conducting bombing, anti-shipping, mining and reconnaissance missions into enemy-occupied territory as far afield as Babo (on the western tip of Dutch New Guinea), Kavieng (New Ireland), Rabaul (New Britain) and Bougainville and Buka in the Solomon Islands.

In many respects Cairns was probably the best posting one could expect in North-Eastern Area. The camp itself was on the waterfront within easy walking distance of the town centre and consisted of some requisitioned private houses with prefabricated 2-man huts (about 4m by 3m). The squadrons' workshops were on the Inlet about 3 km. away from the camp and serviced by a shuttle truck service.

Although many of the civilian population had been evacuated in 1942, there were still enough left in 'essential occupations' (especially nurses and nurses' aides at the General Hospital) to improve the quality of service life. Also, the Cairns Brewery had been deemed an essential industry and was working to capacity, so that the local hotels rarely seemed to be without the amber fluid.

Finally, there were very few other service units (except a small army hospital - with

nurses and AAMWs) in the immediate area.

The Catalinas had Air-to-Surface-Vessel (ASV) radar plus IFF equipment. As with all radar, a great deal of secrecy surrounded the equipment and operations, and this had some advantages for the radar mechanics. The two squadrons worked together. They had a separate and rather spacious workshop and, more importantly, water transport to get from the northern shore to the flying boats moored about 300m away on the southern side of the Inlet. Our boat, probably requisitioned from some hapless weekend fisherman, was nothing spectacular - about 4m long with a petrol-driven inboard motor, maximum speed about 5 knots, and a half-cabin to shelter a portable motor generator that could be taken to the aircraft to test the radar equipment.

There was always great competition to be first to get to an aircraft back from operations. Aircrews often left behind tins of half-consumed flying rations (sometimes, even full tins). These contained chocolate, sugar-coated almonds, cigarettes and other goodies, so were much prized by ground staff. With our own water transport we had a distinct advantage in this activity!

One day in late May, 1943, I was bow hand on our boat, with my job being to sit on the forward edge of the half-cabin ready to tie up to the port blister of the aircraft and ensure our boat did not bump against the aircraft. There was a slight chop on the water and, as we approached from the bow of the aircraft, our boat was on the rise while the aircraft was dipping into a trough. Whether the mechanic steering got too close to the aircraft or I wasn't watching I'm not sure, but I was hit on the head by one of the port wing struts and knocked into the water. As I was wearing only shorts and sandals and could swim, I wasn't much worried, except about the reputed presence of sharks and saltwater crocodiles!

Anyway, the boat's crew soon fished me out of the water, with much mirth. I was none the worse except that I had lost my glasses. I had worn these for many years but was fortunate that I had good vision in one eye so could see without any great discomfort other than having a splitting headache by the end of the day.

I reported to the squadron MO who lectured me on carelessness then arranged for me to go to Townsville to have my eyes retested and new glasses made. There was apparently no optometrist in Cairns.

The trip to Townsville, by troop train, was quite reasonable - it only took 7 or 8 hours to cover the 330 km! As I didn't feel like spending the night at 1RPP, I booked into the YMCA (sixpence for bed and breakfast). On the next day I had my eyes tested and the

glasses were made in a couple of hours so I reported to the RTO in Townsville late in the day for transport back (I couldn't get back to Cairns quickly enough!).

The RTO decreed that I should go on a goods train leaving at 1 am the following morning and that, furthermore, I was to be in charge of a couple of open wagons of crated RAAF equipment. He impressed on me the dire consequences I would face should any of the equipment or, particularly, the accompanying paperwork not arrive complete and in AI condition.

The train consisted of a fairly antiquated engine and tender, a dozen flat-top, open and box wagons and a combined passenger coach and guards van. My fellow passengers were half a dozen army and three RAAF AC1s newly arrived from the south. I was the senior RAAF man present, having gained my 'propeller' on 1st May. I found that two of the AC1's were mustered as guards and equipped with rifles, etc.

Guess who rode in the open wagons with the crated equipment through the night. It wasn't me! I rostered the guards for three hours each while I slept on a padded seat. When daylight came I relented and let the guard come into the passenger cabin from where he could watch the wagons.

The rail track between Townsville and Cairns was a single line all the way except at stations where sidings or loops allowed trains to pass. As a slow goods train we often had to wait for another to pass us.

About 11am next day the train stopped in the middle of nowhere (somewhere near Silkwood) on the single line. There was no signs of habitation other than a dirt road which crossed the line at that point. The train crew, driver, fireman and guard, started off down the road and invited the passengers to go with them. Leaving one of the RAAF guards to mind the equipment, everyone else trotted off. About 400m away, hidden in the scrub, was a small pub and the beer was on! A convivial 40 minutes was spent there before the train crew decided it was time to go. With a bottle of beer for the RAAF guard, we went back to the train.

We arrived in Cairns at about 5pm after 16 hours on the way. I was able to report to the RTO that I had faithfully guarded the RAAF equipment and handed over the paperwork. The two RAAF guards had some uncomplimentary remarks to make about newly promoted LACs but I didn't tell them it had happened because I had been hit on the head by a flying boat!

