Hi-Intensity Operations and Sustaining Self-Reliance

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Facing the rising challenge posed by the 21st century authoritarian states, and by the changing nature of alliances in the Pacific and in Europe, Australia needs to enhance its sovereign capabilities to operate within a regional or global crisis.

And this requires, Australia to have more capability to sustain its evolving integrated force and to do so in the service of the direct defense of Australia.

Hi-Intensity Operations and Sustaining Self-Reliance

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ENHANCING AUSTRALIAN OPTIONS IN A CRISIS: SHAPING A MORE SUSTAINABLE FORCE

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The Williams seminars over the past five years have focused in detail on the reshaping of the Australian Defence Force (ADF) as a more integrated force, one which can operate as discrete Australian force packages able to operate with allies or on their own.

The acquisition of the F-35 is seen as a trigger for accelerating the kind of force integration which Australia is seeking, namely a very capable force package within which fifth generation enablement enhances the lethality and survivability of modular force packages.

But the goal is to have such capability both for the direct defense of Australia and to work with allies during sustained periods of crisis.

It was clear from the latest Williams Seminar that this is not just a technical force packaging effort. It is part of a broader reset within Australian thinking about how to move ahead as the global competition changes.

As Williams Research Fellow, Dr. Alan Stephens put it, Australia needs to focus on Plan B:

“A military posture based on the premise that Australians will assume the burden of combat of defending their own country.”

“For most of our history, Australia has been unwilling to confront the imperatives of a defence posture which would require us to assume the burden of responsibility. Consequently, when faced with our only existential threat, in World War II, we were left dangerously exposed; while on other occasions, the apparent need to pay regular premiums on Plan A has drawn us into morally dubious wars of choice.

"In short, Plan A has distorted our strategic thinking and compromised our independence.

“If Australian defence is to be credibly self-reliant – if we are to have a Plan B – we can start by looking to the examples of those individuals and local industries that have challenged traditionalists and science-deniers, and have instead embraced innovation and transformation.”

Dr. Andrew Carr then followed highlighting what this means in terms of the strategic reset for Australia in dealing with the direct challenges from China and the changing dynamics of the American Alliance. Carr argued that Australia needed to focus on its regional interests rather than following American proclivities over the past three Administrations to pursue conflicts significantly removed from direct defense challenges to Australia itself.

"This is not to suggest an isolationist or inward-looking turn. Far from it. Nor is it about returning to the 1980s Defence of Australia concepts.

"Rather, it is a position which takes seriously the idea that we may be early into a half-century or more of strategic competition. This means knowing what we will fight to protect and how we can do so. And then being able to go forward from a secure continent. That is what a return to fundamentals means.

"To do otherwise, to keep focusing on what we can do at the furthest limits from our core interests, attempting merely to hold firm to the status quo is to risk our own version of a grey zone style crisis.

"A world where we are making commitments to our allies abroad that we can't be sure future government's and the Australian public will want to keep.

"Nor does this extended approach make sense in the face of our specific adversary on the field today. A strategy of simply trying to give '110%', year in and year out, by tired and debt-ridden Western nations, finding ourselves always on the defence against a better resourced and fresher People's Republic of China is not a winning approach."

He posed a key question: What are the fundamentals of continental security for Australia?

I would add that his question can be placed within the context of a broader question: What is the future of globalization in the context of the return of great power politics?

The China challenge is two-fold – Western societies have clearly benefited from a globalization approach within which the Chinese economy has contributed but at the same time the one-party state is able to project its global agenda and to leverage its economic outreach to get inside the infrastructure and systems of the liberal democracies.

Carr underscored that Australia needed to deal with the new strategic challenge and to do so by rethinking its defense and security strategies.

"Unfortunately, this is a question we will need to think through afresh, rather than hoping that past generations have done the work for us. The Defence of Australia policy, which was in place from roughly 1972 to 1997 took shape in a very different world, politically and technologically. This was an era where our continent was secure – something that is not obviously true today."

The well-known Australian strategist Brendan Sargeant then contributed his thoughts on the way ahead in this new historical era. Sargeant has had many policy positions in the Australian government and spoke from that experience to discuss the challenges facing Australia in this new period of history.

His focus was upon how best to take the capabilities Australia has built and is building and how to leverage them effectively in Australian interests

"The development of capability is important, perhaps the most important element of defence policy, but also important is understanding how these capabilities might need to be used in the future.

"How should we shape the force to respond to future crises?

"How we think about that question will in part determine how we want to evolve capabilities, and how powerful and sustainable we will want the force to be.

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"Have we thought sufficiently about how we might need to use defence capability in the future, and are we building for that day or days?"

The remainder of the seminar focused on what one might call the eco system for a more sustainable ADF. A key element of shaping a way ahead clearly is to shape a more sustainable force which can endure through a crisis. This meant taking off the table the capability of the Chinese to disrupt the supply chains into Australia and choking off the sustainability of the ADF. This clearly needs to be dealt with by crafting "buffer" capabilities to sustain the force.

Another key aspect being worked is enhanced local industrial support to ADF forces, as well as new approach to stockpiling parts and skill sets to sustain the force.

There are clear security issues as well. There needs to be enhanced security of Australian civil as well as military infrastructure, in terms of IT, C2 and energy security.

Put in blunt terms, with a focus on direct defense of Australia comes a broader social recognition of the long-term challenges posed by its powerful neighbor in the region as well as finding ways to rethink crisis management tools. An integrated ADF which able to operate in flexible force packages as a key enabler for sovereign options in a crisis is a different trajectory than envisaged in the last White Paper.

But to enable, you need to survive and be sustained. This is why active defense measures are being stood up and rethinking about logistics and industrial support under way.

It is clearly a work in progress.

But the new Aussie approach will have significant implications for Australia's allies and industrial partners as well. A focus on sustainable direct defense will clearly mean a shift in focus and reorientation of how Australia will work with global partners and industry. And this has direct consequences for programs such as the British frigate, the French submarine and US produced 21st century air combat assets, such as P-8, Triton, Growler and F-35.

Dr. Carr highlighted how different the way ahead is from the recent past.

"We should find a new language instead of the term self-reliance.

"This term has always been used by Australians to mean an exception to usual practice. Self-Reliance was we did in the worst-case scenario, or did on the margins while normal allied cooperation was the mainstay.

"Instead we should think of this issue as most other countries do. Defending ourselves is our task and our primary responsibility. We will build alliance cooperation on top of this, we will seek to use our geography to support and sustain a regional order that has been very valuable to us. But what we do alone is not the exception, but a fundamental part of a re-invigorated, and resilient approach.

"So let us take this moment to rethink and regroup. The siren calling us back onto the pitch is sure to blast very soon, and the next half is going to be even tougher. But with a better plan, based on the fundamentals, I am confident the game's momentum will soon run our way."

STRATEGIC PERSPECTIVES ON THE STRATEGIC SHIFT AND AUSTRALIAN SOVEREIGNTY

Reworking Australian Alliances: The Perspective of Dr. Alan Stephens

The alliances in both Europe and the United States are being reworked as the challenges facing the liberal democracies are changing.

The 21st century authoritarian powers are competing against a West that is undergoing fundamental political challenges, with the United States, the UK and Europe in effect undergoing significant political and economic change, which can be considered in many ways' constitutional crises, or crises which are about the fundamental structures within the US, the UK and continental Europe,

The 21st century authoritarian powers are playing off of those crises.

So what does a power like Australia do when it has relied first on Britain and then the United States to provide for Australian security?

And for an Australia, which has significantly benefited from the globalization of the past twenty years, how do you answer the question: what remains of globalization in the context of great power competition and conflict?

The approach for Australia under both British and American leadership has been to play a significant contributing role to first British and then American global roles.

The Aussies have been solid contributors both to the British Empire and the American post-war global order.

This has led to a rules-based order crafted under American pre-eminence in the post-World War II order.

Now that rules-based order is up for grabs, and there is much more focus within Australia on its own direct defense and how allies can work together to deal with the challenge directly to Australia and its closest regional neighbors and partners.

Put bluntly, Australia is far less willing to follow a Bush or Obama Administration type regime down the path of contributing to adventures outside of its definition of direct interests.

It is not about paying a down payment on the alliance; it is about reworking the alliance to ensure that the focus on the defense of the liberal democracies in the Pacific is a first order business.

And now with an American Administration in power which has no clear global alliance strategy, how best to reinforce the important working relationship with the American military but not get caught up in the machinations of internal American politics or the conflicts being unleashed by the cold Civil War in the United States?

At the recent Williams Foundation conference on April 11, 2019, Dr. Alan Stephens, a prominent Australian military historian, and a fellow with the Williams Foundation made a clear case for moving ahead with Plan B in terms of reshaping Australian strategic focus.

What follows is his presentation to the seminar.

For 118 years, since Federation in 1901, the notion of "self-reliance" has been one of the two most troublesome topics within Australian defence thinking. The other has been "strategy", and it is no coincidence that the two have been ineluctably linked.

The central question has been this: what level of military preparedness is necessary to achieve credible self-reliance? What do we need to do to be capable of fighting and winning against a peer competitor by ourselves? Or, to reverse the question, to what extent can we compromise that necessary level of

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preparedness before we condemn ourselves to becoming defence mendicants – to becoming a nation reliant for our security on others, who may or may not turn up when our call for help goes out?

Pressure points within this complex matrix of competing ideas and interests include leadership, politics, finance, geography, industry, innovation, tradition, opportunism, technology and population. My presentation will touch on each of those subjects, with special reference to aerospace capabilities.

My paper's title implies that we have a Plan A, which is indeed the case. Plan A is, of course, that chestnut of almost every conference on Australian defence, namely, our dependence on a great and powerful friend to come to our aid when the going gets tough. From Federation until World War II that meant the United Kingdom; since then, the United States. The strategy, if it can be called that, is simple. Australia pays premiums on its national security by supporting our senior allies in wars around the globe; in return, in times of dire threat, they will appear over the horizon and save us. That is, we will cash-in our insurance policy.

The United Kingdom and the United States have been good friends, and we could be reasonably confident that they would arrive in strength if needed. Plan A nevertheless clearly rests on a potentially fatal act of trust. And as that applies today, it's cautionary to note that Defence Minister Christopher Pyne and former ambassador to Washington Kim Beazley have both publicly questioned the trustworthiness of the current American administration.[1] Thomas Wright from the Brookings Institution recently described Trump's foreign policy as one which recognises "no permanent friends", which "places little value in historical ties", and which is "deeply suspicious of US allies".[2]

It is also the case that paying the premiums on Plan A can draw us into wars of choice of obscure relevance, or which are morally dubious. Thus, from the very outset, at the time of Federation, Australian Colonial and Commonwealth forces were deployed to South Africa and then China, in the first instance to enforce British commercial and imperial interests in a conflict which saw our soldiers associated with the world's first concentration camps;[3] in the second instance, to again enforce British commercial interests, including the opium trade.[4] It was all part of what George Orwell was later to call doing "the dirty work of Empire".[5] Similar political and social deafness attended our involvement in the invasions of Vietnam, Iraq and Afghanistan.

Turning to Plan B – that is, to a military posture based on the premise that Australians will assume the burden of combat of defending their own country - it is not well-understood that, when in 1914 we first went to war fully as a nation, we actually won a major victory with precisely that approach. Furthermore, because of the domination over our national consciousness of the Great War of Gallipoli, the Western Front, and the myth of Anzac and the digger, nor is it well-understood that that victory was won, not by soldiers, but the Royal Australian Navy.

[1] Quoted in the *Washington Post*, July 19, 2016; see also Kim Beazley, "Defence policy in an era of disruption", in The Strategist, https://www.aspistrategist.org.au/defence-policy-in-an-era-of-disruption/, 8 Dec 2018, accessed 4 April 2019.
[2] Thomas Wright, "Trump's Foreign Policy is No Longer Unpredictable", in *Foreign Affairs*, January 18, 2019.
[3] Henry Reynolds, *Unnecessary Wars* (Sydney: NewSouth Publishing, 2016). Reynolds writes of Australian troops committing "atrocities for empire".
[4] Australian War Memorial, "China (Boxer Rebellion), 1900-01", https://www.awm.gov.au/articles/atwar/boxer, accessed 4 April 2019.
[5] George Orwell, "Shooting an Elephant", in *New Writing* (1936), at http://www.online-literature.com/orwell/887/, accessed 4 April 2019.

FIGURE 1 DR ALAN STEPHENS

When World War I began the the RAN had existed for only a handful of years, but astute management had made it into a proficient fighting force.[6] Officers and ratings were well-trained and the fleet, while small, was suited to the task at hand.

Two missions in the Indian and Pacific Oceans were critical: neutralising German military bases and colonial territories, and protecting trade and troopship routes. The Navy executed both missions rapidly with impressive professionalism, and then settled-in to an unrelenting four-year campaign of patrolling and protecting. It was the convergence of strategy and preparedness represented by this largely unheralded campaign – by Plan B, if you will – that secured Australia's territorial integrity during World War I.

As is almost invariably the case with a Plan B, however, there are caveats to be made regarding the boundaries of "self-reliance". In 1914, the RAN was controlled by the Admiralty in London; the entire fleet had been built in the UK; specialist training had been provided by the Royal Navy; and many of the crews were either recruited or seconded from the RN. Nevertheless, the fact remains that it was the Australian Navy, and not the forces of any great and powerful friend, that assumed the burden of responsibility of defending our continent.

In the period between the world wars, Australia's political and military leaders proved incapable of developing a military strategy and industrial base commensurate with our geostrategic circumstances, the threat of Japan, and emerging technologies. The consequence of this failure was an expedient dependence on the so-called Singapore strategy, under which, in the event of war with Japan, the Royal Navy would steam to our rescue. This amounted to nothing less than an abandonment of sovereign responsibility. It was the strategic equivalent of throwing our hands in the air and hoping for the best, and it was the very worst manifestation of Plan A.

In the event, when in December 1941 the United Kingdom couldn't come to our rescue for the very good reason that it was fully occupied fighting for its own survival, Australia was suddenly exposed and vulnerable.

[6] See David Stevens, *In All Respects Ready: Australia's Navy in World War I* (Melbourne: OUP, 2014).

Could we have done better? The Royal Navy's commander at the Battle of Jutland, Admiral of the Fleet Lord Jellicoe, thought so.

Jellicoe had visited Australia in 1919 to advise the government on maritime defence. His report included a well-argued and detailed section on the possible future use of a disruptive technology – namely, aircraft – against ships and submarines. Jellicoe concluded that air attack represented a serious and growing threat to navies, and that air power offered great potential for the defence of Australia.[7] His report was rejected by the RN and, therefore, by the RAN.

Whether or not aircraft would be able to find and sink warships at sea was one of the most hotly debated issues in defence circles during the 1920s and 1930s, with trials conducted by the United States and the United Kingdom indicating that they could and would.[8]

But despite calls in Australia for new thinking on defence from people such as Stanley Bruce, John Curtin, Joseph Lyons and Richard Williams, institutional biases and faith-based thinking could not, like battleships, easily be made to change direction. During the inter-war years, the RAN received about 60 per cent of all defence appropriations, the Army about 30 per cent, and the RAAF 10 per cent.[9] Despite that financial largesse, when the war began the RAN amounted to little more than an auxiliary squadron of the RN, with no capability to defend Australia without major reinforcement.[10] Yet had one-quarter of naval expenditure been invested in next-generation technology, Australia might have fielded some 500 modern strike/reconnaissance aircraft armed with bombs and torpedos.[11]

My point here is not whether one form of traditional combat power is "better" than another; rather, it concerns taking responsibility and remaining open to new ideas.

Before moving on to World War II, I want to elaborate on the topic of new ideas, using Lawrence Wackett and the aircraft industry as my exemplars.

A Duntroon graduate who had distinguished himself as a pilot and inventor with the Australian Flying Corps in World War I, the mercurial "L.J." was the driving force behind the establishment of the RAAF's Experimental Section at Randwick in 1924.[12] Wackett's initiative was supported by the chief of the air staff, Richard Williams, who understood that it is primarily through indigenous innovation and experimentation that a military force is likely to achieve a decisive technological advantage. The Experimental Section was shut-down in 1930 because of cost-cutting, and coercion from the British aircraft industry, which wanted to safeguard its privileged position in the Australian market.

By 1936 the menace of Japan demanded action. A syndicate of businessmen headed by Essington Lewis from BHP established the privately-owned Commonwealth Aircraft Corporation, with L.J. Wackett as manager and

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[7] Viscount Jellicoe, "Report on Naval Mission to Australia", May-August 1919, cited in Alan Stephens (ed), *Defending the Air/Sea Gap: Exploiting Advanced Technology and Disproportionate Response to Defend Australia* (Canberra: Australian Defence Studies Centre, 1992), 9.

[8] Alan Stephens, *Power Plus Attitude: Ideas, Strategy and Doctrine in the Royal Australian Air Force 1921-1991* (Canberra: AGPS, 1992), 34-36.

[9] Official Year Books of the Commonwealth of Australia, 1919-1938.

[10] The RAN's two heavy cruisers were over 10 years old and its four light cruisers 17 years old. There was also a "scrap iron flotilla" of five 20-year old destroyers on loan from the RN, and two Australian-built sloops.

[11] In 1930 it was possible to buy 152 bomber aircraft for the price of a single 10,000-ton cruiser. See *Jane's Fighting Ships* (London, 1929); and "RAAF the Cinderella of the Services", in *Aircraft*, 1 August 1931, 14-15.

[12] See Sir Lawrence Wackett, *Aircraft Pioneer* (Sydney: Angus and Robertson, 1972).

chief designer.[13] In July 1939 the government followed suit, forming its own Aircraft Production Branch, later known as the Department of Aircraft Production and then the Government Aircraft Factories.[14]

Between 1939 and war's end, Australian factories built 6360 aircraft, including advanced types such as the Beaufighter, Mosquito and Mustang, an achievement which subsequently prompted some historians to argue that Australia was "armed and ready" for war with Japan.[15] But while the rapid development of an indigenous aircraft industry was a major success, there were limits.

To start with, getting the local industry up and running took time; consequently, Australia did not start building advanced platforms in reasonable numbers until 1943. Furthermore, we remained largely reliant on foreign sources for modern in-line engines, with the most notable locally-made power plant being the Pratt & Whitney radial Twin-Row Wasp.[16] And finally, a vast investment was required. In 1935/36 Australia's total defence expenditure was £6.8 million; in 1944/45 it was £460 million.[17]

The fact is, when Australia declared war on 3rd September 1939, the nation was pitifully unprepared for sustained, high-intensity, self-reliant combat. Worse still, when Japanese air forces bombed Darwin on 19th February 1942, the United Kingdom was still hanging-on grimly against the Nazis, and the United States was still reeling from the attack on Pearl Harbor.

Australia's Plan A, as represented by the Singapore strategy, was exposed as wishful thinking, and we were alone, vulnerable, and panic-stricken.

I want to make two final observations regarding World War II, one on the relationship between self-reliance and strategy; the other on disruptive technologies.

Because Australia was dependent on our great and powerful friends for supplies of most combat aircraft until about 1943, we had little choice other than to accept what we were given. Accordingly, while the UK and the US were exceedingly generous in sending us some of their best types, including Spitfires and Kittyhawks, at a time when they were under desperate pressure themselves, on other occasions we were fobbed-off with obsolescent machines that no-one else wanted, such as Brewster Buffalos and Vultee Vengences.[18] That's not a criticism, it's simply an acknowledgement of reality.

