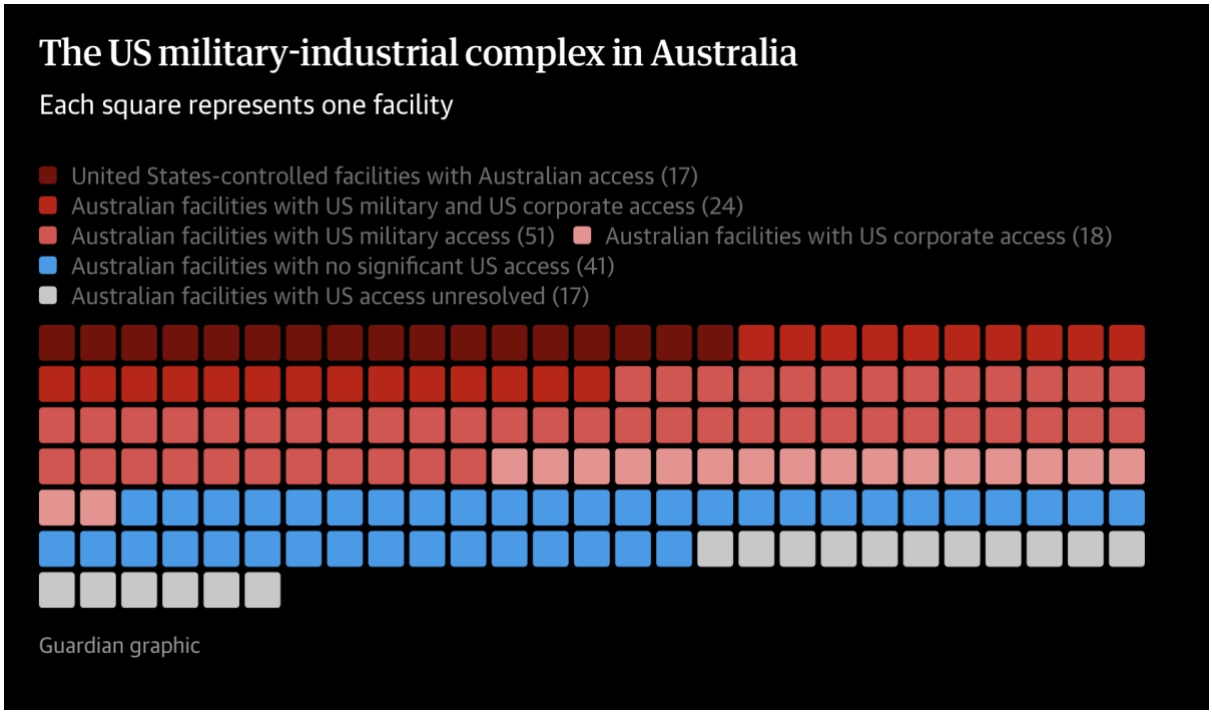
The Nautilus Institute *for Security and Sustainability*

‘Location, location, location’: United States access to Australian defence facilities

Richard Tanter



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Summary

Building on the current edition of the database on the *Australian Involvement and US Bases* website, this report begins with a simple question: to which Australian defence facilities does the United States have significant access?

For each facility, the study asks three questions about dimensions of sovereignty and control:

- Who owns the base?
- Can Australia operate the facilities in the absence of US agreement?
- Can Australia keep a facility operating in the absence of permission from foreign companies or foreign-controlled supply chains?

The database presents information on a population of 177 Australian defence facilities. Nine records are structurally excluded or out of scope, leaving 168 facilities in the comprehensive population. All entries are assessed as to the confidence level of the assessment of US access - high, medium or low. A further 17 facilities are omitted from the statistical analysis in Table 3 because their access status or evidentiary confidence does not support substantive categorisation.

Table 3 comprises 151 facilities assessed with High (129) and Medium (22) confidence concerning judgements about US access.

The short empirical answer to the question of US access to Australian defence facilities is startling:

- seventeen nominally 'joint' military and intelligence facilities in Australia remain under US control, with varying degrees of Australian access;
- United States military and/or United States defence corporations now have access to 70% of 134 Australian-controlled military facilities; and
- the functions of US military activities at over a hundred facilities in Australia to which the US has access (including both those under either Australian- or US-control) are dominated by intelligence and communications, US military force projection capabilities from Australian bases, especially from airfields, and training involving all military domains (air, ground, maritime, space and cyber).

This is not a matter of US penetration of a small number of Australian bases, but a pattern of saturation of the Australian defence eco-system by US access and influence that raises questions about Australian strategic autonomy that focusing on legal ownership alone cannot answer.

Author

Richard Tanter is Senior Research Associate at the Nautilus Institute, and Honorary Professor in the School of Political and Social Sciences, University of Melbourne. He is co-author, with Desmond Ball and Bill Robinson, of the studies collated as the *Pine Gap Project*. Together with Vince Scappatura, he recently published 'Performing nuclear fealty in a nuclear alliance: "understanding and respecting" and "neither confirm nor deny", Nautilus Institute Special Report, 19 April 2026, a part of the Nuclear-capable B-52H Stratofortress bombers project.

The views expressed in this report do not necessarily reflect the official policy or position of the Nautilus Institute. Readers should note that Nautilus seeks a diversity of views and opinions on significant topics in order to identify common ground.

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Glossary

Abbreviation	Acronym, codeword, or cover term
ADF	Australian Defence Force
ADSCS	Australian Defence Satellite Communications Station
AFP	Agence France-Presse
AGO	Australian Geospatial-Intelligence Organisation
AI	Artificial intelligence
AMRAAM	Advanced Medium-Range Air-to-Air Missile
ASA	Australian Space Agency
ASD	Australian Signals Directorate
ASIO	Australian Security Intelligence Organisation
AUKUS	Australia-United Kingdom- United States security partnership
AUSMIN	Australia-United States Ministerial Talks
BOM	Bureau of Meteorology
C2	Command and control
C4I	Command, control, communications, computing and intelligence
CIA	Central Intelligence Agency
COF	Chief of Facility
CoLSME	Combined Logistics, Sustainment and Maintenance Enterprise
CSpO	Combined Space Operations
DARC	Deep Space Advanced Radar Capability
DCOF	Deputy Chief of Facility
DIO	Defence Intelligence Agency
DoD	Department of Defense
DoW	Department of War
DSP	Defense Satellite Program
DSTG	Defence Science and Technology Group
DUSA	Defense Information Systems Agency
EDHFCS	Enhanced Defence High Frequency Communications System
ESC	Enhanced Space Cooperation
EWS	Electro-optical Infrared Weather System
EWS	Electro-Optical Weather System
FIS	Foreign Instrumentation Signals
FISINT	Foreign Instrumentation Signals Intelligence
FK&C	Full Knowledge and Concurrence
FORNSAT/COMSAT	Foreign satellite / Communications satellite
FPA	Force Posture Agreement

FPI	Force Posture Initiatives
FVEY	FIVE EYES (UKUSA Agreements)
GEO	Geosynchronous [or Geostationary] Earth Orbit
GEO	Geosynchronous [and/or Geostationary] Earth Orbit
GHz	Gigaherz
GMLRS	Guided Multiple Launch Rocket System
GPS	Global Positioning System (US)
GWEO	Guided Weapons and Explosive Ordnance
HANDS	High Accuracy Network Determination System
HF	High Frequency
HIMARS	High Mobility Artillery Rocket System
IDF	Israel Defense Forces
IDF	Israel Defence Force
ISNU	Israel SIGINT National Unit
ISR	Intelligence, reconnaissance and surveillance
JADC2	Joint All Domain Command and Control
JDFPG	Joint Defence Facility Pine Gap
JGGRS	Joint Geological and Geophysical Research Station
JLU	Joint Logistics Unit
JORN	Jindalee Operational Radar Network
MCS	Mission Control Station
MGS	Mission Ground Station
MHS	Menwith Hill Station
MHz	Megaherz
MOBLAS	Mobile Satellite Laser Tracking
MOU	Memorandum of Understanding
MRF-D	Marine Rotational Force–Darwin
MTTES	Mobile Threat Training Emitter System
MUOS	Mobile User Objective System
MUTR	Maritime Underwater Tracking Range
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NAVFAC	Naval Facilities Engineering Systems Command
NGA	National Geospatial-Intelligence Agency
NOAA	National Oceanic and Atmospheric Administration
NRO	National Reconnaissance Office
NSA	National Security Agency
NSA	Naval Support Activity

OPIR	Overhead Persistent Infra-Red
OTH	over-the-horizon (radar)
PNT	Positioning, navigation and timing
RAAF	Royal Australian Air Force
RAINFALL	NSA unclassified cover term
RAN	Royal Australian Navy
RGS	Relay Ground Station
RMAF	Royal Malaysian Air Force
RPC	Rocket Pod Container
SATH	Surge Facility Storage and Transfer Hub
SBIRS	Space Based Infrared System
SGS	Satellite Ground Station
SIGINT	Signals Intelligence
SLCM-N	Sea-Launched Cruise Missile - Nuclear
SRF-W	Submarine Rotational Force–West
SRM	Solid rocket motor
SSN	Nuclear-powered attack submarine
SSR	Space Surveillance Radar (C-band)
SST	Space Surveillance Telescope
STELLAR	NSA codeword for Australian Defence Satellite Communications Station - satellite communications interception facility
TDRS	Tracking and Data Relay Satellite
TRANET	Transit Navigation Satellite
TSA	Technology Safeguards Agreement
UAE	United Arab Emirates
UAS	Uncrewed Aircraft System
UKUSA	United Kingdom - United States of America signals intelligence agreements
USMC	United States Marine Corps
VLF	Very Low Frequency
WGS	Wideband Global System

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Introduction

'For a sovereign Australia.'

Desmond Ball[1]

'Once upon a time, you could trace the spread of imperialism by counting up colonies. America's version of the colony is the military base. By following the changing politics of global basing, one can learn much about our ever larger imperial stance and the militarism that grows with it.

Chalmers Johnson[2]

'It's really location, location, location. This is a perfect location for a lot of the things we need to do.'

General James Dickinson, head of US Space Command, en route to Pine Gap[3]

A few days before the publication of this report U.S. Air Force B-52 Stratofortress heavy bombers landed at RAAF Base Tindal at Katherine in the Northern Territory, as the first arrivals for the Bomber Task Force 26-3 to be deployed at Tindal for an unspecified time.[4] B-52s have been landing in Australia since the early 1980s, until the end of that decade at that time landing at RAAF Base Darwin for terrain avoidance training flights over northern Australia and for maritime surveillance missions in the western Indian Ocean.[5]

The arrival of the Bomber Task Force is not the first time US bombers, potentially including nuclear-capable B-52s, have been deployed to Australia since World War 2, but it is a clear marker of Australian participation in US force projection planning for what the US and Australian governments regard as 'strategic deterrence' aimed at China.[6]

The scale of United States military and corporate access to Australian defence facilities revealed by the data in this study is remarkable, most likely surprising or even shocking for many Australians.

The United States military presence in Australia is no longer adequately described as a collection of American bases. It is a distributed network of access, operational integration and technological dependence encompassing both US-controlled and Australian-controlled facilities.

Its expansion from intelligence and communications into force projection, training, logistics and weapons infrastructure raises questions about Australian strategic autonomy that legal ownership alone cannot answer.

The aim of the *Australian Bases & US Involvement Project* is to provide transparent, authoritative and usable information to the Australian public on the issue of US access to Australian and intelligence facilities.

Unorganised and inaccessible knowledge is effectively unusable for practical purposes of policy debate. Public discussion of the issues of peace, security and sovereignty that should sit at the core of debate on Australian foreign and defence policy is severely constrained without reliable information

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[1] Epigram to Desmond Ball, *A Suitable Piece of Real Estate: American Installations in Australia*, (Allen & Unwin, 1980).
[2] Chalmers Johnson, 'America's Empire of Bases', *TomDispatch.com*, 15 January 2004, at https://tomdispatch.com/chalmers-johnson-on-garrisoning-the-planet/.
[3] Demetri Sevastopulo, 'US and Australia boost space and cyber co-operation to counter China', *Financial Times*, 28 March 2022, at https://www.ft.com/content/a6efecd9-8f7f-4072-ba86-f405c03bc005.
[4] Chris Gordon, 'Task Force to Australia's New BUFF Base', *Air & Space Forces Magazine*, 3 September 2026, at https://www.airandspaceforces.com/b-52-bomber-task-force-australia-raaf-base-tindal/.
[5] See Vince Scappatura and Richard Tanter, *B-52 strategic bombers in Australia, 1979 – 1991 and the nuclear heterodoxy of Malcolm Fraser*, Nautilus Institute Special Report, 4 August 2025, at https://nautilus.org/wp-content/uploads/2025/07/B-52-operations-in-Australia-1979-1991.pdf; and Vince Scappatura and Richard Tanter, *Nuclear-capable B-52H Stratofortress strategic bombers: a visual guide to identification*, Nautilus Institute Special Report, 4 August 2024, at https://nautilus.org/wp-content/uploads/2024/08/Nuclear-capable-B-52H-Stratofortress-Aug26-2024.pdf.
[6] Chris Gordon, 'Task Force to Australia's New BUFF Base', Air & Space Forces Magazine, 3 September 2026, at https://www.airandspaceforces.com/b-52-bomber-task-force-australia-raaf-base-tindal/.

about the fundamental issue of providing foreign military forces access to Australian facilities, including, in some cases conducting military operations from Australian territory.

All sources used in the database are publicly available and links to the sources are provided for verification.

This project's contribution to public debate is to find those sources, organise them in a rational manner, and offer them to the public.

The report begins by presenting the findings concerning US access in brief, before introducing the key issues of 'what counts as a "base"?', arguing that simply insisting that juridical control ('Who owns the base?) ignores more complex - and salient - issues of operational control ('Can Australia operate the facilities in the absence of US agreement?') and industrial/technological independence ('Can Australia keep a facility operating in the absence of permission from foreign companies or foreign-controlled supply chains?').

After a discussion of the methods used in the study, Section 4 presents a statistical approach to the questions *How extensive is US access?* And *What US activities does this access enable?* (Chart 1. The military-industrial complex in Australia)

Two long sections present answers to the question *What does US access to Australian facilities enable?*, firstly for US-controlled facilities and then for Australian-controlled facilities.

Section 7 addresses temporal dimensions of the issue of US access to Australian defence facilities, in three broad, albeit overlapping phases, accelerating over time, especially since 2014, in what amounts a time of explosive growth in US access.

The first phase focusses on the situation in the early 1980s revealed by Desmond Ball's pioneering work A Suitable Piece of Real Estate: US Installations in Australia, followed by discussion of the remarkable continuities regarding most of those installations today or their technological successors, (Table 9). The highly militarised situation at the three separate facilities that now make up the Joint Defence Facility Pine Gap taken as a harbinger of shifts in the balance of functions demonstrated in the second and third phases.[7]

The second phase focusses on US access to Australian defence facilities affected by the 2014 Australia-United States Force Posture Agreement and the still unfolding Force Posture Initiatives. (Table 10)

The third phase, overlapping in time with the second, focusses on a new set of largely US-controlled facilities with Australian access involved in space domain awareness, the effect of which is to draw Australia into activities enabling space warfare.

Section 8 deals with Australia's management of strategic risks embedded in this pattern of rapid and widespread US access to Australian defence facilities, apparently with few formal policy or institutional restrictions. Hosting foreign facilities, whatever the flag on the gate, or providing foreign access to national defence facilities may offer strategic advantage, but also carry risk. All defence postures and foreign policies bring benefits and costs - the key question in any given case concerns the balance between the two, and, if the issue of imbalance arises, the national capabilities to alter course.

Political and economic regimes always involve elements of path-dependencies - strategic choices, in the broadest sense of the term, that limit or permit possible changes of direction.

[7] On treatment of Joint Defence Facility Pine Gap as three separate facilities see the discussion in Section 5 below. On the more general question of decisions about database entries for components of some, particularly large or complex facilities, see Appendix 6. Definitions and methods, including the list of selected case-by-case counting decisions (26 facility entries).

The key question is whether Australia can learn to manage simultaneous strategic risks arising from an alliance of this scale and complexity - with risks affecting Australians understood to involve both national interests and the inescapable wider human interest.

These issues are discussed in relation to five fields relating to US access to Australian defence facilities showing inhibiting path-dependency characteristics - with the danger of lock-in: strategic policy; the defence industrial eco-system (see also (Appendix 4); base construction and emerging political interests; systemic deficits in accountability; and institutional learned incapacity.

Section 9 looks at the reversal of the path-dependence examined in the previous section, briefly introduces possible pathways and requirements for transition away from heightened alliance path-dependence for each of the five fields - the transition towards unlocking these 'locked-in' elements of Australian defence.

One field where the question of an alliance-based path beyond lock-in to sovereignty is strongly espoused by the Australian government is defence industrial production, with the Guided Weapons Explosive Ordnance Enterprise at its core. (Appendix 4) The viability of the government's pathway can be summarized by the paradox presented by a foundational policy aiming at first steps towards industrial sovereignty being undertaken with founding Strategic Partners Lockheed Martin and Raytheon, each of which publicly and repeatedly avers their support for the goal of Australia defence industrial sovereignty.

This is not the place to explore in depth either the obstacles such a contradiction sets up, or the adequacy of government plans to overcome that situation over time, as the plans in the Guided Weapons and Explosive Ordnance Plan, the Defence Industry Development Strategy and its annex on GWEO procurement and development maintain.

The plans are quite open, at a general level, on the need to overcome dependence, though less clear about the certainty of the pathway to what is repeatedly asserted to be a sovereign outcome.

Indeed the frequency with which 'sovereign defence' and 'sovereign capability' and similar terms are repeated, given the starting point the admitted and evident obstacles, feels rather like whistling past the graveyard.

Section 10 reviews the goals of the study, assessing the levels of urgency of the early 1980s with the current situation, and the fate of the two key conditions Ball suggested must be applied to US installations. At that time Ball suggested two conditions which must be met with respect to those installations. Firstly

> 'the Australian government must be fully apprised of the operational details of each of the facilities, and that technical and strategic developments relating to the facilities be continually monitored and assessed, so as to ensure that no Australian interests are compromised...'

And secondly:

> 'as much as possible of this information should be made available to the public'.

Ball's remark on the first condition could still apply today - but quite possibly, as understatement:

> 'One of the most disturbing features of the American installations is the lack of control exercised by the Australian government over their establishment, operation and maintenance.' [8]

Section 11 presents a different way of asking 'What does it mean? by way of an invitation to examine counterfactuals - the essential but forbidden fruit of social inquiry as Richard Ned Lebow called them

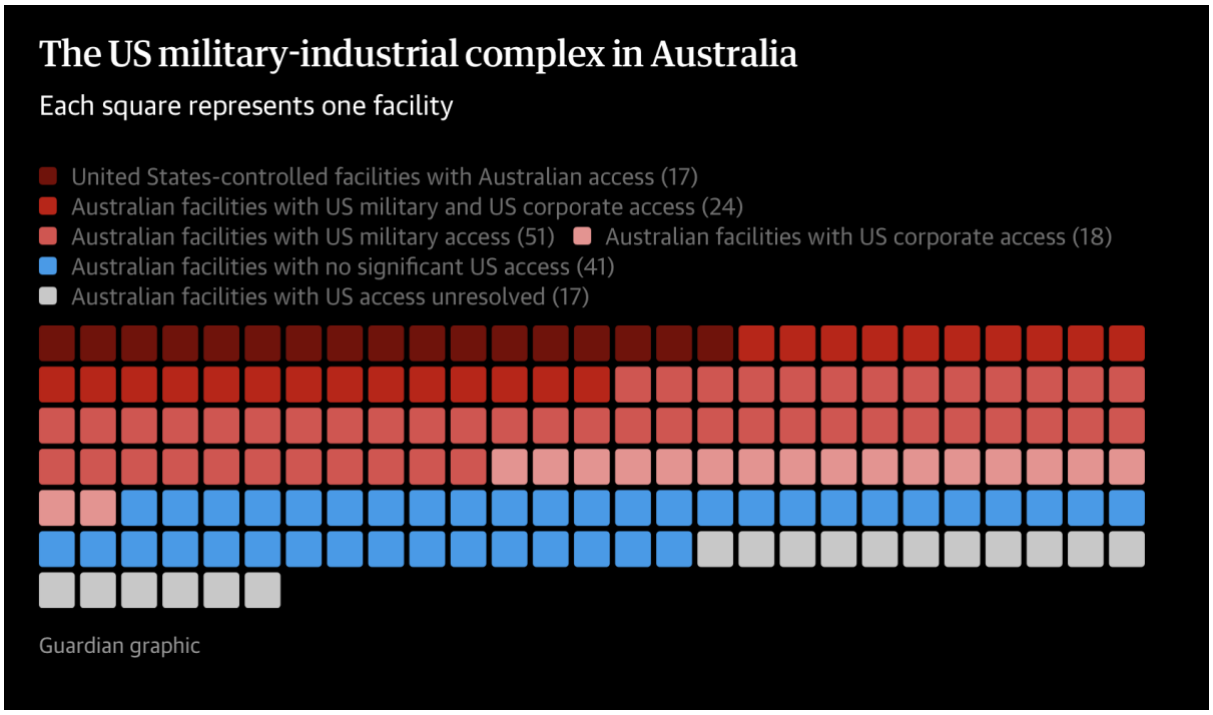
[8] Desmond Ball, *A Suitable Piece of Real Estate,* p. 153.

- posed as a provocation.[9] Like most serious counterfactuals, the 'What if?' questions asked at first appear absurd, or worse.

Yet counterfactual propositions have a rich history in international relations thought, and even in small form can be useful for articulating unacknowledged assumptions in present policy based on the United States as an indubitably 'trusted partner', and for exploring critical turning points in path-dependency that may point to usable approaches to alternative futures.

What if, in the earlier discussion of 'US corporate access to Australian defence facilities', the relevant adjective was changed to 'Chinese corporate access to Australian defence facilities'?

Chart 1. The military-industrial complex in Australia



Source: Guardian graphic, in Ben Doherty, 'The US has access to more than half Australia's military bases - could it drag the country unwillingly into war?', *The Guardian*, 7 September 2026, [interactive media], at https://www.theguardian.com/australia-news/ng-interactive/2026/sep/07/us-military-bases-in-australia-map-list-spy-satellite-pine-gap

[9] Richard Ned Lebow, *Forbidden Fruit: Counterfactuals and International Relations*, (Princeton U.P., 2010).

1. The findings in brief

It is now half a century since Desmond Ball first described many 'United States installations' in his book *A Suitable Piece of Real Estate* (1980), most notably the three large US intelligence facilities now titled the Harold E. Holt Naval Communications Station at North West Cape and the Joint Defence Facility Pine Gap, and the Joint Geological and Geophysical Research Station at Alice Springs.

Much has changed in Australia and in its alliance with the United States in those five decades, some for better, and rather more for worse. Faced with considerable political protests and electoral pressures, the Fraser coalition and Hawke Labor governments of the late 1970s and the 1980s clarified the juridical position by first stressing that all military bases were legally Australian, secondly by declaring that a number of previously United States facilities were rebadged as 'joint Australian-United States facilities', and third by promulgating and applying a doctrine of 'Full knowledge and concurrence' designed to ensure Australian control.

But 1980 was a long time ago, and the shape and character of the Australia-US alliance has also changed, and with it, the fundamental issue with which Ball wrestled - Australian control over defence decision-making - is even more seriously challenged by dramatic changes in both the extent and nature of US access.

The contemporary Australian embrace of the US alliance has brought not just a much larger number of bases with US access of one kind or another, encompassing both US-controlled and Australian-controlled facilities, in a distributed network of United States access to a majority of Australian defence facilities amounting to operational integration with, and systemic technological dependence on, United States military systems and giant US defence corporations, including the world's largest.

And most importantly, that network expansion of US access to Australian defence facilities involves a shift in the activities of the US military in Australia beyond intelligence and communications functions into a systematic capability to project its ground, sea and air forces beyond Australia, unparalleled US access to geographically huge and technologically complex training lands, and to military logistics and weapons manufacturing infrastructure.

This study began by asking a simple question: to which Australian defence facilities does the United States have significant access? The short empirical answer to this question is startling:

- at least a dozen nominally 'joint' military and intelligence facilities in Australia remain under US control, with varying degrees of Australian access;
- United States military and/or United States defence corporations now have access to 70% of all Australian-controlled military facilities; and
- the functions of US military activities at over a hundred facilities in Australia to which the US has access (including both those under either Australian- or US-control) are dominated by the intelligence and communications functions as Ball noted half a century ago, but, firstly, expanded in numbers and, more dramatically, complemented by large-scale US military force projection and training roles from Australian bases.

This is not a matter of US penetration of a small number of Australian bases, but a pattern of saturation of the Australian defence eco-system by US access and influence that raises questions about Australian strategic autonomy that focusing on legal ownership alone cannot answer.

2. The wrong question about US bases

The Military Empires database, a recent innovative research publication, mapped more than 1,200 'foreign military bases' worldwide—meaning 'any installation, facility, or site located outside the operating country that is financed, operated, leased, rented, or temporarily accessed by that country.' (see Table 1, States with military bases in foreign countries). These facilities were operated by 18 different states, with the largest number of bases operated by the United States with 861 bases in 95 countries, with both their number and geographical spread more than justifying the salience of Chalmers Johnson's interpretation of 'the American empire of bases'.

The *Australian Bases and US Involvement* database differs from both official accounts and tallies of US or other foreign bases in host countries, and also from detailed forensic historical and technical research publications on particular facilities exemplified by the work of Desmond Ball on Australian bases.[10] This project looks at the question of the military presence of the United States in just one country - Australia, and begins from a simple question which indicates both similarities and differences with the two types of studies of US bases mentioned already - reports, official and otherwise, of the numbers of US bases abroad and in particular host countries on the one hand, and on the other, in-depth forensic and historical analysis of particular facilities hosted in foreign countries.

The similarity is that the first shape of the answer is a matter of a database and accounting - how many Australian facilities does the answer involve?

However, the most important difference is that the key research task here is to go beyond official designations of facilities by the governments of Australia and the United States to characterise facilities in terms of the status of US access to juridically 'Australian' defence facilities, and to then characterise the types of US access: to which Australian military facilities does the United States have access, and what is the character of that access?

In other words, this report, in the case of Australia, starts from the possibility that the US military may have significant access to foreign countries' national defence facilities, short of US sovereign control. To the extent that this approach proves fruitful, the global list of 'facilities to which the US military has access' will expand very considerably. As will be seen below, this situation is one that the United States government has been actively pursuing for at least a decade under a US policy expressed colloquially by senior US military and defence officials as a current preference for 'places, not bases'.[11]

This work differs from earlier 'thick' forensic and historical studies of small numbers of particular military and intelligence facilities by being more indicative in character and wide-ranging or 'panoramic' in scope, with limited evidence being presented in spreadsheet form.

This study also has a third difference from most previous Australian studies by recording the presence of major US defence corporations as a separate category of US access to Australian defence

[10] Historically, this study follows on the remarkable work on foreign bases from the late 1970s onward by Desmond Ball, Chalmers Johnson, Owen Wilkes, Peter Hayes, Nick Turse, and David Vine. See also the five Nautilus Institute studies by Desmond Ball and Richard Tanter on Japanese and US signals intelligence in Japan collated as *The Japan SIGINT Project*, at https://nautilus.org/uncategorized/the-japan-sigint-project/; and the nine Nautilus Institute studies on the Joint Defence Facility Pine Gap in Central Australia by Desmond Ball, Bill Robinson, Richard Tanter, and other contributors collated as *The Pine Gap Project*, at https://nautilus.org/uncategorized/the-japan-sigint-project/.

[11] For example, Michael W. Pietrucha, 'Making Places, Not Bases a Reality', *Proceedings of the U.S. Naval Institute,* (October 2015) Vol. 141/10/1,352, at https://www.usni.org/magazines/proceedings/2015/october/making-places-not-bases-reality; and Emma Barton, 'Places Not Bases: A4C Regional Planning Teams are Re-shaping Civil Engineering Capabilities in the Indo-Pacific', *DVIDS*, 14 August 2025, at https://www.dvidshub.net/news/545601/places-not-bases-a4c-regional-planning-teams-re-shaping-civil-engineering-capabilities-indo-pacific. See also Luke A. Nicastro and Andrew Tilghman, 'U.S. Overseas Basing: Background and Issues for Congress', Congressional Research Service, Report R48123, 10 July 2024, at https://www.congress.gov/crs-product/R48123.

facilities. This first edition of the 'panoramic' or indicative approach relies largely on recent sources of evidence, especially in the case of the corporate presence where the corporate actors themselves advertise at least some part of their presence openly. To that extent, this privileging of recent sources is not likely to produce false positives regarding US corporate access. But that approach does not provide detailed accounts of the historical development of the facilities examined. This is particularly important in the case of the role of US corporations in certain facilities over a number of decades - most obviously at Pine Gap (1966-), North West Cape (1962 -) and the Alice Springs nuclear detonation seismic detection facility (1955-).

Table 1. States with military bases in foreign countries (2026)

Operating country	Total number of foreign bases	Number of host countries
USA	861	95
Türkiye	131	9
UK	118	38
Russia	35	11
India	19	11
Israel	14	1
UAE	12	5
Singapore	11	7
France	7	4
China	6	6
Canada	4	4
Netherlands	4	3
Australia	2	2
Saudi Arabia	2	2
Bangladesh	1	1
Iran	1	1
Italy	2	2
Pakistan	1	1
Japan	1	1

Source: 'Military Empires: A Visual Guide to Foreign Military Bases Military Bases', World Beyond War, [accessed 20 August 2026], at https://worldbeyondwar.org/military-empires

3. What we counted—and why

> 'By a foreign military base, we refer to any installation, facility, or site located outside the operating country that is financed, operated, leased, rented, or temporarily accessed by that country. These bases accommodate military personnel, weapons systems, and/or logistical infrastructure, and fulfill diverse functions such as training, information gathering, operational planning, command and control, administrative tasks, and/or weapons storage.'[12]

This study examined 177 Australian defence and defence-related facilities of different kinds and sizes, which were then examined for evidence of their status in relation to the core question: to which Australian facilities does the United States have access?

Three primary dimensions of US access may influence practical dependence and frame the classification of facilities in the database.

- Juridical control: Who owns the base? Since the Fraser cabinets (1975-1983), successive governments have maintained that since all facilities operated with the United States are legally Australian 'joint facilities', with the current Albanese government (2022 -) creating a new though unclear category of 'collaborative facilities'.

- Operational control: Can Australia operate the facilities in the absence of US agreement? Successive Australian governments have described the principal condition through which they maintain operational control as one of 'Full Knowledge and Concurrence'. Such a claim is implausible in many important cases of US access to major facilities, and, at best, should be treated as a variable and almost always unverifiable quality.

- Industrial/technological independence: Can Australia keep a facility operating in the absence of permission from foreign companies or foreign-controlled supply chains?

The methods used in analysing US access to Australian defence facilities in this study are set out in detail in Appendix 6 Definitions and methods.

Firstly, two broad types of US access were analysed — access by US military forces and access by US defence contractors and corporations. This approach to 'US access' in the database is derived from the terms used by the 2014 United States Force Posture Agreement in its discussion of 'Agreed Facilities and Areas' related to the Force Posture Initiatives. (See Appendix 1).

The Force Posture Agreement refers to the presence and specified rights of access of US personnel, military, civilian government personnel, and US corporate entities and their employees. 'United States Forces', and 'United States Contractors', the Agreement states

> 'shall have unimpeded access to and use of Agreed Facilities and Areas for activities undertaken in connection with this Agreement'.[13]

The argument here is not that all the facilities to which this study suggests US forces and contractors have access are on the still secret list of 'Agreed Facilities and Areas' under the Force Posture Agreement. Rather the conceptual approach of the Force Posture Agreement to US access is taken as the most appropriate foundation to inquire into to a much wider set of facilities.

Secondly, the evidence for each facility was assessed to provide a judgement of the presence or absence of US access, and what level of confidence the currently available evidence permits for that

[12] Military Empires: A Visual Guide to Foreign Military Bases', *World Beyond War*, [accessed 20 August 2026], at https://worldbeyondwar.org/military-empires.
[13] *The Force Posture Agreement between the Government of Australia and the Government of the United States of America*, (Sydney, 12 August 2014), at https://www.aph.gov.au/-/media/02_Parliamentary_Business/24_Committees/244_Joint_Committees/JSCT/2014/26August2014/force_posture_text.pdf

judgement. Three categories are used to code assessment of how valid and/or reliable are the judgements of US access to particular facilities: high, medium, and low - and several are unknown or undetermined. (see Table 2. Coding categories)

The database contains 177 source records. Nine records are structurally excluded or out of scope, leaving 168 facilities in the comprehensive population. A further 17 facilities are omitted from Table 3 because their access status or evidentiary confidence does not support substantive categorisation. Table 3 therefore comprises 151 facilities assessed with High or Medium confidence.

Thirdly, all facilities were classified as either United States-controlled or Australian-controlled. This study's approach rejects unconditional claims by successive Australian governments that their characterisations of the 'joint' character of certain facilities and of the efficacy of the application of the doctrine of Full Knowledge and Concurrence invariably and necessarily equates to Australian operational control. On the contrary, this is a matter for empirical assessment case-by-case rather than juridically or ideologically based simple assertion.

The category 'US-controlled facility - with Australian access' indicates that whatever the juridical character of the facility ('who owns the base?'), the facility and its key technical infrastructure were essentially built by and paid for by the United States and can only function as part of a US-controlled technological system.

Australian-controlled and US-controlled facilities are then further divided according to the relative balance of US military and/or US corporate presence to yield the following five main categories, with an emerging sixth, of which two examples are highly likely in the near future - HMAS Stirling / Submarine Rotational Force - West, and RAAF Base Tindal.

Table 2. Coding categories

Australian-controlled facilities		
	Australian facility	The facility has no known significant current US military or significant corporate access.
	Australian facility - with US access	The facility primarily serves Australian strategic or operational interests and under Australian operational control, but with some US military and/or corporate access
US-controlled facilities		Whatever the juridical character of the facility, the facility and its key technical infrastructure were essentially built by and paid for by the United States and can only function as part of a US-controlled technological system.
	US-controlled facility - with Australian access	US military/intelligence organisations and defence corporations are substantially present. The facility primarily serves US strategic interests and is functionally under US operational control, but with some Australian military access, management, or oversight.
	US-controlled facility - with Australian civil (and possibly military) access:	US military/intelligence organisations and defence corporations are substantially present. The facility primarily serves US strategic interests and is functionally under US operational control, but with some Australian civil access, management, or oversight
Australian-US military co-located facility		Simultaneous presence of Australian and US military elements at the same facility under separate Australian and US command.

4. How extensive is US access and what US activities does this access enable?

The principal statistical products from this study are set out in Table 3 and in slightly expanded form in Table 4. Table 3 sets out the summary data of all 151 facilities as of mid-2026 with High or Medium confidence regarding US access status included in the statistical analysis in this report.[14] Of the 151 Australian defence and defence-related facilities coded with 'high' or 'medium' levels of confidence on the status of US access:

- only 41 could be classified as 'Australian' based on having no significant US military or corporate access (Table 11).
- despite the Australian and U.S. governments' insistence on Australian juridical possession of all facilities, 17 facilities were classified as 'United States-controlled facilities - with Australian access' (Table 5).
- Almost two thirds of the 151 facilities at high or medium confidence, (93) were classified as 'Australian - with US access' (Table 3)
    - The US military had access to 75 of those 93 facilities, coded either as military access alone or as military access as well as corporate access.
    - US defence corporations had access to 42 of those 93 facilities, in facilities coded as either US corporate access alone or as US corporate access as well as military access.

The disparity between the 41 facilities coded, based on currently available evidence as 'Australian' and the 93 to which the US had access - military, corporate or both - is striking. It is twice as easy to find facilities marked by a significant US presence as to find those that might be called 'Australian-only', at least based on current evidence. This disparity is prima facie evidence to challenge facile Australian government ideas of an alliance-led path to defence sovereignty.

One reasonable objection raised about these results concerns the validity of the existing assessment of the 'Australian' classification, meaning that there is little evidence of significant US access. Might it be better to re-classify the US access status of the 'Australian' cases, at least provisionally, as 'uncertain' or 'unknown'?

Certainly, at least one 'Australian' facility has been coded as such at a "medium' confidence level, indicating an existing level of doubt about that coding: Campbell Barracks at Swanbourne in Western Australia, the home base of the Australian Army's Special Air Service Regiment. The present database entry for Campbell Barracks notes:

> 'Despite long-running association with US special forces in the Afghanistan and Iraq deployments, there is little direct available evidence to show significant US access to Campbell Barracks. Whether this situation is due to an institutional disposition to secrecy, or to a genuine high level of autonomy from US influence remains unclear at present.'

It is true that in other 'Australian' cases further research may well show unrecorded evidence of current US access, as well as whatever may develop subsequently. This is of course, a situation where absence of evidence does not automatically amount to evidence of absence.

However, the burden of this line of inquiry will almost certainly have an asymmetrical effect on the statistical portrait in this study, because such new findings are more likely to increase the number of

[14] Table 4 extends the population reviewed in Table 3 to include 17 facilities for which their US-access status or confidence in that status assessment does not permit assignment to one of the simplified Table 3 categories. 9 structurally excluded or out-of-scope records are omitted from Tables 3 and 4 and are listed in Table 15. Structurally excluded and out-of-scope facility records.

facilities showing evidence of US access, and diminish the number and proportion presently coded 'Australian'.

Table 3. Australian facilities and status of United States military and corporate access (high and medium confidence)

Facility category		High	Medium	Total (n)	Total (percent)
Australian-controlled facilities		115	19	134	88.7%
	Australian	38	3	41	27.2%
	Australian – with US access – all	77	16	93	61.6%
United States-controlled facilities					
	United States-controlled facilities with Australian access	14	3	17	11.3%
Total counted facilities		129	22	151	100.0%

Notes:

Tables are available in more detail at the Australian Bases & US Involvement website 'Report' page, based on the accompanying Database tab. The database will be updated periodically as new information becomes available: each database build is date-marked. Tables presented in this report are derived from the database as of 28 August 2026.

