

RADAR RETURNS

ECHOES FROM THE PAST AND PRESENT



"Some men are killed in a war and some men are wounded, and some men never leave the country...It's very hard in the military or personal life to assure complete equality. Life is unfair."

John F. Kennedy - 21 March 1962

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EDITORIAL

Welcome to another edition of Radar Returns - a little late but I am catching up. The quote for this edition has been very appropriate over the last few months with all the debate about the 'Gold Card', Veterans Benefits and general recognition of service. Whenever anyone signs up in the military they go where they are told and have very little influence over where they carry out their service. This was never more so than during WWII. Every man and woman who enlisted did not know where they would be sent or under what conditions they would carry out their duty. Some moved throughout the islands, others were sent to isolated areas in NWA while others provided training and support roles on the

east coast of Australia.

Everyone went where they were required and did the job they had to do.

Unfortunately, the situation has arisen now that where you carried out your duty dictates the benefits you receive from the government. Sadly, the evidence of your service is based upon records which were poorly kept, not kept or were very vague in their recording of the facts. This leaves some veterans in the position of having to explain why they should receive benefits when the records indicate that they were only posted to, say, 42 Radar Wing in Townsville. All who served with the Radar Wings, or have researched the subject, know that the Wings moved people to any station within their jurisdiction without recourse to RAAF HQ and personnel could end up in some of the most isolated, disease ridden locations with no formal posting record.

I guess what I am leading to is that, all the efforts that are being made to record RAAF Radar history are just not for an academic exercise - they document your history as well making sure you have some evidence of service if you need to call on it in the future. So please support the people working in this arena. The Fighter Sectors which collected all the radar data have

begun to appear in the news. The location of 5FS in Darwin has been recognised as a Heritage Site and will be dedicated during August with the Honourable Austin Ashe presiding over the ceremony. More of that event inside.

Austin Ashe would probably have the biggest rank jump in the RAAF. He went from being an LAC Radar Operator during WWII to being Air Commodore of 13 Sqn while he was Administrator of the NT. All in one promotion. There is hope for radar personnel yet!!.

This issue also contains details of the future of RAAF Radar as well as its history. I have collected details of the various RAAF Air Defence Projects doing the rounds in Canberra. There is a lot of tax payer's money going towards radar projects these days - not before time in some cases. I hope this gives you an idea where some of your money is being spent.

Well, I hope you enjoy this newsletter. The next one out will feature a wrap up of the reunion.

Pete Smith - Editor

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AUSTRALIAN AIR DEFENCE PROJECTS

To add a little of the modern radar world to Radar Returns, this article should give you some idea of the current Air Defence projects which are employing your tax dollars. Each project is given a number, a title and possibly a name. The number starts with the primary sponsor of the project (ie AIR means the RAAF, JP means a joint project between two or more arms of the Defence Forces). Once each project is established, it is normally given a more descriptive name to identify it. If a project does have a name it is in brackets at the end of the title.

AIR 5333 Phase 1

2CRU and 3CRU Replacement (VIGILARE)

The existing computer and display systems at 2CRU and 3CRU are over 25 years old and have reached the end of their support life. Vigilare seeks to replace the command-and-control systems located at 2CRU Tindal and 3CRU Williamstown.

Proposed Contract Signature
August 1999

Financial Dimensions

Between A\$60m and A\$200m).

AIR 5333 Phase 2

ADF Air Defence System Communications Network (AADSNET)

Project Air 5333 Phase 2 aims to provide a communications network to connect ADF ground-based, air-defence assets into a single integrated system. It will provide connections between command centres, civil and military surveillance sensors, ground weapon systems, and radio sites. Both fixed and deployable communication links will be implemented.

The project is being conducted in two stages. Stage 1 is an Initial Design Activity (IDA) which will determine the network requirements and produce a network design specification. The

IDA contractor is Aspect Computing Pty Ltd, a member of the Defence Preferred Systems Integrator (DPSI) panel. Stage 2 will be the implementation of the network.

There are many ground air defence and related systems being introduced into service over the next five years. The scope of many of these projects does not include the required communications links to other systems. Project AIR 5333 Phase 2 will coordinate the communication requirements for the other projects independent of each individual project priorities. AADSNET was approved in the 97/98 budget.

