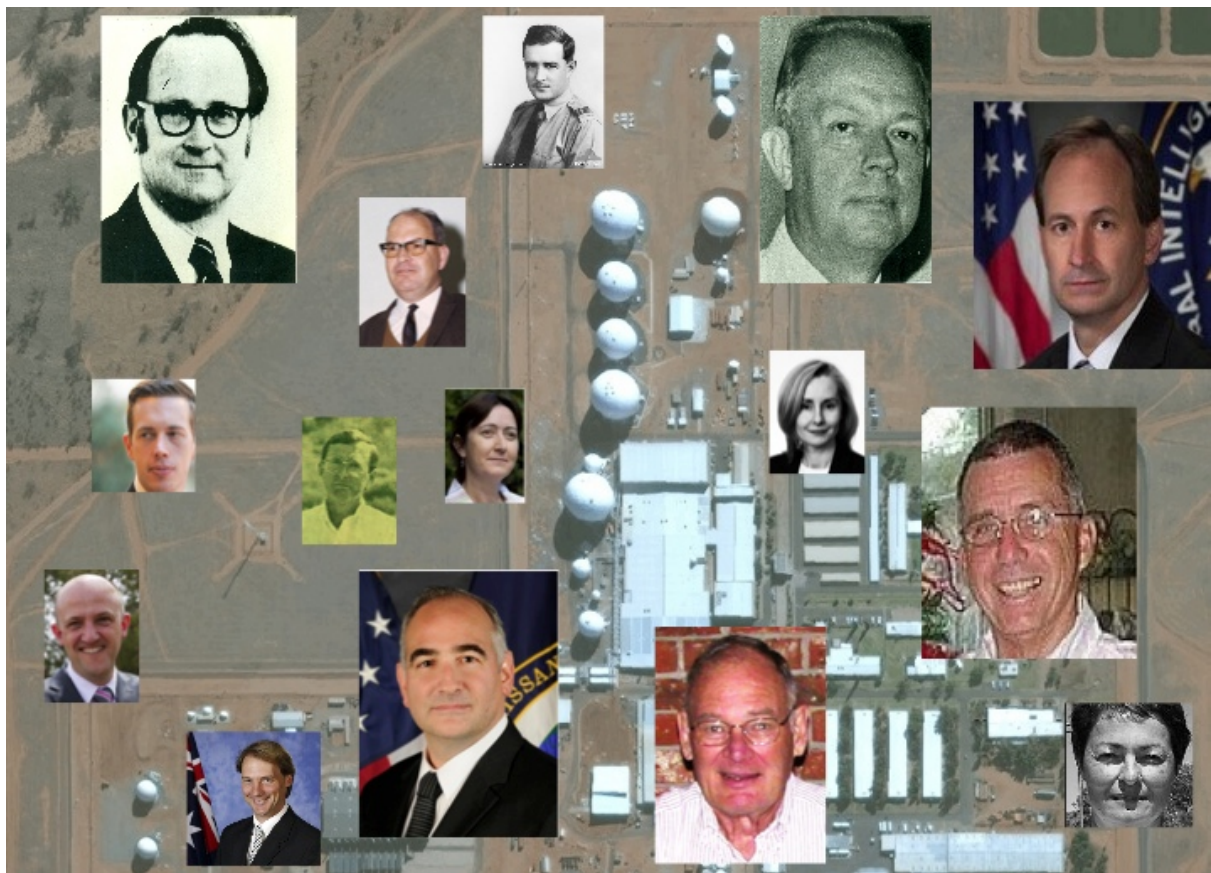




# Management of Operations at Pine Gap

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**Desmond Ball, Bill Robinson and Richard Tanter**



Nautilus Institute for Security and Sustainability  
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## Summary

The management of operations at the Pine Gap facility has become increasingly complex as the functions of the station have expanded, the number of agencies involved has grown, and the demands of a wider range of ‘users’ or ‘customers’ for the provision of ‘actionable intelligence’ in near real-time have increased markedly. Operations at Pine Gap are now completely integrated, in terms of American and Australian, civilian and military, and contractor personnel working together in the Operations Room; the organisational structure for managing operations, which embodies concerted collaboration of multiple US agencies, including the National Reconnaissance Office, Central Intelligence Agency, National Security Agency, Service Cryptologic Agencies and the National Geospatial-Intelligence Agency (NGA); and functionally with respect to signals intelligence (SIGINT) collected by the geosynchronous SIGINT satellites controlled by Pine Gap, communications intelligence collected by foreign satellite/communications satellite (FORNSAT/COMSAT) interception systems at Pine Gap, and imagery and geospatial intelligence produced by the NGA, as well as missile launch detection and tracking data.

Conceptualising the extraordinary growth and expansion of operations at Pine Gap is not easy – by the nature of the facility. Externally, it is evident in the increase in size of the two main operations buildings within the high security compound – areas quite distinct from the separate part of the facility that deals with administration matters. The total area of floor space in the Operations Buildings has increased five-fold since 1970 to more than 20,000 m<sup>2</sup>. If the floor area of the two operations buildings were laid out and joined together, it would cover more than three and a half American football fields. More parochially, though for Australians more meaningfully, the floor area of Pine Gap’s operations complex would more than cover the entire playing field of the Melbourne Cricket Ground.

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## Glossary

ADF	Aerospace Data Facility
AFB	Air Force Base
AFISRA	Air Force Intelligence Surveillance and Reconnaissance Agency
APS	Australian Public Service
ASCP	Assistant Secretary Capability Provision
ASD	Australian Signals Directorate
BND	Federal Intelligence Service (Germany; <i>Bundesnachrichtendienst</i> )
CIA	Central Intelligence Agency
CID	Center for Information Dominance
COL	Collection Operations Lead
COMINT	Communications Intelligence
COMSAT	communications satellite
COP	Chief of Operations
CSAR	Combat Search and Rescue
CSG	Combined Support Group
D/NRO	Director/NRO
DIA	Defense Intelligence Agency
DIO	Defence Intelligence Organisation
DNI	Director of National Intelligence
DoD	Department of Defense
DS&T	Directorate of Science and Technology
DSD	Defence Signals Directorate
DSTO	Defence Science and Technology Organisation
ELINT	Electronic Intelligence
FBIS	Foreign Broadcast Information Service
FISINT	Foreign Instrumentation Signals Intelligence
FMSAC	Foreign Missile and Space Analysis Center
FORNSAT	Foreign Satellite
GCSB	Government Communications Security Bureau
GED	Ground Enterprise Directorate
GEOINT	Geospatial Intelligence
HUMINT	Human Intelligence
IC	Intelligence Community
ICBM	Intercontinental ballistic missile
IMINT	Imagery Intelligence

IOG	Intelligence Operations Group
ISR	Intelligence, Surveillance and Reconnaissance
IT	information technology
JDFPG	Joint Defence Facility Pine Gap
MASINT	Measurement and Scientific Intelligence
MD	Mission Director
MGS	Mission Ground Station
MSD	Mission Support Directorate
NGA	National Geospatial Agency
NIOC	Naval Information Operations Command
NIOD	Naval Information Operations Detachment
NRO	National Reconnaissance Office
NSA	National Security Agency
NTM	National Technical Means
OEL	Office of ELINT
PM&C	Department of Prime Minister and Cabinet
PACOM	Pacific Command
RSOC	Regional SIGINT Operations Center
RTRG	Real-Time Regional Gateway
SALT	Strategic Arms Limitation Talks
SATCOM	Satellite Communications
SCA	Service Cryptologic Agency
SEAL	Sea, Air and Land Team
SIGINT	Signals Intelligence
TELINT	Telemetry Intelligence
WMD	Weapons of Mass Destruction

The management of operations at the Pine Gap facility has become increasingly complex as the functions of the station have expanded, the number of agencies involved has grown, and the demands of a wider range of ‘users’ or ‘customers’ for the provision of ‘actionable intelligence’ in near real-time have increased markedly. Operations at Pine Gap are now completely integrated, in terms of American and Australian, civilian and military, and contractor personnel working together in the Operations Room; the organisational structure for managing operations, which embodies concerted collaboration of multiple US agencies, including the National Reconnaissance Office (NRO), Central Intelligence Agency (CIA), National Security Agency (NSA), Service Cryptologic Agencies (SCA<sup>1</sup>s) and the National Geospatial-Intelligence Agency (NGA); and functionally with respect to signals intelligence (SIGINT) collected by the geosynchronous SIGINT satellites controlled by Pine Gap, communications intelligence (COMINT) collected by foreign satellite/communications satellite (FORNSAT/COMSAT) interception systems at Pine Gap, and imagery and geospatial intelligence produced by the NGA, as well as missile launch detection and tracking data. (Figure 1)

**Table 1. Operations personnel at Pine Gap, 2015**

<b>US government: Civilian (NRO, NSA, CIA)</b>	<b>US government: Military</b>	<b>Australian government</b>	<b>Contractor</b>	<b>Total</b>
<b>55</b>	<b>105</b>	<b>50</b>	<b>45</b>	<b>255</b>
<b>22%</b>	<b>41%</b>	<b>20%</b>	<b>18%</b>	<b>100%</b>

About 255 or so personnel at Pine Gap, or about a third of the total, are directly involved in operations, working in the Operations Room, 24 hours a day, seven days a week – with the other two-thirds concerned with management, operational support, administration, utilities, maintenance, etc., mostly working 9 am to 5 pm jobs, five days a week. (Table 1)

<sup>1</sup> See also Desmond Ball, Bill Robinson and Richard Tanter, *The militarisation of Pine Gap: Organisations and Personnel*, Nautilus Institute, Special Report, 14 August 2015, at <http://nautilus.org/wp-content/uploads/2015/08/The-militarisation-of-Pine-Gap.pdf>.









## NRO's 'fundamental transformation' in 2006-08 and NRO's Ground Stations

The fundamental transformation of the NRO in 2006-08 that was directed by Donald Kerr and Scott Large, the NRO Directors in 2005-07 and 2007-09, included giving greater emphasis to 'the role of our ground systems'.<sup>2</sup> The Ground Enterprise Directorate (GED) was established in 2008 and given responsibility not merely for management of NRO's five Mission Ground Stations (MGSs) but for transforming these into multi-source intelligence centres, at which all of the IMINT and SIGINT is integrated or 'fused' and made accessible to all NRO users world-wide.

The first Director of the Ground Enterprise Directorate (GED) was Dr Pete Rustan, who subsequently became Director of the Mission Support Directorate (MSD). He was a vigorous proponent of transforming the NRO 'into a world class provider of information products and services' and the MGSs into integrated data centres where IMINT and SIGINT is 'fused' in a format which provides ready integration of intelligence collected by other air- and ground-based systems, as well as human intelligence (HUMINT).<sup>3</sup> He was also a key progenitor of the Real-Time Regional Gateway (RTRG) system, used in Iraq and Afghanistan, which fused all data being collected by SIGINT satellites and other airborne and ground-based SIGINT systems, HUMINT, interrogation reports, satellite and drone surveillance images, together with geolocation data, and was accessible to war-fighters in real-time.<sup>4</sup>

Recent senior NRO executives have acclaimed the ground facilities for their creativity and 'magic', and expressed satisfaction at the rate of progress with the transformation of the MGSs, although some have also expressed concern about their vulnerability. In October 2009, NRO Director Bruce Carlson stated that some of the SIGINT satellites were 'geriatric' but still functioning (including Orion-1, also called Magnum-1, and Orion-2, which were then operating at 72° East and 90.5° East respectively). He attributed this longevity to 'the incredible, creative

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<sup>2</sup> Scott Large, 'Statement for the Record Before the House Armed Services Committee Subcommittee on Strategic Forces Joint Hearing: Fiscal Defense Authorization Act Budget Request and Status for Space Activities', 5 March 2008, at <http://www.nro.gov/news/testimony/2008/2008-01.pdf>; and Desmond Ball, Bill Robinson and Richard Tanter, *The Higher Management of Pine Gap*, Nautilus Institute, Special Report, 18 August 2015, at <http://nautilus.org/wp-content/uploads/2015/08/The-Higher-Management-of-Pine-Gap.pdf>.

<sup>3</sup> Pete Rustan, 'Building an Integrated Intelligence Network: Challenges and Opportunities', *High Frontier: The Journal for Space & Missile Professionals*, (Vol. 4, No. 4), August 2008, pp. 10-14, at <http://www.afspc.af.mil/shared/media/document/AFD-080826-020.pdf>.

<sup>4</sup> Ben Iannotta, 'Change Agent', *Defense News*, 8 October 2010, at <http://archive.defensenews.com/article/20101008/C4ISR01/10080311/Change-agent>; and Shane Harris, *@War: The Rise of the Military-Internet Complex*, (Eamon Dolan Books, New York, 2014), pp. 33-35.

use of our ground systems’, and cited ‘the incredible contractor and NRO team[s] that we have that nurse [those] satellite[s] along and the young people that write software to change [their] functionality and keep [them] going’.<sup>5</sup>

Betty J. Sapp, who became Director of the NRO in July 2012, has said that ‘ground functions are absolutely critical to planning and executing ISR missions, and in processing the data collected from our national satellites’, that ‘the NRO GED team has already made considerable headway in moving us toward a more holistic, “horizontal” ground enterprise’, although more remained to be done, and that ‘the future NRO ground enterprise will enable the delivery of information to our mission partners and users when they need it and where they need it.’<sup>6</sup>

Kristina Harrington, who was appointed Director of the SIGINT Systems Acquisition Directorate in December 2013, has expressed strong concerns about the vulnerability of the associated ground systems. She said in May 2014 that while ‘both satellites and the ground need to be secure from cyber intrusion or supply chain infection’, the ‘more pressing vulnerability’ was on the ground. She said that the ground networks had become ‘increasingly complex and had become a growing target of cyber attacks’.<sup>7</sup> She said in April 2015 that changes in the ground infrastructures of NRO’s satellite programs were ‘vital’, and argued that ‘Ground is where a lot of the magic occurs, and it is the place where we invest in last. But it’s one of the things that we can make the greatest leaps with’.<sup>8</sup>

## Chiefs of Facility

There have been 16 Chiefs of Facility at Pine Gap since 1967, most, until recent years, senior officers from the Central Intelligence Agency, and more recently from either the CIA or the National Security Agency. All have been civilians.