Ted Dellit

Proximity Fuses

Until I had a conversation with Cyril Catt, of Newcastle, the proximity fuse was only a term to me. Later he sent me two pages of

"Science at War" published by the HMSO in 1947 in London and some other research. Details of that ingenious invention have been taken from these documents.

The original idea came from W A S Butement (1904-1990) a New Zealander then living in the UK who came to Australia after the war and eventually died here. The fuse incorporated a radar transmitter and receiver in the shell itself. When the time interval between transmission and reception of the reflected wave fell below a certain value the shell exploded. This also involved the Doppler principle plus robust valves. Mr D I Lawson, of Pye Ltd, Cyril's father-in-law, developed the rugged valves, while the research laboratories of General Electric addressed other important aspects.

Manpower limitations and shortages of experts prevented further development in the UK so it was handed over to the Americans. Their extensive resources enabled them to devote 1500 persons to the project. In fact the Americans attached so much importance to the fuse that it is estimated that 25% of the electronics industry and 75% of the plastic moulding capacity was devoted to the project. They ironed out other problems and the USA produced some 150 million shells.

However, they were so apprehensive that the fuse in an unexploded shell may fall into enemy hands that, in addition to the normal contact fuse, its initial usage was by the US Navy and the Royal Navy in the Pacific against kamikaze attacks. In Britain there was a fear that shells may explode over populated areas so its main use was by shore batteries firing at German aircraft and buzz bombs. It was only used over mainland Europe in the last phases of WWII.

In the 1940s it would have been considered an engineering marvel to fit a radar device in such a small space. To me, it was an excellent example of cooperation between Allies, and further evidence that England and America were more interested in developing new equipment than was Australia, which had become complacent when the LW/AW Mk. 1A met the needs of the island hopping campaign.

Ed Simmonds

STATE ASSOCIATIONS

New South Wales

A New Website

The Radar Air Defence Branch of the RAAF Association has established a website with the address:

www.raafradar.org.au

The site opened on 6 October 2006, and presents an abbreviated version of the Branch

history, noting the Branch formation date, 23 August 1960, as well as brief notes on radar research in Australia and on RAAF radar at war in WWII. The words used in the latter entry reflect those used on the plaque which was unveiled on 22/03/06 at the RAAF Memorial Grove, Canberra.

The Branch thanks Terry Delahunty for this initiative and would appreciate any feedback as well as contributions sent to contact@raafradar.org.au. It would be particularly interested to know of members who would prefer to receive the Branch's Bulletin on their email address. Copies of the Bulletin are also posted on the website.

This website is largely complementary to the *Radar Returns* site in that it emphasises current activities in the Branch and in the RAAF rather than the history and personalities of radar in WWII and thereafter. A link to it will be placed on the *Radar Returns* website in due course.

Victoria

The Victorian RAAF Radar Association took part in the International Lighthouse Weekend activities at the Cape Otway light station on 19 and 20 August. No 13RS had operated there during WWII and we had provided a commemorative plaque for attachment to the concrete radar building. The building, which is in reasonably good condition, has been refurbished to protect it from further weather damage.

We arranged the dedication of the plaque as one of the activities. Twelve radar veterans were present, three of whom, having served there during the war, did the unveiling of the plaque. About a hundred local people were also in attendance. Peter Yeomans gave an excellent talk, recalling his time at No 13. He had seen Japanese submarines recharging their batteries not far out from the radar station. 13RS became operational in May, 1942, following the sinking of the US merchant navy vessel *City of Rayville* by a German mine off Cape Otway. The locals, most of whom knew little of this part of the history of the Cape, were very appreciative.

Our plans to provide a plaque for the Exhibition Building are in doubt because the building has been Heritage-listed. A possibility that the plaque could be mounted nearby is being pursued. To this end, at short notice, we provided a display stand at an Open Day held on 29 October to promote the building's history. It was great to have on our stand the daughter of W/Cdr 'Joe' Reynolds who was CO of No 1STT where many radar and wireless mechanics trained during WW2. While there, they were billeted at the Exhibition Building

Len Ralph

POST-WWII NEWS AND COMMENT

Operation ACOLYTE - 3 CRU

The Commonwealth Games were over, the medals had been won and, with the exception of the Rugby team, Australians performed superbly. Similarly, the 3CRU and 41Wing personnel involved in Operation ACOLYTE, the ADF's commitment to the security of the Commonwealth Games, put in a Gold Medal performance.

ACOLYTE was the third Homeland Defence Operation that 41Wing has conducted and with each operation the personnel involved have gained more experience and gone into the activity better prepared and organised than previously. Conducting operations and managing the air traffic flow during the opening and closing ceremonies over a busy capital city was a new challenge, which was made easier with the close support of Air Services Australia.

The new 41Wing TPS-77 tactical air defence radar system deployed to a site north of Bacchus Marsh for most of March for its first official Operation. The radar worked beautifully supported by very capable Logistic, Radar and Communications teams. The Surveillance team at the site did a great job of building the Recognised Air Picture with limited information. The Control team arrived just for the practices, Opening and Closing ceremonies and filled the cabin with more bodies than can comfortably fit. With the additional support of dedicated cooks and medics all the deployment personnel were looked after extremely well.