The database contains 177 facility records. 9 structurally excluded or out-of-scope records are omitted from statistical counts and listed in Table 16. Structurally excluded and out-of-scope facility records.

Confidence means confidence in the assessment of US-access status. This leaves 168 facilities in the comprehensive statistical population shown in Table 4. Table 3 displays the 151 facilities whose US-access status is assigned to its High- or Medium-confidence categories.

The remaining 17 facilities are not structurally excluded; their US-access status or confidence in that status assessment does not permit assignment to one of the simplified Table 3 categories.

Percentages in Table 3 use the 151 facilities displayed in this table as their denominator.

Chart 2. Functions of US military activities from Australian facilities

Notes:

Facilities may have more than one recorded function. Function counts therefore overlap and do not sum to the total number of facilities.

Includes: Facilities with assessed US access and at least one recorded US military function.

Excludes: Facilities without assessed US access or a recorded function, and structurally excluded or out-of-scope records.

United States 'military' and 'corporate' access to Australian-controlled facilities:

Table 4 is an amplified version of Table 3, expanded in two important respects - the inclusion of 'Low confidence' and the break-up of facilities by types of US access - military and/or corporate.

Firstly, Table 4 includes 17 facilities rated 'Low confidence' regarding the assessment of US access, bringing the Table 4 population to 168. The facilities assessed as 'Low confidence' regarding US access are most readily seen in the Table 12 in the Detailed Tables.[15]

Secondly, Table 4 breaks up the large category of 93 Australian facilities with US access into three sub-groups:

- 51 Australian facilities with US military access
- 24 Australian facilities with both US military and US corporate access[16]
- 18 Australian facilities with US corporate access

Accordingly, Table 4 also shows that the United States military has access to 75 out of 93 Australian-controlled facilities, all at 'High' or 'Medium' confidence levels, and US defence prime contractors to 42 out of 93 Australian-controlled facilities.

On both issues—the confidence assigned to US-access assessments and the type of US access—Table 12 in the Detailed Tables, provides a clear descriptive picture of these results, together with Table 4.

[15] In Table 4 'Total (%)' shows each row's share of all 168 facilities included in statistical counts. Nine structurally excluded or out-of-scope records are omitted from Tables 3 and 4 and are listed in Table 15. When they are included the total number of facilities examined in this edition of the database is 177.

[16] As can be seen in Table 11 in the Detailed Tables, the largest single group of Australian-controlled facilities assessed with Low confidence regarding US access are the facilities that make up the four nodes of the ADF's Enhanced Defence High Frequency Communications System (EDHFCS). This assessment is rated 'Low' reflecting a degree of doubt about the claim of US access. This doubt derives from the paucity of the evidence available at present, but that little evidence is significant. See Appendix 2 for an extended discussion of what should be unconsidered a partially unresolved matter.

Table 4. All non-structurally-excluded facilities arranged by control, United States access status and confidence in the status assessment

Category	Confidence re US-access status					Total (n)	Total (%)
	High	Medium	High + Medium	High + Medium (%)	Low		
Australian-controlled facilities	115	19	134	88.7%	17	151	89.9%
Australian facilities with no significant US access	38	3	41	27.2%	0	41	24.4%
Australian facilities with any type of US access	77	16	93	61.6%	0	93	55.4%
Australian facilities with US military access	38	13	51	33.8%	0	51	30.4%
Australian facilities with US corporate access	16	2	18	11.9%	0	18	10.7%
Australian facilities with US military and US corporate access	23	1	24	15.9%	0	24	14.3%
Australian facilities with US access unresolved	0	0	0	0.0%	17	17	10.1%
United States- controlled facilities							
United States-controlled facilities with Australian access	14	3	17	11.3%	0	17	10.1%
Total facilities included in statistical counts	**129**	**22**	**151**	**100.0%**	**17**	**168**	**100.0%**

Notes:

Table 4 contains all 168 facilities included in statistical counts. 9 structurally excluded or out-of-scope records are omitted; Table 16. Structurally excluded and out-of-scope facility records lists them.

Confidence means confidence in the assessment of US-access status. High + Medium combines facilities whose US-access status assessment has High or Medium confidence. High + Medium (%) shows each row's share of all facilities whose US-access status is assessed with High or Medium confidence; its current denominator is 151.

Low includes cases with Low or Unknown confidence in their US-access status assessment, plus substantively undetermined cases. Australian facilities in that group are reported under "Australian facilities with US access unresolved" rather than being assigned to a tentative access-status row.

Total (%) shows each row's share of all 168 facilities included in statistical counts.

Aggregate, subtotal and component rows overlap and therefore should not all be added together. The subordinate access-type rows break down "Australian facilities with any type of US access".

5. What does US access to Australian facilities enable: United States-controlled facilities

For most Australians thinking about the question of possible US access to Australian defence facilities, the most familiar - and logical - starting point is to ask about 'US bases in Australia', following on from Ball's documentation in the early 1980s. Phrases like 'Pine Gap' and 'North West Cape' have considerable resonance in Australia's recent history. In the same vein, this study begins with US-controlled facilities, where:

US military/intelligence organisations and defence corporations are substantially present. The facility primarily serves US strategic interests and is functionally under US operational control, but with some Australian access, management, or oversight.

Seventeen defence and intelligence facilities in Australia were classified as 'United States-controlled' (Table 5). All seventeen were initially built by the United States military or intelligence agencies, with frequently upgraded advanced US technology. All were initially paid for by the United States, with some ancillary funding in recent years by the Australian government. All are designed to operate as part of globally distributed United States-auspiced or -controlled socio-technical systems.

All but two (the East Arm Bulk Fuel Storage Facility, Darwin, and the Mobile User Objective System (MUOS) Radio Access Facility, Kojarena) have intelligence, space surveillance, or position, navigation and timing (PNT) functions critical to a wide range of US military operations in multiple domains.

All have at least nominal, and in some cases, extensive, Australian access, and Australian involvement in facility management. In five cases, Australian access primarily involves Australian civil agencies - the Bureau of Meteorology (the Learmonth Solar Observatory), GeoScience Australia (the Joint Geological and Geophysical Research Station and the Yarragadee Geodetic Observatory) and GeoScience Australia (the Canberra Deep Space Communication Complex, the Tracking and Data Relay Satellite Facility, Dongara, and the Tracking and Data Relay Satellite Ranging System Facility, Alice Springs).

However, the U.S. Air Force retains a direct long-standing military presence of the US-built facilities it controls at the Learmonth Solar Observatory, WA, and at the Joint Geological and Geophysical Research Station, Alice Springs.

To better understand the significance of these seventeen US-controlled facilities, diverse in function, size, and technology, five sets of US-controlled facilities and their military and intelligence utility to the US are discussed in some detail:

- Learmonth and Dongara: space-based US mission-critical weather surveillance
- Global Positioning System Monitoring Station, Edinburgh
- Australian access to US space-based communications: Mobile User Objective System (MUOS) Radio Access Facility and Wideband Global SATCOM system ground station and Satellite Ground Station-West, Kojarena
- Pine Gap - one base, three distinct US-controlled surveillance facilities, one nuclear target
- National Aeronautics and Space Administration facilities

Table 5. US-controlled facilities with Australian access — arranged by confidence in US-access status

Facility	Facility type	US access - status	US access - confidence re Status
Alice Springs Balloon Launching Station	Research / development / testing	US - with Australian access/civil	High
Deep Space Advanced Radar Capability, Site 1: Exmouth	Intelligence / surveillance	US - with Australian access + US corporate access	High
East Arm Bulk Fuel Storage Facility	Logistics / munitions / prepositioning	US - with Australian access + US corporate access	High
EWS-G2 weather satellite Remote Ground Station, Dongara West	Intelligence / surveillance	US - with Australian access + US corporate access	High
Extended HANDS Ground Station Learmonth	Intelligence / surveillance	US - with Australian access	High
GPS Monitoring Station (National Geospatial-Intelligence Agency)	Position, navigation & timing	US - with Australian access	High
Joint Geological and Geophysical Research Station, Alice Springs	Intelligence / surveillance	US - with Australian access/civil	High
Learmonth Solar Observatory	Intelligence / surveillance	US - with Australian access/civil	High
Mobile User Objective System (MUOS) Radio Access Facility, Kojarena	Communications	US - with Australian access	High
Pine Gap - ground-based foreign and communications satellite interception facility [RAINFALL - FORNSAT/COMSAT]	Intelligence / surveillance	US - with Australian access + US corporate access	High
Pine Gap - overhead persistent infrared satellite Relay Ground Station	Intelligence / surveillance	US - with Australian access + US corporate access	High
Pine Gap - space-based signals intelligence facility [RAINFALL]	Intelligence / surveillance	US - with Australian access + US corporate access	High
Space Surveillance Telescope, Exmouth	Intelligence / surveillance	US - with Australian access + US corporate access	High
Tracking and Data Relay Satellite Facility, Dongara	Intelligence / surveillance	US - with Australian access	High
Canberra Deep Space Communication Complex	Intelligence / surveillance	US - with Australian access/civil	Medium
Tracking and Data Relay Satellite Ranging System Facility, Alice Springs	Intelligence / surveillance	US - with Australian access	Medium
Yarragadee Geodetic Observatory	Position, navigation & timing	US - with Australian access/civil	Medium

Notes:

Includes: US-controlled facilities in Australia with Australian access, at any recorded confidence level for that status assessment.

Excludes: Australian-controlled facilities and structurally excluded or out-of-scope records.

Learmonth and Dongara: space-based US mission-critical weather surveillance

Size does not always coincide with strategic significance. Two physically small facilities are critically important for US operations, in both cases dual-purpose military and civil weather surveillance: firstly, the automatically and remotely operated U.S. Space Force ground station at Dongara in Western Australia for the EWS-G2 weather satellite; and secondly the Learmonth Solar Observatory built by the U.S. Air Force in 1978. At both Dongara and Learmonth, the role of space-based weather surveillance is clear to U.S. Space Force: 'To improve readiness for a more lethal force' and support 'global battlespace situational awareness.'

The two large parabolic antennas at the remotely operated Dongara ground station receive data downlinked from a large weather satellite in geostationary orbit over the Indian Ocean at 61.5° East is operated by the U.S. Space Force Space Systems Command together with the National Oceanic and Atmospheric Administration. The EO/IR Weather System – Geostationary satellite (EWS-G2) carries an optical system to produce both visual and infrared imagery of cloud cover, and other sensors measure temperature, humidity, and ozone layers in the atmosphere. The EWS ground system, including the Dongara facility, is sustained by L3Harris and relays the downlinked data 'to DOD weather centers for analysis, forecasting, and dissemination to tactical users'.

Located next to RAAF Base Learmonth on the Exmouth Peninsula, the Learmonth Solar Observatory is an example of US-controlled military infrastructure to which an Australian civil agency has access - the Bureau of Meteorology. The LSO is operated by the U.S. Air Force Detachment 1, 2nd Weather Squadron, 557th Weather Wing, together with BOM's Space Weather Services. The importance of the Learmonth observatory - the only one available to the USAF in the southern hemisphere - is clear:

> 'We watch out for solar flares and geomagnetic storms, because those are the things that are impacting the next battlefield, which is space ... Being in the Air Force, a lot of our munitions are GPS-guided. If we have a lot of activity on the sun, that information needs to get to the decision makers immediately so they can make the decision that maybe today is not a good day to drop a GPS-guided munition.'

However, seven hundred kilometres south of Learmonth, the Dongara satellite ground station is a US affair - operated remotely by U.S. Space Force Space Systems Command, Systems Delta 810 with minimal US civilian oversight by the National Oceanic and Atmospheric Administration (NOAA) at present. Two large parabolic antennas at the Dongara facility maintained by L3Harris receive data downlinked from the EO/IR Weather System – Geostationary satellite (EWS-G2) in geostationary orbit at 61.5° East over the Indian Ocean operated by the U.S. Space Force Space Systems Command. The EWS-G2 satellite and its predecessor in the same orbital position, the EWS-G1 satellite, which also relied on the Dongara facility for transmission of data, were originally launched by the National Oceanic and Atmospheric Administration (NOAA) as part of its civil space weather satellite constellations. In 2019, the Defense Department requested transfer of control over the NOAA satellite to provide interim Indian Ocean regional coverage which existing Defense weather satellites no longer could surveil adequately.

At both Dongara and Learmonth, the role of space-based weather surveillance is clear to U.S. Space Force: 'To improve readiness for a more lethal force' and support 'global battlespace situational awareness.' Accurate and timely knowledge of both atmospheric and solar weather conditions is a prerequisite for U.S. Air Force missions from and overflying Australia and neighbouring regions, especially over oceans, where space-based weather surveillance is critical

The US Space Command publication Apogee recently reported U.S. Air Force testimony to Congress on the specific importance of space-based weather surveillance and ground-based surveillance of weather-related events in space:

> 'Every military mission begins with a weather briefing; terrestrial weather, space weather, or both. The data required to generate forecasts for our forces is largely dependent on complex models, and approximately 95 percent of the data that feeds these models comes from space-based sensors or ground-based observatories looking into space.'[17]

The capabilities of the Dongara and Learmonth facilities close to the Indian Ocean were relevant was the mission by B-2 Spirit long-range stealth bombers carrying massive 'bunker-busting' bombs in the 17 October 2024 attack on Houthi forces in Yemen, which also were intended as a signal of US intent against Iran. While there are still aspects of the bombing missions that remain unclear, the Australian Defence Department stated that 'Australian support' for the bombing mission was provided 'through access and overflight for US aircraft in northern Australia'. Australian media also claimed that air-to-air refuelling was provided for the B-2s, though it is not clear whether the tanker aircraft operating from Australian northern airfields were from the USAF or the RAAF, or both.[18]

What is clear from U.S. Space Force and U.S. Air Force accounts of the role of the Learmonth facility and the EWS-G2 U.S. Space Force weather satellite which downlinks to the Dongara facility were both a necessary and normal enabling element of US global strike operations. Astudy of the strikes noted that Australian participation in the bombing strikes 'marks the first time since World War II that Australian territory has been directly used to support US strategic bomber operations.'

Figure 1. 16 m. and 13 m. diameter antennas for control and data downlink from U.S. Space Force EO/IR Weather System – Geostationary (EWS-G2) satellite, Dongara, Western Australia

Source: Katherine Schauer, 'ESC Network Facilitates Ground Station Development for the U.S. Space Force in Australia', *NASA Exploration & Space Communications*, 28 October 2020, at https://tempo.gsfc.nasa.gov/news/ESC_Network_Facilitates_Ground_Station_Development_for_the_U.S._Space_Force

[17] 'What's Next In Military Weather', *Apogee*, 23 June 2026, at https://apogee-magazine.com/departments/whats-next-in-military-weather/.

[18] Andrew Green and Jacob Greber, 'Australian air bases assisted with US strike on Houthi weapon stores', *ABC News*, 18 October 2024, at https://www.abc.net.au/news/2024-10-18/australian-airbase-used-in-us-strike-on-houthi-stores-yemen/104490578.

Figure 2. US-controlled space surveillance and geodetic facilities, Dongara/Yatharagga/Yarragadee, Western Australia
Source Google Earth, 18 March 2023

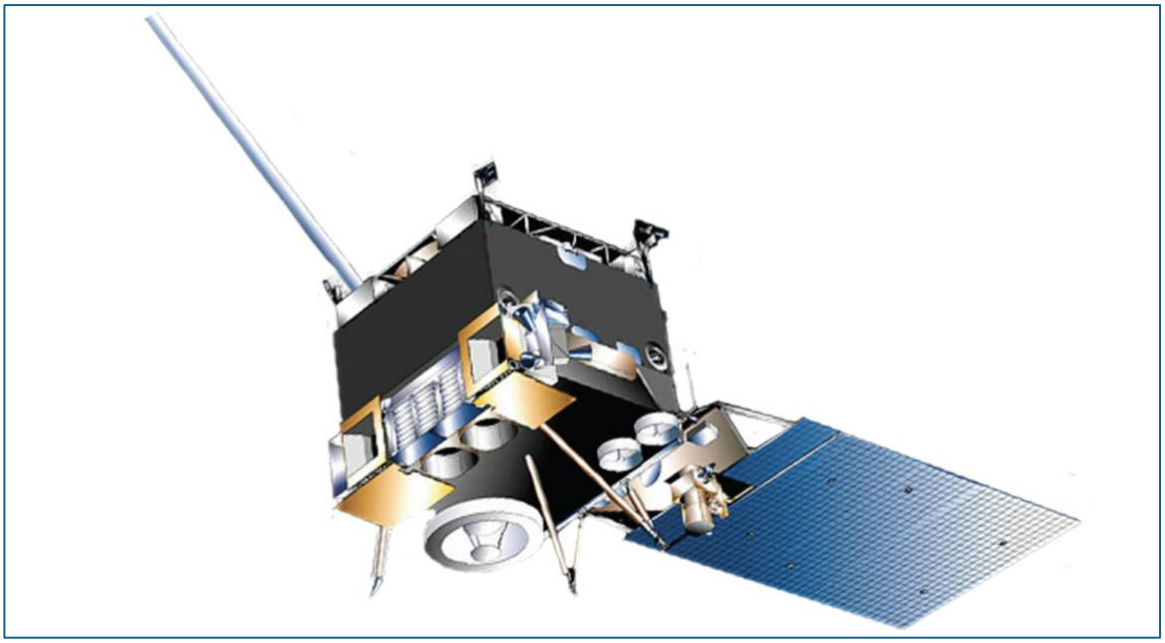


Figure 3. EO/IR Weather System – Geostationary (EWS-G1) satellite
Source: Space Operations Command, Fact Sheet: EO/IR Weather System – Geostationary (EWS-G1) satellite, U.*S. Space Force*, January 2023, at https://www.spaceforce.mil/About-Us/Fact-Sheets/Fact-Sheet-Display/Article/3298455/eoir-weather-system-geostationary-ews-g1/.

Global Positioning System Monitoring Station, Edinburgh

Although the manifold civilian uses of the Global Positioning System (GPS) point to an apparently borderless global good, the United States government is clear that 'GPS is operated and maintained by the U.S. Space Force.' The Global Positioning System Monitoring Station at Edinburgh, SA is one of 11 GPS monitoring stations operated by the US National Geospatial-Intelligence Agency (NGA), with another six operated by U.S. Space Force. Co-location of the GPS Monitoring Station on the grounds of the Defence Science and Technology Group's large Edinburgh facility may or may not involve more than Australian military access to the GPS military code (M-code), but there is no suggestion that the GPS system is anything but an American affair.

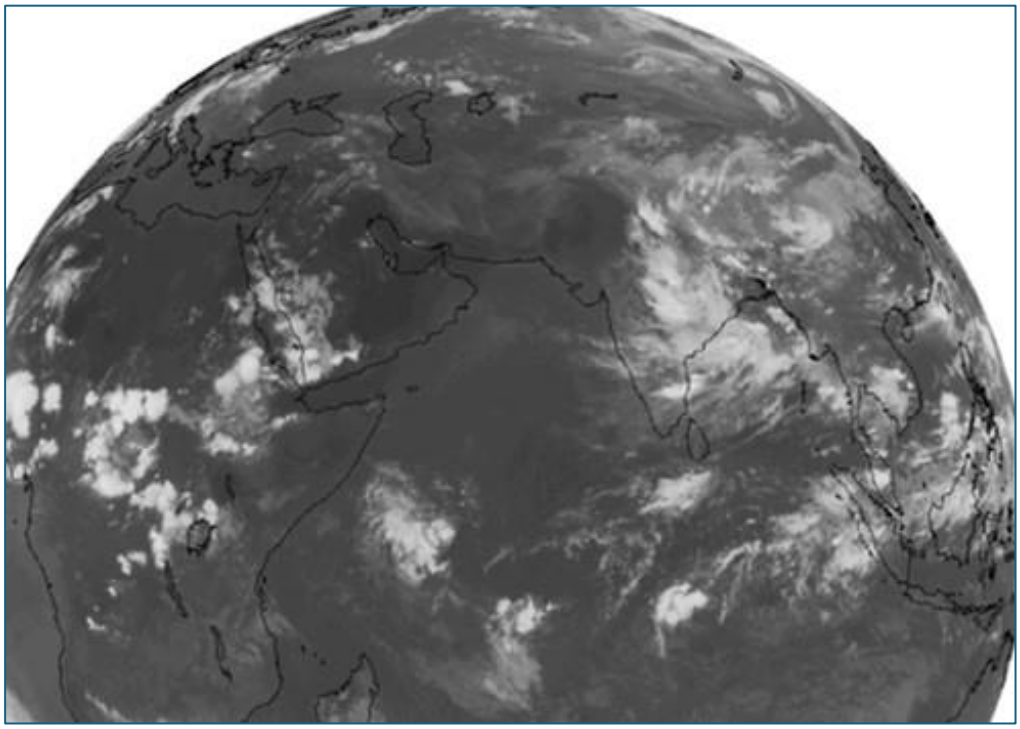


Figure 4. Electro-optical Infrared Weather System - Geostationary satellite image from orbit over the Indian Ocean at 61.5° East, downlinking to Dongara, WA ground station

Source: 'Space Force accepts second weather satellite through NOAA partnership', *U.S. Space Force*, VIRIN: 230921-F-XXXXX-0001, 17 August 2023, at https://www.spaceforce.mil/Multimedia/Photos/igphoto/2003306441

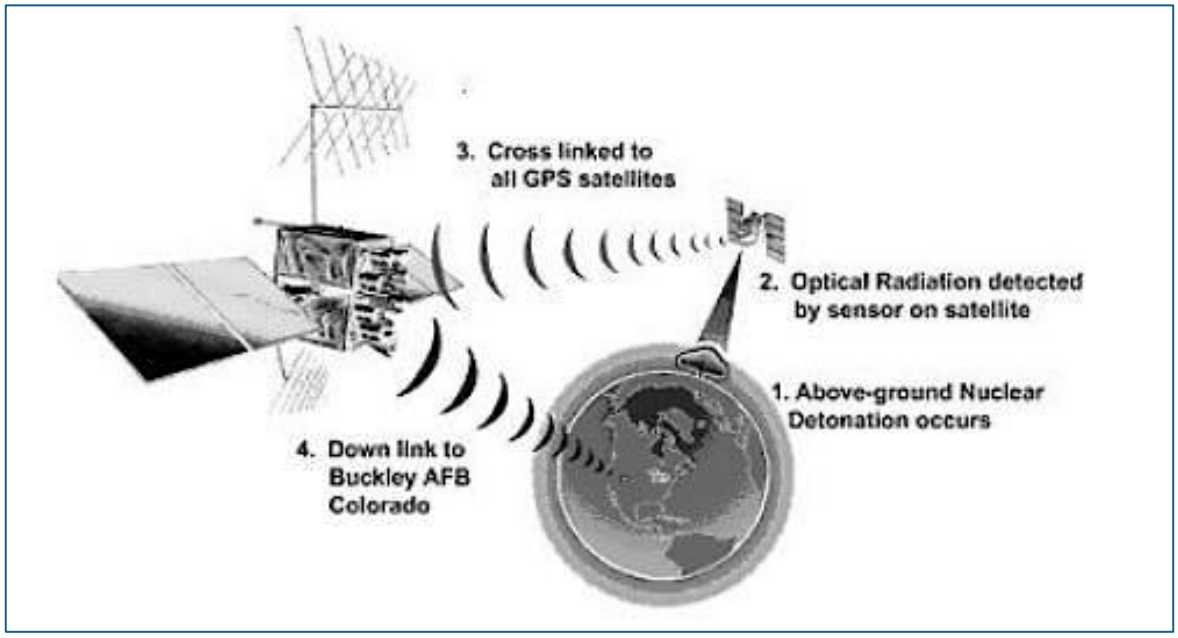


Figure 5. Global Burst Detection nuclear detonation sensors installed on Global Positioning System satellites, and associated communications links

Source: Image credit: A. J. Bell, in 'Detecting nuclear explosions', *Australian Space Academy*, [n.d.], [accessed 7 February 2022], at https://www.spaceacademy.net.au/watch/nudet/nds.htm

Enabling space warfare on the Exmouth Peninsula: Deep Space Advanced Radar Capability and Space Surveillance Telescope

North West Cape in Western Australia has long been a centre of United States military interest, beginning with the U.S. Navy building the submarine communications station now titled the Harold E Holt Naval Communications Station at the tip of the Exmouth Peninsula using Very Low Frequency (VLF) radio transmissions to communicate with submerged US nuclear ballistic missile - armed submarines, principally in the Indian Ocean. While the U.S. Navy has always retained use of at least three of four VLF channels at the giant North West Cape facility, the Australian Navy, with access to one channel, had an increased management role in the post-Cold War period. However, from 2008, a new bilateral agreement brought a deepened US involvement, not only to the communications station, but especially through the construction of a technologically dense cluster of US-controlled space surveillance facilities adjacent to the Naval Communications Station.

Just as the intersection of technological capability and geography led to the location of the Naval Communications Station in the 1960s, so too did strategic geography and new robotic and artificial intelligence technology lead to the construction of the Space Surveillance Telescope (SST) at Exmouth, and its near neighbour the Deep-space Advanced Radar Capability (DARC), a few kilometres away, also at Exmouth. Both surveillance facilities are critical US space warfare capabilities and come under US Space Command control.

The Space Surveillance Telescope was built at White Sands, New Mexico by the Defense Advanced Research Projects Agency, and moved following just a few months of test operations after attaining 'first light' to Exmouth. The telescope is highly automated, utilising artificial intelligence and precision engineering to search the night sky for space resident objects, principally in geosynchronous orbit. While optical telescopes are by their nature limited to night-time operations, the northwest coast of Western Australia provides a high level of unimpeded viewing of the night skies.

The Deep Space Advanced Radar Capability facility at Exmouth is the first of three planned sites (one in Wales and another in Texas) which represent a technologically novel deep space radar, able to detect and discriminate objects and discriminate in geosynchronous earth orbit (GEO; c.36,000 kms above the earth's surface) between 1 to 10 cm in size.[19] This capability is required for both space debris detection and characterization of the nature and behaviour of satellites in GEO. Together the three DARC facilities will provide coverage of satellites in GEO over 360 degrees of longitude.

DARC Site 1 consists of two facilities separated by several kilometres, with a total of 27 parabolic dish antennas (six in the transmit array, and 21 in the receive array). Working together, the transmit array achieves high power by combining and precisely coordinating signals from the separate parabolic antennas in the array to act like a much larger, powerful single-dish system, with comparable sensitivity achieved in the functioning of the coordinated antennas of the receive array.

> 'DARC offers higher sensitivity, better accuracy, increased capacity and more agile tracking than current radars capable of tracking objects in Geosynchronous Earth Orbit. Its ability to provide global monitoring extends beyond inclement weather and daylight, which are limitations of current ground-based optical systems.'[20]

DARC Site 1, Exmouth is expected to be fully operational in 2027.

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[19] Richard Tanter, 'Deep-Space Advanced Radar Capability, Site 1, Exmouth', *Australian Defence Facilities*, Nautilus Institute Briefing 14 October 2025, at https://nautilus.org/briefing-books/australian-defence-facilities/deep-space-advanced-radar-capability-site-1-exmouth-2/

[20] John Pike, 'Deep Space Advanced Radar Capability - DARC', GlobalSecurity.org, [accessed 3 September 2026], at https://www.globalsecurity.org/space/systems/darc.htm.

The Space Surveillance Telescope and the DARC radar facility are ideally located to detect, locate precisely, characterise, and monitor the movements and activities of Chinese satellites in geosynchronous orbit over the Equator. From the Exmouth facilities, the highly automated and efficient SST and the DARC stations can surveil over a hundred Chinese satellites of interest to the US military positioned over at least 160 degrees of longitude - roughly from the mid-Pacific to the middle of the African continent.

The DARC system, which was developed by the Johns Hopkins Advanced Physics Laboratory for Space Command, was incorporated by the United States into Pillar II of the AUKUS treaty structure under an unreleased Memorandum of Understanding signed on 2 December 2023 by the United States, United Kingdom and Australia.

The DARC Exmouth facility will be operated remotely. In May 2026 U.S. Space Force Combat Forces Command formally certified 'Early Use' for the DARC Exmouth facility:

> 'enabling the streamlining of test and evaluation processes while proving readiness of the capability in support of joint and combined force objectives'. [21]

Early Use activities at DARC Exmouth are being conducted from the U.S. Space Force 20th Space Surveillance Squadron's Integrated Radar Operations Center at Eglin Air Force Base in Florida, together with Mission Delta 2, which is responsible for space domain awareness operations from Schriever Space Force Base, Colorado.

'Joint' US and Australian operation is a likely model, most likely involving Australian Defence Space Force No. 1 Space Surveillance Unit at RAAF Base Edinburgh. In late 2026, according to a US report on the DARC and SST facilities, U.S. Space Force and Australian Defence Force 'joint exercises are expected to validate the speed at which tracking data from Western Australia can be converted into actionable targeting information for missile defense and maritime strike groups across the theater.'[22]

No. 1 Space Surveillance Unit already operates Australia's space domain capabilities, including the Space Surveillance Telescope (SST) and C-band Space Surveillance Radar (SSR) also located close to the DARC site near Exmouth. Red System satellites through the Relay Ground Station at the Joint Defence Facility Pine Gap. At Edinburgh, No. 1 Space Surveillance Unit already operates the SST and SSR together with Operating Location Bravo, an element of U.S. Space Force's Space Delta 2, and it is highly likely that a similar arrangement will be applied to the Exmouth DARC facility.[23]

In February 2022 Northrop Grumman was awarded a US$341 million contract as prime integrator to develop, test and deliver the first DARC site in Australia.[24] In addition to the US$341 million award

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[21] 'New Deep Space Radar Capability Employed Early', *U.S. Space Force Combat Forces Command*, 4 May 2026, at https://www.ussf-cfc.spaceforce.mil/News/Article-Display/Article/4476637/new-deep-space-radar-capability-employed-early.

[22] U.S. and Australia Expand Space Surveillance Network to Counter Emerging ASAT Threats', *satnews*, 6 May 2026, at https://satnews.com/2026/05/06/u-s-and-australia-expand-space-surveillance-network-to-counter-emerging-asat-threats/.

[23] Peter O'Rourke, 'A big day for the space domain', *Defence*, 3 July 2023, at https://www.defence.gov.au/news-events/news/2023-07-03/big-day-space-domain; and 'Fact Sheet: Space Delta 2 - Operating Location Bravo', *United States Space Force*, (current as of April 2024), [accessed 21 July 2025], at https://www.spaceforce.mil/About-Us/Fact-Sheets/Fact-Sheet-Display/Article/3739420/space-delta-2-operating-location-bravo/. No. 1 Space Surveillance Unit at RAAF Base Edinburgh also operates the ADF Jindalee Operational Radar Network (JORN), and the Australian Mission Processor that provides Australian access to data downlinked from U.S. Defense Satellite Program (DSP) and Space Based Infra Red System (SBIRS) satellites through the Relay Ground Station at the Joint Defence Facility Pine Gap. See Richard Tanter, *Hiding from the light: The establishment of the Joint Australia-United States Relay Ground Station at Pine Gap*, Special Report, Nautilus Institute for Security and Sustainability, 2 November 2019, at https://nautilus.org/napsnet/napsnet-policy-forum/hiding-from-the-light-the-establishment-of-the-joint-australia-united-states-relay-ground-station-at-pine-gap/?view=pdf.

[24] This total is separate from design and development costs for the DARC system by the Johns Hopkins University Applied Physics Laboratory (APL) in Laurel, Maryland, with a Technology Demonstrator [DARC-TD] version at White Sands, New Mexico. The total cost of the DARC Rapid Prototype Development and initial development of Site 1 was US$844.6 million. Colin Clark, 'Absolutely critical' to get DARC space situational system to Australia: Space Forces Indo-Pacific head', Breaking Defense, 7 April

to Northrop Grumman for Site 1, according to the ABC, the Australian government will reportedly spend 'almost $2 billion over more than 20 years to operate and sustain the WA site'.[25] Contrary to trends at other US-controlled facilities in Australia, this report suggests the Australian government anticipates spending about $100 mn. a year for the DARC Exmouth facility, far more than reported for longstanding facilities such as Pine Gap.[26]

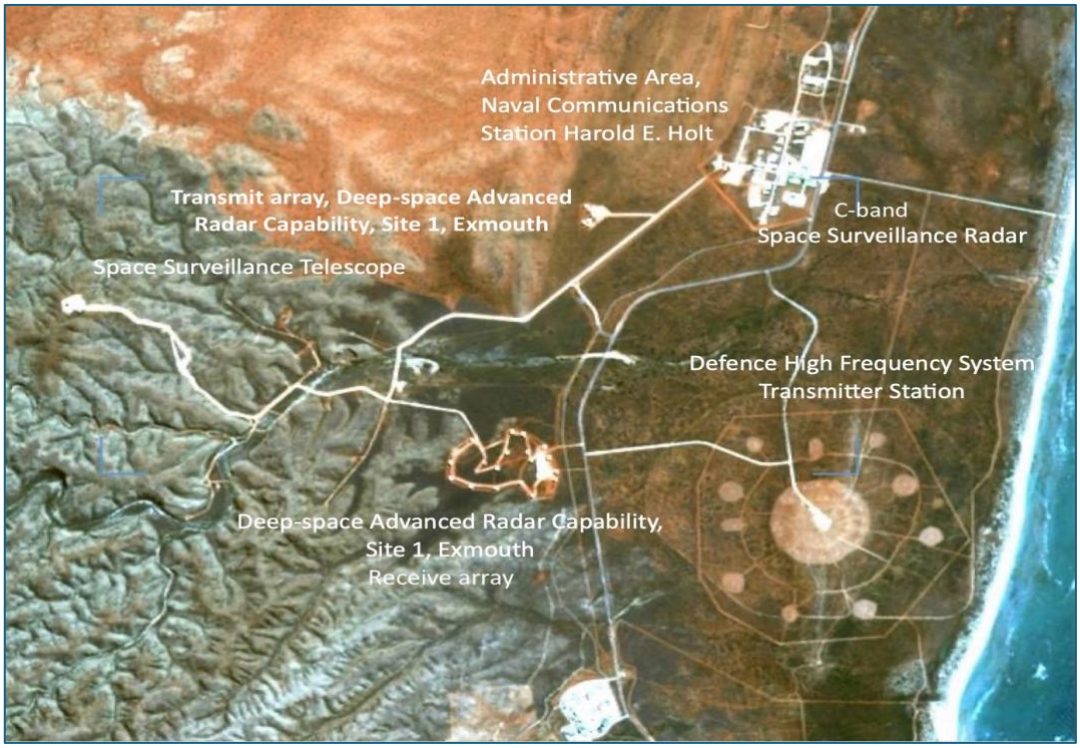

Figure 6. Deep Space Advanced Radar Site 1, Exmouth, and surrounding facilities
Source: *EOSDA LandViewer, Sentinel-2 L2A*, 16 August 2025, at https://eos.com/landviewer/.

US global communications capabilities with Australian access: Kojarena

The Australian Defence Satellite Communications Ground Station (ADSCS) is located at Kojarena, 30 km. east of Geraldton in Western Australia. The station hosts three distinct facilities in separate sectors. One is the Australian Defence Satellite Communications Ground Station (ADSCS) Australian intelligence facility intercepting communications downlinked from communications satellites in geostationary orbit above the equator operated by other countries, with a major Five Eyes signals intelligence role (codename STELLAR).[27] Two adjacent facilities built more recently by the United States provide access to satellite communications for US forces worldwide, and to which Australia has been given access by the US.

2023, at https://breakingdefense.com/2023/04/absolutely-critical-to-get-darc-space-situational-system-to-australia-space-forces-indo-pacific-head/.

[25] Andrew Greene, 'New AUKUS space facility being built near Exmouth in Western Australia's remote north-west', *ABC News*, 2 December 2013, at https://www.abc.net.au/news/2023-12-02/aukus-space-facility-being-built-near-exmouth-australia/103181426.

[26] By comparison, Philip Dorling reported in 2013 that 'according to the Defence Department, Australia's contribution to Pine Gap's running costs in 2011-12 was a mere $14 million', Philip Dorling, 'Desert Secrets', *Sydney Morning Herald*, 21 July 2013, at http://www.smh.com.au/technology/technology-news/desert-secrets-20130720-2qb5c.html. See also Desmond Ball, Bill Robinson, and Richard Tanter, *Australia's participation in the Pine Gap enterprise*, Nautilus Institute Special Report, 8 June 2016, pp. 51-53, at https://nautilus.org/napsnet/napsnet-special-reports/australias-participation-in-the-pine-gap-enterprise/.

[27] For an introduction to the ADSCS signals interception facility see Richard Tanter, 'Australian Defence Satellite Communications Station, Kojarena', *Australian Defence Facilities*, Nautilus Institute Briefing Book, updated 2 April 2025, Part 1, at https://nautilus.org/publications/books/australian-forces-abroad/defence-facilities/australian-defence-satellite-communications-station-kojarena/.