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<sup>5</sup> General Bruce Carlson, ‘GEOINT Symposium, October 21, 2009, San Antonio, Texas’, at <http://www.nro.gov/news/speeches/2009/2009-03.pdf>; and Desmond Ball, Bill Robinson and Richard Tanter, *The SIGINT Satellites of Pine Gap: Conception, Development and in Orbit*, Nautilus Institute, Special Reports, 15 October 2015, at <http://nautilus.org/wp-content/uploads/2015/10/PG-SIGINT-Satellites.pdf>.

<sup>6</sup> ‘Q&A: Betty J. Sapp’, *Geospatial Intelligence Forum*, (Vol. 11, No. 3), 28 March 2013, at <http://www.kmimediagroup.com/geospatial-intelligence-forum/magazines/1485-gif-2013-volume-11-issue-3-april-alt/6917-qa-betty-j-sapp>.

<sup>7</sup> Colin Clark, ‘Adversaries Outpace US in Cyber War; Acquisition Still Too Slow’, *Breaking Defense*, 19 May 2014, at <http://breakingdefense.com/2014/05/adversaries-outpace-us-in-cyber-war-acquisition-still-too-slow/>; and Andrea Shalal, ‘Military Acquisition Rules Hamper U.S. Ability to Counter Cyber Threats’, *Reuters*, 19 May 2014, at <http://www.reuters.com/article/2014/05/20/us-cybercrime-usa-military-idUSBREA4J03L20140520>.

<sup>8</sup> Harrison Donnelly, ‘Peering Into the Satellite Future’, *Geospatial Intelligence Forum*, 7 April 2015, at <http://www.kmimediagroup.com/gif/articles/424-articles-gif/peering-into-the-satellite-future>.

Table 2. Chiefs of Facility,  
Joint Defence Facility Pine Gap

Richard Lee Stallings	1967 – 9.12.1968
Harry E. Fitzwater	1968-73
Lou Bonham	1974-76
Harrison (Hy) Markham	1976-79
Richard Krueger	1979-81
William Reller	1981-85
Glenn Kerr	1985-89
Donald Kingsley	1989-92
James Mathews	1992-95
Stephen Provines	1995-98
Barbara Ely	1999- ?
?	? - ?
Kevin Keating	2005-08
Frank Calvelli	6.2008 - ?
Michael Bartholomew	6.2010 - 6.2013
Tim Howell	06.2013 - present

The first US Chief of Facility at Pine Gap was Richard Lee Stallings, a senior officer in the CIA's Office of Electronic Intelligence, who arrived in Canberra in October 1966 and moved to Alice Springs in January of the following year. Stallings had entered the CIA after serving in the US Navy in both the Second World War and the Korean War, rising to lieutenant commander in naval intelligence.<sup>9</sup> In the Office of ELINT (OEL) Stallings had previously been stationed in West Germany at the I.G. Farben complex in Frankfurt, the European centre of US armed forces, where he had been responsible for management of the OEL SIGINT stations in West Germany and coordination of CIA's SIGINT operations in West Germany with those of both the National Security Agency and the West German Federal Intelligence Service (BND).

<sup>9</sup> 'Stallings, Richard', Obituaries, *Baltimore Sun*, 21 February 2004, at [http://articles.baltimoresun.com/2004-02-21/news/0402231526\\_1\\_annapolis-grandchildren-stallings](http://articles.baltimoresun.com/2004-02-21/news/0402231526_1_annapolis-grandchildren-stallings).

Stallings remained in Alice Springs until 9 December 1968, by which time initial construction of the facility was complete, and the facility was nearly ready to begin operations.<sup>10</sup>

**Figure 2. Richard Lee Stallings, Chief of Facility 1967-68**



Harry Elmer Fitzwater (1968-72), a former US Navy flyer in the Second World War, the Korean War and during the Cuban Missile Crisis, succeeded Stallings. After three years in the Office of the Joint Chiefs of Staff in the Pentagon (1963-66), Fitzwater joined the CIA in the Directorate of Science and Technology (DS&T), and by the time he retired from the CIA in 1986 he was Deputy Director of Administration.<sup>11</sup> Fitzwater stayed at Pine Gap until 1972, by which time the facility was operational.

According to local historian Reg Harris, Fitzwater

and his wife Betty fitted in extremely well with the local Australians, who could be wary of yanks. Whilst here Harry regarded himself as a citizen of Alice Springs and not an

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<sup>10</sup> Desmond Ball, *Pine Gap: Australia and the US Geostationary Signals Intelligence Satellite Program*, (Allen & Unwin, Sydney, 1988, p. 57; and Jeffrey Richelson, *The Wizards of Langley: Inside the CIA's Directorate of Science and Technology*, (Boulder: Westview Press, 2002), p. 156.

<sup>11</sup> Harry Elmer Fitzwater Navy Captain, CIA Deputy Director', Obituaries, *Washington Post*, 16 November 16, 2004, Page B0, at <http://www.washingtonpost.com/wp-dyn/articles/A52974-2004Nov15.html>.

American posted to a remote location. If any of his staff dared criticise anything in Harry's adopted town they would be immediately sent back to the States. There were over 200 people on the staff at Pine Gap, yet Harry was able to greet everyone, including all the Australians by their first names.<sup>12</sup>

Fitzwater's successor was Lou Bonham (1972-75), who had served as Acting US Chief of Facility for a brief period when Fitzwater was on leave. Bonham was succeeded by Harrison "Hi" Schermerhorn Markham (1975-79), an electrical engineer and former lecturer in electronics at the US Naval Academy at Annapolis. Markham worked as a civilian engineer and program manager with the US Air Force prior to joining the CIA, where he worked in 'technical program management' and eventually became Director of the Foreign Broadcast Information Service (FBIS) before retiring in 1986 to join TRW, the company that manufactured the Rhyolite satellites controlled by Pine Gap.<sup>13</sup>

Markham's successor was Richard A Krueger (1979-81), who began a four-decade career in the CIA in 1953 with a degree in physics and electro-mechanical systems. Within months of starting as a Technical Services Staff officer Krueger was tasked with installing 'several covert audio devices, including microphones hardwired to recorders in the security offices' in the office of the agency's new director, Allen Dulles. The following year Krueger became Dulles's 'technical tutor', in part to bolster the director's understanding of the issues involved in the agency's conflict with the Air Force over the U-2 program, in which Krueger was later to be closely involved. In 1962 Richard Krueger was appointed as Chief of Research and Development for the Technical Services Division within the Deputy Directorate of Plans, which was charged with supporting espionage in the field and was quite distinct from the Deputy Directorate of Science and Technology which developed the Rhyolite program at Pine Gap.<sup>14</sup>

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<sup>12</sup> Reg Harris, *Legendary Territorians*, Alice Springs: Harris Nominees, 2007, p. 89.

<sup>13</sup> According to an obituary, Markham worked from 1966 to 1980 as a civilian engineer and program manager with the US Air Force, only joining the CIA in 1980, but this is wrong. See Joe Holley, 'Harrison 'Hi' Markham Electrical Engineer', Obituaries, *Washington Post*, 6 March 2009, at <http://www.washingtonpost.com/wp-dyn/content/article/2009/03/05/AR2009030503327.html>.

<sup>14</sup> Harold Keith Melton and Robert Wallace, with Henry Robert Schlesinger, *Spycraft: Inside the CIA's Top Secret Spy Lab*, London: Bantam Books, 2009, pp. 46-53; and Ahmar Mustikhan, 'Guns & Butter Don't Go Together: New CIA Chief', *Newsvine*, 9 January 2009, at <http://mustikhan.newsvine.com/news/2009/01/09/2294192-guns-butter-dont-go-together-new-cia-chief>.

**Figure 3. Richard Krueger, Chief of Facility 1979-81**



Krueger was well aware of the importance of signals intelligence facilities like Pine Gap for achieving US strategic goals at the highest level when he came to Pine Gap in 1979. His previous appointment was as Chief of Station of the Tacksman II ground signals intelligence interception station at Kabkan in northeast Iran, one of the CIA's key ground SIGINT collection stations (together with another station in Iran and one in Norway). In January of 1979, as the Iranian revolution unfolded, revolutionary militia had overrun the facility, capturing 22 US technicians. The Kabkan station was placed to intercept missile telemetry from the Soviet Union's Tyuratam space centre and ICBM test facility 650 miles to the north, yielding intelligence that no other station could provide, which Carl E. Duckett, the chief of the Foreign Missile and Space Analysis Center (FMSAC), described as 'pure gold'. So significant was the signals intelligence from Tacksman II at Kabkan and the Tacksman I station at Safi Abad near Beshahr that President Carter instructed the US ambassador in Iran that intelligence cooperation with the Shah's regime was to continue, despite its acknowledged appalling record in human rights.<sup>15</sup> Like Pine Gap, the Tacksman sites provided data critical for verification of Soviet

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<sup>15</sup> Richelson, *The Wizards of Langley*, pp. 87-88, and 214. See also *A Sourcebook on the TACKSMAN I and TACKSMAN II ELINT Bases in Iran*, Version of 2012-07-25, at <http://fas.org/irp/eprint/tacksman.pdf>.



compliance with the SALT I Treaty, signed in 1972 – a key to the period of détente. That treaty, and its successor, SALT II (1979), relied on verification by ‘national technical means of verification’ (NTM), and included explicit commitments by both sides to not impede the operations of the NTM facilities.<sup>16</sup> The loss of the Iranian facilities increased reliance on Pine Gap, and in the eyes of American opponents of SALT II, ‘reliance on Moscow’s good faith’.<sup>17</sup>

Krueger was succeeded by William Reller (1982-85), and in turn by Glen Kerr (1985-89). Donald Kingsley (1989-92), a 17-year veteran of the CIA spent three years as US Chief of Facility before retiring in 1993. Kingsley then became Managing Director of Boeing Satellite Systems (1996-2002), before turning to writing ‘action adventure stories.’<sup>18</sup> He was succeeded by James Mathews (1992-1995).

**Figure 4. Donald Kingsley  
Chief of Facility 1989-92**



Source: ‘Don Kingsley’, *LinkedIn*, at <https://www.linkedin.com/pub/don-kingsley/21/44/641>

**Figure 5. Stephen Provines  
Chief of Facility 1995-98**



Source: ‘Stephen Provines’, *Facebook*, at <https://www.facebook.com/stephen.provines>.

Stephen Provines, Chief of Facility from 1995 to 1998, graduated from the University of Oklahoma in electrical and electronics engineering in 1966. He then worked for the next 13 years for ‘the secretive E-Systems’ (Richelson) of Texas, a company which held the contract for the

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<sup>16</sup> See the SALT I Treaty: *Interim Agreement between the United States of America and the Union Of Soviet Socialist Republics On Certain Measures With Respect To The Limitation Of Strategic Offensive Arms*, signed May 26, 1972, at <http://fas.org/nuke/control/salt1/text/salt1.htm>. See also the 1979 SALT II treaty, signed in 1979, but never ratified by the US Senate: *Treaty between the United States of America and the Union of Soviet Socialist Republics On the Limitation of Strategic Offensive Arms, Together With Agreed Statements And Common Understandings Regarding The Treaty*, signed at Vienna, June 18, 1979, at <http://fas.org/nuke/control/salt2/text/salt2-2.htm>.

<sup>17</sup> Christian Emery, *U.S. Foreign Policy and the Iranian Revolution: the Cold War Dynamics of Engagement and Strategic Alliance*, (London: Palgrave Macmillan, 2013), p. 55.

<sup>18</sup> ‘Don Kingsley’, *LinkedIn*, at <https://www.linkedin.com/pub/don-kingsley/21/44/641>.



management and operation of the computer room at Pine Gap from its very beginnings.<sup>19</sup> Raytheon, which acquired E-Systems in 1995, is still the prime contractor in the secure areas of Pine Gap today.<sup>20</sup> Provines was unusual in moving from the military corporate sector to the CIA's SIGINT science and technology operations, rather than the other way around, entering the CIA in 1980.<sup>21</sup> Provines' time in Australia was notable in an attempt, ultimately unsuccessful, in the case of *Lindon v. Commonwealth of Australia (No. 2)* to call him as a witness in an action in the High Court of Australia

against the Commonwealth of Australia which [the plaintiff] considered was participating in the "nuclear targeting of civilian populations through military bases at Pine Gap and Nurrungar".<sup>22</sup>

Barbara Ely became the first woman to hold the position of US Chief of Facility at Pine Gap when she arrived in 1999. When she died in 2013, aged 72, her obituary noted that she had '37 years of Federal Government service including Chief of Facility, JDF Pinegap Australia [sic] and Director of Systems Operations Office (SOO) [within the NRO].' Ely also received the Intelligence Commendation Medal.<sup>23</sup>

Ely's successor is unknown, but that person was Chief of Facility until July 2005 when Kevin Keating took over Pine Gap. Keating was succeeded by a high flyer from the NRO, Frank Calvelli, who was Chief of Facility from June 2008 until June 2010.<sup>24</sup> Announcing Calvelli's appointment in December 2007 NRO Director Scott Large said that Calvelli, then the Deputy Director, Systems Operations Directorate, had previous assignments including

management and engineering positions in the Imagery Systems Acquisition and Operations Directorate, Communications Systems Acquisition and Operations

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<sup>19</sup> Richelson, *The Wizards of Langley*, p. 97.

<sup>20</sup> Desmond Ball, Bill Robinson, Richard Tanter and Philip Dorling, *The Corporatisation of Pine Gap*, Nautilus Institute, Special Report, 14 August 2015, at <http://nautilus.org/wp-content/uploads/2015/08/The-militarisation-of-Pine-Gap.pdf>.

<sup>21</sup> 'Stephen Provines', *LinkedIn*, at <https://www.linkedin.com/pub/stephen-provines/6b/a42/40b>. See also 'Stephen Provines', *Facebook*, at <https://www.facebook.com/stephen.provines>.

<sup>22</sup> LINDON V. COMMONWEALTH OF AUSTRALIA (NO. 2), *International Law Reports*, (1996) Volume 11, pp. 338-352.

<sup>23</sup> 'Death Notice: Barbara J. V. Ely', *Washington Post*, 24 May 2013, at

<http://www.legacy.com/obituaries/washingtonpost/obituary.aspx?pid=164951333>. On the NRO Systems Operations Office around that time see, for example, the presentation by Mark Broswick, Systems Operations Office, National Reconnaissance Office, Customer Outreach Program on 'Customer Outreach Program', *GSAW2002, Ground System Architectures Workshops*, The Aerospace Corporation, El Segundo, California, March 13 - 15 2002, at <http://sunset.usc.edu/events/GSAW/gsaw2002/s2/broswick.pdf>.

