

# RADAR RETURNS

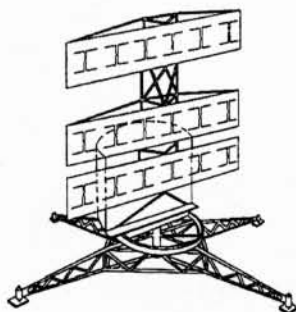
## ECHOES FROM THE PAST AND PRESENT

"In any case, we are not really sure that there was an enemy aeroplane in the area. The only evidence was that from the radar stations."

*AVM George Jones - 1942*

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### Editorial

The quote which heads this issue is taken from the autobiography of Sir George Jones KBE CB DFC entitled 'From Private to Air Marshal'. He made this statement to the Advisory War Council Defence Committee as part of the investigation into the flight of a Japanese reconnaissance aircraft over Sydney on 30 May 1942. The flight did take place and was later verified by examination of Japanese documents at the end of the war and an interview with the Japanese pilot himself. Unfortunately the quote reflects the lack of confidence, and understanding of radar, at the time, by all levels of the military hierarchy. I also hope that it helps to explain some of reactions which radar operators received when they transmitted a track to the sector only to be told there was nothing there. After that explanation, welcome to this edition of Radar Returns. I trust this edition has some more interesting aspects of radar history as well as challenging your memories with some intriguing historical questions and unidentified photographs. From my perspective, at least, the most significant event since the last edition, was my decision to leave the RAAF. Don't worry, I have not left just yet and I certainly have not lost my interest in radar or radar history. After some discussion between

Corinne and myself, we decided that it was time to part ways with the RAAF and move to a warmer climate and new challenges. Our current plans mean that we shall be leaving Canberra in early December this year and moving to Brisbane. After 27 years with the same employer it is probably time that I tried someone else.

I intend to keep producing Radar Returns and I have begun making plans to ensure that this will be achieved. I certainly did not want to let this publication vanish. I gain too much satisfaction from its production and an immense amount of enjoyment from the responses I receive from the readers after the release of each edition. I will keep you informed of the developments as well as giving you the undertaking that Radar Returns will not disappear; just arrive in the post from a different location.

**Pete Smith**



### ***What does the 'D' signify in D-Day, and the 'H' in H-Hour ?***

Many of the radar veterans who were involved in operations in the SWPA would have had intimate involvement with D-Days and H-Hours. The terms themselves were used to designate the day and hour of the operation when the precise date and time of the operation were yet to be determined, or when secrecy was essential. There is no special significance for the selection of the letters themselves. They are derived from the words for which they stand, 'D' for the day of the invasion and 'H' for the hour operations actually begin. There was only one D-day and one H-hour for all the units participating in any given operation. It was also unnecessary to state that H-hour is on D-day.

When the letters are used in combination with numbers and a plus or minus sign, the terms indicate the length of time preceding or following the action. Thus, H-3 means 3 hours before H-hour, and D+3 means 3 days after D-day. H+75 minutes means H-hour plus 1 hour and 15 minutes.

This method came about because planning papers for large-scale operations were made up, in detail, a long time before specific dates can be set. Thus, orders were issued for the various steps to be carried out on the D-day or H-hour minus or plus a certain number of days, hours, or minutes. At the appropriate time, a subsequent order was issued

that provided the actual day and times.

The earliest use of these terms, as determined by the Centre of Military History in the United States, was during World War I. In Field Order Number 9, First Army, American Expeditionary Forces, dated September 7, 1918 was the statement: "The First Army will attack at H hour on D day with the object of forcing the evacuation of the St. Mihiel Salient."

D-day for the invasion of Normandy was set for June 6, 1944, and that date has since been popularly referred to by the short title "D-day". However, it was not the only D-Day in World War II nor was it the last time that these terms were employed.

