STRATEGIC INSIGHTS

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North of 26° south and the security of Australia

Views from *The Strategist*

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Introduction: revisiting the north in the defence of Australia

Paul Dibb

The idea of the north of Australia being central to the new concept of the defence of Australia in the 1970s derived from the key strategic fact that the only country in the region with the conventional military capabilities to threaten Australia was Indonesia.

In the 1950s and early 1960s, Indonesia had the world's third-largest communist party and was armed by the Soviet Union with modern submarines and long-range bombers. Australia's response was to acquire F-111 fighter-bombers and Oberon-class submarines.

However, by the 1980s, much of Indonesia's military equipment was either out of date or suffering from a chronic lack of maintenance. Hence, the 1986 Dibb review and the 1987 defence white paper focused on the potential threat of low-level conflict, which could conceivably be escalated to the use by Indonesia of its deteriorating Soviet military equipment.

Australia with city lights from space at night. Image courtesy of johan63/Getty Images.

The 1972 defence review and the 1976 defence white paper had both emphasised the relevance of the defence of the north of Australia in such contingencies. But successive governments had done little about it, even though President Richard Nixon's Guam doctrine in 1968 had made it clear that—short of nuclear war—America's allies were expected to be able to defend themselves in credible conventional contingencies.

It is not generally known that the real reason why Defence Minister Kim Beazley asked me in 1985 to undertake the review of Australia's defence capabilities was the entrenched differences of opinion between the senior military and civilian hierarchies in the defence organisation and their inability, after 12 months, to come to even a preliminary agreement on force structure priorities for the defence of Australia. The then secretary of defence, William Cole, advised Beazley that he should consider recruiting an independent expert.

The secretary and the chief of the defence force had got bogged down in exchanging 130 classified memos about the theology of defence policy on such concepts as defence warning time; low-level conflict; more substantial conflict; and whether Australia's unique geography should basically determine its force structure, as distinct from expeditionary forces for operations at great distance from Australia. Most of the ensuing debate was not constructive: it was hostile with little agreement on even basic principles for force structure priorities.

My main policy aim was to arrive at a workable compromise between these bitterly held positions. But, at the same time, I argued strongly for the priority to be given to the defence of Australia and, in that context, to stress the relevance of Australia's northern approaches. The focus of the review's recommendations about the north was as follows:

- The army should locate a regular infantry battalion in the Darwin area expandable to a three-battalion brigade group, as well as establish a joint force headquarters (Northern Command, or NORCOM).
- The navy's submarine base should be relocated from Sydney to Cockburn Sound near Fremantle. The review also proposed the acquisition of a light patrol frigate, which became the Anzac ships, and recommended that the navy take mining and mine countermeasures much more seriously.
- The air force should complete the chain of strategically important military bare bases across the north by building an airfield on the Cape York Peninsula in addition to the bases at Tindal, Learmonth and Derby.

There were other recommendations relevant to the defence of northern Australia, with priorities to be given to army reserves, including Norforce; the protection of northern ports such as Dampier, Port Hedland, Darwin, Gove and Weipa against mining; the requirement for a significant presence of surface patrol assets in offshore focal areas such as Dampier, the Timor Sea, the Arafura Sea, the Torres Strait, Christmas Island, and the Indian Ocean approaches.

The strongest resistance came from the army, which without the leadership of the chief of the general staff, Peter Gration, would never have agreed to transfer the 2nd Cavalry Regiment from Holsworthy in Sydney to Darwin. We were fortunate when Gration became chief of the defence force and gave strong support for the 1987 defence white paper. Later, when General John Baker became CDF, he made clear his views to me about the defence of Australia by stating, 'It was inevitable that the idea of the independent defence of Australia should be taken seriously.'

I would note here that the army has recently detached a battalion from 1 Brigade in Darwin to be relocated 2,600 kilometres to the south at Edinburgh, apparently so it can benefit from the all-weather training area at Cultana.

The navy resisted the move to shift its submarine base from Sydney to Fremantle because it allegedly would be difficult to recruit enough numbers of submariners from eastern Australia to live in such a remote location. The air force strongly resisted the review's recommendation that ground force tactical helicopters and their crews become operationally part of the army. In retrospect, that was a mistake given the army's subsequent operational record.

So, we now come to today's deteriorating strategic environment for Australia. As Richard Brabin-Smith and I argued in *Australia's management of strategic risk in the new era*: '[F]or the first time since World War II, we face an increased prospect of threat from a major power.' We noted that the expansion of China's military capabilities will mean that the warning time for potential contingencies will become shorter.

China is already using coercion to challenge the presence of other countries—including Australia—in the waters of Southeast Asia. We cannot afford to have our strategic space constricted in this way. China's military presence in the South China Sea has brought its capacity to project military power 1,200–1,400 kilometres closer to Australia's northern approaches.

None of this is to argue that China is necessarily going to become a direct military threat. But the simple fact is that China will increasingly have the military capability to mount high-intensity operations against us. We must now develop our military capabilities to deny any such threat, including access to bases and facilities in our neighbourhood.

These radical changes to our strategic circumstances will require a fundamental review of our force structure and readiness and the expansion base of the Australian Defence Force. The problem is that there's a yawning gap between the growing concerns of many defence experts in this country and the relaxed views of the general population and business community.

According to the vice chief of the defence force, David Johnston, during the Q&A following his keynote speech at ASPI's 'War in 2025' conference on 13 June 2019, Defence is now undertaking a mobilisation review. It is to be hoped that such a review will include some or all the following: a review of readiness and the expansion base to include numbers of combat pilots and submariners; proposals for greatly expanded stocks of war-shot missiles and munitions; recognition of the need to guarantee the ADF's fuel supplies in the north of Australia; attention to the hardening of northern bases against strikes and electronic-warfare attacks; and the sustainability planning required for round-the-clock military operations against a capable modern adversary.

There is an urgent need to review Australia's long-range air and maritime strike capabilities and the delivery of adequate numbers of platforms in a timeframe relevant to Australia's deteriorating strategic circumstances.

Unlike in the Cold War, Australia's strategic geography as the pivot between the Pacific and Indian oceans is now assuming much more strategic relevance. This means that we will have to revisit the disposition of our forces and their capabilities in the north and west of our continent. The most vulnerable geographic approaches to our continent are still in the north. But, unlike at the time of the Dibb review, we will now have to prepare for high-intensity contingencies against a major power with which we don't share national security values.

Straight-line extrapolations from the comfortable past—including the 2016 defence white paper—will not be good enough because time is no longer on our side.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/revisiting-the-north-in-the-defence-of-australia.

The north and Australia's security

John Coyne, 30 January 2019

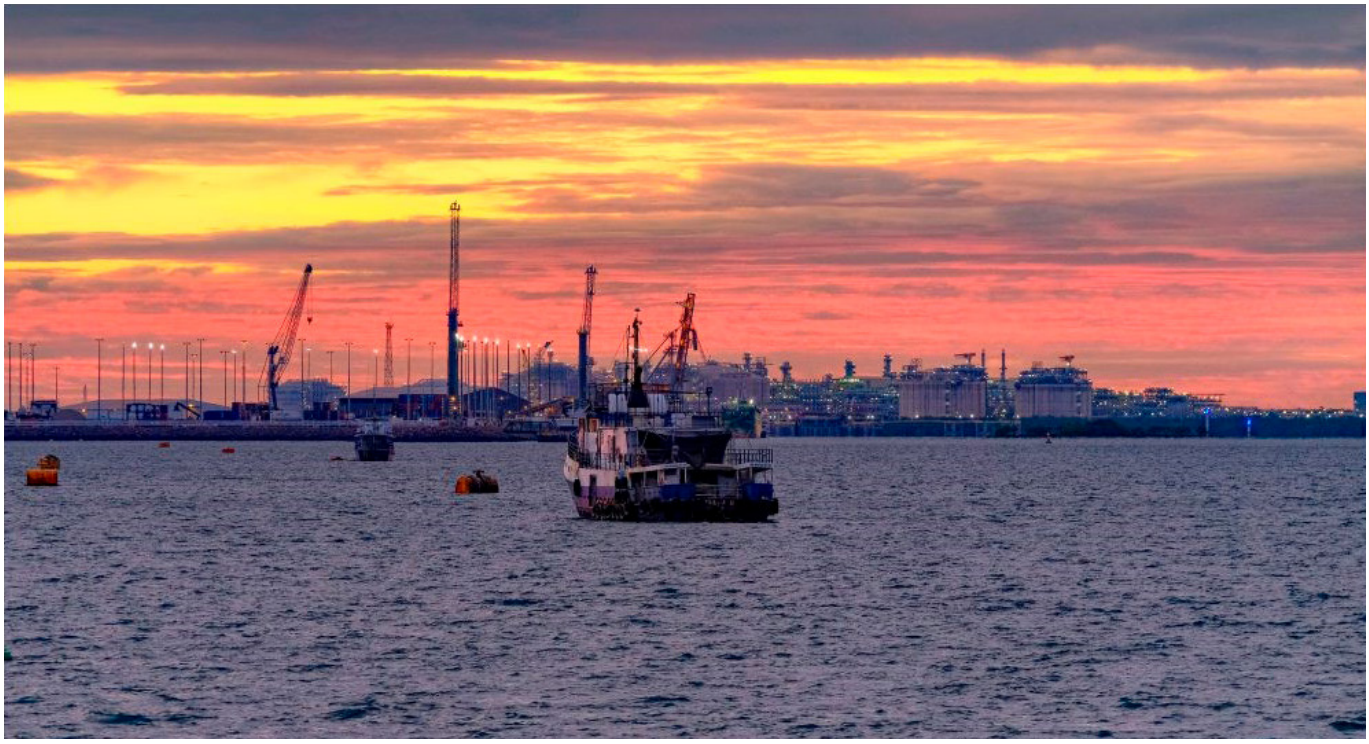


Image courtesy of Geoff Whalan on Flickr.

In terms of Australia's first, and primary, strategic defence objective—'to deter, deny and defeat any attempt by a hostile country or non-state actor to attack, threaten or coerce Australia'—it seems that Paul Dibb's 1986 review of defence capabilities was prophetic. Dibb's assessment is as accurate now as it was 32 years ago: 'There are risks inherent in our strategic environment that could pose difficult problems for the nation's defence.'

Today, however, the timeframe for change is much shorter. Over the past three decades, many of the factors that have shaped the assumptions of our 'defence of Australia' strategies have changed substantially, and often deteriorated.

In 1986, Australia was a long way from the global conflicts of the day. Of course, Russia made efforts to bring superpower competition to our region—with its presence in the Pacific and Cam Ranh Bay, Vietnam—but failed. The Cold War between Russia and the US also fostered a comforting alliance of necessity between China and the West that lasted until the fall of the Berlin Wall. Australia now finds competition and potentially conflict far closer to home, especially in the South China Sea.

While Russia was declining, China was rising. In 1990, China's GDP was estimated at US$390 billion; in 2016, it was more than 30 times that amount (US$11,779 billion). In 1989, less than 5% of Australia's exports were destined for China. By 2015, the proportion had grown to almost 30%, making China our number one trading partner.

With its new-found wealth, China has been investing widely in its Belt and Road Initiative, creating new levels of maritime, air and land connectivity. All the while, it has been increasing, and very often asserting, its influence across the Asia–Pacific and Indo-Pacific.

Over the past decade, the defence technology advantages in the region that Australia once enjoyed have rapidly eroded. China continues to reform, build and modernise its military, and it isn't the only one in our region doing so. Chinese efforts have also been backed by an ambitious research and development program.