The site was honoured by a couple of significant visits. The CO of 3CRU visited the radar site on 3-4 March to check the set-up, and returned on 12 March to show the Commander, JTF 636 and his staff around the site and again on 24 March for the visit by the CAF, OC 41 Wing and the OC 81Wing. Visitors to the sites were impressed by the professionalism of all involved and also by the exceptional view, both visual and by radar, of the Melbourne basin.

The Tactical Control Centre at 3CRU, Williamstown, moved comfortably into its remote-operations role to control the operation. Voice-over Internet Protocol was used so that the Joint Force Air Commander at HQAC, Glenbrook, could talk to the F/A-18s over Melbourne using the 3CRU radios.

The 3CRU Regional Correlation Centre absorbed the ACOLYTE tasking and produced the Recognised Air Picture not only for our normal Areas of Interest but also focused on the Melbourne area. Planning and surveillance activities commenced months in advance so the airspace was well known and understood

even though some procedures would be changed by the airspace restrictions that applied during the opening and closing ceremonies.

The radar picture was bolstered by the inclusion of data from HMAS *Waramunga*. HMAS *Waramunga* was stationed in Port Philip Bay and the Bass Strait and transmitted her air picture from its TPS-49 radar via Link 11 to the Regional Correlation Centre. This significantly improved the radar coverage of the Southern approaches to Melbourne and provided an additional level of redundancy. Link 11 worked flawlessly throughout the operation.

The role of the 41Wing Air Battle Management Coordination Centre and in particular of F/O Feldham and S/Ldr des Jardins should be recognised. The 41Wing Air Battle Management Coordination Centre was responsible for the flight approval process and briefings to the civil aviation community during the periods where the ACOLYTE airspace was active. The Coordination Centre maintained and updated the approval lists during the active periods and kept everyone informed of all changes.

Now that the Games are over, members of 3CRU, like the athletes, don't get a break. For 3CRU it's been on to the ACES series of exercises and preparation for Exercise PITCH BLACK. By the time we repeat this event, 3CRU, 41Wing will have conducted at least one more major Homeland Defence task and without doubt we will do it even bigger and better.

S/Ldr Michael Dunn, XO 3CRU

Post-WWII Radar Reunion.

A radar reunion dinner was held in Brisbane on 21st October 2006. This was organised by Ray Green, an ex-Aircraft Plotter, and was to cater for Queensland personnel and others who were unable to be among the 146 who attended the the 50th Anniversary of the formation of No 1 Control & Reporting Unit, held at the Dee Why RSL on 11th June 2005.

Eighty four members and wives attended, and an excellent dinner was served at the Greek Club, South Brisbane. Many people at this reunion had not seen one another for more than thirty years. Congratulations to Ray on a job well done.

Howie Campbell.

2CRU Reunion

Planning for a reunion in September 2009 to mark the 50th Anniversary of the formation of No 2 Control & Reporting Unit at Lee Point, RAAF Darwin, is well under

way. A dedicated committee of local ex-radar people has been formed, and anyone wanting more information or interested in attending this reunion should contact Kevin Funnell (ex-W/O), 08 8945 6653, or Gail (Mapstone) Snell, 08 8945 1547, or email 2cruaware@gmail.com. Gail was a member of the first post WW2 WRAAF Aircraft Plotters Course, who were sent to Darwin in 1961, as the first WRAAF radar operators to be posted to RAAF Darwin. Gail's daughter, Sgt Leslie Stowers (13 Sqdn (Active Reserve), RAAF Darwin.) is also a member of the organising committee.

Gail notes that Darwin is a long way to go and that 2009 may seem a long way off, but points out that plenty of time will be needed to get it up and running, adding that the earlier you book air travel, the cheaper it is likely to be. She reports that almost 100 people have expressed interest so far.

Any suggestions or ideas you may have would be greatly appreciated.

Howie Campbell

Ensuring an Air Combat Edge

As part of the plan to maintain air superiority in our region during the transition to the Joint Strike Fighter, the F/A-18 fleet is undergoing substantial combat enhancement. The upgrades will give the F/A-18 greater air-to-air combat and strike capabilities.

A highly capable Radar Warning Receiver (RWR) is critical to these upgrades. It will allow the F/A-18 to deter or engage targets in complex high-threat environments. BAE Systems Australia has been developing a RWR – the ALR 2002B. This Australian-developed technology shows great promise. However, it has been concluded that it cannot be delivered within the necessary time and another option has been investigated.

It has now been decided to fit the Raytheon ALR-67(v)3 RWR to the entire F/A-18 fleet. The ALR-67(V)3 is already proven and operational in the United States' F/A-18 fleet and will be fitted progressively to the F/A-18s from 2008 with full operational capability to be achieved in 2011.

Working variants of the ALR-2002 RWR, developed by BAE, will be fitted to our helicopter and, possibly, transport fleets. This decision does not reflect on the efforts of BAE Systems Australia and its CEO has given an assurance that no jobs will be lost as a result of it.

From a Minister for Defence Media Release, 13/11/06