*Source: The General Service Schools, Fort Leavenworth, Kansas, Combat Orders (Fort Leavenworth, Kansas: The General Service Schools Press, 1922).*

### ***Q&A***

#### ***Radar School***

Of late Ed Simmonds and I have been delving into the training records from Radar School. The eventual aim of this research is to document all the courses that were conducted at this establishment and to record everyone who gained their grounding in radar within its 'hallowed halls'. To date, we have discovered that approximately 6,200 students passed through the school from 1942 to 1945. We know that this figure is not final as there were approximately 20 to 25 USAAC courses conducted at the school, which were not fully documented. An educated guess would place the final figure closer to 6,500. The next challenge is to discover how

many operators were trained at 2 Fighter Sector New Lambton so that we can say how many radar people were trained by the RAAF during the war. This is definitely not a small task!

Out of this research has arisen a couple of questions for which we require assistance. Can anyone tell us what specifically was taught on some of the courses that were conducted at Radar School in 1943. These courses were:

Rad Mech (G) Special T  
Rad Mech (G) Special D  
Rad Mech (A) Special X

They were all conducted after the basic (G) or (A) courses and were, presumably, based upon some specific piece of equipment. Does anyone have any suggestions?

#### ***Deaths in Service***

As a result of the article on this topic in the last edition, I received a number of letters that assisted in advancing our research in this area. Presently, our records stand at 63 members of the RAAF and WAAAF who died while serving on radar units. This number certainly surprised me and I will be presenting a complete print of this list in the future.

While delving into this topic, and prompted by other letters, I have also started recording those radar personnel that received citations for their work during the war. This is also another area which I consider as a 'light under a bushel' issue. To date I have found 17 personnel who received citations for their work on radar units. The

citations range from OBEs and MBEs to MIDs. I would be grateful if any readers could inform me of anyone they knew who may have received a citation. This is another aspect of radar history that has been sadly neglected.

### **Radar Archives**

Some of you may have heard that 3CRU (Williamstown) is about to undergo a significant redevelopment.

Unfortunately, part of this rebuilding program will mean that the security of the unit will be increased substantially. This will mean that access to the Radar Archive for researchers will become even more difficult than it is presently. A better method of using the Archives had to be found.

After taking up the matter with the present CO 3CRU (WgCdr J. Blacklock) and OC 41 Wing (GpCapt J. Blackburn) I believe that the problem has been solved, but it means that the Radar Archives will have to move. The RAAF Museum at Point Cook has agreed to set aside a part of its establishment for the Radar Archives and Research Facility. I have contacted some of the Victorian Radar Veterans and they have expressed an interest in providing support for the facility when it is relocated. The Curator, Mr Dave Gardiner, is fully supportive of this move and is keen to involve as many Radar Veterans in its development as possible. Point Cook has the advantage of being an 'Open Base' (ie no restrictions on entry) and the RAAF Museum is a high

profile establishment with thousands of visitors every year. I believe that it is a positive move for both Radar History and the RAAF.

I'll keep you in touch with further developments in the relocation of the Archives as they occur.

*Pete Smith*

### **Faded Echoes**

#### **Bob Burne (TAS)**

SGT Robert Roy Burne (31443) died on 7AUG1995 after a long and courageous battle with ill health. After training as a Radar Mechanic he was stationed at Katherine Hill Bay, Cape Don and finally on Morotai where he remained to dismantle equipment after hostilities had ceased. After the war, he joined the Civil Aviation Department (now known as Air Services Australia). He subsequently served for ten years as a SRTO in the Northern Territory and was Supervising Technical Officer at Devonport when he retired through ill health in 1981 (aged 58).

[It may be of interest to note that Bob had a long association with Louis Malempre, firstly when Louis was Chief Airways Engineer with DCA and later in his capacity as their Regional Director for VIC-TAS. Louis kept in touch with Bob and his family and always visited when he was in Tasmania. Bob greatly valued his friendship.]

**Howard Kaeshagen** (Unley Park SA) – Howard passed away on Anzac Day 1995.

**Evan Lewis** (Brighton SA) Evan Lewis died 10 May 1997. Evan and his wife Beulah attended BLIPS in 1995 and Evan became ill soon after their

return. He had fought on since then but unfortunately lost the battle in May.

#### **Frank Morris (NSW)**

Frank passed away on 25 Jul 97 at the age of 86 years. He was a Radar Mechanic on 323RS Boepoel and if you wish to glimpse a part of his character, I suggest you read 'An Accidental Wound' in Radar Yarns.