As to strategy, notwithstanding our national consciousness of war again being largely shaped by events on land, in this instance the fighting along the Kokoda Track, and the horrific treatment of prisoners-of-war in Southeast Asia, the critical events for the defence of Australia once more took place in the maritime domain. I refer to the victories of American naval air power at Coral Sea and Midway in May-June 1942; and of American and Australian land-based air power in the Bismarck Sea in March 1943. Once again, the issue was one of having a strategy and force structure relevant to the times.

Turning to disruptive technologies, I'll use munitions as an example to infer the general from the particular.

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[13] See B.L. Hill, *Wirraway to Hornet: A History of the Commonwealth Aircraft Corporation Pty Ltd, 1936 to 1985* (Bulleen: Southern Cross Publications, 1998).

[14] For an excellent account of these developments, see Brian Weston, "The Australian Aircraft Industry", Working Paper No. 12 (Canberra: Air Power Development Centre, 2008).

[15] A.T. Ross, *Armed and Ready: The Industrial Development and Defence of Australia 1900-1945* (Sydney: Turton & Armstrong, 1994). For aircraft production numbers, see Joan Beaumont, *Australian Defence: Sources and Statistics* (Melbourne: OUP, 2001), 453.

[16] Beaumont, 453. Australia built 870 Twin-Row Wasp engines, which were used to power the RAAF's B-24 Liberators, among other platforms.

[17] Beaumont, 31.

[18] Stephens, *Power Plus Attitude*, 79.

Australia has been designing and manufacturing a wide range of small arms, rounds, bombs, rockets, mortars, grenades, mines, and much more, for over a century.[19] That industry has been fundamental to our national defence posture, but none of it warrants the description "disruptive". A little-known exception, however, was the acquisition by the RAAF in 1943 of sufficient stocks of mustard gas and casings to build about 22,000 bombs.[20] By 1945 trials had been conducted and plans drawn-up for the RAAF to drop those weapons from its fleet of 250 B-24 Liberator heavy bombers.[21]

FIGURE 2 CAC-23

Weapons of mass destruction are contentious. They are also inherently strategically disruptive and, as demonstrated by North Korea - a state which by any other measure is degenerate and broken - they concentrate the minds of potential enemies. That's not necessarily to say that Australia should acquire WMD, but it is to say that the subject needs to be raised. In the context of genuine self-reliance, such disruptive capabilities fundamentally redefine a nation's capability to shape, influence and deter.

I want now to move to July 1949, when the Australian government awarded a contract to CAC to design and build a "Long-Range All-Weather Attack Fighter" for the RAAF. Designated the CA-23, the prototype was scheduled to fly within a year.[22] Instead, after much official procrastination, the project was cancelled in 1952.

The CA-23 proved to be a metaphor for what was to come for Australia's combat aircraft industry. Good intentions notwithstanding, it gradually became apparent that, given the inadequate funding provided by

[19] See Chris Coulthard-Clark, *Breaking Free: The ADI Story* (Melbourne: Australian Scholarly Publishing, 1999); and Beaumont, 452.
[20] RHS, War Cabinet Minute 2637, 15 February 1943; NAA, CRS A2670, War Cabinet Agendum 32/1945; RHS, War Cabinet Agendum 453/1945, 4 October 1945.
[21] The RAAF also intended to use its B-25 Mitchells to drop mustard gas bombs. Orders were placed with the US for 40,000 type M47 1000-lb bombs and 4000 type M78 500-lb bombs. Stephens, *Power Plus Attitude*, 81.
[22] Neville Parnell and Trevor Boughton, "Sep 1948", in *Flypast: A Record of Aviation in Australia* (Canberra: AGPS, 1988), 226.

government, any ambition to sustain an indigenous capability to even assemble, let alone design and build, advanced combat aircraft was unrealistic.

The era seemed to start well enough, with the local construction of the de Havilland Vampire, GAF Canberra and CAC Sabre. The Avon Sabre in particular incorporated significant redesign, to the extent that when it became operational in 1954 many considered it the best F-86 variant in the world. The trouble was that by then other defence forces were on the verge of introducing delta-wing, Mach 1.5 plus, high-altitude interceptors as their first line of air defence.

Indigenous design and production of manned aircraft during the era of CAC and GAF was limited to the Winjeel, an ab initio trainer, and the often-maligned Nomad general purpose aircraft. Given the current irresistible rise of unmanned platforms, it is noteworthy that "by far the most successful Australian aircraft design" was the GAF Jindivik, a remotely controlled target vehicle that remained in production from 1950 to 1986 and which was exported to the UK, the US and Sweden.[23]

What ensued was the gradual decline of Australia's military aircraft construction industry. Types such as the Mirage, MB-326 and F/A-18 were fabricated from a mixture of imported and locally-made components; CAC and GAF were sold-off in the mid-1980s; and the RAAF's Super Hornets, Growlers and F-35s are fully-imported.

Perhaps we shouldn't be surprised. More broadly in terms of self-reliance, government investment in scientific research currently is at its lowest level for forty years.[24] And according to the authoritative Bloomberg Index, the country ranked first in the world for innovation, South Korea, spends more than twice as much on relevant research as the country ranked nineteenth, Australia.[25]

Despite this failure of leadership at the political level, the RAAF at least seems to have recognised the challenge. For one hundred years, air power's fundamental game-changer has been bigger and better piloted fighter and bomber aircraft. Now, however, channelling their inner Sir Richard Williams, the Air Force's senior leadership appears to have redefined Australian air power through the agency of Project Jericho. Described as a "marriage of minds and machines", Jericho implies a transformed organisation based on artificial intelligence, robotics, machine learning, manned-unmanned teaming, networks, and innate intellectual flexibility.[26]

Concurrently, and channelling their inner L.J. Wackett, the Air Force, the Defence Science and Technology Group and the Boeing Company have announced the cooperative development of a stealthy unmanned combat air vehicle under the rubric of "Loyal Wingman".[27] This is the most exciting initiative undertaken by the Australian aerospace community since World War II. If the project succeeds, the implications are profound.

Let me summarise.

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[23] Stewart Wilson, *Military Aircraft of Australia* (Weston Creek: Aerospace Publications, 1994), 120. 502 Jindiviks were built.
[24] Robert Bolton, "Government spending on scientific research hits 40-year low", in the *Australian Financial Review*, 17 December 2018; Peter Hartcher, "So much for the clever country, we're squibbing it", in *The Sydney Morning Herald*, 16 November 2018.
[25] Michelle Jamrisko, Lee Miller and Wei Lu, "The world's most innovative countries", in *The Sydney Morning Herald*, 23 January 2019; Ian Burrows, "Which is the most innovative country in the world? Well, it's not Australia", in ABC News, 27 January 2019.
[26] See Brendan Nicholson, "RAAF marrying minds and machines" (parts 1 & 2), in *The Strategist*, 26-27 February 2019.
[27] Andrew McLaughlin, "Dawn of our Loyal Wingman", in *Australian Aviation*, April 2019, 39-43; Bradley Perrett and Graham Warwick, "Team Player", in *Aviation Week & Space Technology*, March 11-14, 2019, 16-19; and Malcolm Davis, "Loyal Wingman to take Australia's airpower into the next generation, *The Strategist*, ASPI, 7 March 2019, at https://www.aspistrategist.org.au/loyal-wingman-to-take-australias-airpower-into-the-next-era/, accessed 4 April 2019.

For most of our history, Australia has been unwilling to confront the imperatives of a defence posture which would require us to assume the burden of responsibility. Consequently, when faced with our only existential threat, in World War II, we were left dangerously exposed; while on other occasions, the apparent need to pay regular premiums on Plan A has drawn us into morally dubious wars of choice. In short, Plan A has distorted our strategic thinking and compromised our independence.

If Australian defence is to be credibly self-reliant – if we are to have a Plan B – we can start by looking to the examples of those individuals and local industries that have challenged traditionalists and science-deniers, and have instead embraced innovation and transformation.

What the Re-Focusing of Australia on Direct Defense Means for Its Allies

The strategic shift from the land wars to crisis management with peer competitors is seeing a significant shift in the alliance structures of the liberal democracies.

The rise of the 21stcentury authoritarian states have seen them operating within the liberal democracies politically and economically in ways the Soviet Union never could.

This means that the liberal democracies face wide ranging security as well as defense challenges at the same time.

Their competitors are working to avoid significant high-end conflict but to have expanded their sphere of influence by pushing back on the zone of acceptable political-military and political economic activities.

The past two decades of global engagement by the liberal democracies in support of American-led global counter-terrorism is being replaced by a clearer focus of attention on their own defense and upon thei rown regional contexts for defense and security.

The last twenty years of globalization and the assumption that the end of history was seeing the eradication of global authoritarian competitors to the United States and its allies has been shattered.

What will take its place is not clear, and is a work in progress.

But what is clear is that key allies need to take key responsibilities for enhanced direct defense and as they do so, the United States' role will change significantly.

If the United States wants to lead an effort for the defense of the "West," it will be doing so less as a superpower than as the big brother which can bring relevant military capabilities and crisis management skills to the competition.

This will require a continued process of military transformation but also by shaping a political-diplomatic capability not seen in Washington for a long time.

It will mean as well working new concepts and approaches to crisis management across the conflict spectrum which can constrain the 21stcentury authoritarians and not let them dominate gray zone and hybrid warfare operations which have pushed the zone of acceptable tools of reshaping their influence further outward into a reshaping of global politics.

In other words, we are entering a new phase of history, one which is in the process of being constructed with no manuals lying around to guide us.

And the liberal democracies are seeking to do so when internal crises are the order of the day in the UK, the US and in Europe.

What this means for Australia was laid out in Dr. Andrew Carr's presentation to the Williams Foundation Seminar on April 11, 2019.

FIGURE 3 DR. ANDREW CARR

Carr noted that "As part of the West's victory lap after the Cold War, we declared an interest in global peace and prosperity. We claimed an interest in operating virtually anywhere on the globe, no matter who it antagonized or how remote from our own nations.

"What is happening today in Eastern Europe by Russia or the South China Sea by China is that the new authoritarians are challenging this claim to near-limitless interests. What they are doing is declaring their judgement that these regions do not seriously matter for the West. And they are right."

He argued that the liberal democracies needed to sort through what their core interests really are and put the fundamental effort in to protect those interests. Otherwise, we will suffer loss of credibility as we seek to inflate what we care about and operate beyond the reach of our capabilities.

Put another way, the 21stcentury authoritarians have called our bluff. And they are pushing out what they perceive to be their core interests and challenge us to respond in an effective manner.

He argued that we need to craft a strategy and approach "that is founded upon protecting that which is most important to us, that plays to our strengths and which will allow us to re-set the momentum in the game. One that re-connects our interests and available resources, instead of the last decade or two of 'strategic wandering' we have had."

From this perspective, he then discussed how best to understand the challenge to Australia in terms of defense self-reliance.

He added that Australians needed to make their own continent more of focus of attention in the strategic reset.

"There are both strategic and political reasons we need to make the continent a greater focus.

Second Line of Defense

The first and most obvious one, is that our continent is no longer secure. This is the big change for Australia from the Post-Cold War years. Though the likelihood of direct attack is very low, it can't be entirely dismissed. As such, we need a sense of how we could and would respond.

"Even putting scenarios of invasion aside, there is a possibility of serious strategic pressure being applied against us. Already it is possible for China to apply overflight and harassment efforts to parts of our continent as they do to Japan, Taiwan and South Korea on a regular basis.

"Then there are our alliance commitments which I argue should also drive more of a continental focus. Everyone knows ANZUS's famous Article 4, where the parties declare they will 'act to meet the common danger'.

"What is far less known is Article 2. To quote:

'In order more effectively to achieve the objective of this Treaty the Parties separately and jointly by means of continuous and effective self-help and mutual aid will maintain and develop their individual and collective capacity to resist armed attack.'

"Without the ability to resist armed attack individually, we are in breech of ANZUS. This is not just about the technicalities of the treaty. America under its current and previous President has demonstrated strong concerns about burden sharing and allies pulling their weight. Their views reflect an American public which feels taken for granted. One that has sacrificed there, so we may be safe here.

"Equally, there is a need in this new Asia to think about how best to use the continent to the mutual aid of ourselves and our allies. For most of the history of the alliance, the continent was the place we departed from. In the future, it may be the place we begin at. The foundation of a different kind of US presence in Asia, and a staging point for high-intensity operations.

"Finally, there is a domestic reason to re-focus on continental security. Though the Australian public remain supportive of the US alliance, the impact of President Trump is sapping support. Demonstrating that the alliance is foremost a means of protecting people's homes is a way to re-assure and strengthen the foundations of ANZUS, our defence posture and our call on taxpayer resources.

"We therefore have strategic, legal and political reasons to re-orient our attention at this point to thinking about the security of the continent."

He cautioned that this was hardly about fortress Australia or an inward isolationist approach to continental defense and security. But only by having a secure continent can Australia not only protect itself but provide for the kind of allied engagement which protects collective liberal democratic interests.

"It is a position which takes seriously the idea that we may be early into a half-century or more of strategic competition. This means knowing what we will fight to protect and how we can do so. And then being able to go forward from a secure continent. That is what a return to fundamentals means.

"To do otherwise, to keep focusing on what we can do at the furthest limits from our core interests, attempting merely to hold firm to the status quo is to risk our own version of a grey zone style crisis. A world where we are making commitments to our allies abroad that we can't be sure future government's and the Australian public will want to keep.

"Nor does this extended approach make sense in the face of our specific adversary on the field today. A strategy of simply trying to give '110%', year in and year out, by tired and debt-ridden Western nations,

finding ourselves always on the defence against a better resourced and fresher People's Republic of China is not a winning approach."

The return of geography in the defense of Australia is a key piece of the evolving strategic competition in the Pacific. Australian's need to rework how they operate their military across their continent but also shape new ways to facilitate strategic engagement by allies as well.

"We must return the discussion of geography to our strategic debates. Doing so quickly makes irrelevant the question of a 'choice' about the US or China. It also demonstrates the absurdity of a mid-sized nation wanting to exert global influence while its own island is increasingly at risk. Not because of who we are, but where we are, and the value of what we claim.

"We need to work out how we can use this unique platform of ours to give America a sustainable and enduring position to project power into Asia. How might new capabilities such as the F-35, in conjunction with partners such as Japan offer new means of cooperation.

"Beginning from a secure foundation on our northern shores that looks north to Asia and west into the Indian Ocean. What roles should Australia play in supporting and sustaining this very different picture of the ANZUS alliance?

"We need to work out how to exert the maximum strategic impact from our geography. Because it is quite possible that we will need to be reliant on ourselves much more often. Facing off against low-level political and strategic pressure from 21st century authoritarian powers, perhaps even a direct military threat. How can just 25 million people defend 10% of the world's surface? There are answers there, but we need to learn what our geography can tell us."

In effect, what Carr was reworking was the language to describe not just the Australian way ahead in dealing with its own defense, but a fundamental need for the United States and Australia's allies more generally to focus on the core capabilities necessary to deal with the long-term competition the 21stcentury authoritarian powers have put in place.

In other words, we are talking about a significant historical shift, not a simple adjustment to the approach followed by the liberal democracies operating globally against piecemeal threats. Rather, we were facing fundamental threats to our core values and way of life, and we better clearly focus on how best over the mid to long-term shape an effective way ahead.

"Defending ourselves is our task and our primary responsibility. We will build alliance cooperation on top of this, we will seek to use our geography to support and sustain a regional order that has been very valuable to us. But what we do alone is not the exception, but a fundamental part of a re-invigorated, and resilient approach."

Editor's Note: Dr. Carr's full presentation is found in Appendix I below.

Australian Defence Policy in Flux: The Perspective of Brendan Sargeant

The strategic shift from the land wars in the Middle East to the challenges of facing the 21st century authoritarian powers has recast the defense challenges facing the liberal democracies.

Direct defense has returned as the core challenge facing the European states, even while the EU is in crises and the question of how to defend Europe with the forces that exist is an open question.

Second Line of Defense

Australia has had growing impact on European defense through its deployment of integrated capabilities into the fight in the Middle East, and its growing relationships with a number of key states in Europe as well.

This means that any rethink by Australia has an impact beyond the Pacific back into Europe itself.

This certainly can be seen in Canada and the UK where a common frigate is being worked, one in which Canada and Australia are overwhelmingly the major players, and will certainly shape what that frigate ends up deploying in terms of its combat systems as well as other aspects.

The new build submarine in France is also about a dynamic interaction and reshaping between Australian and French industries with the French reintroducing emphasis on the Chinese challenge along with dealing with any reset of defense policy in Europe itself.

And as Australia considers how best to prepare for the crises facing it in the Pacific region, there is a growing recognition of the force evolution which they are working requires integration of their own force to be able to exercise sovereign options as well as close integration of that force evolution with the United States and Japan as the primary allies in the region.

In effect, the working relationship among the militaries of the liberal democracies have become the eco-skeleton for how those states can work together in practical terms during a crisis.

But what remains is the major question of how the diverse states of the "West" will work together diplomatically and politically in a crisis.

The strategic shift from the land wars to full spectrum crisis management is a significant one requiring major shifts in how states will operate independently and collectively.

At the recent Williams Foundation seminar dealing with the strategic shift, one of the most experienced Australian defense policy makers look at the nature of that shift in his presentation at the seminar.

Professor Brendan Sargeant provided his thoughts in his contribution entitled, "Australian Defence Policy in Flux,' and given that Australia is soon to face a major rewrite of its defense policy with a new government coming to power, the issues presented by Sargeant are hardly only of academic interest.

His presentation follows.

The topic – Australian Defence Policy in Flux – is a large topic, which can be approached from many different perspectives.

The approach I want to take is to discuss the three recent White Papers (2009, 2013 and 2016) and how they have embodied a response to changes in the world. I want to put forward some propositions about what they mean when looked at in the perspective of the last twenty years and the changes we have seen in the world, and what they might say about the future

The Nature of Defence Policy

But first some thoughts about policy. The defence policy challenge for Australia is relatively enduring, and the tensions that policymakers seek to deal with are stable over time. Some of these tensions, or perhaps a better description is the poles that shape policy choices, include:

Our strategic ambition, which is large, against the limits of our capacity.

We need to and want to be able to operate autonomously, particularly in our near region, but the alliance with United States exerts tremendous gravitational pull on policy and has an enormous shaping influence that flows into the force structure.

FIGURE 4 PROFESSOR BRENDAN SARGENT

Another tension is in how much power we want to create for ourselves against the limits of our size.

How much focus should we give to any region, as opposed to deployments and operations that are more distant.

Related to this is how much we want to invest for strike and deterrence against other capabilities that might have more immediate utility.

Most policy debates revolve around these and some other fundamental questions. If you consider defence policy over a long period of time, there is a great deal of continuity in the arguments and debates, and often these arguments, always resolved provisionally, express that resolution in differences of emphasis. Internal stakeholders tend to magnify difference for reasons of institutional and political imperative.

Yet, from the perspective of time and distance, I think it is fair to say that we are going through a period of major change in our strategic environment and that policy responses, as expressed in both official documents and decisions governments have made, including the allocation of resources, show that we are and have been for the last two decades in a period of uncertainty about the direction of defence policy and the nature of the choices before us.

The Strategic Order is Changing

I believe that there is now a broad consensus in the policy and academic community that we are going through a fundamental period of change in the world, and that the strategic order in which we have lived and prospered for the last 70 years is now in question and changing.