<sup>24</sup> National Reconnaissance Office, Director's Note, Number 2007-59, 3 December 2007; and Philip Dorling, "Desert secrets", *The Sunday Age*, 21 July 2013, at [http://newsstore.fairfax.com.au/apps/viewDocument.acj;sessionid=654271B4CE97FDCB92DAE1AE2BA6D686?sy=af&pb=all\\_ffx&dt=selectRange&dr=1month&so=relevance&sf=text&sf=headline&rc=10&rm=200&sp=brs&cls=1969&clsPage=1&docID=SAG1307211U9B44N0FLB](http://newsstore.fairfax.com.au/apps/viewDocument.acj;sessionid=654271B4CE97FDCB92DAE1AE2BA6D686?sy=af&pb=all_ffx&dt=selectRange&dr=1month&so=relevance&sf=text&sf=headline&rc=10&rm=200&sp=brs&cls=1969&clsPage=1&docID=SAG1307211U9B44N0FLB).

Directorate, Advanced Systems and Technology and the Deputy Director for Systems Engineering within the NRO.<sup>25</sup>

Returning from Australia two years later, Calvelli became Deputy Director, Ground Enterprise Directorate, and in March 2011, Director of the Special Communications Office.<sup>26</sup> In July 2012, just two years after leaving Pine Gap, Calvelli became the NRO's Principal Deputy Director, a position in which he 'provides overall day-to-day management of the NRO ... In the absence of the DNRO, he acts on the Director's behalf on all matters.'<sup>27</sup>

**Figure 6. Kevin Keating, Chief of Facility, 2005-2008**



Source: 'Social', *Centralian Advocate*, 18 December 2007, p. 8

In June 2010 Calvelli was replaced at Pine Gap by another high flyer, but this time a 30-year veteran of the CIA.<sup>28</sup> In 2001-2003 Michael Bartholomew had been Chief of the CIA's Collection Analysis Center, where he

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<sup>25</sup> National Reconnaissance Office, Director's Note, Number 2007-59, 3 December 2007.

<sup>26</sup> Bruce Carlson, Director, Organizational Announcement: Director, Special Communications Office, Number 2011-06, 7 March 2011. (Document provided by Jeffrey Richelson.)

<sup>27</sup> 'Frank Calvelli, Principal Deputy Director of the NRO', NRO Leadership, National Reconnaissance Office, at <http://www.nro.gov/about/leadership/PDDNRO.html>.

<sup>28</sup> Bruce Carlson, NRO Organizational Announcement, 14 June 2012. [Document provided by Jeffrey Richelson.] All career details from 'Michael Bartholomew', *LinkedIn*, at <http://www.linkedin.com/pub/michael-bartholomew/29/708/180>.

managed a diverse workforce of more than 100 analysts, H/W and S/W engineers, maintenance technicians and systems administrators from multiple government agencies, contractors and military services.

**Figure 7. Frank Calvelli, Chief of Facility 2008 – 2010**



Source: 'Frank Calvelli, Principal Deputy Director of the NRO',  
National Reconnaissance Office,  
at <http://www.nro.gov/about/leadership/PDDNRO.html>.

**Figure 8. Michael Bartholomew,  
Chief of Facility 2010-2013**



Source: “Michael Bartholomew, *LinkedIn*, at <http://www.linkedin.com/pub/michael-bartholomew/29/708/180>.

**Figure 9. Michael Bartholomew,  
Chief of Facility 2010-2013  
(right) and Margaret Larkin,  
Deputy Chief of Facility (left)**



Source: “Pine Gap’s a cert for RSL”, *Alice Now*, 8 May 2012, at <http://alicenow.com.au/news/article/pine-gaps-a-cert-for-rsl>.

In the highly charged atmosphere of the ‘missing WMD’ following the invasion of Iraq, Bartholomew directed the review of Iraq’s WMD for the Director of Central Intelligence conducted by the DCI’s Special Advisor.<sup>29</sup> Between 2005 and 2008 he directed the CIA’s Office of Strategy Management and its Center for Mission Innovation. In the two years before leaving for Pine Gap Bartholomew acted as the NRO’s representative on the Intelligence Community Collection Architecture Group, which he described as a

unique interagency forum charged by the DNI [Director of National Intelligence] to review the full range of collection capabilities in order to make programmatic recommendations.

After his return from Pine Gap in June 2013 Bartholomew listed his role as ‘Business Intelligence and Strategy at Central Intelligence Agency’.

The current Chief of Station, Tim Howell, replaced Bartholomew in June 2013, having served 22 years with the CIA.<sup>30</sup>

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<sup>29</sup> *Comprehensive Report of the Special Advisor to the DCI on Iraq’s WMD*, September 2004, at [https://www.cia.gov/library/reports/general-reports-1/iraq\\_wmd\\_2004](https://www.cia.gov/library/reports/general-reports-1/iraq_wmd_2004).

<sup>30</sup> National Reconnaissance Office, Office of the Director, Organizational Announcement, Number 2012-21, June 14, 2012 [Document provided by Jeffrey Richelson.]; and Mayor’s report, Council Meeting, Alice Springs Council, Report No. 219/13cncl, 25 November 2013, at

## Australian Defence Representative

Prior to 1999, the senior Australian officer at Pine Gap was known as the Australian Defence Representative, Joint Defence Space Research Facility, Alice Springs (ADRAS).<sup>31</sup>

The first senior representative of the Australian Government at Pine Gap (then known as the Joint Defence Space Research Facility, Pine Gap) was Lindsay Blackwell Smooker, who arrived in Pine Gap when the construction begun under Stallings was nearing completion. Smooker, who was 55 at the time he went to Pine Gap in 1969, had enlisted in the Army in 1937, but transferred to the Air Force, finishing the war as a Group Captain.<sup>32</sup> Working together in New Guinea in 1943 with a US Air Force ordnance specialist, Captain Arnold Erickson, Flight Lieutenant Smooker invented ‘a bomb fuse which enabled Allied pilots to carry out mast-high attacks on Japanese warships and shipping with devastating results’. The improved bomb fuse was reportedly a factor in RAAF operations against Japanese troop transports in the Battle of the Bismarck Sea, resulting in huge loss of life.<sup>33</sup> Erickson said of his collaborator:

**Table 3.**  
**Australian Defence Representatives at Pine Gap**

Lindsay Smooker	1969 – 1978
Wallace F. Caplehorn	1979 – 1980
Ivo H. Parker	1980 – 1984
W.A.L. (Bert) Forsyth	1984 – 1987
Michael K. Busch	1987 – 1988
John McCarthy	1988 – 1992
Janet Tyler	1992 – 1995

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[http://www.alicesprings.nt.gov.au/sites/default/files/meetings/03.\\_Agenda\\_7.1\\_-\\_Mayor%27s\\_Report\\_25\\_November\\_2013.pdf](http://www.alicesprings.nt.gov.au/sites/default/files/meetings/03._Agenda_7.1_-_Mayor%27s_Report_25_November_2013.pdf).

<sup>31</sup> Department of Defence, *Functional Directory*, October 1976, p.51; and Question upon Notice Defence: Pine Gap, 21 March 2002, Ms Plibersek to the Minister representing the Minister for Defence, Ms Vale, House of Representatives, Notice Paper Question No 286, 28 May 2002, Hansard: Pages 2555-8, at <http://www.defence.gov.au/ips/parliament/qons/40th/house/0001-0500/H0286.htm>. Note however that in 1989, John McCarthy identified himself as ‘Deputy Chief, Department of Defence, Joint Defence Facility, Pine Gap’.

Anthony Hoy, ‘The Business-Card Spy’, *Weekend Australian*, 27-28 May 1989.

<sup>32</sup> Lindsay B. Smooker. Medal of Freedom (Group Captain, b.1914, d.1982) (author) (1966). Transcripts, photocopy. Australia, at

<http://trove.nla.gov.au/work/32053241?q=smooker%2C+lindsay&c=collection&versionId=38927397>.

<sup>33</sup> ‘Low Bombing Thrills – Experts Exciting Test Work’, *Examiner* (Launceston), 4 December 1943. To Japanese, the Battle of the Bismarck Sea is known as the Tragedy of the Dampier Strait (ダンピール海峡の悲劇).



Brian Ely	1995 – 1999
John McCarthy	1999 – 2002

Smooker is so highly skilled that he must be one of the most valued members of the Allied Forces. Apart from his great technical ability he is a leader in a practical way.<sup>34</sup>

After the war, Smooker was awarded the US Medal of Freedom with Silver Palm.<sup>35</sup> He remained in the Air Force at least until 1955, when he was promoted to Wing Commander while working at the Aircraft Research and Development Unit, Laverton, Victoria.<sup>36</sup>

**Figure 10. Bomb makers at work:  
RAAF Flight Lieutenant Lindsay Smooker (right)  
and USAF Captain Arnold Erickson (left), December 1943.**



AUSTRALIAN WAR MEMORIAL

P00381.002

Source: Australian War Memorial, Collection, P00381.002, at <https://www.awm.gov.au/collection/P00381.002>.

By 1976, four years after the weapons research responsibilities of the Department of Supply had been transferred to the newly created Defence Science and Technology Organisation, Smooker's position at Pine Gap was under the DSTO Policy and Planning Division, which was

<sup>34</sup> Smooker 'also designed the parachute fragmentation bomb which was used with such deadly effect in daylight raids on Rabaul and was responsible for the development of an anti-personnel bomb.' 'Bomb Inventions - Gippsland Airman's Success', *Gippsland Times*, 16 December 1943.

<sup>35</sup> 'More U.S. Awards Made', *The Age*, 16 April 1948, p.2, at <http://nla.gov.au/nla.news-article206880984>.

<sup>36</sup> 'List Of Promotions For Air Force - Two new Air Commodores', *Canberra Times*, 23 December 1955, p. 2, at <http://nla.gov.au/nla.news-article91214615>.

responsible not only for ‘management of special DST undertakings’, but also ‘formulation of DST policy, and arrangements for international co-operation in scientific and technical undertakings.’<sup>37</sup>

More than most of his successors, Smooker engaged deeply with the then small outback community, including authoring an Alice Springs Community College (later to become part of Charles Darwin University) submission to the Northern Territory Education Council.<sup>38</sup> Smooker represented the Australian government at Pine Gap longer than any of his successors, leaving in 1978 after nine years at the post. During that time the base not only became operational, but also grew well beyond its original size.

Succeeding Smooker in 1979, Wallace Caplehorn also came from the Defence Science and Technology Organisation’s Policy and Planning Division, where ‘he had for many years been responsible for liaison on joint defence undertakings’, as Specialist Defence Officer in the Special Undertakings Section.<sup>39</sup> Caplehorn was involved in Pine Gap from almost its very beginning in Australia, as a member of the site selection team lead by Dr R.E.L.D. White, First Assistant Secretary of the Defence Science Division of the Department of Defence.<sup>40</sup>

Like Smooker, Caplehorn brought a combination of military experience and technical interest but with a higher level of scientific training. Caplehorn was something of a polymath, with an advanced degree in physics and academic publications in nuclear physics, operations research, psychology, and military affairs.

Caplehorn was born in 1915, the son of a soldier settler wounded in the First World War, who settled near Casterton in Victoria’s Western District. Caplehorn was educated at Ballarat College (dux, 1932), before training at the Victorian School of Forestry and working with the Victorian Forests Commission.<sup>41</sup> Entering the Royal Military College, Duntroon, in June 1939

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<sup>37</sup> Department of Defence, *Functional Directory*, October 1976, p.51.

<sup>38</sup> Final report, Alice Springs Community College assessment: College and community presentation to Northern Territory Further Education Council, 1st., 2nd. & 3rd June 1977.

<sup>39</sup> Department of Defence, *Functional Directory*, October 1975, p.39; Department of Defence, *Functional Directory*, October 1976, p.51; Department of Defence, *Functional Directory*, October 1977, p. 54; and Desmond Ball, *A Suitable Piece of Real Estate: American Installations in Australia*, (Hale & Iremonger, Sydney, 1980), p. 63.

<sup>40</sup> Desmond Ball, *Pine Gap: Australia and the US geostationary signals intelligence satellite program*, Allen & Unwin, Sydney, 1988, p. 5; and Desmond Ball, interviews with members of the 1965-66 Special Project Team.

<sup>41</sup> On Caplehorn’s early life see Langkoop Memorial Hall, North-West of Casterton, Victoria, Australia, "Elderslie" WW1 Soldier Settlers' Commemorative Stone, Langkoop (near Casterton), S-W Victoria, Australia, Glenelg & Wannon Region, S-W Victoria, Australia, at [http://www.swvic.org/casterton/langkoop\\_memorial.htm](http://www.swvic.org/casterton/langkoop_memorial.htm); 'CAPLEHORN, Wallace Ferrier', *ACT Memorial*, Australian Capital Territory, at <http://www.memorial.act.gov.au/person.php?id=503>;



for a 6-month abridged officer-training course, Caplehorn was posted to Darwin in January 1940, finishing the war as a captain.

**Figure 11. Lieutenant W.F. Caplehorn (second from right) en route to Darwin posting, January 1940**



Source: 'Going To Darwin', *News* (Adelaide), 3 January 1940, p. 8  
<http://nla.gov.au/nla.news-article131548195>.

After the war Caplehorn remained in the Army, but received a scholarship to take 'a brilliant science degree' at Melbourne University, receiving a Master of Science degree in 1950 for a thesis in nuclear physics.<sup>42</sup>

Caplehorn resumed his military career, with a strong involvement in scientific issues.<sup>43</sup> His interest in nuclear physics and its military applications was long-term. On October 15, 1953,

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Death notice, CAPLEHORN, Wallace Ferrier, *Canberra Times*, 15 April 1993; W. Gordon Mein, *History of Ballarat College, 1864-1964*, Ballarat College Council, Ballarat, 1964, p. 121; and 'Country News: Trentham', *The Argus*, 23 June 1939, page 13, at <http://nla.gov.au/nla.news-article12141873>.

<sup>42</sup> 'Trinity College, Scholarships and Exhibitions', *The Age*, 21 December 1945, at <http://nla.gov.au/nla.news-article205645400>; and Wallace Ferrier Caplehorn, *The Scattering of Neutrons by Protons and by Deuterons*, University of Melbourne, 1950, at

<https://books.google.com.au/books?id=xizMNAAACA&dq=Wallace+Caplehorn+physics&hl=en&sa=X&ved=0CCsQ6AEwAGoVChMIoMSYxtXVyAIVwuamCh2FXQgb>.