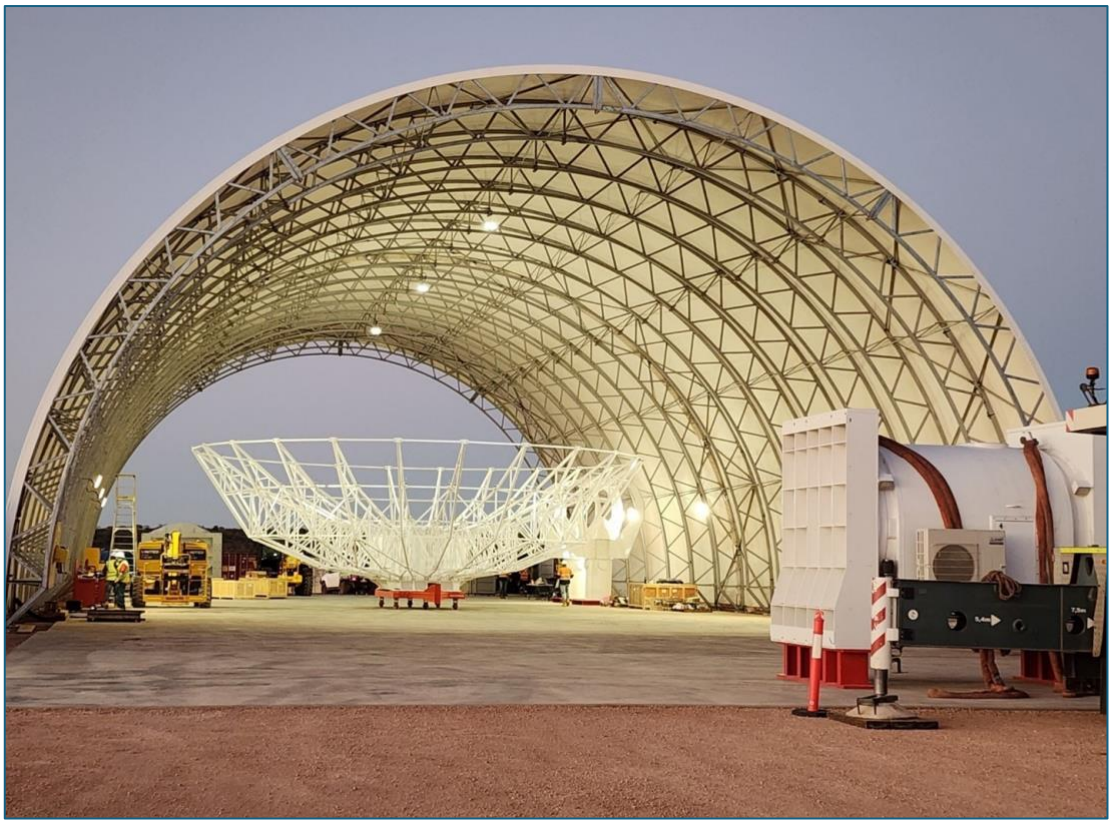

Figure 7. Deep Space Advanced Radar Site 1, Exmouth: one of 27 transmit and receive antennas under construction at the Antenna Integration Structure.

Source: Photo Credit: Mike Kortum, Four Sea Group Inc., VIRIN: 250219-X-FC312-1002, in Lisa Sodders, 'Deep Space Advanced Radar Capability makes tremendous progress in first year', *U.S. Space Systems Command*, 20 February 2025, at https://www.spaceforce.mil/news/article-display/article/4072069/deep-space-advanced-radar-capability-makes-tremendous-progress-in-first-year/

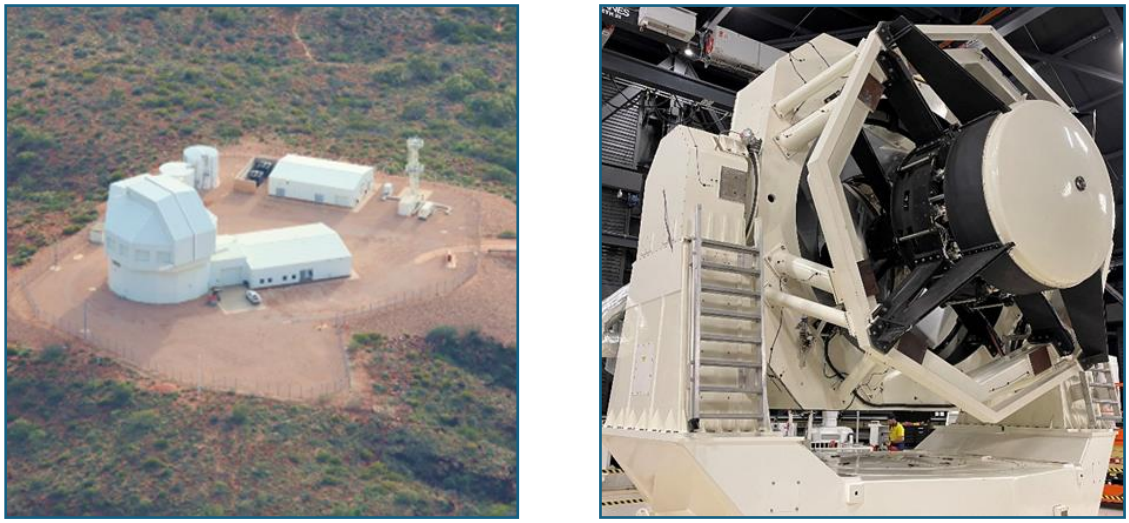

Figure 8. Space Surveillance Telescope, Exmouth

Photo credits - left: Department of Defence; right: MIT Lincoln Laboratory, VIRIN: 220930-X-DC888-1128 & VIRIN: 220930-X-DC888-1127. Source: 'SST Military Telescope', United States Space Force Space Systems Command, at https://www.ssc.spaceforce.mil/Newsroom/Article-Display/Article/3176471/space-surveillance-telescope-reaches-operational-acceptance-set-to-provide-spac

The three large antennas of the US-built MUOS military mobile phone Radio Access Facility and the Wideband Global SATCOM (WGS) military communications antennas are located adjacent to the north side of the ADSCS central sector, together with a smaller Australian-built ADF Satellite Ground Station, – West, also known as the Wideband Satellite Communications (SATCOM) Network Management System.

The MUOS system is made up of a space segment – four communications satellites in geosynchronous orbit (with one spare in orbit) – and a worldwide ground segment connected by a global ground data transport system of 18,000 miles of dedicated optical fibre linking the four radio access facilities (including Kojarena), network management nodes, and satellite control centres. MUOS terminals – ruggedised military smartphones- are capable of secure worldwide voice and data links, including internet protocol links to military databanks and computing systems. The MUOS ground system development was led by General Dynamics, while Lockheed Martin is the prime MUOS system contractor and satellite developer.

Figure 9. Australian Defence Satellite Communications Station, Kojarena, April 2024

Note: Australian Defence Satellite Communications Station satellite communications interception facility - STELLAR (right and lower), and northern compound containing MUOS Radio Access Facility, Satellite Ground Station – West, and Wideband Global System Ground Station (left). Source: Google Earth, 11 April 2024

Figure 10. US MUOS ground station (right) and Satellite Ground Station – West, Wideband Global SATCOM (left) compound, Australian Defence Satellite Communications Station, Kojarena
Source: Google Earth, 11 April 2024

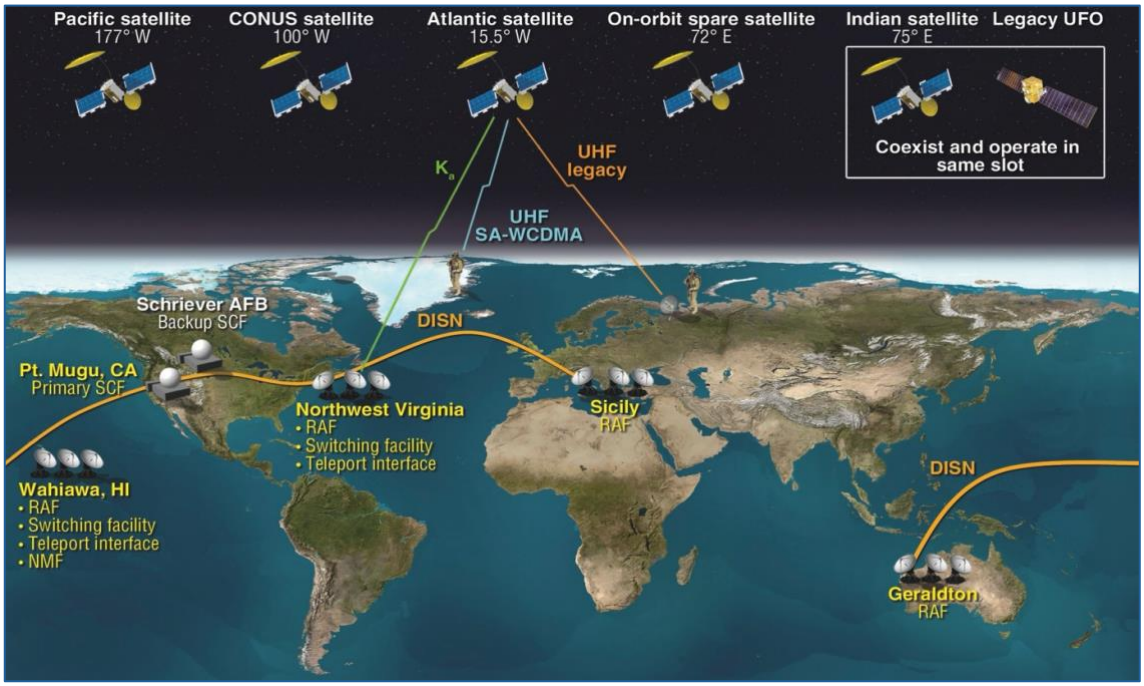

Figure 11. MUOS satellite and ground system architecture, and global optical fibre linkages
Note: the thick orange lines denote high-capacity fibre optic terrestrial links connecting the Radio Access Facilities and enabling routing of data to either the U.S. Defense Information Systems Network (DISN) or to the most appropriate of the four Radio Access Facilities to link to one or more satellites.
Source: John D. Oetting and Tao Jen, 'The Mobile User Objective System', Johns Hopkins APL Technical Digest, Volume 30, Number 2 (2011), Figure 1, (reproduced with kind permission.)

Under an agreement initiated in 2007, the Kojarena ADSCS facility was to be expanded under the US-Australia partnership in the Wideband Global SATCOM system, which provides Australian access to the principally US-funded constellation of ten (as of 2024) high-capacity global war-fighting communications satellites. Under the agreement, Australia funded the sixth satellite, launched in 2012-13. The first three satellites were launched between 2007 and 2010, and Australia gained operational access by June 2010. Ten Boeing-built satellites, weighing almost 6 tonnes, are currently in geostationary orbit above the Pacific, Indian and eastern Atlantic oceans, and a further two are under development.[28]

[28] See Gunter D. Krebs, 'WGS 11, 12', *Gunter's Space Page*, [accessed 20 August 20, 2026], at https://space.skyrocket.de/doc_sdat/wgs-11.htm; and Richard Tanter, 'Australian Defence Satellite Communications Station,

Pine Gap - one base, three distinct US-controlled surveillance facilities, one nuclear target

The Joint Defence Facility Pine Gap is strategically and politically the most important United States-controlled military facility in Australia, and is many ways the paradigm case of such a facility: the base was built by the United States, paid for in almost all respects by the United States, and each of the three separate parts of the base - here treated as three separate facilities - only functions as part of three distinct sets of US-controlled globally distributed technological systems.

However, Pine Gap is also the major US-controlled facility in Australia which shows the greatest level of Australian participation in terms of staffing and information access. That pattern stops well short of a comparable level of Australian control over high level direction of operations and planning.

Australian participation in the base's greatly expanded range of operations brings with it a measure of responsibility for the consequences of those operations, including amounting to sufficient Australian participation to render the Australian government complicit in grave US-auspiced violations of international law.

Although Australian government convention is to present the Joint Defence Facility Pine Gap as a single entity or 'base', it is more accurate to describe the JDFPG as three distinct co-located facilities, distinguishable at least to some extent by their locations within the 50 ha. JDFPG site, more directly by their technical characteristics and functions, and by the elements of the U.S. military and intelligence community involved in each. This study and the *Australian Bases & US Involvement* database from which it is drawn consider the JDFPG as three separate facilities, and treat them statistically as separate, without including the JDFG as a whole in the statistical reports. (See Figures 12 and 13.)

In brief, these three facilities that now make up the Joint Defence Facility Pine Gap are:

a. Space-based signals intelligence interception ground station [RAINFALL]

The original, much expanded, and still, primary function of Pine Gap is as a ground station for U.S. space-based signals intelligence operations in relation to at least four large United States signals interception satellites in geosynchronous orbit at a height of 36,000 kms over the equator. Most of the antennas, operations buildings capabilities, computing power, and skilled operational staff are involved in this aspect of the JDFPG.

b. Ground-based signals intelligence interception of foreign and communications satellites facility [RAINFALL - FORNSAT/COMSAT interception].

This aspect of JDFPG began operations in the late 1990s and has expanded considerably since that time with the construction, initially of two large parabolic antennas in the 1990s, and in particular since 2008, with the installation of the Torus multibeam antenna, whose stated motto for Pine Gap's companion station at Menwith Hill in the United Kingdom is 'We collect it all' - a phrase which involves an exaggeration in a literal sense, but describes very well an otherwise unprecedented industrial scale of communications intelligence collection enabled by principally by the Torus system.[29]

Kojarena', *Australian Defence Facilities*, Nautilus Institute Briefing Book, updated 2 April 2025, at https://nautilus.org/publications/books/australian-forces-abroad/defence-facilities/australian-defence-satellite-communications-station-kojarena/.

[29] Desmond Ball, Duncan Campbell, Bill Robinson, and Richard Tanter, *Expanded Communications Satellite Surveillance and Intelligence Activities Utilising Multi-beam Antenna Systems*, Nautilus Institute, Special Reports, 28 May 2015.

c. Relay Ground Station -Pacific - Overhead Persistent Infra Red surveillance

The Relay Ground Station -Pacific (RGS-P) is a ground facility for a second suite of large US satellites over the equator in geosynchronous orbit carrying large, powerful and highly sensitive infrared telescopes (Overhead Persistent Infra Red or OPIR satellite systems). The OPIR Relay Ground Station, on the western side of the facility, was established in 1999 following the closure of the large Joint Defence Facility Nurrungar near Woomera due to U.S. technological developments. The Pine Gap RGS is now operated remotely and substantially automatically from a Mission Control Station in Colorado, with little personnel involvement at Pine Gap.

As of 2026 there were two types of OPIR satellites controlled through Pine Gap, older Defense Satellite Program (DSP) satellites and more capable Space Based Infra Red System (SBIRS) satellites. Three large parabolic antennas installed around 2020 on the far western edge of the RGS will link to a third constellation of OPIR satellites whose launch sequence is planned to begin imminently.

The primary function of all three sets of OPIR satellites is to detect and locate the launch of ballistic missiles by the heat bloom, characterise their type and capabilities from the thermal signature of the rocket launch, and provide a foundation for calculation of the missile's initial trajectory, and hence both the likely impact area and trajectory information required for missile defence response.

The Joint Defence Facility Pine Gap is a 'joint' facility in the sense that, in recent decades, the numbers of Australian and United States staff are about even; the Deputy Chief of Staff of the facility is normally an Australian; Australian senior personnel are appointed, alongside US colleagues, in managerial positions at levels of Deputy Chief of Operations and below; Australians are present in every section of the facility, with the exception of the US National Cryptographic Room; Australians participate in satellite tasking/targeting decisions; and Australia may obtain all data flowing through Pine Gap.[30]

This transformation reflects both the achievements of Australian governments in their efforts over decades to increase the Australian presence at the base on the one hand, and on the other the changing military and intelligence nature of the relationship between Australia and United States. Indeed, the pervasive Australian participation in the activities of Pine Gap now epitomises both the networked, but fundamentally asymmetrical, character of the Australia-United States alliance today.

Australians may participate in all aspects of the base's operations, including tasking satellite operations. However, the fundamental realities are that not only does the great bulk of tasking of satellites come from the United States and reflect its strategic priorities, but despite Australian participation in the base's greatly expanded range of operations, Pine Gap remains a United States facility that was both established by and then greatly expanded to satisfy US intelligence and warfighting interests.

High policy direction, command arrangements, priorities of operational tasking, and the globe-spanning socio-technical space-based systems of which Pine Gap is an integral part all confirm that Pine Gap is a United States-controlled facility in the operation of which Australia participates closely. Those fundamental asymmetrical characteristics of the 'joint facility' are confirmed by the funding arrangements.

Over the past two decades in particular the role of the Pine Gap space-based signals intelligence facility as a source of significant intelligence material on parts of the Middle East including Israel,

[30] This text of this section draws on previously published papers authored by Desmond Ball, Bill Robinson and myself, including 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; *The Higher Management of Pine Gap*, Nautilus Institute, Special Report, 18 August 2015; *Managing Operations at Pine Gap*, Nautilus Institute, Special Reports, 24 November 2015; *Australia's participation in the Pine Gap enterprise*, Nautilus Institute Special Report, 8 June 2016; and *The militarisation of Pine Gap: Organisations and Personnel*, Nautilus Institute, Special Report, 14 August 2015.

Gaza, Lebanon, Yemen and Iran has marked heightened questioning of US access to an Australian facility, in particular by linking a US-controlled Australian defence facilities to activities by the Israel Defence Force in Gaza regarded by the International Court of Justice as an ongoing plausible case of genocide.[31]

To summarise:

- The technical capabilities of signals intelligence satellites with coverage of the relevant areas of the Middle East region controlled through and downlinking data to Pine Gap (see Figure 14)
- The historical record of previous occasions on which intelligence originating from the facility of value to the IDF's military operations was passed to the IDF by U.S. intelligence agencies involved in Pine Gap between 1973 and 2008, including the Central Intelligence Agency and the National Security Agency.
- The evidence of official U.S. government sources released by the former CIA analyst and NSA sub-contractor Edward Snowden from 2013 documenting signals intelligence collection and cooperation agreements and protocols between the U.S. and Israeli government and their relevant agencies and military units authorising and regulating the transmission of NSA intelligence to Israel including material derived from Pine Gap - a matter confirmed by David Rosenberg's judgement on the basis of his direct knowledge of the 1990-2008 period.

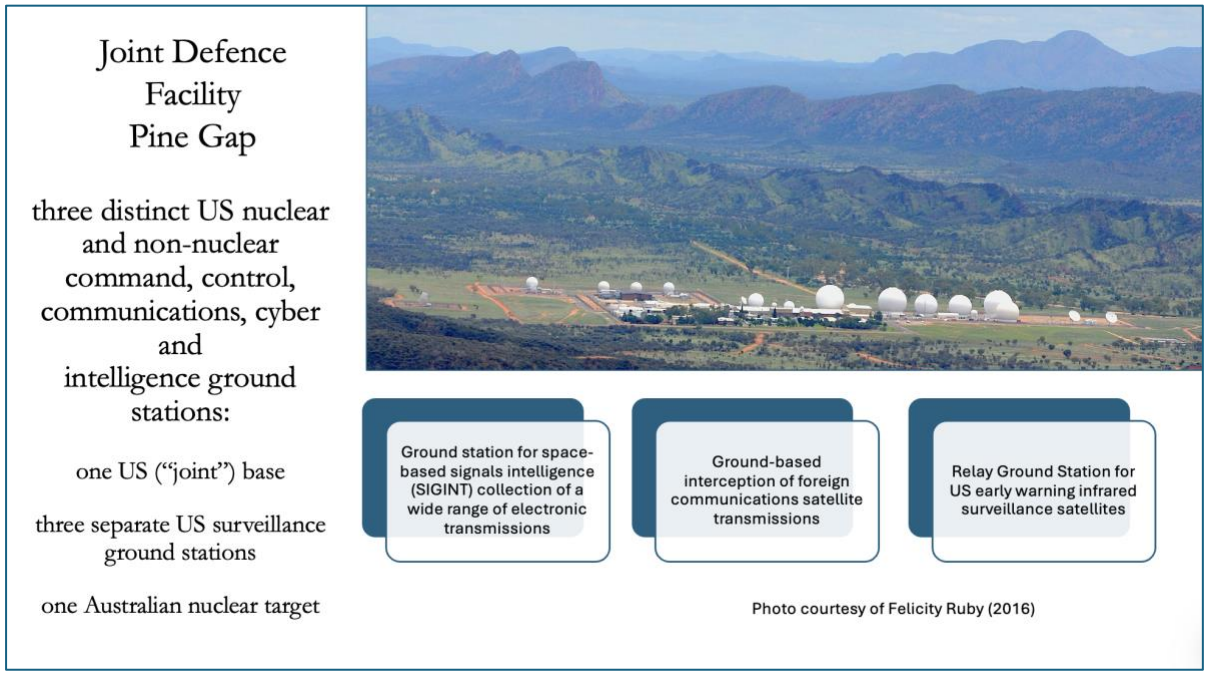

Figure 12. Joint Defence Facility Pine Gap - three separate US surveillance ground stations

[31] See sources cited and documentation in Richard Tanter, *Does Pine Gap place Australia at risk of complicity in genocide in Gaza? A complaint concerning the Australian Signals Directorate to the Inspector General of Security and Intelligence*, 27 March 20 24, at https://nautilus.org/briefing-books/australian-defence-facilities/pine-gap/pine-gap-gaza-and-complicity-in-genocide/. The conclusion that Pine Gap was likely assisting IDF operations in Gaza is based four main elements outlined in detail in the complaint: Pine Gap satellites' technical coverage of Gaza and the broader Middle East; the historical provision of Pine Gap-derived intelligence to Israel; documented US–Israeli intelligence-sharing agreements permitting the transfer of NSA intelligence, including raw intelligence material; and Statements made by former NSA Senior Intelligence Analyst at Pine Gap, David Rosenberg.

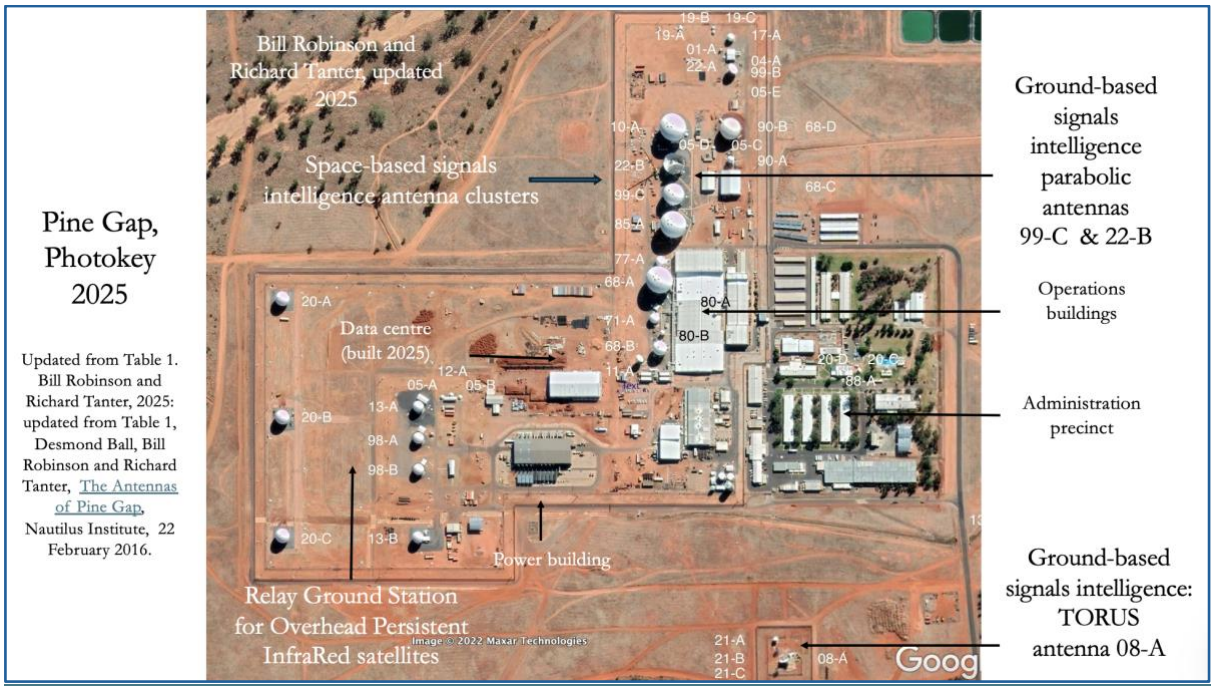

Figure 13. The three surveillance facilities at the Joint Defence Facility Pine Gap, 2025 photokey

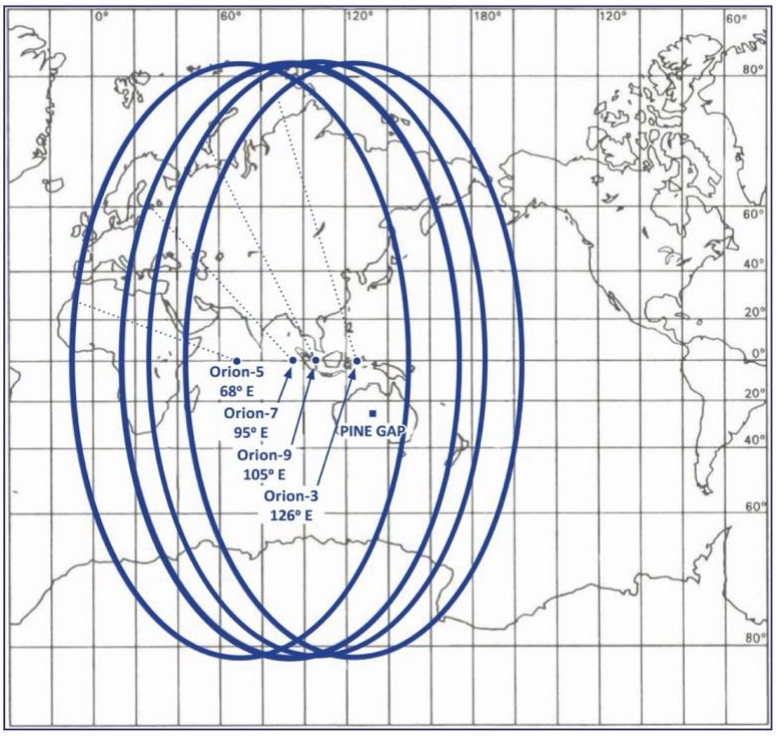

Figure 14. U.S. Advanced Orion geosynchronous signals intelligence satellites under Pine Gap control in 2021-2022

Source: Bill Robinson and Richard Tanter, graphic by Luke Hambly. Data source: Jonathan S. McDowell, 'Geostationary Orbit Catalog: Current orbits', Jonathan's Space Home Page, updated 23 February 2024, at https://planet4589.org/space/gcat/data/derived/geotab.html. According to subsequent observations by Professor Jonathan McDowell of the Harvard-Smithsonian Center for Astrophysics these longitudinal stations were effectively unchanged in mid-2025.

National Aeronautics and Space Administration (NASA) facilities in Australia

The US National Aeronautics and Space Administration (NASA) is formally a civilian organisation but has a long history of collaboration with US military organisations, with consequent political and strategic implications for other countries that host NASA facilities.

In 2026 there are five Australian facilities with both defence and scientific relationships with the US National Aeronautics and Space Administration (NASA). (Table 6. US-controlled NASA facilities in Australia.) All are either continuations or derivatives of seventeen facilities first documented from Desmond Ball in the 1980s (Table 9). Each has an Australian government partner - either the Commonwealth Scientific and Industrial Organisation (CSIRO) or GeoScience Australia.

The historian Aaron Bateman summarised the history leading to the situation Ball documented

> 'In 1960, NASA paved the way for the United States to significantly expand its presence in Australia when Australia and the United States signed an agreement permitting NASA tracking stations in the country. Within a decade, NASA had a presence in Western Australia (Carnarvon), the Australian Capital Territory (Tidbinbilla, Honeysuckle Creek, and Orroral Valley), South Australia (Island Lagoon), and Queensland (Cooby Creek). Because of its location, the Carnarvon station relayed the command to the Apollo 11 spacecraft that placed it on a lunar trajectory. Moreover, it was the only NASA facility in the Southern Hemisphere with high-precision FPQ-6 radars that played a key role in accurately tracking NASA space missions. Australian facilities were largely invisible enablers of the U.S. space program, including its Moon landings.' [32]

Each of the five contemporary NASA facilities has been classified as a United States-controlled facility to which Australia has access, mostly civil in the form of management by either CSIRO or GeoScience Australia. Each facility was built or is owned by NASA, with an Australian civil partner.[33]

The facilities vary in size from the four very large satellite communications antennas (up to 70 m. in diameters) of the Canberra Deep Space Communication Complex at Tidbinbilla, ACT, to the NASA MOBLAS5 satellite ranging facility, the size of several shipping containers, at the Yarragadee Geodetic Observatory in Western Australia.

The Yarragadee Geodetic Observatory, like earlier US-controlled geodetic facilities, has a critical role in various aspects of military position, navigation & timing requirements, including through Doppler shift satellite tracking.

The Tracking and Data Relay Satellite Facility at Dongara in Western Australia is adjacent to the Yarragadee facility, and also to the U.S. Space Force's EWS-G2 weather satellite Remote Ground Station at Dongara.

Like the Dongara tracking facility, the Alice Springs Tracking and Data Relay Satellite Ranging System Facility is part of the worldwide Part of the U.S. Tracking and Data Relay Satellite ground system. The Tracking and Data Relay satellite system has both military and civil functions.

The Alice Springs Balloon Launching Station used for stratospheric atmospheric and radiation research is housed in a warehouse structure on the western edge of Alice Springs Airport.

The large antennas at the Tidbinbilla deep space satellite communications complex have in the past had major roles in US military space activities, notably the Space Shuttle., beginning in 1981. For the Australian government of the day this caused considerable anxiety because of US reluctance to acknowledge that the Australian government's doctrine of Full Knowledge and Concurrence would

[32] Aaron Bateman, 'U.S. Space Power and Alliance Dynamics in the Cold War', *International Security,* Vol. 50, No. 2 (Fall 2025), pp. 75-76.

[33] In several cases the status of the assessment of US access to the particular facility is classified as 'medium' rather than 'high', reflecting uncertainty about the exact nature and extent of the Australian civil partner's actual role.

apply to the activities of the Space Shuttle, which were in considerable part undoubtedly military in nature.[34]

> 'It was helpful to Canberra that NASA was primarily a civilian space agency whose activities in Australia were less likely to generate controversy. Regardless, the NASA talks in the 1980s underscore once again the inseparability of civil space infrastructure from the broader U.S.-Australia alliance and some of the political challenges associated with hosting dual-use satellite ground stations in foreign territories.'[35]

Table 6. US-controlled NASA facilities in Australia

Facility	NASA role	US access status and confidence level
Alice Springs Balloon Launching Station	NASA-owned CSIRO operated[36]	US - with Australian access/civil - high
Canberra Deep Space Communication Complex	NASA-owned CSIRO-managed[37]	US - with Australian access/civil - medium
Tracking and Data Relay Satellite Facility, Dongara	NASA-built GeoScience Australia-managed[38]	US - with Australian access - high
Tracking and Data Relay Satellite Ranging System Facility, Alice Springs	NASA-built GeoScience Australia-managed[39]	US - with Australian access - medium
Yarragadee Geodetic Observatory	NASA-built GeoScience Australia-managed[40]	US - with Australian access/civil - medium

Notes: For documentation of sources see entries in the *Australian Bases & US Involvement* database.

[34] See the detailed account in James David, *Spies and Shuttles: NASA's secret relationships with the DOD and CIA*, (Smithsonian Air and Space National Museum, 2015), pp. 165-248. On the Space Shuttle and the Defense Support Program satellites linked to Pine Gap, see Richard Tanter, *Hiding from the light: The establishment of the Joint Australia-United States Relay Ground Station at Pine Gap*, Special Report, Nautilus Institute for Security and Sustainability, 2 November 2019, pp. pp. 8-11, at https://nautilus.org/network/associates/richard-tanter/publications/.

[35] Aaron Bateman, 'U.S. Space Power and Alliance Dynamics in the Cold War', *International Security,* Vol. 50, No. 2 (Fall 2025), p. 92.

[36]Parliament of Australia, Joint Standing Committee on Treaties*, Report 219: Australia-Tuvalu Falepili Union; CITES; Scientific Balloons*, August 2024, [Chapter 4 - Scientific Balloon Treaty], at https://parlinfo.aph.gov.au/parlInfo/download/committees/reportjnt/RB000428/toc_pdf/Report219.pdf; and Nick Hose, 'From the outback to the galaxy, Alice Springs space balloons used to study the Milky Way', *ABC News*, 8 April 2018, at https://www.abc.net.au/news/2018-04-08/alice-springs-space-balloons-to-help-study-the-milky-way-galaxy/9631028.

[37] 'About Canberra Deep Space Communication Complex', *CSIRO*, [accessed 5 September 2026], at https://www.csiro.au/en/about/facilities-collections/international-facilities/CDSCC/About-CDSCC; and Ewen Levick, 'Space support from state governments', *ADM*, 5 April 2020, at https://www.australiandefence.com.au/defence/cyber-space/space-support-from-state-governments.

[38] 'Our satellite and ground station network', *GeoScience Australia*, updated:4 December 2024, at https://www.ga.gov.au/scientific-topics/space/our-satellite-and-ground-station-network. ß

[39] 'Our satellite and ground station network', *GeoScience Australia*, updated:4 December 2024, at https://www.ga.gov.au/scientific-topics/space/our-satellite-and-ground-station-network.

[40] 'Our satellite and ground station network', *GeoScience Australia*, updated:4 December 2024, at https://www.ga.gov.au/scientific-topics/space/our-satellite-and-ground-station-network.

6. What does US access to Australian facilities enable: Australian-controlled facilities?

The facility primarily serves Australian strategic or operational interests and under Australian operational control, but with some US military and/or corporate access.

If the highly significant but small category of 'US-controlled facilities' comes most readily to mind for most Australians thinking about Australian defence facilities with a significant measure of US access, perhaps the most shocking result to emerge from this study is that the number of Australian-controlled facilities with US access (93) is more than double the number of Australian-only, or facilities without significant US access (41). In other words, there are twice as many facilities with US access as those classified as Australian-only (Tables 3 and 4).

This very large group of Australian facilities is best understood in terms of their roles in US military activities in Australia. Whereas almost all of the 17 US-controlled facilities perform intelligence, surveillance, or positioning roles for the United States, Australian-controlled facilities, while including a number with intelligence and surveillance importance for the United States, are more diverse (Table 6).

The two largest groups enable the United States to carry out force projection activities from Australian bases (25), on the one hand, and to conduct mainly large-scale wide-area training activities and military exercises (24).

The next most significant group for US activities in Australia involves communications, command and control activities (12), with the important proviso that US access to eight of those facilities is judged 'low confidence' (see Appendix 6).

The remaining facilities are involved in US activities in Australia dealing with logistics, munitions and pre-positioning (7), industrial production or weapons supply (3), or large-scale capability buildout or construction of strategic infrastructure (3).

Training lands and sacrifice zones

The two dozen training facilities and areas to which the US has access are found in all states except Tasmania, plus the Northern Territory, and vary in size from a few hectares to the size of significant nation states. For the Defence Department, size is a principal factor deciding what kind of training can be carried out, determined by:

- 'Numbers of troops, vehicles and equipment able to fit on the ground;
- 'Amount of tactical movement (manoeuvre) required to meet training objectives; and
- 'Capability of weapons systems in use and associated no-go exclusion areas (safety templates) around live-fire training to keep troops, and the public safe.'[41]

The largest training areas

> 'have a primary function to support joint and combined manoeuvre for force elements at or above battle group with the potential ability to support live fire training from land, air and sea.'

[41] Senate Standing Committee on Foreign Affairs, Defence and Trade, *Inquiry into the Impact of Defence Training Activities and Facilities on Rural and Regional Communities*, Department of Defence Written Submission, May 2017, pp. 4-5, at https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Foreign_Affairs_Defence_and_Trade/Defencetraining/~/media/Committees/fadt_ctte/Defencetraining/Second_interim_report/C01.pdf.