AADSNET Stage 1 is being conducted totally by Australian Industry. It is probable that most of the hardware for Stage 2 will have to be sourced from overseas. An Australian entity will, however, be preferred as the Stage 2 prime contractor in view of the fact that communications has been designated a first-order strategic priority by the Government and because of the need for through-life support.

Stage 1 contract award

19 December 1997

Stage 1 complete June 1999

Stage 2 TBA *

** The development of Stage 2 is the subject of review within the Defence Organization, which may result in changes to the acquisition strategy and to in-service dates.*

Finance Dimensions

Between A\$20m and A\$60m

AIR 5375 - Tactical Air Defence Radar Systems

Project AIR 5375 seeks to replace the three existing Air Defence Ground Environment ground-based radar systems with modern Australian Defence Force Air Defence Systems (AADS). The AADS will consist of Tactical Air Defence Radar Systems (TADRS) and Electronic Support Measure



Lockheed Martin TPS-117

(ESM) systems. The TADRS will be comprised of long-range tactically-mobile air defence radar systems, Electronic Radar Decoy (ERD) systems, and a Radar Environment Simulator (RES). The project also includes provision of a tactical-transport capability for the TADRS and satellite communications interface equipment.

On 11 August 1998, Lockheed Martin Corporation (LMC) was awarded the Prime Equipment and Logistics-Support Contracts for the supply and subsequent five years support of the four TADRS. LMC has teamed with Australian companies Tenix Defence Systems, RLM Systems and Redflex Communications to produce the TADRS. LMC, as the prime contractor will provide Primary Surveillance Radar (PSR), Secondary Surveillance Radar (SSR) and the Tactical Data Subsystem (TDS), decoys and RES, and will be responsible for overall management of the project. Tenix Defence Systems is producing the transportable cabins, in which the TADRS equipment will be housed and will also be performing the integration of subsystems into the cabins. RLM Systems will be developing the Human Machine Interface (HMI) software for the operator workstations. Redflex Communications is providing the communications switches for the

TADRS communications subsystem.

1st TADRS to be delivered in April 2001, 4th Delivered in September 2001

Financial Dimensions

Approved project cost \$176.5 million. Cumulative expenditure to 30 June 1999 \$98.9 million

JP 2025 - Jindalee Operational Radar Network (JORN)

The Jindalee Operational Radar Network (JORN) project will provide two over-the-horizon radars, one near

Longreach, Qld.

and the other near

Laverton, WA,

jointly operated

from the JORN

Coordination

Centre (JCC) at

RAAF Base

Edinburgh, South

Australia. The

radars are an

advanced

development of the

Australian designed Jindalee radar

at Alice Springs which is in

operational use as well as being an

R&D facility for DSTO. JORN

radars are capable of all weather

detection of air and surface targets

entering or departing above certain

speed thresholds, inside a 3,000km

arc from Geraldton around to

Cairns. The Network will make an

important contribution to broad area

surveillance of Australia's

strategically important northern

approaches.

Project Background

The JORN project arose out of

extensive research undertaken by

the Defence Science and

Technology Organisation (DSTO)

into over-the-horizon radar

beginning in the early 1970s. As

part of the 1987 Defence White

Paper the Government placed a high

priority on wide area surveillance of

the north and north western

approaches to Australia and over-

the-horizon radar was seen to be the

most cost effective solution. As a consequence, in December 1990 the Government approved the design and construction of JORN.

A prime contract for JORN was awarded to Telecom Australia (now Telstra) on 13 June 1991 with a contracted completion date of 13 June 1997 for

commissioning of the network.

Telstra awarded major sub-contracts to GEC Marconi Limited and Telstar Systems, then a 60:40 joint venture between Telstra and

Lockheed Martin Corporation.

Other significant

sub-contracts

were awarded to

Radio Frequency

Systems (RFS),

Digital

Equipment

Corporation,

Lindsay Eckert

& Associates,

Fletcher

Constructions and

the John Holland Construction

Group.

Project Status

In February 1997, as part of a

strategy by Telstra to divest itself

of the JORN project, negotiations

were concluded with RLM

Management Company, a 50:50

joint venture of Lockheed Martin

and the Tenix Group (formerly

Transfield Defence Systems).