My view is that we are in a new world, but we don't yet understand what that world is. Another way of putting it, is that we are at the beginning of the birth of a new strategic order across the Indo Pacific. There is much debate about what this means, and no agreement about the future. And I don't think we're going to get clarity anytime soon, so we can expect to live with uncertainty for some time to come.

Second Line of Defense

The focus of much discussion is on China, because of the spectacular growth in the Chinese economy and the extraordinary changes we are seeing within that country. China's posture to the world has changed. At the centre has been the pursuit of the Belt and Road strategy, which is emerging as a geostrategic intervention in the global system, as well as a geo-economic initiative. Activities such as island building in the South China Sea, including the militarisation of the islands has called into question China's strategic goals and whether they are as benign as Chinese government statements suggest.

It is clear that neither China nor the US are now status quo powers. Both seek change in the strategic order and, in different ways, want to reset it. But we are also seeing extraordinary economic growth in other countries – India and the ASEAN countries, and Japan remains economically and militarily powerful. The United States also continues to be an economic powerhouse across the Indo Pacific.

These changes have been gathering pace, and what I have noticed is that the conversation in the last eighteen months has changed. Even if some discussion is about preservation of past patterns of policy and frameworks, and if the level of change has not yet entered the public political discourse in proportion to what is going on, I think there is broad agreement in academic and policy communities that we are in a new world.

As time passes, I think it is increasing apparent that we have been in a new world for some time.

Within institutions and government, the discussion on policy and strategy is usually focused on specific decisions and on budgets. So, to really understand a government's policy, one must not only to look at declaratory statements, such as white papers, but also the cumulative impact of decisions over time. I think it is now possible to discern a broad pattern over the last 20 years and to draw some preliminary conclusions, which I propose to do in remainder of this discussion. I want to do this through the lens of the three white papers I mentioned above.

The Strategic Challenge for Policy

My broad proposition is that the story of defence policy over the last two decades has been a slow coming to terms with the limits of our power. Reflecting on the major documents and decisions, I would argue that there is a thread of anxiety that pulls through all of them. This anxiety might be expressed in the question:

Are we capable of marshaling and deploying defence resources sufficient to deal with the challenges of the Indo Pacific strategic environment?

So, what do the White Papers say?

The Nature of White Papers

First, the word about white papers. Every white paper tells the story of this moment, even as it tries to set direction for the future. White papers are collective efforts, and even though there may be a single presiding author, they contain many voices and many ideas.

They try to impose a narrative on events, but events have a way of evading this.

They function as high level policy documents and are important for setting strategic direction for Defence as a whole, but they do not resolve every argument, nor do they provide definitive clarity on the many micro choices involved in developing and implementing Defence policies.

It is important to recognise that they are provisional documents, and to some extent they are out of date as soon as they are printed.

However, that said, they also represent part of a conversation over time. This conversation is about the nature of Australia's strategic environment, how it is changing, and how the risk that accrues as a result of this change might be mitigated. So, when reading white papers, it is important to see them within a longer continuum of thought and activity around defence policy and strategy, and understand that their significance will change as the future changes our understanding of the present.

2009 White Paper

In many ways the 2009 White Paper was a landmark document. Reading it now, one is struck by its ambitions and the multitude of policy directions that is laid down. Its ambition means that at some point it laboured to reconcile many of the tensions within it and of which are a feature of the Australian conversation about defence policy. It brings a refreshing focus to the near region, but it also places the alliance at the centre of defence and strategic policy.

There was some debate when it came out as to what it was saying about our strategic environment. Some commentators identified the paper as a document directed against China. It certainly can sustain this interpretation, though this is not necessarily how some of those who developed the document see it.

Its most important contribution was that it laid down the architecture and the program for a wholesale rebuild and renovation of the ADF.

At the time, we had absorbed the lessons of Timor and we had experienced the wars in Afghanistan and Iraq, and we wanted to develop a force structure that strengthened our combat capability, and mobility, and our ability to operate with our Alliance partner at the high end. The White Paper's most important achievement was to recognise that the world of 2030 – the world we needed Force 2030 for – was going to be very different to the world of 2009, and it recognised that the force structure and capability underpinning the ADF had to embody a step change. So, my reading is that the underlying strategy was to hedge against future uncertainty by building capability through a significant investment in the development of ADF capability. This idea has lasted, while many other elements of the White Paper can be disputed or have suffered the ravages of time and experience.

The problem with the 2009 White Paper was that it was developed just as a global financial crisis was being dealt with by the government, and subsequent years demonstrated that the policy aspirations embodied in the vision of the future force were not sustainable within the parameters of the government's fiscal policy.

The 2013 White Paper

The 2013 White Paper was developed by the government to try and close the gap between policy aspirations and budgetary reality. It did this by adjusting the level resources that might be devoted to developing the force structure, which meant in practical terms and parts of the investment program scheduled in the 2009 White Paper would slip. But importantly, it preserved the design of the force.

It was also more focused on our immediate regions as the area of priority for Australia in establishing force structure priorities. It was very much a document that sought to close the gap between policy aspiration and budget.

However, it did have one very important policy achievement, which was to express the idea of the Indo Pacific as a framework for thinking about our strategic environment and understanding how policy might respond to that environment. It was a first time that the idea of the Indo Pacific was expressed in an Australian defence document. There are, of course, many Indo Pacific's, but what the White Paper was trying to do this was return Australian strategic policy to a much older conception of our national interests, which was

to focus on the archipelago to our north. It argued that this was where our interests are most directly engaged. By implication, the most significant strategic relationship for Australia remained with Indonesia.

The other big idea was it Indo Pacific was a community of nations, and notwithstanding the economic growth of China, it was important to recognise that there were other major countries; an alternative's future might be the establishment of a sense of shared community of interest, rather than a world dominated by one power or bifurcated between two. In this respect, the White Paper's argument was that the single biggest strategic challenge for Australia was the establishment of a regional or Indo Pacific architecture that enabled countries to understand and respond effectively to the problems that would emerge in the future.

The 2016 White Paper

The 2016 White Paper was an important document because it restored the underlying funding framework that the 2009 White Paper envisaged but was never able to sustain. The underlying vision of the force that was evident in 2009 was reinvigorated in the 2016 White Paper and a funded investment program was established. This was an important achievement.

The 2016 White Paper also recognised that Defence was more than the ADF, but also included the broader Defence system. We saw a much more sophisticated recognition of the importance of enablers (what Nick Warner in a landmark speech when he was Secretary had called the broken backbone of Defence). It put renewed emphasis on defence industry, particularly with the recognition that industry is an element of capability.

At the heart of this White Paper was a recognition that we needed to rebuild the Australian Navy, so the shipbuilding agenda, which we are all now grappling with, was born in that document.

But it also had two other very interesting features. One was that it removed the prioritisation framework for the development of the force structure that had been evident in the 2013 and 2009 papers, and in preceding papers such as the one in 2000, 1994 and most importantly, the one in 1987. It was a significant break with the past. This is perhaps the most controversial element of the paper.

But perhaps the most interesting element of the 2016 document was that it gave enormous priority to the maintenance of the Rules Based Order, a theme that also occurs in the 2017 Foreign Policy White Paper. The 2016 Defence White Paper has many achievements, but its focus on the Rules Based Order is now starting to look a bit wistful.

Different Strategies for the Same Large Challenge

When we look at this conversation over time, we can see one common thread. We are trying to think through the strategic challenge of an Indo Pacific that is undergoing enormous change. We are seeing what I would describe as provisional response to a number of tectonic shifts – the emergence of China as a pre-eminent regional power and potentially a global power; and the emergence of thinking that suggests that though the United States may not leave the region (as some of the more apocalyptic analysis suggests), the terms of its engagement and therefore its alliance and partnership arrangements are likely to change. At minimum, allies and partners will be required to do more to secure their own defence.

In these white papers, we therefore have three different strategies responding to a single problem.

What they have in common is that they recognise the need for a larger, more capable ADF and supporting defence system. Capability building has been the golden thread that links the work of the last twenty years. But it has been capability building as a hedge against uncertainty.

I think that it's now time to ask the question whether building capability is sufficient as a defence policy response to the future.

The development of capability is important, perhaps the most important element of defence policy, but also important is understanding how they capabilities might need to be used in the future. How should we shape the force to respond to future crises? How we think about that question will in part determine how we want to evolve capabilities, and how powerful and sustainable we will want the force to be. Have we thought sufficiently about how we might need to use defence capability in the future, and are we building for that day or days?

When I look at the three white papers, and I stand back and reflect on what they are saying, my sense is that they are are not sure (which means that we are not sure) of how the world is going to evolve or of Australia's place in it. We manage this risk by building defence capability that allows us to hedge against the future while we wait for the future to tell us what it is going to be. The significant changes we have seen in our strategic environment in the last few years suggests that this is an insufficient response.

The Defence Policy Challenge for the Future

I would frame the defence policy challenge for the future as thus:

How do we maximise our national power through the ADF? Or, how do we ensure that the ADF can support our capacity as a country to sustain our strategic space?

This question is not primarily of how much capability we might have in the existing and prospective force structure. It is also a question of the direction in which we want to develop that latent capability on the basis of how we might want or need to use it in the future. To be blunt: for example, how are we going to use the joint strike fighter and Growler strategically to maximise our strategic space? How will we use our new maritime capabilities to secure and advance our strategic position in an increasingly crowded Indo Pacific?

Defence policy will continue to be in flux. We need a larger conversation not only about how the world might change and how the strategic order might evolve, but the role of Defence in helping Australia manage its response to a changing strategic order, and of the circumstances in which we might want to use the force in the future.

Some Final Observations

I am currently working my way through the official history of the Internet Operation in East Timor as part of the process of declassifying the book before it is published. It has led me to reflect on many things. There are some big lessons.

One is that we don't know what crises might emerge in the future, and responding to them always brings major risk, both to capability and to operational capacity.

The second is that we need to be prepared to lead when there is a crisis. Leadership means understanding not only the capability of the force, but also how it might be used strategically to shape the broader environment within which the crisis occurs and is resolved through operational interventions.

Additional Observations About the Way Ahead

In comments on the Sargeant presentation, one observer added the following:

I see the 1994 Defence White Paper and the 'here and now' realities of our strategic environment in 2019 as two book ends of a 25 year story. This 25 year story bears out your framework. From 1994 to 2009 the Second Line of Defense

strategic assessments were sound and the capability plans were sound, but until 2009 we didn't really contemplate using the ADF or other Defence capabilities in a major contingency for most of this period; and that's not to down-play our role in the Middle East and Central Asia since the early 2000s.
The 2009 DWP didn't anticipate the pace of Chinese military modernisation. Did anyone?

We now need to contemplate force being against us and Australia using serious force in response. That's your key point I believe.

Looking back, the 1994 DWP, 1997 review of Australia's Strategic Policy and the 2000 DWP were in my view quite strong on capability. The chapter on capability in the 1994 DWP continues the narrative that was developed in the Dibb Review and 1987 DWP. It's still respectable 25 years later as an overview of the essentials of the force structure; the debate now is around self-protection and lethality of our systems – maritime (air and sea), undersea, on land. And now I'm space and cyberspace.

The Defence Capability Plan that was developed in support of the 2000 DWP was the intellectual and actual start point for the 2008 FSR that supported the 2009 DWP, notwithstanding the iterations the DCP went through in the mid-2000s.

The 1994 DWP says 'Our strategic circumstances at present are not threatening, but they are likely to become more demanding over the next fifteen years.'

Interestingly it says 'Australia's strategic stance is, in the broadest possible sense, defensive. We will not use armed force except to defend our national interests, and we do not envisage resorting to armed force other than in response to the threat of force by others. We have no disputes with other countries which might be expected to give rise to the use of force, and no reason to expect that disputes of that sort will develop.'

Those words were written 25 years ago. In the minds of the writers (good FDA types), there was the sense that the substantial threat of force against us or our interests was a remote prospect in the 15-year horizon. Compare that sense with what the next 25 years may look like.

The 1994 DWP also says 'We recognise that at some time in the future armed force could be used against us and that we need to be prepared to meet it.' Again though the sense us that this contingency is a distant prospect.

The 1997 review 'Australia's Strategic Policy' is worth a look. It is good on North Asian evolving dynamics. Ínter alía it says 'China is already the most important factor for change in the regional strategic environment.' It adds further on that 'This expansion of China's military capabilities does not constitute a threat to Australia or to the security of the region as a whole.'

The 2000 DWP was strong on capability. It assumed globalisation and continued US primacy as the two key trends that would shape our strategic environment. In 2019 we would have different words about both.

The 2009 DWP was the first to seriously contemplate upping our strategic weight, especially through the force structure. It also contemplated serious use of force against us.

The 2008 FSR was the start point for the work done on the FSR in the 2016 DWP. In effect the 2016 FSR built on the 2008 foundations but sought to redouble efforts to fund enabling capabilities.

Government did not have the appetite for a force structure review in 2013 but as you say the utility of that DWP was around the Indo-Pacific construct.

We have spent 2 decades iteratively building a force to meet our broad capability needs, but apart from the well-established and successful practice of niche contributions to coalition operations we have not really had the need for a serious discussion about how we might use those capabilities in a higher-end, contested conflict in the Indo-Pacific.

Editor's Note: The strategic shift started for the liberal democracies with the 2014 Russian actions.

In a recent interview with the former head of the Australian Defence Force, who took over as chief of the ADF, during this crisis, the beginning of the strategic shift was highlighted.

In effect, the events of 2014 have proven to be the launch point for the next phase of ADF development and enhanced recognition of its role in the defense of Australian sovereignty.

Air Marshal (Retired) Mark Binsken looked back at 2014 and the beginning of the reset.

"The government wanted to make national statement about the emerging threats and our ability, as a Nation, to respond.

"The ADF was at the forefront of that strategy.

"In addition, we had significant regional humanitarian operations to conduct in that timeframe as well.

"The ADF showed a lot of agility in being able to conduct operations globally, but we always did this in a whole of government approach in partnership with Foreign Affairs and Trade, the Australian intelligence organizations and the Australian Federal Police.

https://sldinfo.com/2019/04/1914-and-2014-two-key-strategic-turning-points/

SHAPING AN ECO-SYSTEM FOR A MORE SUSTAINABLE AUSTRALIAN DEFENCE FORCE

Military Logistics: The Bedrock or Quick Sand of Sustained Operations in a Crisis

The ADF shaped a joint force which was able to self-deploy to the Middle East. With the RAAF's new force package of advanced tanker, the C-17 and Wedgetail, the ADF experienced a joint capability which it had not had before, one which was featured in Middle East operations.

This self-deployment capability was sustained in part by the presence of allied and commercial logistics structures in the region to which it deployed.

But for a regional crisis, facing an adversary with tools to disrupt the base, IT systems, and parts supply chain, how will logistics be sustained through the duration of a crisis?

In Thomas Kane's well-known study of military logistics, the author coined the phrase, "logistical capabilities are the arbiter of opportunity." Armies which have secured reliable resources of supply have a great advantage in determining the time and manner in which engagements take place. Often, they can fight in ways their opponents cannot.

One of the key speakers at the Williams Foundation Seminar on April 11, 2019, was Lt. Col. Beaumont. Beaumont is an army logistician but one with a focus on joint logistics support.
Second Line of Defense

According to Beaumont: "Logistics will give us options and the flexibility to respond in a crisis as well as defining key constraints on freedom of action."

In a capitalist society, of course, much that feeds a logistics machine in times of crisis or war is outside of the control of the military and is really about the capability to mobilize resources from the private sector in a timely and effective manner.

In effect, logistics is about taking resources out of the economy and making them available for the battlefield.

According to Beaumont, the main focus of logistics in the recent past has been tactical, but as we face a peer-to-peer environment it is important to take a more strategic perspective.

But the shift facing the militaries of the liberal democracies, can be described as a strategic shift from operating on the basis of "assumption logistics" ordered and delivered by a global just in time supply chain to shaping and operating from an "assured logistics reservoir or flow" in a crisis.

Beaumont highlighted that one cannot assume even if one is operating within a coalition that the coalition partners will be able to sustain you in a crisis.

"A key factor is what the level of mobilization has been achieved before a crisis to sustain a force. There is a long lead time to turn on the spigots from industry, and that is not just in Australia."

He argued as well that different types of systems being operated across a coalition makes the common sustainment challenges that much more difficult.

He noted that "even in the Middle East, each of the nations that operated there, by and large, provided for their own logistical support and used their own national supply lines.

"And with such an approach, the lift assets in a crisis will be rapidly overwhelmed by demand.

"We saw that in 2003, as we all head to the Gulf, and we effectively dried up lift and tanker forces available for movement of forces."

He underscored the importance from both a national and coalition perspective of Australia enhancing its sovereign capabilities and options with regard to supplies and logistical support.

"With a sovereign approach, you can become a contributor rather than primarily focusing on how to draw upon a global supply network which will be significantly constrained in a crisis in any case."

What follows is Lt. Col. Beaumont's presentation at the Williams Foundation Seminar

Discussions about self-reliance, like many other conversations among defence planners, rarely begin with a conversation on supply and support.

Many of these conversations can end with it.

The ability of a military to conduct operations independent of another's aid is intrinsically linked to the capacity to move, supply and support that force

hese three factors can be a powerful influence on strategy and strategic policy formulation as they can set significant limits in what the ADF can practically achieve independent of others nor not.

Alternatively, and far less desirably, these three factors can be overlooked and the time at which those limits are confirmed will be when the ADF – if not Australia – can least afford it.

If we are to make a reasonable attempt at confirming how the ADF might sustain self-reliance, let alone consider a scenario where it will face a significant threat in 'high-intensity' conflict, a good portion of the discussion will have to be centred on the dry, seemingly bureaucratic and technically dense topic of sustaining military forces.

Today I will talk on how we might sustain self-reliance.

More importantly, I would like to challenge some of the assumptions we make about logistics and discuss some of the problems we are reluctant to truly address.

As a logistician looking outward into a world where strategic competition is particularly evident, I get nervous. As a research student studying the ADF's approach to its logistics readiness prior to operations, I get nervous. Perhaps, after this presentation, you might feel a little nervous too!

The topic of logistics might seem to be matter for military commanders, being typically defined as the 'art and science of maintaining and moving forces' or variations thereof. As nice as that may sound to the military-minded,

I'd like to offer a paraphrased definition coined from Logistics in the national defense, one of a few books on logistics and strategy:

Logistics is a system of activities, capabilities and processes that connect the national economy to the battlefield; the outcome of this process is the establishment of a 'well' from which the force draws its combat potential or actual firepower.

Logistics is the connective tissue between the military and the national economy, and is a 'verb' as much as it is a 'noun'. The military can influence economics through logistics demand and requirements, just as the economy shapes capability development and provides the resources that are shaped through the logistics process into combat potential or actual firepower.

A true assessment of self-reliance therefore relies upon our ability to bind 'the economic' and 'the military' into the same argument.

I proffer that the current debate on the logistics aspects to Australian military self-reliance are hidden in the natural link between it and national defence economics, and are currently coached in monumental terms and framed by enormous problems. National fuel supplies, prioritised sovereign defence industries and national manufacturing capacity, economic resilience in an era of globalisation.

These contemporary, popularised, topics certainly give us pause. They are major national security concerns that are bound to influence our role in the world in a period of major power strategic competition. They have been seemingly unresolvable problems to Australian governments and strategists for decades, beyond the period in which self-reliance was ensconced in the strategic doctrine of the 1970's, 80's and 90's, and to the interwar period where lessons from the First World War reminded them to be prepared for national mobilisation.

They are truly national issues, and will never be solved by Defence, or any other arm of Government, independently.