Table 7. All facilities with US access — arranged by functions of US military activities in Australia

Function group	Facility	Facility type	Functions of US military activities in Australia	US access - status	US access - confidence re Status
Capability build-out					
	Australian Marine Complex	Infrastructure / manufacturing	Capability build-out / strategic infrastructure; Industrial production / weapons supply	Australian - with US military access	High
	Henderson Defence Precinct	Infrastructure / manufacturing	Capability build-out / strategic infrastructure; Logistics / munitions / prepositioning; Industrial production / weapons supply	Australian - with US military access	High
	Osborne Naval Shipyard / Nuclear-Powered Submarine Construction Yard	Infrastructure / manufacturing	Capability build-out / strategic infrastructure; Industrial production / weapons supply	Australian - with US military access	High
Communications / command and control					
	Bohle River Transmit Site (HF)	Communications	Communications / command and control	Australian - with US military access + US corporate access	Low
	Exmouth Receive Site (HF), North West Cape	Communications	Communications / command and control	Australian - with US military access + US corporate access	Low
	HMAS Harman	Intelligence / surveillance	Communications / command and control; Intelligence / surveillance	Australian - with US military access	High
	Humpty Doo Transmit Site (HF), Darwin	Communications	Communications / command and control	Australian - with US military access + US corporate access	Low
	Lyndoch Transmit Site (HF), Riverina	Communications	Communications / command and control	Australian - with US military access + US corporate access	Low
	Mobile User Objective System (MUOS) Radio Access Facility, Kojarena	Communications	Communications / command and control	US - with Australian access	High

Function group	Facility	Facility type	Functions of US military activities in Australia	US access - status	US access - confidence re Status
	Morundah Receive Site (HF), Riverina	Communications	Communications / command and control	Australian - with US military access + US corporate access	Low
	Mount Bundey Receive Site (HF), Darwin	Communications	Communications / command and control	Australian - with US military access + US corporate access	Low
	Naval Communication Station Harold E. Holt, North West Cape	Communications	Communications / command and control	Australian - with US military access + US corporate access	High
	Rough Range Receive Site (HF), North West Cape	Communications	Communications / command and control	Australian - with US military access + US corporate access	Low
	Satellite Ground Station – West (Wideband Global System Ground Station), Kojarena	Communications	Communications / command and control	Australian - with US military access + US corporate access	High
	Speed Creek Receive Site (HF)	Communications	Communications / command and control	Australian - with US military access + US corporate access	Low
Force projection					
	Borneo Barracks, Cabarlah	Intelligence / surveillance	Force projection	Australian - with US military access	Low
	Cairns Airport	Civilian infrastructure	Force projection	Australian - with US military access	High
	Defence Accommodation Precinct Darwin	Army base	Force projection	Australian - with US military access	High
	Garden Island Defence Precinct / Fleet Base East	Naval base	Force projection; Communications / command and control	Australian - with US military access + US corporate access	High
	HMAS Albatross	Naval base	Force projection	Australian - with US military access + US corporate access	High

Function group	Facility	Facility type	Functions of US military activities in Australia	US access - status	US access - confidence re Status
	HMAS Cairns	Naval base	Force projection	Australian - with US military access	High
	HMAS Coonawarra	Naval base	Force projection	Australian - with US military access	High
	HMAS Kuttabul	Logistics / munitions / prepositioning	Force projection	Australian - with US military access	High
	HMAS Stirling / Fleet Base West	Naval base	Force projection; Communications / command and control; Capability build-out / strategic infrastructure	Australian - with US military access + US corporate access	High
	HMAS Waterhen	Naval base	Force projection	Australian - with US military access	High
	Holsworthy Barracks	Army base	Force projection	Australian - with US military access + US corporate access	Medium
	Larrakeyah Barracks	Army base	Force projection	Australian - with US military access	High
	RAAF Base Amberley	Air base	Force projection	Australian - with US military access + US corporate access	High
	RAAF Base Curtin	Air base	Force projection	Australian - with US military access	High
	RAAF Base Darwin	Air base	Force projection	Australian - with US military access + US corporate access	High
	RAAF Base Edinburgh	Research / development / testing	Force projection; Intelligence / surveillance; Research / development / testing; Industrial production / weapons supply	Australian - with US military access + US corporate access	High
	RAAF Base Learmonth	Air base	Force projection; Logistics / munitions / prepositioning	Australian - with US military access	High
	RAAF Base Pearce	Air base	Force projection	Australian - with US military access	Medium

Function group	Facility	Facility type	Functions of US military activities in Australia	US access - status	US access - confidence re Status
	RAAF Base Richmond	Air base	Force projection	Australian - with US military access + US corporate access	High
	RAAF Base Scherger	Air base	Force projection	Australian - with US military access	Medium
	RAAF Base Tindal	Air base	Force projection; Logistics / munitions / prepositioning; Intelligence / surveillance	Australian - with US military access + US corporate access	High
	RAAF Base Townsville	Air base	Force projection	Australian - with US military access + US corporate access	High
	RAAF Base Williamtown	Air base	Force projection	Australian - with US military access + US corporate access	High
	RAAF Forward Operating Base Cocos Islands	Air base	Force projection	Australian - with US military access	Medium
	Robertson Barracks	Army base	Force projection	Australian - with US military access	High
Industrial production / weapons supply					
	Defence Mulwala Facility	Logistics / munitions / prepositioning	Industrial production / weapons supply	Australian - with US military access + US corporate access	High
	Proof and Experimental Establishment, Port Wakefield	Research / development / testing	Industrial production / weapons supply	Australian - with US military access + US corporate access	High
	Toowoomba Wellcamp Airport Defence & Aerospace Precinct	Logistics / munitions / prepositioning	Industrial production / weapons supply; Logistics / munitions / prepositioning	Australian - with US military access + US corporate access	High
Intelligence / surveillance					
	Alice Springs Balloon Launching Station	Research / development / testing	Intelligence / surveillance	US - with Australian access/civil	High

Function group	Facility	Facility type	Functions of US military activities in Australia	US access - status	US access - confidence re Status
	Australian Cyber Security Centre	Intelligence / surveillance	Intelligence / surveillance	Australian - with US military access	High
	Australian Defence Satellite Communications Station - satellite communications interception facility [STELLAR]	Intelligence / surveillance	Intelligence / surveillance	Australian - with US military access	High
	Australian Geospatial Intelligence Organisation	Intelligence / surveillance	Intelligence / surveillance	Australian - with US military access + US corporate access	High
	Australian Signals Directorate headquarters	Intelligence / surveillance	Intelligence / surveillance	Australian - with US military access	High
	Canberra Deep Space Communication Complex	Intelligence / surveillance	Intelligence / surveillance	US - with Australian access/civil	Medium
	Cocos Islands Signals Intelligence Station	Intelligence / surveillance	Intelligence / surveillance	Australian - with US military access	Low
	Deep Space Advanced Radar Capability, Site 1: Exmouth	Intelligence / surveillance	Intelligence / surveillance	US - with Australian access + US corporate access	High
	EWS-G2 weather satellite Remote Ground Station, Dongara West	Intelligence / surveillance	Intelligence / surveillance	US - with Australian access + US corporate access	High
	Extended HANDS Ground Station Learmonth	Intelligence / surveillance	Intelligence / surveillance	US - with Australian access	High
	GPS Monitoring Station (National Geospatial-Intelligence Agency)	Position, navigation & timing	Intelligence / surveillance	US - with Australian access	High
	Jindalee Operational Radar Network (JORN) – Alice Springs	Intelligence / surveillance	Intelligence / surveillance	Australian - with US military access	Medium

Function group	Facility	Facility type	Functions of US military activities in Australia	US access - status	US access - confidence re Status
	Jindalee Operational Radar Network (JORN) – Queensland	Intelligence / surveillance	Intelligence / surveillance	Australian - with US military access	Medium
	Jindalee Operational Radar Network (JORN) – Western Australia	Intelligence / surveillance	Intelligence / surveillance	Australian - with US military access	Medium
	Joint Geological and Geophysical Research Station, Alice Springs	Intelligence / surveillance	Intelligence / surveillance	US - with Australian access/civil	High
	Learmonth Solar Observatory	Intelligence / surveillance	Intelligence / surveillance	US - with Australian access/civil	High
	Learmonth Space Situational Awareness Observatory	Intelligence / surveillance	Intelligence / surveillance	Australian - with US military access + US corporate access	High
	Maritime Underwater Tracking Range (MUTR)	Intelligence / surveillance	Intelligence / surveillance	Australian - with US military access + US corporate access	High
	Pine Gap - ground-based foreign and communications satellite interception facility [RAINFALL - FORNSAT/COMSAT]	Intelligence / surveillance	Intelligence / surveillance; Communications / command and control	US - with Australian access + US corporate access	High
	Pine Gap - overhead persistent infrared satellite Relay Ground Station	Intelligence / surveillance	Intelligence / surveillance; Communications / command and control	US - with Australian access + US corporate access	High
	Pine Gap - space-based signals intelligence facility [RAINFALL]	Intelligence / surveillance	Intelligence / surveillance; Communications / command and control	US - with Australian access + US corporate access	High
	Russell Precinct, Canberra	Administration	Intelligence / surveillance	Australian - with US military access	High
	Satellite Operations Centre – 1, RAAF Base Edinburgh	Communications	Intelligence / surveillance	Australian - with US military access	Medium

Function group	Facility	Facility type	Functions of US military activities in Australia	US access - status	US access - confidence re Status
	Shoal Bay Receiving Station	Intelligence / surveillance	Intelligence / surveillance; Communications / command and control	Australian - with US military access + US corporate access	High
	Space Surveillance Radar, (C-band Radar), Exmouth	Intelligence / surveillance	Intelligence / surveillance	Australian - with US military access + US corporate access	High
	Space Surveillance Telescope, Exmouth	Intelligence / surveillance	Intelligence / surveillance	US - with Australian access + US corporate access	High
	Tracking and Data Relay Satellite Facility, Dongara	Intelligence / surveillance	Intelligence / surveillance	US - with Australian access	High
	Tracking and Data Relay Satellite Ranging System Facility, Alice Springs	Intelligence / surveillance	Intelligence / surveillance	US - with Australian access	Medium
	Yarragadee Geodetic Observatory	Position, navigation & timing	Intelligence / surveillance	US - with Australian access/civil	Medium
Logistics / munitions / prepositioning					
	Defence Establishment Berrimah	Logistics / munitions / prepositioning	Logistics / munitions / prepositioning	Australian - with US military access	High
	East Arm Bulk Fuel Storage Facility	Logistics / munitions / prepositioning	Logistics / munitions / prepositioning	US - with Australian access + US corporate access	High
	Gaza Ridge Barracks (North and South Bandiana)	Logistics / munitions / prepositioning	Logistics / munitions / prepositioning	Australian - with US military access	High
	Jennings Explosives Depot	Logistics / munitions / prepositioning	Logistics / munitions / prepositioning	Australian - with US military access	Medium
	Lavarack Barracks	Logistics / munitions / prepositioning	Logistics / munitions / prepositioning	Australian - with US military access	High
	Navy Ammunitioning Facility, Twofold Bay	Logistics / munitions / prepositioning	Logistics / munitions / prepositioning	Australian - with US military access	Medium
	Palmer Barracks	Logistics / munitions / prepositioning	Logistics / munitions / prepositioning	Australian - with US military access	Low
	Wadsworth Barracks (East Bandiana)	Logistics / munitions / prepositioning	Logistics / munitions / prepositioning	Australian - with US military access	High

Function group	Facility	Facility type	Functions of US military activities in Australia	US access - status	US access - confidence re Status
Research / development / testing					
	Defence Science and Technology Adelaide, Edinburgh	Research / development / testing	Research / development / testing	Australian - with US corporate access	High
	Defence Science and Technology Melbourne, Fishermans Bend	Research / development / testing	Research / development / testing	Australian - with US corporate access	Medium
	Woomera Range Complex	Research / development / testing	Research / development / testing	Australian - with US military access + US corporate access	High
Training					
	Beecroft Weapons Range	Training / exercises	Training	Australian - with US military access	Medium
	Bindoon Training Area	Training / exercises	Training	Australian - with US military access	Low
	Bradshaw Field Training Area	Training / exercises	Training	Australian - with US military access	High
	Combat Training Centre - Jungle Training Wing, Tully	Training / exercises	Training	Australian - with US military access	High
	Cowley Beach Military Training Area	Training / exercises	Training	Australian - with US military access	High
	Cultana Training Area	Training / exercises	Training	Australian - with US military access	High
	Defence Establishment Howard Springs North	Training / exercises	Training	Australian - with US military access	Medium
	Delamere Air Weapons Range	Training / exercises	Training	Australian - with US military access + US corporate access	High
	Halifax Bay Training Area	Training / exercises	Training	Australian - with US military access	High
	HMAS Creswell	Training / exercises	Training	Australian - with US military access	Medium

Function group	Facility	Facility type	Functions of US military activities in Australia	US access - status	US access - confidence re Status
	HMAS Watson	Training / exercises	Training	Australian - with US military access + US corporate access	High
	Kangaroo Flats Training Area	Training / exercises	Training	Australian - with US military access	High
	Lancelin Defence Training Area	Training / exercises	Training	Australian - with US military access	High
	Learmonth Air Weapons Range	Training / exercises	Training	Australian - with US military access	Low
	Lone Pine Barracks	Training / exercises	Training	Australian - with US military access	High
	Mount Bundey Training Area	Training / exercises	Training	Australian - with US military access	High
	Mount Stuart Training Area	Training / exercises	Training	Australian - with US military access	Medium
	Robertson Barracks Close Training Area	Army base	Training	Australian - with US military access	High
	Shoalwater Bay Training Area	Training / exercises	Training	Australian - with US military access	High
	Singleton Military Area	Training / exercises	Training	Australian - with US military access	High
	Townsville Field Training Area	Training / exercises	Training	Australian - with US military access	High
	Tully Military Training Area	Training / exercises	Training	Australian - with US military access	High
	Wide Bay Training Area	Training / exercises	Training	Australian - with US military access	High
	Yampi Sound Training Area	Training / exercises	Training	Australian - with US military access	High

Notes: 107 facilities in Table 7. Table The chart is sorted by function count; the detailed rows are grouped by the first function recorded for each facility.

Includes: Facilities with assessed US access and at least one recorded US military function. Excludes: Facilities without assessed US access or a recorded function and structurally excluded or out-of-scope records.

In the mid-2010s these included four large wide-area Australian training areas with US access: Bradshaw Field Training Area, Cultana Training Area, Shoalwater Bay Training Area, and Yampi Sound Training Area - all larger in size than a number of UN member states. A decade later it is possible that Delamere Air Weapons Range, similarly of nation-state size, is now included in that multi-service list.

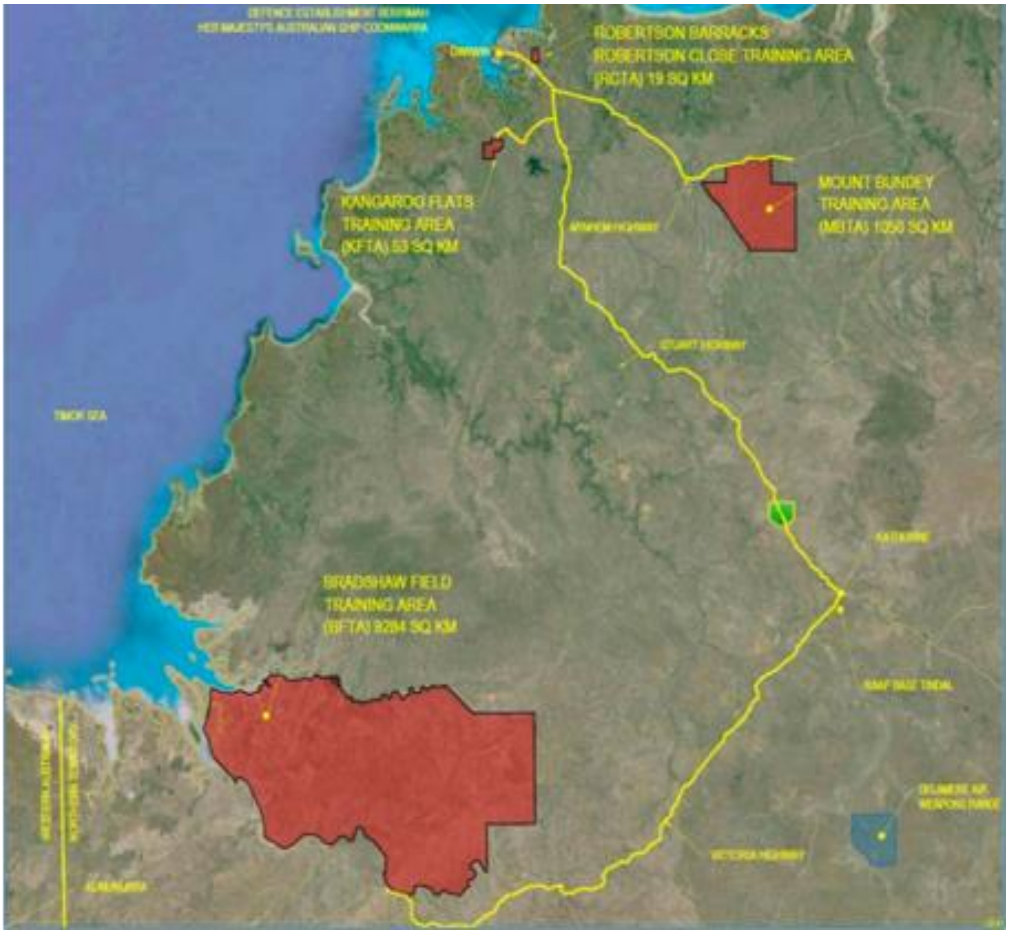

Figure 15. Defence Northern Territory training areas and weapons ranges
Source: Parliament of Australia, Parliamentary Standing Committee on Public Works, Report 4/2021, July 2021, Part 2. *Inquiry into United States Force Posture Initiatives Northern Territory Training Area and Ranges Upgrades*, Submission 1: Department of Defence, Attachment 1, at https://www.aph.gov.au/Parliamentary_Business/Committees/Joint/Public_Works/Completed_Inquiries_of_the_46th_Parliament/USForcePosture/Report

In 2004, at the beginning of the post-Cold War expansion of US access to Australian defence training facilities, an Australian newspaper explained the rationale that still applies today:

> 'Australia has one thing the United States lacks when it comes to training its forces in the Asia-Pacific region - lots of wide open space. US forces based on heavily populated Okinawa and Japan simply lack the space for large scale manoeuvers. Political sensitivities limit the extent of realistic training on the Korean Peninsula. In contrast, the three Australian training areas slated for upgrade for joint Australia-US training are simply vast.
>
> 'The principal site for the proposed joint training, the Shoalwater Bay Training Area in northern Queensland, covers 270,000 hectares on land and 180,000 hectares at sea. It's the only area in Australia where the navy, army and air force can engage in joint exercises, including those with international forces.
>
> 'The Bradshaw Field Training Area in the Northern Territory covers more than 870,000 hectares.

> 'The Delamere Air Weapons Range, also in the Northern Territory, covers 211,000 hectares. It's regarded as one of only a few air weapons ranges in the world able to accommodate training with all conventional weapons.'[42]

Today that list of nation-state-scale training areas open to the US military in Australia would also include the Cultana Training Area (209,300 ha.) at the head of the Spencer Gulf in South Australia and Yampi Sound Training Area (566,000 ha.) on the northwestern coast of Western Australia. (Figures 15. and 16.)

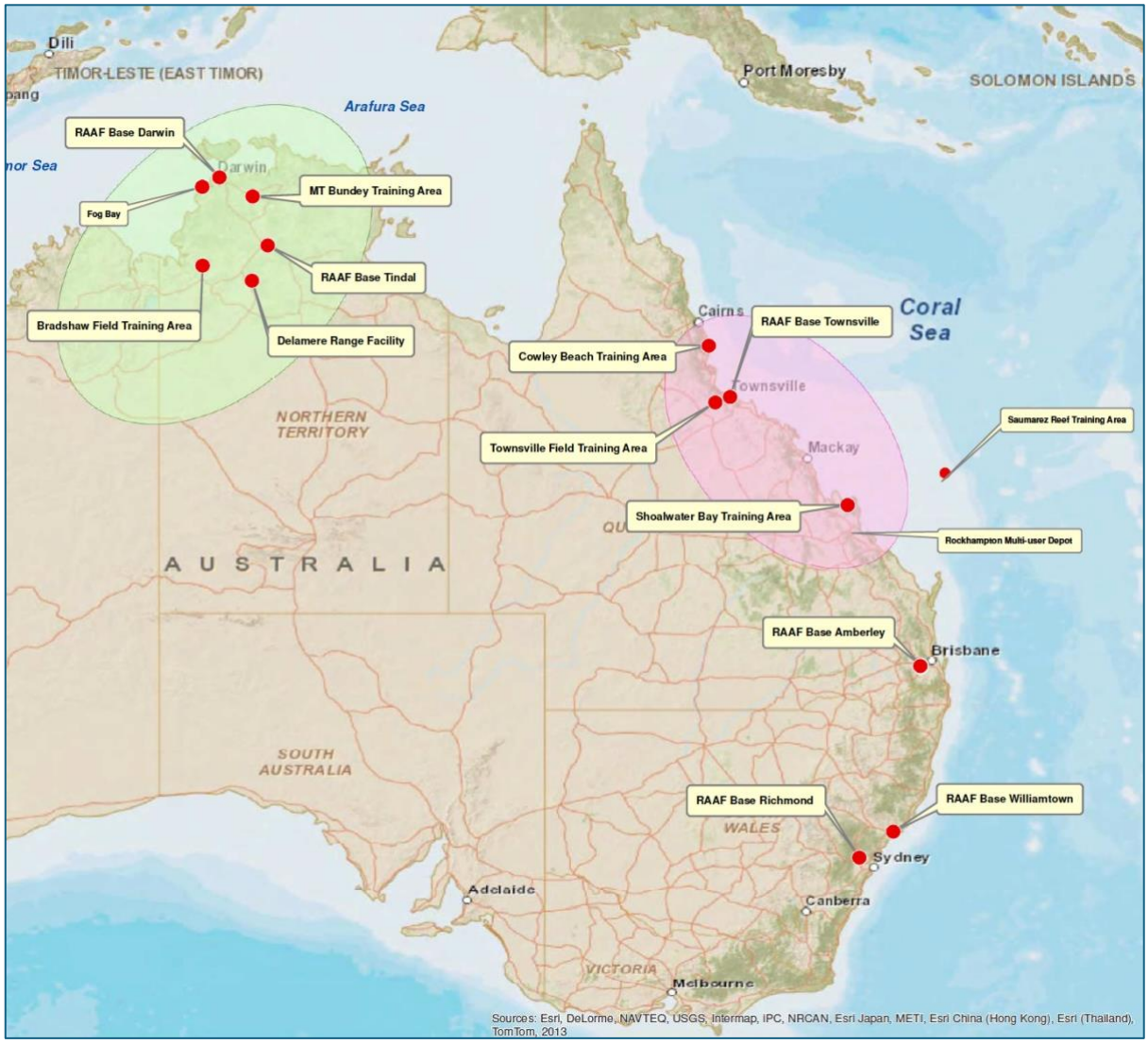

Figure 16. Potential sites for combined Australia-United States combined exercise Talisman Sabre 2015
Source: AECOM Australia Pty Ltd, *Talisman Sabre 2015 Final Public Environment Report*, prepared for the Department of Defence, 12 June 2015, at https://aecom.com/content/wp-content/uploads/2015/10/Talisman_Final.pdf.

Cultana Training Area

Considerably expanded in recent decades, the Cultana Training Area at the head of the Spencer Gulf near Whyalla is described by the South Australian government as the ADF's 'largest training area, capable of supporting combined arms exercises'.[43] In 2024, Cultana was the main site of Exercise

[42] AAP, 'Wide open spaces attract training bases', *The Age*, 9 July 2004, at https://www.theage.com.au/national/wide-open-spaces-attract-training-bases-20040709-gdy7rh.html
[43] - 'Test and Training Areas', *South Australia - the Defence State*, [accessed 27 February 2026], at https://defencesa.com/precincts/test-and-training-areas/

Rhino Run 24, a major 'combined exercise' involving 1,400 personnel from the Australian Army and the U.S. Marine Corps, including armoured units from both.

According to Defence Department reporting

> 'Exercise Rhino Run culminated in a 24-hour crescendo of combat power by 7th Battalion, the Royal Australian Regiment (7RAR), 1st Armoured Regiment and 1st Combat Engineer Regiment.'[44]

Given the high intensity warfare operations for which armoured elements are a key component, it is not surprising that in 2025 Cultana was one of eight sites selected for expansion of guided missile ordnance storage capabilities, through the construction of a New Surge Facility Storage and Transfer Hub (SATH) for the Guide Weapons Explosives Ordnance Enterprise.[45]

Like most other major training areas, Cultana has been expanding both in area and capabilities. Alongside the wide area and landform that permits Australian and US armoured force exercises, Cultana also hosts an Urban Operations Training Facility

> 'constructed to simulate battle scenarios in urban environments. Upon full completion, the urban environment will include civic spaces, high and low density residential buildings, a central business district and outlying suburbs.'[46]

In August 2026, Cultana was the site of the first test of a high energy laser military project titled Boobook, co-developed by the Mitsubishi Electric Corporation and the Defence Science and Technology Group (DSTG).[47]

Figure 17. Urban Operations Training Facility, Cultana Training Area

Source: Defence image supplied to Aurecon, in 'Contractor Aurecon are calling on local businesses to submit their capabilities for upcoming work', *Whyalla: Calling local businesses*, 19 April 2022, at https://www.whyalla.sa.gov.au/our-city/news-and-events/latest-news/2022/calling-all-local-businesses.

[44] Peter March, 'Exercise culminates in explosion of firepower', *Defence*, 7 June 2024, at https://www.defence.gov.au/news-events/news/2024-06-07/exercise-culminates-explosion-firepower

[45] Darian Macey, 'Cultana Training Area', *DECNet.com.au*, updated 8 August 2023, https://decnet.com.au/properties/cultana-training-area/.

[46] 'ADF Cultana Training Area - Redevelopment of Defence Force's largest training area', *Aurecon*, [accessed 8 June 2026], at https://www.aurecongroup.com/projects/defence/cultana-training-area-redevelopment

[47] 'Laser trial deepens Australia-Japan relations', *ADM*, 18 August 2026, at https://www.australiandefence.com.au/news/news/laser-trial-deepens-australia-japan-relations

Figure 18. Cultana Training Area - northern entrance

Source: Google Earth, Street View, [accessed 4 September 2026]

Delamere Air Weapons Range

The size of the Delamere Air Weapons Range makes it particularly attractive to the United States, permitting targeting practice by the largest USAF bombers, including B-1, B-52 and B-2 bombers. Large-scale B-52 use of Delamere began in November 2005 following the Howard government's agreement to establish the United States Strategic Bomber Training Program, which centred on the use of Delamere Air Weapons Range in the Northern Territory for live conventional bombing practice and increasing interoperability capability.[48]

Delamere has developed technologically considerably, greatly increasing its attractiveness to US planners:

> 'Aside from providing an excellent advanced weapon training facility, DEL also provides several other critical effects through updated scoring systems. The range can provide a high-definition video with a live feed to range control, allowing accurate reporting on weapons delivery. Observation towers have also been constructed in order to facilitate safe targeting on the range. Additionally, a permanent electronic warfare capability enables the Air Force to prepare and validate electronic warfare tactics, techniques, and procedures safely and sustainably.'[49]

In recent years, Defence allocated $75 mn. to enhance Delamere's capability to operate with the RAAF electronic warfare EA-18G Advanced Growler, including cooperation with Raytheon's Advanced Mobile Threat Training Emitter Systems (MTTES).[50]

Delamere's rough base airfields have also been the site for combined US-Australian exercises in rapid deployment of Australian Army 'long fires' HIMARS guided missile launchers built by Lockheed Martin based at RAAF Base Edinburgh in South Australia, and U.S. Air Force Super Hercules transport aircraft.[51]

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[48] Vince Scappatura and Richard Tanter, *B-52 strategic bombers in Australia, 1979 – 1991 and the nuclear heterodoxy of Malcolm Fraser*, Nautilus Institute Special Report, 4 August 2025, p. 2.

[49] Brian Dick, 'Delamere Air Weapons Range', *Defense.info*, 24 September 2020, at https://defense.info/williams-foundation/2020/09/delamere-air-weapons-range/

[50] 'Supporting the mission: Raytheon Australia bolsters success at Exercise Talisman Sabre', *Raytheon Australia*, 9 October 2025, at https://www.raytheonaustralia.com.au/news/2025/09/24/raytheon-australia-bolsters-success-at-exercise-talisman-sabre; and 'Blake Vowles', LinkedIn, [accessed 26 April 2026], at https://www.linkedin.com/in/blake-vowles/ . Under Project EST5349 PH6 Facilities Support AIR5349PH6 Advanced Growler the Raytheon contract at Delamere includes maintenance, logistics and storage facilities: Darian Macey, 'EST5349PH6 Facilities to Support AIR5349PH6 Advanced Growler', *DECNet.com.au*, 21 November 2024, at https://decnet.com.au/project/est5349ph6-facilities-to-support-air5349ph6-advanced-growler-delamere/

[51] Brian Hartigan, 'Introducing Australia's "tactical dream team"', *Contact*, 17 June 2026, at https://contactairlandandsea.com/2026/06/17/introducing-australias-tactical-dream-team/

Figure 19. USAF MC-130J delivers Lockheed Martin M142 High Mobility Artillery Rocket System (HIMARS) to Delamere Air Weapons Range, 2023

Source: Photo by Leading Seaman Susan Mossop; story supplied by Lockheed Martin Australia, in Brian Hartigan, 'Introducing Australia's "tactical dream team"', *Contact*, 17 June 2026, at https://contactairlandandsea.com/2026/06/17/introducing-australias-tactical-dream-team/

Yampi Sound Training Area

Yampi Sound Training Area is almost unique in Australia, difficult to access by ground, with little infrastructure, defence or civil, few roads, and a complex littoral environment. But Yampi also has great attractions for the US military, not just because of its size, but because it is well-suited to complex multi-domain (air, land and sea) and combined (US-Australian) exercises.

Yampi was one site for Exercise Koolendong in 2022 (along with Mount Bundy Training Area near Darwin and the Australian Air Force Curtin 'bare base', with USAF B-2 Spirit stealth bombers and RAAF F-35 Lightning II bombers. Koolendong was described by the commander of the U.S. Marine Rotational Force - Darwin viewed as a 'mid-intensity warfighting exercise [which] replicates elements of a combined joint littoral combat operation supported by capabilities from the U.S. Army and U.S. Air Force'. The Australian Army Commander Headquarters Northern Command maintained the exercise 'validates USMC-ADF interoperability and demonstrates preparedness to respond to a regional crisis.'[52]

US force projection capabilities from Australian facilities

> 'Force projection' refers to the ability to project power from within national borders. Of the total of 25 Australian defence facilities with US military access associated with US force projection activities, 12 are air bases (plus a civilian airport) which support possible U.S. Air Force operations from Australian territory.

[52] 'Defence and U.S. Marines hold warfighting exercise across the Top End', *s*, 11 July 2022, at https://www.defence.gov.au/news-events/releases/2022-07-11/defence-us-marines-hold-warfighting-exercise-across-top-end.

Figure 20. USAF B-2 Spirit stealth bombers and RAAF F-35 Lightning II bombers, Exercise Koolendong, over the Kimberley region, July 2022

Photo credit: Tech. Sgt. Dylan Nuckolls, in 'USAF, RAAF Airmen perform bilateral training in Australia', *Pacific Air Forces*, VIRIN: 220718-F-LX214-1085, 18 July 2022, at https://www.pacaf.af.mil/News/Photos/igphoto/2003040170/

RAAF Base Tindal

In 2026 one of the two paradigm cases of US force projection capabilities is RAAF Base Tindal near Katherine in the Northern Territory, Australia's largest northern base. For the Australian Air Force, Tindal is one of two major operating bases for Lockheed Martin F-35A Joint Strike Fighters and a remote operating base for MQ-4C Triton uncrewed aircraft systems controlled from RAAF Base Edinburgh.[53]

The Australian and United States governments have spent over a billion dollars in the most recent round of upgrades at Tindal to prepare Tindal as a USAF Forward Operating Base for B-52 Stratofortress long range bombers. Dedicated USAF developments include squadron control facilities, deep maintenance capabilities, crew facilities for permanently deployed personnel and for fly in/fly-out aircrew, munitions and fuel storage facilities.[54]

The first B-52 Bomber Task Force, an apparent prelude to full B-52 rotational deployments of up to six aircraft at a time (with or without accompanying C-17A Globemaster heavy transport aircraft), began in September 2026.[55]

The most plausible mission for the B-52s operating from Tindal in time of war will involve China, at least to the South China Sea, supported by a protective screen of RAAF F-35 strike aircraft, E-7A Wedgetail aerial battle management aircraft, and teams of KC-30A Multi-Role Tanker Transport refuelling aircraft.

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[53] 'F-35A Lightning II', *Air Force*, [accessed 3 September 2026], at https://www.airforce.gov.au/aircraft/f-35a-lightning-ii; and 'MQ-4C Triton Unmanned Aircraft System', *Air Force*, [accessed 3 September 2026], at https://www.airforce.gov.au/aircraft/mq-4c-triton.

[54] Vince Scappatura and Richard Tanter, Nuclear-capable *B-52H Stratofortress strategic bombers: a visual guide to identification,* 2024, Nautilus Institute Special Report, at https://nautilus.org/wp-content/uploads/2024/08/Nuclear-capable-B-52H-Stratofortress-Aug26-2024.pdf.

[55] Chris Gordon, 'Task Force to Australia's New BUFF Base', *Air & Space Forces Magazine*, 3 September 2026, at https://www.airandspaceforces.com/b-52-bomber-task-force-australia-raaf-base-tindal/.

Over half of all extant USAF B-52s are nuclear-capable versions of the aircraft. There are no Australian legal or policy impediments to the introduction of US nuclear weapons into Australia, so long as such events are classified as 'visiting' rather than 'stationing in Australia. Under 'peacetime' conditions, USAF regulations require nuclear weapons to be transported on C-71A transports to wherever they are required. However, USAF regulations also permit nuclear weapons to be carried on B-52s in periods of crisis, or for participation in exercises.[56]

It is difficult to think of a more potent U.S. Air Force post-1945 force projection capability from Australia.

The US corporate presence at Tindal is substantial and long standing. Lockheed Martin holds sustainment and training contracts for the Lockheed Martin F-35s at Tindal. From 2024, Northrop Grumman-manufactured MQ-4C Triton uncrewed aircraft were supported under a $220 million. interim contract with Northrop Grumman covering work at RAAF Tindal and RAAF Edinburgh.

Figure 21. B-52 bombers in U.S. Air Force Bomber Task Force 26-3 deploy to RAAF Base Tindal, 1 September 2026

Source: U.S. Air Force photos by Tech. Sgt. Victoria Boyton, in '2nd Bomb Wing conducts Bomber Task Force 26-3'. *DVIDS*, [Images 1 and 6 of 10], at https://www.dvidshub.net/image/9908140/2nd-bomb-wing-conducts-bomber-task-force-26-3.

HMAS Stirling / Fleet Base West - home-porting US nuclear-armed submarines from 2032?

A second model case of US force projection capabilities from Australian defence facilities is the Fleet Base West naval facility at HMAS Stirling in Western Australia, in the form of home-porting US-commanded attack submarines that may be nuclear-armed within a short time.[57]

[56] Vince Scappatura and Richard Tanter, *Nuclear-capable B-52H Stratofortress strategic bombers: a visual guide to identification*.
[57] For background on the Stirling *Virginia*-class submarine basing project see Richard Tanter, 'HMAS Stirling and Submarine Rotational Force – West', *Australian Defence Facilities*, Nautilus Institute Briefing Book, updated 22 August 2025, https://nautilus.org/briefing-books/australian-defence-facilities/hmas-stirling-and-submarine-rotational-force-west/.

The Australian government has commenced development of an expanded submarine facility at HMAS Stirling on Garden Island near Perth, Western Australia to accommodate the rotational presence of U.S. and U.K. attack (SSN) submarines from 2027.

That rotational presence will be known as the Submarine Rotational Force – West. The WA facility may be complemented in the future by a companion facility on the east coast of Australia in a location to be determined.

Australian government investment at HMAS Stirling for the decade from 2023 was estimated at $8 billion.[58]In September 2026 the Australian government maintained that up to a thousand US personnel will be located at Stirling for the SRF-West, although U.S. Navy sources reportedly put the expected figure at more than twice that number.[59]

Table 8. US submarine visits to HMAS Stirling, 2022–2025

Vessel name	ID no	Dates	Class	Block / Flight	Homeport	Unit
USS Vermont	SSN 7922	2025.10.25 – 2025.11.28	*Virginia*	IV	Joint Base Pearl Harbor-Hickam	Submarine Squadron 1
USS Minnesota	SSN 783	2025.02.25 – 2025.3.01 (+)	*Virginia*	II	Naval Base Guam	Submarine Squadron 15
USS Hawaii #	SSN 776	2024.08.?? – 2024.09.??	*Virginia*	I	Joint Base Pearl Harbor-Hickam	Submarine Squadron 1
USS Annapolis	SSN 760	2024.03.?? – ?	*Los Angeles*	III	Naval Base Guam	Submarine Squadron 15
USS North Carolina	SSN 777	2023.08.0? – ?	*Virginia*	I	Joint Base Pearl Harbor-Hickam	Submarine Squadron 1
USS Asheville	SSN 758	2023.03.01 – 2023.03.20	*Los Angeles*	III	Naval Base Guam	Submarine Squadron 15
USS Mississippi	SSN 782	2022.11.28 – 2022.12.01	*Virginia*	II	Joint Base Pearl Harbor-Hickam	Submarine Squadron 1
USS Springfield #	SSN 761	2022.04.22 – 2022.04.28	*Los Angeles*	III	Naval Base Guam	Submarine Squadron 15

Notes: * = in port at least this day. + = in port within this period. # = 3 week maintenance visit with Emory S. Land-class submarine tender

Between 2022 and 2025 U.S. Navy attack submarines, either Los Angeles-class or Virginia-class boats, visited HMAS Stirling twice a year. These submarines were home-based in either Guam or Hawaii. (Table 8. US submarine visits to HMAS Stirling, 2022 – 2025)

In October-November 2025, the *USS Vermont*, a *Virginia*-class submarine remained at Stirling for almost a month, carrying out

> 'the first submarine maintenance period without the support of a U.S. submarine tender—a specialized vessel that provides mobile repair and supply services….and was the first time a maintenance availability at this level has ever been done on a *Virginia*-class outside the United States.'[60]

[58] Robert Dougherty, 'Western Australia to house upgraded AUKUS submarine base', *Defence Connect*, 14 March 2023, at https://www.defenceconnect.com.au/naval/11609-western-australia-to-house-upgraded-aukus-submarine-base.
[59] Tom Lowrey, 'US declares it will accelerate military presence in Australia', *ABC News*, 3 September 2026, at https://www.abc.net.au/news/2026-09-03/federal-politics-us-military-presence-in-australia-set-to-grow/107111352; and Antony Nillsson, 'US numbers to swell at Perth AUKUS base', *Crikey*, 7 August 2026, at https://www.crikey.com.au/2026/08/07/us-navy-perth-aukus-base-trump-board-peace-gaza/.
[60] Ashley Calingo, 'U.S. Submarine Maintenance Period Demonstrates Forward Sustainment in Australia', *America's Navy,* 20 February 2026, at https://www.navy.mil/Press-Office/News-Stories/display-news/Article/4410356/us-submarine-maintenance-period-demonstrates-forward-sustainment-in-australia/.

The *Vermont* 2025 visit marked the transition from a pattern of brief visits to preparations for the deployment of up to four US attack submarines (and possibly one UK submarine) each year to Stirling under the aegis of Submarine Rotational Force - West from 2027. These submarines will be under US command.

The question of how many, new or second-hand, when, and under which flag US-built *Virginia*-class attack submarines be based at Stirling under the AUKUS Pillar I Phase 2 is now uncertain. The original plan involved Australian purchase of three to five submarines, beginning in 'the early 2030s'.[61] In the face of continuing pessimism about the US submarine shipbuilding rate compared with the US Navy's specification of its requirements, , the Congressional Research Service suggested in mid-2026 that an emerging possibility was that instead of the three-to-five submarines to be sold to Australia, new or second-hand, 'performance of Australian SSN missions by U.S. SSNs would continue indefinitely'.[62] In other words, under that arrangement some or all *Virginia*-class submarines effectively home-ported at HMAS Stirling would be under US command.[63] Much remains to be seen.

However, the role of U.S. Navy Virginia-class submarines deployed to SRF-West in US force projection purposes from Australia has another dimension.