#### **Dr J.H. Piddington 1910 – 1997**

The recent death of this prominent and brilliant radio scientist means that yet another connection with the beginnings of RAAF ground radar has been lost.

At Sydney University he earned many scholastic awards before he went to the Cavendish Laboratory in England where he was awarded his PhD in 1938.

In 1939 Dr Piddington was on the staff of the new Radiophysics Laboratory which was working on radio location (later to be called radar). He was the leader of a team which developed the Army's Shore Defence (ShD) system for its coastal artillery. Having heard of the Japanese attack on Pearl Harbour he lead his team to produce Australia's first air warning radar set by modifying parts of the ShD system in the astoundingly short time of 5½ days.

The electronics employed in this radar became the famous AW. One of the six experimental prototypes was sent to Darwin on 5 February 1942 but the antenna was not erected at the time of the first air raid. Dr Piddington went to Darwin to get the maximum



range and performance out of 'his' equipment. The result was almost immediate in that the first detection of an enemy raid was on 19 March 1942. In July 1940, Dr Piddington invented an unusual but very effective time base circuit for the AW set. In combination with a lightweight aerial, the end result was the LW/AW – the world's first truly air transportable radar set.

Our sympathy is extended to Dr Piddington's widow and family with the sincere thanks for what he achieved in the defence of Australia.

### ***A Return to 344RS***

The following information was recently received from Laurie Leckie and I thought it may be of interest to everyone, and, more especially to those personnel who served on 344RS West Montalivet.

"In July 1988, I was able to achieve an ambition that, no doubt, many other Radar personnel have yearned to do – to return to one of the outposts at which we had been stationed.

Our home for six months had been 344RS on West Montalivet Island. The island is a small dot in the Indian Ocean off the NW WA coast and our purpose, then, was to cover our base at RAAF Truscott – and all points N, W, S and E!

The opportunity came to hire a converted 15 metre crayfish boat (including skipper).

With a party of a dozen friends, including my wife Evi and our son Alan, we set out on a 10 day return trip ex Broome up to our island.

We were able to stay on the deserted, coral surrounded

isle for two days and it was a great thrill to explore and clamber over our lonely isle again.

The main features that remained – apart from some rusty old Doover girders – were a couple of dozen rusting 44 gallon kero drums, and in pride of place, at our Doover site, still enjoying a magnificent panoramic view – our revered thunderbox."

*Laurie Leckie (WA)*

### ***ASV Mk II Radar***

The fact that ground based radars rescued a number of aircraft during the war has been well established. However, Col King relates two occasions on which airborne radar saved his life during the same period. Col now takes up the story:

"I feel obliged to write of my experiences with radar while serving in Beaufort bombers, because on two occasions the radar probably saved our crew. I received my training in the operation of the ASV Mk II as a Wireless Air Gunner (WAG) at No 1 OUT East Sale in July/August 1943. At the time we were told that radar was classified as Secret. The theory of 'Radio Detection and Ranging', by means of transmitted beamed radio pulses and reflected echoes being received, was explained.

Recognition and interpretation of presentations on the green screen were demonstrated as well as the use of the port/starboard aerals and the nose aerial to home in on a 'blip'. Instruction in the use of Radar Beacons and the recognition of IFF Transponders was also part of the course.

Although technical details of the 'black box' were not disclosed, apart from the obvious fact that it operated on VHF because of

the length of the yagi aerial elements, I considered the course adequate for an operator.

While serving with 14 Squadron, based at Pearce WA, the ASV radar was vital to the effectiveness of coastal surveillance from Albany to Geraldton. By this time I could quickly identify small blips of ships at distances up to 40 nautical miles. Homing in on a ship always impressed our navigator because most ships were not visible to the naked eye until well within the 10 mile range. It was then the WAG's job to challenge the ship using an Aldis lamp to send 'OE OE OE' in Morse code. If the ship did not respond immediately by Aldis, or by running up its flags, to identify itself, the opening of the aircraft bomb bay doors and a bombing approach had the desired response!