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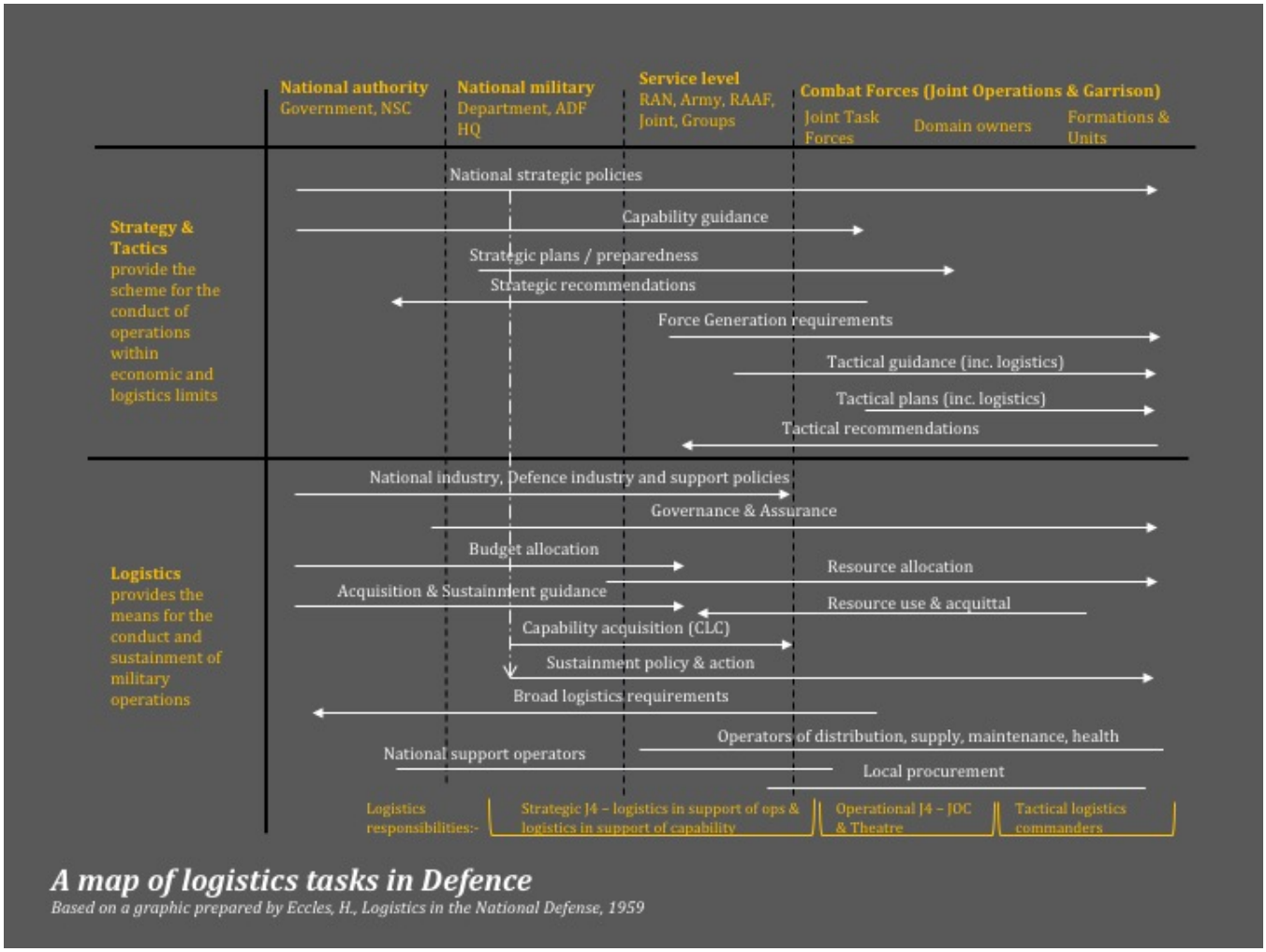

FIGURE 5 MAP OF LOGISTICS TASK IN DEFENCE

Nonetheless, niggling doubts and prudence lead us to consider self-reliance yet again.

We are questioning, here, what Australian can reasonably do with its military forces irrespective of whether we are in a coalition or not.

Australia's military history makes these concerns completely justifiable. Twenty years ago this year we assumed the mantle of coalition leadership in an intervention in East Timor, and operation which exposed the limits of the ADF of the time. We thought we could do it, but – as Cosgrove put it – it was a 'close run thing.'

But as the Second World War proved, even in a coalition conflict there will be times the ADF will need to 'go it alone' and sustain itself as our allies resources are drawn elsewhere.

Who's to say these scenarios will be unique?

The ADF, its partners in academic, industry and government, are at a point where the discussion has to get to the specifics of the problem.

We have to question ourselves as to how our impressive new capabilities, from the RAAF's F-35 to the Army's Combat Reconnaissance Vehicle, can endure on the battlefield of the future when our friends are far away.

The answer can't afford to be as simplistic as 'thirty days of supply' or 'purchase from the global market.' We have to delve into the resilience of the national support base, globalised logistics arrangements and our relationships with coalition partners.

I hope that today's presentation gives you an insight as to where we might want to look, and perhaps suggest at assumptions we may wish to challenge as a nation and military.

FIGURE 6 LT. COL. BEAUMONT

Why Logistics Matters Now

Before we go on, I'm going to step back and offer my thoughts as to why logistics matters right now.

With increasing agreement that Australia is party to increased strategic competition, interest in how we might sustain self-reliance is also gaining interest. The line between peace and war has always been blurred, and now Western militaries are starting to act.

In the recently released Joint Concept for Integrated Campaigning, the US Joint Chiefs of Staff argue that the 'binary conception' of peace and war is now obsolete, and a 'competition continuum' now applies.

The Australian Army would agree if 'Accelerated Warfare', an exploratory concept which considers a devolving strategic situation, is any indication. Now these same Western militaries recognise they must act in times other than in armed conflict, offsetting the strengths of other nations or groups who have a very different interpretation of what defines war.

We are witnessing, in this strategic competition, actions of a logistics tone.

The logistics systems which sustain nations and their military forces have always had a 'deadly life'.

The architecture of global supply chains, siphoning national wealth through geographic areas of immense strategic interest to nations and others, are natural points of strategic interest. 'Logistics cities', major trade Second Line of Defense

hubs and economic routes attract the interest of Governments and have become of immense strategic relevance.

All arms of Government can be seen in action, using diplomatic, informational, military and economic means to shape how both commercial and military logistics might be applied to their favour.

Supply chain security continues to occupy our minds as we intermingle our desire for national prosperity through global trade with our desire to prevent the loss of native capacity to build military capability, mobilise and sustain operations.

In this environment it will take little effort for nations to exert influence, or strangle the capacity of a nation to respond to threats militarily.

War won't always begin when the first shots are fired.

Freedom of action and the ability to respond is clearly being tested.

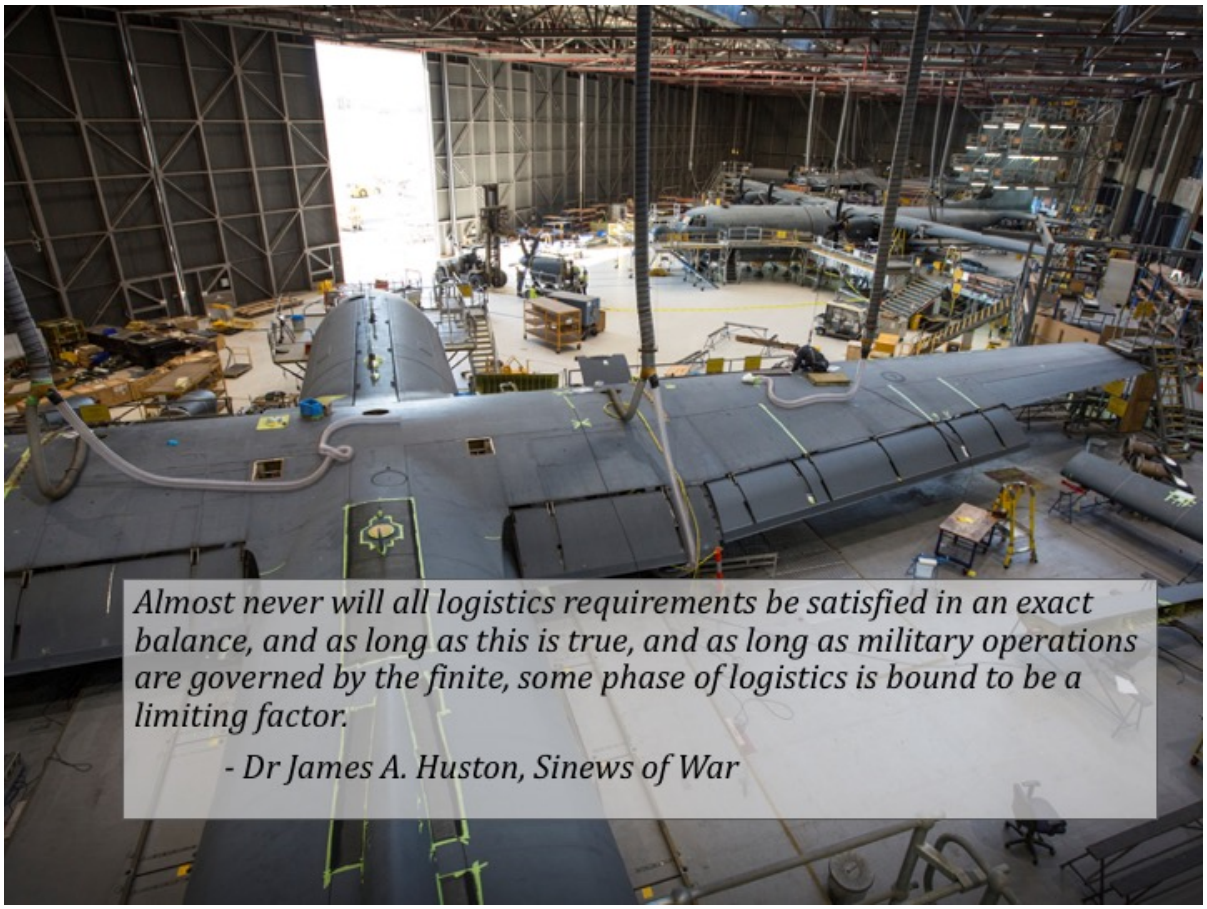

FIGURE 7 MANAGING THE LOGISTICS "BET"

A recent report by the US Defense Science Bureau written for senior leadership highlights the impacts of strategic competition on the US military's capacity to protect its strategic interests independently. It examined the threat to US interests from Russia and China as they applied to its capacity to project power.

As these reports tend to go, its conclusions weren't pretty.

Firstly, it recommended conducting realistic wargames and exercises to reflect threats and the capability of the 'logistics enterprise' to respond.

Secondly, it advocated to 'protect, modernise and leverage' the mobility 'triad' of 'surface, air and prepositioning'.

Thirdly, it articulated the need to protect logistics data from espionage and manipulation, especially information that was held by national commercial partners.

Finally, it recommended that the US must increase its funding to logistics programs to make anticipated future joint operating concepts viable. Those are significant capability concerns that are equally applicable to the ADF.

They are concerns we could invest our way out of, subject to the scale of our military, and would go a long way to assuring logistics support to our own operations.

Force posture or capability development are important in strategic competition, but the way in which nations mobilise logistics support is equally important. Those nations that aspire to self-reliance naturally invest in policies, plans and national defence industries. Clearly, the degree to which the logistics system continually takes resources from the economy to create military capability varies with political desire and in a way, hopefully, that is commensurate to the threat. In peace this system is generally stable and allow for predictable results.

When uncertainty becomes prevalent, or a crisis begins, this logistics system must be altered to direct economic and logistics resources to where they are most required.

Creating surety in logistics is incredibly important.

And so, in recent years, we've seen Australian defence industry policy renewed alongside strategic policy, we've seen the Services develop close and valuable ties with industry partners, and we've seen a commitment to sovereign defence industries. Only time will tell whether Australia has invested enough attention to mobilisation to prepare the nation for a time of significant crisis. I suspect we haven't considered it enough.

We might be beginning a conversation on the military link to industry, but it's pretty clear that other nations are in an advanced state.

For example, Western Governments – especially the US – are highly concerned with the emerging Chinese policy of 'civil-military fusion'. This approach is seeing tighter integration between industry and the PLA, thereby improving the seeping of 'dual-use' technologies into military practice.

With industry is moving to the centre of geopolitics, we're starting to see whole-of-nation efforts shaping how militaries are formed and act operationally.

That this Chinese political philosophy makes the US nervous shows how significant economics and logistics are in strategic competition.

Managed properly, the logistics process can translate what industry provides into tactical combat potential and reflects a national capacity to compete, deter, and to demonstrate an ability to militarily respond.

Therefore, the presence of robust industry policy, the organisation of strategic logistics capability to leverage these arrangements, the appointment of commanders to oversee sustainment and the presence of mobilisation plans and doctrine, are good indicators of future military success.

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These are not areas we typically look at when we consider how belligerents may compete, but they can be discriminating factors in any strategic competition.

Other examples of logistics influences on strategic competition are before us if we choose to look. One nation might overcome force projection challenges by building an island where there was none before, while another will procure air mobility platforms or ships for afloat support.

Others will examine force posture from first principles, while another will establish arrangements and agreements that might support a friendly force based in a partner nation at short notice.

Militaries might be restructured so that the acquisition and sustainment of capability improves preparedness, or eventual operational performance, more effectively. Just as there will be an unending competition in the development offensive and defensive capabilities between nations, so too will there be unending shifts in the way military forces will offset one another through logistic means.

At the height of non-armed competition, these changes in logistics systems will manifest in mobilisation.

Logistics has long been regarded as a crucial component of military capability, and the supply and support given to armed forces a major constituent of operational success. Logistics constraints and strengths can shape strategy, determine the form and means of operations, and if given nothing more than a passing glance by military commanders and civilian planners, will prevent combat forces from ever achieving their full potential in the air, and on the sea and land.

As we seek to answer the question, 'what can we achieve on our own?', a really difficult question to answer, solutions to our logistics problems and concerns must be front and centre. A suborned view of logistics in this discussion about self-reliance is way out of step with the strategic reality facing the ADF.

In engaging with this reality we might see that logistics is, in fact, a strategic capability in its own right.

Logistics in the ADF – How Might We make Ourselves More Self-reliant?

How does the ADF employ its strategic logistics capability to create a strategic advantage, and to improve its ability to operate without the intervention of coalition partners?

Firstly, we must recognise that it is one thing to have the weapons of war on hand; if those capabilities are to have any use whatsoever, they must be complemented by the logistics resources necessary that they be used at their desired potential.

An investment in logistics is an investment in combat power. At a simplistic level many of our weapons, ammunition and components are acquired from other nations, or as we see with major capital programs, produced with others. Without these supplies, the technology at the ADF's disposal is fundamentally worthless.

We complement our forces – in all domains – with discrete logistics capabilities on offer from partners that we cannot generate independently. Even in those times where the mantle of coalition leadership has fallen upon the ADF's shoulders, as we saw with regional peacemaking and keeping operations of the last twenty years, the ADF has been supported from other quarters.

Secondly, the ADF's engagement with industry must reflect the needs of higher states of readiness and surety of support.

It is incredibly difficult to determine how self-reliant the ADF might be when the present practice of global production and supply masks supply chain risks, and while Australia lacks the levers or market power to

directly intervene in global production. Reliability is in question; this is not a fault of industry, but a consequence of the complex, decentralised, industry environment that works well in peacetime.

The ADF must emphasis reliability in its logistics – to deliver 'assured logistics' – for wont of a better term. It must also encourage industry to be ready to match short-notice, strategic, responses. It may be that in a time of crisis traditional boundaries such as intellectual property rights will need to be challenged, industry capacity seconded to defence interests, and projects redirected in new directions at very short notice.

At the very least ADF and industry should discuss how industry 'scales' in parallel with any expansion of the fielded force.

Thirdly, the ADF should leverage existing command arrangements to better coordinate logistics across the organisation.

It's impossible to talk about coordinating Defence logistics activities without commenting on the nature of strategic logistics control in the Defence organisation.

Because logistics problems are naturally large, the ways in which concerns on self-reliance will be addressed will invariably be pan-organisational in nature. Commander Joint Logistics Command might be the CDF's 'strategic J4' or key logistics commander, but he or she partners with the Capability, Acquisition and Sustainment Group, Estate and Infrastructure Group, the Services and others within what's called the 'Defence Logistics Enterprise'.

Each organisation naturally has a different perspective as to what 'self-reliance' means, and there is always a risk that Defence will have difficulty identifying where its logistics risks and opportunities truly lie in this context. Quite clearly the analysis of what the ADF's 'logistics limits' are, and what national resources might be needed, requires a coherent effort with solutions achieved through mutually supporting activities conducted across the organisation.

This may mean we reinvigorate the idea of 'national support'as a collective process in which industry and the military can work together to support operations; where national industry support to military operations is included at a conceptual level.

Fourthly, the ADF must look to address noteworthy operational capability gaps.

The strategic level challenges to self-reliance might fundamentally shape whether the ADF will perform in the way intended.

What about the condition of the forces in the operational area?

The most significant operational-level challenge to self-reliance, I argue, is with respect to strategic mobility. The ADF regularly seeks operational-level support in terms of intelligence and a wide range of capabilities that a military of our size simply could not realistically produce.

Perhaps there will be a time in which very long-distance fires will overcome the geography between us and an adversary, but until they do to a level that satisfies the desired military outcome strategic mobility capabilities will be continue to be critical to anything the ADF does.

Our strategic mobility will be critical to achieving a persistent response (whether that be on land or at sea) to an offshore threat.

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Most of our partners declare their own paucity in strategic mobility capacity which suggests that even if our future conflicts are shared, we might still need to invest heavily in order to meet our own requirements.

On top of the mobility capabilities themselves, the aircraft and the ships and the contracted support we can muster from the nation, we cannot forget the 'small' enablers that support a deployed force.

In our recent campaigns in the Middle-east, we have been heavily dependent upon our coalition partners for the subsistence of our forces.

There is a real risk that our operational habits may have created false expectations of the logistics risk resident within the ADF, especially when it comes to conducting operations without coalition support.

As the Services look to their future force structure, it will serve them well to scrutinise not only those capabilities essential for basic standards of life, but the wide spread of logistics capabilities which are essential complements to their major platforms.

These include over-the-shore logistics capabilities for amphibious operations, expeditionary base capabilities as well those elements of the force that receive, integrate and onforward soldiers, sailors and airmen and women into the operational area.

With the newly formed Joint Capabilities Group, the ADF has a significant opportunity to comprehensively address these operational challenges to self-reliance.

Logistics and a Way Forward

You don't have to deeply analyse defence logistics to understand that self-reliance is underpinned by the ADF's – if not the nations – capacity to sustain and support its operations. The comments here are certainly not revelatory, nor are the allusions to the limits of ADF's capability particularly surprising.

For the ADF to be effective in high-intensity conflict there is still a way to go yet, irrespective of whether it goes to way within a coalition or not.

There is every chance that even if the ADF does deploy as part of a coalition, it will still be necessary for it to have a capacity to support itself.

It is understandably important that we have a conversation about the limits to self-reliance in the current time of peace and think deeply about establishing the policy infrastructure and organisational arrangements that will enable us to make good judgements on what the ADF can or can't do alone. Without doing so we risk logistics capability being revealed as a constraint on ADF operations, not a source of opportunity and the well from which the joint force draws its strength to fight.