At present, no U.S. Navy attack submarines carry nuclear weapons. In 1991, President George H. W. Bush withdrew tactical nuclear weapons from all U.S. Navy surface vessels, attack submarines, and naval aviation.[64]

But this situation will not last long. According to both the Trump administration and US congressionally mandated requirements, by 2032 *Virginia*-class submarines will potentially be equipped to carry nuclear weapons in the form of a new long-range cruise missile, the Sea-Launched Cruise Missile-Nuclear, now under development. The SLCM-Nuclear will carry a new type of nuclear warhead, the W80-5, with a variable yield of 5 to 150 kilotons, now under development by the National Nuclear Security Administration's Sandia National Laboratory—with the same congressionally mandated deadline of 2032.[65]

US communications, command and control activities

Table 7 shows a large group of Australian facilities with US military access that are classified as performing communications, command and control in relation to US military activities in Australia. However, a closer look makes two points.

Most in this group are primarily communications facilities, in particular eight sites in the four nodes of the ADF's Enhanced Defence High Frequency Communications System. This modernised communications system provides wide area and long-range beyond-line-of-site (BLOS)

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[61] 'The Optimal Pathway', *Australian Submarine Agency Annual Report, 2023-2024*, at https://www.transparency.gov.au/publications/defence/australian-submarine-agency/australian-submarine-agency-annual-report-2023-24/chapter-2%3A-australian-submarine-agency-overview/the-optimal-pathway.

[62] Ronald O'Rourke, 'Navy Virginia-Class Submarine Program and AUKUS Submarine (Pillar 1) Project: Background and Issues for Congress', *Congressional Research Service*, RL32418, 26 January 2026, p. 23, at https://s3.documentcloud.org/documents/26510460/crs-on-aukus.pdf

[63] Formally, 'Submarine Rotational Force' deployments would be 'rotational', rather than home ported, at Stirling. Given the size of the SRF-W annual rotational deployment, and the fact that submarines do not spend long periods at their home port other than for maintenance and resupply (for which purpose Stirling is being developed), then considering SRF-W as homeporting may not be inaccurate.

[64] For a summary (as of 2017), see *Fact Sheet: The Presidential Nuclear Initiatives (PNIs) on Tactical Nuclear Weapons at a Glance*, Arms Control Association, July 2017, https://www.armscontrol.org/factsheets/presidential-nuclear-initiatives-pnis-tactical-nuclear-weapons-glance.

[65] See the discussion of the SLCM-N in Vince Scappatura and Richard Tanter, *Performing nuclear fealty in a nuclear alliance: "understanding and respecting" and "neither confirm nor deny*, (with Vince Scappatura), Nautilus Institute Special Report, 19 April 2026, pp. 19-24, at https://nautilus.org/napsnet/napsnet-special-reports/performing-fealty-in-a-nuclear-alliance-understanding-and-respecting-and-neither-confirm-nor-deny/.

communications capability for the ADF, providing a certain level of redundant long-range communications BLOS capability in the event of loss of access to either (or both) space-based satellite communications or to international optical fibre communications.

However, as explained in Appendix 2 the assessment of US access to these Australian facilities is rated as "low confidence', primarily because the small number of sources, albeit carrying some significance.

The new US 'front line' in Australia: materiel for warfighting

In mid-2026 an experienced and well-informed observer of Australian defence procurement and estate development, remarked on a shift in thinking in Canberra:

> 'Defence is treating bases, logistics, fuel, data and industrial precincts as part of the warfighting system. That shift is changing where the money flows, how projects get prioritised, and what "resilience" actually needs to look like in practice.'[66]

Logistics has always been an important concern for the Australian military, and as Darian Macey pointed out, the shift was starting to become evident some years earlier in Australian defence investment planning. However, that movement was accelerated by longer-term US military planning based on strategic design for 'supply resilience' for mixture of reasons.

Firstly, the Covid pandemic challenged both national and globalised supply chains in almost all economic areas.

Secondly, the Russian invasion of Ukraine and the subsequent ongoing war have demonstrated the difference between 'peacetime' and 'wartime' logistics requirements, with the United States-Israel war on Iran underlining the point.

Thirdly, the rise of Chinese force projection capabilities, albeit limited compared to those of the United States itself, have demonstrated the vulnerabilities of long-standing US military East Asian bases and associated logistics supply chains.

Fourthly, that same Chinese factor also impelled the US military to re-think its Pacific basing structure towards both enhancement of bases more distant from China but still in-theatre, most notably Australia, in addition to more flexible and mobile forms of deployment of both combat forces and logistics, such as the U.S. Air Force doctrine of Agile Combat Employment to increase the number of facilities that could be chosen to be used in crisis, and thus complicate Chinese planning.[67]

A large number of facilities supporting US military activities in Australia listed in Table 7 involve logistics, munitions and prepositioning, beginning with fuel storage.

The US-controlled $270 mn. East Arm Bulk Fuel Storage Facility dedicated to US aviation fuel storage has already been mentioned.[68] Base-level fuel storage projects have been expanded and

[66] Darian Macey, Defence Estate Community News - Monthly Newsletter, *DECNet.com.au*, May 2026, at https://mailchi.mp/decnet.com.au/defence-estate-community-news-may26.

[67] Luke A. Nicastro and Andrew Tilghman, 'U.S. Overseas Basing: Background and Issues for Congress', *Congressional Research Service,* Report R48123, 10 July 2024, at https://www.congress.gov/crs-product/R48123; Sarah Gee and Luke A. Nicastro, 'Defense Primer: Agile Combat Employment (ACE) Concept', *Congressional Research Service, In Focus* IF12694,24 June 2024, at https://www.congress.gov/crs_external_products/IF/PDF/IF12694/IF12694.4.pdf; and Aaron Spray, 'US Is Quietly Building Up To Back Up Andersen AFB', *Simple Flying*, 17 August 2026, at .https://simpleflying.com/6-pacific-air-bases-us-quietly-building-back-up-andersen/.

[68] 'New Top End Defence facility a milestone for Australia and United States', *Defence*, 30 October 2023, at https://www.defence.gov.au/news-events/releases/2023-10-30/new-top-end-defence-facility-milestone-australia-united-states; Max Blenkin, 'Progress continues on Darwin fuel facility', *ADM*, 5 May 2022, at https://www.australiandefence.com.au/defence/general/progress-continues-on-darwin-fuel-facility; and Jack Hislop and David O'Shea, 'Project Caymus fuel tanks for US military built unlawfully on Darwin Harbour', *ABC News*, 10 March 2025, at

modernised at a number of major Australian-controlled facilities supporting US force projection, in particular at northern and western facilities - for example RAAF Base Darwin, RAAF Base Tindal (including dedicated USAF fuel storage), Larrakeyah Defence Precinct, and RAAF Base Amberley (a base for RAAF refuelling tankers).[69]

Munitions storage is a broad term, and expansion programs involve both Australian facilities with and without US access. The large and complex Guided Weapons Explosives Ordnance (GWEO) Enterprise discussed in some detail in Appendix 4 is one aspect. The GWEO Enterprise has a potential salience to all munitions storage issues at present insofar as the two founding GWEO Strategic Enterprise Partners were Lockheed Martin and RTX/Raytheon, raising a question about the depth of US corporate involvement in all aspects of GWEO planning and operations, including facilities without any recorded US corporate involvement.

Eight existing 'deep storage nodes' at munitions facilities are being expanded and modernised under the Guided Weapons Explosives Ordnance Enterprise, amongst which is the Navy Ammunitioning Facility, Twofold Bay, in NSW.[70]

One striking development confirming Macey's linkage of logistics and industrial to Australian defence approaches to war fighting, especially in an alliance context has been the evolution of the Australian-US Combined Logistics, Sustainment and Maintenance Enterprise (CoLSME) Force Posture Initiative announced at the 2021 Australia-United States Ministerial Consultations.

According to the Defence Department the intent of the CoLSME initiative

> 'is to support high-end warfighting and combined military operations in the region. It is anticipated that this will help to:

- enhance interoperability of capabilities
- overcome logistical challenges and explore logistical opportunities in the region
- support effective networks of Defence infrastructure
- promote maintenance of fit-for-purpose capability.'[71]

In 2024 CoLSME resulted in an agreement between the U.S. Army 8th Theater Sustainment Command and the Australian Defence Force Joint Logistics Command to establish a Joint Theater

https://www.abc.net.au/news/2025-03-10/project-caymus-darwin-fuel-tanks-us-military-built-unlawfully/105021774; Darian Macey, 'Larrakeyah Defence Precinct (incl HMAS Coonawarra and Larrakeyah Barracks)', *DECNet.com.au*, 8 August 2023, at https://decnet.com.au/properties/larrakeyah-defence-precinct/;

[69] FY18 PAF 160600, Asia Pacific Resiliency Bulk Fuel Storage Tanks, Royal Australian Air Force (RAAF) Base Darwin, Australia', *HigherGov.com*, 22 March 2019, [paywall], at https://www.highergov.com/contract-opportunity/91-fy18-paf-160600-asia-pacific-resiliency-bulk-n6274219pumps-r-0ddb4/; Camden Smith, '$120m United States fuel tanks contract awarded at Tindal', *Northern Territory News*, 25 December 2022; Tom Lowrey, 'US military investigates converting remote Australian airstrips to major fuel depots', *ABC News*, 19 August 2026, at https://www.abc.net.au/news/2026-08-19/could-united-states-use-bare-northern-based-for-defence-assets/107017430; https://decnet.com.au/project/defence-fuel-transformation-program-tranche-2-dftp2-nt/; and Darian Macey, 'RAAF Base Amberley (AMB)', *DECNet.com.au*, updated 4 March 2025, https://decnet.com.au/properties/raaf-base-amberley/.

[70] Other new or expanded GWEO deep storage nodes are to be located at Mount Stuart Training Area, Cultana Training Area, and Woomera Test Range (SA). New Surge Facility Storage and Transfer Hubs (SATH) are to be constructed at King River, RAAF Base Learmonth, and Townsville Field Training Area. 'Closed ATM View - AZ6592: ESTJ2092PH1 (JP2092PH1) Guided Weapons Explosive Ordnance Enterprise Program – Procurement Notice (Design Services)', *AusTender*, 30 June 2025, at https://www.tenders.gov.au/Atm/ShowClosed/55b2e1b9-8f86-4f41-a850-d01dddcdbd77

[71] United States Force Posture Initiatives: Combined Logistics Sustainment and Maintenance Enterprise', *Defence*, [accessed 24 February 2026], at https://www.defence.gov.au/defence-activities/programs-initiatives/united-states-force-posture-initiatives/combined-logistics-sustainment-maintenance-enterprise.

Distribution Center at Bandiana Barracks in the Albury Wodonga Military Area. Initially some 330 major US military vehicles and associated supplies were housed at the new Distribution Centre.[72]

The Oshkosh-manufactured eight-wheel Heavy Expanded Mobility Tactical Trucks (HEMTT) trucks are produced in many different variants, including the HEMTT A4 Guided Missile Transporter which, according to the manufacturer, is:

> 'Vital in the delivery, recovery, and loading of guided missiles, this vehicle is equipped with a 5,200-pound (2,358 kg) lifting capacity crane, ensuring swift and efficient replacement of spent missile canisters with fresh ones. With advanced features like an anti-lock braking system, traction control, air-ride suspension, and a large, climate-controlled, armor-ready cab, the HEMTT A4 GMT excels in traversing all terrains while ensuring crew comfort and mission readiness.'[73]

The wider strategic logic behind the CoLSME initiative became evident in January 2026 when the US Naval Facilities Engineering Systems Command (NAVFAC) awarded a US$8.4 million contract for 'facilities enhancement' at North Bandiana Barracks,

> 'with US$30,358,960 options for renovation of three additional warehouses under the NAVFAC Southwest Pacific Deterrence Initiative Program'.[74]

In May 2026, AFP reported that the US military announced a further US$30 mn. tender for warehouses to be built in the same state of Victoria for 'critical forward provisioning' through to 2028. At that time, the tender documents explained, the warehouse contents will be moved to Bandiana.[75]

In a parallel development at the conclusion of the 2025 Marine Rotational Force-Darwin deployment the Defence Department announced an unspecified number of the ten MV-22B Ospreys assigned to Marine Medium Tiltrotor Squadron (VMM) 265 normally based in Hawaii would be stored in Australia. According to the Defence Department:

> 'Keeping the aircraft in Australia means the Ospreys will be available for training, and it will significantly reduce transportation costs and remove the import-related impost on Australian border agencies.'[76]

Between annual MRF-D rotations, the Ospreys will be stored at Toowoomba Wellcamp Airport Defence & Aerospace Precinct. Brigadier Mick Say, director-general of the Force Posture Initiatives

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[72] Jonathon Daniell, '8th TSC and ADF Joint Logistics Command sign milestone agreement', *DVIDS*, 27 June 2024, at https://www.dvidshub.net/news/475079/8th-tsc-and-adf-joint-logistics-command-sign-milestone-agreement; and [72]Cameron Jamieson, 'Integrated long-range logistics', *Defence*, 5 August 2024, (Image 4 of 4), at https://www.defence.gov.au/news-events/news/2024-08-05/integrated-long-range-logistics.

[73] 'HEMTT A4 Guided Missile Transporter', *Oshkosh Defense*, [accessed 5 September 2026], at https://oshkoshdefense.com/vehicles/heavy-tactical-vehicles/hemtt/.

[74] Krista Cummins, 'NAVFAC Southwest Awards Contract To Repair Warehouses In Bandiana, Australia', *Naval Facilities Engineering Systems Command*, 23 January 2026, at https://www.navfac.navy.mil/Home/News-Detail/Article/4397098/navfac-southwest-awards-contract-to-repair-warehouses-in-bandiana-australia/ .

[75] AFP, 'US military to build war-ready stockpile in Australia', *Straits Times*, 16 June 2026, at https://www.nst.com.my/amp/world/world/2026/06/1464824/us-military-build-war-ready-stockpile-australia. The location of the three interim warehouses to be built elsewhere in Victoria under the US$30 mn. contract was not specified. A year earlier Lockheed Martin had announced an agreement to lease 'a facility owned by Avalon Airport to store equipment required for the domestic assembly of Guided Multiple Launch Rocket System (GMLRS) munitions, which are compatible with the Australian Army's recently delivered HIMARS launch vehicles.' 'Lockheed Martin Australia secures Avalon site for guided weapons manufacturing push', *Australian Manufacturing*, 19 August 2025, at https://www.australianmanufacturing.com.au/lockheed-martin-australia-secures-avalon-site-for-guided-weapons-manufacturing-push/. Avalon Airport is adjacent to the Port Wilson Explosives Area.

[76] Dzirhan Mahadzir, 'U.S. MV-22B Ospreys Will Stay in Australia, Navy's Carrier Air Wing 5 Preps for Upcoming Patrol', *USNI News*, 16 September 2025, at https://news.usni.org/2025/09/16/u-s-mv-22b-ospreys-will-stay-in-australia-navys-carrier-air-wing-5-preps-for-upcoming-patrol

Branch, said that the storage of the Ospreys at Toowoomba 'represents the continuing development of a deeper relationship with the United States.'[77]

Figure 22. B-52 bombers in U.S. Air Force Bomber Task Force 26-3 deploy to RAAF Base Tindal, 1 September 2026

Source: Photo by John Young, in Cameron Jamieson, 'Integrated long-range logistics', Defence, 5 August 2024, (Image 4 of 4), at https://www.defence.gov.au/news-events/news/2024-08-05/integrated-long-range-logistics.

Industrial production and weapons supply

In addition to issues of supply in the form of logistics, munitions storage and pre-positioning of US war materiel, the United States now has direct involvement in several expanding armaments assembly and manufacturing facilities.

The breadth of Lockheed Martin's corporate presence across Australian defence facilities is summarised in Table 17 in Detailed Tables.

Defence Mulwala Facility is one of two government-owned armaments productions facilities leased to private companies. The Mulwala Facility, located in the Riverina, is a companion facility to the nearby Benalla Munitions Factory. Both have been the subject of inquiries by the Australian National Audit Office, principally over the contract performance of corporate leaseholders.[78]

Under Project EST02043 Defence Mulwala/Benalla Facility Redevelopment, Mulwala and Benalla are 'Australia's core propellant, explosives and munitions manufacturing sites'.[79]

[77] Julian Bajkowski, 'U.S. Marines' Osprey cleared for permanent base in Australia', *The Mandarin*, 12 September 2025, at https://www.themandarin.com.au/299272-us-marines-osprey-cleared-for-permanent-base-in-australia/

[78] Australian National Audit Office, 'Defence's Management of Contracts for the Supply of Munitions — Part 1', Performance Audit, *Auditor-General Report No. 47*, 2023–24, at https://www.anao.gov.au/sites/default/files/2024-06/Auditor-General_Report_2023-24_47.pdf.

[79] Darian Macey, 'EST02043 Defence Mulwala/Benalla Facility Redevelopment', *DECNet.com.au*, updated 8 December 2025, at https://decnet.com.au/project/mulwala-and-benalla-redevelopment/.

In 2023 Lockheed Martin opened 'its first co-located site in Australia' with Thales at Mulwala to accelerate GWEO production. Lockheed Martin-Thales testing of GMLRS-relevant high explosive warheads commenced in 2024.[80]

In April 2026: In 'a leap forward in self-reliance', Defence signed a $126 mn. contract with Northrop Grumman to produce solid rocket motors at Mulwala, initially for the Guided Multiple Launch Rocket System (GMLRS).

In April 2026 Defence announced Australia taking 'a leap forward in self reliance with an agreement with Northrop Grumman to commence a process centred on Mulwala of 'formal engagement as a critical step toward establishing sovereign solid rocket motor (SRM) manufacturing capabilities in Australia.'[81]

Figure 23. Guided Multiple Launch Rocket System missile at the Missile Assembly facility at Port Wakefield in South Australia

Source: Photo credit Kym Smith / Defence, in 'Lockheed Martin to localise guided weapons manufacture', *ADM*, 29 May 2026, at https://www.australiandefence.com.au/defence/land/lockheed-martin-to-localise-guided-weapons-manufacture

Proof and Experimental Establishment, Port Wakefield

In December 2025, a partnership between the Australian Defence Department and Lockheed Martin commenced production of Guided Multiple Launch Rocket System (GMLRS) missiles for use by the ADF and allied states. The missiles will be produced, using components imported from the United States, at the Missile Assembly Facility, a dedicated facility within the Proof and Experimental Establishment at Port Wakefield in South Australia. According to Lockheed Martin, the Missile

[80] 'Lockheed Martin Australia To Open New Facility At Mulwala To Accelerate The Development And Production Of Australia's Guided Weapons Capabilities', *Lockheed Martin*, 5 October 2022, at https://lockheedmartinau.mediaroom.com/index.php?s=2429&item=122621; and 'Lockheed and Thales test local warheads', ADM, 13 December 2024, https://www.australiandefence.com.au/defence/land/lockheed-and-thales-test-local-warheads.

[81] 'Australia takes leap forward in self-reliance with launch of rocket motor manufacturing', *Defence*, 30 April 2026, at https://www.minister.defence.gov.au/media-releases/2026-04-30/australia-takes-leap-forward-self-reliance-launch-rocket-motor-manufacturing.

Assembly Facility 'will be only the second facility in the world to produce GMLRS outside Lockheed Martin's facility in Camden, Arkansas'.[82]

In July 2026 Lockheed Martin announced that

> 'Within months of commencing operations at the Port Wakefield facility, the Lockheed Martin team delivered the first GMLRS Rocket Pod Containers (RPCs) assembled outside the U.S. The two RPCs loaded with twelve GMLRS munitions were delivered to the Australian Army for a live fire demonstration at Woomera in April 2026.'[83]

Toowoomba Wellcamp Airport Defence & Aerospace Precinct

In addition to hosting the U.S. Marine Corps contingent of MQ-22B Osprey Tiltrotor aircraft placed in storage between MRF-Darwin annual deployments, Toowoomba Wellcamp Airport also is the site of a factory under construction where Boeing aims to produce MQ-28 uncrewed robotic aircraft by 2027.[84] The MQ-28, known as the Ghost Bat, is formally designated a Collaborative Combat Aircraft, an aircraft type described by the U.S. Air Force as a

> 'large uncrewed aircraft (UAS) powered by jet engines, as potentially equipped for missions including air-to-air combat; air-to-ground combat; electronic warfare; targeting; and intelligence, surveillance, and reconnaissance. The Air Force has said CCAs' AI-driven software would enable collaboration with, and take direction from, human pilots and that CCAs would serve to expand the fighter fleet and protect human pilots at a lower cost than current fighter jets.'[85]

The first test flights of the MQ-28 took place in 2021 and have continued at the Woomera Test Range. According to Boeing

> 'The flight test program culminated in a series of demonstrations in 2025 which included MQ-28 aircraft teaming with crewed assets, such as E-7 [E-7A Wedgetail airborne early warning & control aircraft], to complete operationally relevant missions. This was closely followed by a joint Boeing and RAAF exercise in December 2025, during which MQ-28, teamed with a RAAF E-7A Wedgetail and F/A-18F Super Hornet, autonomously fired an AMRAAM missile to destroy an airborne fighter-class target.'[86]

[82] 'Australian-first missile assembly facility launches in South Australia', *Defence SA*, 5 December 2025, at https://defencesa.com/news-events-and-media/news/australian-first-missile-assembly-facility-launches-in-south-australia/
[83] 'Engineering a better future for Australia', *Lockheed Martin*, 30 July 2026, at https://www.lockheedmartin.com/en-au/features/engineering-a-better-future-for-australia.html
[84] 'New Boeing MQ-28 Production Facility begins construction in Queensland', *Boeing*, 25 March 2024, at https://www.boeing.com.au/news/2024/new-boeing-mq-28-production-facility-begins-construction-in-quee.
[85] 'MQ-28 Ghost Bat', *Boeing*, [accessed 5 September 2026], at https://www.boeing.com.au/products-services/defence-space-security/ghost-bat.
[86] 'MQ-28 Ghost Bat', *Boeing*, [accessed 5 September 2026], at https://www.boeing.com.au/products-services/defence-space-security/ghost-bat.

7. Half a century of development of US military access - continuities, militarisation, and new agreements and commitments

Continuities from *A Suitable Piece of Real Estate*

In the early 1980s Desmond Ball documented more than a dozen 'US installations in Australia', some large and critical to the US like Pine Gap (1966-), North West Cape (1962 -), and the Alice Springs nuclear detonation seismic detection facility (1955-), with others small or incidental. Several had ceased recently operation by the time Ball documented them, but as shown in Table 9, of seventeen in Ball's historical account, fifteen remain in 2026 in some form or another, with most under US control - either the US military directly or US military-adjacent civil agencies such as the National Aeronautics and Space Administration (NASA).

The most important continuities are reasonably well known - the Joint Defence Facility Pine Gap, the Harold E. Holt Naval Communications Station, the Joint Geological and Geophysical Research Station, and the Learmonth Solar Observatory.

Changes in technology produced most of the changes. In 1999 the establishment of the remotely controlled Relay Ground Station at Pine Gap absorbed the critical intelligence functions of the redundant Joint Space Communications Station at Nurrungar.[87] On a smaller scale, the highly controversial Omega and TRANET position, navigation & timing facilities became technically redundant. These were replaced by the Global Positioning System including the GPS Monitoring Station operated by the US National Geospatial-Intelligence Agency at the Defence Science and Technology - Adelaide. Technological change also resulted in the Dongara ground station for the US EWS-G2 weather satellite over the Indian Ocean operated remotely by the U.S. Space Force Space Systems Command, Systems Delta 810.[88]

Explosive growth

From the first years of this century, Australia has seen remarkable change and growth in its interactions with the United States. The explosive growth this century in new military functions that access to Australian defence facilities provides to the US has roughly three important stages, in overlapping periods, involving both Australian- and US-controlled facilities.

The militarisation of Pine Gap

The first phase centred on dramatic expansion in size and capabilities and wholly new roles at the US-controlled Joint Defence Facility Pine Gap, commencing in the early post-Cold War period and still unfolding in 2026.[89] These developments involved Pine Gap in new elements of nuclear war targeting, US and Japanese missile defence, direct support for widespread US combat operations including in preparation for high-intensity operations in East Asia and the Middle East, generation of target schedules for extra-judicial drone assassinations, and support for Israel Defence Force operations in Gaza.

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[87] For the history and strategic consequences of that shift see Richard Tanter, *Hiding from the light: The establishment of the Joint Australia-United States Relay Ground Station at Pine Gap*, Nautilus Institute for Security and Sustainability, Special Report, 2 November 2019, at https://nautilus.org/napsnet/napsnet-policy-forum/hiding-from-the-light-the-establishment-of-the-joint-australia-united-states-relay-ground-station-at-pine-gap/?view=pdf.

[88] In mid-2025 the US Defense Department announced it would no longer supply US military weather satellite data to the National Oceanic and Atmospheric Administration for civil use.. Rebecca Hersher, 'Defense Department will stop providing crucial satellite weather data', *NPR*, 1 July 2025, at https://www.npr.org/2025/06/28/nx-s1-5446120/defense-department-cuts-hurricane-ice-weather-satellite

[89] See the papers by Desmond Ball, Bill Robinson, Richard Tanter and other contributors collated as the *The Pine Gap project*, at https://nautilus.org/briefing-books/australian-defence-facilities/pine-gap/the-pine-gap-project/.

Table 9. United States installations in Australia, 1980–84, and their status in 2026

Facility	Facility type	Location	Established / closed	Present situation / successor	Current US access status
Joint Defence Space Research Facility	Intelligence & surveillance	Pine Gap, NT	1970 - present	Joint Defence Facility Pine Gap: space-based signals intelligence facility [RAINFALL]	US-controlled - with Australian
Joint Geological and Geophysical Research Station / USAF Unit 421	Intelligence & surveillance (nuclear)	Alice Springs, NT	1955 - present	Joint Geological and Geophysical Research Station, Alice Springs (USAF, AFTAC, Detachment 421 / GeoScience Australia)	US-controlled - with Australian access: civil
Joint Project, Woomera	Missile testing	Woomera, SA	1947 - ? - present	US-related missile testing continues	Australian - with US access
Joint Space Communications Station (Nurrungar)	Intelligence & surveillance / communications	Nurrungar, SA	1971-1999	Joint Defence Facility Pine Gap - overhead persistent infrared satellite Relay Ground Station	US-controlled - with Australian access
Joint Tropical Trials and Research Establishment		QLD	1977 - ?		
Learmonth Solar Observatory	Intelligence & surveillance (solar): Optical and radio telescopic solar weather surveillance	Learmonth, WA	1978 - present	Learmonth Solar Observatory: (USAF Detachment 1, 2nd Weather Squadron, 557th Weather Wing / Bureau of Meteorology Space Weather Services)	US-controlled - with Australian access: civil
Narrogin Seismic Station	Intelligence & surveillance (nuclear)	Narrogin, WA	1976 - present	Station IU NWAO, Southwest Australia Seismic Network (GeoScience Australia)	Australian.
NASA - multiple space tracking facilities	Intelligence & surveillance (space)	Orroral Valley, ACT	1957 - present	Canberra Deep Space Communication Complex: (NASA / CSIRO)	US-controlled - with Australian access: civil
Naval Communications Station	Communications - VLF communication for US nuclear submarines	North West Cape, WA	1962 - present	Harold E. Holt Naval Communications Station	Australian - with US access
Omega	Position, navigation & timing: VLF radio-navigation for aircraft, surface ships and submarines	Darriman, VIC	1982 - 1997 (2008)	Replaced by US Global Positioning System, including GPS Monitoring Station, (US National Geospatial-Intelligence Agency)	US-controlled - with Australian access.
Partial Nuclear Test Ban Treaty Monitoring Station, Amberley	Intelligence & surveillance: Nuclear detonation detection	RAAF Base Amberley, QLD	1965 - 1975	GPS Monitoring Station, (National Geospatial-Intelligence Agency), Edinburgh: Nuclear detonation detection	US-controlled - with Australian access.
Partial Nuclear Test Ban Treaty Monitoring Station, Pearce	Intelligence & surveillance: Nuclear detonation detection	RAAF Base Pearce, WA	1964 - 1974	GPS Monitoring Station (National Geospatial-Intelligence Agency), Edinburgh: Nuclear detonation detection	US-controlled - with Australian access.

Facility	Facility type	Location	Established / closed	Present situation / successor	Current US access status
Portable geodetic satellite observation post, Perth	Position, navigation & timing: Optical satellite tracking sensor	Perth, WA			
Portable geodetic satellite observation, Yarragadee	Position, navigation & timing: Doppler shift satellite tracking	Dongara, WA		Yarragadee Geodetic Observatory, WA, (incl. NASA MOBLAS-5 Mobile Satellite Laser Tracking Facility): 1978 - present: (NASA / GeoScience Australia)	US-controlled - with Australian access: civil.
Project Flowerless, ASW sonar array	Anti-submarine warfare detection: Passive sonar array	Christmas Is., WA	c. 1976 -?	Maritime Underwater Tracking Range, Fleet Base West/Naval Base Stirling	Australian - with US access.
Project HIBAL	Intelligence & surveillance: Atmospheric radioactive residue detection	Mildura, VIC	1960 - 1971 [1981] - present	Alice Springs Balloon Launching Station, (NASA-owned; CSIRO-managed)	US-controlled - with Australian access: civil
TRANET Station 112	Position, navigation & timing: Transit Navigation Satellite doppler shift detection	Smithfield, SA	1961 - 1976 / (1978 - ?)	Replaced by GPS system, incl. GPS Monitoring Station (National Geospatial-Intelligence Agency), Edinburgh	US-controlled - with Australian access.

Notes:

All US GPS satellites carry a nuclear detonation detector sensor payload (Global Burst Detector) as part of the US Nuclear Detonation Detection System. See 'NNSA Delivers Next-Generation Global Burst Detector for Space Force GPS Satellite', *National Nuclear Security Administration*, 23 July 2026, at https://www.energy.gov/nnsa/articles/nnsa-delivers-next-generation-global-burst-detector-space-force-gps-satellite

Sources: Desmond Ball, A Suitable Piece of Real Estate: US installations in Australia, (Allen & Unwin, 1980), and Ball, 'US Installations in Australia - Agenda for the Future', Australian International Law News No. 105, (1984), pp. 410-423, available from AustLII; and documentation in Australian Bases & US Involvement.

The Force Posture Agreement

The second phase featured expanded locales and forms of Australian alignment with and integration into US military planning and operations following announcements by Prime Minister Gillard and President Obama in November 2011, formalised by the 2014 Force Posture Agreement, and accelerating through Force Posture Enhanced Cooperation Initiatives, (air, land, maritime, and space) particularly after 2021(Table 10). As of mid-2026, these FPI-centred developments have resulted in upgrades and expansion for at least 24 ADF facilities with US military access, especially northern Australian force projection facilities and major training lands.

The most recent FPA-related development involved the extension of the Force Posture Initiatives into logistics and pre-positioning of war materiel through the Australian-US Combined Logistics, Sustainment and Maintenance Enterprise (CoLSME) Force Posture Initiative announced in 2023, resulting initially in pre-positioning of US armoured capabilities at Bandiana.[90]

This FPA-centred phase was presaged by the signing of the Australia-United States Exchange of Letters Relating to Harold E. Holt Naval Communications Station, AUSMIN 2010, marking the renewed engagement of the U.S. Navy with the VLF submarine communications facility (which had retained access to three of four VLF channels in any case under interim RAN-control from 1999), including US rights to establish space surveillance facilities as part of a space surveillance partnership.

Enabling space warfare

The third phase rested on a separate but complementary and sometimes overlapping suite of bilateral (or multilateral) agreements that provided the legal foundation for entirely new US-auspiced facilities in Australia. Notably, this includes the AUKUS Pillar I and Pillar II agreements.[91]

The focus of the third phase has been the development and integration into US space operations of new facilities for space domain awareness surveillance, either outright US-controlled or Australian-controlled with new levels and forms of US access:

- The 2008 Military Satellite Communications Partnership Statement of Principles leading to the establishment of the Mobile User Objective System (MUOS) Radio Access Facility, Kojarena, and its accompanying ground station for the US-controlled Wideband Global System satellite constellation.
- The Combined Space Operations (CSpO) initiative (2014) Memorandum of Understanding leading to the Space Surveillance Telescope and the Deep Space Advanced Radar Capability, Site 1: Exmouth.
- 2023: US Space Command and Australian Defence Space Command signed an Enhanced Space Cooperation MOU:[92]

  'Through these cooperative efforts, the U.S. and Australia will continue to improve coordination and interoperability to maintain freedom of action in space, optimize resources, and enhance mission assurance and resilience.

[90] 'Integrated long-range logistics', *Duty First*, [accessed 20 April 2026], at https://www.dutyfirst.com.au/integrated-long-range-logistics/.
[91] The AUKUS Pillar I nuclear-power submarine project has generated many agreements, two of which were the trilateral *AUKUS agreement for cooperation on naval nuclear propulsion (2024)*, and the Australia-United Kingdom Bilateral *Nuclear-Powered Submarine Partnership and Collaboration Treaty* (2025).
[92] 'USSPACECOM and Australian Defence Space Command Sign Enhanced Space Cooperation MOU', *U.S. Space Command*, Release No. 2023-04-04, 20 April 2023, at https://www.spacecom.mil/Newsroom/News/Article-Display/Article/3369772/usspacecom-and-australian-defence-space-command-sign-enhanced-space-cooperation/

'A few of the key focus areas within the ESC MOU include force development, combined training and exercises, development and alignment of the space operational disciplines, reciprocal academic and professional education opportunities, modernization and future capabilities development, and enhanced information sharing.'

- 2024: the Australia-US 'treaty level' Technology Safeguards Agreement:

'provides the legal and regulatory foundation for US entities to conduct spaceflight activities involving sensitive technologies from Australian territory'

'directly enables a US entity to conduct a launch activity from Australia using a US launch vehicle. This may also involve other sensitive US space technologies, such as spacecraft, satellites, and equipment and data associated with the launch activity.'[93]

- 2025: NASA and the Australian Space Agency sign a 'treaty level' Space Framework Agreement' as a 'strategic companion to the Technology Safeguards Agreement (2024).[94]

'While the TSA specifically addressed export controls to allow U.S. technology—such as rockets and satellite payloads—to launch from Australian spaceports, the new Framework Agreement covers broader civil and government-to-government collaboration.'

- 2025: U.S. Space Force Combat Forces Command announcement of certified Early Use activities at the Deep Space Advanced Radar Capability, Exmouth conducted from the 20th Space Surveillance Squadron's Integrated Radar Operations Center (IROC), Eglin Air Force Base, Fla.[95]

- 2026: Combat Forces Command Public Affairs stated that through the Exmouth DARC and SST space surveillance facilities:

'U.S. and Australian forces are preparing to preserve battlefield coordination, missile warning and long-range targeting even in a contested space environment.'[96]

This pattern of rapid growth and diversification of US access to Australian military facilities, both US- and Australian-controlled, has not ended. On the contrary, on 2 September 2026, the Australian Defence Minister Richard Marles and his US counterpart, Pete Hegseth, Secretary of Defense, met to review progress on military aspects of the Australia-United States alliance. The read-out issued by Secretary Hegseth's office promised a further change in speed of integration:

'Both leaders agreed to accelerate force posture initiatives at Australian bases, bolster cooperation in combined logistics, and build greater interoperability through joint exercises.'[97]

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[93] 'Technology Safeguards Agreement', *Australian Space Agency*, [accessed 31 August 2026], at https://www.space.gov.au/technology-safeguards-agreement. 'The United States requires a TSA to be in place with MTCR partner countries in order to authorise space launch activities in the territory of the MTCR [Missile Trade Control Regime] partner country... Without a TSA, US companies, government organisations and universities would be restricted from undertaking space launch activities in Australia.' *National Interest Analysis [2024]*, regarding Agreement between the Government of Australia and the Government of the United States of America on Technology Safeguards Associated with United States Participation in Space Launches from Australia (Washington D.C., 26 October 2023), [2024] ATNIF 6, at https://static.aph.gov.au/-/media/02_Parliamentary_Business/24_Committees/244_Joint_Committees/JSCT/2024/AU-US_Technology_Safeguards_Agreement/NIA.pdf?rev=5d7fbae827604ae58627c679c206f4a3&hash=7852ED2126801B96100657701252E359.

[94] Sean Payne, 'US and Australia Sign Treaty-Level Space Framework Agreement at IAC Sydney', *satnews*, 2 October 2025, at https://satnews.com/2025/10/02/us-and-australia-sign-treaty-level-space-framework-agreement-at-iac-sydney/

[95] 'New Deep Space Radar Capability Employed Early', *USSF Combat Forces Command*, 4 May 2026, at https://www.ussf-cfc.spaceforce.mil/News/Article-Display/Article/4476637/new-deep-space-radar-capability-employed-early

[96] U.S. Space Force Expands Australia Satellite Surveillance Network Against Chinese Anti-Satellite Threats', *Army Recognition*, 11 June 2026, at https://www.armyrecognition.com/news/aerospace-news/2026/u-s-space-force-expands-australia-satellite-surveillance-network-against-chinese-anti-satellite-threats.

[97] 'Readout of Secretary of War Pete Hegseth's Meeting With Australia Deputy Prime Minister and Minister for Defence Richard Marles', *U.S. Department of War*, 2 September 2026, at https://www.war.gov/News/Releases/Release/Article/4589553/readout-of-secretary-of-war-pete-hegseths-meeting-with-australia-deputy-prime-m/.