Temperature inversion in the upper atmosphere sometimes played strange tricks on radar propagation. Occasionally a pulsed blip of a beacon would appear on the radar screen at, say, 60 miles away when in fact we would be 350 miles off the coast. The glare from the screen while searching for blips with to composition rubber hood in place to exclude daylight eventually caused a headache and the WAGs took hourly turns at the radar screen. Each surveillance trip was about 6 hours duration. During my time with 100 Squadron in the SWPA in 1944/45, our crew was engaged for much of our operational tour in bombing missions (85 in all). As most of these attacks took about two hours to accomplish, there was no time or need to use radar.

However, we carried out 9 anti-submarine patrols, some of them in atrocious weather. On one such heavily overcast night patrol, we had been doing a square search for some four hours until there was a radar indication of a fleet of ships. When we were directly over the vessels, Ron, my co-WAG, dropped three flares, only one of which worked, to light up the fleet. However, it proved to be an American convoy of 23 ships and we continued on our search pattern. Eventually it was time to return to base and Bob, our pilot, asked the navigator for a course to steer. We soon realised there had been a serious misunderstanding for Arthur didn't have a clue where we were. We were lost at sea. No one spoke while we silently cursed. Bob asked me to see what I could do on the 'Jesus Box', as he always called the radar. I suggested that we climb to a higher altitude and fly two minutes on each leg of a square search while I scanned the radar screen. On the second leg of the search I picked up what could be a landmass to starboard at the extreme limit of the screen. We headed in that direction to confirm that it was indeed the New Guinea mainland. We arrived at the coast well east of the Tadjji strip and followed the coastline home. On another overcast night we were returning from an anti-submarine patrol when I picked up a blip of an aircraft without IFF heading directly towards us. I warned the pilot and gave a commentary as it quickly closed the distance. At about four miles (about one minute separation)

the pilot pulled the Beaufort up in a steep climb while I watched the radar blip of the other aircraft pass below. Maybe Bob had the right name for the radar after all!

I cannot recall the radar being unserviceable on any occasion and considering the state of the art more than 50 years ago the equipment was efficient.

*Mr Col King QLD  
Ex FlgOff RAAF*

### **LW/AW Radar in the AWM**

The Director of the Australian War Memorial (AWM), Major General (Rtd) Steve Gower, AO, and the Curator, Mr John White, have stated that the only LW/AW radar remaining in Australia is about to undergo a conservation program. Upon completion of this work, it will be reinstalled in the Bradbury Aircraft Hall of the AWM, hopefully, by the year 2000. Presently, the radar is stored in the Mitchell Annex of the AWM.

Those who attended the final dinner at the Wagga Wagga RAAF Radar Veterans Reunion were privileged to hear Steve Gower's address covering the future proposals for the redevelopment and upgrading of the AWM. The following day, an interstate group of WWII RAAF radar veterans viewed the LW/AW equipment in the Mitchell Annex and were very favourably impressed with the condition of this equipment. However, a number of items need special conservation and some parts will have to be found or manufactured to complete the display. As a result, a National Advisory Group (NAG) has

been formed to assist the AWM in the development of the radar display. The group includes representatives from right across Australia. The present members are:

#### **NSW**

Walter Fielder-Gill  
[Convenor] (02) 9417 8065  
Ted Dellit  
[Secretary] (02) 9971 6945  
Ed Simmonds (07) 5524 8393

#### **VIC**

Alex Culvenor [Deputy Convenor]  
(054) 762288  
Jo Lynam (03) 9557 1672  
Warren Mann (03) 9598 2193  
Len Ralph (03) 9337 8272

#### **QLD**

Norm Smith (066) 72 1987

#### **SA**

Phil Williams (085) 523 806

#### **WA**

Mark Bussanich (08) 9417 4536

#### **ACT**

Len Brighton (02) 6281 0173  
Pete Smith (02) 6296 3449

It is anticipated that these members will 'network', as required, to obtain relevant information and assistance from other interested WWII radar individuals and groups. There is still a great deal to be done and some financial assistance MAY be needed in due course. NAG will keep you apprised of the progress.