RLM subsequently assumed full

management responsibility for the

JORN project, with power of

attorney to act on Telstra's behalf.

Under a share sale agreement,

ownership of Telstar transferred to

RLM. The Company then re-

baselined the project during the

period February to June 1997,

leading to an Estimate to Complete

with acceptance planned for

December 2001.

Construction of buildings and

antenna arrays at the Queensland

and Western Australia sites is

complete and installation, test and

integration of electronics hardware at the sites is progressing. Early successes have been achieved in operational trials with limited transmission of high frequency skywaves from the Longreach, Queensland site in mid-October 1998 using the installed Marconi 20 kW High Power Amplifiers. Project effort is now directed at integration of the myriad of transmit, receive, operations centre, frequency management, software support and training sub-systems into a comprehensive Network, with necessary design proving and Commonwealth testing/acceptance activities.

Construction of the JCC, located at RAAF Base Edinburgh in South Australia, is complete. Remote operation of the current Jindalee Radar at Alice Springs has been demonstrated and transfer of operation of this radar from 1 Radar Surveillance Unit at Alice Springs to the JCC will occur in July 1999 on completion of training.

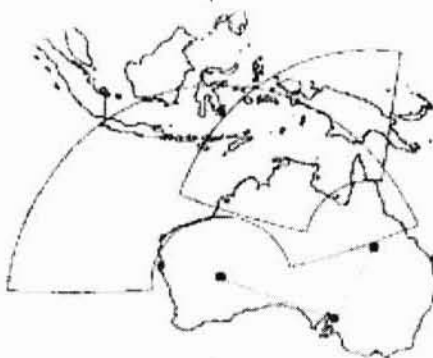
The Project is over 75% complete and based on current schedule projections, integrated target detection and tracking capability at Longreach will be available in December 2001. The Laverton site should be similarly capable in the April 2002 timeframe and the Network is expected to be fully operational in the following July. Subsequently, individual Qld and WA radars will receive surveillance tasking from the ADF and dispatch results to the various Defence and civilian users.

Financial Dimensions

Approved project cost \$1,180.9 million. Cumulative expenditure to 30 June 1999 \$837.2 million

AIR 5077 - Airborne Early Warning Aircraft (Wedgetail)

Due to the scale of this project, I propose to dedicate more space to this topic in future editions of Radar Returns.



JORN Radar Coverage

FADED ECHOES

Arthur Edward Irvine

Passed away 5th May 1999

Arthur Irvine joined one of the later Bailey Boy courses at Sydney University. He was then posted to 111MFCU which was forming up at RAAF Station Sandgate. There he was appointed the CO of 325RS. After sailing through Morotai and on to Labuan BOR, Arthur was in the second wave of landings on 12 June 1945.

Arthur returned to Sandgate after the war, where he became a school teacher.

Eric Victor Olsen

Died 18th February 1999

Eric was born in Malcolm Street Brisbane on the 25th June 1922. He was educated at East Brisbane and commenced work as an apprentice Compositor at Smith and Patterson in the Valley. He joined the RAAF in 1942 and completed his training at Point Cook Signals School as a trainee Telegraphist. He served on several stations in areas such as Bowen Qld, Nadzab, Madang and Bundralis. Upon returning to civilian life in Brisbane he completed his apprenticeship at Smith and Patterson. He then moved to Dubbo where he worked on the local paper. He married Thora in 1948 and returned to Brisbane in November 1954. He worked on the Courier Mail and Sunday Truth from where he retired at the age of 59. During retirement he took part in many reunions of the 346RS personnel, one of the stations he was attached to during the war. Reunions were held in Canberra, Brisbane, Port Macquarie, Ballina, Nelson Bay etc. Eric was very much a family man and he will be missed by all.

Brian Cooper AM

Engineer, adventurer, 1917 - 1999

Brian Frederick Charles Cooper, who died in Sydney aged 81, was born in England; his father, a blacksmith, brought the family to Australia in 1925 and made a home at Austinmer. Cooper attended Wollongong High School, where he came equal second in the Leaving Certificate maths honours. He won an exhibition and a bursary to enter the University of Sydney, and graduated in science and engineering.