Australia's north has changed, too. In 1986, the Northern Territory had a population of 155,000; today it's 247,000. Northern Australia's contribution to our economy is also rising. It is a major exporter of commodities ranging from gold to gas. According

to Deloitte Access Economics, northern jurisdictions will account for nearly 42% of the Australian economy by 2040, up from 35% in 2011. The Northern Territory's LNG projects alone supply more than 10% of Japan's annual global gas imports. Arguably, infrastructure investment in the north hasn't always kept pace with this growth, which could in time affect future growth opportunities and national security.

The emphasis on 'self-reliance' in the 1987 defence white paper likely reflected the author's wariness of abandonment by our key allies. The UK's military withdrawal from Southeast Asia in 1967, US President Richard Nixon's 1969 Guam Doctrine and the fall of South Vietnam loomed as large in defence strategists' minds then as the likely impacts of the Trump administration's 'America First' policy do today. Although the Australian Defence Force's presence in the north has increased, and further investments were foreshadowed in the 2016 defence white paper, the less favourable strategic circumstances still require new thinking.

Traditional national security threats have intensified over recent years and non-traditional ones have broadened. Transnational serious and organised crime in the maritime domain (including illegal, unreported and unregulated fishing; piracy; and trafficking of weapons, drugs and people), terrorism and an increasingly assertive Chinese maritime strategy are generating further security complexity.

In the 1980s, official strategic guidance indicated that our defence planners would have 'at least 10 years' warning of a substantial military threat'. That's clearly no longer the case. The 2016 defence white paper set a firm foundation for developing Australia's future defence capabilities; however, its projections of our strategic circumstances now look like wishful thinking. In 2019, Australia's strategic outlook appears to be far more uncertain and susceptible to rapid changes with short warning.

Northern Australia's dispersed critical infrastructure and primary resources remain vulnerable to traditional and non-traditional national security threats. Modern weapon systems put these resources within striking distance of conventional weapons, and they're also susceptible to hybrid warfare strategies like that used by Russia in Ukraine.

While Australia has a long-term defence capability plan, we need to continue to test our assumptions about the defence of northern Australia and the north's significance to national security.

In response to these changes, and with the support of the Northern Territory government, ASPI is establishing its latest research program, 'The north and Australia's security'. The program will provide a sustained research focus on the security of Australia's north and the north's critical role in contributing to the broader security of Australia. The program will concentrate on:

- maintaining a strong public policy focus on the role of the north in the broader security of Australia at a time when strategic circumstances are driving new policy thinking in Canberra
- developing a modernised way of thinking about the north and security by updating strategic frameworks that remain anchored in the 1980s 'defence of Australia' context
- situating the north in a broader discussion about national security interests beyond defence—encompassing home affairs, border security and customs, space, cybersecurity, humanitarian and disaster response, biosecurity and energy security.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/north-of-26-south-and-the-security-of-australia.

It’s time to renew Australia’s north as a source of strategic advantage

Michael Shoebridge, 7 February 2019

Image courtesy of Neil Skene on Wikimedia Commons.

Australian policymakers’ attitude to the role of northern Australia in the nation’s defence mimics a cicada’s life cycle. For a brief period, it’s out in the world, flying around and making a huge amount of noise, just long enough to mate and create the beginnings of the next generation. That noise and flurry is followed by years of quiet gestation and subterranean tunnelling by the new generation, before the cicada’s brief time in the sun returns.

The last time real attention was paid to what our regional environment means for defence in the north of Australia was in Paul Dibb’s 1986 review of defence capabilities and the 1987 defence white paper. Following that work, the Australian government invested billions of dollars in bases and bare base infrastructure in the north, with a real focus on the Northern Territory.

RAAF Base Tindal became and remains a core base for air force fighter jet operations, and the army took real steps to create a functional and serious presence in the north. An arc of bare bases was constructed—like RAAF Base Scherger on Cape York and RAAF Base Learmonth in Western Australia.

The other big initiative in our north has been the joint Australia–US force-posture work that started in 2011 and has brought rotating US Marine deployments to Darwin that exercise with our military and various regional militaries. That welcome set of initiatives is more about US engagement in Australia and our region than about how we will meet our own defence needs.

A problem for this policy area is that commentators have a habit of getting very simplistic very fast. If you advocate a greater defence presence in northern Australia, you’re just resurrecting the Dibb review and have an overdeveloped sense of paranoia about small numbers of men in black raiding Darwin infrastructure and Territorians’ cattle stations.

If you see the value of drawing in the more advanced infrastructure and larger population centres in southern Australia and on the east coast, you’re just one of those defeatist, pre-Federation types who wants to withdraw south of the Brisbane line during conflict and wants to see all money and activity flow to your own favoured state.

And the US presence has brought a new layer of discussion to the debate. Unfortunately, this is often about the risks and advantages of having US forces on Australian territory and the pragmatic issues involved—like who funds what, and the regimes for managing the behaviour of visiting and local militaries.

None of this introspection engages much with the real strategic drivers that make a serious Australian defence presence in our north a compelling and increasingly urgent matter of strategic policy and capability planning.

Unsurprisingly, as a geographer and a strategic analyst, Dibb got some big things right that still matter. Australia's defence must take advantage of our geography, and any credible Australian military must be able to project and sustain substantive levels of force from Australia's northern land mass and offshore territories.

Similarly, defence planning should indeed take advantage of the deeper infrastructure, industrial support and demographic bases in our southern and eastern population centres to produce and sustain the complex systems that make up modern defence capabilities. The deep technical ecosystem required to operate and sustain the range of advanced platforms and systems the ADF has and is acquiring can't just be a parochial effort out of any given state or territory. It requires a national approach to industry policy and to skills and workforce.

But defence in the north has, like the cicada, moved back into the light. And that's because of Australia's changing strategic environment.

That environment is characterised by two big trends.

First, regional nations continue to get richer and more capable, including in their ability to project military power within and beyond their own territories—meaning that near-region partners like Indonesia, Malaysia and Singapore are becoming more important in Australia's security and diplomacy. Australia needs to do more to engage with these partners, and the north of Australia is a gateway for that to happen.

Second, great-power competition and potential conflict have returned to the forefront of world affairs. China and the US are now actively engaged in deep strategic competition and arm-wrestling over political, economic and strategic relationships and technological dominance across our Indo-Pacific region. There are credible prospects of a major military conflict between these great powers over the next couple of decades, which, if it happens, will most likely spill beyond a bilateral conflict into a wider regional war.

The north's significance in this context is that it's the closest point from which Australia can project and sustain military force. And the expanse of territory means that it allows dispersal of forces and power projection from multiple places.

The size of the north makes it more important as a counter to the increasingly lethal and long-range systems that can target single points of failure in an adversary's defence effort (think Guam or Hainan Island as missile-aiming points).

So, to make the north a growing strategic advantage in our defence planning, we need to respond to these bigger strategic trends. We also need to take advantage of the growth in population, industrial capability and infrastructure that has occurred in the north since the foundational thinking of the Dibb review.

That means thinking about how the north can empower and deepen our broader regional relationships. The Northern Territory government's close relationship with Indonesia should be part of this, as it can help pave the way for growing defence and other industry connections out of the north with Indonesia.

It also means doing what the US Marines in Darwin do: using the regional proximity to increase bilateral and regional exercising and engagement with partner militaries.

Proximity matters. Even for fast surveillance aircraft like the RAAF's new P-8 Poseidons, the transit time from Edinburgh in South Australia to Darwin is over three hours, and that means we get some six hours' more range and endurance up into our region if we operate out of Darwin instead of RAAF Base Edinburgh.

The real thinking, innovation and resourcing, though, need to be driven by the implications for Australia of the growing great-power competition and geopolitical conflict that we're seeing. Major conflict is a worst-case scenario, but that's why governments invest in high-end militaries.

Being able to sustain and operate Australia's military in the event of a wide regional conflict involving the major powers entails a big shift in priorities and investment that must include our northern presence and infrastructure.

Despite the base reinvestment program in the 2016 defence white paper, our military would still struggle to sustain lengthy operations from the current northern infrastructure.

A simple but key example is fuel supply for air operations out of Darwin and Tindal. Fuel tanker convoys on the highway cannot be an adequate solution. Similarly, our bare bases need to be configured to be able to operate and support an increasingly wide range of capabilities, not just the big platforms like P-8 aircraft or even the joint strike fighter. They also need to be hardened and have dispersed operating areas so that they can continue to function in the much more lethal threat environment of modern long-range war.

Both strategic trends mean it's time to have a new discussion about the nature and level of our defence presence in the north. The paradigm has changed since 1987, so what's the new framework for thinking about a future-ready ADF presence? Industry needs to be an active participant in this discussion and the resulting actions.

It's time for the cicada that is our northern defence thinking to take wing again. Let's stretch the time it has in the sun long enough to understand and make the necessary changes.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/its-time-to-renew-australias-north-as-a-source-of-strategic-advantage.

The defence of (northern) Australia—then and now

Richard Brabin-Smith, 14 February 2019

Image courtesy of the Department of Defence.

Once governments have decided that their defence policies will focus on the defence of Australia, two conclusions immediately follow. First, priorities for the development of the Australian Defence Force will have a strong maritime dimension. Second, because of the nature of Australia's strategic geography, there will necessarily be a focus on operations in or from the north of the country.

Such considerations set the framework for an extensive series of studies, starting in the 1970s, to work out the consequences of this central policy choice in more detail. There was also guidance from the key strategic observation of the time: in the shorter term, only lesser contingencies were credible, and more serious contingencies were credible only in the longer term, after years of warning.

The work included conceptual studies focused on the problem of defending Australia carried out by the Defence Department's central policy areas, and some more technology-oriented studies conducted by the Defence Science and Technology Group. This program of analysis encountered *terra incognita* in both senses: such work had not been attempted since before World War II, so there was a distinct conceptual vacuum, and, in Canberra at least, there was precious little understanding of what there was 'up north'.

Some important decisions ensued, and here are some examples. The government decided (in 1984) to develop the bare-base airfield at Tindal (near Katherine in the Northern Territory) into an operational base for a squadron of F/A-18 Hornets. The experimental Jindalee over-the-horizon radar was set up close to Alice Springs, with its surveillance arc looking north.

The army established a set of Regional Force Surveillance Units, including the Darwin-based Norforce (North-West Mobile Force), which drew on the detailed local knowledge of members of the army reserve. Other bases were to be modernised or developed (the patrol boat base in Darwin, and additional bare airfields), and there was a growing recognition of the vulnerability of ports to mine-laying (such as Darwin and the ore-exporting ports), and therefore of the importance of mine countermeasures.

Interpreting strategic guidance for priorities for Australia's maritime capabilities was relatively straightforward. But there was no such convergence of views with respect to the army. To resolve the impasse, the government appointed Paul Dibb to conduct a review of Australia's defence capabilities. The review dismissed the army's arguments that gave priority to more substantial conflict (in particular, its plans for mechanisation).

In contrast, it gave priority to an army capable of countering a protracted campaign of dispersed raids across the north of Australia (while also allowing for modest capabilities in the expansion base against the remote prospect of a conventional land battle in Australia). It argued strongly for elements of the regular army to be based in the north, and for the establishment of the Northern Command (NORCOM) in Darwin. A specific role for the army would be the formidable task of protecting the bases from which maritime operations would be conducted.

The subsequent 1987 defence white paper (and later decisions) built on Dibb's recommendations. Examples include the basing of the army's 1st Brigade in Darwin (but with one of its battalions now based in Adelaide), the establishment of NORCOM, and the continued development of northern air bases and training grounds. The success of the experimental Jindalee radar led to the full-scale development of the Jindalee Operational Radar Network (JORN, based in Laverton, Western Australia; Longreach, Queensland; and Alice Springs, Northern Territory), with a primary focus on the surveillance of Australia's northern approaches and Darwin.