<sup>43</sup> In the late 1950s Caplehorn published a paper on 'An application of operational research to war games', and in the early- to mid- 1960s co-published at least one research study on child intelligence. See W.F.Caplehorn, 'An application of operational research to war games', cited in *Operations Research*, (Operations Research Society of America), Vol. 7, 1959, p.114, at

<https://books.google.com.au/books?id=JFBEEAAAIAAJ&q=%22w.f.caplehorn%22&dq=%22w.f.caplehorn%22&hl=en&sa=X&ved=0CBoQ6AEwADgKahUKEwjytuLovNfIAhWH46YKHxNmBNE>; and W. F. Caplehorn

the 9-kiloton *Totem 1* British atomic test weapon was exploded over Emu Plains in South Australia. Fallout spread downwind in a black mist for 250 km over the communities of Wallatina and Wellbourne Hill and towards Coober Pedy, causing widespread sickness, and according to indigenous communities, many deaths.<sup>44</sup> Five days later, Lt-Col. Caplehorn arrived at the *Totem 1* site as staff officer accompanying W.R. Blunden, the Scientific Adviser to the Military Board (Chief of the General Staff).<sup>45</sup> Two years later, Caplehorn and Blunden both contributed articles to a special issue of the Australian Army Journal, titled *Atomic Digest No. 1*. Caplehorn's 'first principles' study dealt with tactical considerations of defence with and against nuclear weapons, particularly nuclear artillery.

After leaving the army in 1961, Caplehorn, a civilian employee of the Defence Science and Technology Organisation, represented Defence Department interests in a series of highly classified interdepartmental meetings in mid-1965 on 'the introduction of nuclear power to Australia' and on IAEA safeguards – or more precisely on the potential to obviate 'their effect on Australian atomic weapons production capability'.<sup>46</sup>

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and A. J. Sutton, 'Need achievement and its relation to school performance, anxiety and intelligence', *Australian Journal of Psychology*, Volume 17, Issue 1, pages 44–51, April 1965.

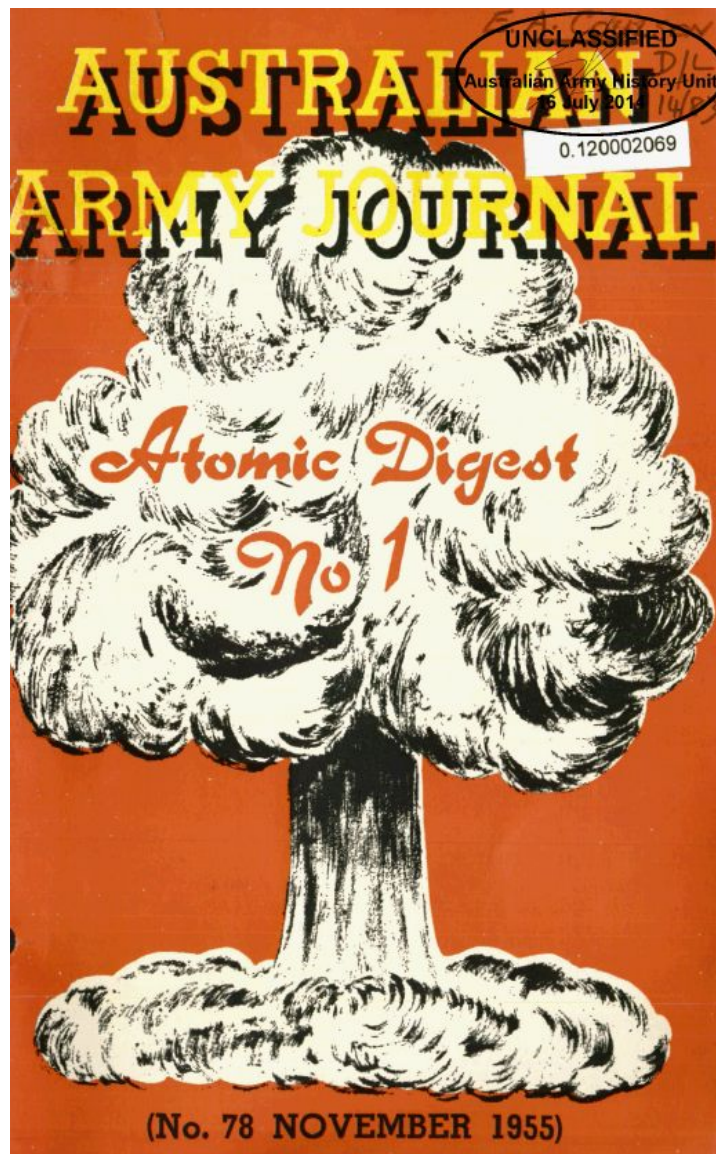
<sup>44</sup> Roger Cross and Avon Hudson, *Beyond Belief: The British Bomb Tests: Australia's Veterans Speak Out*. Wakefield Press, 2006, pp. 23–25.

<sup>45</sup> *The Report of the Royal Commission into British Nuclear Tests in Australia, Volume 2*, (Australian Government Publishing Service, Canberra, 1985), p. III-I, at

[http://www.industry.gov.au/resource/Documents/radioactive\\_waste/RoyalCommissioninToBritishNucleartestsinAustraliaVol%202.pdf](http://www.industry.gov.au/resource/Documents/radioactive_waste/RoyalCommissioninToBritishNucleartestsinAustraliaVol%202.pdf).

<sup>46</sup> Document 66. 'Note by Department of External Affairs on Interdepartmental Committee Meeting On IAEA Safeguards, Canberra, 22 June 1965', and Document 69. 'Record by Evans of Interdepartmental Meeting, (Secret) Canberra, 1 July 1965', both in Wayne Reynolds and David Lee (eds.), *Documents on Australian Foreign Policy: Australia and the Nuclear Non-Proliferation Treaty 1945–1974*, Australian Department of Foreign Affairs and Trade, 2013, p. 93.

Figure 12. Atomic Digest No. 1  
Australian Army Journal, No. 78 November 1955



Ivo Parker had a four-year posting following Caplehorn from 1980 to 1984. Parker, who graduated from Melbourne University as an electrical engineer in 1956, was an officer in the Joint Intelligence Bureau (JIB) in the mid-1960s working under R.H. Mathams, the head of the bureau, on Chinese missile and nuclear weapons developments.<sup>47</sup> Parker held a JIB post in the Australian Embassy in Washington, where in the period 1972-1974 he met on a number of occasions with the Director of Central Intelligence, William Colby, and the Deputy Director,

<sup>47</sup> R.H.Mathams, *Sub Rosa: Memoirs of an Australian Intelligence Analyst*, Allen & Unwin, Sydney, 1982.



General Vernon Waters.<sup>48</sup> The Henley-on-Todd Regatta magazine recalled him, incorrectly as to his posting, as

our ASIO man in town during the 80's. He might have been an adept spy catcher but was in many ways naive and unworldly.<sup>49</sup>

**Figure 13. W.A.L. 'Bert' Forsyth  
Australian Defence Representative,  
Pine Gap, 1984-1987**



Source: 'Bert Forsyth, Deputy Director', *Tidbinbilla Staff Photos*, at [http://www.honeysucklecreek.net/other\\_stations/tidbinbilla/tid\\_staff\\_photos.html](http://www.honeysucklecreek.net/other_stations/tidbinbilla/tid_staff_photos.html).

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<sup>48</sup> U.S. Officials Received (Amb, DCM, Military Attaches & Government', Central Intelligence Agency, CIA-RDP80R01731R002100090001-3, at [http://www.foia.cia.gov/sites/default/files/document\\_conversions/5829/CIA-RDP80R01731R002100090001-3.pdf](http://www.foia.cia.gov/sites/default/files/document_conversions/5829/CIA-RDP80R01731R002100090001-3.pdf); '1972 Invitations extended and accepted by DDCI', Central Intelligence Agency, CIA-RDP80R01731R002100090006-8, at [http://www.foia.cia.gov/sites/default/files/document\\_conversions/5829/CIA-RDP80R01731R002100090006-8.pdf](http://www.foia.cia.gov/sites/default/files/document_conversions/5829/CIA-RDP80R01731R002100090006-8.pdf); and '1973 Invitations extended and accepted by DDCI', Central Intelligence Agency, at [http://www.foia.cia.gov/sites/default/files/document\\_conversions/5829/CIA-RDP80R01731R002100090006-8.pdf](http://www.foia.cia.gov/sites/default/files/document_conversions/5829/CIA-RDP80R01731R002100090006-8.pdf).

<sup>49</sup> No 2 - Henley-on-Todd Regatta, at [www.henleyontodd.com.au/index.php/2013-01-02-06-46.../44-no-2](http://www.henleyontodd.com.au/index.php/2013-01-02-06-46.../44-no-2).

W.A.L. (“Bert”) Forsyth brought a quite different background to the post of Defence Representative when he arrived in 1984. Forsyth began his career as a geophysicist trainee in the Department of Supply’s Bureau of Mineral Resources, Geology and Geophysics in 1947, praised for his work surveying potential gold ore country near Coolgardie.<sup>50</sup> After a series of geophysical studies for the Department of Supply in the 1950s, by 1965 Forsyth had risen to become a Geophysicist Class 4 in the Oil Search section of the Petroleum Exploration Branch of the Bureau of Mineral Resources, Geology and Geophysics, which had then been shifted to the Department of National Development.<sup>51</sup>

Three years later, however, Forsyth had moved in a different direction, back into the Department of Supply, but this time to the American Projects Branch of the Weapons Research Establishment, as Deputy Director of the recently opened Tidbinbilla Deep Space Communication Complex.<sup>52</sup> Tidbinbilla was one of three stations built by the National Aeronautics and Space Administration (NASA) in the ACT, supporting many deep space missions, including the Apollo moon-landing program.<sup>53</sup> A 1967 staff parody of the Harry Belafonte hit *Banana Boat Song* captured the shift in Forsyth’s interests exactly, and with more prescience than the author knew:

Bert Forsyth studying art of telemetry,  
(five o’clock an we wan go home.)  
with a miner’s pick and a book on geology.  
Five o’clock an we wan go home.<sup>54</sup>

At Tidbinbilla Forsyth had been involved in cooperation with US officials in NASA and the Goddard Space Center, experience that served him well when he moved from the Weapons Research Establishment to the Defence Science and Technology Organisation. In March 1984, just before he left for Pine Gap. Forsyth was a senior officer in DSTO’s Special Undertakings Section within the DSTO Programs and Administration Division. This section was responsible

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<sup>50</sup> J.C. Dooley, W.A.L. Forsyth & L.A. Richardson, Geophysical Survey of Hampton Plains Areas, Coolgardie, W.A., Plans G9 and G10 (Sheets 1 to 6), Department of Supply And Shipping, Bureau of Mineral Resources, Geology and Geophysics, Report No. 1947/9, at [http://www.ga.gov.au/corporate\\_data/9715/Rec1947\\_009.pdf](http://www.ga.gov.au/corporate_data/9715/Rec1947_009.pdf).

<sup>51</sup> W.A.L. Forsyth, Inverell Airborne Magnetic And Radiometric Survey, N.S.W. 1958, Bureau of Mineral Resources, Geology and Geophysics, Department of National Development, Records 1960 No. 131; and 1965 Programme and 1966 Tentative Programme, Bureau of Mineral Resources, Geology and Geophysics, Department of National Development, Records, 1967/58.

<sup>52</sup> 'Australian Stations Serve Space Program Since Project Mercury', *Technical Information Bulletin: The Manned Flight Network*, Goddard Space Flight Center, Vol. 6, No. 8, 5 June 1969, p.1, at [http://www.honeysucklecreek.net/images/msfn\\_images/TIBs/TIB-6-08.pdf](http://www.honeysucklecreek.net/images/msfn_images/TIBs/TIB-6-08.pdf).

<sup>53</sup> The others, no longer functioning, were the Ororal Valley Tracking Station and the Honeysuckle Creek Tracking Station. On these and other NASA activities in Australia at that time see Desmond Ball, *A Suitable Piece of Real Estate: American Installations in Australia*, (Hale & Iremonger, Sydney, 1980), pp. 103-110.

<sup>54</sup> “Please Mr. Hamilton”: The Banana Boat Song’, *Honeysuckle Creek Tracking Station: 1967–1981: People and Stories*, at [http://honeysucklecreek.net/people/banana\\_boat.html](http://honeysucklecreek.net/people/banana_boat.html).

for ‘management of joint undertakings, including management of co-operating agency responsibilities in joint undertakings.’<sup>55</sup> Forsyth left Pine Gap in January 1987.

Michael Busch, who followed Forsyth, had been acting ADR in July 1986, while Forsyth was on leave. At DSTO in Canberra, Busch had been in the External Relations Branch in the International Programs Section, where he was

responsible for the development of and review of technical aspects of DSTO participation in co-operation with overseas governments through joint projects, complementary programs and exchange of information.<sup>56</sup>

In this post Busch had also been responsible for coordination of joint activity in The Technical Cooperation Program (TTCP), which

consists of a series of multinational fora geared toward technical cooperation in defense technology. The program enables technical experts from the U.S., UK, Australia, New Zealand, and Canada to share their knowledge and research.<sup>57</sup>

Described as the ‘acting Australia Defence Department attaché to Pine Gap’, Busch said he and his colleagues at the base were puzzled about ‘a mysterious metal ball which fell from the sky on a remote area of southwest Northern Territory’ in July 1986, reportedly saying, ‘we have no idea what it is’.<sup>58</sup>

Busch’s successor, John McCarthy, had the longest posting at Pine Gap of any senior representatives of the Australian Government. McCarthy served as Deputy Chief of Facility over two separate tours, in 1988 – 1992 and again in 1999 – 2002, as well having two tours at Pine Gap in another post before 1988.<sup>59</sup> McCarthy was 43 when he first took the deputy’s position, coming from the staff of the Defence Attaché in Washington. A Level 2 officer in the Commonwealth government’s Senior Executive Service, McCarthy reported to Deputy Secretary (Strategy and Intelligence) Paul Dibb through an Assistant Secretary (Special Undertakings).

As a full-page profile in *The Australian* newspaper described him in 1989, McCarthy was

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<sup>55</sup> Department of Defence, *Functional Directory*, (DRB 6), March 1984, p. 83.

<sup>56</sup> Department of Defence, *Functional Directory*, (DRB 6), March 1984, p. 132.