We are extremely grateful to the AWM and particularly the Director, Steve Gower, Assistant Director, Mark Whitmore and Curator, John White, for the warm reception given to those of the above committee who were able to visit the AWM in April. Please understand that for those people, who have little to do with the LW/AW radar, one

must appreciate that it was the only truly transportable ground radar designed and manufactured in Australia. It's ability to cope with the wide range of operating environments made it the first choice for the RAAF as well as achieving high regard with the United States forces. It will truly represent the spirit of those involved in this aspect of 'The Secret War' regardless of the equipment type used.

A further meeting between the AWM officials and members of the NAG took place in Canberra on 15 July 1997 to discuss the LW/AW restoration program in more detail. This program can be summarised as follows:

- a. Restoration of the LW/AW equipment should commence mid 1998 with the potential to slip to September 1998
- b. The restoration is planned for completion in December 1998 (1 March 1999 at the latest)
- c. Installation into the gallery in the first half of 1999

AWM action was already under way to check the equipment at the Mitchell Annex to determine a 'missing parts list'. This should be finalised during September/October 1997 following which the Curator (John White) will advise the results to the NAG, who will co-ordinate a 'search' activity through their network of WWII RAAF radar veterans in all states and territories.

This meeting also identified an immediate interest from the AWM for the following items:

- a. Personal items used by WWII RAAF radar veterans such as Hats -Fur Felt, Helmets, mechanics tool boxes, unusual photographs taken of individuals involved in 'off-beat' activities, short records of experiences of unit personnel and so on. Please remember though that the AWM already possess published books such as Radar Pictorials, Radar Yarns, More Radar Yarns, Echoes Over The Pacific, Secret Action of 305, Adventures in Radar and so on.
- b. Movie films taken of radar installations and unit radar people involved. NAG members do not know of any such films.

When you consider the above request, please keep in mind that the AWM will request copyright of any photographs or written material sent to them. Original material will be copied by the AWM and returned to the owner, if requested.

Please contact the State or Territory representative of NAG if you have anything to offer. Pete Smith is already working with the group in providing copies of some of the manuals from Radar Archives. The AWM has received copies only and the originals remain in the Archives.  
Walter Fielder-Gill  
Convenor

### ***Tales from the A50s***

As a result of journeying through the A50 History sheets for most radar units, I have accumulated a number of interesting 'tall tales' exactly as they were recorded. I trust you can gain the same amount of entertainment as I did when I discovered them.

#### **35ZFC (Potshot WA) 18/9/44**

"The topic of conversion in the Mess the other night consisted, in the main, of members experiences with alligators, snakes and other reptiles. The party adjourned to bed. A certain Officer was disturbed by noises later in the night and, knowing a member of Mickey and Minnie's family also resided in the sleeping quarters, decided to investigate with the aid of a torch and broom. This awoke the Commanding Officer who lay doggo, but peered with grim suspense and bated breath at the figure outlined by the rays of the torch. The investigation only revealed the already lifeless body of the afore mentioned mouse and has left the inmates of the hut with the perplexing and awesome problem of:

What killed Mickey...or Minnie?

It is perhaps fitting to record at this stage that beer stocks are seriously depleted, and severe rationing has been introduced."

*Any takers to explain the connection between the lack of beer and the demise of the aforementioned rodent?*