In short, the decades since the 1970s have seen an impressive level of investment in the ability of the ADF to conduct operations in and to Australia's north. Yet there have been times when that focus has become blurred. Earlier this century, with ADF deployments to Afghanistan and the Middle East, it became fashionable in some quarters to talk about the return to an ADF designed for distant expeditionary warfare, and to be dismissive of 'defence of Australia' policies. In any event, the effort required to support the conduct of operations, both closer to home and further afield, led to less attention being paid to the defence of Australia's own north. The overall significance of that neglect has been amplified in more recent times by the deterioration in Australia's strategic environment.

In the 1970s, a fundamental conclusion was that there would be many years of warning before a potential adversary could develop the capabilities necessary for serious conflict with Australia. This situation has now changed, and will change further. In particular, with the economic growth of China and the expansion and modernisation of its armed forces, the warning time for more intense and technologically sophisticated conflict has shortened. This is not to paint China as necessarily our adversary, but it does increase significantly the challenges of strategic risk management, as Dibb and I have discussed. That has consequences for the readiness, sustainability and even structure of the ADF, and other parts of the national defence effort such as intelligence, science and industry.

What does it all mean for Australia's north? Several matters require attention, all of them obvious and in some cases already recognised elsewhere. Bases in the north need to be modernised, including for the storage of advanced munitions. We need to recognise the likely demands of intensive operations in the Indo-Pacific, including strike operations, and the possible conduct of joint operations with such countries as Indonesia and India as well as with the US.

Serious consideration should be given to hardening to mitigate the risks associated with increasing regional strike capabilities. Fuel supplies, especially for sustained operations from northern bases, need to be highly reliable. Staffing arrangements for JORN (and other surveillance capabilities) need to be capable of sustained round-the-clock operations. Plans for mine countermeasures, including the use of the reserves, should be dusted off.

Similarly, plans for the use of the army to defend northern bases, again including the use of reserves, should be reviewed (among other things, the potential levels of threat will be higher now than in the 1980s). We also need more clarity on how the ADF would draw on the civilian infrastructure (much improved since the days of the 1970s studies), and on the relationship between military and civilian authorities in the event of contingencies.

There is now much to be done. While there is no cause for panic, it would be a serious breach of faith to be complacent in the face of such a call for action.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/the-defence-of-northern-australia-then-and-now.

From Bali to Sulawesi: the importance of northern Australia's regional response capability

Len Notaras, 25 February 2019

Image courtesy of the Department of Defence on Flickr.

More than 16 years after the 2002 Bali bombings, Australia's National Critical Care and Trauma Response Centre (NCCTRC) in Darwin continues to demonstrate the importance of both geopolitical location and regional preparedness, particularly in the event of a natural or manmade disaster.

The NCCTRC is well situated at Australia's natural gateway to Asia on the periphery of the notorious 'Ring of Fire'. Before the centre's establishment, Darwin and the Top End figured in a number of significant national events, none less than the first of many World War II bombings on 19 February 1942; the city's levelling by Cyclone Tracy in 1974; and the unique strategic role of accommodating a 'tent city' following the 1999 Timor refugee evacuation.

The decision in 2002 to use Darwin and the Royal Darwin Hospital as the retrieval, rescue, resuscitation and then repatriation hub for the more than 75 Australians injured in the Bali terrorist attack was a strategic success. The north's resilience and proximity have endured and continue to provide a regional soft-power lever in 2019.

The NCCTRC opened its doors in 2005 and has since evolved to become an important asset for enhancing Australia's health security and disaster response capacity in the Top End. It is also active in building capacity and relationships across Asia and the Pacific. The NCCTRC provides a combination of readily adaptable and innovative response capabilities; training; teaching; exercising expertise; research initiatives; and mentoring and support for emerging medical teams across the Asia–Pacific.

The NCCTRC also works with the World Health Organization's humanitarian and global outbreak divisions and plays a key role in the humanitarian aspects of Australia's regional engagement.

Following the Haiti earthquake of 2010, a series of global standards for responding medical teams were developed on the NCCTRC site in collaboration with WHO. These standards are the benchmarks used by WHO across the world. Members of the NCCTRC assist with developing and mentoring other national teams across Asia and the Pacific, and further afield.

In 2016, the NCCTRC worked closely with WHO to achieve verification of Australia's emergency medical assistance team, AUSMAT, as a WHO Emergency Medical Team Type 2 capability. AUSMAT is the official Australian government multidisciplinary healthcare team, which comprises doctors, nurses, paramedics, fire-fighters (logisticians) and allied health staff. These self-sufficient teams can be deployed in response to formal requests for assistance from a disaster-affected government. Australia's AUSMAT was just the fifth team in the world to gain WHO certification.

The Australian government response to the devastating floods in Pakistan in August 2010 was the first time a large-scale joint civilian AUSMAT and defence team was deployed. The team—drawn from jurisdictions across the nation—was in the field for 11 weeks treating more than 11,000 patients. Australia's response to the disaster has since been recognised as one of the most successful civil–military deployments.

The lessons from Pakistan shaped the AUSMAT and contributed to changes in global standards, with further refining occurring following the response to Typhoon Haiyan in the Philippines in 2013.

The tragedy of the Bali bombings in 2002 and 2005 has continued to provide an opportunity to galvanise the Darwin–Denpasar relationship, not just in disaster preparedness, but more broadly in clinical practice. An ongoing collaboration with the Sanglah Hospital—well supported by I Made Mangku Pastika, former governor of Bali—has enabled sharing of skills and knowledge with a focus on disaster preparedness and capacity building.

The NCCTRC continues to work with the Muhammadiyah Medical Group in Indonesia through an ongoing commitment following the 2018 tsunami and earthquake in Sulawesi.

Since 2009, with the development of a national AUSMAT capability, the NCCTRC has worked through federal, state and territory health services to ensure preparedness and participation of all jurisdictions and AUSMAT-trained clinicians.

A wider example of 'soft power' was well demonstrated in the strengthening of national relationships that followed the response to Cyclone Winston, which struck Fiji in February 2016.

Well before Winston, and as part of capacity and knowledge-sharing programs with regional partners, a small group of Fijian surgeons undertook AUSMAT training in Darwin. This not only raised both ability and awareness, but also lowered the threshold to seek 'known' and trusted support. Within hours of Winston's making landfall, those surgeons deployed a rapid local surgical response to the disaster-affected areas and, with their encouragement, the Fijian government requested further AUSMAT assistance.

An Australian team worked closely with the Fijian government to identify and address areas of unmet need and provide support to the health system and their Fijian counterparts. At the conclusion of the AUSMAT response, the Fijian Ministry of Health and Medical Services (MoHMS) was provided with a report on the response to the disastrous cyclone. The review overwhelmingly reflected positively on the achievements of the health response in meeting the Fijian people's immediate health needs and included additional recommendations on how key structures and coordination could be strengthened.

The NCCTRC has since developed a training package for emergency health responses in partnership with the MoHMS. This integrated education program will support the establishment of incident command and information management. It focuses on building the capacity of identified emergency health operations centres to address critical issues in a timely manner with available resources.

The partnerships forged through training and mentoring, and the sharing of exercising and educational modules, result in lives and limbs being saved and recovery occurring more quickly. When Tonga was struck by a severe cyclone in early 2018, it was satisfying to know that a well-prepared response could be quickly mounted locally and that additional support was unnecessary.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/from-bali-to-sulawesi-the-importance-of-northern-australias-regional-response-capability.

LNG: it's a big egg, but it shouldn't be the only one in our energy basket

Genevieve Feely, 7 March 2019

Image courtesy of Ken Hodge on Flickr.

Last year, Australia became the world's largest exporter of liquefied natural gas (LNG). We're set to stay that way for a few more years as new projects and exploration are slated for development in the Northern Territory. Demand for natural gas is soaring, especially in our region, so LNG is on its way to becoming one of our most critical exports in the short term.

Darwin's strategic importance during this industry expansion becomes increasingly clear when we consider that Asia has the world's fastest growing demand for gas. It's our closest port to many of those markets.

Our gas exports underpin our relationships with key trading partners. We're already one of the primary suppliers to the world's biggest gas importers, such as Japan, China and South Korea; for example, 10% of Japan's LNG imports pass through the port of Darwin. Unsurprisingly, there's huge interest in further exploring the Northern Territory's gas reserves, building infrastructure and expanding production.

While there's potential for the territory to supply domestic markets, there's a real opportunity for the federal and territory governments to support gas exports and meet Asian demand. However, we must also consider the long-term implications of exporting gas. Can we continue to rely only on gas as a primary export, and will those exports deliver sustained benefits?

Recent analysis shows that demand for gas will undoubtedly increase over the short and medium terms. Competition in the sector is also set to intensify. The global supply base for LNG is rapidly expanding outside Australia. The US is increasing its production, and new gas projects are being opened in China and Russia. In time, this is likely to challenge Australia's leading position in the global gas market. While we're likely to remain a leading exporter of natural gas until the mid-2020s, by then Qatar and the US will probably have dramatically increased their production and market shares.

If we look a little further into the future, demand for gas is set to peak and then plateau by the mid-2030s. Australia should continue to invest in the LNG industry, but our policymakers and the energy industry itself must be more creative and look to diversify in order to secure Australia's position as a leading and, most importantly, reliable energy partner in our region. This may mean turning to emerging energy-production processes and technologies.

We have a clear economic incentive to do so. Based on modelling by McKinsey, renewable energy sources will account for 25% of fuel needs and more than 50% of power supply globally by 2035. Importantly, key importers of Australian gas have signalled their intent to integrate renewable energy quickly over this period.

Japan has said it will make renewables account for 22–24% of its energy needs by 2030. South Korea plans to nearly quadruple its renewable energy use by then. China will account for a significant portion of global renewables expansion in the coming decade. In Southeast Asia, ASEAN has set a target of 23% renewable energy by 2025.

Since our region will increasingly rely on renewable energy sources in addition to gas, a smart move would be to build Australia's capacity to supply both. With our vast territory, we can do so. Swathes of northern Australia could be used for producing renewable energy. Being able to transport multiple types of energy through Darwin could cement Australia's position as an energy superhub of the Indo-Pacific.

For example, hydrogen is likely to play a key role in future global energy consumption. Japan, the biggest importer of Australian LNG, has said that hydrogen will become a mainstream fuel domestically. Luckily, hydrogen supply chains rely on transportation infrastructure similar to that operated by the natural gas industry, such as pipelines and tankers. Current investments in the gas supply chain could, in time, be adapted as demand changes and shifts.

Such agility could make our energy supply more resilient and reliable. While CSIRO has made some progress in developing better methods for transporting hydrogen, more R&D is needed to make this a cost-efficient process.

Australian governments would find another resources boom an enticing prospect. We should invest in our strategically placed northern gas supply infrastructure, but with the long-term aim of using it to diversify our energy supply to include other sources, such as methanol, ammonia, solar and hydrogen. This will strengthen our export capacities in line with upcoming shifts in energy demand.

Setting up the necessary infrastructure and technology will require research and planning. If that doesn't happen, in a few decades the Northern Territory will find itself unable to enter and compete in established renewable energy markets.

We need to respond to changes in market demand, and those changes are already happening.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/lng-its-a-big-egg-but-it-shouldnt-be-the-only-one-in-our-energy-basket.

Lightnings over Delamere

Malcolm Davis, 14 March 2019

Image courtesy of the Department of Defence.

One of Australia's greatest but least known military assets is the Delamere weapons range in the Northern Territory. It's a large range located around 120 kilometres south of Katherine and RAAF Base Tindal. As the main air weapons range used by the RAAF, and with little or no civilian presence nearby, it's the ideal playground for fighter pilots flying fast jets who want to 'feel the need for speed' and practise dropping live ordnance.