<sup>57</sup> United States Government Submission to the Joint Committee on Foreign Affairs, Defence, and Trade's Inquiry into Australia-United States Defence Relations, Parliament of the Commonwealth of Australia, February 2004. Report on the Inquiry into Australia's Defence Relations with the United States, Joint Standing Committee on Foreign Affairs, Defence and Trade, Parliament of the Commonwealth of Australia, 22 May 2006, at [http://www.aph.gov.au/Parliamentary\\_Business/Committees/House\\_of\\_Representatives\\_Committees?url=jfad/t/relations/report.htm](http://www.aph.gov.au/Parliamentary_Business/Committees/House_of_Representatives_Committees?url=jfad/t/relations/report.htm).

<sup>58</sup> Candace Sutton, ‘“Space junk” puzzles scientists’, *Sunday Telegraph*, 20 July 1986.

<sup>59</sup> Anthony Hoy, ‘The Business-Card Spy’, *Weekend Australian*, 27-28 May 1989.

to all intents and purposes a relatively innocuous, happily married father of six, Rotarian, and active member of his church community. McCarthy is the human face to the Hawke Government's resolution to demystify security and intelligence operations. He is the business-card spy, complete with non-silent telephone directory listing.<sup>60</sup>

McCarthy was the first amongst his colleagues to speak relatively openly about the role of the base and the activities of the 600 people who worked there, who, he said, 'are certainly not a pack of warmongers':

We are very committed to our tasks directed towards the maintenance of world peace and to the procedures needed to ensure that. It is very satisfying to be able to work in an environment where that is the policy.

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<sup>60</sup> *Ibid.*



**Figure 14. John McCarthy, Deputy Chief of Facility Pine Gap  
1988-92, 1999-2002**



Source: Anthony Hoy, 'The Business-Card Spy', *Weekend Australian*, 27-28 May 1989.

Emphasizing the increased role for Australia in management and operation of the base negotiated by the Hawke government McCarthy described his role as assisting Chief of Facility Don Kingsley 'in the management of all aspects of Pine Gap' and being 'solely responsible for the facility's security'. Most importantly for the government's stress on the base's contribution to maintaining the global nuclear balance, the *Australian* profile reported that

one of McCarthy's main functions at Pine Gap is to verify arms control and disarmament measures.

Stressing that Australia 'can fully utilise the equipment at Pine Gap', McCarthy emphasized the technological advantage this gave Australia over regional powers, reportedly saying that

Pine Gap plays a vital role in intelligence gathering on the activities of Indonesia's defence forces and other Southeast Asian defence and intelligence operations.<sup>61</sup>

In 2002 McCarthy responded to a local media inquiry about the nature of the base's activities by referring back to 'the very complete statement' made by Hawke in Parliament in November 1988, which stressed its role in the maintenance of arms control verification as a foundation of a stable global nuclear balance.<sup>62</sup> McCarthy summarised and updated that statement:

Pine Gap is a satellite ground station whose function is to collect intelligence data which supports the national security of both Australia and the United States. Intelligence collected at Pine Gap contributes importantly to the verification of arms control and disarmament agreements. The value of that data has become more and more evident over the last year or two, as disarmament has moved from being an aspiration to become an emerging reality.<sup>63</sup>

McCarthy would have gained rather less credibility in this open-door policy in 2001 when asked about preparations for the possibility of a nuclear missile attack on the critically important base, explaining that

the [Northern] Territory Emergency Services would be responsible for assistance to the town population in the event of an attack.<sup>64</sup>

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<sup>61</sup> *Ibid.*

<sup>62</sup> *Joint Defence Facilities*, R.J.L. Hawke, Prime Minister, Ministerial Statement, House of Representatives, Commonwealth Parliamentary Debates, 22 November 1988, p. 2937.

<sup>63</sup> Kieran Finnane, 'Snowdon's new demand for Pine Gap answers as major protest is planned', *Alice Springs News*, 13 March 2002, at <http://www.alicespringsnews.com.au/0906.html>.

<sup>64</sup> At the time the mayor of Alice Springs, Fran Kilgariff, said she had inquired into this matter and 'was advised that the plan had been recently upgraded and is adequate.' Scott Campbell-Smith, 'What if the bomb hits the base?' *Alice Springs News*, 21 March 2001, at <http://www.alicespringsnews.com.au/0807.html>. See also Desmond Ball, 'Limiting damage from Nuclear Attack', in Desmond Ball and J.O. Langtry (eds.), *Civil Defence and Australia's Security in the Nuclear Age*, (George Allen and Unwin, Sydney, 1983), pp. 143-181; and Richard Tanter, 'Possibilities and effects of a nuclear missile attack on Pine Gap', *Australian Defence Facilities*, Nautilus Institute, 30 October 2013, at <http://nautilus.org/briefing-books/australian-defence-facilities/possibilities-and-effects-of-a-nuclear-missile-attack-on-pine-gap/>.

Janet Tyler succeeded McCarthy after his first tour as Australian Defence Representative, arriving in 1992 and leaving in 1995. Like McCarthy, Tyler publicly reiterated the Hawke government position that government had ‘full knowledge of the base’s role’, but reportedly went further to claim, improbably, that the public also had such ‘full knowledge’. Tyler said she was ‘convinced that Australia will have full access to intelligence data collected at Pine Gap’, and that ‘I have access to all the information that is available’.

Well, I’m fully integrated, and Australians are fully integrated at the facility, and I’m a joint senior manager there.<sup>65</sup>

Tyler, ‘who is one of the five most senior women in the Defence Department’, maintained that, as the first woman in the post of deputy to the American commander, ‘gender was not a big problem in her career’.<sup>66</sup>

Brian Ely followed Tyler, arriving in 1995, following a career in the departments of Defence, Foreign Affairs, and Prime Minister and Cabinet.<sup>67</sup> In March 1998 Ely was reported as saying that the base was involved in discussions about the impending sale of Alice Springs airport. The Alice Springs News maintained that

Pine Gap makes some financial contribution towards the upkeep of the main runway. However, under a military agreement between the two countries, no landing charges apply to the giant US Airforce Starlifter and Galaxy transport planes landing here at least weekly with supplies for Pine Gap.<sup>68</sup>

After leaving Pine Gap, Ely joined the Northern Territory government as Chief of Staff to the Chief Minister.<sup>69</sup>

## Deputy Chiefs of Facility

The last Australian Defence Representative, John McCarthy (1988-1992, and 1999-2002),

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<sup>65</sup> ‘Monitoring Perth Media’, J. Griffin Pty. Ltd., 29 January 1992; and DPR, ‘Electronic News Summary’. January 1992.

<sup>66</sup> ‘Monitoring Perth Media’, J. Griffin Pty. Ltd., 29 January 1992; and DPR, ‘Electronic News Summary’. January 1992.

<sup>67</sup> *Annual Report 2001 - 02*, Department of Business, Industry and Resource Development, Northern Territory Government, p. 20, at [http://www.nt.gov.au/d/Content/File/p/AR/0102\\_AR\\_DBIRD.pdf](http://www.nt.gov.au/d/Content/File/p/AR/0102_AR_DBIRD.pdf).

<sup>68</sup> Erwin Chlanda, “How the dream of local control over the Alice airport evaporated”, *Alice Springs News*, 11 March 1998, at <http://www.alicespringsnews.com.au/0506.html>.

<sup>69</sup> *Annual Report 2001 - 02*, Department of Business, Industry and Resource Development, Northern Territory Government, p. 20, at [http://www.nt.gov.au/d/Content/File/p/AR/0102\\_AR\\_DBIRD.pdf](http://www.nt.gov.au/d/Content/File/p/AR/0102_AR_DBIRD.pdf).

was designated in March 2002 as the ‘Australian deputy chief of the facility’.<sup>70</sup> All subsequent incumbents have been formally designated as ‘Deputy Chief of Facility JDFPG’.

**Table 4.**  
**Deputy Chiefs of Facility, 1999-2015**

John McCarthy	1999 — 2002
?	? - ?
Rachel Noble	? - ?
Michael Burgess	01.2006 – 01.2008
Cameron Ashe	2007 – 2009
Margaret Larkin	2009 – 07.2012
Nicholas Post	25.01 2013 – 01.2015
Gary Thorpe	01.2015 -

McCarthy was still at Pine Gap as the Deputy Chief of Facility in March 2002, and in January 2003 he was identified as Assistant Secretary Technical Intelligence. It is not clear when his successor arrived, but a year later as Assistant Secretary Capability Assurance/Director General Intelligence Capability and Support to Operations McCarthy had returned to Canberra.<sup>71</sup>

The next known Deputy Chief was Rachel Noble, who occupied the position at some point between 2003 and January 2006. After leaving Pine Gap, Noble held a succession of high profile positions in the Defence Signals Directorate (DSD<sup>72</sup>) and the Defence Department, including Assistant Secretary Governance and Assistant Secretary Americas, North and South Asia and Europe. Noble then moved to the Department of Prime Minister and Cabinet (PM&C)

<sup>70</sup> Question upon Notice Defence: Pine Gap, 21 March 2002, Ms Plibersek to the Minister representing the Minister for Defence, Ms Vale, House of Representatives, Notice Paper Question No 286, 28 May 2002, Hansard: Pages 2555-8, at

<http://www.defence.gov.au/ips/parliament/qons/40th/house/0001-0500/H0286.htm>. Note however that in 1989, John McCarthy identified himself as ‘Deputy Chief, Department of Defence, Joint Defence Facility, Pine Gap’.

Anthony Hoy, ‘The Business-Card Spy’, *Weekend Australian*, 27-28 May 1989.

<sup>71</sup> *Defence Annual Report 2002-03*, Department of Defence, Chapter One - Overview, p. 62, at <http://www.defence.gov.au/annualreports/02-03/pdf/01.pdf>; and ‘Defence Information Environment Committee Senior Committees, Defence Governance Framework’, *Defence Annual Report 2003-04*, Department of Defence, at [http://www.defence.gov.au/AnnualReports/03-04/01\\_04\\_gov\\_5.htm](http://www.defence.gov.au/AnnualReports/03-04/01_04_gov_5.htm).

<sup>72</sup> The Defence Signals Directorate was redesignated the Australian Signals Directorate (ASD) in May 2013, reportedly without change in function, powers, or accountabilities. ‘Prime Minister and Minister for Defence – Joint Media Release – 2013 Defence White Paper: Renaming the Defence Signals Directorate and the Defence Imagery and Geospatial Organisation’, Ministers, Department of Defence, 3 May 2013, at <http://www.minister.defence.gov.au/2013/05/03/prime-minister-and-minister-for-defence-joint-media-release-2013-defence-white-paper-renaming-the-defence-signals-directorate-and-the-defence-imagery-and-geospatial-organisation/>.

in April 2009 when Prime Minister Kevin Rudd appointed her as the first National Security Chief Information Officer, moving into the PM&C National Security and International Policy Group.<sup>73</sup>

Three years later, Noble had returned to Defence, as First Assistant Secretary Ministerial and Executive Coordination and Communication, Defence Support and Reform Group. In May 2013 she became Chief Information Officer and National Director of Intelligence in the increasingly militarised Australian Customs and Border Protection Service.<sup>74</sup> By mid-2015, Noble was Deputy Secretary (Policy Group) of the Department of Immigration and Border Protection.<sup>75</sup>

**Figure 15. Rachel Noble, Deputy Chief of Facility**



Source: *Annual Report, Department of Prime Minister and Cabinet 2010-11*, Chapter 11, at [http://www.dpmc.gov.au/sites/default/files/publications/annual\\_reports/2010-11/html/chapter-11/01-corporate-governance.html](http://www.dpmc.gov.au/sites/default/files/publications/annual_reports/2010-11/html/chapter-11/01-corporate-governance.html).

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<sup>73</sup> 'Rudd appoints National Security CIO', *Intermedium*, 6 April 2009, at <http://www.intermedium.com.au/article/rudd-appoints-national-security-cio>; and 'Division profiles, PM&C', p. 363, in documents released under the Freedom of Information Act, News Limited, at <http://resources.news.com.au/files/2011/12/20/1226226/481402-foi-document-3.pdf>.

<sup>74</sup> "Division profiles", p. 363, at <http://resources.news.com.au/files/2011/12/20/1226226/481402-foi-document-3.pdf>; Liam Tung, "Rudd appoints first national security CIO", ZD Net, 3 April 2009, at <http://www.zdnet.com/rudd-appoints-first-national-security-cio-1339295803/>; Executive, Defence Support and Reform Group, Department of Defence, at [http://www.defence.gov.au/dsg/dsg\\_exec.htm](http://www.defence.gov.au/dsg/dsg_exec.htm); and Renai LeMay, "Customs appoints new CIO, CTO", Delimiter, 3 June 2013, at <http://delimiter.com.au/2013/06/03/customs-appoints-new-cio-cto/>.

<sup>75</sup> 'Rachel Noble PSM', Department of Immigration and Border Protection, at <http://www.border.gov.au/about/corporate/who-we-are/senior-staff/rachel-noble>.



The next known Deputy Chief after Noble was Michael Burgess (01.2006 – 01.2008), appointed, like McCarthy, simultaneously as Deputy Chief of Facility and Assistant Secretary Technical Intelligence. Beginning his career as an electronic engineer in the Defence Science and Technology Organisation working on radar, Burgess moved to DSD in 1995 as a collection engineer, and within three years moved into managerial roles in DSD, first in signals intelligence collection development and then in the Industry Engagement, Information Security branch. During 2000-01 Burgess was seconded to DSTO, working at Northrop Grumman's Baltimore facility as technical support to the Wedgetail Airborne Early Warning & Control project. Returning to Canberra and DSD, Burgess continued in DSD management as project director (DEF 21 [Blue Shift] and DEF 223 [Tailfeather]), and in 2004 as Assistant Secretary Capability Provision (ASCP).<sup>76</sup> After leaving Pine Gap in January 2008, Burgess returned to Canberra, and in August 2008 became Assistant Secretary Executive, and subsequently Deputy Director Information Security at DSD. In April 2012, Burgess was Deputy Director of Cyber and Information Security at the Defence Signals Directorate, and First Assistant Secretary Cyber and Information Security. Burgess joined the private sector in February 2013 as Chief Information Security Officer for Telstra.<sup>77</sup>

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<sup>76</sup> 'Speakers' Biographies: Mike Burgess', *Program Book, 21st Security in Government Conference 2008: The Evolution of Security*, Attorney-General's Department, National Convention Centre, Canberra, 16-18 September 2008, pp. 14-15.