When asked about that remark, Mr Marles did not demur, saying that

> 'you will hear more from us on that topic ["other force posture initiatives we might do"] in the coming months.'[98]

Table 10. Australian-controlled military facilities with Force Posture Agreement-related US access

Facility	Force Posture and related agreements
Albury Wodonga Military Area	Force Posture Agreement + US Combined Logistics, Sustainment and Maintenance Enterprise (CoLSME)
Australian Marine Complex	Force Posture Agreement + AUKUS agreements
Bradshaw Field Training Area	Force Posture Agreement
Cairns Airport	Force Posture Agreement - Enhanced Air Cooperation Initiative
Defence Establishment Berrimah	Force Posture Agreement
Delamere Air Weapons Range	Force Posture Agreement - Enhanced Air Cooperation Initiative
Evans Head Air Weapons Range	Force Posture Agreement
HMAS Coonawarra	Force Posture Agreement
Kangaroo Flats Training Area	Force Posture Agreement - Northern Territory Training Areas and Ranges Upgrade
Larrakeyah Barracks	Force Posture Agreement
Mount Bundey Receive Site (HF), Darwin	Force Posture Agreement - US Force Posture Initiatives
Mount Bundey Training Area	Force Posture Agreement - Northern Territory Training Areas and Ranges Upgrade
RAAF Base Amberley	Force Posture Agreement - Enhanced Air Cooperation
RAAF Base Curtin	Force Posture Agreement - Enhanced Air Cooperation
RAAF Base Darwin	Force Posture Agreement - Enhanced Force Posture Cooperation, AUSMIN 2024
RAAF Base Learmonth	Force Posture Agreement - Enhanced Force Posture Cooperation, AUSMIN 2024
RAAF Base Scherger	Force Posture Agreement - Enhanced Force Posture Cooperation, AUSMIN 2024
RAAF Base Tindal	Force Posture Agreement - Enhanced Force Posture Cooperation, AUSMIN 2024
Robertson Barracks	Force Posture Agreement - Northern Territory Training Areas and Ranges Upgrade
Robertson Barracks Close Training Area	Force Posture Agreement - Northern Territory Training Areas and Ranges Upgrade
Toowoomba Wellcamp Airport Defence & Aerospace Precinct	Force Posture Agreement
Townsville Field Training Area	Force Posture Agreement - query
Wide Bay Training Area	Force Posture Agreement + AUSMIN 2024
Yampi Sound Training Area	Force Posture Agreement

[98] 'Doorstop, Washington DC, The Hon Richard Marles MP, Deputy Prime Minister and Minister for Defence', *Australian Government - Defence Ministers*, 2 September 2026, at https://www.minister.defence.gov.au/transcripts/2026-09-02/doorstop-washington-dc.

8. Lock-in: questions on tightening path-dependence

Hosting foreign facilities, whatever the sign on the gate, or providing foreign access to national defence facilities may offer strategic advantage, but also carry risk. All defence postures and foreign policies bring benefits and costs - the key question in any given case concerns the balance between the two, and, if the issue of imbalance arises, the national capabilities to alter course. Political and economic regimes always involve elements of path-dependencies - strategic choices, in the broadest sense of the term, that limit or permit possible changes of direction.

Strategic choice, in the narrow sense of defence posture and foreign policy is fundamental, and for Australia, the alliance with the United States has been at the heart of such questions for over seven decades, and now more than ever. The combination of rapid, profound, and, in most cases, irreversible changes in the global political, economic and ecological orders have dramatically elevated risks for Australia, with the United States at the centre of each constellation of risks.

An enduring question is whether Australia can learn to manage simultaneous strategic risks arising from an alliance of this scale and complexity - with risks affecting Australians understood to be both national interests and the inescapable wider human interest.

A recent indication of the Australian government's fundamental strategic thinking can be found in the Defence Department's talking points prepared for senior officials facing likely hostile questioning in Senate Estimates hearings in May 2026.[99] Speaking of Australia's 'strategic circumstances', the first line of the briefing began with two accurate propositions:

> 'The United States is our principal strategic partner.
>
> 'We are bound by a long history of bipartisan cooperation.'

These verities were followed by two telling but fundamentally implausible assertions that go to the core of why US access to Australian defence facilities matters:

> 'Our cooperation is vital to one another's defence, security and economic prosperity, and that of the region....
>
> 'The Alliance, including AUKUS, fundamentally expands Australia's sovereignty by increasing Australia's ability to protect its interests by providing access to world-leading defence capability and technology, training and combined exercises, and vital intelligence capabilities.'

The first statement omits both the element of evident asymmetry in the power relationship between the two states involved, and reference to the costs of path dependency or lock-in created by that asymmetry in the defence capabilities of the smaller ally.

The second rests on an untested claim by fiat to alliance dependence permitting a path to its abolition by itself permitting a transition to a more independent capability.

However, both these statements have the virtue of making clear the fundamental problem of policy limitations imposed by path-dependence, or lock-in, whereby prior decisions - over technology, policy, or institutional characteristics - over time intertwine, reinforce certain interdependencies, and make the possibility of transitioning in a different direction more difficult, perpetuating the current fundamentals. As one application to energy transitions remarked:

> 'When a system or process becomes path-dependent, the accumulated choices, investments, and developments can create a momentum that favors the existing path, making it difficult to deviate or

[99] Department of Defence, 'June 2026 Senate Estimates briefing pack', Defence FOI 1939/25/26, available via the 'Freedom of Information Disclosure Log', Department of Defence, 23 July 2026, at https://www.defence.gov.au/sites/default/files/2026-07/1939-25-26-document.pdf.

switch to alternative paths. This can result in lock-ins: the system or process becomes resistant to change and perpetuates its current state or trajectory.'[100]

Clearly, there is a risk of determinism in interpretation of such approaches - change or transition becomes more difficult or costly, but not inherently impossible. But in many cases, the difficulties are of such a level that acute path-dependence conditions are interrupted by external forces - technological, ecological, social - including by force itself in the form of war or armed conflict.

Five categories of path-dependence are relevant to questions of the consequences of the pattern of US access to Australian defence facilities this study has outlined:

Strategic policy: can Australia distinguish Australian from United States interests?

Does the Australian state have the capability to systematically distinguish Australian interests and those of the United States, noting when they align and when they do not, and assessing, in both cases, what are the implications for autonomy and accountability in Australian foreign and defence formation?

Is there any serious critical assessment of a shared alliance goal in treating China as an adversary whose interests are inimical to those of Australia to be countered by preparation at Australian defence facilities for combined high-intensity combat operations?

Does acceptance of that alliance-defined military-oriented goal by providing comprehensive United States access to Australian defence facilities diminish or vitiate alternative Australian security pathways?

These may be centred, for example, on regional and global common interests concerning climate change, regional cooperative security based on non-alignment regarding great power competition, and development of more indigenously oriented security strategies.

Do important Australian facilities only function properly as part of a wider United States-auspiced military and technological structure?'

The three US-controlled facilities that make up the Joint Defence facility Pine Gap are paradigm cases of potentially disabling alliance embeddedness, and many aspects of Australian-controlled facilities depend for their full functioning on US military linkages and US defence corporations.

Do particular facilities increase the risk a facility could be used by the United States in ways that draw Australia into a conflict, even against the wishes of the Australian government?

The history and current roles of Pine Gap's space-based signals intelligence ground station offer powerful examples of alliance entrapment from hosting US-controlled facilities.[101] But the same question applies in varying degrees to other Australian-controlled facilities with US access. Australian government claims to control the consequences of such US access through the application of the doctrine of Full Knowledge and Concurrence are both insubstantial and unverified - and quite possibly unverifiable by Australian governments under current etiolated oversight arrangements.

The state of the defence industrial ecosystem

If Australia does not host the base, can Australia replicate its functions alone, or at least without the United States?

[100] Avri Eitan and Marko P. Hekkert, 'Locked in transition? Towards a conceptualization of path-dependence lock-ins in the renewable energy landscape', *Energy Research & Social Science,* Volume 106, December 2023, 103316, p. 3, at https://doi.org/10.1016/j.erss.2023.103316

[101] See for example, Richard Tanter, *Does Pine Gap place Australia at risk of complicity in genocide in Gaza? A complaint concerning the Australian Signals Directorate to the Inspector General of Security and Intelligence*, 27 March 2024, at https://nautilus.org/wp-content/uploads/2024/03/Complaint-mss-27-March-final-v4.pdf.

This question is occasionally answered assertively in the negative by Australian governments, indicating that there is no alternative. However, in the case of major facilities any competent answer would require a great deal more consideration than customarily offered in public by government.

If Australia does not host the base, should Australia replicate its functions alone, or at least without the United States?

The first requirement in properly addressing the previous question returns focus to the fundamental of competent and autonomous strategic policy: sound assessment of whether the need to which the facility or weapon system involved prima facie warrants replication without further consideration of strategic requirements, absent US strategic requirements.

Pine Gap is once again a paradigm case, where senior Defence officials assert that the historically constructed tight interdependence of Australian defence facilities on co-functioning with US military infrastructure and organisation is a reason why a lessening of path-dependence is impossible - though without inquiry or explanation.

In May 2018 a senior Australian official testified to a parliamentary committee that joining the Treaty on the Prohibition of Nuclear Weapons would be against Australia's national interests, principally because of likely damage to its alliance with the United States. This potential for damage, he argued, was in large part precisely because of the nuclear-related elements of 'joint' Australia-US intelligence and military facilities in Australia. The Australian government's view is that the alliance is made up of 'many separate interlocking structures, understandings, agreements and joint activities and facilities . . . [that are] incompatible with the treaty'.

It is, the official averred 'impossible, not practical, for Australia to restrict roles under the alliance to non-nuclear missions'.[102]

Can Australia maintain and repair the base and the systems critical to its functioning without US company support?

U.S. government and corporate enthusiasm for installing not only conventional maintenance capabilities for US systems and weapons platforms at Australian facilities but increasingly complex 'deep maintenance' capabilities otherwise only available in the US itself suggest otherwise.[103]

What are Australia's actual contractual rights, restrictions, and obligations? Where do system critical parts and components come from, under whose design authority, and whose certification?

To a remarkable extent, the contractual obligations of major foreign suppliers, even at a high level of generality, are almost always either opaque or wholly hidden. The question that has been made obvious by events of the last five years in many aspects of daily life is now evident to the U.S. government seeking to limit exposure to potentially inimical suppliers in complex and highly opaque globalised supply chains.[104] As any consumer understands about the electronic devices that make

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[102] Mr. Richard Sadleir, First Assistant Secretary, International Security Division, Department of Foreign Affairs and Trade and Dr John Kalish, Acting Director General, Australian Safeguards and Non-Proliferation Office. *Extract from testimony to the Senate Foreign Affairs, Defence and Trade Legislation Committee*, Parliament of Australia, Estimates Hearing, (31 May 2018), pp. 121–125; cited in Richard Tanter, 'Hope Becomes Law: The Treaty on the Prohibition of Nuclear Weapons in the Asia-Pacific Region', *Journal for Peace and Nuclear Disarmament*, Vol. 44:sup1, (2021), p. 256.

[103] For example the $200 million Deep Maintenance and Modification Facility (DMMF) at RAAF Base Edinburgh for Boeing P-8A Poseidon and E-7A Wedgetail aircraft; and new capabilities at HMAS Stirling capabilities to provide the Virginia-class USS Vermont attack submarine in a month-long maintenance period - 'the first submarine maintenance period without the support of a U.S. submarine tender—a specialized vessel that provides mobile repair and supply services….[This] was the first time a maintenance availability at this level has ever been done on a *Virginia*-class outside the United States.' Ashley Calingo, 'U.S. Submarine Maintenance Period Demonstrates Forward Sustainment in Australia', *America's Navy*, 20 February 2026, at https://www.navy.mil/Press-Office/News-Stories/display-news/Article/4410356/us-submarine-maintenance-period-demonstrates-forward-sustainment-in-australia/.

[104] For example: Stephen Losey and Joe Gould, 'Fake parts: A Pentagon supply chain problem hiding in plain sight', *Defense News*, 5 December 2022, at https://www.defensenews.com/pentagon/2022/12/06/fake-parts-a-pentagon-supply-chain-problem-hiding-in-plain-sight/.

everyday life possible today, knowledge of rights, restrictions and obligations is critical in the face of often less than benign corporate powers - and is even more important for government and oversight agencies considering the implications of dependence on US suppliers.

The pathways to at least mitigating the influence of foreign dependence on sovereign defence industrial capability are addressed at length, if not in concrete detail or conceptual depth, in the 2024 Defence Industry Development Strategy:

'Australian defence industry is comprised of businesses with an Australian-based industrial capability and an Australian Business Number (ABN), providing products or services used in, or which can be adapted to be used in, the Australian Department of Defence supply chain and/or an international defence force supply chain.'

This benign definition is then followed by a clear, but unsubstantiated claim:

'This is Australia's sovereign defence industrial base. Only in limited circumstances is Australian ownership critical to sovereignty.'[6]

This position is elaborated in the RAND Corporation's recommendations on the Australian GWEO enterprise:

'Sovereignty needs to be carefully defined. Operational sovereignty, in the case of guided weapons, is about removing the risks of losing access to, or control over, needed capabilities. While Australia might need access to, or control over, the requisite element required for producing certain weapons, the capabilities do not necessarily need to be produced in Australia or by Australian companies to achieve operational sovereignty. However, there may be other benefits (jobs, assured supply chains, etc.) that may come with an enterprise of building weapons in Australia.' [7]

Industrial dependence, separate from operational dependence, is an aspect of US access with multiple possible dimensions of restriction of Australian autonomy, all of which will require effective and sustained resolution. This is often recognized at least nominally in Defence industrial planning, and applauded by foreign defence primes promising commitment to assistance on the path to sovereign defence capability.

In brief, the constraints, all of which carry over into the conditions under which US corporations have access to Australian facilities, include questions of design authority, control of intellectual property and technical data, the conditions attached to supply of software updates and cybersecurity patches, assured availability of spare parts and consumables, location and control over depot-level maintenance and specialist repair, certification and safety approval, training of workforce, embedding of contractor support, and, as evident recently, reliability of and control over supply chains for components and materials.

These are by and large not matters unique to either Australia or to defence industrial eco-systems, but readily understandable in the wider context of a largely deindustrialised Australian economy facing high technology dependence. Between the decades-long collapse of large-scale Australian heavy industrial manufacturing, the systemic effects of the relatively short and abrupt Covid pandemic and Iran war supply chain shocks, and the consumer experience of struggles with the constraints of information technology ecosystems, the problems inherent in the present state of defence industrial dependence that must be overcome for claims to sovereignty to be anything but propaganda are recognizable and systemic.

Constructing the political base of vested interests

What are the political implications of a greatly expanded defence budget based on strategic policy oriented to US strategic planning, US military access, and rapidly growing dependence of Australian

small and medium-sized armaments, military supply, and construction companies on sub-contracts from United States defence primes?

Beyond the headlines of rapidly elevated defence spending in absolute terms and as a proportion of national economic activity, a great many of the database entries, if not most, show a clear pattern of increased spending specific to particular facilities.

A brief review of the list of facilities to which the US has access according to the US military functions associated with each would provide an outline of a burgeoning political economy network set of effects.

Not without political reason does the Defence Department often link budget spending 'deliverables' to Commonwealth electorates and include local federal and state members of parliament in publicity.

But more important than local employment effects of projects, real or illusory, is the likely generation of political constituencies built around the interests of small and medium-sized Australian sub-contractors, firstly in construction, secondly in sustainment and supply, and thirdly in armaments and defence systems manufacture.

Systemic deficits in accountability

What is the specific contribution to US alliance path dependency of the pattern of US access to Australian defence facilities of undue influence, or what the Australian integrity specialist Joo-Cheong Tham termed in another context the 'trinity of vices' of 'secrecy, corruption and unfairness'?[105]

Over at least the past decade a succession of well-documented Australian reports, studies and inquiries have raised questions about undue influence in Defence policy formation and procurement practices arising from the revolving door practices of former Defence minister and senior officials and senior military officers taking up paid positions with foreign armaments companies, most often US defence primes, within a short period of leaving office - often so short as to not even provide a fig leaf of 'cooling-off'.

Given the access of major US defence corporations to Australian defence facilities of virtually every kind in every state and territory, and their well-funded and poorly regulated lobbying capabilities in Canberra, the defence eco-system revolving door ensures that there is little legal impediment to such companies gaining detailed, virtually current, information concerning the on-the-ground status and ongoing planning by the ADF and Defence on any weapons system issue in which they have an interest.

Dismayingly, the most important work on this topic has been the result of civil society researchers, including the work of Andrew Fowler in his pathbreaking study *Nuked: The Submarine Fiasco that Sank Australia's Sovereignty*; Kym Bergmann, the editor of *Australia-Pacific Defence Reporter*, in a remarkably persistent and effective sequence of documented criticism of the transparency and accountability failings of the Defence Department concerning both the AUKUS submarine project and the abrupt replacement of EU-built Taipan helicopters by UH-60 Black Hawk helicopters manufactured by Lockheed Martin subsidiary Sikorsky; and a recent ABC Four Corners report.[106]

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[105] Joo-Cheong Tham, 'Democracy before Dollars—the Problems with Money in Australian Politics and How to Fix Them', Parliament of Australia, Senate Occasional Lecture Series at Parliament House, Canberra, on 12 April 2019, at https://www.aph.gov.au/-/media/2CAF962E7D4C443E8249B45333FD39C5.ashx

[106] Andrew Fowler, *Nuked: The Submarine Fiasco that Sank Australia's Sovereignty*, (Melbourne UP, 2024); Kym Bergmann, 'No, Minister – Taipan helicopters are extremely safe', *Asia-Pacific Defence Reporter*, 17 January 2024, and many subsequent reports; and Mark Willacy, Lesley Robinson, Dylan Welch and Samantha Dick, 'Dozens of government insiders lobbying for defence industry, analysis shows', *ABC News*, 24 August 2026, at https://www.abc.net.au/news/2026-08-24/defence-insiders-now-lobbying-for-industry-analysis-shows/107046326.

The work of Michelle Fahey in particular in her *Undue Influence* Substack has highlighted the role of armaments companies such as Lockheed Martin, the world's largest, recruiting former defence ministers, secretaries of defence, chiefs of the air force, chiefs of the navy, senior prime ministerial advisors, and senior Defence Science & Technology scientists.[107] When air vice-marshal Warren McDonald retired in 2017, his explanation to a defence trade magazine of his desire to join Lockheed Martin Australia as CEO, explained the wider impediment to Australian defence industry sovereignty clearly:

> 'From all domains – space to the sea floor – Lockheed Martin has in its hands the combat capability of the Defence Force.'[108]

Fahey has also been central to the ongoing issue of the Australian role of Lockheed Martin as the prime integrator of the global supply chain for the Lockheed Martin-designed and -built F-35 Lightning II stealth multirole strike aircraft.

In 'The Australian F-35 Supply Chain', Fahey has documented the role of at least 70 Australian corporate participants producing parts and equipment for F-35s worldwide, including the 72 Australian F-35s at RAAF Base Williamtown and RAAF Base Tindal.[109] Fahey highlights the manner in which this paradigm case of US corporate access carries accountability risks beyond matters of arms sales and procurement to include Australian complicity in what the International Court of Justice regards as plausible acts of genocide in Gaza through the Australian supply chain contribution to Israel Defence Force F-35s.[110]

Fahey's research on the F-35 supply chain points to another, wider pathway to Australian path-dependence through US access to Australian defence facilities: the construction of a growing group of small and medium-sized Australian companies subcontracting to US defence primes gradually coalescing into dependence for survival on the continued presence of those US primes.

Learned incapacity: Do the ADF and Defence have the institutional capability to think autonomously?

The technically and industrially founded sources of restrictive path dependence relevant to US corporate access to Australian defence facilities should be supplemented by considerations of potential limiting factors deriving from the organisational experiences, doctrinal preferences, and learned cognitive limitations flowing from two decades of near continuous close co-deployment of ADF forces in missions under either US-command or NATO-command.

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[107] Michelle Fahey, 'Lockheed Martin, Australian Government: joined at the hip', *Undue Influence,* 20 June 2024, at https://undueinfluence.substack.com/p/lockheed-martin-australian-government, and her extensive collated work at her Substack site*: Undue Influence*, at https://undueinfluence.substack.com. Fahey also notes the reverse but equally troubling revolving door pathway to policy and procurement influence, in the case of Defence's Capability Acquisition and Sustainment Group: 'The three deputy secretaries appointed by the Defence Department to lead CASG – still colloquially known as the government's chief arms buyer – were all appointed straight from leadership roles with weapons manufacturers: Kim Gillis from Boeing Defence; Tony Fraser from Airbus; and current incumbent Chris Deeble from Northrop Grumman. Before their arms industry leadership roles, each had worked for the federal government in senior defence positions. Before that, Fraser and Deeble had been in the military.'

[108] Michelle Fahey, 'Lockheed Martin, Australian Government: joined at the hip', citing 'From the Source: Warren McDonald', *Australian Defence Magazine,* 11 July 2022, at https://www.australiandefence.com.au/industry/interviews/from-the-source-warren-mcdonald.

[109] This is of course not only an Australian issue. US Treasury data shows Australia tenth on a global list of non-US suppliers, behind the United Kingdom, Italy, Netherlands, Israel, Canada, Norway, Denmark and Japan. See Source: Kelsey Gallagher, *Global Production of the Israeli F-35I Joint Strike Fighter*, Ploughshares, January 2025, Figure 6 at https://ploughshares.ca/wp-content/uploads/2025/05/F35I-Report-Jan.25.pdf.

Like all allied militaries, the ADF is highly influenced organisationally by the United States model - both through compulsive isomorphism - the mirroring, the dominant ally's organisational and doctrinal forms - and through a variety of forms of social interaction fostering integration including decades of combined combat deployments, the search for interoperability and interchangeability, embedding, and multiple levels of training and exercising. US-Australian organisational overlap increases the probability of consonant thinking, through prolonged joint overseas combat deployments, extended embedding of Australian senior defence personnel in US service organisations, and numerous 'combined' US-plus initiatives and organisations, all of which have material consequences through US access to Australian defence facilities.[111]

These social and organisational sources of what may amount to a learned incapacity to think strategically about Australia's interests as distinct from those of the too-familiar alliance partner are a mark of integration into an imperial system.

In 2021, shocked by the abrupt and clumsy' shifts under the Turnbull and Morrison governments to align Australian policy on China to the more belligerent US position, the Max Suich conducted a sustained review of positions in the Australian defence community, and more importantly within the various Australian intelligence agencies which have long been the leading edge of alliance integration with the United States.

After noting the prominent public influence in this period of comments, official and leaked, from Australian intelligence figures supporting this militant - and militarised - China shift, Suich considered a key question:

> 'Did the Australian government jump? Or was it pushed by Washington? It appears it jumped...'

Why, asked Suich?

> 'The Canberra intelligence community shared with its Washington counterpart the perspective of China as a future military antagonist. One official makes the point: "Like the rest of the defence forces they are integrated not manipulated."'[112]

Between the two alternative models of 'did they jump', or 'were they pushed', the comment by the official Suich cited points to a third model that is highly consonant with the pattern of US access to Australian defence facilities - that this outcome was precisely what came to be desired by both sides already enmeshed in a deep and complex social relationship, characterised by an asymmetrical power structure.

One mechanism facilitating such an outcome that Suich hints at was examined in depth by Vince Scappatura in his remarkable study over a decade ago on the influence of 'the US lobby' in Australia, epitomised by the largely bipartisan (in the Australian political party sense) and bilateral Australian-American Leadership Dialogue.

Scappatura's study makes clear that 'socialisation' includes the intentional, explicitly goal-oriented organisational form, as well as the combination of the myriad committees and working groups that flesh out alliance, and the well-advertised goal of combined exercises and training activities 'to better get to know each other in preparation for the time we will work together'.

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[111] For example, the Combined Space Operations Center (CSpOC); Combined Logistics, Sustainment and Maintenance Enterprise (CoLSME); the planned Combined Intelligence Centre – Australia within Australia's Defence Intelligence Organisation; Combined Mine Warfare Activity; Australian command of Combined Task Force 135 (Red Sea); and the integrative intention of the multiple and expanding number of components under the rubric of the Force Posture Initiatives.

[112] Max Suich, 'War Dance: Reversal', *The Australian Financial Review*, 17 May 2021, pp. 35-37. (Part 1 of a three-part series in the AFR, 17, 18 and 19 May 2021).

9. Unlocking path-dependence

Path dependence, as metaphor or sustained analysis, can easily turn deterministic or fatalist if by focusing overmuch on limiting consequences, rather than remaining open to exploration of the possible transition pathways to essentially alternative futures. Political fatalism is a common consequence of emphasis on the enduring efficaciousness of power structures.

While the sketch of five dimensions of path-dependence consequences associated with the knitted congeries of long-term historical factors that have resulted in the structure and character of the Australian alliance with the United States is only a schematic outline in question form, that brief introduction also permits preliminary notes on directions of alternative directions of travel on each dimension.

However, only one of these five seems at this stage to offer grounds for optimism.

Strategic policy: Can Australia distinguish Australian from United States interests?

Inherently, strategic policy debate ought to be the most congenial arena to consideration of alternative pathways and their capacity for encouraging properly realistic assessment of Australian interests. After all, both in intellectual theory and in security community practice, that is precisely what is often specified as a goal.

And yet, looking, of Australian public discourse of just one element - the value attached by government, media and academic commentators on the importance of maintaining the so-called bipartisan approach to alliance policy - evident contradiction with this presumption is evident. Or consider the inherent tendency of bureaucracies - and Defence and the ADF are two of the largest in Australian society - towards conformity of thought, and intolerance of debate.

However, it is also important to recall that there have been occasions, moments, even periods when mobilised public opinion regarding aspects of the alliance with the United States has had sufficient potency to induce governments to reverse course on significant issues - most notably in Australian defence issues over the war in Vietnam and conscription. Or, in the decade 2015-2025, three former Australian prime ministers decried heightened strategic integration of Australian defence into US military planning.

Moreover, careful examination of declassified secret Australian and U.S. government records shows points of possible choice of alternative direction. Firstly, there is some evidence of far more sensitivity to external pressures than are admitted in public.[113]

Secondly, declassified Australian cabinet documents show some occasions when strong ministerial and bureaucratic proponents of the alliance were quite precisely cognisant of the tensions between Australian and US interests, and remained firm defence of what they considered a more appropriate balance than was on offer from the US, often during robust, protracted and sensitive negotiations.[114]

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[113] Declassified annual official histories produced by the Commander in Chief of US Pacific Command (CINCPAC) from the late 1970s and to mid-1980s clearly show the concerns of different parts of the U.S. government and military services to recognize expressions of political resistance by both government and civil society in the Pacific region on a range of issues such as nuclear weapons and nuclear power. See

[114] One example is the position of expressed by the Fraser cabinet in conjunction with some strands of Defence Department thinking about negotiations with the Carter and Reagan administrations access of nuclear-capable B-52s in 1980-83. Another was the development of a quite nuanced position within the senior ranks of the Defence Department over some aspects of the early negotiations on the establishment of Pine Gap. See Vince Scappatura and Richard Tanter, *B-52 strategic bombers in Australia, 1979 – 1991 and the nuclear heterodoxy of Malcolm Fraser*; and Desmond Ball, Bill Robinson, and Richard Tanter, *Australia's participation in the Pine Gap enterprise*, Nautilus Institute Special Report, 8 June 2016, pp. 10-18, at https://nautilus.org/napsnet/napsnet-special-reports/australias-participation-in-the-pine-gap-enterprise/. For a contrary case see the apparently willed ignorance of the Howard Cabinet's National Security Committee in relation to Pine Gap discussed in Richard Tanter, *Hiding from the light: The*

Thirdly, the present remarkably volatile period in US foreign and defence policy is producing expressions of resistance by some otherwise strong alliance supporters amongst allied governments in NATO (for example Spain and Italy in relation to USAF basing access), and a re-emergence of East Asian allies' policies of hedging and retaining at least some institutional and material capabilities of a dual-track nature that may permit distance from within a continuing alliance, albeit to a limited extent (the Republic of Korea and Japan).[115]

All three perspectives give reason to think there are resources within strategic policy communities that may give some hope for unlocking possibilities over strategic policy.

However, the other four fields of path-dependency may offer less encouragement, and in some cases, considerable pessimism in current circumstances.

The state of the defence industrial ecosystem

The root problem with questions asked above concerning path-dependency arising from policy on defence infrastructure and weapons system planning is epitomized by the fundamental contradiction at the heart of the Albanese government's Guided Weapons Explosive Ordnance (GWEO) Enterprise Program and its rhetoric and practice concerning defence industrial sovereignty (see Appendix 4). The issues will not be rehearsed here, but can be summarized by paradox presented by a foundational policy aiming at first steps towards industrial sovereignty being undertaken with founding Strategic Partners in the form of Lockheed Martin and Raytheon, each of which publicly and repeatedly avers their support for the goal of Australia defence industrial sovereignty.

For all the public relations repetitions of the terms sovereign and sovereignty in Defence industry planning documents, and the urgent policy of support for Australian small and medium sized potential collaborators (see Appendix 5), there is little indication of any serious reason to believe the contradiction will be overcome, and the foundations of a genuinely independent Australian defence industry will result.

This is not the place to explore in depth either the obstacles such a contradiction sets up, or the adequacy of government plans to overcome that situation over time, as the plans in the Guided Weapons and Explosive Ordnance Plan, the Defence Industry Development Strategy and its annex on GWEO procurement and development maintain. The plans are quite open, at a general level, on the need to overcome dependence, though less clear about the certainty of the pathway to what is repeatedly asserted to be a sovereign outcome. Indeed the frequency with which 'sovereign defence' and 'sovereign capability' and similar terms are repeated, given the starting point the admitted and evident obstacles, feels rather like whistling past the graveyard.

Constructing the political base of vested interests

A second reason for serious pessimism about the political possibilities of an 'unlocking' policy approach concerns the political consequences of one aspect of the dependent defence industrial strategy, namely the likely development of a set of vested interests capable of political mobilisation, most likely in the direction of reinforcing and expanding the alliance-base path dependency.

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establishment of the Joint Australia-United States Relay Ground Station at Pine Gap, Special Report, Nautilus Institute for Security and Sustainability, 2 November 2019, at https://nautilus.org/napsnet/napsnet-policy-forum/hiding-from-the-light-the-establishment-of-the-joint-australia-united-states-relay-ground-station-at-pine-gap/?view=pdf.

[115] The Spanish and Italian cases of refusing or limiting US bomber access to air bases over Iran policy are well known. In the case of South Korea, a country with rather more serious, genuine security concerns than Australia, see the acute commentary on the policy differences between Seoul and Canberra by the Yonsei University-based Australian commentator, Jeffrey Robertson, in his Substack commentary, 'Australia: Your strategy is f@cked', *Junotane*, 4 September 2026, at https://www.junotane.com/p/australia-your-strategy-is-fecked.

The nexus of claimed attractive 'business opportunities' for Australian companies and 'employment opportunities' for Australian workers, with state and territory governments as enthusiastic facilitators, is a staple of Australian economic narratives. Government defence industry development strategies target all three constituencies, and as noted in the case of the influence of the Lockheed Martin F-35 global supply chain in Australia, is a strategy led by foreign defence primes with their considerable lobbying capabilities.

Against this pessimism, there are also contrary movements - most evidently in some labour circles. This possibility is epitomised by the cluster of union, community and local governments on the south coast of New South Wales that has formed a powerful, and so far, apparently effective resistance to the Morrison and Albanese governments' intention to build an East Coast base of AUKUS submarines to be acquired from the United States at Port Kembla. Centred on the South Coast Labour Council, a remarkably effective regional campaign has developed around integrated defence of both alternative economic prospects and environmental protection.[116]

Again, these are just sketches of contrary possibilities, but obdurate path-dependency may on occasion transition in different directions.

Systemic deficits in accountability

The third pessimistic pattern of path-dependency in the search for an alternative pathway is the defence establishment species of the 'trinity of vices' cited earlier" of secrecy, corruption and unfairness'. It is difficult for non-specialists to make judgement, but the defence examples of undue influence or improper behaviour approaching governmental corruption cited in the previous section have companion sets in other fields of policy.

In other words, substantial corruption and its near synonyms - incipient, borderline, or full-blown - is being reported and documented in several areas of Australian society and government at the same time - indicating a systemic, rather than field- or policy sector-specific, set of deficits in accountability mechanisms.

Legal observers have been prominent in outlining promising solutions in multiple fields of government policy and legal practice that have had improving effects in other jurisdictions.[117]

However, in the first place, current government appetite at both federal and state level for serious, structured reform aimed at the systemic problems has not been forthcoming - despite numerous inquiries.[118]

Secondly, despite the efforts of informed civil society critics, there is little sign to date of government willingness to even acknowledge problems in the defence sector, especially in the context of the huge financial flows from defence spending, unprecedented outside wartime, both at the macro-level of the Defence budget and the multi-decade AUKUS submarine program, and at the granular level of specific defence facilities documented in the database accompanying this study.

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[116] Ben Doherty, 'Aukus nuclear submarine base would 'place a massive target on our backs', NSW labour union warns', *The Guardian*, 17 May 2026, at https://www.theguardian.com/australia-news/2026/may/17/port-kembla-nsw-aukus-nuclear-submarine-base-outcry-nsw-labour-union.

[117] Amongst numerous other individuals and reformers, the work of the Accountability Round Table made up of 'journalists, lawyers, academics, former politicians and judges) and extensive experience in parliament, government and the courts' is instructive and encouraging. *Accountability Round Table*, at https://www.accountabilityrt.org.

[118] Amongst numerous other individuals and reformers, the work of the Accountability Round Table made up of 'journalists, lawyers, academics, former politicians and judges) and extensive experience in parliament, government and the courts' is instructive and encouraging. *Accountability Round Table*, at https://www.accountabilityrt.org.

Learned incapacity: Do the ADF and Defence have the institutional capability to think autonomously?

The last of the five sources of path-dependence closure is perhaps the most likely to induce pessimism. As with all the discussions in this section and the previous, these are little more sketches of the substantive, systematic and sustained inquiries required.

Moreover, it is true to point out that amidst the malign instances of the organisational experiences, doctrinal preferences, and learned cognitive limitations flowing from two decades of near continuous close co-deployment of ADF forces in missions under either US-command or NATO-command, there are notable non-conforming examples. Former senior government officials are prominent in the ranks of critics of defence and foreign policy - including former prime ministers.

However, the abrasive question of whether the ADF and Defence, as organisations, have the institutional capability to think autonomously from the multiple strands of influence of the United States - intentional, conscious, 'organisation cultural, or indeed barely conscious - must be asked.

Despite the somewhat optimistic examples cited in the discussion of strategic policy above, there seems little reason to be confident that those two extremely large, opulently funded, and essentially closed bureaucracies will learn to think autonomously.

10. What does it mean?

This report and the database from which it is largely derived have three purposes:

- To provide a first account of all Australian defence facilities to which the US has significant access
- To assure Australians that reliable and transparent robust sources of information about these facilities and the nature of US access are available
- To encourage other civil society researchers to use the indicative and 'panoramic' portrayal of the facilities in the current edition of the database to use that material and the necessarily brief analyses in the report as a starting point for further research and discussion on both the facilities listed and issues introduced in summary form here.

Research, however concerned with accuracy to the facts and accountability to complexity, is never entirely free from the influence of the motives and broadly political intentions of its authors, and from the conditions of its production.

In the current information, academic, research and media context, the three purposes outlined above amount to a statement of political as much as analytical intent.

Unlike other recent studies of Australian bases, this study is not a deep and authoritative forensic or technical account of Australian bases to which the US access. Despite its length, this work trades depth for comprehensiveness, exploration of complexity for accessible introduction to a small number of the key issues involved.

That said, the urgency of talking clearly about these issues is as great, or even greater, than it was during the early days of the Second Cold War when Desmond Ball write the first substantial account of US installations in Australia.

At that time Ball suggested two conditions which must be met with respect to those installations. Firstly

> 'the Australian government must be fully apprised of the operational details of each of the facilities, and that technical and strategic developments relating to the facilities be continually monitored and assessed, so as to ensure that no Australian interests are compromised...'

And second:

> 'as much as possible of this information should be made available to the public'.

Both objectives, the complexities of which Ball patiently and clearly unfolded, remain priorities today, but little with little progress in half a century.

Ball's remark on the first condition still applies today - but quite possibly, as understatement:

> 'One of the most disturbing features of the American installations is the lack of control exercised by the Australian government over their establishment, operation and maintenance.' [119]

The database shows granular, if only indicative, detail on what in full view amounts to a torrent of new builds, expansions, modernisation, technological and mission innovation, and networked integration across military services, national armed forces, and domains of conflict now routinely including air, ground, sea, space and cyber forms.

Despite, or perhaps because of, the large numbers of Defence and armaments corporations' media relations staff, mainstream media coverage of the locales, events and issues discussed in this report is

[119] Desmond Ball, *A Suitable Piece of Real Estate,* p. 153.

substantial in volume but rarely penetrating and reliable, largely consisting of barely rewritten media releases and public relations offerings.

And the palpable risks to Australian security rooted in the alliance commitment expressed in basing structures that Ball was concerned with remain but in enhanced form today: entrapment in alliance-driven war, and equally importantly, avoidance of serious and sustained engagement with genuine sources of threat to Australian security such as climate heating, transnational disease vectors, and the destabilising social, economic and environmental consequences of the pursuit of economic 'growth'.

This report began by noting the arrival of the first U.S. Air Force B-52 Bomber Task Force to an Australian air base. In the time of working on this project, two events have epitomised Ball's primary points about the disinterest of the Australian government in seriously managing the consequences of US access to Australian defence facilities.

The first example of 'lack of control exercised by the Australian government' is the ongoing involvement of Pine Gap in the provision of intelligence to support Israel's war in Gaza, a conflict now three years old, and still a matter of a provisional finding by the International Court of Justice of the crime of genocide by the state of Israel. Much the same sets of concerns would apply to Pine Gap's so far largely undocumented contribution to the Israel/United States illegal attacks on Iran over the past year or more.

The second concerns the involvement of Australian navy personnel serving on board the *USS Charlotte*, a *Los Angeles*-class attack submarine when it sank the Iranian frigate *Dena* off the coast of Sri Lanka on March 4th, 2026, with the loss of over 100 Iranian sailors after the US commander made a deliberate decision to not contribute to the rescue of the drowning survivors.

The Australian prime minister responded to news of the attack, which was already within days widely viewed as a war crime, assuring the public that 'no Australian personnel have participated in any offensive action against Iran'. According to one media report, this 'non-participation' was achieved by Australian embedded personnel on the *Vermont* 'being ordered to head to their rooms.' [120]

A former Australian navy officer followed a widely held line of argument dismissing claims of violation of the laws of armed conflict and the obligation to rescue survivors:

> 'In practice, however, submarines face particular challenges in fulfilling this obligation [to rescue]. Surfacing to rescue survivors may expose them to significant risk. You also can't usually fit a large number of survivors on a submarine...
>
> 'Under that framework, IRIS Dena therefore constitutes a lawful military target, and efforts to facilitate the rescue of survivors are consistent with those obligations.' [121]

Leaving international law aside, there are more 'practical' concerns for the Australian government. Australia is fond of 'embedding' ADF personnel and weapons platforms with US forces, with the total number unreleased. The rush to create a nuclear propulsion-capable Australian submarine capability has led to embedding of at least 50 Australian navy personnel on US attack submarines.