Delamere is not just used by the RAAF but is open to Australia's close allies. And it's not just a place for fast jets, but is also visited by heavy bomber platforms from the US Air Force like the B-52 and the B-1B. It plays a vital role in airpower exercises such as the biennial Pitch Black and Arnhem Thunder.

Its use should be significantly expanded as the F-35 Lightning comes into service with the RAAF and allied air forces.

The facility was described by a RAAF range safety officer:

> Delamere is undoubtedly the premier air weapons range in Australia; all Aussie aircrew as well as visiting ones acknowledge that. The fact that we can provide the facilities we do and have virtually unrestricted airspace provides terrific training value for them.

The absence of human settlement over a vast area means that live ordnance—like freefall and guided bombs, aircraft cannon and rocket pods—can be used, including against fake townships (known as 'Tac Town' and made up of shipping containers). USAF bomber crews can train under realistic conditions; the missions they've conducted have included flying non-stop from Guam to strike at targets in Delamere, and then returning to base, with in-flight refuelling en route both ways.

One of the most important aspects of the Delamere range is that it's also fully instrumented, which enhances range safety during missions. The instrumented range means that bombing can be monitored for accuracy and effectiveness against a variety of targets, and post-attack analysis can be done in high fidelity to consider how to improve tactical capability.

In addition, simulated threats can be exercised. For example, the fire control radar emissions of various adversary fixed and mobile ground-based air defence systems can be simulated, increasing the realism of training. This obviously has benefits for operational experience, as well as allowing planned missions to be practised before they're flown. Testing models of systems in a real-world environment also contributes to greater understanding of red-force capability.

Delamere remains a well-kept defence secret, and one wonders if this is deliberately so. It will take federal government leadership to grasp the alliance and regional security value that will come from making these training facilities the hub of Asia–Pacific F-35 operational excellence. We should grab this opportunity.

With that in mind, how do we make better use of facilities like Delamere?

The introduction of the F-35A Lightning II joint strike fighter into RAAF service from late 2018, with full operational capability of all 72 aircraft due by 2024, adds a new opportunity for developing Delamere for greater cooperative training with key allies in the Indo-Pacific region and beyond.

Practising similar and dissimilar air combat training operations—for example, our F-35s flying alongside F-35s from the Japanese Air Self-Defense Force, the Republic of Korea Air Force, and the US Navy and US Marine Corps, as well as the USAF—under realistic conditions would be a valuable operational boost for all partners. It could also help strengthen defence cooperation between partners such as South Korea and Japan. For other F-35 operators, like the UK and Singapore, that lack adequate weapons ranges and must operate in constrained airspace, the wide-openness of the Northern Territory would have real appeal.

Delamere, together with Bradshaw Field, and the Woomera test range further south, should be seen as key capabilities for defence diplomacy as Australia seeks to strengthen defence partnerships with its Five Eyes allies, and other key partners such as Japan, Singapore and Indonesia.

Australia does conduct major international exercises such as Pitch Black and Talisman Sabre on an annual or biennial basis, but it's time to go beyond that approach and develop a more regular drumbeat of exercises that make full use of Delamere.

We could conduct regular multinational exercises similar to the USAF's 'Red Flag' exercises, with Delamere and Bradshaw Field the focus of air operations. The Red Flag exercises are run over two weeks several times a year. An Australian equivalent run out of RAAF Tindal and Darwin, focusing on F-35 operators, and practising fifth-generation airpower and multi-domain network-centric air operations, would link well with the recently announced arrangements for F-35 maintenance and sustainment.

Additional exercises could practise 'fifth to fourth' operations between the F-35, F-22 and fourth-generation platforms like the F/A-18F and E/A-18G as well as regional partner platforms such as the F-16.

With the announcement of an Australian development of the 'Loyal Wingman' unmanned combat air vehicle, it's easy to see the Delamere range and others like it being the ideal testing ground for practising manned–unmanned teaming and developing UCAV capabilities for the RAAF, and potentially for export.

Finally, the employment of 'aggressor' capability designed to fly and fight in a manner similar to possible future adversaries, notably China, should be part of such exercises. The US operates them, as do Japan and the UK. If we want to expand the use of our weapons ranges, operating in a contested airspace, including with aggressor squadrons in the air, is a vital aspect of training.

Too often when we debate the current state, or the future evolution, of defence capability, we focus on platforms—sometimes at the expense of the more intangible command and control aspects. Australia's vast and sparsely populated outback terrain is an asset in itself that we can promote as we seek to strengthen our defence relations with our key partners, given that we all confront a more dangerous and unpredictable strategic outlook.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/lightnings-over-delamere.

Boosting the US presence in northern Australia—slowly but surely

Michael Crane, 21 March 2019

Image courtesy of the Department of Defence.

First announced in November 2011, the US force posture initiatives in northern Australia comprise a deployment of US Marines to Darwin and other parts of the north for about six months each year and increased rotations of US aircraft through the region. Taken together, the initiatives are intended to enhance defence cooperation between Australia and the US.

The Marine Rotational Force—Darwin (MRF-D) initiative aspires to establish a presence in Australia's north of an up to 2,500-strong Marine Air–Ground Task Force. From a modest initial deployment of around 200 in 2012, successive rotations have grown in size and scope. The 2018 rotation involved almost 1,600 personnel and the most complex mix of equipment seen to date. While they're in Australia, the marines do their own unilateral training. They also train with elements of the Australian Defence Force and take part in bilateral and multilateral exercises.

The Enhanced Air Cooperation (EAC) initiative was originally billed as an extension of longstanding bilateral activities in northern Australia, but without much detail about what that might mean. It seems to have achieved more substance since 2017, when the Australian Department of Defence for the first time announced specifics of visiting US aircraft types and the nature of training conducted under the EAC umbrella. Defence emphasises that the EAC is about more than just aircraft and encompasses enabling effects such as joint logistics.

The initiatives were at first governed by the 1963 Status of US Forces in Australia Agreement, but since 2014 the new, purpose-designed Force Posture Agreement has provided a more tailored legal, policy and financial framework.

In signing up to the initiatives, Australia pursued a number of objectives. We sought to deepen the ANZUS alliance and further our strategic interest in maintaining a strong US presence in the Asia–Pacific. Defence saw a way to improve interoperability between the ADF and US forces and to maintain the ADF's high-end war-fighting skills through enhanced training. And it wanted to create opportunities to work with the US and regional partners in preparing for common contingencies, such as humanitarian assistance and disaster relief.

US interests originally centred on Barack Obama's 'pivot to East Asia', which intended to refocus America's attention and resources away from the Middle East and towards the Asia–Pacific. In contrast to the permanent forward bases of the Cold War era, the new approach called for rotational deployments to host nations (some argued that this was intended to make US forces a more difficult target for ballistic missiles).

While the US no longer uses 'pivot' language, Donald Trump's 2017 national security strategy provided some continuity by listing the Indo-Pacific first in its 'regional context' section and committing to maintain a forward military presence in the region capable of deterring and, if necessary, defeating any adversary. At a tactical level, northern Australia also provides US forces with access to some of the world's most modern ranges and largest training areas.

For all the rhetoric, implementation hasn't been without its irritants and the initiatives have been painfully slow to gather momentum. In 2018, MRF-D numbers were still well short of the full Marine Air–Ground Task Force, and EAC activity had only just begun. (Marine tempo worldwide and ongoing budget and sequestration challenges are likely to continue to complicate efforts to reach the 2,500 target.) Negotiations for cost-sharing arrangements were slow and have only recently been completed.

Although Defence has made much of the potential for Australian industry to contribute to both infrastructure development and US procurements more broadly, little has yet been realised in those areas. And there's been some misbehaviour by visiting US forces, although that hasn't been as significant an issue as Australians might have feared. That said, neither Defence nor the US should take for granted its social licence to operate in the Northern Territory.

Despite these frustrations, the initiatives have generally been well received in Australia and the region. Domestic critiques tend to come from those who decry ANZUS more broadly and from those concerned about the potential for the initiatives to destabilise our relationship with China. But the Chinese reaction has been mixed and surprisingly muted overall, and other regional neighbours, including Indonesia, have been quietly supportive.

Although the initiatives aren't yet mature, after seven iterations we can now make some preliminary judgements about their value.

If we've sought to bolster the US presence in the region, we've certainly achieved that: while the trajectory has been uneven, the size and scope of US forces participating in the initiatives have continued to grow and, importantly, there's been no sign of the US resiling from its commitment.

The Force Posture Agreement has helped deepen ANZUS by adding a new institution to the treaty, which some scholars argue is relatively underdeveloped in such architecture. ADF training and interoperability have been enhanced, and the pace of improvement is likely to accelerate as both sides build on the experience of successive rotations.

New infrastructure and other measures introduced to support the US presence will help develop Australian capability, not least in problem areas such as bulk fuel and ammunition storage. US platforms such as the V-22 Osprey tilt-wing aircraft offer the opportunity to open up remote training areas. And the potential US contribution to the Northern Territory economy is welcome and strongly supported by local community leaders.

From the US perspective, the primary value of the initiatives remains their contribution to a geographically dispersed, operationally resilient and politically sustainable military presence in the Indo-Pacific. This is increasingly important to the US at a time when it confronts major challenges in the region, not least its problematic relationships with China and North Korea. In addition, by continuing to commit to the initiatives, the US can send a strong signal that it still values Australia and ANZUS despite Trump's ambivalence towards allies and alliances more generally.

However, there are no straightforward options for expanding the initiatives. There's little point in making the US Marine presence year-round, since the wet season would preclude the training activities that are the MRF-D's raison d'être; and, in any case, a permanent presence would likely be politically unacceptable on both sides of the Pacific. While adding a formal naval dimension might seem obvious, such opportunities are tightly constrained by the limited capacity of Darwin's parlous naval infrastructure.

For the moment, then, the focus is likely to remain on growing the MRF-D and EAC to their target numbers and maturing the infrastructure and other arrangements needed to support them. Even if that takes another decade, the force posture initiatives will still have served their purpose.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/boosting-the-us-presence-in-northern-australia-slowly-but-surely.

Protecting country: Indigenous Australians in the defence of the north

Chris Clark, 29 March 2019

Image courtesy of the Department of Defence.

Notions of 'protecting country' have, anecdotally at least, been a key motivation for Indigenous people to participate in Australia's defence services since World War I. It may well be one reason they have been joining the army reserve's Regional Force Surveillance Units for the past 30-odd years. The youngest of the three units, 51st Battalion, Far North Queensland Regiment, even has as its motto *Ducit amor patriae*, 'The love of country guides me'.

Given that it's been almost three decades since we last considered the defence of Australia's north, it's time to think about whether there are new ways to involve Indigenous people in that endeavour.

Since 1981, the army has employed the North-West Mobile Force (or Norforce, as it's more commonly known) to be its 'eyes and ears' across the Northern Territory and the Kimberley region of Western Australia. As a regionally based component of the army reserve, Norforce is uniquely placed to utilise the local knowledge of the Indigenous communities in the area it patrols. Not only is 87% of its personnel made up of reservists, but 60% of the unit is drawn from Indigenous communities in Norforce's area of operations.

For a unit with the designated roles of reconnaissance, observation and collection of military geographic intelligence, the benefits of this recruitment base are obvious. The Australian Defence Force is able to build vital links with the communities it may need to work with in the future, and trust in the ADF among those communities is enhanced when they see faces already known to them, or closely identified with their social grouping, among Norforce members in uniform.

Recruitment from Indigenous communities in Australia's north is a development that draws on some hard-won lessons of World War II, when the military had scant knowledge or experience of a vast region they were called to defend against a seemingly imminent invasion in 1942. The army initially improvised by forming an Aboriginal auxiliary unit in Arnhem Land, but a year later replaced it with a non-Aboriginal outfit called the North Australian Observer Unit—the heritage of which has been heavily and directly drawn upon by Norforce.