If we are all serious about self-reliance, we must be serious and frank about the logistics limits of the armed forces, and the industry capacity of the nation. I've made some suggestions in this brief talk.

However, let's continue the discussion by challenging some of the assumptions that we hold about logistics; that a coalition will underwrite our logistics operations, that the global market – designed for commerce not war – can offer us the surety of support we require, that we will have access to strategic mobility forces that even our allies believe they are insufficient in.

No matter what type of war, there will be some things we must re-learn to do on our own. I am sure we can all here challenge ourselves and our beliefs – whether we are confident in these beliefs in the first place.

If we do not, it is inevitable that we will compromise the plans and policies we create, if not the logistics process more broadly.

Moreover, any neglect prevents us from minimising the ADF's possible weakness with sources of strength or comparative advantage.

Present day convenience will likely cost the future ADF dearly. In fact, we may find that it is better that Australia has an ADF that can sustain, and therefore operate, some capabilities incredibly well at short notice rather than aspiring to a military that spreads its logistics resources across areas where the prospects of success are much lower.

Whatever we do choose to do, it will be important to bring defence industry alongside the ADF as the partnership between the two truly determines what is practical in any war, and not just one in which 'self-reliance' is on the cards.

Force Sustainability Through A Crisis: An RAAF Perspective

A key question facing the US and the allies in confronting the kinds of crises which they will confront with peer competitors in ensuring that their forces are more sustainability and more robust.

Two key challenges need to be faced.

The first is relying largely on the commercial approach to global supply chain logistics. In this world, just in time is the goal; not enough to engage and prevail in a crisis.

The second is having taut stocks of supplies. The buying practices of the liberal democracies when it comes to the military is to have taut supply chains, and in so doing having very inadequate stocks of parts when a crisis comes.

Efficiency in parts supplies for a slow mo conflict is hardly appropriate for a crisis in which one has an adversary which is both targeting the logistics systems of the US and allied militaries and seeking to disrupt.

Taut supply will come down to little or no supply.

During my visit to Australia to work with The Williams Foundation, I had a chance to engage in a discussion with three RAAF leaders about the challenge of enhanced sustainability for the force. The roundtable discussion involved head of the JSF Division Air Vice Marshal Leigh Gordon, DGSP-AF Air Commodore Stephen Edgeley and DGLOG-AF Air Commodore Martin Smith.

The RAAF has spearheaded significant modernization of its force and has provided a significant input into overall ADF force transformation. The result of this effort is clearly a more integrated force and one able to provide for integrated force packages which can be tailored to a particular mission.

But without proper sustainability the effects which can be achieved by this force will be significantly attenuated in a crisis.

This means that Australia needs a focus on how to sustain the force through a crisis period, but with an approach which is realistic in terms both of resource commitments and the infrastructure in Australia.

The concern was defined by one participant as follows:

"You don't want people to be able to easily coerce you by strangling obvious methods of resupply.

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"You don't want to hand an easy win to anybody by providing them the opportunity to coerce you simply by cutting off resupply.

"A review of resilience inside the ADF is not about sustained high end war fighting,

"It is simpler than that.

"In a competitive environment, an adversary is going to look for ways to coerce you, and the most obvious way to coerce you is to affect those things that limit your ability to be resilient.

"This means that we need to look carefully at those elements of our sustainment pipelines that can be most easily coerced and correct those shortfalls."

Building from this approach, Australia needs to build buffer resupply capabilities in=country to sustain the force in a crisis.

The buffer concept is a focus on critical supplies necessary to sustain the force through a crisis period.

And is designed to take off the table coercion options associated with supply chain inputs to sustainability from outside the continent.

This is clearly not about building fortress Australia but about strengthening Australia's role in the region and to meet its roles within the context of its changing alliances.

For Australia, its role is expanding within the region and within the alliance; and the reset of the relationship with the United States is best understood within that context.

To do so will require increased investments in capabilities for enhanced Australian self-reliance.

The Shift from the Middle Eastern Mindset

Another participant highlighted the strategic shift from the experience of the Middle Eastern mindset to a regional one.

"We have been focused on efficiency more than effectiveness.

"Many of the aspects of our logistics enterprise have been efficiency driven, drawing on allies and global supply chains, to operate efficiently in the Middle East.

"Now the focus needs to be more on effectiveness in a regional contingency and the durability of operation."

"We are turning a corner.

"We are focused on logistics and its role in survivability and durability of the force."

The Plan Jericho initiative was cited as providing a focal point on the re-shaping of logistics and finding ways for effectiveness to leverage efficiency, but to enhance force survivability overall.

"The focus of Plan Jericho in this regard to integrating logistics into the battlespace.

'We cannot do this by ourselves but we see this as part of our alliance anchoring role within the Alliance."

Put in other terms, as the Aussies have generated significant allied interest in force integration through their example, perhaps they can do so as they reform the sustainability part of force integration, one designed to operate through a crisis.

Energy security is clearly a key element of the effort.

"If you're going from fuel holdings, good enough for a raise, train and sustain force to having fuel holdings that will survive a crisis and provide a buffer, that clearly is turning the page and creating a new approach to sustainable logistics."

And this will mean as well when one comes to IT and C2 systems, that working with commercial providers is fine, as long as the military works with those focusing on enhanced security considerations.

As one participant put it: "I'm fine with the idea of a commercial service provider, but let us work with the right one from a security point of view."

The Case of the F-35

We then discussed the F-35 in this broader sustainability context.

One participant proffered his assessment of how Australia is addressing the F-35 and sustainability issues in the regional context.

"The global support system for the F-35 is a work in progress and much of the evolution is positive.

"We look to our role in the region and the participation of our firms in the program as a key part of working the sustainability piece.

"For example, we have established an engine repair facility in Australia and the first engine going through the facility is not Australian; it is one from a regional partner.

"This means we do not have to go back to the U.S. for this type of repair.

"We have developed common maintenance standards throughout the program which can allow for repairs to be done globally.

"I expect we will get to a point where we can do cross-aircraft maintenance across the partners.

"We're certainly having to challenge some sacred cows to do that but I think it is important and can be done.

"We could not afford an F-35 without a partnership.

"I don't think any of the partners and operators could afford the platform in isolation.

"We have to be part of an efficient and effective network that allows us to make the best decisions based on fleet wide performance data.

"The maintenance approach is evolving and will be a function of what partners and the US services negotiate and implement.

"This will require compromise by the US as well as the partners, but our goal is very clear – we need to maintain and sustain the air system through a crisis."

In this area as in the maritime area, where a UK-Australian-Canadian partnership at play.

A software reprogramming laboratory to support F-35 aircraft from Australia, Canada (should Canada eventually purchase the F-35) and the UK is being stood up.

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Known as the ACURL (Australia, Canada, UK Reprogramming Laboratory), the facility is adjacent to a similar USRL (for the US Air Force, Navy and Marine Corps) and NIRL (for Norway and Italy).

A further reprogramming laboratory will support the remaining partner nations and FMS customers.

More broadly, the RAAF is looking at regional partners, including the U.S. services, to ensure capabilities to plus up parts in a crisis as well, with common aircraft like the C-17 operating in the region.

Reworking the Relationship with Industry

The sustainability focus is seeing as well significant change in the working relationship between industry and the Air Force with regard to maintenance.

There is an evolving blended workforce approach designed to enhance availability of aircraft and to provide for a more effective and efficient process of maintaining aircraft as well.

The Aussies have clearly moved beyond a classic depot system to shape a more agile approach to providing for available aircraft.

According to one participant: "The focus is upon an enterprise approach and determining where the choke points are to delivering more aircraft for operations.

"This means that industry is a key part of the solution rather than just a supplier to the resolution."

In short, Australia can build a counter-pressure strategy where sustainability is a weapon system.

The operations of the past decade where the RAAF could operate globally with an integrated air combat package required global logistical support, Such support has been clearly understood as a key enabler.

But in a regional crisis it is much more than that.

Now going forward that enabler needs to be transformed into a pillar of operational sovereignty.

Such a capability underwrites durable operations in a crisis.

Far from the Sanctuaries: Sustaining a Fifth Generation Fight in the Indo-Pacific

Donna- Cain-Riva. Director of Future Logistics Capability for the Royal Australian Air Force, provided an overview on key capabilities necessary to sustain the force for anticipated regional crises.

Currently, she is working within the RAAF, but has been working in a variety of logistics positions in the ADF since 2001, and the range of experience makes a great deal of sense given the focus within the RAAF on providing a joint capability for the ADF overall.

She started with the crucial point that increasingly RAAF bases within Australia and allied support bases from the standpoint of the RAAF in the Indo-Pacific region will not be sanctuaries. The assumption is that the kinds of adversaries Australia and its allies would face would have "the capability to reach out and touch both physically and virtually."

This would be true not just of bases but of the "national supply base" as well.

he characterized the legacy approach as the "Middle East" mindset, one in which one could operate from sanctuaries to supply the force. She argued that we needed to rethink our approaches and to shape a new paradigm.

Donna- Cain-Riva underscored that this was not just a challenge for Australia but for an overall ability to ensure "collective self-reliance as well." She made it very clear throughout her presentation that in her view the kind of rethink and redesign which Australia was undergoing needed to be part of a broader effort within the alliance in the Pacific.

"As we introduce fifth generation capabilities, we have an opportunity to rethink how we can enhance and redefine how we sustain sovereign capabilities through deep and enduring alliance and regional relationships."

This requires an integrated strategy for Australia and its allies and partners for sustainment and support.

This would be one in which "we identify priority capabilities that Australia must sustain or must sustain or contribute to in order to give use the reach, flexibility and the resilience to operate independently or as part of a combined operation in a high-end fight."

Where do we start?

"We need to move beyond our current Middle Eastern logistics mindset."

"If we are honest with ourselves, the threats were asymmetric and we operated far from our domestic basses. What took place in the Middle East was a sustained buildup of logistics support structures in the Middle East prior to operations. These hubs became part of a network that could be called upon to support a range of operations and were underwritten by significant commercial and host nation support.

FIGURE 8 DONNA CAIN-RIVA SPEAKING AT THE WILLIAMS FOUNDATION SEMIANR, APRIL 11, 2019

Donna- Cain-Riva underscored that by and large the operating bases were not under direct threat and the global supply chain was free to flow goods into the hubs.

"The ADF could distribute support uncontested throughout the theater of operations."

The ADF has drawn upon commercial supplier as well as major allies to make available key supplies for operations.

"Generally speaking, demand did not outstrip supply."

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She also emphasized that the IT systems underwriting the flow of logistical support was not contested and limited encryption could be used to support operations.

In short, "operations in the Middle East over the past decade have been supported by traditional global supply chain arrangements. We were not self-reliant in the Middle East; but this was not demanded of us."

What changes as we look to the future in the Indo-Pacific?

She highlighted that adversaries will, as part of the conflict, ramp up seek to deny Australia and its allies' access to operating areas and supplies within the region.

"Adversaries will seek to contest our freedom of maneuver, disrupt our supply chains, and challenge our defenses."

She argued that we count on an effort to disrupt the logistics and communications pathways which the ADF relies on in peacetime operations.

Donna- Cain-Riva argued that in such an environment, "the distinctions between gray hull and white hall operations will be increasingly blurred.

"A fifth-generation air force will operate differently in this environment…Our advantages will be demonstrated not just by the capabilities we possess but how we employ them."

She argued that the kind of innovative operating concepts, in effect, associated with what we have called the kill web, will be crucial to combat success. But such operational innovations must be supported by evolving concepts and approaches to sustainment to succeed.

"To achieve this, we must build a network of basing and power projection options across the region to enable to achieve operational reach and effectiveness.

"This must be underwritten by a logistics system which is resilient and agile and able to respond rapidly to warfighter needs"

Donna- Cain-Riva concluded by highlighting key questions which need to be addressed.

"This entails leveraging our natural geographical strengths, building infrastructure, growing regional partnerships, enhancing coalition engagement and cooperation and developing synchronized sustainment strategies with our allies as an integrated part of our deterrence posture."

Australian industry, in her view, has a critical role to play in shaping an effective way ahead.

"How quickly can we mobilize for war? As an Air Force? As an ADF? And as a Nation?

"How long could we sustain high-intensity operations before depleting our fuel reserves or can no longer arm our platforms?

"How quickly could we repair or replace critical platform components before we impact our fifth-generation force?

"How quickly could we recover from attack or restore critical services like electricity or power to continue operations?"

Donna- Cain-Riva ended with the blunt point that currently "logistics is the soft underbelly exposing us to operational risks."

And she clearly identified throughout her presentation some key elements of attenuating the risks and setting in motion a much clearer focus on the challenge of empowering a more sustainable ADF in the region.

Because Australia's allies face similar challenges, she argued that the focus of the ADF to build enhanced sustainability provided an opportunity within their broader alliance structures.

I would add that the significant readiness shortfalls seen in the past few years for the US forces significantly challenges the US as it works to repair these shortfalls to address the general working relationship between industry and the services in terms of supply Chans.

The taut supply chains seen to be useful for efficiency, but also responsible for readiness shortfalls clearly needs to be rethought and reworked.

The Australian challenge can be leveraged as suggested throughout the seminar to be a critical input to rethinking on the US side as well; and the Aussies do remind us that there is a clear priority for the systems that deliver strategic and tactical advantage to us, rather than being primarily focused on maintaining yesterday's forces with yesterday's logistics approach

Re-shaping Australian Industry as Part of Enhanced Self-Reliance and Sustainability

The strategic shift away from the Middle Eastern land wars towards the return to direct defense against the authoritarian powers carries with it another strategic shift — namely, the shift in focus from sustaining expeditionary operations with a fed-ex type logistics approach to one where support in depth is required.

What is required a shift from the heavy reliance on commercial logistics solutions to more robust mobilization ones.

Obviously, at the center of such a shift is an enhanced role for domestic industry to support a nation's military as well as ensuring that global systems being used by a nation's military have well thought out and well-stocked support solutions as well.

At the recent Williams Foundation seminar, the focus was upon the Australian approach to dealing with this challenge.

In Australian terms, given the size of the population, the workforce and the economy, no one is seeking what a country like the U.S. would consider self-sufficiency.

It is about building in greater self-sufficiency, supportability and local support as a core strategic goal.

Without doing this, not only would the ADF and the nation be at risk in a regional crisis, but the Australian effort hope to trigger rethinking across their alliance structures.

Much as the ADF has driven interest from allies with regard to thinking through building a fifth-generation force, the ADF rethink could have similar impacts on its allies with regards to supportability.

For example, in the area of F-35 support, the Aussies will be key drivers in working to ensure that the U.S. actually delivers on a global support structure for the F-35, rather than simply seeking to preserve the US depot support structure.

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There is a broad rethink going on in Australia with regard to how to move forward with industry and its relationship with the ADF.

One key line of effort is to shape innovative ways to integrate industry within the ADF sustainment approach.

An example of the approach was provided at the seminar by Wing Commander Alison MacCarthy, Commanding Officer of the Heavy Lift, SPO.

She outlined a platform stewardship approach within which industry is a full partner with the Commonwealth with regard to ensuring the availability of lift and tanking aircraft.

She noted that although the Commonwealth retains ultimate decision-making authority with regard to the sustainment approach, industry is broadly engaged in the effort.

"What do we expect of our stewards?

"To do everything necessary to make the jet fly – today, tomorrow, until PWD. Not just those things explicitly described in the contract!

"To coordinate and integrate all the stakeholders to achieve a common goal

"To provide the SPO with information and recommendations that appropriately resource the LOT management of the platform."

She then provided a graphic which highlighted the nature of the working relationship between industry and the RAAF as follows:

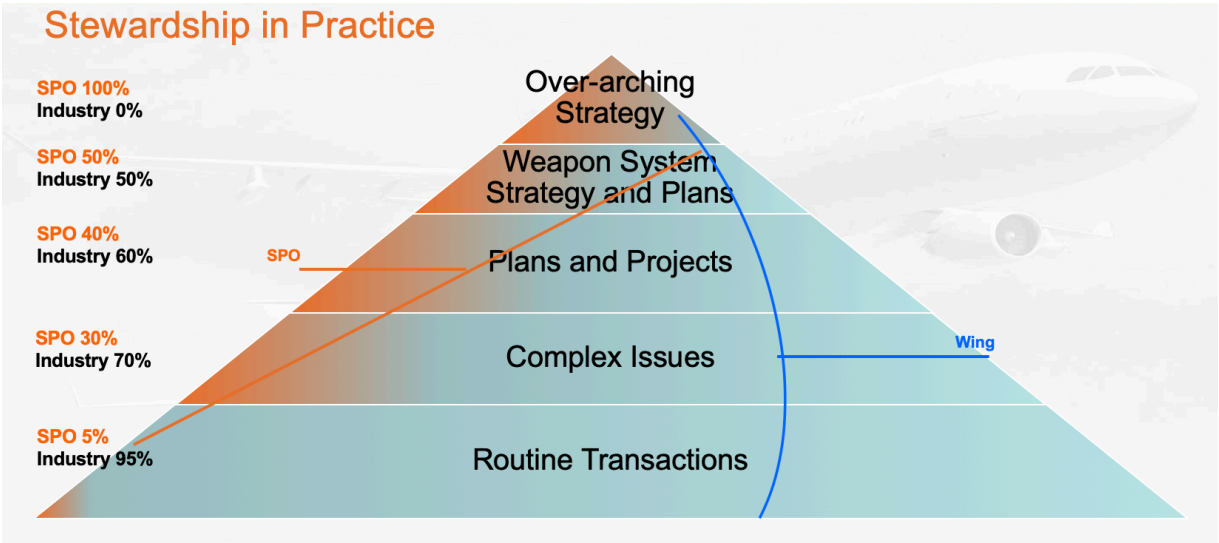

FIGURE 9 WORKING RELATIONSHIP BETWEEN GOVERNMENT AND INDUSTRY IN SUSTAINMENT OF LIFT AND TANKING FORCE

Such an approach is designed to get more efficient support to ensure higher availability rates for aircraft.

For enhanced support during a crisis, there would is a need to add to this approach enhanced availability of parts beyond the normal ops cycles.

But the current system would still lead to much greater efficiency in understanding critical parts flows, a key part of providing for a sustainable force in a crisis.

A second key line of effort would clearly be to standup industry which could provide capabilities directly to the ADF and be part of a global export strategy.

There is probably no area potentially riper for doing this than with regard to the development and production of weapons.

At the seminar, a UK speaker, Chris Stevens, Head of Air Domain, for MBDA, provided a look at how the UK shaped a sovereign approach to weapons development.

A key focus of MBDA is to build modular weapons and such an approach certainly bears serious examination by Australia in conditions whereby stockpiling weapons cost effectively is clearly required for a crisis management force which need to operate for a significant period of time through a crisis.

MBDA's approach has been to build its latest weapons to be useable by a variety of air platforms, including fifth generation ones, so that the flexibility of the kill web being shaped can be enhanced.

For example, with regard to SPEAR this means that it can be carried by an F-35 which allows it to engage significantly more targets than if it used a legacy glide weapon or that Typhoon which will also most likely carry SPEAR 3 can contribute significant load out capability of this weapon for the platforms operating in the extended battlespace.

"The SPEAR missile is being developed to meet the UK's Selective Precision Effects At

"Range Capability 3 (SPEAR Cap 3) requirement for the UK's F-35 Lightning II aircraft, with the potential to equip Typhoon. SPEAR will precisely engage long range, mobile, fleeting and re-locatable targets in all weathers, day or night, in the presence of countermeasures, obscurants and camouflage, whilst ensuring a safe stand-off range between the aircrew and threat air defences."