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[120] Andrew Greene, 'USS Charlotte: How Australian submariners avoided taking part in Iranian warship sinking', *The Nightly,* 10 March 2026, at https://thenightly.com.au/politics/how-australian-submariners-avoided-taking-part-in-iranian-warship-sinking--c-21892748.

[121] Jennifer Parker, 'The US sank an Iranian warship and didn't rescue the survivors. Is this legal in war?', *The Conversation*, 6 March 2026, at https://theconversation.com/the-us-sank-an-iranian-warship-and-didnt-rescue-the-survivors-is-this-legal-in-war-277606. The U.S. Navy conferred a Navy Unit Commendation on the entire crew of the USS *Charlotte*, an award for a unit that 'distinguishes itself for extremely meritorious service in support of military operations'. Riley Ceder, 'USS Charlotte crew that reportedly sank Iranian frigate awarded Navy Unit Commendation', *Navy Times*, 22 July 2026, at https://www.navytimes.com/news/your-navy/2026/07/21/uss-charlotte-crew-that-reportedly-sank-iranian-frigate-awarded-navy-unit-commendation/.

In volatile regions like northeast Asia or the Middle East there have long been concerns about embedding Australian navy ships in US-commanded task forces that had a good likelihood of involvement – quite possible contrary to international law – in conflicts with adversary forces. Once under US command, in the face of immediate armed conflict, Australian governments would be loath to risk US ire by suspending involvement for the duration.

It needed no great strategic understanding by the Australian government to foresee a possibility that some of those US vessels could be involved in conflict – 'legally justified' or not.

A competent defence minister would have ensured that their department had prepared a risk assessment and protocols for dealing with this possibility with something other than business as usual silence, stonewalling, dissimulation, and when forced, denial.[122]

These two sets of incidents are pointers to the more violently substantial possibilities of entrapment in US military planning for high-intensity war, quite evidently with China. The blithe, brazen ways that such a possibility is described in a positive manner in Australian government commentary on the multiple, complex and continually evolving ways in which United States military and US defence corporations have access to Australian defence facilities is itself a quality of Australian political discourse that makes the possibility of such an outcome more possible and more likely.

[122] See the former Australian submariner Rex Patrick, '"Disingenuous". Minister blindsided as Australia stumbled into Iran war', *Michael West Media,* 12 May 2026, at https://michaelwest.com.au/disingenuous-minister-blindsided-as-australia-stumbled-into-iran-war/; and Richard Tanter, 'Australia's six pathways to the war with Iran: Part 1', *Pearls & Irritations*, 21 March 2026, at https://johnmenadue.com/post/2026/03/australias-six-pathways-to-the-war-with-iran-part-1/.

11. A thought experiment

Let this indicative, panoramic study of US access to Australian defence facilities based on an evolving but substantial evidence base conclude by supplementing its hope that other researchers will be able to use the *Australian Bases and US Involvement* database as a foundation for further inquiry with an invitation to a small thought experiment.

This invitation to examine counterfactuals - the essential but forbidden fruit of social inquiry as Richard Ned Lebow called them - is something of a provocation.[123] Like most serious counterfactuals, the questions limned out below at first appear absurd, or worse. Yet counterfactual propositions have a rich history in international relations thought, and even in small form can be useful for articulating unacknowledged assumptions in present policy based on the United States as an indubitably 'trusted partner', and for exploring critical turning points in path-dependency that may point to usable approaches to alternative futures.

What if, in the earlier discussion of 'US corporate access to Australian defence facilities', the relevant adjective was changed to 'Chinese corporate access to Australian defence facilities'?

Or, more seriously still - if even less plausible - the same thought experiment concerned 'Chinese military access to Australian defence facilities'?

Australian security authorities maintain a position - shared with the United States - that Chinese corporate access to Australian defence facilities - and indeed, virtually all Australian critical industrial infrastructure - constitutes an unacceptable security risk.

Yet much of what has been noted above about the path-dependence consequences of the current level and patterns of US access to Australian defence facilities have potentially serious security and intelligence consequences.

What if the United States were not, for the sake of argument, to be considered a priori a 'trusted partner' in all and every respect in its presence on Australian defence facilities?

If a Huawei is a risk to the Australian telecommunications system, what are the consequences of dependence at a very large number of Australian defence facilities of a larger and more clearly politically powerful company like Lockheed Martin that is both the biggest armaments company in the world and the largest single armaments supplier to the United States government?

The phrase 'trusted partner' recurs throughout Australian government and military documents to indicate that such questions are simply absurd - literally unspeakable: 'our alliance runs on trust'.

Yet objectively there is an evident element of risk, albeit of unknown size. At the very least, all the US defence primes with access to Australian defence facilities can gain commercially relevant information to their advantage. And, as in China, all such US companies, no matter how powerful, are under some degree of obligation to share information with U.S. government authorities. How much may not be known in any detail, but as the history of secret US corporate provision of information technology 'backdoors' to US security and intelligence authorities illustrated, to some extent it would be wise to consider the U.S. government and US defence primes as at least potentially cooperating rather than opposed entities.

Australian security authorities will always have a hierarchy of tasks and threat perceptions, and it is understandable in an alliance that inclusion of potentially malign activities of the ally is neither advertised nor a formal priority.

[123] Richard Ned Lebow, *Forbidden Fruit: Counterfactuals and International Relations*, (Princeton U.P., 2010).

But would it not be wise for an Australian security agency to maintain at least a potential capability to make a comprehensive nationality-blind assessment of security risks that would consider the possibility that the official label 'trusted partner' may not be the whole story?

Detailed Tables

Table 11. Australian facilities with no significant US access — arranged by confidence in US-access status

Facility	Facility Type	US Access		
		Status	Confidence re Status	Access Type
Anglesea Barracks	Naval base	Australian	High	No significant US access
Blamey Barracks	Training / exercises	Australian	High	No significant US access
Campbell Park	Administration	Australian	High	No significant US access
Damascus Barracks	Army base	Australian	High	No significant US access
Defence Establishment Fairbairn	Administration	Australian	High	No significant US access
Defence Establishment Marrangaroo	Logistics / munitions / prepositioning	Australian	High	No significant US access
Dutson Air Weapons Range / Dutson Training Area	Training / exercises	Australian	High	No significant US access
Evans Head Air Weapons Range	Training / exercises	Australian	High	No significant US access
Gallipoli Barracks, Enoggera	Army base	Australian	High	No significant US access
Greenbank Military Range	Training / exercises	Australian	High	No significant US access
Greenvale Training Area	Training / exercises	Australian - with Singaporean military access	High	No significant US access
Headquarters Joint Operations Command	Command + control	Australian	High	No significant US access
HMAS Cerberus	Training / exercises	Australian	High	No significant US access
HMAS Moreton	Naval base	Australian	High	No significant US access
HMAS Penguin	Training / exercises	Australian	High	No significant US access
Joint Logistics Unit - East	Logistics / munitions / prepositioning	Australian	High	No significant US access
Keswick Barracks	Army base	Australian	High	No significant US access
Kokoda Barracks	Training / exercises	Australian	High	No significant US access
Majura Training Area	Training / exercises	Australian	High	No significant US access
Monegeeta Vehicle Proving Ground	Research / development / testing	Australian	High	No significant US access
Muchea Air Weapons Range	Training / exercises	Australian	High	No significant US access
Murray Bridge Training Area	Training / exercises	Australian	High	No significant US access
Northam Training Area	Training / exercises	Australian	High	No significant US access
Office of National Intelligence Headquarters	Intelligence / surveillance	Australian	High	No significant US access
Port Melville Defence Fuel Facility	Logistics / munitions / prepositioning	Australian	High	No significant US access
Porton Barracks	Army base	Australian	High	No significant US access
Puckapunyal Military Area	Training / exercises	Australian	High	No significant US access

Facility	Facility Type	US Access		
		Status	Confidence re Status	Access Type
RAAF Base Gingin	Logistics / munitions / prepositioning	Australian	High	No significant US access
RAAF Base Wagga	Training / exercises	Australian	High	No significant US access
RAAF Base Williams	Training / exercises	Australian	High	No significant US access
Randwick Barracks	Logistics / munitions / prepositioning	Australian	High	No significant US access
Ross Island Barracks	Army base	Australian	High	No significant US access
Salt Ash Air Weapons Range	Training / exercises	Australian	High	No significant US access
Sarpeye Barracks, Waibene (Thursday Island)	Army base	Australian	High	No significant US access
Simpson Barracks	Army base	Australian	High	No significant US access
Swan Island Training Area	Training / exercises	Australian	High	No significant US access
Taylor Barracks, Karratha	Army base	Australian	High	No significant US access
Wirlinga Close Training and Storage Facility	Logistics / munitions / prepositioning	Australian	High	No significant US access
Campbell Barracks	Army base	Australian	Medium	No significant US access
Casey Station / Wilkins Aerodrome	Civilian infrastructure	Australian	Medium	No significant US access
Proof & Experimental Establishment, Graytown	Research / development / testing	Australian	Medium	No significant US access
King River	Logistics / munitions / prepositioning	Australian	Low	No significant US access
Satellite Operations Centre 2, HMAS Harman	Communications	Australian	Low	No significant US access

Notes:

43 facility records. Data current as at 28 August 2026; website extraction 10 September 2026.

Includes: Australian-controlled facilities assessed as having no significant US access, at any recorded confidence level for that status assessment.

Excludes: Facilities assessed as having US access, US-controlled facilities, and structurally excluded or out-of-scope records.

Source: Australian Bases & US Involvement database. Captured website table

Table 12. Australian facilities with any type of US access — grouped by facility and access type

US access type	High confidence	Medium confidence	Low confidence
Administration · 2 facilities			
Corporate	Brindabella Business Park		
Military	Russell Precinct, Canberra		
Air base · 11 facilities			
Military + corporate	RAAF Base Amberley RAAF Base Darwin RAAF Base Richmond RAAF Base Tindal RAAF Base Townsville RAAF Base Williamtown		
Military	RAAF Base Curtin RAAF Base Learmonth	RAAF Base Pearce RAAF Base Scherger RAAF Forward Operating Base Cocos Islands	
Army base · 6 facilities			
Corporate	Army Aviation Centre, Oakey / Swartz Barracks		
Military	Defence Accommodation Precinct Darwin Larrakeyah Barracks Robertson Barracks Robertson Barracks Close Training Area		
Military + corporate		Holsworthy Barracks	
Civilian infrastructure · 1 facility			
Military	Cairns Airport		
Command + control · 1 facility			
Corporate	HMAS Encounter / Naval Headquarters South Australia		
Communications · 12 facilities			
Military + corporate	Naval Communication Station Harold E. Holt, North West Cape Satellite Ground Station – West (Wideband Global System Ground Station), Kojarena		Bohle River Transmit Site (HF) Exmouth Receive Site (HF), North West Cape Humpty Doo Transmit Site (HF), Darwin Lyndoch Transmit Site (HF), Riverina Morundah Receive Site (HF), Riverina Mount Bundey Receive Site (HF), Darwin Rough Range Receive Site (HF), North West Cape Speed Creek Receive Site (HF)
Corporate			Satellite Ground Station - East, Kapooka

US access type	High confidence	Medium confidence	Low confidence
Military		Satellite Operations Centre – 1, RAAF Base Edinburgh	
Infrastructure / manufacturing · 10 facilities			
Military	Australian Marine Complex Henderson Defence Precinct Osborne Naval Shipyard / Nuclear-Powered Submarine Construction Yard		
Corporate	Benalla Munitions Factory Deep Maintenance and Modification Facility Maritime Combat Systems Integration Centre, (Department of Defence) Missile Assembly Facility (Port Wakefield) Missile Manufacturing and Maintenance Facility (Newcastle) Sovereign Combat Systems Collaboration Centre		Rheinmetall NIOA Munitions, (Maryborough)
Intelligence / surveillance · 14 facilities			
Military	Australian Cyber Security Centre Australian Defence Satellite Communications Station - satellite communications interception facility [STELLAR] Australian Signals Directorate headquarters HMAS Harman	Jindalee Operational Radar Network (JORN) – Alice Springs Jindalee Operational Radar Network (JORN) – Queensland Jindalee Operational Radar Network (JORN) – Western Australia	Borneo Barracks, Cabarlah Cocos Islands Signals Intelligence Station
Military + corporate	Australian Geospatial Intelligence Organisation Learmonth Space Situational Awareness Observatory Maritime Underwater Tracking Range (MUTR) Shoal Bay Receiving Station Space Surveillance Radar, (C-band Radar), Exmouth		
Logistics / munitions / prepositioning · 14 facilities			
Corporate	Avalon Airport Defence Establishment Myambat Defence Establishment Orchard Hills Point Wilson Explosives Area		
Military	Defence Establishment Berrimah Gaza Ridge Barracks (North and South Bandiana) HMAS Kuttabul Lavarack Barracks Wadsworth Barracks (East Bandiana)	Jennings Explosives Depot Navy Ammunitioning Facility, Twofold Bay	Palmer Barracks
Military + corporate	Defence Mulwala Facility Toowoomba Wellcamp Airport Defence & Aerospace Precinct		
Naval base · 6 facilities			

US access type	High confidence	Medium confidence	Low confidence
Military + corporate	Garden Island Defence Precinct / Fleet Base East HMAS Albatross HMAS Stirling / Fleet Base West		
Military	HMAS Cairns HMAS Coonawarra HMAS Waterhen		
Research / development / testing · 7 facilities			
Corporate	Defence Science and Technology Adelaide, Edinburgh Edinburgh Parks	Defence Science and Technology Melbourne, Fishermans Bend Lot 14, defence innovation centre	
Military + corporate	Proof and Experimental Establishment, Port Wakefield RAAF Base Edinburgh Woomera Range Complex		
Training / exercises · 24 facilities			
Military	Bradshaw Field Training Area Combat Training Centre - Jungle Training Wing, Tully Cowley Beach Military Training Area Cultana Training Area Halifax Bay Training Area Kangaroo Flats Training Area Lancelin Defence Training Area Lone Pine Barracks Mount Bundey Training Area Shoalwater Bay Training Area Singleton Military Area Townsville Field Training Area Tully Military Training Area Wide Bay Training Area Yampi Sound Training Area	Beecroft Weapons Range Defence Establishment Howard Springs North HMAS Creswell Mount Stuart Training Area	Bindoon Training Area Learmonth Air Weapons Range
Military + corporate	Delamere Air Weapons Range HMAS Watson		
Corporate	RAAF Base East Sale		

Notes:

108 facilities.

Structurally excluded or out-of-scope records are omitted; Table 16 lists those records.

Includes: Australian-controlled facilities with military, corporate or combined US access, at any recorded confidence level for that status assessment.

Excludes: Facilities with no significant US access, US-controlled facilities, and structurally excluded or out-of-scope records.

Table 13. Australian facilities with US military access — arranged by confidence in US-access status

Facility	Facility Type	US Access		
		Status	Confidence re Status	Access Type
Australian Cyber Security Centre	Intelligence / surveillance	Australian - with US military access	High	Military
Australian Defence Satellite Communications Station - satellite communications interception facility [STELLAR]	Intelligence / surveillance	Australian - with US military access	High	Military
Australian Marine Complex	Infrastructure / manufacturing	Australian - with US military access	High	Military
Australian Signals Directorate headquarters	Intelligence / surveillance	Australian - with US military access	High	Military
Bradshaw Field Training Area	Training / exercises	Australian - with US military access	High	Military
Cairns Airport	Civilian infrastructure	Australian - with US military access	High	Military
Combat Training Centre - Jungle Training Wing, Tully	Training / exercises	Australian - with US military access	High	Military
Cowley Beach Military Training Area	Training / exercises	Australian - with US military access	High	Military
Cultana Training Area	Training / exercises	Australian - with US military access	High	Military
Defence Accommodation Precinct Darwin	Army base	Australian - with US military access	High	Military
Defence Establishment Berrimah	Logistics / munitions / prepositioning	Australian - with US military access	High	Military
Gaza Ridge Barracks (North and South Bandiana)	Logistics / munitions / prepositioning	Australian - with US military access	High	Military
Halifax Bay Training Area	Training / exercises	Australian - with US military access	High	Military
Henderson Defence Precinct	Infrastructure / manufacturing	Australian - with US military access	High	Military
HMAS Cairns	Naval base	Australian - with US military access	High	Military
HMAS Coonawarra	Naval base	Australian - with US military access	High	Military
HMAS Harman	Intelligence / surveillance	Australian - with US military access	High	Military
HMAS Kuttabul	Logistics / munitions / prepositioning	Australian - with US military access	High	Military
HMAS Waterhen	Naval base	Australian - with US military access	High	Military
Kangaroo Flats Training Area	Training / exercises	Australian - with US military access	High	Military
Lancelin Defence Training Area	Training / exercises	Australian - with US military access	High	Military
Larrakeyah Barracks	Army base	Australian - with US military access	High	Military
Lavarack Barracks	Logistics / munitions / prepositioning	Australian - with US military access	High	Military
Lone Pine Barracks	Training / exercises	Australian - with US military access	High	Military
Mount Bundey Training Area	Training / exercises	Australian - with US military access	High	Military

Facility	Facility Type	US Access		
		Status	Confidence re Status	Access Type
Osborne Naval Shipyard / Nuclear-Powered Submarine Construction Yard	Infrastructure / manufacturing	Australian - with US military access	High	Military
RAAF Base Curtin	Air base	Australian - with US military access	High	Military
RAAF Base Learmonth	Air base	Australian - with US military access	High	Military
Robertson Barracks	Army base	Australian - with US military access	High	Military
Robertson Barracks Close Training Area	Army base	Australian - with US military access	High	Military
Russell Precinct, Canberra	Administration	Australian - with US military access	High	Military
Shoalwater Bay Training Area	Training / exercises	Australian - with US military access	High	Military
Singleton Military Area	Training / exercises	Australian - with US military access	High	Military
Townsville Field Training Area	Training / exercises	Australian - with US military access	High	Military
Tully Military Training Area	Training / exercises	Australian - with US military access	High	Military
Wadsworth Barracks (East Bandiana)	Logistics / munitions / prepositioning	Australian - with US military access	High	Military
Wide Bay Training Area	Training / exercises	Australian - with US military access	High	Military
Yampi Sound Training Area	Training / exercises	Australian - with US military access	High	Military
Beecroft Weapons Range	Training / exercises	Australian - with US military access	Medium	Military
Defence Establishment Howard Springs North	Training / exercises	Australian - with US military access	Medium	Military
HMAS Creswell	Training / exercises	Australian - with US military access	Medium	Military
Jennings Explosives Depot	Logistics / munitions / prepositioning	Australian - with US military access	Medium	Military
Jindalee Operational Radar Network (JORN) – Alice Springs	Intelligence / surveillance	Australian - with US military access	Medium	Military
Jindalee Operational Radar Network (JORN) – Queensland	Intelligence / surveillance	Australian - with US military access	Medium	Military
Jindalee Operational Radar Network (JORN) – Western Australia	Intelligence / surveillance	Australian - with US military access	Medium	Military
Mount Stuart Training Area	Training / exercises	Australian - with US military access	Medium	Military
Navy Ammunitioning Facility, Twofold Bay	Logistics / munitions / prepositioning	Australian - with US military access	Medium	Military
RAAF Base Pearce	Air base	Australian - with US military access	Medium	Military
RAAF Base Scherger	Air base	Australian - with US military access	Medium	Military
RAAF Forward Operating Base Cocos Islands	Air base	Australian - with US military access	Medium	Military
Satellite Operations Centre – 1, RAAF Base Edinburgh	Communications	Australian - with US military access	Medium	Military

Facility	Facility Type	US Access		
		Status	Confidence re Status	Access Type
Bindoon Training Area	Training / exercises	Australian - with US military access	Low	Military
Borneo Barracks, Cabarlah	Intelligence / surveillance	Australian - with US military access	Low	Military
Cocos Islands Signals Intelligence Station	Intelligence / surveillance	Australian - with US military access	Low	Military
Learmonth Air Weapons Range	Training / exercises	Australian - with US military access	Low	Military
Palmer Barracks	Logistics / munitions / prepositioning	Australian - with US military access	Low	Military

Notes:

56 facility records. Data current as at 28 August 2026; website extraction 10 September 2026.

Includes: Australian-controlled facilities with US military access, at any recorded confidence level for that status assessment.

Excludes: Corporate-only access, no significant US access, US-controlled facilities, and structurally excluded or out-of-scope records.

Source: Australian Bases & US Involvement database. Captured website table

Table 14. Australian facilities with US corporate access — arranged by confidence in US-access status

Facility	Facility Type	US Access		
		Status	Confidence re Status	Access Type
Army Aviation Centre, Oakey / Swartz Barracks	Army base	Australian - with US corporate access	High	Corporate
Avalon Airport	Logistics / munitions / prepositioning	Australian - with US corporate access	High	Corporate
Benalla Munitions Factory	Infrastructure / manufacturing	Australian - with US corporate access	High	Corporate
Brindabella Business Park	Administration	Australian - with US corporate access	High	Corporate
Deep Maintenance and Modification Facility	Infrastructure / manufacturing	Australian - with US corporate access	High	Corporate
Defence Establishment Myambat	Logistics / munitions / prepositioning	Australian - with US corporate access	High	Corporate
Defence Establishment Orchard Hills	Logistics / munitions / prepositioning	Australian - with US corporate access	High	Corporate
Defence Science and Technology Adelaide, Edinburgh	Research / development / testing	Australian - with US corporate access	High	Corporate
Edinburgh Parks	Research / development / testing	Australian - with US corporate access	High	Corporate
HMAS Encounter / Naval Headquarters South Australia	Command + control	Australian - with US corporate access	High	Corporate
Maritime Combat Systems Integration Centre, (Department of Defence)	Infrastructure / manufacturing	Australian - with US corporate access	High	Corporate
Missile Assembly Facility (Port Wakefield)	Infrastructure / manufacturing	Australian - with US corporate access	High	Corporate
Missile Manufacturing and Maintenance Facility (Newcastle)	Infrastructure / manufacturing	Australian - with US corporate access	High	Corporate
Point Wilson Explosives Area	Logistics / munitions / prepositioning	Australian - with US corporate access	High	Corporate
RAAF Base East Sale	Training / exercises	Australian - with US corporate access	High	Corporate
Sovereign Combat Systems Collaboration Centre	Infrastructure / manufacturing	Australian - with US corporate access	High	Corporate
Defence Science and Technology Melbourne, Fishermans Bend	Research / development / testing	Australian - with US corporate access	Medium	Corporate
Lot 14, defence innovation centre	Research / development / testing	Australian - with US corporate access	Medium	Corporate
Rheinmetall NIOA Munitions, (Maryborough)	Infrastructure / manufacturing	Australian - with US corporate access	Low	Corporate
Satellite Ground Station - East, Kapooka	Communications	Australian - with US corporate access	Low	Corporate

Notes:

20 facility records. Data current as at 28 August 2026; website extraction 10 September 2026.

Includes: Australian-controlled facilities with US corporate access, at any recorded confidence level for that status assessment.

Excludes: Military-only access, no significant US access, US-controlled facilities, and structurally excluded or out-of-scope records.

Source: Australian Bases & US Involvement database. Captured website table

Table 15. Australian facilities with US military and US corporate access — arranged by confidence in US-access status

Facility	Facility Type	US Access		
		Status	Confidence re Status	Access Type
Australian Geospatial Intelligence Organisation	Intelligence / surveillance	Australian - with US military access + US corporate access	High	Military + corporate
Defence Mulwala Facility	Logistics / munitions / prepositioning	Australian - with US military access + US corporate access	High	Military + corporate
Delamere Air Weapons Range	Training / exercises	Australian - with US military access + US corporate access	High	Military + corporate
Garden Island Defence Precinct / Fleet Base East	Naval base	Australian - with US military access + US corporate access	High	Military + corporate
HMAS Albatross	Naval base	Australian - with US military access + US corporate access	High	Military + corporate
HMAS Stirling / Fleet Base West	Naval base	Australian - with US military access + US corporate access	High	Military + corporate
HMAS Watson	Training / exercises	Australian - with US military access + US corporate access	High	Military + corporate
Learmonth Space Situational Awareness Observatory	Intelligence / surveillance	Australian - with US military access + US corporate access	High	Military + corporate
Maritime Underwater Tracking Range (MUTR)	Intelligence / surveillance	Australian - with US military access + US corporate access	High	Military + corporate
Naval Communication Station Harold E. Holt, North West Cape	Communications	Australian - with US military access + US corporate access	High	Military + corporate
Proof and Experimental Establishment, Port Wakefield	Research / development / testing	Australian - with US military access + US corporate access	High	Military + corporate
RAAF Base Amberley	Air base	Australian - with US military access + US corporate access	High	Military + corporate
RAAF Base Darwin	Air base	Australian - with US military access + US corporate access	High	Military + corporate
RAAF Base Edinburgh	Research / development / testing	Australian - with US military access + US corporate access	High	Military + corporate
RAAF Base Richmond	Air base	Australian - with US military access + US corporate access	High	Military + corporate
RAAF Base Tindal	Air base	Australian - with US military access + US corporate access	High	Military + corporate

Facility	Facility Type	US Access		
		Status	Confidence re Status	Access Type
RAAF Base Townsville	Air base	Australian - with US military access + US corporate access	High	Military + corporate
RAAF Base Williamtown	Air base	Australian - with US military access + US corporate access	High	Military + corporate
Satellite Ground Station – West (Wideband Global System Ground Station), Kojarena	Communications	Australian - with US military access + US corporate access	High	Military + corporate
Shoal Bay Receiving Station	Intelligence / surveillance	Australian - with US military access + US corporate access	High	Military + corporate
Space Surveillance Radar, (C-band Radar), Exmouth	Intelligence / surveillance	Australian - with US military access + US corporate access	High	Military + corporate
Toowoomba Wellcamp Airport Defence & Aerospace Precinct	Logistics / munitions / prepositioning	Australian - with US military access + US corporate access	High	Military + corporate
Woomera Range Complex	Research / development / testing	Australian - with US military access + US corporate access	High	Military + corporate
Holsworthy Barracks	Army base	Australian - with US military access + US corporate access	Medium	Military + corporate
Bohle River Transmit Site (HF)	Communications	Australian - with US military access + US corporate access	Low	Military + corporate
Exmouth Receive Site (HF), North West Cape	Communications	Australian - with US military access + US corporate access	Low	Military + corporate
Humpty Doo Transmit Site (HF), Darwin	Communications	Australian - with US military access + US corporate access	Low	Military + corporate
Lyndoch Transmit Site (HF), Riverina	Communications	Australian - with US military access + US corporate access	Low	Military + corporate
Morundah Receive Site (HF), Riverina	Communications	Australian - with US military access + US corporate access	Low	Military + corporate
Mount Bundey Receive Site (HF), Darwin	Communications	Australian - with US military access + US corporate access	Low	Military + corporate
Rough Range Receive Site (HF), North West Cape	Communications	Australian - with US military access + US corporate access	Low	Military + corporate
Speed Creek Receive Site (HF)	Communications	Australian - with US military access + US corporate access	Low	Military + corporate

32 facility records. Data current as at 28 August 2026; website extraction 10 September 2026.

Includes: Australian-controlled facilities with both US military and corporate access, at any recorded confidence level for that status assessment.

Excludes: Facilities with only one form of US access, no significant US access, US-controlled facilities, and structurally excluded or out-of-scope records.

Source: Australian Bases & US Involvement database. Captured website table

Table 16. Structurally excluded and out-of-scope facility records

Facility	Facility Type	US Access		Disposition	Reason not included in facilities counts
		Status	Confidence re Status		
Al Minhad Air Base, UAE	Air base	—	—	out of scope	Overseas tenant facility
Albury Wodonga Military Area	Logistics / munitions / prepositioning	Australian - with US military access	High	structurally excluded	Separate entries for some component elements
Defence Intelligence Organisation	Intelligence / surveillance	Australian - with US military access	High	structurally excluded	Included under entry for enclosing facility/organisation
Edinburgh Defence Precinct	Research / development / testing	Australian - with US military access + US corporate access	High	structurally excluded	Separate entries for some component elements
Joint Defence Facility Pine Gap	Intelligence / surveillance	US - with Australian access + US corporate access	High	structurally excluded	Separate entries for some component elements
Larrakeyah Defence Precinct	Command + control	Australian - with US military access	High	structurally excluded	Separate entries for some component elements
Majura Park	Intelligence / surveillance	Australian - with US military access + US corporate access	Medium	structurally excluded	Separate entries for some component elements
Naval Support Activity Bahrain	Naval base	US - with Australian access	High	out of scope	Overseas tenant facility
RMAF Butterworth	Air base	—	—	out of scope	Overseas tenant facility

Notes:

9 facility records. Data current as at 28 August 2026; website extraction 10 September 2026.

Includes: Structurally excluded and out-of-scope facility records documented outside the statistical counts.

Excludes: All facilities included in statistical counts, including those with Low, Unknown or undetermined US-access assessments.

Source: Australian Bases & US Involvement database. Captured website table

Table 17. Lockheed Martin corporate presence at Australian defence facilities

Facility	Lockheed Martin role
Army Aviation Centre, Oakey	Army's second Black Hawk operating node, sustained by Lockheed Martin.
Australian Marine Complex	Aegis Combat Management System for Hunter-class frigates and Hobart-class Air Warfare Destroyers.
Avalon Airport	Lockheed Martin agreement (GWEO Enterprise partner) for storage and planned manufacture of GMLRS munitions.
Bohle River Transmit Site (HF)	Lockheed Martin and Babcock (UK) $1.96 billion contract to upgrade the Defence High Frequency Communications System.
Brindabella Business Park	Canberra liaison with Australian Submarine Corporation as 'preferred combat system integrator for Australia's future Virginia Class Submarine fleet'
Defence Establishment Orchard Hills	Development underway for guided weapons production capability
Defence Mulwala Facility	Lockheed Martin-Thales Guided Weapons Explosive Ordnance production.
Defence Science and Technology Adelaide, Edinburgh	DSTG strategic partner
Defence Science and Technology Melbourne, Fishermans Bend	DSTG strategic partner
Edinburgh Parks	Corporate base
Exmouth Receive Site (HF), North West Cape	Lockheed Martin and Babcock (UK) $1.96 billion contract to upgrade the Defence High Frequency Communications System.
Garden Island Defence Precinct / Fleet Base East	Aegis combat system sustainment
HMAS Albatross	$313 million Sikorsky [Lockheed Martin subsidiary] maintenance and logistics contract for RAN and U.S. Navy M60-R Sea Hawk helicopters
Holsworthy Barracks	Logistics node for UH-60M Black Hawk helicopter fleet.
Humpty Doo Transmit Site (HF), Darwin	Lockheed Martin and Babcock (UK) $1.96 billion contract to upgrade the Defence High Frequency Communications System.
Learmonth Space Situational Awareness Observatory	Electro Optical Systems/Lockheed Martin: 'a combined project between EOS, Lockheed Martin Australia and the Australian Department of Defence'.
Lot 14, defence innovation centre	Partner with University of Adelaide's Australian Institute for Machine Learning.
Lyndoch Transmit Site (HF), Riverina	Lockheed Martin and Babcock (UK) $1.96 billion contract to upgrade the Defence High Frequency Communications System.

Facility	Lockheed Martin role
Maritime Combat Systems Integration Centre, (Department of Defence)	AEGIS Combat Management System
Missile Assembly Facility, Proof and Experimental Establishment, Port Wakefield	GWEO Missile Assembly Facility for Lockheed Martin Guided Multiple Launch Rocket System
Mobile User Objective System (MUOS) Radio Access Facility, Kojarena	Lockheed Martin-manufactured system
Morundah Receive Site (HF), Riverina	Lockheed Martin and Babcock (UK) $1.96 billion contract to upgrade the Defence High Frequency Communications System.
Mount Bundey Receive Site (HF), Darwin	Lockheed Martin and Babcock (UK) $1.96 billion contract to upgrade the Defence High Frequency Communications System.
Osborne Naval Shipyard	Aegis Sustainment Program for Hobart Class guided missile destroyers contract extension.
Point Wilson Explosives Area	Munitions (GMLRS) storage, associated with Avalon Airport /Lockheed Martin storage and planned manufacture.
RAAF Base Darwin	2025: $250–280 million for delivery of Lockheed Martin Joint Air Battle Management System (JABMS) capability
RAAF Base East Sale	$1.2 billion basic flight training contract led by Lockheed Martin
RAAF Base Edinburgh	Supply of Precision Strike Missiles (PrSM) and M142 HIMARS launchers for the Australian Army land-based maritime strike.
RAAF Base Richmond	C-130J transport fleet sustainment.
RAAF Base Tindal	One of two major operating bases for Lockheed Martin F-35A Joint Strike Fighters.
RAAF Base Williamtown	One of two major operating bases for Lockheed Martin F-35A Joint Strike Fighters. Lockheed Martin 'has established its largest F-35 sustainment footprint outside the USA at Williamtown. Lockheed Martin sustains Tactical Air Defence Radar System.
Rough Range Receive Site (HF), North West Cape	Lockheed Martin and Babcock (UK) $1.96 billion contract to upgrade the Defence High Frequency Communications System.
Shoal Bay Receiving Station	Lockheed Martin and Babcock (UK) $1.96 billion contract to upgrade the Defence High Frequency Communications System.
Sovereign Combat Systems Collaboration Centre	Combat System Integration (CSI) Collaboration Agreement (CCA), to be delivered by BAE Systems Australia, Lockheed Martin Australia, Saab Australia, and Defence. AEGIS Combat Management System manufactured by Lockheed Martin, modified by Saab. Lockheed Martin is building Submarine Combat System Laboratory.
Speed Creek Receive Site (HF)	Lockheed Martin and Babcock (UK) $1.96 billion contract to upgrade the Defence High Frequency Communications System.

Sources: Australian Bases & US Involvement database, https://ausbases.au.

Appendices

Appendix 1. Extracts concerning US access to Australian military facilities from the Australia-United States Force Posture Agreement, 2014

Appendix 2. Assessment of US access to the ADF Enhanced Defence High Frequency Communications System

Appendix 3. Global ranking of defence prime integrators supplying Australia, 2024

Appendix 4. US access and the Guided Weapons Explosive Ordnance (GWEO) Enterprise Program

Appendix 5. Australian National Audit Office assessment of efforts to maximise Australian industry participation in the GWEO Enterprise

Appendix 6. Definitions and methods

Appendix 1. Extracts concerning US access to Australian military facilities from the Australia-United States Force Posture Agreement, 20141

Article I: Definitions

> '"Agreed Facilities and Areas" means the facilities and areas in the territory of Australia provided by Australia which may be listed in Annex A appended to this Agreement, and such other facilities and areas in the territory of Australia as may be provided by Australia in the future, to which United States Forces, United States Contractors, dependants, and other United States Government personnel as mutually agreed, shall have the right to access and use pursuant to this Agreement.'
>
> '"United States Contractors" means non-Australian companies and firms and their employees who are not nationals of Australia, under contract or subcontract to the United States Department of Defense who may be present in Australia in connection with the Force Posture Initiatives.'
>
> '"United States Forces" means the entity comprising the "members of the United States Forces", "members of the Civilian Component", and all property, equipment and materiel of the United States Armed Forces present in Australia.'

Article IV: Agreed Facilities and Areas

> '1. With full respect for Australian sovereignty and the laws of Australia, United States Forces and United States Contractors shall have unimpeded access to and use of Agreed Facilities and Areas for activities undertaken in connection with this Agreement.'

Article VII: Prepositioning

> '4. United States Forces and United States Contractors shall have unimpeded access to Agreed Facilities and Areas for all matters related to the prepositioning and storage of defence equipment, supplies, and materiel, including delivery, management, inspection, use, maintenance, and removal of such prepositioned materiel. As mutually determined by the Parties, aircraft, vehicles, and vessels operated by or for United States Forces shall have access to aerial ports and seaports of Australia and other locations, for the delivery to, storage and maintenance in, and removal from the territory of Australia of United States Forces' prepositioned materiel.'

Notes and sources

1. The Force Posture Agreement between the Government of Australia and the Government of the United States of America, (Sydney, 12 August 2014). See also Richard Tanter, 'Cover up: The Australian Government's secret list of US bases', *Pearls & Irritations*, 25 July 2023.

Appendix 2. Assessment of US access to the ADF Enhanced Defence High Frequency Communications System

Summary

The most important problematic claim about confirmed Australian facilities to which the United States has some access concern the nine sites of the ADF Enhanced Defence High Frequency Communications System (EDHFCS).

At present these facilities are coded as 'Australian - with US military access' at low confidence, reflecting a degree of doubt about the claim of US access.

That doubt is based on the paucity of evidence: the most important source is a single US official source from 2022 which suggests that the EDHFCS is at least somewhat integrated into the operations of the US High Frequency Global Communications System (US HFGCS).[1]

While the number of sources is very small, the direction of travel of the US-auspiced high frequency communications interoperability project is clear. However, because of the paucity of sources, confidence of coding US access to the Australian Enhanced Defence High Frequency Communications System remains 'low' - for the present.

The strategic importance of high frequency beyond-line-of-sight radio communications has received more attention in recent years due to increased awareness of the vulnerability to attack of both space-based radio communications and optical fibre linkages.

Analysis

The Australian Enhanced Defence High Frequency Communications System is made up of four geographically separated nodes, each of which is made up of a transmit and a receive array separated by 20-30 kilometres. There is also a control facility at HMAS Harman in Canberra.

Receive arrays have a direction-finding capability, and accordingly have a secondary signals intelligence role in addition to their communications role.

In the past two decades the ADF high frequency communications system has been repeatedly modernized, most recently through the ongoing Project Phoenix EST 9101, budgeted at over $280 mn.[2] The Project Phoenix upgrade includes system modernization, construction of optical fibre linkages between nodes and the control facility, and construction of a new receive facility for the Darwin node to replace the high frequency antenna farm the Shoal Bay Receiving Station.[3] The ten year upgrade is led by the UK and US primes Babcock and Lockheed Martin.[4]

At present these facilities are coded as 'Australian - with US military access' at low confidence, reflecting a degree of doubt about the claim of US access. That doubt is based on the paucity of evidence: the most important source is a single US official source from 2022 which suggests that the EDHFCS is at least somewhat integrated into the operations of the US High Frequency Global Communications System (US HFGCS).[5]

In February 2022 the Defense Information Systems Agency, the Pentagon's primary information technology agency, conducted a month long event titled BOLD QUEST 22 under joint staff sponsorship, involving

> 'all U.S. Military Services, Allies, and partners from 19 countries, over 1,000 participants, collaborated through lab testing and field data collection in and around Fort Stewart, Georgia.'