PGS



## *Mystery Photographs*

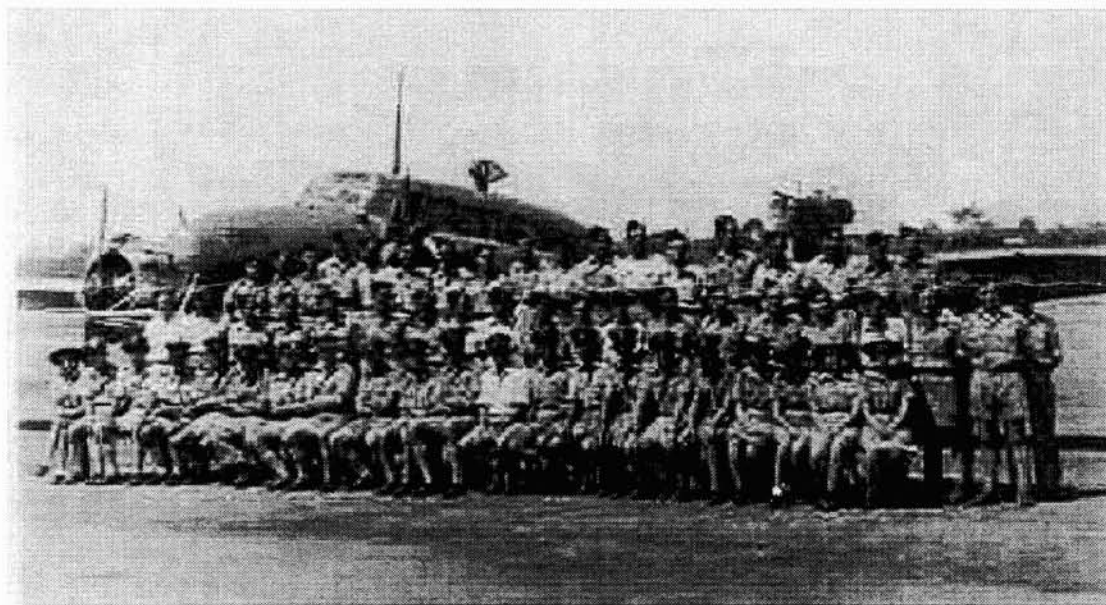


This photograph depicts an LW/AW (either a Mk 1A or Mk II) in an unknown location. Our first guess is that the background suggests the Northern Territory of northern Western Australia. That is all we know.

The only radars that recorded the fact that they operated from a tower were:

31RS Point Charles (steel tower)  
 308RS Millingimbi  
 311RS Green Island  
 312RS Wessel Island  
 313RS Green Island  
 316RS Kombies  
 317RS New Drysdale Station  
 320RS Mitchell River  
 322RS Tanah Merah  
 342RS Eilanden River

While the flora does not conform to some of above locations, I have included all 'tower' units just for the record. Can anyone identify the unit, the location or even the time when this photograph was taken?



The above group photograph shows the staff at Radar School at Maryborough. That is all we know about it. The aircraft in the background (Anson 889 complete with ASV aerals) was delivered to the school in Dec 44 and photo has to be after this event. To complete our records we need any further information about the photograph and the personnel in the group. If you think you can help, I can arrange for an 8x10 copy of the photograph to make it easier to identify the faces.

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**CLASSIFIEDS****Fenton Publications**

There will be two new booklets in the Fenton Series ready for printing at the end of September.

The titles are:

321 Radar Yirrkala (Gove)

The Mobile GCI's of RAAF Radar

321 Radar Yirrkala is a 'customary' radar station history but The Mobile GCI's tells the stories (old and new) of the GCI's on wheels - the Crossleys and Internationals. The booklets are still \$5.00 each

Additionally, there are still a few copies of 46 Radar Cape Don available for those who missed out last time, also at the low price of \$5.00

All of these publications can be ordered from:

M.E. Fenton

27 Lasscock Avenue

LOCKLEYS SA 5032

**14RS Wilsons Promotory**

Mr Terry Synan is presently researching the wartime history of the Wilson's Promontory area and would like to hear from any members of 14 Radar Station who served in the area. He would also like to hear from anyone who may have photographs of either 14RS or the Navy Signal Station that was located in the same area. He may be contacted at the following address:

Mr J.T. Synan

PO Box 783

WARRAGUL VIC 3820

**316RS Members**

A Radar Operator, known at the time as "Ming" would like to hear from members of 316RS from its formation to Merauke and Kombies. If anyone would like to contact him he can be reached as:

R.A. Harry

36 Simons Road

Leopold VIC 3224

**BL4 Interrogator**

As you read earlier in this edition, an LW/AW is undergoing conservation work in the AWM. In order the present as complete a set as possible we need to track down a BL4 Interrogator. This is the box which sat in between the Tx and Rx on the base and provided the IFF component for the radar.

If anyone knows where we can find one, pleased drop me a line at the Radar Returns address.

Pete Smith

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