It is also about what the weapon can do as an interactive data linked strike asset ON a platform; and yet be able to operate by OTHER platforms identified by the C2 authority to take over those strike assets and direct them to their final product.

This is about interactive capabilities; and a new approach to weaponization, which will transform how d forces operate in the extended battlespace.

Spear 3 is a key example of how the UK is focusing upon the enhanced capabilities of the F-35 and Typhoon as strike platforms, but also shaping a way ahead for the kill web approach to weaponization.

https://sldinfo.com/2016/10/the-weapons-revolution-continues-mbda-shapes-a-way-ahead-for-strike-platforms-in-the-kill-web/

If Australia is to take sustained operations seriously, weapons stockpiles need to be increased, and having modular missiles would be clearly the most efficient way to go about it.

With its significant test ranges, and clear interest in regional allies and others in using these test ranges, there is clear opportunity to expand its work in the weapons domain.

A third key line of effort is underway with regard to shipbuilding.

The new "continuous shipbuilding" approach is designed to expand the industrial players working with the Commonwealth at the same time as they stand up more capability within country.

Second Line of Defense

The new frigates to be built with the UK and Canada, or the new submarine to be co-developed with France are two key examples.

The Department of Defence and the Royal Australian Navy have put in place an approach which allows for both greater domestic sustainability and enhanced integration not only within their own force but for allies as well.

FIGURE 10 CHRIS STEVENS, MBDA, AND JEROME DUNN, NORTHROP GRUMMAN, ON WILLIAMS FOUNDATION PANEL, APRIL 11, 2019

As Vice Admiral (Retired) Barrett has put it in various past interviews, the approach is to separate the hull builds from the combat systems build.

The combat systems build designed to take any new platforms and integrate them throughout a scalable force.

And the combat systems decisions are also shaped to enhance interoperability with core allied navies as well.

The ability to build software in common with core allies is a key part of how to ensure that the force is sustainability, modernizable, and scalable.

At the seminar, an example of how scalability would work in dealing with a core emerging threat, namely hypersonic missiles was provided by Jerome Dunn, Chief Architect, Counter Hypersonics, from Northrop Grumman.

His presentation focused on how the U.S. was looking at the challenge, but for Dunn the core point was to shape an offensive-defensive enterprise within which an architecture is created in which platforms distributed across the battlespace could contribute to the defeat mission against hypersonic missiles.

This means that Australian contributions with regard to F-35s or Aegis systems, for example, are part of the broader allied capability in the Pacific and could be focused on where the threat was directed, either at allied or US forces.

The combat systems approach being taken by the Australian Navy is clearly very symmetrical with the architectural focused sketched at the conference by Jerome Dunn.

But to be clear, his presentation highlighted a key challenge facing the United States and its allies. The United States will fall far short of having the capabilities for the kind of global reach to deal with the interactive operations of the 21st century authoritarian powers. Only by shaping approaches in which core allies can both defend their own interests and the US theirs will the kind of collaboration be facilitated to deflect, deter or defeat the actions of the 21st century authoritarian powers.

For example, with regard to the challenge of defeating high-speed missiles, if the focus is solely upon unique to be designed and built US space systems as the "solution," not only will that take too much time it will ignore the opportunities which collaborative systems like Aegis and F-35 can provide for the defeat mission.

As Ed Timperlake put it in his recent study of the hypersonic defeat mission: "We need to focus on what we can do now and the next five years. Space-based systems are great if you want to see what is to kill you but does not provide solutions to attacking the archer nor defending yourself now. We already have systems in place – F-35s, Aegis, ADA, new warships like the DDG-1000 which can be worked into an architecture to deal with the hypersonic threat. This is what we need to do; not what for a space-based solution sometime in the indefinite future."

https://sldinfo.com/2019/03/new-report-would-you-actually-like-to-kill-hypersonic-cruise-missiles-rather-than-just-see-the-attack-from-space/

And it is not just about protecting U.S. forces – it is about both leveraging the US and allied forces into a kill web capable to dealing with these evolving challenges. Dunn's approach to architecture needs to be understood in these terms rather than in terms of US-centric thinking.

For the same reason that Aegis has become a global enterprise, and the fledgling F-35 program is moving into a global enterprise, the US and the allies need to design from the ground up more integrated approaches to leveraging such assets to get capabilities which can be used in the national interest of the participants in the enterprise itself.

A fourth key line of effort can be seen with regard to how the Australian Army is working with local industry in Australia to shape a way forward with regard to remotes or UAVs.

It is clear if you spend time in Australia, there are a number of innovative smaller firms, providing very significant innovations in the software, IT and communications areas.

In effect, what the Australian Army is doing is positioning itself to take advantage of this indigenous capability in building out its future in the remotes or UAV areas.

Second Line of Defense

FIGURE 11WING COMMANDER MACCARTHY AND LT. COL. JOYCE ON WILLIAMS FOUNDATION PANEL, APRIL 11, 2019

A presentation by Lt. Col. Keirin Joyce, UAS Army HQ, highlighted a way ahead for the ADF in the UAS area.

He noted that over the past 10 years, the Australian Army have made increasing use of UAVs.

He noted that they had more than 900 systems in inventory and more than 1,000 operators within the Army.

The shift as he described it was from buying off the shelf overseas; to the development of indigenous systems.

"This means that we are shifting from considering acquisition and sustainment as separate activities; to looking at them as an integrated activity."

The past decade pattern has been to acquire abroad; and then to set up the sustainment system in country.

The new approach is to shape an indigenous approach whereby sustainment is part of the ongoing acquisition cycle.

He argued it is not just the sovereign capability in play; but also export possibilities as well.

I would add that one could argue that this was especially important in a software driven platform, where one would ideally like to drive the software in ways that support one's specific concepts of operations, and in which gaining software transient advantage against an adversary was crucial and in which dealing with the cyber threat is often best dealt with in terms of a code rewrite.

This means in turn that logistics support for a UAV is not simply about replacing parts but about code writing.

In short, the Aussies are looking for an enhanced contribution from industry, foreign and domestic with regard to building an integrated fifth generation sustainable force.

This is not a fortress Australia policy; it is about enhancing the capability of the force to operate from Australia outward in the region during times of crisis and to be effective and durable throughout a operational effort in an area of interest.

This is an approach different from the past decade or what was done during the "Middle Eastern" mindset.

But it is a core strategic shift which the allies of Australia need to take seriously going forward.

CONCLUSIONS

The Perspective of Air Marshal (Retired) Geoff Brown, Chairman, The Williams Foundation

After the latest Williams Foundation seminar, Air Marshal (Retired) Geoff Brown who is the Chairman of the Williams Foundation, provided his take-aways from the seminar.

“One of the key points made which is important to consider when moving ahead is the geography piece and the interest’s allies will increasingly draw from engaging with Australia given what is becoming our strategic location.

"I think that that's an area where Australia needs to have a closer look at in term of our northern bases which currently are just set up for ourselves.

"At a relatively low cost, you could expand the capacity of those bases in terms of utility and impact in the region.

“And more generally, we need to concentrate on what we can do and need to do on our own, rather than just plugging into an American operation.”

Clearly, what might be called a strategic engagement strategy could be generated by the expansion of how Australia as an unsinkable aircraft carrier might function.

For example, for the American or the Japanese allies, an investment significant, forward deployment of parts for F-35s, along with an, an active defense capability to protect maintenance capabilities, would provide an operating capability for allied maintainers and pilots and as those reserves came in from the RAAF itself.

The parts “buffer” could be used by the RAAF itself in a crisis, or F-35 partners to the crisis, and this include European F-35s as well.

This could be done without a significant Fed-Ex type lift of C-17s and tankers.

Such an approach could be facilitated by the Australian rethink about geography and the use of Australian territory, in a new way, rather than having an either-or policy of bases or flying in for a show of force.

The F-35 as a global enterprise could be leveraged to shape a significant deployable regional capable with allies from outside of the region providing additional capability as well.

“That is very true.

"This is an approach which could and should be examined going forward."

FIGURE 12 AIR MARSHAL (RETIRED) GEOFF BROWN, CHAIRMAN OF THE WILLIAMS FOUNDATION, CLOSING THE APRIK 11, 2019 SEMINAR

A key question which came up in the seminar was what is the role of globalization in the era of great power competition.

“The globalization aspect is a key one.

"We have acted on the assumption that the sort of globalization we have seen the past twenty years is the only pathway forward.

"By acting under this assumption, we have generated a number of risks which need to be dealt with, notably in areas such as energy security.”

The other major issue dealt with in the seminar is the question of shaping an eco-system which can support a more sustainable ADF.

“This is a key area which needs significant attention.

"Cleary, we need to hold bigger stocks of expendables and weapons, to take one key example.

"I think that operational support and repair capabilities need to be clearly done in Australia and we are on the way to achieve that goal.

"It may cost us a little more because the scale will be smaller, but we probably just should do it for self-reliance.

“There was a good presentation by MBDA in terms of how the British have developed modular weapons which has allowed them to reduce their logistics footprint and kept their developmental and manufacturing capability as well.

“Looking back at the seminar, I believe it was just the start of the conversation and it's one that we need to continue.

"But I think we are raising the right questions.”

With regard to the industrial side of the self-reliant effort, clearly the Australians have a number of innovative smaller companies which can be leveraged in various areas as part of the effort.

“The entry point for innovation is changing.

"We have seen this with regard to space and a number of Australian firms are engaging in space innovation.

"We can do a number of key aspects for defense but in a much more cost effective and sustainable manner.

"In terms of the industrial revolution 4.0, you can actually extract new industrial capabilities to support defense in a more effective way.

“And I think we can actually harness capability in far less expensive way than the traditional path that we've been on before.”

The Perspective of Brendan Sargeant, Honorary Professor at the Strategic and Defence Studies Centre, Australian National University

With the rise of the 21st Century authoritarian powers, and the various dynamics of change in Europe, and in the United States, obviously Australia’s policy approach over the past two decades was no longer valid.

Australia has focused its efforts to contributing the United States leadership in providing for enforcement of a rules-based order, and doing so with enhanced capabilities, but within the context of enforcing an order, not shaping it.

Indeed, the 2016 Defence White Paper underscores throughout the need to enforce the rules-based order. But the 21st century authoritarians have no intention of operating within those constraints and are seeking to reshape global order to their advantage.

As Sargeant put it: “The world we have assumed is not necessarily going to be the world of the future. So how is Australia going to live in that world and play its role?”

He noted that the Chinese were seeking to reshape the global order. “The Chinese strategy is clear – guarantee access to resources, create buffers, break alliances and not be constrained by any rules-based order that they do not consider congruent with their perception of their interests.”

He argued that we are facing a fluid period of global change.

“We will see lots of experiments, and see lots of ideas and you'll see states trying out different political and architectural formations to meet their interests.

“We're in a world with we don't know what the future strategic order is going to look like, or how it's going to be managed. The global order is clearly in play.”

There are cross cutting forces at play.

“Globalization has unleased one set of forces; the rise of nationalism another set of forces; and the rise of the illiberal powers yet a different set of force. Nations are trying to work out how best to protect their interests and with whom to work to do so.”

This has a significant impact on the inherited alliances. There is the habitual cooperation which has underlaid the Western Alliances and that cooperation is continuing but in the context of significant redefinition of what alliances are going to look like going forward,

“Great powers like the United States are more interested in totalizing alliance arrangements than their alliance partners are likely to accept. Australians like other regional allies of the United States will seek

working arrangements with a variety of regional partners to provide for our interests and work through different sorts of working arrangements to deal with our strategic challenges."

The shift is clearly from followership to engagement in working relationships where leadership is shouldered or shared differently from the great power followership role which Australia has followed first with Britain and then with the United States.

Working relationships with regional or global partners around specific issues and challenges are becoming "the real alliances. They are being built in response to specific crisis or specific problems."

For Australia, the challenge will be how to deal with global and regional crisis management. For defense, this means shaping capability which can be leveraged in a crisis and effectively used by political leadership effectively to meet the national interest.

This means taking a hard look at the kind of defense force which Australia has and is developing and determining which tools are available to decision makers.

It also means building a more durable and sustainable force through a crisis period.

"The ability to deploy force creates more decision space in a crisis. But you need to do that over time. That requires a robust logistical and industrial base that can give you more confidence that you can scale up during a crisis."

"From a policy perspective, you want to give yourself more strategic options by giving yourself more time. Which means that you will need to have a more sustainable force during a crisis."

And the crisis management challenge requires thinking through partnerships and working relationships with allies.

"When do you exercise leadership? When do you exercise followership?"

An example of how force packaging might be reworked in terms of partnerships in the region could be the working relationship between Australia and Indonesia.

"We ought to be able to put together an integrated task force with Indonesia to manage a regional crisis from the low end to the high end. And a task force where either Australia or Indonesia could take the lead."

In short, for Sargeant, "We need to think differently about our position in this part of the world and how that may drive our thinking about the capability which we need to have and to develop going forward."

WILLIAMS SEMINAR TERMS OF REFERENCE

Since 2013 the Sir Richard Williams Foundation seminars have focused on building an integrated fifth generation force. Recent seminars have evolved from the acquisition of new platforms to the process of shaping and better understanding the environment in which that integrated force will prepare and operate. In doing so they have, among other things, highlighted the challenges of making the strategic shift from counterinsurgency operations in Iraq and Afghanistan to higher tempo and higher intensity operations involving peer competitors.

Within this context, the seminar in August 2018 focused on the importance of a joint approach to building an independent and potent regional strike capability. The topic broadened to begin an examination of new ways and means of enhancing sovereign options as part of an evolving deterrent strategy. The August

seminar began a process of looking at the evolution of Australian defence capabilities through an increasingly sovereign lens and concluded there are some important choices to be made if we are to maintain our capability edge and influence in the region.

Allies are crucial to the Australian concept of defence; however, the emerging strategic circumstances demand it is vital we reconsider the ways and means of enhancing Australian sovereignty to better contribute to our relationships and ensure a more sophisticated and independent defence of Australian interests. During the 2019 seminars, the Sir Richard Williams Foundation will develop this theme and address more broadly the question of how to look at the evolution of the Australian Defence Force from the perspective of the sovereign lens and setting the conditions for future success.

Aim of the Seminar

The first seminar will examine the question from an historical standpoint and focus on the importance and challenges of sustaining an Australian Defence Force that can autonomously contribute to the pursuit of Australia's national interests in an increasingly challenging environment. A key element of our thinking is to focus on the importance of our natural strategic strengths and reconsider Australian territory and geography, as well as the near region, as an integral part of our deterrence posture. This entails building the infrastructure and partnerships necessary to enable more effective mobility so that Australian and partner territory can be used as a chessboard on which we are able to move Australian forces, and upon which allied forces could operate in times of crisis as part of a broader coalition engagement and sustainment strategy.

Enhanced Australian industrial sovereignty and sustainability is a core requirement of a secure and sustained force in times of crisis, where the normal functioning of the global supply chain will be deliberately targeted and disrupted. This will require an integrated strategy for preparedness, operations and sustainment of the force enabled by appropriate industry policy to ensure the delivery of a sovereign defence capability.

Seminar Outline

This industrial policy must be closely aligned with defence policy, concepts and doctrine and will require a new approach and attitude to partnerships and an increased emphasis on the combat support and combat service support functions of the fifth-generation force. This will further develop the Australian manoeuvre approach to warfighting but set in a much broader context than simply the force elements.

The seminar will address the evolving Australian approach to building new capabilities and systems with an expanded role for Australian industry as part of a broader alliance structure. A contemporary example is how Army is building its unmanned aircraft capability through an innovative partnering strategy with industry. Similarly, the seminar will address how Defence can be a better steward of its major platforms by partnering with industry.

One such sector worthy of consideration by Australia is in emerging technologies and how these might disrupt traditional concepts of supply chains and enhance Australia's sovereign capabilities. The development of an Australian-based research, design, manufacture, test and sustainment capability is a realistic aspiration and provides sovereign capability which contributes significantly within a broader alliance structure.

In particular, Australia can play a significant role in the development and production of 21st century missiles and at the same time support the needs of core allies who could leverage evolving Australian science and technology, test and experimentation ranges, and advanced manufacturing capabilities within a sophisticated and diverse global supply chain.

Second Line of Defense

Above all, this will add diversity, complexity and resilience to the Australian defence and security posture and provide additional choice in the selection of the most appropriate ways and means of delivering a balanced suite of defensive and offensive independent strike capabilities.

SEMINAR PROGRAM: HI-INTENSITY OPERATIONS AND SUSTAINING SELF RELIANCE

0830-0835	*Welcoming remarks*	AIRMSHL Geoff Brown AO (Retd) Sir Richard Williams Foundation
	Introduction and MC	GPCAPT Jason Begley, CSM, Joint Operations Command
0835-0900	*Defence Self-Reliance and Plan B*	Dr Alan Stephens OAM, UNSW Canberra
0900-0925	*Defence self-reliance in Australian foreign policy: why and so what?*	Dr Andrew Carr, Strategic and Defence Studies Centre, Australian National University
0925-0950	*Australian Defence policy in flux*	Prof Brendan Sargeant, Strategic and Defence Studies Centre, ANU College of Asia and the Pacific
0950-1020	*Panel session*	Alan Stephens, Andrew Carr, Brendan Sargeant
1020-1050	Break – Morning Tea	
1050-1110	*From tail to tooth: sustaining a self-reliant ADF*	LTCOL David Beaumont, Australian Army School of Logistics Operations
1110-1130	*Far from sanctuaries: sustaining a fifth-generation fight in the Indo-Pacific*	Donna Cain-Riva, Director Future Logistics Capability – Air Force
1130-1150	*Alternative sustainment: Army's approach to drones*	LTCOL Keirin Joyce, UAS Army HQ
1150-1210	*Platform stewardship: a CASG perspective*	WGCDR Alison MacCarthy, Heavy Airlift Systems Program Office, Capability Acquisition and Sustainment Group
1210-1250	Panel session	David Beaumont, Donna Cain-Riva, Keirin Joyce, Alison MacCarthy
1250-1400	Break - Lunch	
1400-1420	*The UK Weapons Portfolio – successfully providing Freedom of Action and Operational Advantage*	Chris Stevens, Head of Air Domain, MBDA
1420-1440	*Countering hypersonics and self-reliance through architecture design*	Jerome Dunn, Chief Architect, Counter Hypersonics, Northrop Grumman
1440-1510	*Panel Session – concluding thoughts*	RADM Mark Hammond AM, RAN, Major General David Mulhall, DSC, AM, CSC BRIG Todd Ashurst, AIRCDRE Stephen Edgeley, Jerome Dunn, Chris Stevens

1510-1515	Formal Close	AIRMSHL Geoff Brown AO (Retd) Sir Richard Williams Foundation

APPENDIX I: SEMINAR PAPERS AND INTERVIEWS

Defence Self-reliance in Australian Foreign Policy: Why and so What?

Andrew Carr

Like most Australians, I love my sport. Cricket, Rugby, Basketball, you name it I'll watch it. I expect many in this room are the same. I think part of the fascination is that sport, like strategy is fundamentally about competition.

Your own talents, resources and organisation will only take you so far if you are not focused on how to deal with the real adversary in front of you. As fans, we get to watch teams attempt game plans, adjust, find and exploit weaknesses and dig in and fight right before us.

Athletes however, have two big advantages over those of us in the strategy business.