<sup>77</sup> 'AISA Canberra Branch Meeting: Security Thought Leadership from Mike Burgess', Australian Security Information Association, Canberra Branch, at <https://www.aisa.org.au/branches/canberra/events/previous/aisa-canberra-branch-meeting-security-thought-leadership-from-mike-burgess/>.

**Figure 16. Michael Burgess, Deputy Chief of Facility, 2006-2008**



Source: Mathew Hinge, 'Making Australia a hard target', *Defence*, Issue 7, (2012) at <http://www.defence.gov.au/defencemagazine/issue/7/articles/24.html>

Cameron Ashe (2007 – 2009) came to Pine Gap after 19 years in DSD, including two overseas liaison positions with Five Eyes counterpart organisations. For two years (1992-94), Ashe was DSD's 'first integrated officer' in New Zealand's Government Communications Security Bureau (GCSB), and in 1998-2000 Ashe was deputy head of DSD's liaison office to the NSA in Washington. Immediately prior to his time at Pine Gap Ashe was promoted to the Senior Executive Service in the Defence Department as an Assistant Secretary, 'responsible for intelligence policy, personnel, and security at DSD.' After leaving Pine Gap, Ashe 'made the switch to Intelligence Assessment' in February 2010 as Assistant Secretary Southeast Asia in the Defence Intelligence Organisation (DIO), and later becoming Deputy Director. By December 2013 Ashe had made another international move, becoming Deputy Director Intelligence (J2) for South East Asia at US Pacific Command (PACOM). Ashe was still in that position, living in Kailua, Hawaii, in December 2014, 'one of two senior embedded Australian officers at PACOM'.<sup>78</sup>

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<sup>78</sup> Robert K. Ackerman, 'Australia Takes Nationwide Approach to Cybersecurity', *Signal*, 4 December 2013, at <http://www.afcea.org/content/?q=australia-takes-nationwide-approach-cybersecurity>; and 'Cameron Ashe, Deputy Director for Intelligence South East Asia, US Pacific Command', AFCEA, TechNet Asia-Pacific 2014, 9-11 December 2014, [http://www.afcea.org/events/asiapacific/13/documents/DJ2\\_Bio\\_CameronAshe.doc](http://www.afcea.org/events/asiapacific/13/documents/DJ2_Bio_CameronAshe.doc).



**Figure 17. Cameron Ashe, Deputy Chief of Facility, 2007-2009**



Source:<sup>1</sup> ‘Cameron Ashe, Deputy Director for Intelligence South East Asia, US Pacific Command’, AFCEA, TechNet Asia-Pacific 2014, 9-11 December 2014, at [http://www.afcea.org/events/asiapacific/13/documents/DJ2\\_Bio\\_CameronAshe.doc](http://www.afcea.org/events/asiapacific/13/documents/DJ2_Bio_CameronAshe.doc).

There were at least two notable aspects to Ashe’s time as Australian Deputy Chief of Facility at Pine Gap. Firstly, Ashe was identified in his PACOM biography as having had in conjunction with the US Chief of Facility...responsibility for all aspects of the facility’s operations as well as ensuring that the Australian Government had Full Knowledge and Concurrence of activities at JDFPG.<sup>79</sup>

Secondly, Ashe was the senior Australian officer at Pine Gap during installation of the Torus multi-beam antenna in 2008. This marked a major expansion of Pine Gap’s FORNSAT/COMSAT role intercepting transmissions from foreign communications satellites over the Indian Ocean and Southeast Asia and East Asia. This was one of six Torus antennas

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<sup>79</sup> *Ibid.*

installed at five acknowledged and one covert Five Eyes FORNSAT/COMSAT collection sites between 2007 and 2013.<sup>80</sup>

Before succeeding Ashe in 2009 as Deputy Chief at Pine Gap, Margaret Larkin was Assistant Secretary, Executive Branch, Defence Signals Directorate.<sup>81</sup> She was described as ‘Assistant Secretary Technical Intelligence, Alice Springs’ in 2011, and was still in the position in July 2012 when she oversaw the planning of a new gated community for Pine Gap staff in Alice Springs as part of the ‘modernising of the housing fleet’.<sup>82</sup> As a young Air Force flight lieutenant Larkin was deployed to Saudi Arabia in 1991 in the Gulf War as one of a team of five Australian intelligence specialists with ‘the US-led Joint Imagery Production Complex at Riyadh International Air Base’.<sup>83</sup>

Larkin introduced her successor, Dr Nicholas Post, to the Alice Springs mayor in July 2012.<sup>84</sup> Post continued in the position until January 2015.<sup>85</sup>

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<sup>80</sup> Desmond Ball, Duncan Campbell, Bill Robinson and Richard Tanter, *Expanded Communications Satellite Surveillance and Intelligence Activities utilising Multi-beam Antenna Systems*, Nautilus Institute, Special Report, 28 May 2015, p. 9 and pp. 29-31, at <http://nautilus.org/napsnet/napsnet-special-reports/expanded-communications-satellite-surveillance-and-intelligence-activities-utilising-multi-beam-antenna-systems/attachment/torus-satcom/>.

<sup>81</sup> Review of Administration and Expenditure No. 7 – Australian Intelligence Agencies, Parliamentary Joint Committee on Intelligence and Security, Parliament of Australia, May 2010, Appendix B – Witnesses appearing at Private Hearings, Canberra, 21 April 2009, at <http://parlinfo.aph.gov.au/parlInfo/search/summary/summary.w3p;adv=yes;orderBy=customrank;page=0;resCnt=Default;query=%22margaret+larkin%22>.

<sup>82</sup> Erwin Chlanda, ‘20m gated community proposed for Pine Gap staff’, *Alice Springs News*, 5 July 2012, at <http://www.alicespringsnews.com.au/2012/07/05/20m-gated-community-proposed-for-pine-gap-staff/>.

<sup>83</sup> ‘Personal experiences of war’, *Air Force*, Vol. 46, No. 9, 3 June 2004, at <http://www.defence.gov.au/news/raafnews/editions/4609/history/story02.htm>.

<sup>84</sup> Mayor’s Report, Alice Springs Council, Report No. 135/12 cncl, July 2012, at [http://www.alicesprings.nt.gov.au/sites/default/files/meetings/2012/20120730\\_CNCL/03\\_Agenda\\_Item\\_7.1\\_-\\_Mayor's\\_Report\\_30\\_July\\_2012.pdf](http://www.alicesprings.nt.gov.au/sites/default/files/meetings/2012/20120730_CNCL/03_Agenda_Item_7.1_-_Mayor's_Report_30_July_2012.pdf).

<sup>85</sup> Diary notes’, Vice-Regal program, Government House, Northern Territory, at <http://www.govhouse.nt.gov.au/ViceRegalProgram/DiaryNotes/Pages/Archive.aspx>; Mayor’s Report, Council Meeting, Alice Springs Council, Report No. 219/13cncl, 25 November 2013, at [http://www.alicesprings.nt.gov.au/sites/default/files/meetings/03\\_Agenda\\_7.1\\_-\\_Mayor%27s\\_Report\\_25\\_November\\_2013.pdf](http://www.alicesprings.nt.gov.au/sites/default/files/meetings/03_Agenda_7.1_-_Mayor%27s_Report_25_November_2013.pdf); Philip Dorling, ‘Australian outback station at forefront of US spying arsenal’, *The Age*, 26 July 2013, at <http://www.theage.com.au/it-pro/security-it/australian-outback-station-at-forefront-of-us-spying-arsenal-20130726-hv10h.html>; and Mayor’s Report to Council, Alice Springs Town Council, Report No. 4/15 cncl, 27 January 2015, at <http://www.alicesprings.nt.gov.au/sites/default/files/meetings/03.%20Mayor's%20Report%20150127.pdf>.

**Figure 18. Flight Lieutenant Margaret Larkin (sixth from right)**



Source: John Blaxland, *The Australian Army from Whitlam to Howard*, (Melbourne: Cambridge U.P., 2014), p. 89.

**Figure 19. Margaret Larkin, Deputy Chief of Facility, 2009–2012**



Source: 'Pine Gap Joins Solar Charge', *Centralian Advocate*, 5 July 2011, p. 4.

The current Deputy Chief of Facility, Gary Thorpe (1.2015 – present), was introduced to the mayor of Alice Springs by his predecessor in January 2015. Thorpe trained in computer

science at university (1986-1993), and came to Pine Gap after a four-year Defence IT executive posting in Canberra (1.2008 - 2.2012), before entering the executive service in February 2012.<sup>86</sup>

The Deputy Chief of Facility is assisted by a Policy, Plans and Communications Officer. This position was advertised by the Australian Department of Defence in July 2010, which described it as ‘ongoing’ and at APS Level 6. It said that ‘the successful applicant will work directly to the Deputy Chief of Facility Pine Gap providing policy and planning advice concerning the Australia-US arrangements for Pine Gap’, and that

the successful applicant will also engage with senior staff and local and Territory government on a wide range of issues.<sup>87</sup>

## The National Security Agency

Most of the US Government personnel engaged in operational activities at Pine Gap, whether civilian or military, are employed by the NSA. By the end of the 1980s, the NSA provided all the COMINT and ELINT personnel and about half of the TELINT crew at Pine Gap.<sup>88</sup> It now provides most of the TELINT/FISINT personnel. The FORNSAT/COMSAT interception and cyber-warfare activities are performed by military units directed by NSA.

By 1985, when the first Orion (Magnum-1) satellite was launched, the NSA was directly involved in the organisation of the SIGINT processing activities at Pine Gap. Major General William Odom, Director of the NSA in 1985-88, wrote in his diary on 20 August 1985 that ‘with RAINFALL/MAGNUM -- took new approach to ground processing. Modest first step, add more later’.<sup>89</sup>

As portrayed by David Rosenberg, who worked as an ELINT analyst in the Operations Room at Pine Gap for 18 years (1990-2008), the facility functions essentially as an NSA station. Not only are the great majority of the US civilian and military personnel at Pine Gap employed by the NSA, but NSA personnel occupy the main positions with respect to the management of operations, and the organisational structure for managing operations essentially reflects the

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<sup>86</sup> Mayor’s Report to Council, Alice Springs Town Council, Report No. 4/15 cncl, 27 January 2015; and ‘Gary Thorpe’, *LinkedIn*, at <https://www.linkedin.com/pub/gary-thorpe/96/21a/1a3>.

<sup>87</sup> ‘Policy Plans and Communications Officer’, *APS Jobs*, at <https://www.apsjobs.gov.au/SearchedNoticesView.aspx?Notices=10487912%3A1&mn=JobSearch>.

<sup>88</sup> Thomas R. Johnson, *American Cryptology During the Cold War, 1945-1989. Book II: Centralization Wins, 1960-1972*, (Center for Cryptologic History, National Security Agency, 1995), pp. 409-410, at <http://www2.gwu.edu/~nsarchiv/NSAEBB/NSAEBB441/docs/doc%201%202008-021%20Burr%20Release%20Document%201%20-%20Part%20A2.pdf>.

<sup>89</sup> Information from Jeffrey T. Richelson.

NSA's career structure. In 2000, Lieutenant General Michael Hayden, recently appointed Director of NSA, visited Pine Gap 'to receive an executive overview and take a carefully scripted tour of the Operations floor where operators at their workstations, both American and Australian, discussed many of our accomplishments with him'. According to Rosenberg, Hayden's 'arrival at Pine Gap was a great morale booster for those of us in Operations who were unable to meet with the senior leadership at NSA headquarters due to the remoteness of Alice Springs'.<sup>90</sup> Hayden visited the facility again in 2004, when he presided over the 'NSA promotion ceremony at Pine Gap'.<sup>91</sup>

Since the mid-1990s, the NSA has been able to receive SIGINT directly from Pine Gap's satellites for processing and analysis at its Regional SIGINT Operations Center (RSOC) in Hawaii. This was originally located in an underground site at Kunia (KRSOC), but in 2012 it moved to new premises in nearby Wahiawa and was renamed the Hawaii Regional Security Operations Center (HRSOC). The facility is also known as NSA/CSS Hawaii. The Air Intelligence Agency noted in an internal report for the period 1 January – 30 June 1996 that: 'The KRSOC received real-time high priority COMINT data from the [DELETED] overhead SIGINT satellite system'.<sup>92</sup>

## The Combined Support Group

The Combined Support Group (CSG), as described in more detail in an earlier paper, was formed in 1998 as the umbrella organisation for detachments of the Service Cryptologic Agencies (SCAs) posted to Pine Gap in 1998-99. These detachments currently consist of the Naval Information Operations Detachment (NIOD) Alice Springs, a detachment of the Naval Information Operations Command (NIOC) at Suitland, Maryland, which also reports to the Fleet Cyber Command/Tenth Fleet at Fort Meade and the Center for Information Dominance (CID) at NIOC Pensacola, Florida; Detachment 1 of the 25th Air Force's 566th Intelligence Squadron, 544th Intelligence, Surveillance and Reconnaissance Group; Detachment A of the US Army's 743rd Military Intelligence Battalion, 704th Military Intelligence Brigade; and Sub-Unit 1 of the Marine Cryptologic Support Battalion.<sup>93</sup> The number of Service personnel involved has

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<sup>90</sup> David Rosenberg, *Inside Pine Gap: The Spy Who Came in From the Desert*, (Hardie Grant Books, Melbourne, 2011), p. 93.

<sup>91</sup> *Ibid*, p. 122.

<sup>92</sup> Juan R. Jimenez, Dennis F. Casey, Gabriel G. Marshall, Sharon N. Wright-Davis and Joyce M. Hons, *History of the Air Intelligence Agency 1 January – 30 June 1996, Volume 1*, (History Office, Air Intelligence Agency, San Antonio, Texas, 15 December 1997), p. 87.

<sup>93</sup> The 566th Intelligence Squadron is a tenant organisation at the Aerospace Data Facility-Colorado at Buckley AFB, Colorado. The 25<sup>th</sup> Air Force was created in September 2014 through a redesignation of the Air Force Intelligence, Surveillance and Reconnaissance Agency (AFISRA) subordinate to the Air Combat Command. AFISRA itself was

remained fairly steady at about 105 (about 40 Navy, 30 Air Force, 30 Army and six Marines) since around 1990-2000, all of whom are involved in operations.<sup>94</sup>

The SCAs/CSG are mainly tasked by the NSA, although some of the Service personnel are effectively seconded to the NRO. Some Service personnel are involved with processing and analysing SIGINT collected by the NRO's Orion geosynchronous SIGINT satellites, garnering operational intelligence as the SIGINT satellites monitor ground-based emitters (including mobile phones) in areas of interest. The majority, however, are concerned with FORNSAT/COMSAT interception and cyber-warfare. They are undoubtedly key participants in NSA's X-Keyscore program at Pine Gap.