In 1940 the CSIR (now CSIRO) Radiophysics Laboratory was set up at the University of Sydney to develop secret radar techniques for war defence. There was a pressing need for electronics engineers, and Cooper was released from the final stages of his engineering course to join Radiophysics, where work was being done on a shore defence machine which would warn of the approach of surface vessels to the Australian coast.

Cooper was part of a team that modified this equipment to create a long-range air-warning system, commissioning it in Darwin where it was used by the RAAF. [31RS Driestone Caves] On March 22, 1942, it enabled a squadron of American fighters to intercept incoming Japanese bombers. This equipment evolved into the Light Weight Air Warning set which was used widely in the SWPA.

In 1946 Cooper gained overseas experience with Canada's National Research Council, and subsequently applied radar techniques to develop Distance Measuring Equipment for civil aircraft, which was adopted for use nationwide by the Department of Civil Aviation in the 1950s. In 1962 he was

awarded a Master of Engineering for its development.

While he was in Canada, Cooper married Pat Eade. Upon returning to Australia and the Radiophysics Laboratory, Cooper worked on Mk I, the precursor to CSIRAC, Australia's first computer. His contribution was to develop a fast magnetic drum which greatly extended the Mk. I's memory capability. Next followed transistor circuit development. Cooper designed Australia's first transistor radio; the text of a lecture course given by Cooper with Dr L. W. Davies in 1953 was one of the earliest books to discuss the transistor.

By the late 1950s, the Parkes 64-metre radio telescope project was under way and Cooper was asked to head a group to develop receivers for the telescope. To gain experience in the United States on rapidly developing low-noise receiver techniques, he went to Harvard and built a maser receiver for its 18-metre telescope. Back at the Parkes project, and for the rest of his time at Radiophysics, he focused on receiver development and was involved in a series of fascinating projects in radio-astronomy. In the 1970s, Cooper joined the team working on the development of an international microwave approach-and landing guidance system - the Interscan Microwave Landing project - that had been started by Dr J. P. Wild. He was with the team until he retired as a senior principal research scientist in 1978.

Cooper had a reputation for pushing equipment to the limit of its specifications. He continued to push these limits with personal computers after he retired, not only for himself but in revitalising computer hardware for Technical

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Aids to the Disabled. Retirement also gave him the chance to pursue his other interests and to plan trips with Pat to many countries. He is survived by Pat, his wife of 52 years, and their three children, Jill, Susan and Ian.

Abridged from an article by Sue Cooper – SMH Jul 3, 1999

The following Vales appeared in the Winter Edition of Wings. Can anyone provide some more details? R.W. Brisco (Radar) Died Oct98 [No 30 Radar Mechanics (G) Course 4/1/43 - 28/3/43]

A.R. Griffen (Radar)

C.E. West (Radar) Died Oct98 [No 41 Radar Mechanics (A) Course 10/7/44 - 1/10/44]

MAROOCHYDORE AND THE BATTLE FOR AUSTRALIA

Those people who will be attending the RAAF Radar Veterans reunion at Maroochydore beginning on 6 September may be interested to know that a luncheon to commemorate the Battle for Australia will be held at Nambour, not far from Maroochydore, on Sunday 5 September at 11.30 am for 12. The President of the Sunshine Coast Branch of the RAAF Association, Harold Richards, has invited any RAAF Radar Veterans who may be available on that day to join with them in the celebration. The luncheon will take the form of a smorgasbord at the Nambour RSL Club, costing \$12 a head, but Harold would need to have notice several days in advance of the numbers proposing to attend. If there are enough people interested who need transport, we may be able to arrange a bus at a modest cost per head, but we would need rather more notice to

do so. To sort out these matters, the following arrangements have been made:

- if you will have your own transport and wish to attend, contact Warren Mann (39 Crisp Street, Hampton, Vic 3188 or phone 03 9598 2193) or Harold Richards (phone 07 5448 5370) before Monday, 30 August;
- if you will not have transport but would like to attend if it could be arranged, contact Warren Mann (as above) or Alex Culvenor (phone 03 5476 2288) before Monday 23 August.

Our ability to provide a bus will depend on sufficient people registering interest to keep costs at a reasonable level; the reunion finances will not be able to subsidise it.



Q & A

Ted Dellit came across the following ditty recently and wonders if anyone can help with some of the questions which came up.