First, they know when their game begins. We often don't.

It is clear that the People's Republic of China fired a starter's pistol for regional strategic competition in 2008. We did not hear it. We have been playing catch up ever since.

Too much can be made of this. Initial deficits are not unusual in the world of sport or strategy, but here is the Athletes' second great advantage: The half-time break.

Along with time for some oranges and a fresh shirt, comes the chance to take stock of just how the game is being played and what you have done right and wrong. So, today, a decade or so into our multi-decade long regional competition, I think it appropriate we take a breather and think through our position.

To borrow a well-word phrase you'll hear from every footy coach, to dig ourselves out of our current hole, I believe we need to get back to the fundamentals. Not only in what we are doing, but where.

Take the issue of 'Grey Zone conflict'. Western discussion of this issue has been both reactive and largely tactical in focus. Yet this issue is not actually about the means employed. China's use of quasi-military, quasi-civilian shipping vessels to push and push below the bar of escalation is simply a tactical choice that exploits a more important strategic choice that we in the West have made. The heart of the Grey Zone issue is not escalation but national interests.

As part of the West's victory lap after the Cold War, we declared an interest in global peace and prosperity. We claimed an interest in operating virtually anywhere on the globe, no matter who it antagonised or how remote from our own nations.

What is happening today in Eastern Europe by Russia or the South China Sea by China is that the new authoritarians are challenging this claim to near-limitless interests. What they are doing is declaring their judgement that these regions do not seriously matter for the West. And they are right.

Grey Zone conflict is impossible in areas where states have genuine interests and will fight for them. If these regions did matter to the defenders they would respond as all do when their fundamental interests are threatened – with clear demonstrations of force. In such a case, it would be the aggressor, whose quasi-military resources would seem absurd. But in this case, it is the defender who is made to look absurd, claiming an interest they won't actually defend.

The reason Grey Zone conflict works has little to do with the tactics or questions of escalation. Rather, it works because these regions are not core interests to western powers like the US and Australia and our adversaries know it. We have claimed more of the field than we can possibly cover, and after modest pushing by the new authoritarian states this has been revealed.

A return to fundamentals must therefore begin with thinking afresh about what truly matters to us in the West. To do otherwise and continue our post-cold war indulgence of pretending to care about everything and wanting to control everyone, will lead events and adversaries to prick our hubristic claims one by one.

To return to my sporting metaphor, our game plan of the last thirty years is no longer working. We can either give it '110%' and hope that's enough, as US President Obama's Pivot or Rebalance policy attempted to do, or we can develop a new plan.

One that is founded upon protecting that which is most important to us, that plays to our strengths and which will allow us to re-set the momentum in the game. One that re-connects our interests and available resources, instead of the last decade or two of 'strategic wandering' we have had.

It is in this context, that I want to talk about Australia and Defence Self-Reliance.

Achieving reliance is not be simply a question of logistics, doctrine and resources — though I'm sure everyone in this room would agree with me on the importance of these issues and the need to spend far more on Defence. It is also fundamentally about our ideas and willingness to think for ourselves.

If Self-Reliance is to be meaningful, the first issue has to be the extent to which Australia can provide the ultimate defence of its territory. This is a conversation too often waved away by commentators. Too big, or too expensive they say. Or perhaps its importance is acknowledged but placed behind the many other pressing challenges that require our focus. But there are both strategic and political reasons we need to make the continent a greater focus.

The first and most obvious one, is that our continent is no longer secure. This is the big change for Australia from the Post-Cold War years. Though the likelihood of direct attack is very low, it can't be entirely dismissed. As such, we need a sense of how we could and would respond. Even putting scenarios of invasion aside, there is a possibility of serious strategic pressure being applied against us. Already it is possible for China to apply overflight and harassment efforts to parts of our continent as they do to Japan, Taiwan and South Korea on a regular basis.

Then there are our alliance commitments which I argue should also drive more of a continental focus. Everyone knows ANZUS's famous Article 4, where the parties declare they will 'act to meet the common danger'. What is far less known is Article 2. To quote:

'In order more effectively to achieve the objective of this Treaty the Parties separately and jointly by means of continuous and effective self-help and mutual aid will maintain and develop their individual and collective capacity to resist armed attack.'

Without the ability to resist armed attack individually, we are in breech of ANZUS. This is not just about the technicalities of the treaty. America under its current and previous President has demonstrated strong concerns about burden sharing and allies pulling their weight. Their views reflect an American public which feels taken for granted. One that has sacrificed there, so we may be safe here.

Equally, there is a need in this new Asia to think about how best to use the continent to the mutual aid of ourselves and our allies. For most of the history of the alliance, the continent was the place we departed from.

Second Line of Defense

In the future, it may be the place we begin at. The foundation of a different kind of US presence in Asia, and a staging point for high-intensity operations.

Finally, there is a domestic reason to re-focus on continental security. Though the Australian public remain supportive of the US alliance, the impact of President Trump is sapping support. Demonstrating that the alliance is foremost a means of protecting people's homes is a way to re-assure and strengthen the foundations of ANZUS, our defence posture and our call on taxpayer resources.

We therefore have strategic, legal and political reasons to re-orient our attention at this point to thinking about the security of the continent.

This is not to suggest an isolationist or inward-looking turn. Far from it. Nor is it about returning to the 1980s Defence of Australia concepts, as I'll cover in a minute.

Rather, it is a position which takes seriously the idea that we may be early into a half-century or more of strategic competition. This means knowing what we will fight to protect and how we can do so. And then being able to go forward from a secure continent. That is what a return to fundamentals means.

To do otherwise, to keep focusing on what we can do at the furthest limits from our core interests, attempting merely to hold firm to the status quo is to risk our own version of a grey zone style crisis. A world where we are making commitments to our allies abroad that we can't be sure future government's and the Australian public will want to keep. Nor does this extended approach make sense in the face of our specific adversary on the field today. A strategy of simply trying to give '110%', year in and year out, by tired and debt-ridden Western nations, finding ourselves always on the defence against a better resourced and fresher People's Republic of China is not a winning approach.

So what are the fundamentals of continental security for Australia?

Unfortunately, this is a question we will need to think through afresh, rather than hoping that past generations have done the work for us. The Defence of Australia policy, which was in place from roughly 1972 to 1997 took shape in a very different world, politically and technologically. This was an era where our continent was secure – something that is not obviously true today.

We therefore cannot simply adopt and replace DOA's approach to our modern-day challenges. But, by taking a broader sweep of our national history, including the DOA years, we can identify some common challenges and questions this continent poses to those who would defend it.

What is quickly apparent, is that defending Australia requires confronting several paradoxes. How we answer these paradoxes is a reflection of who we think we are as a people and directly shapes the specific defence policies, doctrines and capability choices we make.

Some of the paradoxes are well known and don't need too much elaboration. Australia is both a continent and an island. How we answer this tension informs our funding of the ADF, and whether to seek to defend the northern 'air-sea gap' or to try and use our defence in depth afforded by this vast continental geography.

Other paradoxes we face are the tension between our adversaries largely operating to our North and North West, while our population and resources reside here in the South and South East. Another is that we are a nation often anxious about security and yet extremely frugal when it comes to trying to alleviate that insecurity. There are several more, and I'm trying to work through them at the moment for a book to be published later next year. So comments and suggestions are very welcome.

Today given our theme about self-reliance and sovereignty, I want to discuss a curious paradox related to the role of alliances. Namely that

Australia's greatest security and greatest threat depend on how valuable it is to our allies.

All too often, we think of the significance and security of the Australian continent in terms of the Australians who live upon it.

Those who downplay the threat of China for instance, like to point out that there is no automatic need for a dispute between the Chinese and Australian people. Indeed, our economies are very complementary.

But that is too narrow a viewpoint.

In a maritime and archipelagic region, the Australian continent is a vast prize. One full of potential for the great powers and long desired.

During the 17th and 18th century, European colonial powers looked for a Great Southern Land as a base upon which to sustain and support their Asian trading empires.

For all that Australians revel in our convict origins, it was a strategic purpose that led to White Settlement. The Australian continent was to be a southern anchor of British military and economic presence in Asia.

This is what gave birth to our country and caused the dispossession of the First Nation People. A story which should remind us daily of the cataclysmic consequences of invasion.

In the 20th century we saw two hostile great powers shift their attitude towards Australians based not on the actions of our people, but on the designs of our great power partners and allies.

In 1941, Japan pushed south towards the Australian continent. Their object was not to invade or remove Australian troops from the fight. Instead, it was to prevent the Americans from using the continent as a spring board for their counter-attack on Japan.

The 'Battle for Australia', such as it was during WW2, was thus about the value of the continent for Japan and America and not the actual people living on top of it.

In the Cold War we saw a similar pattern play out. Early on the USSR was largely indifferent to Australia, a remote and militarily insignificant western state.

That began to change as we made our land more valuable to our now alliance partner, the United States. In a move that initially began as a cost saving effort – offering the US access to our land to help keep our own defence spending low — (I did say we were frugal), it was found that thanks to their location on the globe, facilities at Pine Gap and Nurrungar could peer deep into the Soviet Union, observing key military facilities otherwise inaccessible to US collection efforts.

This value of Australian land to the United States in turn brought it to the attention of the USSR. It seems clear that after these efforts to support our ally, our continent was placed on Soviet nuclear targeting lists.

This is a key paradox we must grapple with in any plan for self-reliance: Our greatest security and greatest threat depend on how valuable we are to our allies.

The superficial answer to this is to suggest we should not have allies.

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But that misunderstands the issue. Japan did not need to see an alliance in 1941 to realise that the size and position of the Australian continent made it a vital piece of real estate for projecting power into Asia.

We already know the US sees the opportunities of this unsinkable aircraft carrier today, one located at the outer edges of current Chinese missile capacity. We should be under no illusions that strategists in Beijing also see the value of this continent – if only to deny its purchase to the Americans.

Thus, even if territorial invasion is unlikely, and our own relations with China peaceful, the likelihood of an effort to forcefully dissuade, isolate and remove Australian territory from American hands is likely.

Properly recognising the value of our land means that we should also get beyond the frightened fear that America will abandon us at any moment. That we can never say no to Washington, lest it decide we're not worth the effort. Far from it. Unlike the Cold War and Post-Cold War period, though somewhat akin to WW2, Australia's location today is of great value to the US position in Asia. So we need not fear distinguishing when we have clear differences of interests and values from the US and saying so.

Going to the extremes of either horn of the paradox – to abandon or blindly embrace our allies, is unhelpful. Yet we will need an answer to this paradox. As we saw with the Soviets, how we engaged with the US defined how the adversaries thought about our continent. It is likely that we will want to do more with the US on the Australia continent, fully conscious this may invite greater antagonism from China. This may be a risk worth taking, but it is one that should consciously factor into our defence plans and discussions with the public.

What then should be the key message of this half-time break, this moment of pause as we re-gather for another long stretch out on the field?

First, we need stop trying to give '110%' and being over-extended. Instead we must return to the fundamentals. This means reducing our global footprint to have a larger tread closer to home. Learning to say no to requests that we can't meaningfully resolve and re-orienting Western individual and collective defence policies around direct defence. Only by doing so will we meet both our commitment to the alliance and to the public who pays for national defence.

Second, we must return the discussion of geography to our strategic debates. Doing so quickly makes irrelevant the question of a 'choice' about the US or China. It also demonstrates the absurdity of a mid-sized nation wanting to exert global influence while its own island is increasingly at risk. Not because of who we are, but where we are, and the value of what we claim.

Third, we need to work out how we can use this unique platform of ours to give America a sustainable and enduring position to project power into Asia. How might new capabilities such as the F-35, in conjunction with partners such as Japan offer new means of cooperation. Beginning from a secure foundation on our northern shores that looks north to Asia and west into the Indian Ocean. What roles should Australia play in supporting and sustaining this very different picture of the ANZUS alliance?

Fourth, we need to work out how to exert the maximum strategic impact from our geography. Because it is quite possible that we will need to be reliant on ourselves much more often. Facing off against low-level political and strategic pressure from 21st century authoritarian powers, perhaps even a direct military threat. How can just 25 million people defend 10% of the world's surface? There are answers there, but we need to learn what our geography can tell us.

Finally, we should find a new language instead of the term self-reliance. This term has always been used by Australians to mean an exception to usual practice. Self-Reliance was we did in the worst case scenario, or did on the margins while normal allied cooperation was the mainstay. Instead we should think of this issue as most

other countries do. Defending ourselves is our task and our primary responsibility. We will build alliance cooperation on top of this, we will seek to use our geography to support and sustain a regional order that has been very valuable to us. But what we do alone is not the exception, but a fundamental part of a re-invigorated, and resilient approach.

So let us take this moment to rethink and regroup. The siren calling us back onto the pitch is sure to blast very soon, and the next half is going to be even tougher. But with a better plan, based on the fundamentals, I am confident the game's momentum.

The Sovereignty Piece: The Perspective of Vice Admiral (Retired) Barrett

During my current visit to Australia working with the Williams Foundation, I had a chance to meet with the former head of the Aussie Navy, Vice Admiral (Retired) Tim Barrett, and to discuss the Australian approach going forward with maritime power.

I have had the privilege of meeting with him when he was in office, but this was the first chance I had to continue that conversation after he had retired from the Navy.

I think the best place to start in understanding his perspective with the book he published when he was Chief of Navy.

The title of the book The Navy and the Nation.

What clearly emerges from this book is a much broader perspective about the RAN than simply adding new hulls or capabilities; it is about a national security strategy in which Australia as a nation embraces what is necessary to defend the nation in the challenging times of the 21stcentury.

It is an enterprise not simply a force structure approach; it is about Australia as a society and political system embracing the importance of building an infrastructure which can sustain the defense of Australia in an alliance context.

But that alliance is changing fundamentally with the rise of China, and Australia clearly is playing and needs to play an anchor role for core allies like the US and Japan, and not simply contribute to Alliance defense

He starts his book this way:

MOST PEOPLE THINK that Navy is something else. They know it exists, they may even have a rough idea of what it is for, but they don't think it's got much to do with them. They're wrong.

The Navy is a national enterprise in which everyone is involved and which delivers peace and security to everyone in the country.

This enterprise is a two-way street, and must be a two-way street.

Going one way, the Navy offers peace and security. Going the other, the people offer support and contribution. Only when the street is a properly mutual two-way exchange between the Navy and the citizens can this bargain, this contract, deliver what it needs to.

Barrett then added a comment with regard to how industry and Navy needed to work together to get the kind of enterprise approach in place which would provide for national security.

In the wider community of interest for which this essay is also intended, the manufacturing, industrial, technological and investment sectors are at front of mind.
Second Line of Defense

Not only should the leaders of these sectors read and understand how the Navy might position itself for these new opportunities, but they should also begin to join the conversation that is a necessary part of realising these opportunities.

Industry leaders should embark upon a conversation with the leaders of the Navy in the same way that naval leaders should talk to them.

Barrett then highlighted the key point that a force like the Australian Navy will draw upon the broader changing skill sets in Australia and both energize them and draw from them, which is another key point when considering an enterprise approach.

Most of the leaders of our key national institutions are acutely aware that our society is changing as it learns to adjust to demographic pressures, the evolving expectations of our fellow citizens, the fluidity and variability in the career choices available to young people, the pressures of managing family and professional demands, the remarkable and timely expansion in the role that women play in our national enterprise—to name just a few factors driving change.

Just as the Navy will be affected by the pace of change, so it needs to participate in managing change and benefiting from it. Inevitably, the naval career of the twenty-first century will differ significantly from that of the twentieth century. We need to prepare for change, in order to make the most of it.1

Working from this perspective it is obvious that for Tim Barrett, the modernization of the Navy is both part of a broader force transformation, a redesign of alliance structures, and a shift in how the Navy needs to work with the broader society in order for Navy to contribute to the strengthening of Australia's defenses in the broader region and the bigger world.

We discussed the approach to Naval force structure modernization and he emphasized two key points.

The Navy was being recapitalized in terms of hulls, but the larger picture was how those hulls would work together with the larger ADF and beyond that with core allies and partners.

Here the former Chief of the Navy provided further details on the core point he made at a Williams Seminar in 2016:

"We are not building an interoperable navy; we are building an integrated force for the Australian Defence Force."

The kill web approach was clearly what he is working from when he discusses force modernization for the Navy.

Barret provided a particularly compelling example of the approach and what it means in terms of acquisition. He described a recent visit to Spain where his wife was privileged to launch a new tanker to support the maritime force.

That tanker has on it a combat system which allows it to operate in a joint manner with the wider maritime force and to be integrated into the wider ADF.

This was a good illustration of what we have argued for, namely "no planform fights alone" if linked with platforms and assets in a broader kill web.

Barrett argued that a key consideration for naval procurement was the nature of the combat systems being placed on the hulls as well as their potential for continuous modernization which is part of what he meant when he argued for a continuous shipbuilding strategy.

The operational advantage that can go to a 21stcentury combat force can come as much for the clean room where software is developed as from the armaments onboard any particular vessel.

And in part this is because if one can shape a kill web force one can get this sort of outcome:

"An Air Warfare Destroyer is as important to the RAAF as is an F-35 to the RAN."

He underscored that: "We have deliberately separated the procurement strategy for the hull from that of the combat management system.

"For example, with regard to Aegis, the hull is there to take Aegis to sea.

"The hull configuration will change only gradually over its lifetime.

"The Aegis combat system however will evolve and adapt constantly, informed by operational experiences and from the broader Aegis community as well.

"And Aegis is what provides the combat advantage, not just for the Navy but for the wider ADF."

We discussed at some length the new submarine decision to go with French Naval Group and what the wider ramifications of doing so might be.

It is clear that this is NOT a simple tech transfer contract; it is a co-development contract and as such challenges BOTH the French and Aussies sides to engage in significant cross-learning.

For the French, the Aussies are going to build a digital shipyard, which is not what the French currently have.

The two societies operate with very different work forces and if the French desire they can learn from how the Aussies trade-based system operates and to generate change in France itself.

What we discussed were the changes on the Australian side.

Because this is not simply a build in France or import the design or the technology from an existing submarine in France, at the heart of the challenge if the program is to succeed would be to build the kind of workforce which Australia will need to have to engage in a continuous shipbuilding approach for the new class of submarines.

And associated with this as well will be the combat systems side of this, where Australian software engineers and designers become full participants in its ongoing development.

He emphasized the importance of a whole of government approach to the new build submarine. He noted that providing visas to the French participating in the program, needed to be combined with the education and training part of the Australian government to ensure that French participation in the program was as well about the development of an Australian work force capable of evolving the entire French-Australian submarine enterprise.

"We need to ensure that we have the right personnel to build the 6thsubmarine on; not just capability in place to stand up the program."

Second Line of Defense

Ultimately, this is about Australian sovereignty and the ability to sustain force in a crisis.

This also means that Australia is enhancing its role in terms of anchoring an alliance of the liberal democracies, and not just in the Pacific.

Interestingly, for this French partner, most French analysts would consider sovereignty to be about an ability of the nation to build its military systems on its own.

But for Barrett this approach would be too narrow, particularly in today's world of rapidly changing technologies and capabilities.

For Barrett, "sovereignty is the ability to act in a crisis, when government requires it, where it requires it and to be able to do so for as long as is needed, to the level you need, with the resources that are readily available to you."

"We can and indeed will buy other nation's equipment, but we will operate it in a sovereign manner and we will integrate into our ADF approach."

From his perspective, Australia was not building a Barracuda, for it is a new design submarine.