Figure A.2-1. Facilities to support JP9101 Phase 1 Enhanced Defence High Frequency Communications System - Project Phoenix

Source: Department of Defence, Supplementary Submission to the Parliamentary Standing Committee on Public Works inquiry into facilities to support JP9101 Phase 1 Enhanced Defence High Frequency Communications System - Project Phoenix, 7 July 2023, p. 9 of 30.

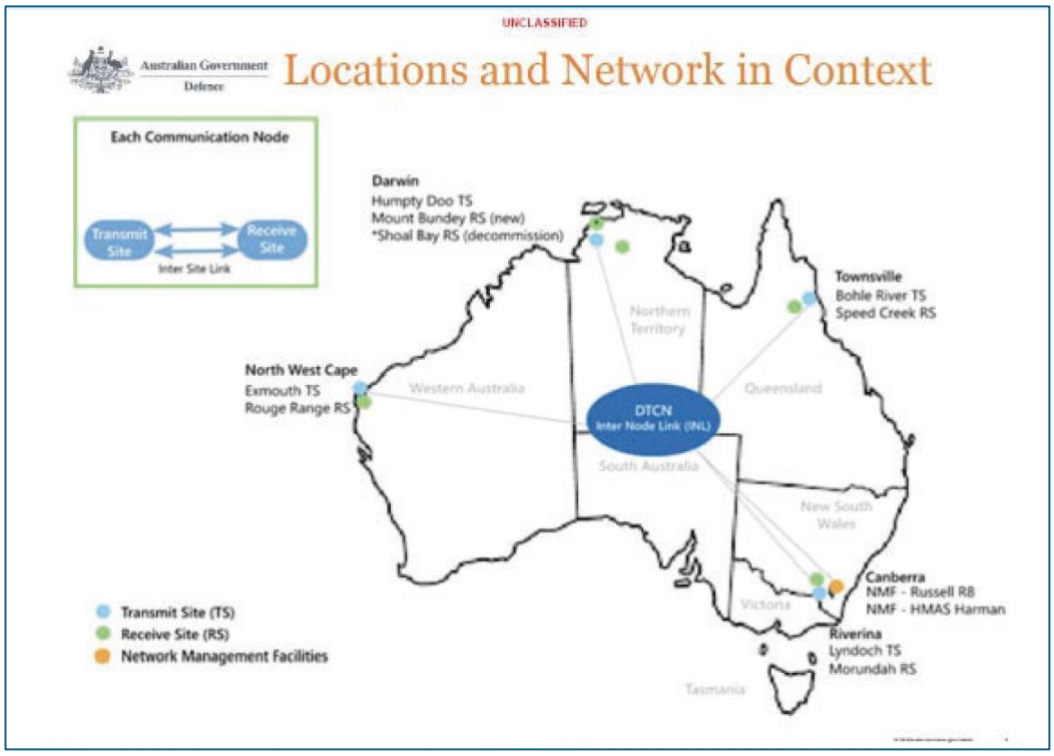

Figure A.2-2. ADF Enhanced Defence High Frequency Communications System sites and network

Source: Department of Defence, Supplementary Submission to the Parliamentary Standing Committee on Public Works inquiry into facilities to support JP9101 Phase 1 Enhanced Defence High Frequency Communications System - Project Phoenix, 7 July 2023, p. 11 of 30.

The exercise was designed to

> 'push the limits on coalition interoperability, focused on testing elements of Joint All Domain Command and Control (JADC2) including the JADC2 Network Environment.'

After the event, the US Defense Department judged that

> 'BQ22 facilitated the advancement of technical and procedural tactical-level interoperability among U.S. and Partner Nations, strengthening alliances and increasing the lethality of the Combined/Joint Force.'

BQ22 was said to be

> 'a key effort to successfully deliver JADC2 is to synchronize Command and Control (C2) initiatives across all domains (sea, land, air, space, cyber)... The Department understands C2, across the Combined/Joint Force and all domains, is necessary to maintain information and decision advantage. Through Bold Quest, the U.S. and our Allies and partners have an opportunity to build trust, improve interoperability, and advance innovative and resilient C2 capabilities in support of globally integrated operations.'[6]

One key aspect of the multifaceted month-long exercise involved overlap between DISA and Indo-Pacific Command's Multinational Communications Interoperability Program, specifically at the intersection of high frequency communications and cyber operations through the modernization of the US Global High Frequency Communications System (US HFGCS).

For decades high frequency communications, which are especially effective long range radio frequency communications, had been somewhat neglected following the development of other radio frequencies together with satellite communications and optical fibre links. However, the increasingly evident vulnerabilities of both satellite and optical fibre communications, combined with a rapid development of new high frequency capabilities made clear the utility of the existing US global high frequency system. [7]At the same time, the US was reconfiguring the relationship of the US system with most, if not all, Five Eyes Partners' HF systems.

BOLD QUEST 22 High Frequency was a testbed for a new level of interoperability and coalition coordination and collaboration, involving establishment of certification of common standards and protocols common to all Allied and Partner nation participants - based on NATO Standardization Agreements (STANAGs).

At the time of BOLD QUEST 22, the 'Current BQ Coalition' the US and a number of its NATO allies, plus Middle East partners including Saudi Arabia and the UAE, and Australia.[8]

The Australian Defence Force's Enhanced Defence High Frequency Communications System played an active role in the high frequency component of BOLD QUEST 22, working particularly closely with the US Global High Frequency Communications System, and also testing connections and collaboration with the companion Canadian HF system. In addition, all three national military systems worked with the US

> 'Joint Tactical Networking Center (JITC), the Joint Tactical Networking Center (JTNC), the US Army NETCOM HF Gateway, and multiple vendors to continue testing to achieve data interoperability across radio systems' to 'enable Vendors to Conduct Testing to Resolve Interoperability Issues in ALE linking, Wideband HF, Chat, and Email'.[9]

The vendors involved in the US-auspiced testing included four of the top ten global arms and military equipment producers, all of whom are major suppliers in the Australian procurement eco-system: from the US - L3Harris, Collins Aerospace (now a subsidiary of RTX), General Dynamics; from Britain - BAE/Flex; and the German major Rohde & Schwarz.[10]

One objective of biweekly high frequency testing and synching was hoped to

> 'leverage the High Frequency Global Communications System (HFGCS) and the Defence High Frequency Communications System (to establish HF connections from these high powered strategic systems to the tactical edge.'

The outcome was a commitment by 'Australia, Belgium, Canada, Norway, Poland, and Sweden to pursue HF connections from their nations to the US'.[11]

At BOLD QUEST 22 HF the Australian contingent also presented its view of the high frequency system upgrade capabilities to be delivered by the $2 bn JP9101Ph1 Enhanced Defence High Frequency Communications System by the partnership of Babcock and Lockheed Martin at the four EDHFCS nodes.[12]

From these sources, BOLD QUEST 22 HF indicates Australian involvement in US-auspiced projects of heightened interoperability, coordination, collaboration, and integration of multinational high frequency communications systems, systems which continue to undergo well-funded upgrades involving US and other foreign suppliers and sustainers.

While the number of sources is very small, the direction of travel of the US-auspiced interoperability project is clear. However, because of the paucity of sources, confidence of coding US access to the Australian Enhanced Defence High Frequency Communications System remains 'low' - for the present.

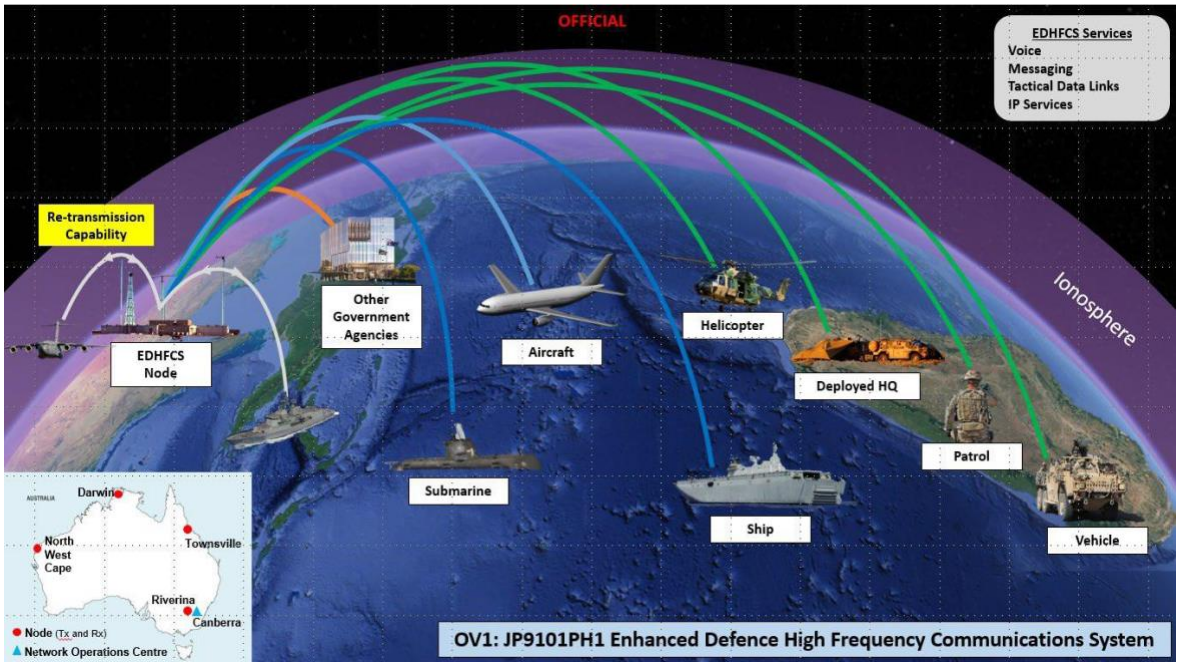

Figure A.2-3. ADF schematic of operations of the Enhanced Defence High Frequency Communications System sites and network

Source: John Holloway, Defense Information Systems Agency, DISA briefing to the US-AUS-NZ Strategic Defense Communications Management Group General Meeting on DoD HF modernization efforts, AFCEA, 15 November 2022, p. 17 of 18; hard copy retained.

Notes and sources.

1. John Holloway, Defense Information Systems Agency, DISA briefing to the US-AUS-NZ Strategic Defense Communications Management Group General Meeting on DoD HF modernization efforts, AFCEA, 15 November 2022; hard copy retained. See also Brian McCarty, DISA validates next generation wideband high frequency waveforms interoperability, LinkedIn, 14 September 2022; and Jonathan Nally, Putting HF to the test, *Critical Communications*, vol. 4, no. 1, November/December 2016, pp. 27-28.

2. A portion of the infrastructure cost of the Mount Bundey facility is budgeted under the US Force Structure Initiatives. See Department of Defence, Submission to the Parliamentary Standing Committee on Public Works inquiry into facilities to support JP9101 Phase 1 Enhanced Defence High Frequency Communications System - Project Phoenix, May 2023, para. 56.

3. Report into Department of Defence - Facilities to Support JP9101 Phase 1 Enhanced Defence High Frequency Communications System - Project Phoenix, Parliamentary Standing Committee on Public Works, Report 5/2023, August 2023; Department of Defence, Submission and Supplementary Submission to the inquiry, May and July 2023; and Darian Macey, Contractor for EST9101Ph1 - Facilities to support EDHFCS (NT), DECNet.com.au, 21 November 2024.

4. "Babcock's principal partner for the program, Lockheed Martin Australia will support Babcock in the delivery of mission system elements that will grow a sovereign industrial capability solution to provide through life support over the duration of the program and beyond." Gregor Ferguson, Babcock to upgrade Australia's Defence HF Communications System, EX2, 24 October 2022.

5. John Holloway, *DISA briefing*; Brian McCarty, DISA validates next generation wideband high frequency waveforms interoperability, LinkedIn, 14 September 2022; and Jonathan Nally, Putting HF to the test, *Critical Communications*, vol. 4, no. 1, November/December 2016, pp. 27-28.

6. JADC2 Tactical Capabilities Go International During Bold Quest 22, Department of Defense, 19 August 2022; accessed 26 May 2026.

7. Andrew White, The military renaissance in high frequency communications, C4ISRNet, 22 September 2022.

8. John Holloway, 'DISA briefing', p. 13.

9. John Holloway, 'DISA briefing', p. 14.

10. 'The SIPRI Top 100 arms-producing and military services companies in the world, 2024', *Stockholm International Peace Research Institute*, [accessed 28 May 2026].

11. John Holloway, 'DISA briefing', p. 15.

12. John Holloway, *DISA briefing*, p. 17; and Gregor Ferguson, Babcock to upgrade Australia's Defence HF Communications System.

Appendix 3. Global ranking of defence prime integrators supplying Australia, 2024

The database frequently refers to prime integrator, supply, sustainment, and maintenance roles for a small number of foreign armaments manufacturers and defence materiel suppliers. In any discussion of the Australian defence procurement ecosystem it is critical to appreciate the difference in scale of domestic Australian companies and the majority of foreign, and in particular, US defence primes involved.

Lockheed Martin, RTX/Raytheon, Northrop Grumman, General Dynamics and Boeing were described by the Congressional Research Service as 'The Big Five'. According to the Stockholm International Peace Research Institute, in 2024 these companies made up five of the top six global arms producers and military services providers.[1]

Table A3- 1. Global ranking of arms producers and military services providers of defence prime integrators to Australia, 2024 (Stockholm International Peace Research Institute)

Rank (globally)	Company	Country of origin	Arms revenues as a % of total company revenues
1	Lockheed Martin	US	91%
2	RTX/Raytheon	US	54%
3	Northrop Grumman	US	92.2%
4	BAE	UK	95.4%
5	General Dynamics	US	70.4%
6	Boeing	US	45.9%
10	L3Harris	US	76%
15	Thales	France	53.0%
17	HII	US	89.1%
18	Leidos	US	52.6%
19	Amentum	US	60.1%
20	Rheinmetall	Germany	78.1%

The Congressional Research Service summarized the role of these companies in the US procurement ecosystem in 2024 as follows:

> 'Over the past four fiscal years, these five firms have tended to receive about one-third of all annual DOD contract obligations in the United States (the group received approximately 30.3% of FY2022 obligations, 29.1% of FY2021 obligations, 34.6% of FY2020 obligations, and 31% of FY2019 obligations). Of the 78 major weapons systems DOD identified in its FY2024 budget materials, 58—over 74% of the total—featured at least one of the 'Big Five' as a prime contractor. All five of these companies (or their predecessors) have been major recipients of defense contracts since at least the 1950s'.[2]

All of the foreign defence primes recorded in the database are present in the SIPRI list of the largest global arms producers and military services providers, including nine US companies in the global top 20.

Notes and sources

1. 'The SIPRI Top 100 arms-producing and military services companies in the world, 2024', Stockholm International Peace Research Institute, [accessed 3 May 2026]

2. Luke A. Nicastro, The U.S. Defense Industrial Base: Background and Issues for Congress, Congressional Research Service, R47751, updated September 23, 2024.

Appendix 4. US access and the Guided Weapons Explosive Ordnance (GWEO) Enterprise Program

One rapidly expanding Defence 'Enterprise' in particular is expanding US access to a wider range of Australian defence facilities than ever before, as well as intensifying connections in other cases. The Guided Weapons Explosive Ordnance (GWEO) Enterprise Program features the Australian Government's Strategic Partnerships with four of the world's top armaments companies - beginning with the two biggest contractors with the US War Department - Lockheed Martin and RTX/Raytheon as the founding GWEO Strategic Enterprise Partners.[1]

The government's comprehensive Australian Guided Weapons and Explosive Ordnance Plan, 2024 was quite clear about the starting point of the Enterprise:

> 'Australia currently manufactures a range of non-guided munitions, including small arms ammunition and some types of aircraft bombs. However, all of the ADF's guided weapons are currently manufactured outside Australia.'[2]

The GWEO Enterprise Program figures remarkably often in the database, and in a number of cases is one influence in the classification of ADF facilities as 'Australian - with US access'.

This claim may appear unwarranted since the Australian government frames the GWEO Enterprise Program, one of its largest defence innovations, in terms of a sovereign defence industrial capability - or at least, as a pathway to that end.

Introducing the 2024 GWEO Enterprise Program, the Minister for Defence Industry and Capability Development stated:

> 'This Australian GWEO Plan presents a vision to develop local industry capability and to increase industrial resilience in order to provide increased sovereignty for Australia. It supports National Defence, leveraging the industrial capabilities of the nation to upgrade production capacity of existing conventional weapons and advanced missiles, while establishing the foundations of long-term domestic manufacture and investment in next-generation capabilities.'[3]

The GWEO Enterprise Plan is a complex initiative, with principal headings addressing concerns with strategic rationale, the Australian defence industrial base and the GWEO plan, long range strike and uplift of GWEO stockpiles, domestic manufacture and international supply of GWEO, GWEO capability enablers, and budgeting. Each section in turn shows more detailed complex planning, summarized in a set of Sovereign Defence Industrial Priority [SDIP] factsheets.[4]

The plan is founded on two related propositions:

> 'The Defence Industry Development Strategy aims to foster seamless collaboration across Australia's defence industrial base and trusted partners, as well as gaining access to and leveraging international industrial capabilities.'
>
> 'A sovereign GWEO industrial base is critical to the success of the Australian GWEO Plan.'[5]

The success of that element strategy will hinge on resolving the evident contradictions between the goal of defence industrial sovereignty on the one hand, and on the other, current, and for some considerable time, industrial dependence on foreign manufacturers, and in particular on a very small number of foreign, principally US very large defence primes.

The pathways to at least mitigating the influence of foreign dependence on sovereign defence industrial capability are addressed at length, if not in concrete detail or conceptual depth, in the 2024 Defence Industry Development Strategy:

> 'Australian defence industry is comprised of businesses with an Australian-based industrial capability and an Australian Business Number (ABN), providing products or services used in, or which can be

> adapted to be used in, the Australian Department of Defence supply chain and/or an international defence force supply chain.'

This benign definition is then followed by a clear, but unsubstantiated claim:

> 'This is Australia's sovereign defence industrial base. Only in limited circumstances is Australian ownership critical to sovereignty.'[6]

This position is elaborated in the RAND Corporation's recommendations on the Australian GWEO enterprise:

> 'Sovereignty needs to be carefully defined. Operational sovereignty, in the case of guided weapons, is about removing the risks of losing access to, or control over, needed capabilities. While Australia might need access to, or control over, the requisite element required for producing certain weapons, the capabilities do not necessarily need to be produced in Australia or by Australian companies to achieve operational sovereignty. However, there may be other benefits (jobs, assured supply chains, etc.) that may come with an enterprise of building weapons in Australia.' [7]

Industrial dependence, separate from operational dependence, is an aspect of US access with multiple possible dimensions of restriction of Australian autonomy, all of which will require effective and sustained resolution. This is often recognized at least nominally in Defence industrial planning, and applauded by foreign defence primes promising commitment to assistance on the path to sovereign defence capability.

In brief, the constraints, all of which carry over into the conditions under which US corporations have access to Australian facilities, include questions of design authority, control of intellectual property and technical data, the conditions attached to supply of software updates and cybersecurity patches, assured availability of spare parts and consumables, location and control over depot-level maintenance and specialist repair, certification and safety approval, training of workforce, embedding of contractor support, and, as evident recently, reliability of and control over supply chains for components and materials.

These are by and large not matters unique to either Australia or to defence industrial eco-systems, but readily understandable in the wider context of a largely deindustrialised Australian economy facing high technology dependence. Between the decades-long collapse of large-scale Australian heavy industrial manufacturing, the systemic effects of the relatively short and abrupt Covid pandemic and Iran war supply chain shocks, and the consumer experience of struggles with the constraints of information technology ecosystems, the problems inherent in the present state of defence industrial dependence that must be overcome for claims to sovereignty to be anything but propaganda are recognizable and systemic.

This is not the place to explore in depth either the obstacles such a contradiction sets up, or the adequacy of government plans to overcome that situation over time, as the plans in the Guided Weapons and Explosive Ordnance Plan, the Defence Industry Development Strategy and its annex on GWEO procurement and development maintain. The plans are quite open, at a general level, on the need to overcome dependence, though less clear about the certainty of the pathway to what is repeatedly asserted to be a sovereign outcome. Indeed the frequency with which 'sovereign defence' and 'sovereign capability' and similar terms are repeated, given the starting point the admitted and evident obstacles, feels rather like whistling past the graveyard.[8]

For the present, and quite possibly for the foreseeable future, the contradiction between stated ambition for sovereignty and the evident reality of industrial dependence will remain, foreign primes will retain dominance, and will, as a result have access to a wide range of Australian facilities that are sites for GWEO assembly, manufacture, logistics, supply, storage, and maintenance. That is the present situation, and the reason why coding of 'Australian - with US access', albeit varying with degree and type, is applied.[9]

Notes and sources

1. Defence subsequently appointed Thales (French) and Kongsberg (Norwegian) as GWEO strategic partners. In April 2026 Defence designated Raytheon, the leading US supplier of guided weapons, as the preferred industry partner to establish a solid rocket motor manufacturing capability in Australia, initially at Defence Establishment Mulwala. See also the ministerial announcement.

2. Commonwealth of Australia, The Australian Guided Weapons and Explosive Ordnance Plan, 2024, p. 3

3. Commonwealth of Australia, The Australian Guided Weapons and Explosive Ordnance Plan, 2024, p. 5.

4. See also 'SDIP 4 – Domestic manufacture of guided weapons, explosive ordnance and munitions', *Defence Industry Development Strategy*, Department of Defence, 2024, Annex B4, [accessed 14 April 2026]

5. Commonwealth of Australia, *The Australian Guided Weapons and Explosive Ordnance Plan*, 2024, p. 10.

6. In the pertinent official Australian document, the crucial topic of how to utilise "international industrial partnerships" is addressed in six rather general paragraphs. Seven "Sovereign Defence Industrial Priorities", each a few pages long, are appended but do not provide reason to challenge this view. See Department of Defence, Defence Industry Development Strategy, 2024, pp. 6-7.

7. See Christopher A. Mouton et al., Establishing a Sovereign Guided Weapons Enterprise for Australia: International and Domestic Lessons Learned, RAND Research Report RRA1710-1, 2022. See also Department of Defence, Defence Industry Development Strategy, 2024, pp. 6-7.

8. The term 'sovereign defence' occurs 77 times in the *Defence Industry Development Strategy*. Nowhere is that concept defined beyond the passage cited above concerning the definition of 'Australia's sovereign defence industrial base', which prescribes little more than businesses with an ABN. That passage concludes with the remark, notably not further explained, that 'Only in limited circumstances is Australian ownership critical to sovereignty.' (p.3)

9. The alternative position is put in publications from the RAND Corporation project on Australian guided weapons: Christopher A. Mouton et al., Establishing a Sovereign Guided Weapons Enterprise for Australia: International and Domestic Lessons Learned; and Andrew Dowse et al., Optimizing Defense Requirements Cooperation Among the United States and Its Allies, RAND, 7 May 2026.

Appendix 5. Australian National Audit Office assessment of efforts to maximise Australian industry participation in the GWEO Enterprise

An initial but robust and transparent assessment of current government protocols to ensure the GWEO Enterprise headed in the direction of the proclaimed sovereign capability outcome was carried out by the Australian National Audit Office in 2024-25, during the time the GWEO Enterprise Plan was being formulated. [1] ANAO's objective was 'to examine the effectiveness of Defence's administration of contractual obligations to maximise Australian industry participation' in relation to Defence objectives established in 2019.

The ANAO inquiry applied three 'high-level' criteria:

'Have fit-for-purpose administrative arrangements been established to maximise Australian industry participation in Defence procurement and contracting?

'Have applicable contracting requirements been implemented to maximise Australian industry participation?

'Has Defence implemented appropriate governance, assurance and reporting arrangements to support the objective of maximising Australian industry participation?' (para 1.31)

The ANAO's conclusions made clear that the proclaimed pathway to sovereign defence industry capability through Australian industry participation was, at least for the time being, not soundly based, with faint praise for partial achievement over the previous half decade the best outcome:

> '7. Defence has not maximised Australian industry participation through the administration of its contracts. Defence industry policy and contracting requirements were not applied to all relevant procurements, and — where supplier commitments have been contracted — Defence has not effectively monitored or ensured the delivery of those obligations.
>
> '8. Defence's administrative arrangements for maximising Australian industry participation through its procurement and contracting activities are partly fit for purpose. Defence's procurement framework has not been updated in a timely manner, and as at August 2024, did not fully reflect the requirements of the March 2019 DPIP. Guidance for Defence personnel in relevant tendering and contracting templates is incomplete, and in some cases outdated....
>
> '9. Defence has not implemented applicable contracting requirements effectively. Of the eight contracts examined, each had one or more important shortcomings resulting from limitations in Defence's advice to potential suppliers, weaknesses in Defence's contracting of industry participation commitments, and ineffective monitoring of supplier compliance with those commitments.'
>
> 'Defence's governance, assurance and reporting arrangements for industry participation are partly appropriate....' [2](p. 9)

Notes and sources

1. Australian National Audit Office, Defence's Management of Contracts for the Supply of Munitions — Part 1, Performance Audit, Auditor-General Report No. 47, 2023–24, 20 May 2025.

2. ANAO, *Defence's Management of Contracts for the Supply of Munitions - Part 1*, p. 9. See also ANAO, Maximising Australian Industry Participation through Defence Contracting - Part 2, Performance Audit, Report No. 31, 2024-25.

Appendix 6. Definitions and methods

A concise reference to the classifications, evidence judgements, counting treatment and location conventions used in the database.

1. About the classifications

The database classifies facilities according to their principal role, the assessed form of US military and/or corporate access, confidence in the assessment of US-access status, and the functions of US military activity. These classifications are analytical judgements based on currently available evidence and may change as evidence or facility activities change.

Access status describes the assessed form of access and operational relationship. It does not necessarily describe legal ownership of the land or facility, and it does not imply that every facility with US access is an "Agreed Facility or Area" under the Force Posture Agreement.

2. Key analytical fields

Field	What it records	Interpretation
Facility type - primary	The principal role assigned to the facility.	A facility may perform additional roles recorded in more detailed fields.
Status re US access	The assessed form of Australian or US control and significant US military and/or corporate access.	"Australian" means that no significant current US access is recorded on the available evidence. Access status does not necessarily indicate legal ownership.
Confidence re US-access status	Confidence in the assessment of US-access status, based on the supporting evidence.	It is not a measure of the extent, operational importance or strategic significance of US access.
Functions of US military activities in Australia	The principal function or role of US military activity based at, conducted at or enabled by the facility.	The field concerns the function of US activity, not every function performed by the facility.
Part of	The enclosing base, precinct, organisation or facility to which an entry belongs.	Helps distinguish an overarching named base or precinct from a distinct component within it.
Includes	Component facilities represented within an overarching entry.	Documents relationships between a larger named place and geographically, technologically, functionally or organisationally distinct components.
Reason excluded from statistical analysis	The source spreadsheet's literal counting note.	Recognised structural and out-of-scope reasons exclude a record. "Low confidence re status of US access" is retained as source provenance but, under the current method, low confidence alone does not exclude a record from the comprehensive statistical population.

3. Coding of US access status

The status field distinguishes the facility's controlling relationship and the assessed form of significant current US military and/or corporate access.

Control group	Status code	Meaning
Australian-controlled facilities		
	Australian	The facility has no known significant current US military or significant corporate access.

Control group	Status code	Meaning
	Australian - with US access	The facility primarily serves Australian strategic or operational interests and under Australian operational control, but with some US military and/or corporate access.
US-controlled facilities		Whatever the juridical character of the facility, the facility and its key technical infrastructure were essentially built by and paid for by the United States, and can only function as part of a US-controlled technological system.
	US-controlled - with Australian access	US military/intelligence organisations and defence corporations are substantially present. The facility primarily serves US strategic interests and is functionally under US operational control, but with some Australian military access, management, or oversight.
	US-controlled facility - with Australian civil (and possibly military) access:	US military/intelligence organisations and defence corporations are substantially present. The facility primarily serves US strategic interests and is functionally under US operational control, but with some Australian civil (and possibly military) access, management, or oversight.
Australian-US military co-located facility		Simultaneous presence of Australian and US military elements at the same facility under separate Australian and US command.

Coding describes the assessed operational relationship and significant access; it does not by itself determine legal ownership of the land or facility.

4. Confidence in assessments of US-access status

High: strong and reliable evidence supports the classification.

Medium: the classification is supported, but the evidence is incomplete, indirect or subject to qualification.

Low: evidence is weak, uncertain or leaves substantial doubt.

Blank: no confidence value has been assigned.

For facilities classified as "Australian", confidence in the assessment of US-access status concerns the judgement that no significant current US connection has been identified. A lower confidence category indicates greater doubt about that absence-of-evidence judgement.

Confidence refers to confidence in the assessment of the presence or absence of the classified form of US access. It does not measure the degree, operational importance or strategic significance of that access.

5. How facilities are counted

The unit of analysis is a facility record, not necessarily a commonly named "base". Large or complex facilities—especially defence precincts—may contain smaller facilities that are distinct geographically or by function, technology or organisation. Whether to count the larger place as one facility or count several component facilities is therefore decided case by case and documented through the **Part of**, **Includes** and **Reason excluded from statistical analysis** fields.

Separate entries are preferred where they make materially different functions or locations clearer. The choice can change category totals, but in almost all current cases it does not materially alter the overall proportions. The counting treatment remains visible so readers can assess or reproduce a different choice.

Record situation	Current statistical treatment	Why
Ordinary included record	Included in the comprehensive statistical population.	The source counting-note field is blank and no structural or scope rule excludes it.
Distinct component facility	Counted when its geography, function, technology or organisation warrants a separate analytical entry.	A component may be analytically distinct even when it is part of a larger named base or precinct.
Overarching base or precinct entry	Structurally excluded when marked "Separate entries for some component elements".	The distinct component entries are counted instead, preventing the overarching record from being added to them.
Record represented through an enclosing entry	Structurally excluded when marked as included under an enclosing facility or organisation.	The documentary entry remains visible without being counted twice.
Incomplete entry	Structurally excluded when marked "Incomplete entry".	Visibility supports continuing research but does not imply inclusion in totals.
Overseas ADF tenancy	Out of scope when marked "Overseas tenant facility".	The entry is retained for context but is outside the principal Australian facility population.
Low or unknown confidence	Remains in the comprehensive statistical population; unresolved Australian cases are not assigned to a substantive category in Table 3 and are reported separately in Table 4.	Confidence affects reporting, not eligibility. A source note saying "Low confidence re status of US access" is therefore not treated as a structural exclusion.

Database entries should not automatically be interpreted as a count of named bases. Depending on the documented relationship and configured statistical rule, one named base may correspond to several analytical facility records.

Examples include the Albury Wodonga Military Area and Edinburgh Defence Precinct, where overarching entries are excluded while distinct component facilities are counted. Joint Defence Facility Pine Gap is represented by three counted entries distinguished mainly by function: space-based signals intelligence, ground-based signals intelligence, and overhead persistent infrared intelligence. The Australian Defence Satellite Communications Station at Kojarena is likewise represented through three functional facilities: the STELLAR interception facility, the Mobile User Objective System Radio Access Facility, and Satellite Ground Station – West.

In other cases a substantial component is counted separately to make a distinctive role explicit even though the larger facility is also analytically relevant—for example, the Missile Assembly Facility at Port Wakefield and the Deep Maintenance and Modification Facility at RAAF Base Edinburgh.

Selected case-by-case counting decisions (26 facility entries)
This table adapts the examples in the technical note. "Counted" and "excluded" describe the current analytical rules, resolving places where the note's shorthand could be read as applying to the component rather than its enclosing entry.

Facility entry	Enclosing or related entry	Current counting treatment and rationale
Australian Cyber Security Centre	Australian Signals Directorate	**Counted separately.** Significant distinct function and physical separation.
Australian Geospatial Intelligence Organisation	Russell	**Counted separately.** Significant distinct function.
Australian Signals Directorate headquarters	Majura Park	**Counted separately.** Significant distinct function.
Beecroft Weapons Range	HMAS Creswell	**Counted separately.** Significant distinct function and physical separation.
Combat Training Centre - Jungle Training Wing, Tully	Tully Military Training Area	**Counted separately.** Significant specialist function.
Deep Maintenance and Modification Facility	RAAF Base Edinburgh	**Counted separately.** Significant distinct function.
Defence Establishment Berrimah	Larrakeyah Defence Precinct Base Support Area	**Counted as a distinct component.** The enclosing precinct is not separately counted.
Defence Intelligence Organisation	Russell	**Structurally excluded.** Represented through the enclosing facility or organisation.
Gaza Ridge Barracks (North and South Bandiana)	Albury Wodonga Military Area	**Counted as a distinct component.** The enclosing military-area entry is excluded to avoid double-counting.
GPS Monitoring Station (National Geospatial-Intelligence Agency)	Defence Science & Technology Group - Edinburgh	**Counted separately.** Significant distinct function and physical separation.
Henderson Defence Precinct	Australian Marine Complex	**Counted separately.** Physically distinct.
HMAS Coonawarra	Larrakeyah Defence Precinct Base Support Area	**Counted as a distinct component.** The enclosing precinct is not separately counted.
HMAS Kuttabul	Garden Island Defence Precinct / Fleet Base East	**Counted separately.** Significant distinct function.
HMAS Watson	Garden Island Defence Precinct / Fleet Base East	**Counted separately.** Significant distinct function and physical separation.
Larrakeyah Barracks	Larrakeyah Defence Precinct Base Support Area	**Counted as a distinct component.** The enclosing precinct is not separately counted.
Lone Pine Barracks	Singleton Military Area	**Counted separately.** Significant distinct function.
Majura Park	Majura Defence Precinct	**Structurally excluded.** Separate entries are counted for some component facilities.
Maritime Underwater Tracking Range (MUTR)	Fleet Base West / HMAS Stirling	**Counted separately.** Significant distinct function and physical separation.
Missile Assembly Facility (Port Wakefield)	Proof and Experimental Establishment, Port Wakefield	**Counted separately.** Significant distinct function and physical separation.
Pine Gap - ground-based foreign and communications satellite interception facility [RAINFALL - FORNSAT/COMSAT]	Joint Defence Facility Pine Gap	**Counted separately by function.** The overarching Joint Defence Facility entry is structurally excluded.
Pine Gap - overhead persistent infrared satellite Relay Ground Station	Joint Defence Facility Pine Gap	**Counted separately by function.** The overarching Joint Defence Facility entry is structurally excluded.

Facility entry	Enclosing or related entry	Current counting treatment and rationale
Pine Gap - space-based signals intelligence facility [RAINFALL]	Joint Defence Facility Pine Gap	**Counted separately by function.** The overarching Joint Defence Facility entry is structurally excluded.
Robertson Barracks Close Training Area	Robertson Barracks, Palmerston	**Counted separately.** Significant distinct function and physical separation.
Satellite Operations Centre – 1, RAAF Base Edinburgh	RAAF Base Edinburgh	**Counted separately.** Significant distinct function.
Satellite Operations Centre 2, HMAS Harman	HMAS Harman	**Included in the comprehensive population.** Its Low confidence means it is omitted from Table 3 and reported in Table 4's Low or undetermined category; low confidence alone is not a structural exclusion.
Wadsworth Barracks (East Bandiana)	Albury Wodonga Military Area	**Counted as a distinct component.** The enclosing military-area entry is excluded to avoid double-counting.

Related research: Richard Tanter, Australian Defence Satellite Communications Station.

6. Overseas ADF tenant facilities

Over the past two and a half decades, the Australian Defence Force has maintained many facilities outside Australia as sole occupant or co-tenant, particularly during deployments in Afghanistan and the Middle East, but also in the South Pacific, Timor-Leste and Southeast Asia. Most of those presences have ended.

At this update, the database retains three contemporary overseas ADF tenant facilities for documentary and contextual purposes:

RMAF Butterworth, Penang, Malaysia—the long-term deployment of RAAF aircraft;

Al Minhad Air Base, UAE—including the March 2026 deployment of an RAAF Wedgetail E-7A airborne early warning and control aircraft and support personnel; and

Naval Support Activity Bahrain—the long-running, still significant ADF presence at the US facility.

These three records are out of scope for the principal Australian facility statistics. They are marked "Overseas tenant facility" and appear in the database and Table 16, but not in the comprehensive counted population. This is a contextual list, not a complete survey of current or historical Australian overseas deployments.

The limited list identifies a future research task: a systematic review of contemporary ADF overseas deployments and tenancies, including renewed Australian infrastructure assistance for Pacific Island defence facilities such as Lombrum Naval Base in Papua New Guinea.

Sources and further reading: Richard Tanter with Nic Maclellan, Australian Forces Abroad; Richard Tanter, Australian Bases Abroad and Australia's six pathways to the war with Iran: Part 1; Department of Defence, annual reports and Joint Initiative at Lombrum Naval Base.

7. Location and coordinates

Facilities are identified by locality, state or territory, and geographic coordinates; street addresses are deliberately omitted. Coordinates usually represent a gate or entrance where one can be identified. For large ranges, inaccessible areas or complex facilities, a representative or indicative point may be used.

A point coordinate does not represent a facility's legal boundary, physical extent or total footprint. For a complex facility it may indicate the broader site rather than the exact internal component.

Some complex bases therefore have both an overarching location and separate locations for identifiable components.

8. Use of generative AI

OpenAI's ChatGPT and Codex were used as research and technical assistants in aspects of data analysis, consistency checking, statistical validation, drafting and editing explanatory material, and constructing and testing this website. They also assisted in clarifying two facility entries.

AI output was not treated as evidence. Factual claims and classifications were checked against the project's cited public sources, and editorial and analytical decisions remained the responsibility of the project team.