The CSG is commanded by one of the SCA detachment commanders. Lieutenant Commander David William Stender, who served as Officer-in-Charge of the NIOD in 1999-2000, was commander of the Combined Support Group during that period.<sup>95</sup> Lieutenant Commander James Hagy was commander of the CSG from May 2000 to February 2002 when he was Officer-in-Charge of the NIOD.<sup>96</sup> Subsequent commanders of the CSG have come from the Air Force and Army detachments as well as the NIOD.

## Contractors

Contractors are integrally involved with most aspects of operations as well as management, operational support and maintenance activities at Pine Gap.<sup>97</sup> About 60 contractor personnel work in the Operations Room. As David Rosenberg wrote in 2011,

Contractors have always played a key role at Pine Gap, and over the past forty years have helped with the mission in Operations and overall maintenance. Raytheon, the primary contractor inside the secure building, is tasked with manning positions within Operations, and its operators are referred to as 'rack jocks' because each operator sits in front of a tall rack of equipment, monitoring data and alerting Operations to anything new that might indicate an impending event.<sup>98</sup>

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the result of a redesignation of the Air Intelligence Agency in 2007. *Twenty-Fifth Air Force: Brief History*, at <http://www.25af.af.mil/shared/media/document/AFD-150520-021.pdf>.

<sup>94</sup> Desmond Ball, Bill Robinson and Richard Tanter, *The militarisation of Pine Gap: Organisations and Personnel*.

<sup>95</sup> United States Department of the Navy, 'Navy DET Combined SUPGRUAUS', at <http://publicdirectory.smartlink.navy.gov.us>.

<sup>96</sup> James Hagy, *LinkedIn*, at <https://www.linkedin.com/in/jehagy>.

<sup>97</sup> See Desmond Ball, Bill Robinson and Richard Tanter, *The corporatisation of Pine Gap*.

<sup>98</sup> David Rosenberg, *Inside Pine Gap: The Spy Who Came in From the Desert*, (Hardie Grant Books, Melbourne, 2011), pp. 40-41.



More specifically, Raytheon engineers have been involved in processing telemetry intercepted by the SIGINT satellites. Raytheon provides the hardware and software engineering support for the Telemetry Analysis Sub-System (TASS), a large FISINT processing system at Pine Gap.<sup>99</sup> In 2010, a Raytheon engineer ‘led the execution of Telemetry detection on various foreign instrumentation signals intelligence (FISINT) signals’ at Pine Gap.<sup>100</sup> Raytheon’s Phoenix project, which evidently involves activities conducted cooperatively at Pine Gap and Menwith Hill in the UK, ‘provides system engineering, system integration, and configuration management services’ which have operational as well as management dimensions.<sup>101</sup>

Northrop Grumman Corporation, which acquired TRW in 2002, inherited TRW’s responsibility for controlling Pine Gap’s geosynchronous SIGINT satellites, including satellite station-keeping, alignment of the intercept antennas on the satellites, and monitoring all aspects of ‘system and subsystem performance’. Northrop Grumman currently has some 55-60 personnel in its Atlantis program at Pine Gap, comprising an Operations Crew Department with 15-20 personnel, an Operations Support Team with 14, a Hardware Engineering Team with 16, and a Software Engineering Team with ten personnel.

General Dynamics Information Technology provides IT services for both management and operational purposes.<sup>102</sup>

The corporate personnel sometimes cause management difficulties. They are mainly concerned with enhancing their technical skills, gaining promotions and obtaining higher salaries, and more beholden to their companies than to the Chief of Facility or the Mission Directors.

## **The Chief of Operations**

The Chief of Operations (COP), sometimes also called the Director of Operations, is responsible, on behalf of the Chief and Deputy Chief of Facility, for oversight and direction of all operational activities at the facility, including personnel issues that affect operational efficiency and effectiveness.<sup>103</sup> Jeff White, who was Director of Operations from July 2003 to July 2005, says that he ‘led over 250 U.S. Government, Government of Australia, and civilian contractor

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<sup>99</sup> Kurt Hassler, *LinkedIn*, at <https://www.linkedin.com/pub/kurt-hassler/13/349/245>.

<sup>100</sup> Michael DeHay, ‘Resume’, at <http://www.indeed.com/r/Michael-DeHay/2e3977d2ce23a228?sp=0>.

<sup>101</sup> Raytheon Company, ‘Phoenix’, at <http://jobs.raytheon.com/australia/jobs/bring-your-talents-to-the-raytheon-system-engineering-and-integration-team-job-alice-springs-northern-territory-1-5266101>.

<sup>102</sup> General Dynamics Information Technology, ‘CM Analyst’, at [http://www.gdcareers.com/gdchq\\_jobs/main.cfm?pg=search&view=detail&recnum=44&totalrecs=2962&start=1&pagestart=1](http://www.gdcareers.com/gdchq_jobs/main.cfm?pg=search&view=detail&recnum=44&totalrecs=2962&start=1&pagestart=1).

<sup>103</sup> David Rosenberg, *Inside Pine Gap*, p. 55.

personnel in the performance of highly technical and advanced technology activities’, and that he ‘directed all facets of overseas operations to include support to combat operations achieving National Security objectives’. (White had previously served as chief of the Information Operations Division of the Navy Warfare Development Command at Newport, Rhode Island).<sup>104</sup> The position is always held by an American, normally an NSA officer or a military officer.<sup>105</sup>

The position of Deputy Chief of Operations is always held by an Australian, normally a civilian official from the Australian Signals Directorate (ASD). Former operators at Pine Gap have said that, as with the Chief of Facility and Deputy Chief of Facility, the positions of Chief of Operations and Deputy Chief of Operations ‘are on the equivalent Executive level with each respective position responsible for the tasking from their respective country and for dealing with matters concerning their country’s personnel at the Base’, although ‘the US submits much more tasking as its military is much more diversely deployed than Australia’s although both countries have similar interests in some tasking, such as weapons development’.<sup>106</sup>

Subordinate to the Chief and Deputy Chief of Operations is a Chief of Intelligence Operations, a position created by the Australian Department of Defence in 2010 and held by another Australian. In August 2010, the Department of Defence advertised this position, based in DSD’s Technical Intelligence Section but posted to Pine Gap, at Australian Public Service (APS) Executive Level 1, with a closing date for applications of 23 September 2010. It said that the ‘Department of Defence is looking for [an] experienced, highly focused Chief of Intelligence Operations at the Joint Defence Facility Pine Gap. The successful applicant will lead a large multi-national team, manage a complex array of technical operations, and provide operational support to senior leadership at Pine Gap.’<sup>107</sup>

Patrick Winter served as Chief of Intelligence from February 2011 to February 2013. He says that ‘as Chief of Intelligence at Joint Defence Facility Pine Gap I managed and led a large group of intelligence and operations staff, with teams responsible for analysis, policy development, training and engineering development’, that ‘I implemented major operational and organisational reforms for the US and Australian Governments, and provided policy advice to

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<sup>104</sup> Jeff White, *LinkedIn*, at <https://www.linkedin.com/pub/jeff-white/10/513/b13>.

<sup>105</sup> Private correspondence, 13 October 2015.

<sup>106</sup> Private correspondence, 13 October 2015.

<sup>107</sup> ‘Chief Intelligence Operations’, *APS Jobs*, at <https://www.apsjobs.gov.au/SearchingNoticesView.aspx?Notices=10494400:1&mn=JobSearch>.

senior figures from both’, and that ‘I was also responsible for the establishment of an indigenous Australian collection capability for a developing target of strategic significance’.

**Figure 20. Patrick Winter, Chief of Intelligence, 2011–2013**



Source: ‘Patrick Winter’, *LinkedIn*, at <https://au.linkedin.com/pub/patrick-winter/67/4b9/9b4>

Winter had previously been Assistant Director of DSD in charge of Support to Military Operations (December 2009 to February 2011). While at Pine Gap, he undertook a course on ‘Understanding China’ at the Defense Language Institute in Monterey, California.<sup>108</sup>

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<sup>108</sup> Patrick Winter, *LinkedIn*, at <https://www.linkedin.com/pub/patrick-winter/67/4b9/9b4>. This information is drawn from Winter’s *LinkedIn* page as it was when accessed in 3 February 2014. A large amount of detail on Winter’s career was subsequently removed. The February 2014 version of the page listed Winter’s ‘major accomplishments’ as Chief of Intelligence as follows:

- Project Manager for a major suite of reforms for the US Government.
- Developed policies and procedures for intelligence collection, contingency operations, reporting and engineering management.
- Negotiated and implemented major changes to an 80 million dollar US Government contract.
- Achieved savings of 52 staff in one overseas operational location, a reduction of 60%.
- As Acting Assistant Secretary – Technical Intelligence (ASTI) I led a large branch of the Department of Defence with staff in two countries, and managed the US-Australian relationship at Joint Defence Facility Pine Gap. My role included holding Ministerial Authority for monitoring and managing compliance with the Pine Gap Implementing Arrangement and Defence (Special Undertakings) Act.
- Provided project reporting to US agency heads, Australian ministers and the Secretary of the Department of Defence.
- Increased operational efficiency by 400% through the development of new innovative operational methods based on statistical analysis.
- Contributed to five US Presidential Daily Briefs, and produced eight operational briefings for the head of a major US intelligence agency.
- Became the first Australian selected to work in a leadership role in a specialist element of the US Intelligence Community.

## The Chiefs of Divisions

The operational activities are organised into functional Divisions, such as Satellite Control, which includes orientation of the intercept antennas; FISINT [Foreign Instrumentation Signals Intelligence], which has incorporated the original TELINT activity; COMINT, which includes monitoring specific satellite phones and cell phones as well as terrestrial microwave relay transmissions; ELINT Analysis; Weapon Signals Analysis, which analyses ELINT associated with weapons systems (such as cruise missiles, ballistic missiles, and surface-to-air missiles); and FORNSAT/COMSAT Intelligence, which includes information warfare and cyber warfare.

The Divisions are headed by Chiefs, who can be either civilian or military personnel. For example, Major John P. Jenks, US Army, served as a Division Chief in 1999-2001, when he was commander of Detachment A, the US Army element of the CSG.<sup>109</sup> The civilian chiefs are mainly NSA officers, who must have reached Grade 14. (David Rosenberg, the NSA ELINT analyst, was offered the job soon after his promotion to Grade 14 in June 2004). It is a 'day job', Monday to Friday, 9.00 am to 5 pm, rather than a shift job worked by the operators and analysts in their crew in the Operations Room.<sup>110</sup>

The role of the Division Chief has been described as follows:

The Division Chief manages the tasking coming in, training for new analysts, scheduling, subsystem upgrades, improvements to existing analysis techniques and equipment. He/she also manages career development of the team, advocates for training, submits promotion recommendations, performance appraisals, award write-ups, sets goals for the team members and resolves conflicts. Also, he/she attends managers meetings and the daily Chief of Operations meeting (along with a senior shift worker who reports the team's collection highlights) to elaborate on highlights and progress of collection efforts. Basically, the role ensures that the collection of targeted signals is accomplished in the most effective/efficient way.<sup>111</sup>

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- Commended by a leading US intelligence agency for the quality of my project management and policy development work.

<sup>109</sup> Lisa R. Rhodes, 'Lt Col John Jenks Assumes Command of Operations Division 7', *Fort Meade Soundoff*, 31 December 2003, at <http://www.fmeadesoundoff.com/news/220/lt-col-john-jenks-assumes-command-operations-division-7/>.

<sup>110</sup> David Rosenberg, *Inside Pine Gap*, p. 120.

<sup>111</sup> Private correspondence, 4 September 2015.

(David Rosenberg attended the Chief of Operation’s morning meeting as the Weapon Signals Analysis Division’s shift representative, accompanying the Division Chief, for five years, during which he briefed ‘senior management on highlights from the division’).<sup>112</sup>

## **The Mission Directors**

The Mission Director (MD) is ‘the highest authority’ in the Operations Room.<sup>113</sup> Indeed, for 75 per cent of the time – from 5 pm to 9 am on weekdays and over the weekends – the MD is the most senior person at the whole facility, acting as Chief of Facility. There are three Mission Directors (MDs), one for each shift, with the positions rotated among the senior US civilians (Grade 14), senior Australian personnel, and the commanders of the SCA detachments.

In the early 1990s, a new schedule was adopted in the Operations Room, which involved 12-hour shifts on a 3-days-on, 3-days-off roster, providing more ‘time for relationships and leisure’. The crews worked for three days from 7.30 am to 7.30 pm, had three days off, worked three nights from 7.30 pm to 7.30 am, then had another three days off.<sup>114</sup> This schedule had been modified by 2015, when Raytheon advertised for Multi-Disciplined Engineers ‘who will utilize a wide variety of specialized electronic equipment for the acquisition and recording of technical data’ at Pine Gap; it said that ‘the position is a 12 hour rotating shift schedule typically from 7:30 to 7:30 – in 12 hour shifts – 4 on / 4 off – includes working days, weekends, and holidays – with 2 days, 2 nights, 4 days off’.<sup>115</sup>

According to Rosenberg, the MD was ‘responsible for ensuring that [the shift] was effectively performing its duties, would help to resolve any conflict that occurred within the team and with our counterparts overseas and would be responsible for initiating and directing emergency procedures should the need arise’. To Rosenberg, ‘the “desk job” responsibilities were relatively boring’. He states that ‘most of the operators had an excellent work ethic’, that ‘the team members on all crews in general worked very well together’, and that ‘Pine Gap was a very reliable facility’.<sup>116</sup> According to Rosenberg,

The number of times we went into lockdown from a perceived threat was very rare. Power generation was also reliable, as over the course of my eighteen years in

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<sup>112</sup> David Rosenberg, *Inside Pine Gap*, p. 93.

<sup>113</sup> *Ibid*, p. 53.

<sup>114</sup> *Ibid*, p. 87.

<sup>115</sup> Raytheon, ‘Multi-Disciplined Engineer I – Mission Operations, Australia’, at <http://jobs.raytheon.com/australia/jobs/multi-disciplined-engineer-i-mission-operations-australia-job-alice-springs-northern-territory-1-5352603>.