HUSHABYE RADAR

(Tune - Hush A Bye Baby)
Hushabye radar up in the blue,
Watched all the time by
Archibald Screw,
When the shell bursts the radar
will fall,
Down comes the Observer, Pilot
and All.

From 'Digger's Songs' collected by Warren Fahey

The song was provided by Mrs Rollinson of Brisbane in 1972.

The questions are:

Has anyone heard of this song, and if so, by whom,
What radar are they referring to, ASV, Air warning, or Anti-

Aircraft, and
Who or what was 'Archibald Screw', and finally,
What does it all mean?
Ted Dellit

RADAR ON A TRAILER

Anecdotal evidence has surfaced that, during 1944, Radar School personnel assembled an AW radar and mounted it on a trailer [N.B. not a truck but a trailer]. It was employed as part of the field training for radar personnel and used on the bivouacs in the local (Sydney) area. It supposedly could be made operational in one hour. Can anyone enlighten us about this piece of equipment, its construction, use or its history?
Ed Simmonds

5FS - DARWIN

The wartime site of the former 5 (later 105) Fighter Sector Headquarters RAAF near Darwin has been recently rediscovered. The site has been prepared by the Heritage Branch of the Northern Territory Government and will be dedicated on Friday 13 August 1999. The organisers hope that many ex-servicemen, particularly those from the RAAF, and more particularly any who served there will be able to attend. Enquiries should be directed to Graham Calley, telephone 0419 300 822. It is unfortunate that the notice is so short - but we must take advantage of the opportunity provided. The dedication will be performed by the previous Administrator of the Northern Territory, The Honourable Austin Ashe, formerly Chief Justice of the Northern Territory. He is "a most respected person in the Territory". More to the point, he was a radar operator on Bathurst Island during the War and would have been one of those who sent messages on Japanese aircraft movements to the Operations Room. A very fitting "officiant". More about the ceremony in the next edition.

CLASSIFIEDS



WHERE ARE THEY NOW?

No 328 Radar Station, Wallal Downs

Foundation members of No 328RS, formed at Mascot in June 1943, are requested to contact the former CO. He will pass on information that may prove advantageous to you.

Phone: (02) 4943 4430

J.D. Balfe



**FPS-6 Height Finding Radar
1CRU Brookvale NSW**

If anyone can help identify the people in the photograph above, I can send you a bigger copy.!

ERRATA

In the last edition of Radar Returns the Deaths in Service contains some erroneous information. 24RS was, in fact, at Caloundra not Lytton as reported. Lytton was 23RS.

My apologies, and I shall watch my facts more closely in the future.

TONY CAFARELLA PUBLICATIONS

Tony Cafarella has produced two publications which would be of interest to anyone who served in NWA or who just has interest in the life and times of radar. The titles are:

Corunna Downs "The Invisible WW2 Airfield"
A Town Called Onlsow

If you are interested, the books cost \$7.00 each plus \$1.10 Postage & Handling. They can be obtained by writing to:

T.A. Cafarella

PO Box 24

HAWKER SA 5434

FENTON PUBLICATIONS

317RS and LORAN - Pago and Sir Graham Moore

Hot off the press and the best to date. Not to be missed at this price. Contains 72 pages of text and photographs but still only \$5.00 posted. **Don't miss this one!** Just write to:

Morrie Fenton

27 Lasscock Avenue

LOCKLEYS SA 5032

A PRE-GST SALE

A local instruction has been issued by the house manager that more space is to be created in the garage. Consequently I propose to try to 'remainder' those books which are still in this location. The following titles are available as follows:

More Radar Yarns [60 copies]

Radar Pictorials 1 [15 copies]

Radar Pictorials 2 [5 copies]

Echoes Over The Pacific [350 copies]

These books are going 'under the hammer' at \$10.00 per copy including postage and handling. After incidental expenses and postage are covered, I intend that any surplus will go to subsidising the production of *Technicalities and Generalities* which will hopefully be finished sometime very soon.

Alternatively, it may go towards financing future copies of Radar Returns. To minimise bank charges at my end, I would prefer payment to be made by postal order.

Please assist me in this clean up as the alternative is to send them for recycling!

To place an order, print your name and address clearly on your correspondence and send it to:

Mr E. Simmonds

15 Blair Street

Port Macquarie NSW 2444