Wartime lessons were also taken on board by defence strategists during the 1980s, when thinking focused on the 'lesser contingencies' that could conceivably confront northern Australia. In the absence of major or direct threats, the priority was to address a range of non-military situations that might equally pose a security threat to the sparsely populated north—for example, illegal fishing and immigration, or smuggling—possibly orchestrated or manipulated by state actors for political, economic or strategic advantage.

The responsibility for dealing with such situations might rest primarily on civil agencies in the first instance (police, customs, quarantine), but the ADF could still be called on to contain and prevent escalation into direct hostilities. While it may be unlikely that Norforce would be required to 'stay behind' in the event of an invasion, to operate behind enemy lines, there are still scenarios where the Regional Force Surveillance Units would have an important role to play—for example, helping to provide rear-area security and countering threats to lines of communication and infrastructure.

In that context, the raising of the units made perfect sense; it still does, considering that a number of the 'lesser contingency' scenarios have largely been realised in recent decades, making surveillance of the north more important than ever. All three units currently contribute to border security through Operation Resolute, and already work in liaison with law enforcement agencies and regional authorities.

It was to enhance their role in support of the defence surveillance network that the Regional Force Surveillance Units were brought together in October 2018 as the Regional Force Surveillance Group, under a single formation headquarters located in Darwin. Considering some of the newer capabilities added to the surveillance network since the 1980s, including drones and advanced radar, it makes sense to coordinate the surveillance effort at a higher level, and to further integrate the group into the ADF's total intelligence, surveillance and reconnaissance capability and the whole-of-government approach to northern security.

The greatest gains realised so far from the involvement of Indigenous Australians in the defence of the north have been the social benefits derived from Norforce programs. Those gains have been an important contribution to the whole-of-government strategy for closing the gap on Indigenous disadvantage. Potential recruits from remote and isolated locations often need help to overcome levels of social disadvantage that restrict their ability to meet standard ADF education and health requirements. In addition to using waivers to take account of the lack of opportunity, Norforce has instituted prerecruitment courses to help Indigenous people 'acculturate to life in the uniform'.

The impulse to 'protect country' may also explain why the proportion of ADF members who identify as being of Indigenous heritage has steadily risen in recent years to reach 2.5% in 2017. But that's still only half the level the ADF hopes to achieve by 2025. Growing indigeneity of the ADF as a whole is probably where the best prospect of improving participation in defence activities lies. For its part, Norforce is a stepping stone for many reservists into regular force employment.

Also worth exploring is the role that Indigenous people could play in providing industry support to the Defence organisation, especially given the major construction projects expected in the Northern Territory in coming decades, including the building and sustainment of ADF training facilities. It might well be in this area that Defence reaps the benefits of its investment in the social development of the Indigenous workforce, demonstrating that the true value of Norforce has been about far more than symbolism.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/protecting-country-indigenous-australians-in-the-defence-of-the-north.

Stopping the drift to the south: Defence and northern Australia

John Coyne, 3 April 2019

Image courtesy of the Department of Defence.

For over a century, Australian federal governments have periodically tussled with the question of what to do with, and at times how to defend, what they've long considered Australia's underdeveloped and underpopulated north. The Australian government's sporadic northern foci have over time led to the development and delivery of a long list of infrastructure investments and new policy initiatives.

Regularly, to the detriment of the Northern Territory, the benefits of those investments fail to be fully realised. The driver of this underperformance is probably the stopgap nature of Canberra's commitments to developing the north, which favour short- to medium-term economic gains. It appears that this dynamic is once again playing out in Defence's strategic posture in northern Australia.

In his 1986 review of defence capabilities, Paul Dibb argued that, 'If we are to project credible military power in the most vulnerable part of the continent, we require a larger permanent presence in the north of Australia.' Over the first decade following the release of the landmark 1987 defence white paper, and its 'defence of Australia' concepts, Dibb's thinking would shape Defence's force posture in Australia's north. Bit by bit, the ADF moved army and air force units to the Northern Territory, eventually establishing Headquarters Northern Command as a fully functioning operational command.

On paper, the Australian government has made a strong declaratory commitment to northern Australia. The 2015 white paper on developing northern Australia included a pledge to strengthen Defence's presence in the region.

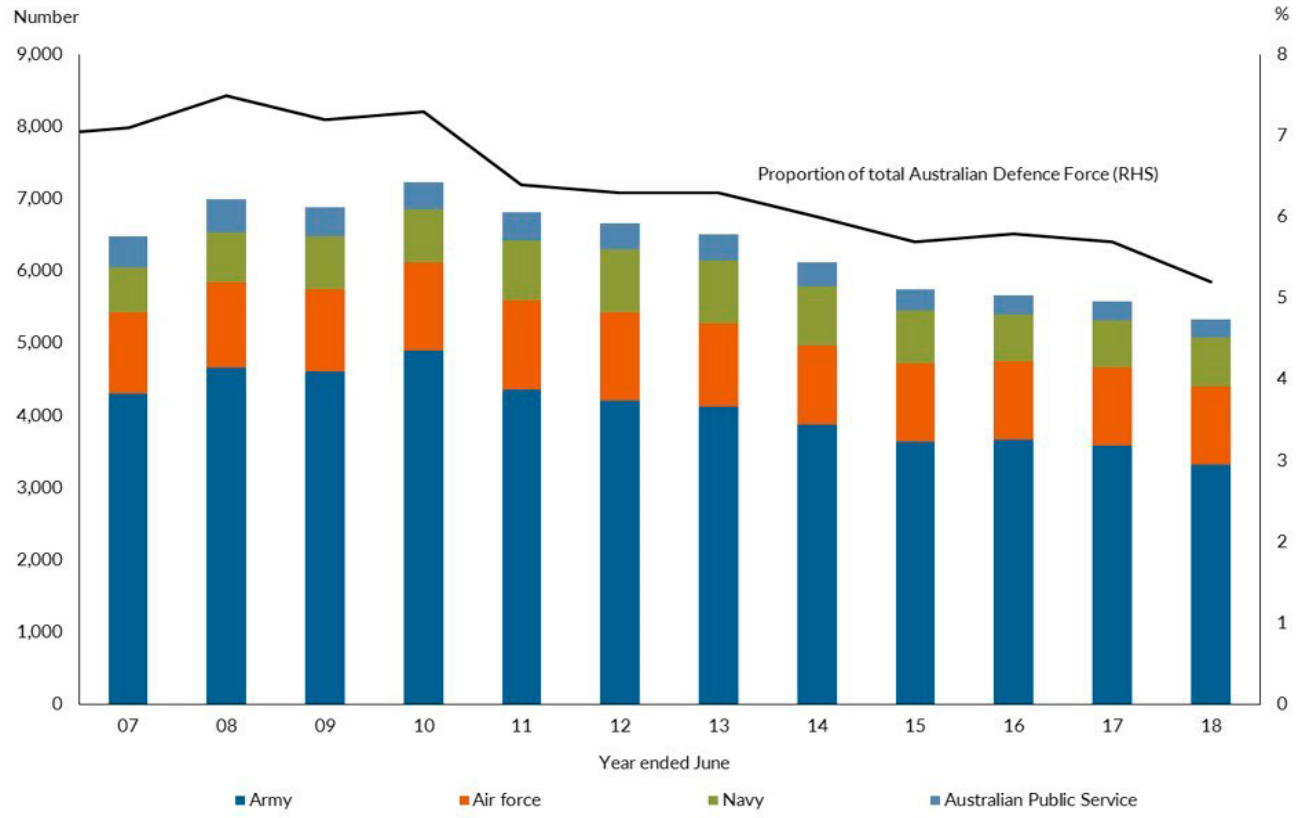
The 2016 defence white paper stated: 'Investment in our national defence infrastructure—including the Army, Navy and Air Force bases in northern Australia, including in Townsville and Darwin, as well as the Air Force bases Tindal, Curtin, Scherger and Learmonth—will be a focus.'

It also predicted that Defence's presence and investment in northern Australia would gradually increase. Defence is still looking to upgrade the Bradshaw Field Training Area (Northern Territory), Robertson and Larrakeyah Barracks (Darwin) and RAAF Darwin, albeit with a much smaller budget.

In contrast with these grand statements, there's a growing body of evidence to suggest that there's an expanding gap between declaratory policy and actual Defence activities and presence in the north. While funding might be earmarked for facility upgrades in the Northern Territory over the next few years, there will be fewer defence personnel, exercises and units there to use them.

To start, Defence annual reports reveal that the number of personnel in the Northern Territory is already at an 11-year low (see figure 1 below).

Figure 1: Defence personnel in the Northern Territory, 2007 to 2018



The large national-level tri-service exercises, such as the Kangaroo and Crocodile series, that once focused on the defence of Australia's north have ended.

Headquarters Northern Command's responsibilities have been downgraded, and command has become a part-time role for the commander of the Darwin-based 1st Brigade.

The unchanged environmental challenges of wet seasons have become, over recent years, a justification to move whole units and capabilities—such as the tanks of the 1st Armoured Regiment—south to Adelaide. The 7th Battalion of the Royal Australian Regiment, along with supporting subunits from the 8th/12th Regiment, 1st Combat Engineer Regiment and 1st Combat Service Support Battalion, has moved to RAAF Base Edinburgh, just outside Adelaide.

These changes seem incongruous at a time when the US is continuing to implement its force posture initiatives in northern Australia.

Of course, a lot has changed since the 1987 white paper was drafted, and it wasn't legally binding. However, there's been little public discourse to suggest a reduction in the strategic importance of northern Australia.

As I noted in January, many of the factors that have shaped the assumptions of our 'defence of Australia' strategies have changed substantially, and in many cases even deteriorated, since 1987.

China's projection of soft and hard power across Eurasia and its waters, at a time when the dynamics between the globe's great powers are changing, is creating increased strategic uncertainty. The likelihood and consequences of miscalculations are rising.

Today, the security of the north is just as important to Australia's national security as it was in the 1930s when Japan invaded Manchuria. In this environment, Defence is placing renewed emphasis on the 2016 white paper's first strategic objective: 'to deter, deny and defeat any attempt by a hostile country or non-state actor to attack, threaten or coerce Australia'.

Clearly, the ADF's slow move south needs to be not just arrested but reversed. It may be easier and cheaper to raise, train and sustain capabilities in Australia's southern states but, as stated in the 2016 white paper, the ADF's significant presence in northern Australia is an important part of Defence's strategic posture. The first step in achieving that outcome is for Defence to develop a single shared policy position on its presence in the north.

Arguably, security in the north isn't just about boots on the ground and infrastructure development, but the promotion of economically and socially flourishing northern communities. The development of industry capacity in Australia's strategically important north is critical for defence and national security. Policy success is predicated on the Australian government making a long-term strategic commitment to northern Australia and its economy.

In bridging the gap between policy and action, the government would do well to pay heed to three lessons from its historical northern experiences:

- To be successful in the north, you must be there for the long haul.
- Building a resilient and secure north depends on creating social and economic prosperity.
- Defence's social licence to operate in the north can't be taken for granted.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/stopping-the-drift-to-the-south-defence-and-northern-australia.

Northern Australia's space coast

Malcolm Davis, 12 April 2019

Image courtesy of NASA on Flickr.

Mention the term 'space coast' and the image of launch pads and gantries at NASA's John F. Kennedy Space Center in Florida come to mind. It's a true spaceport that not only launches rockets but also stimulates the growth of the local economy and supports the clusters of aerospace companies that are located nearby.

Australia is now moving swiftly towards establishing its own space program, under the leadership of the Australian Space Agency. The agency's recently released space strategy increases the potential for regular launches of Australian satellites on Australian launch vehicles from Australian launch sites. It's important to base that launch capability in Australia's north. To understand why, let's start with some rocket science 101.