<sup>116</sup> David Rosenberg, *Inside Pine Gap*, p. 121.

Operations we lost all power to our section only once, but the matter was resolved in just over one hour. I was at work when this occurred and the cool-headed female mission director [i.e., Cathy Day] calmly and effectively followed the never-before-used procedure to bring us back online.<sup>117</sup>

Rosenberg is very disparaging with respect to the Mission Director position, which, he says, one ‘wouldn’t have to be awake to perform’. He states that

Several mission directors were notorious for sitting in their chair, elevated above the other positions so they could effectively oversee the operators, but sleeping for several hours straight during the night shift while the operators continued to perform their jobs. Once, a mission director tipped over while asleep with the resultant crash inspiring one operator to exclaim over the loudspeaker, “MD down”.<sup>118</sup>

Admittedly, he notes, ‘staying awake on night shift wasn’t always easy’. And hence, ‘needless to say, the coffee machine was a vital part of Operations’.<sup>119</sup>

**Figure 21. Cathy Day, Mission Director, Pine Gap,  
January 1996 – January 1999**



Source: Australian National University  
<https://researchers.anu.edu.au/researchers/day-cl>.

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<sup>117</sup> *Ibid*, p. 121.

<sup>118</sup> *Ibid*.

<sup>119</sup> *Ibid*.



An Australian civilian, Cathy Day, a DSD IT specialist, served as a Mission Director at the station from January 1996 to January 1999. She has said that, ‘as Mission Director, I had responsibility during the course of my shift for all operational activities of this significant intelligence facility’. She has also said that ‘weekday business hours comprised only 25 per cent of the working hours of the facility, and outside of those times I acted as Chief of Facility, exercising responsibility for the entire facility’.<sup>120</sup> Rosenberg has said that Day was an exception to his generalisation cited above about the uselessness of the MDs; he says that she ‘was very competent and always kept her cool – she was always a pleasure to work with’.<sup>121</sup> Day subsequently served as Director of the Military SIGINT Operations Centre (MSOC) in DSD (January 1999 to November 2000), before remarkably switching careers to anthropology and epidemiology. In 2015 Day was Senior Research Officer in the Chronic Diseases Epidemiology Group at the Australian National University.<sup>122</sup>

Major John P. Jenks, mentioned above in connection with his position of Division Chief, also served as a Mission Director when he was commander of Detachment A, the US Army element of the CSG, around 1999-2001. He was at the Aerospace Data Facility-Colorado (ADF-C) at Buckley AFB in 2001-2003, and became commander of NRO Operations Division 7, based at Fort Meade, in December 2003.<sup>123</sup>

Lieutenant Commander James Hagy was a Mission Director while he was commander of the NIOD from May 2000 to February 2002.<sup>124</sup> Lieutenant Commander Kevin Ziomek, who commanded the NIOD from February 2002 to September 2004, also served as an MD.<sup>125</sup> Major Jeff Ford, commander of Detachment 2 of the 544th Information Operations Group (IOG) from August 2005 to July 2007, served as a Mission Director during that period.<sup>126</sup> Lieutenant Commander Craig Rudy also served as a Mission Director when he was officer-in-charge of the NIOD from February 2006 to June 2008.<sup>127</sup>

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<sup>120</sup> Cathy Day, *LinkedIn*, at <https://www.linkedin.com/pub/cathy-day/67/830/7a7>; and ‘Dr Cathy Day: Career History’, at <http://www.significanceinternational.com/Portals/0/Documents/Dr%20Cathy%20Day%20%E2%80%93%20Career%20History.pdf>.

<sup>121</sup> Correspondence from David Rosenberg, 23 September 2015.

<sup>122</sup> Cathy Day, *LinkedIn*, and ‘Dr Cathy Day: Career History’.

<sup>123</sup> Lisa R. Rhodes, ‘Lt Col John Jenks Assumes Command of Operations Division 7’, *Fort Meade Soundoff*, 31 December 2003.

<sup>124</sup> James Hagy, *LinkedIn*, at <https://www.linkedin.com/in/jehagy>.

<sup>125</sup> Kevin Ziomek, *LinkedIn*, at <https://www.linkedin.com/pub/kevin-ziomek/8b/8b/220>.

<sup>126</sup> Jeff Ford, *LinkedIn*, at <https://www.linkedin.com/in/jeffreyford97>.

<sup>127</sup> Craig Rudy, *LinkedIn*, at <https://www.linkedin.com/pub/craig-rudy/59/3a9/ab5>.

## Chief of Military Support

Below the Mission Directors are Chiefs of Military Support. For example, Lieutenant Commander Craig Rudy served as Chief of Military Support from February 2005 to February 2006, when he was the deputy commander of the NIOD (before becoming commander of the NIOD). In this capacity, he led ‘an operations team which provided collection support to over 25 combatant units’.<sup>128</sup> As most of the floor teams have been engaged to greater or lesser extents in support of military operations since the 1990s, the position of Chief of Military Support was established as ‘the go-to person for tasking we received related to these operations’, which in 2005-2006 mostly involved Iraq and Afghanistan.<sup>129</sup>

## The Floor teams

About 85 personnel work in the Operations Room at any given time. The room has no windows, and is ‘dimly lit as the analysts need low light to help them see details on their computer monitors’. According to David Rosenberg, ‘signs above the various work areas [indicate] the type of activities being performed by these highly specialised operators’. Rosenberg has also noted the ‘camaraderie between the Aussies and the American government workers, civilian contractors and military who all worked with me on the Operations floor’.<sup>130</sup>

In the Operations Room, personnel are organised into Sections and Teams. Each Division has 2-4 Sections, each of which has three Teams, one for each shift. For example, the Weapon Signals Analysis Division has a Search Section that is responsible for finding and reporting new and modified threat systems associated with enemy missile systems. David Rosenberg, who worked in that section for more than a decade, says that he found and reported ‘a large number of new and modified threat systems that were of great interest to our counterparts in the intelligence community and senior government policymakers’.<sup>131</sup>

Each Team is headed by a Team Leader, also called a Collection Operations Lead (COL), at least in the case of Australian personnel. The Team Leader/COL also serves as Section Head during his/her shift. In organisational terms, NSA Team Leaders are Grade 13, while Australian COLs are APS Level 6. In January 2010, for example, the Department of Defence advertised two COL positions at Level 6; it said that ‘the COL is responsible for managing a multi-national,

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<sup>128</sup> *Ibid.*

<sup>129</sup> Private correspondence, 23 September 2015.

<sup>130</sup> David Rosenberg, *Inside Pine Gap*, pp. 55, 56, 59.

<sup>131</sup> *Ibid.*, p. 119.

multi-agency shift-working team to successfully manage the complex tasking in support of the JDJFPG Mission'.<sup>132</sup> David Rosenberg became a Team Leader in the Search Section of the Weapon Signals Analysis Division in 1994, when he was promoted to Grade 13.<sup>133</sup>

In addition to their operational tasks, managing the teams to maximise their efficiency and effectiveness, the Team Leaders are also responsible for personnel management matters with respect to the team members, such as 'career development, promotion recommendations, performance appraisals, goal setting, performance feedback, training and development, change management, team motivation and morale'.<sup>134</sup>

The team members, called Operators and Analysts, are APS Levels 4 and 5 in the case of Australian civilians,<sup>135</sup> and GS 11 and 12 in the case of NSA civilians. Teams generally have four or five members, including the Team Leader. For example, Greg Hess, a member of the Army's 743rd Military Intelligence Battalion who worked at Pine Gap from 2007 to 2010, led a 4-person team which 'conducted search and analysis of low-capacity communications [and] digital push-to-talk emitters', and which provided 'SIGINT support to Combat Search and Rescue [CSAR] operations'.<sup>136</sup> David Rosenberg led a 5-person team which 'collected, analysed, and reported signals of interest from various weapon threat systems utilising satellites as the intelligence collection platform'.<sup>137</sup>

## Conclusion

Conceptualising the extraordinary expansion of operations at Pine Gap is not easy – by the nature of the facility. Moreover, as with other aspects of information technology, productivity has improved enormously in the facility's five-decade history. While the number of people involved in Pine Gap's operations has not grown substantially in recent years, the widening of the number of tasks the facility is assigned, the expansion of capacity of its SIGINT satellites, and above all, the growth in complexity of its SIGINT and FORNSAT/COMSAT collection and processing functions have all resulted in a great growth of the areas in the base devoted to management of these operations.

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<sup>132</sup> 'JDJFPG Collection Operations Lead', *APS Jobs*, at <https://www.apsjobs.gov.au/SearchedNoticesView.aspx?Notices=10467003%3A1&mn=JobSearch>.

<sup>133</sup> David Rosenberg, *Inside Pine Gap*, pp. 89-90.

<sup>134</sup> David Rosenberg, *LinkedIn*, at <https://www.linkedin.com/pub/david-rosenberg/8/a70/78a>.

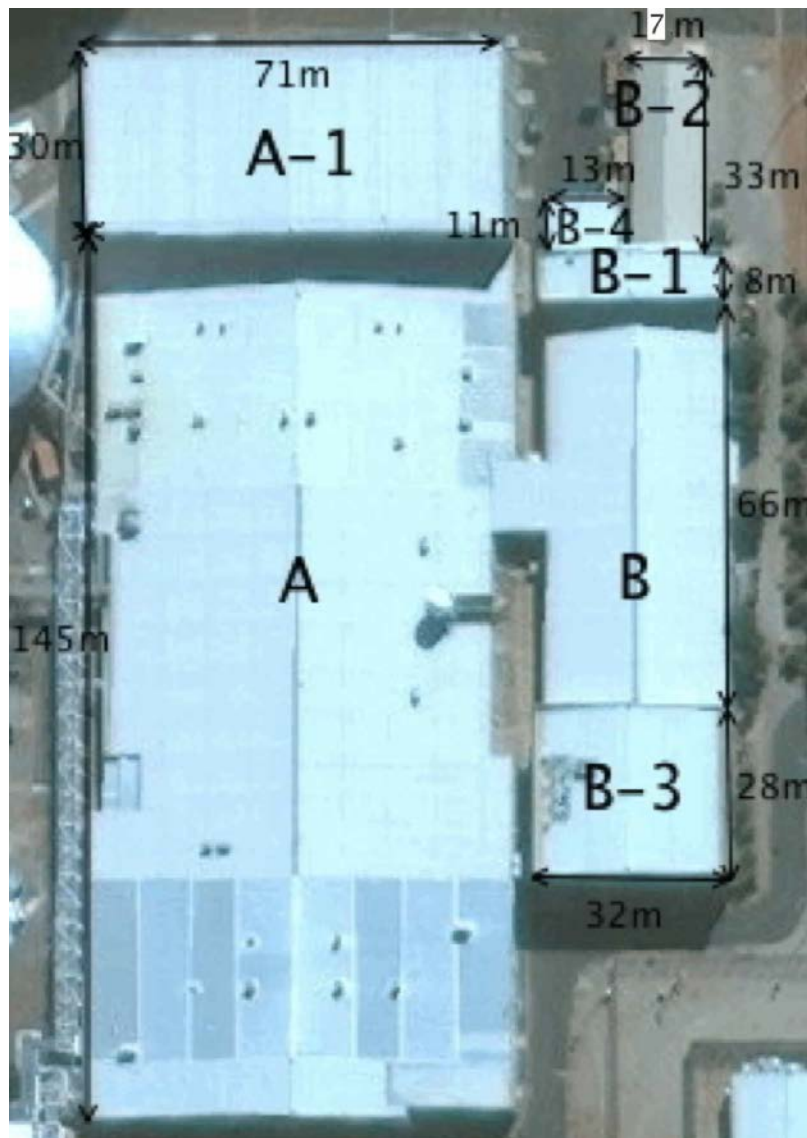
<sup>135</sup> 'Collection Operators', *APS Jobs*, at <https://www.apsjobs.gov.au/SearchedNoticesView.aspx?Notices=10422177%3A1&mn=JobSearch>; and 'Intelligence Collection and Analysis Operator', *APS Jobs*, at <https://www.apsjobs.gov.au/SearchedNoticesView.aspx?Notices=10552375%3A1&mn=JobSearch>.

<sup>136</sup> Greg Hess, *LinkedIn*, at <https://www.linkedin.com/in/ghess>.

<sup>137</sup> David Rosenberg, *LinkedIn*.

Externally, this expansion in operations is evident in the increase in size of the two main operations buildings within the high security compound – quite distinct from the separate part of the facility that deals with administration matters. The two Operations Buildings are joined by a covered walkway, and both buildings have some areas that have at least two levels.

**Figure 22. Main Operations Buildings, Pine Gap, 2012**



Source: Here.com

When the base first became operational in 1970, the single Operations Building, (comprising roughly half of Building A in Figure 21) measured about 64 metres square – providing about 4,000 m<sup>2</sup> for computing facilities and office space for operational staff. The room was remarkably large for its time, and visitors and former staff noted that staff needed to

use headphones to communicate from one end to the other, and that they had to walk substantial distances to have coffee with a colleague who could not leave their desk or terminal.

Forty-five years later, the total area of floor space in the Operations Buildings has increased five-fold, to more than 20,000 m<sup>2</sup>. (Figure 21 and Table 5) The original building A has been expanded on at least three occasions, to the point where it is now 145 metres long. The second building, Building B, has itself expanded from about 66 m in length to over 130 m.

**Table 5. Dimensions and estimated floor area of buildings in the main operations area (2015)**

Building	Dimensions (m)	Ground area (m <sup>2</sup> )	Levels (known or assumed)	Floor area (m <sup>2</sup> )
A	71 x 145	10,295	1	10,295
A-1	71 x 30	2,130	2	4,260
B	32 x 66	2,112	1	2,112
B-1	32 x 8	256	2	512
B-2	17 x 33	561	2	1,122
B-3	32 x 28	896	2	1,792
B-4	13 x 11	143	1	143
Total				20,236

Abstractly, it is not easy to comprehend just what this extraordinary physical expansion of the area where men and women carry out the different tasks of managing the satellites and the operations they conduct might mean. If the 20,000 m<sup>2</sup> floor area of the two operations buildings were laid out and joined together, it would cover more than three and a half American football fields. More parochially, though for Australians more meaningfully, the floor area of Pine Gap's operations complex would more than cover the entire playing field of the Melbourne Cricket Ground, the largest sporting arena in the country.