Geographic location matters a lot in the rocket-launching world. A rocket launched from near the equator can ride on the rotation of the earth as it spins west to east and pick up kinetic energy, generating a free boost in velocity that helps to achieve orbit. Proximity to the equator is the main reason the European Space Agency launches from Kourou in French Guiana rather than from Europe.

The free boost from a spinning earth is an undeniable advantage. It can make space access cheaper because less fuel is needed for a mission. That lowers the cost per kilogram of putting a payload into orbit and allows for larger payloads. The reduction in size and weight of small satellite and 'cubesat' designs is further reducing the cost of space access. The amount of savings depends on the payload and the type of orbit desired.

The Top End of Australia is a mere 12 degrees south of the equator. That makes the Northern Territory an ideal location for accessing the 'equatorial low-earth orbit' region of space from which rapid revisits over densely populated areas of interest can be conducted for tasks such as maritime surveillance. Northern launch sites could also support the establishment of mega-constellations of communications satellites in low-earth orbit.

This isn't pie-in-the-sky thinking. Agreements are in place to establish a launch site run by Equatorial Launch Australia near Nhulunbuy in the NT, and the Queensland government recently released a report that recommended developing launch vehicles and investigating the possibility of establishing a launch site in the state. A proposed launch site in South Australia could easily support launches into sun-synchronous and polar orbits, which are ideal for earth observation.

There are valid defence and national security rationales for developing a sovereign space launch capability. For years, Australia has played an important role in supporting US space activities from the ground, notably through the joint facility at Pine Gap and, more recently, through the space situational awareness radar and optical telescope near Exmouth in Western Australia. Developing a sovereign space launch capability will enable Australia to do much more than simply provide the real estate and skilled personnel for ground facilities.

A sovereign space launch capability would be a logical complement to a local satellite manufacturing industry and would boost self-reliant space support for the Australian Defence Force. Current defence space projects could be undertaken with a sovereign launch in mind. These include phase 2 of defence project DEF-799, which aims to establish a sovereign space-based intelligence, surveillance and reconnaissance capability by the late 2020s, and joint project 9102, which will provide the next generation of satellite communications for the ADF by 2029.

A sovereign space launch capability, operating from launch sites in the NT, northern Queensland and South Australia, would support joint ADF expeditionary forces or missions under the 'defence of Australia' doctrine. It would be an entirely new type of ADF capability.

It would enable Australia to burden-share in orbit with the United States to reinforce space deterrence and strengthen resilience. As space becomes increasingly contested, congested and competitive, the loss of access to it as a result of an adversary's use of anti-satellite (ASAT) weapons would render our forces deaf, dumb and blind. The ADF would then be susceptible to tactical, operational and strategic surprise and at increased risk of sustaining casualties and, ultimately, defeat. To paraphrase Field Marshal Bernard Montgomery, if we lose control of space, we lose the war and we lose it quickly.

Australia already contributes to burden-sharing with the US through ground-based space situational awareness, but we can do much more. Two approaches—augmentation and reconstitution—should be considered in shaping Australia's future military space capability.

Augmentation would involve protecting the limited number of large, complex and expensive US satellites currently on orbit by rapidly deploying small satellites and cubesats in the build-up to a conflict to make it more difficult for an adversary to decisively attack them. Australia could contribute to the augmentation mission either by launching US-made satellites or by building and launching satellites to support US forces.

Reconstitution would entail rapidly launching small satellites and cubesats to fill any gaps left in large satellite constellations from an adversary's use of ASATs at the outset of a military conflict. Denying the adversary the ability to deliver a decisive blow—a 'Pearl Harbor in space'—would reduce the incentive for it to employ counterspace weapons in the first place and further strengthen space deterrence.

An Australian space launch capability could also increase our collaboration and burden-sharing with regional allies in ASEAN and with major partners such as Japan, the UK and France.

The establishment of an Australian 'space coast' would also stimulate the growth of the local space industry and the local economy. It would make little sense to base this industry in the south; the logistical cost of moving equipment to launch sites in the NT, for example, would wipe out any savings gained by launching close to the equator. Instead, Australia's growing space sector should be encouraged to co-locate near the launch sites, where it could sustain a space economy centred around a northern space coast.

Establishing an Australian space coast, where Australian-built satellites are launched into orbit on Australian rockets from Australian launch sites, has the potential to facilitate the rapid growth of a high-technology sector in northern Australia.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/northern-australias-space-coast.

Australia's north needs people and people need a resilient economy

Paul Barnes, 24 April 2019

Image courtesy of Geoff Whalan on Flickr.

It's hard to argue against the importance of a modern coastal city in Australia's Top End to geopolitics, the economy and the nation's security. Darwin's long history as a military post attests to that.

Populations thrive when people live in viable ambient environments, have access to prosperous local economies and can participate in community life. In recent years, Darwin's economy has struggled in key areas. The challenges faced by the Northern Territory government are significant and fiscal belt-tightening is embodied in its budget recovery plan.

A variety of economic opportunities should be encouraged. These range from investment in commercialisation of natural resources to the development of critical water infrastructure and capitalising on Darwin's proximity to Southeast Asia.

Darwin enjoyed an energy boom in the early 2000s as ConocoPhillips built the city's first LNG processing plant. This continued when Inpex announced its $37 billion LNG plant and pipeline to address Japanese demand. But economic activity flattened with the plant's completion in 2018.

Last year the NT gas taskforce was established to support and expand Darwin's role as an LNG export hub, to grow the gas supply and service industry. Sources of support for significant infrastructure investment, such as the Northern Australia Infrastructure Facility, exist to provide loans to infrastructure projects across the nation's north. These links should be encouraged.

With Darwin's annual wet season, it seems counterintuitive that the city needs a more resilient and better-managed water supply. But the need for better water management has long been recognised and is reflected in Darwin's water strategy and climate change plan, and the territory government's 10-year infrastructure plan.

Darwin's water situation was also listed in the 2016 Australian infrastructure plan as a medium-term issue of importance, with a timeframe of five to 10 years. Ahead of it are two other important items: enhancing essential services in remote communities and upgrading the Tanami Road from Alice Springs to Halls Creek in Western Australia. These items, too, may be some time in coming. They exist on paper as 'initiatives'—potential infrastructure solutions for which a business case has not yet been completed—and not as projects underway.

While potable water is essential for normal life, the need to diversify Darwin's water supply seems to be drastically under-recognised at the federal level. Anecdotal evidence suggests also that the owners of larger properties near the capital are having to drill bores to ever-increasing depths to access water.

Given the great emphasis on water issues in territory planning documents and the difficulties with accessing bore water, it seems incongruous that a critical service such as potable water is so underrated as a priority in national infrastructure planning. This is an issue where the territory and federal governments should engage in detailed negotiations.

The third growth opportunity is in the digital economy. While this area is being examined by the NT government in its infrastructure plans, there are opportunities for more innovative thinking that makes the most of Darwin's proximity to Southeast Asia.

The NT could promote the development of a subsea internet link between Darwin and Singapore via East Timor, which is less than 700 kilometres away. This would add resilience to Australia's global connectivity and support other investments in the digital economy for Darwin.

The logic for this, from a national resilience perspective, is that there are currently only two landfalls for subsea internet cables in Australia: Perth and Sydney. Historically, 95–99% of the country's internet needs have been serviced by a limited number of undersea cables coming into these locations. While there's more than one cable in Sydney and Perth, having connections at more than two locations makes sense not just in terms of redundancy.

The Singapore-to-Perth subsea connection (approximately 4,600 kilometres in length) has been increasingly unreliable in recent years. When the link failed, internet traffic was routinely diverted through the eastern seaboard, resulting in slower transmission speeds. A new cable from Singapore to Perth was brought into service late last year.

A connection (with a landing station) to the new 9,600-kilometre Japan–Guam–Australia cable is being built in Maroochydore on Queensland's Sunshine Coast. This link to Asia is expected to be operational in mid-2020 and it's estimated that the project will add up to $900 million to the state economy and boost local employment.

A subsea internet link to Southeast Asia seems especially worthy of deeper investigation given current plans for extensive internet commerce and connectivity across the region as outlined in ASEAN's master plan.

A related area of possible development for Darwin, given the size of its harbour, is to host submarine cable maintenance services for the region. The South East Asia and Indian Ocean Cable Maintenance Agreement (SEAIOCMA) is a cooperative entity managed by 46 submarine cable owners to repair and sustain these cables.

As its name suggests, SEAIOCMA spans much of the Indian Ocean and all of Southeast Asia. It also covers large parts of East Asia and Australia. A dedicated repair ship is based at Subic Bay in the Philippines, and support services in Batangas provide repair, reinstatement and preventive maintenance of cable systems. The current cable maintenance agreement expires on 31 December 2022 and a more central maintenance node in Darwin could be an attractive option.

Defence and security will always make Darwin a priority from a national perspective but, as our northernmost capital city, different ideas to make the city more economically resilient need to be supported. Darwin will always have a 'spirit of place' as long as people want to live there.

It's already a 'smart' place, but it needs encouragement and access to investment funds to be an 'innovative' place.

The time to act is now.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/australias-north-needs-people-and-people-need-a-resilient-economy.

Forward … from the (hardened) north of Australia

Malcolm Davis, 3 May 2019

Image courtesy of the Department of Defence.

Australia faces a rapidly changing—and worsening—defence and security outlook that is increasingly at odds with the policy assumptions that underpinned the formulation of the 2016 defence white paper. That reality demands a rethink of our defence policy and a new defence white paper early in the term of the next government. The next white paper needs to deal more directly and robustly with a rising China that's intent on challenging US strategic primacy across the Indo-Pacific and exploiting opportunities arising from any US strategic miscalculations, such as reducing visible support for key allies.

Thankfully, US policy statements suggest that Washington isn't simply acceding to Beijing's desire for a new regional hegemonic role. There's now an intensifying strategic competition between Washington and Beijing—some call it a 'new cold war'—that will last decades, and could easily flare into direct military confrontation. The potential for China to instigate a conflict, perhaps over Taiwan or in the South China Sea, is quite real.

Far from being a distant backwater, as was the case in the Cold War, Australia, because of its geostrategic location and vital strategic relationship with Washington, has become a frontline state in this new era of major-power competition. Within this strategic reality, northern Australia is emerging as a region of key defence significance. The hosting of US forces in the north, including a US Marine Corps deployment in Darwin for training, and the enhanced air cooperation initiative have elevated the Northern Territory's defence importance. Key facilities such as Pine Gap and Northwest Cape remain essential components of our alliance, and must be kept secure.

I've already argued that our traditional approach of relying on the strategic moat of the sea–air gap for defence is outdated and needs to be reviewed, and that we should switch to a strategy of 'forward defence in depth'. Rather than hide behind a sea–air gap which, like the French Maginot Line defences of 1940, is rapidly being overtaken by advances in military technology, we must build an Australian Defence Force that can quickly respond to threats with minimal warning and exploit greater speed and longer reach.

Australia should invest in long-range power-projection capabilities that can rapidly deploy from the north deep into the Indo-Pacific to blunt an adversary's campaign before it can threaten our northern air and maritime approaches. Most importantly, we must acquire new capabilities quickly and not emulate the future submarine program, which won't deliver the first operational Attack-class submarine until 2035.

In adopting a new strategy of 'forward defence in depth', we should seek capabilities that will enable the ADF to project power responsively and at long range, but we must not ignore the rear area of northern Australia. An essential first step to secure the rear is to harden pieces of military infrastructure to make them tougher targets for threats ranging from special forces attacks to missile strikes.

In particular, we need to ensure that we can defend against emerging ballistic and cruise missile threats to Australia's northern bases. The starting point for this is the Royal Australian Air Force's integrated air and missile defence project, AIR 6500, which will link together sensors, platforms and shooters to create a 'system of systems' for detection, decision and response to air and missile threats. Phase 1 of the project will provide the battle management system and phase 2 will shape the medium-range air defence component (though details on this are vague to say the least). AIR 6500 is due for delivery in the second half of the next decade. LAND 19 phase 7B, meanwhile, will provide a short-range air defence solution for deployed forces.

In developing our integrated air and missile defence capability, greater consideration needs to be given to how long-range sea- and land-based ballistic missile defence might also play a role. It's certainly not a panacea for the defence of the north of Australia.

Andrew Davies and Rod Lyon are sceptical of the effectiveness of either land- or sea-based ballistic missile defence options for Australia. Their scepticism is certainly justified in terms of what would be called 'national missile defence'. Defence of critical facilities such as RAAF Tindal and Pine Gap would be a more achievable goal. They note the potential of the sea-based combination of the Aegis Baseline 9 and Standard Missile 3 against shorter-range ballistic missiles, concluding that such a capability could be incorporated into the navy's Hobart-class destroyers. They also note that a ballistic missile defence system for Australia should be tailored to defend vital facilities rather than the whole continent.

The missile defence equation is only going to get more difficult for the defender as hypersonic weapons emerge in coming years. Any investigation of, and investment in, long-range defences needs to recognise the risk that disruptive offensive innovations may lock out our ability to maintain an effective defence.

Hardening against non-kinetic threats—including defending sites against special forces attacks, electronic attacks, cyberwarfare and the indirect effects of counterspace capabilities—also needs to be considered. The growing importance of space, cyber and the electromagnetic spectrum as warfighting domains should shape basing requirements in the north and may demand that specialised capabilities be concentrated near critical facilities.

With these threats in mind, we also have to consider dispersed forces as a part of a comprehensive solution. RAAF Tindal, for example, is a high-value target because it is so central to the RAAF's defence of our northern air approaches. We have 'bare bases' at RAAF Curtin, RAAF Scherger and RAAF Learmonth, as well as RAAF Darwin, but given Chinese advances in long-range strike capabilities, particularly with hypersonic weapons, these too are vulnerable. They are likely to be prized targets, especially if they're hosting US forces in a crisis. We have too many critical units concentrated on too few air bases that can be too easily struck from long range.

It's time to undertake a northern basing analysis which looks at innovative ways to operate from non-traditional airfields and considers dispersal to non-traditional operating locations in a crisis. A lesson could be learned from Sweden's use of roads to disperse vital airpower away from vulnerable bases. The US Marine Corps is using rough fields to create forward arming and refuelling points for its F-35B as part of its island-hopping expeditionary advanced base concept. The Australian Army already supports its Tiger helicopters this way, so we need to examine whether civil northern infrastructure can be better adapted to support the ADF in wartime. That analysis could include consideration of greater civil–military integration as part of a northern Australia 'total force' that expands the use of reserve units.

It's well past time to end the comfortable coast of defence policy on autopilot. To paraphrase analyst Ross Babbage, it's a coast too long.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/forward-from-the-hardened-north-of-australia.

Water management in northern Australia is a national security issue

Rhys De Wilde and Genevieve Feely, 10 May 2019

Image courtesy of Tourism NT.

In a recent *Strategist* article, Dr Paul Barnes raised the issue of water management and water scarcity in the Top End. He argued that access to water as an essential service may be underrated in national infrastructure planning. But how seriously is water being considered as a security resource, a capital resource or a developmental resource? We argue that water is not just one of these, but all three. This is an important notion considering the significant role it plays in Australia's prosperity, security and, indeed, survival.

Within this water management trichotomy, there are different focuses and priorities, but also different forms of legislative operationalisation.

When it comes to water management, while the viability of the Murray–Darling Basin has been a persistent focus of Australia's media and politicians, the issue has lacked the same focus in the Top End. The problems faced in the Murray–Darling Basin are ongoing and based largely on state and territory water access. But the immediate consequences of inadequate access to water in the Northern Territory must be a high priority in the nation's conceptions of water security.

In the Northern Territory, 90% of water is supplied through bores, and the territory government has acknowledged that groundwater levels are running low in the Darwin area. Though the NT government has done a significant amount of work on improving water management, that's something both territory and federal politicians need to increase their focus on.

In terms of national planning, water is controlled by the states and territories (with the exception of the Murray–Darling Basin Authority). Water management is run primarily through the National Water Initiative, which was agreed to by the Council of Australian Governments in 2004.

Currently, the National Water Initiative positions water as a part of Australia's 'natural capital', with its purpose being to support and sustain economic and industrial growth. Indeed, former deputy prime minister Barnaby Joyce once reflected that 'water is wealth and stored water is a bank'. As capital, water is managed through the statutory authority of the Productivity Commission

and the environment department. Bodies such as the Critical Infrastructure Centre in the Department of Home Affairs can foster interstate and public–private consultation, but state and territory governments and private water companies have the biggest say in the capital resourcing of water.

As a developmental resource, access to water and sanitation is recognised by the UN as a human right. All Australians must be provided with access to drinking water, and governments must balance access with the strategic and capital considerations of water management. Equitable access for all citizens to water should be a major priority for all governments. In terms of realising this goal, developmental priorities are balanced between state and territory governments and the Commonwealth and departments including the Department of the Prime Minister and Cabinet, the Department of Infrastructure, Regional Development and Cities, and various state and territory departments.

But most importantly, water management is inadequately presented as a national security issue. While state and territory governments should have a leading role in policing and resource management, the federal government is the provider of national security. In deciding where and how water resources should be administered, the National Water Initiative does not engage with questions of exposure and vulnerability of water resources at the national level and mentions 'security' only in relation to entitlements and reliability of access. The National Water Commission did not make vulnerability and exposure a main focus in its 2014 report.

Looking more closely at defence, water security in the NT is essential for Australia's warfighting capability. Bore drilling, for example, can create serious surface and structural issues for infrastructure, and sewerage and waste management have significant defence considerations. In the case of Darwin Airport, inefficient water and wastewater management could affect the operational continuity of the dual-use facility. Any such impact on the airport would drastically undermine the ability of the Australian Defence Force and the US Marines to operate from Darwin.

Strategic resourcing of water could help offset some of these issues. It would mean the siloing of water as a critical asset during military conflict, but also take into account the cascading risks and effects of climate change. While the Critical Infrastructure Centre considers water a 'critical asset', its position as a monitoring and assessment body means that it cannot force state and territory governments or industry to change their behaviour. Though the launch of the National Resilience Taskforce's report, *Profiling Australia's vulnerability,* is a great start in considering the systemic nature of risk and vulnerability, real 'strategic resourcing' would require a renegotiation of water's place in Australia's resource management, critical infrastructure and defence and national security framework.

How Australia considers this 'trichotomy' of water management will be a major part of future policymaking concerning risk and resilience in the territory. Water's role as a strategic, capital and developmental asset will need to be considered in terms of balancing of responsibilities between the states and territories and the federal government, and the states' and territories' own resource management schemes. A failure to do so will constitute a threat to not only Australia's operational capability during a conflict, but also its ability to respond to disasters and crises.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/water-management-in-northern-australia-is-a-national-security-issue.

It’s time to make good on defence commitments to northern Australia

John Coyne, 24 May 2019

Image courtesy of the Department of Defence.

Prime Minister Scott Morrison has announced that more Royal Australian Navy vessels will be built at the Henderson shipyard south of Perth, and the plan appears to have bipartisan support. The 2016 defence white paper and the associated integrated investment program have already committed to decades of continuous submarine and frigate building in South Australia.

Of course, there’s never been any doubt about the implementation of defence policies in southern Australia. In contrast, changes in defence investment patterns in Australia’s north seem to have flown under the political radar.

Both the government and the opposition have declared their support for defence and national security initiatives in northern Australia. However, they might be surprised to learn that the current level of commitment to the north isn’t what Labor set out in its 2009 and 2013 defence white papers or what the Coalition said in its 2016 white paper.

The 2015 white paper on developing northern Australia pledged to strengthen the Department of Defence’s presence in the region. And the 2016 defence white paper stated: ‘Investment in our national defence infrastructure—including the Army, Navy and Air Force bases in northern Australia, including in Townsville and Darwin, as well as the Air Force bases Tindal, Curtin, Scherger and Learmonth—will be a focus.’ It also predicted that Defence’s presence and investment in northern Australia would gradually increase.

However, there’s a growing body of evidence indicating that the gap is widening between strategic policy and Defence’s actual activities and presence in the north.

To begin with, Defence annual reports reveal that the number of personnel in the Northern Territory is already at an 11-year low.

In 2016, Defence sent a brigadier to Darwin to brief the local government and industry on its plans. The headline was that it was going to significantly increase expenditure on facilities and infrastructure to the tune of $7.7 billion over 10 years. In the almost three years since that visit, it’s estimated that Defence’s spend on facilities and infrastructure development and maintenance in the Northern Territory has fallen to under $1 billion.

In March 2018, Defence sent a colonel to brief the same people, this time with a revised figure: $3.1 billion to be spent over six years. While Defence might be planning to spend another $3.6 billion right after the six-year commitment ends, that seems unlikely.

Defence intimated to those at this briefing that the US government would be investing in infrastructure development in support of the Marine Rotational Force—Darwin (MRF-D) initiative, which aspires to establish a marine air–ground taskforce of up to 2,500 personnel in Australia's north.

While the MRF-D has been present since 2012, only one Northern Territory business has succeeded in obtaining a contract to supply the Americans. Local construction firms in the Northern Territory have reported challenges meeting the US government's Miller Act bond requirements. The US requires Australian businesses to provide performance and payment bonds each equal to 100% of the original contract price—a level of bonding significantly higher than that used in the Australian market.

Then, in February this year, the US government's plan to spend US$76 million on bulk fuel storage in Darwin was 'earmarked' as a cost saving to fund President Donald Trump's border wall.

'Earmarks' don't always become budget realities in the US, but it's a reminder to Australia that we need to actively support the US Marines' presence in the north, maximising the benefits that they get from engaging with the Australian Defence Force. A Marine Corps that values the training experience will protect the deployment and resist pressures to make savings to fund other political objectives.

Defence's dwindling northern presence and opaque investment strategy come at a time of great strategic uncertainty.

The defence of Australia isn't just about troop numbers and infrastructure development in the north. But it gets very hard to project force to defend Australia's northern approaches on short notice if neither the personnel nor the infrastructure is there.

If that isn't enough justification, the development of industry capacity in Australia's strategically important north is critical for defence and national security.

The strategic defence and security outlook for the Indo-Pacific has deteriorated substantially since the MRF-D initiative was developed. And this change makes the presence of the Marine Corps in Darwin all the more important as an expression of America's strategic commitment to the security of the region.

Australia has an integral role to play here by ensuring we fund our part of the cost of developing shared facilities in the north.

Both sides of politics should commit to strengthening an amphibious capability in the ADF that's able to work with the marines and other partners in the region.

Now is the time for a renewed bipartisan commitment to the importance of a strong security presence in the north, including the US Marines presence.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/its-time-to-make-good-on-defence-commitments-to-northern-australia.

Australia's north needs a reserve police force

John Coyne, 31 May 2019

Image courtesy of Northern Territory Police, Fire and Emergency Services on Facebook.

Each of Australia's border security domains presents unique threats and operating challenges. Whether searching for illicit drugs in Sydney's mail centre, processing passenger arrivals at Melbourne's international airport or inspecting shipping containers in Fremantle, the job is difficult. For the Australian Federal Police and the Australian Border Force, the law enforcement challenge in Australia's north is all about the tyranny of distance.

Since 2016, the ABF, through its Maritime Border Command, has created a 'ring of steel' around Australia's northern waters. Primarily focused on blocking people smugglers, the command's officers, supported by military and civil maritime-surveillance capabilities, have made a substantial contribution to thwarting other maritime crimes like illegal, unregulated and unreported fishing. But they haven't stopped all crime.

As Australia's maritime domain awareness and response capabilities have improved, the onshore and nearshore eyes, ears and muscle in Australia's north have been wasting away.

Over the past century, Australians living in the north have played critical civil defence roles through coastwatch programs, community reporting networks and membership in Regional Force Surveillance Units.

In 1988, Headquarters Northern Command (HQ NORCOM) assumed responsibility for planning, practising and conducting surveillance, reconnaissance, protection and civil support operations from north of 19˚ south in Queensland and the Northern Territory, and the Kimberley and Pilbara districts of Western Australia. For more than two decades, NORCOM played a central role in coordinating support for whole-of-government efforts to prevent illegal activities relating to fisheries, immigration and customs. Today, it performs a much more administrative role.

Over the past decade, regional surveillance capabilities provided by the North-West Mobile Force, the 51st Battalion Far North Queensland Regiment and the Pilbara Regiment have degraded, which has been reflected in their much-reduced availability to support ABF operational activities.

Both the AFP and the ABF have modest offices in Cairns and Darwin. While their officers are highly trained, there aren't many and yet they are responsible for some of the world's largest law enforcement operating areas.

Northern Australia's vastness creates three problems for ABF and AFP decision-makers. First, they need eyes and ears in communities spread across Western Australian, the Northern Territory and Queensland. These eyes and ears need to include citizens who are ready and willing to report unusual behaviour. And they need a mechanism for reporting their observations.

Second, both organisations need an enhanced capability in northern Australia to undertake covert surveillance of suspicious activity on and near the coast.

Finally, both the AFP and ABF need to be able to rapidly scale up the deployment of officers to respond to criminal activity in some of Australia's most remote locations.

An obvious answer to these problems could be reinvesting in Regional Force Surveillance Units and their community reporting networks. However, the Department of Home Affairs, and more specifically the ABF, have already been heavily criticised for 'militarising' Australia's borders over recent years. The prospect of having soldiers sworn in as special constables to perform community policing or law enforcement operations in Australia's north is unlikely to draw much public support.

A far more attractive option is for the ABF and AFP to develop an auxiliary force or police reserve in Australia's north.

Since 1992, the NT government has operated a police auxiliary scheme to fill communication and frontline support roles in its police force. While not without training, these auxiliary police perform roles that are unable to be undertaken by public servants but don't require a fully qualified police officer. A Commonwealth scheme could build on these successes by expanding the scope of work of auxiliary police officers.

Such a capability could also draw inspiration from the Indigenous ranger programs funded by the Department of the Prime Minister and Cabinet.

The Indigenous ranger scheme was established in 2007 through the federal environment department's Working on Country program. Today it supports Indigenous people in combining traditional knowledge with conservation training to protect and manage their land, sea and culture. In addition to its environmental, biosecurity and heritage benefits, the program has created more than 2,200 jobs.

A combined ABF and AFP part-time auxiliary force, composed of small detachments across Australia's north, could be used to establish a civil reporting network. This network could then provide a mechanism for reporting suspicious behaviour to state and territory police forces as well as the ABF and AFP in Darwin.

Under certain conditions, and with appropriate training, the auxiliary force could also be tasked to undertake surveillance patrols or specific covert surveillance operations. With higher levels of training, auxiliary officers could directly support law enforcement operations, or perhaps even act as a rapid first-response capability. Just as importantly, such a program would generate a wide range of community advantages, including job opportunities in areas with high levels of unemployment.

Police auxiliary programs have been operating in Canada since 1960. These programs are used, with great success, to supplement police forces with additional staffing, especially in isolated communities in the Arctic Circle.

There is more at stake here than the establishment of a new capability. There's a broader opportunity for Home Affairs to further define the north's role in Australian security. Through better whole-of-government coordination, improvements can be made in basing, logistics, domain awareness, and command-and-control structures. There's also an opportunity for Home Affairs and its portfolio agencies to generate social and economic benefits for communities right across the north of Australia.

For print readers, the original piece with live links is at https://www.aspistrategist.org.au/australias-north-needs-a-reserve-police-force.

NASA contract demonstrates northern Australia's potential as a space launch hub

Scott Wallis, 21 June 2019

Image courtesy of Eddie Yip on Flickr.

The geographic and economic landscape of northern Australia, as well as its history and ecology, differ in fundamental ways from southern Australia with its large cities and well-connected inhabitants. Sparsely populated, the north typically has vast open spaces with little infrastructure. Many Australians living in the north actually live closer to some of the world's fastest growing economies with densely populated cities than they do to southern Australian cities.

A common theme among the residents of Asia and Australia, including our traditional owners, is the embrace of new space-enabled technologies that improve quality of life and social connectivity. Consumers need space technology for GPS and satellite TV, and it plays a role in bushfire protection, weather monitoring and providing essential communications and services to the public.

Countries in the region are now acquiring their own space assets while also leveraging off increasing global space capabilities. Space industry momentum in these countries is growing their national power. But facing deep strategic competition between China and the US, many Asian nations are seeking alternative sources for the supply of space services. This presents opportunities for the Australian space industry to offer new options for access to space and associated services for billions of potential customers.

There are two key parts to the space industry. *Upstream providers of technology* send objects into space and do space exploration. This includes satellite system developers; component and materials suppliers; ground segment operators and suppliers; researchers and consultants; and suppliers of space products and services. *Downstream exploiters of technology* use upstream technology and research—for example, earth observation providers, equipment suppliers, and providers of support products and services.

The space industry comprises all organisations, or parts thereof, engaging in any space-related activity. Commercial organisations earn revenue from the manufacture, launch and operation of satellites and spacecraft, and from using signals and data supplied by satellites and spacecraft to develop valued-added applications such as mobile phone communications and earth observation. Non-commercial organisations contribute space-specific research and expertise throughout the industry supply chain—often in partnership with commercial organisations. These include civilian space agencies such as NASA, defence and national security agencies, and universities and research institutions.

Launch companies are potentially the highest revenue earners in the industry. A SpaceX launch can cost around US$90 million, and a relatively small RocketLab Electron launch from New Zealand would still cost US$4.9 million. In 2030, with the growth in the global demand for launch services, Australia could conservatively be generating over US$1 billion per year of export revenue from launches. This capability would also keep funds in Australia that would otherwise be going offshore to foreign launch sites.

The great benefit in launching from northern Australia is the additional velocity imparted to a rocket when it is launched to the east at low latitudes. This means extra payload can be carried in lieu of fuel. From Gove near Equatorial Launch Australia's Arnhem Space Centre, the earth's rotational velocity is 1,637 kilometres per hour, a third faster than the speed of sound.

NASA's planned launches from the Arnhem Space Centre in mid-2020 will bring international attention to northern Australia's fledgling space industry. A coup for Australia, this will be the first time NASA has used an international commercial spaceport for launches and culminates from four years of discussions. Follow-on research missions are expected with NASA and other regional space agencies. The head of the Australian Space Agency, Dr Megan Clark, recently said, 'NASA's interest in conducting a sounding rocket campaign in Australia shows the increasing importance of commercial launch activities from Australia.'

An interesting addition to the north's space industry is the Airbus Zephyr solar-powered unmanned aircraft. The Zephyr is now flying from Wyndham airfield in Western Australia. The airfield is the world's first operational site for the launch and recovery of the class of unmanned aircraft known as high-altitude pseudo-satellites, or HAPS. The Zephyr typically flies for days or weeks at a time without landing and operates at very high altitudes. Although not technically in space, the Zephyr can carry communication and observation payloads typically found in satellites.

The north's space industry will soon include an Indigenous-owned satellite ground station. Viasat plans to launch a real-time earth facility in Alice Springs, in partnership with the Centre for Appropriate Technology Ltd, an Aboriginal not-for-profit science and technology company. The investment will enable Alice Springs to be a key player in the burgeoning global satellite and space industry, and Indigenous Australians to be leading participants in the sector.

The mostly clear skies of the northern outback provide the opportunity to use the visual spectrum to track objects in space and perhaps eventually to communicate with satellites using lasers.

Lockheed Martin Space and Perth's Curtin University have adopted the technology used to observe meteorite fireballs and applied it to track satellites. The FireOPAL project uses a range of sensors to track satellites and space debris and could ultimately provide a persistent view of objects in orbit. Extending this network to northern Australia would further enhance Australia's space surveillance capabilities.

In the future, our clear northern skies could facilitate the reliable anchoring of high-performance optical space networks. The European Data Relay System currently uses lasers to communicate between satellites, HAPS and ground stations. NASA has recently demonstrated laser communications between two small orbiting cubesats more than 2,400 kilometres apart.

Reflecting the need for guidance to the space industry, in April the Australian Space Agency released the Australian civil space strategy. This follows the release of similar documents commissioned by the Northern Territory, Queensland and Western Australia highlighting their space capabilities. With the support of their governments, northern Australians are now well positioned to leverage significant commercial advantage arising from upstream and downstream opportunities in the rapidly growing global space industry.

For print readers, the original piece with live links is at: https://www.aspistrategist.org.au/nasa-contract-demonstrates-northern-australias-potential-as-a-space-launch-hub.

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Acknowledgements

ASPI would like to thank the Northern Territory government for its support of the North and Australia's Security program, without which the 'North of 26° south' *Strategist* series would not have been possible. Sincere thanks also to all of the individual authors for taking time out of their busy schedules to contribute to the series.

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ISSN 1449-3993

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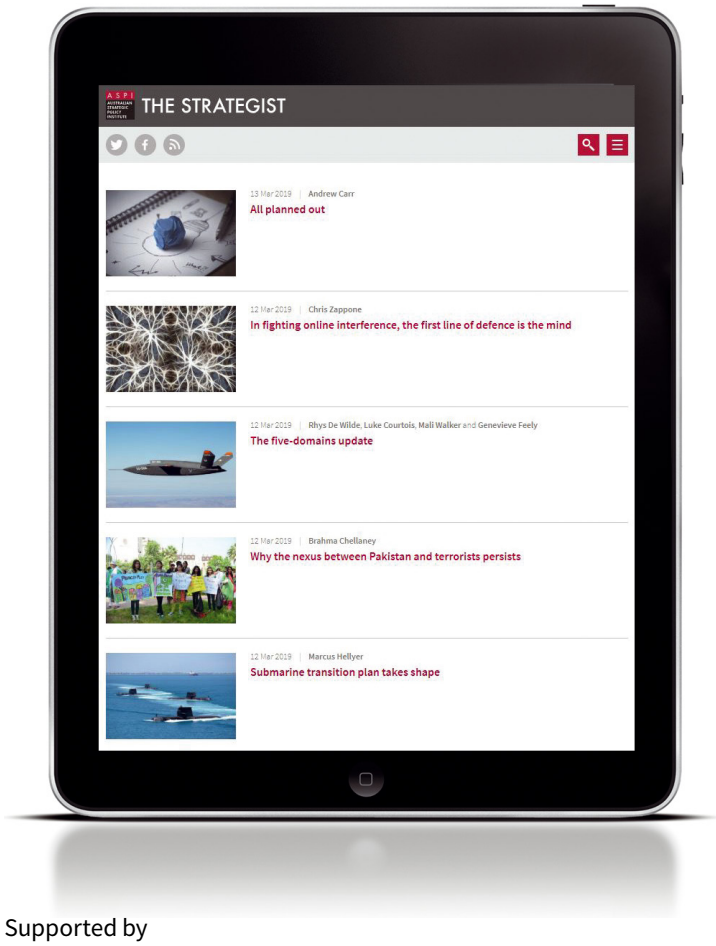

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North of 26° south and the security of Australia

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