"We are designing the Barramundi (which is a well-known Australian fish)."

But the new build submarine program really is about a two-way street working with France.

"The whole point of this exercise is that we leverage their each other's skills: they learn from us as much as we learn from them as they develop their business and manufacturing processes as well."

This is clearly part of a potential French strategic opening in the region as well.

"They are clearly re-establishing their presence in the region, as recent French naval activity demonstrates as well as the public policy statements made by President Macron as well."

Barrett then went on to describe a presentation which he made at a UK conference three years ago.

"I put a map of Australia over the map of Europe which showed the relative sizes of each geographic area and got the usual laughs.

"But then I pointed out that on the European map the significant trade routes within the graphic simply stopped at the Suez Canal. It did not account for, or recognize the more than seven trillion dollars that emanates from Asia and our region – from India, China, Japan and the Pacific trade routes as far as the US, that flows into the European economy.

"I opined that the Asia Pacific region was as critical to Europe as it is to Australia"

"I also argued that you need to consider the broader picture, especially when you consider that the influences acting upon European markets – for example, the Chinese acquisition of container ports in Greece and other European maritime infrastructure.

"They are clearly focused on European ports and are looking at the wider picture. It is important for Europeans to do so as well.

"Perhaps our working relationship with France on submarines might be part of shift in Europe as well on the broader defense and security posture and situation."

APPENDIX II: SHAPING AN ECO-SYSTEM FOR ENHANCED AUSTRALIAN SOVEREIGNTY -- THE SECURITY PIECE

The Need for an Australian National Security Strategy: The Economic Dimension

The Institute for Integrated Economics Research – Australia

The financial and economic indicators that signal the start of a downturn are evident in advanced economies.

Australia is at particular risk with households currently the second most indebted in the world and with a total private sector debt ratio of 205% of GDP.

We are facing a serious economic security challenge; however, most Australians do not appear to appreciate that economic security is the foundation of national security.

We cannot rely on past economic performance and assume that we will have the resilience to address the significant economic risks in the decade ahead. Australians need to face an unpleasant reality and take appropriate action.

If you read the newspapers in early January this year you could be excused for feeling some anxiety when you saw Deutsche Bank's grim warning of the top hazards threatening global markets in 2019 with one of the top 30 factors being the potential "house price crash" in both Canada and Australia.

Other reports noted that the global economy is "leveraged to the hilt with a $264 trillion problem.

These warnings have been sounding throughout 2018, e.g. in June it was reported that "global and Australian economies are experiencing record and abnormally high structural imbalances that in previous historical episodes have resulted in catastrophic economic and social outcomes."

So, how is our Government addressing these risks?

In the Mid-Year Economic and Fiscal Outlook in December 2018, the Government stated that their "economic plan is working, delivering a strong economy and making real progress in restoring the nation's finances … A strong budget position allows Australia to face the future with confidence, providing a buffer to respond to any adverse developments that might occur in the global economy."

It reported that the global economy has continued to grow at a solid rate since the start of the year and forecast global growth of 3.75 per cent is expected in 2019 and 2020, while growth in Australia's major trading partners is forecast to be 4 per cent in each of the next two years.

This is a picture in stark contrast to the analyses reported in the media.

The claim that the Australian economy will have a buffer to respond to any adverse developments that might occur in the global economy, suggesting that we have adequate economic resilience, is fanciful at best.

This situation is a bit like flying in an F/A-18 when the master caution light comes on, accompanied by an engine fire light and multiple systems failures, and then deciding to ignore the warning and just talk about how well the flight has gone so far. The difference in an F/A-18 is that in a crisis you have a checklist that you can follow that has a good chance of working. If it doesn't, there is always the ejection seat.

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We don't have a checklist or an ejection seat for the economy … and, if our economy is severely impacted, then so is our national security, because in order to have national security, Australia must have economic security.

This article will discuss national and economic security, economic risks, our economic trajectory and then explore the potential impact on national security using Australia's defence budgetary approach and assumptions as an example.

National Security and the Economy

For the purposes of this article, national security is defined as the survival of the Nation through the use of economic, diplomatic, military and political power.

Understanding the complex systems nature of national security and why the economy is a part of the equation is crucial.

However, trying to build an understanding of our economy from the perspective of a non-economist is a major challenge. The language of economics is opaque (similar to that of Defence), academic and business sector views are often contradictory and historical economic models are now less relevant as the global economy staggers under growing debt and a challenging political environment.

Most importantly, the lack of clearly stated, shared assumptions related to our economy is a significant risk factor in itself.

If you come from a Defence background you may initially search for an "Economy White Paper" and hopefully an integrated, forward-looking, and outcome-based strategic plan for our economic security that has bi-partisan support.

You would be disappointed.

A clear statement of risks, considered options and a coherent, integrated plan appears absent. In contrast to Australian Foreign Affairs and Defence policies and plans, the Government's economic policies must be deduced from budget statements and a plethora of political announcements and claims which are often targeted at the opposition, thus precluding a coherent bi-partisan approach in favour of electioneering.

In their July 2018 Australian Financial Review article, Professor Peter Drysdale and Mr. Shiro Armstrong from the ANU noted that "the problem lies in how Australia's strategic policy choices are currently being framed and made … Strategic policy is overwhelmingly framed from a security perspective in political-military terms.

"Yet the economic dimension of national power and influence is also central to the hard choices to be made on strategic policy … taken separately, the responses of the security specialist and the economist are each inadequate … the problem is that Australia's strategic decision making is not currently configured to integrate security and economic considerations in a way that balances and integrates these twin objectives."

The authors have identified a key gap in our development of strategic policy.

Another significant gap is the lack of an Australian National Security Strategy.

Australia needs a strategic, forward-looking, outcome-based plan for its economic security that is integrated with the other elements of national security under a National Security Strategy.

Economic Security

At the time of the 2008 financial crisis, Australians were fortunate that the preceding Hawke, Keating and Howard Governments had taken political risks in order to build a strong economic base that had the ability to deal with the subsequent financial crisis. An October 2018 Treasury Working paper on Australia's experience with economic reform in the period 1983 through to 2000, details bold and visionary economic policies such as the floating of the dollar, the Prices and Incomes Accord, Tariff Reforms, the Charter of Budget Honesty and the introduction of the GST. The paper states that most of these actions were arguably the most premeditated and planned economic reforms undertaken in Australia, particularly where they demanded coordination between Federal and State governments. In military terms of preparedness, we had appropriate resilience (readiness and sustainability) in our national economy as a result of these collective actions. As the Treasury paper notes, it is evident that policymakers of that time were mostly persistent in their pursuit of reform, they did not give up in the face of adverse outcomes or events and, perhaps most importantly, appeared to learn from past mistakes.

The 2008 financial crisis revealed major gaps in many economist's understanding of financial intermediation. Enormous efforts were made to counter the downward trend that had led to the global economy shrinking for the first time in more than 60 years, and to restart the "growth engine." Despite economic stimulus, ballooning debt burdens, record low-interest rates, and many guarantees applied to markets or entities requiring support, growth targets were regularly missed – even today, after some 10 years, that "growth engine" is still spluttering, and predictions are regularly revised downward. So far, few people have picked up on the paradox of how little has come from all those unprecedented interventions. We are all still hoping for things to get better next year.

Currently, Australian public sector debt levels are relatively good compared to many other developed countries; they were 41.7% of GDP in 2017. This level of government debt and the servicing of that debt is not considered to be a significant economic risk. However, it should be remembered that current debt levels do not reflect the total risk to our economic resilience as obligations in unfunded promises do not represent deficits today but will represent deficits and debt in the future.

The greater risk factor for the Australian economy is private sector debt which was at 205.5% of GDP in 2017. Australian households are currently the second most indebted in the world (after Switzerland) with a 121% debt to GDP ratio in Jun 18. Australia's private debt levels are largely attributed to home loans, which have come at the expense of productive business lending. The credit ratings agency, Moody's, has stated that "A key issue for the Australian sovereign and the country's banking sector is their reliance on overseas funding … This means a relatively greater vulnerability to 'event risk' than most other AAA-rated sovereigns."

As at June 2017, the banking sector had borrowed some $850 billion from offshore, equating to 49% of Australia's GDP. More than 90% of this lending for property investment was for existing houses, not for new housing that would help boost supply.

This is, in effect, non-productive debt.

When reflecting on Australia's economic security and resilience, it is concerning to read an October 2018 speech made by Jennifer Westacott, Chief Executive of the Business Council of Australia. She noted that household debt is at a record high … half of that GDP growth in the June quarter reflected household and government spending … you have to question the sustainability of that … new business investment fell in the June quarter, and is … as low as it was coming out of the 1990s recession.

The combination of global risks, high household debt, high government debt, weak wages and low productivity led her to pose an important question: is this a recipe for resilience in a volatile world?[7]
Second Line of Defense

An additional example of unfunded liabilities of concern can be found in the pensions sector.

Actuarial reviews of the Commonwealth's defined benefit pensions funds found that the total unfunded government liability has increased to $216 billion with only $150 billion of the estimated liability backed by Future Fund assets.

The Australian Government 2018 budget papers predict a liability peak at around $315 billion in 2050.

This, before we count the unfunded pension liabilities of the State Governments.

However, this pales into insignificance compared with the total value of unfunded or underfunded government pension liabilities for twenty OECD countries which was estimated in a 2016 Citibank report to amount to $78 trillion, or almost double the $44 trillion published national debt at that time.

This is truly a global economic security and societal risk.

For Australia, economic security requires the resilience to fend off both economic and non-economic challenges. Many Australians have a tendency to view conflict in military terms and to define our response though a build-up of military capability and alliances.

However, an adversary may choose not to threaten us militarily but rather to achieve their goals by impacting our economy through control of trade or energy supplies. Given that over 90% of our liquid fuels are imported, it is not difficult to envisage such a scenario.

Unfortunately, successive Governments have elected to leave this particular aspect of or national and economic security to the "market."

Economic Security and Defence

Whilst Australia must have an appropriate military capability, such a capability requires a solid economic underpinning and a level of economic output that supports allocation of adequate resources to all elements of society.

Given the concerns regarding our economy and the apparent lack of coherent bi-partisan approach to improving Australia's economic security, what are the implications for Defence budgets and therefore military capability?

The 2016 Defence White Paper released on 25 February 2016 set out a comprehensive, long term plan for Australia's defence. The Government stated that "The plans in this Defence White Paper have been cost-assured and externally validated. Australia's defence strategy and capability plans have been aligned with funding. These plans are affordable and achievable."

The problem with the Defence Budget was that, according to the Australian Financial review, it was not based on "the amount of spending required to provide an acceptable level of security. Instead it is a rule of thumb that says we should spend about 2 per cent of our national income, or GDP, on defence.

While this 2 per cent target enjoys bipartisan support in Canberra, neither party has been able to explain how it meets Australia's security and defence requirements … It is a measure of the defence burden on the economy, not a measure of security … To that end maybe the lack of a clearly defined national strategy, along with commitment to spend 2 per cent of GDP, is Canberra's way of sitting on the fence.

In November 2016, the ADF's future operating environment assessment included the following statement: "A combination of global population growth and increases in productivity is likely to see an average world GDP growth of about 3.5% in the years to 2035."

This figure would have been provided to Defence by Government. The analysis did not appear to have addressed the risk for the Defence budget and the force design in that assumption.

If the growth assumption does not eventuate and our economy stagnates, what is the risk to our defence capability and therefore to national security?

At the time of the White Paper, the provision of contingency for future funding pressures was understood to have been included in the Defence Budget to address that issue.

However, due to a lack of subsequent cost discipline and a focus on platform vice a balanced, whole of force acquisition model, project costs growths appear to have absorbed the contingency funds and have incurred a further budget shortfall as discussed in the following paragraphs.

Defence White Paper projections and budget estimates have had a history of being somewhat flawed and lacking in transparency. So, how is the Defence budget travelling in the two years since the White Paper was launched? The Australian Strategic Policy Institute's Cost of Defence 2018-2019 Reportis the best public source of analysis available.

The report makes the following defence budget related observations:

- The Australian Government is broadly meeting its commitment to get the defence budget to 2% of GDP. But the content and timing of Defence White Paper's investment program have not been revisited, despite changes (for the worse) in the strategic environment it was intended to address.
- Funding pressures are already emerging, with more to come in sustainment and personnel right at the time when a large share of the investment budget is being tied up in shipbuilding.
- There are no guarantees that future funding will be delivered.
- Informed decision making and public debate on these issues is essential to navigating them in order to keep Australia secure. To support this, the government needs to demand Defence provide greater public transparency in its planning and reporting. investment.
- The government has capacity to invest more in defence capability, should it want to; however, it would need to make a compelling case for any additional expenditure to an Australian public that doesn't currently see national security as a key concern.

ASPI's conclusions should concern all Australians.

Whilst the lack of transparency makes it virtually impossible to gauge the full extent of budget pressures on Defence, the extent of existing budget pressures within the capital investment program is probably the worst-kept secret around Canberra at the present time. It has already resulted in project budget slippages which have not been made public because of the somewhat disingenuous technique of delaying project budgets whilst maintaining unrealistic Initial Operating Capability dates.

This, combined with "unquantified" future funding obligations such as the rapidly growing cost of the submarine project, JSF sustainment costs, and the growth in operating and sustainment costs resulting from the significant expansion in defence capabilities, makes the defence budget a risk even at projected GDP growth levels.

Second Line of Defense

If we discount budget growth based on a risk of economic stagnation in the 2020s, the potential pressures grow significantly. We could face the risk of replicating the "hollow force" problems of the past; e.g. platforms but insufficient weapons, lack of upgrades, lack of key force integrators and insufficient sustainment funds. Perhaps a 5thGen Force needs a 5thGen business model that takes such risks into account?

With a stagnating economy, budget pressures would, of course, not just be confined to Defence. Federal and State budgets would also come under immense pressure.

Given ASPI's contention that the Australian public does not currently see national security as a key concern, it would seem sensible to have a public discussion of the potential impacts of the economic risks we face and the consequences for defence and, in turn, national security.

This may result in more prudent investment decisions than have been made in recent years; for example, the investment required to make Australia a "Top 10" arms exporter in the world may be better redirected to more economically productive outcomes that help build a more resilient economy and, in turn, a resilient Defence Force.

The bottom line is this – it appears that we are blind to the economic risks we face in the coming decade, largely for near-term political reasons.

In this Defence example, we appear to be proceeding with the implementation of a Defence White Paper that is both out of date and out of synch with present global economic realities and we face the risk of recreating a hollow force in the future.

Conclusions and Recommendations

We must ensure that we have adequate resources to protect Australia and to ensure our national security. As long as governments and central banks continue their current trajectory we may see a period of protracted economic stagnation. A consequence of this situation, and the resulting behaviour of institutions, is a growing disenfranchisement of large segments of the voting population in advanced economies. The risk is then that the strength of institutional defence mechanisms against the next crisis are weakened.

The economic warning signs are growing stronger each month and to ignore them is foolhardy. We must acknowledge that the problem is not just the current debt; it is the unfunded obligations that will be future debt that grows faster than inflation and faster than the economy grows.

We need to analyse a range of scenarios based upon credible threats for both today and the future, and to determine what actions can be taken to limit the risks for our economy. We need to face reality and understand the resource constraints that we have and are going to have over time. There needs to be a public debate leading to a bi-partisan approach.

The economic dimension of national power and influence is central to the hard choices to be made on strategic policy. Currently, Australia's strategic decision making is not configured to integrate security and economic considerations in a way that balances these twin objectives. Australia needs a strategic, forward-looking, and outcome-based plan for its economic security that is integrated with the other elements of national security under a National Security Strategy.

To paraphrase the 2018 Treasury Working paper discussed previously, we need a current generation of policymakers who can be persistent in their pursuit of reform, who will not give up in the face of adverse outcomes or events and who can to learn from past mistakes. Perhaps the Economist Magazine was right

when it published the following description of Australia: "Australia is one of the best managers of adversity the world has seen – and the worst manager of prosperity."

This article has been produced by the The Institute for Integrated Economics Research (IIER) – Australia Board Members: John Blackburn AO, Anne Borzycki, Neil Greet and Dr Gary Waters.

Footnotes can be found in the published article:

https://defense.info/re-thinking-strategy/2019/02/the-need-for-an-australian-national-security-strategy-the-economic-dimension/

Shaping a 21st Century Resilient Defense Infrastructure: The Case of Energy Security in Australia

A key challenge facing the liberal democracies in defending themselves against the 21st century authoritarians is clearly ensuring that they have a robust and resilient infrastructure for defense operations.

In Europe, the infrastructure built for the Cold War has largely disappeared; the challenge facing the European Union and NATO is to reshape, rebuild and forge a 21st century defense infrastructure.

This will now include clearly C2 and cyber defense as well as more traditional security of supply and transport infrastructure needs.

With regard to Australia, John Blackburn has focused for some time on what he sees as yawning gap in Australian defense, namely, reliable and robust energy security.

Recently, Blackburn establish a new website highlighting his work and on that website has a section on energy security. There, one can see his intellectual path to focusing on energy security as a key building block for 21stcentury Australian defense.

His narrative follows:

National security is underpinned by energy security.

Energy security, like national security, can only be addressed with consistent bipartisan political support.

Unfortunately, the topic of energy has become so politicised in Australia, both between the major parties and within the Liberal party.

As a result, the national interest has been subsumed by both party and personal interests.

This is not acceptable.

Whilst Australia is endowed with natural resources, energy security risks across several sectors have increased.

Despite this, the current Liberal Coalition Government does not seem to think we have a problem.

Unfortunately, energy security is about much more than just a more "reliable" and cheaper electricity supply.

It is about our security as a nation, it is about protecting our society and our way of life and, as such, it is a very complex issue.

I became interested in the topic of energy security when I realised that the assumptions I had made about energy and fuel supplies when I was the Deputy Chief of the RAAF were fundamentally flawed.
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Accepting that one is flawed is a challenge for any fighter pilot … as I now realise, the problem of flawed assumptions is widespread in our society today.

A classic assumption related to fuel security, quoted in the Australian Newspaper in January 2019, is stunning : "The Energy Department said Australia's low supplies were not a serious concern as there had never been a serious interruption to Australia's supply."

Using that logic perhaps you should cancel your house insurance if you have never had a fire!

My own reality check came about when I teamed with Dr. Gary Waters in 2011 to research and write a report on Australia's Cyber Security. In the process of researching that report we found that few organisations, including our own Defence Force, had conducted a cyber resilience analysis of their supply chains, it was merely assumed.

Having by then grasped the scale of our own cyber vulnerabilites, we realised that all essential supply chains were at risk.

Having identified concerns in our supply chains, I obtained sponsorship from the NRMA to conduct three studies into fuel security to determine the extent of the problem.

My studies confirmed our concerns.

In 2012, the Government issued the National Energy Security Assessment; its' assessment of fuel security was fundamentally flawed seen clearly in follow-on government reports.

Gary and I then went on to study and write a government report on Defence Logistics in 2014.

That process did not reassure us either; we concluded that the global nature of supply chains combined with efficiency changes had led to increased systemic risk and reduced resilience in some cases.

We recommended that Defence needed to take a fresh look at Enterprise risk assessment and the changing nature of logistics support.

We still await a response …both from Defence and the Government.

The promised 2015 update to the flawed 2012 National Energy Security Assessment was not delivered.

Following the publication of the fuel security reports, a number of concerned Senators initiated a Senate Inquiry.

The 2015 Senate Inquiry report made the following recommendations:

Recommendation 1 – The committee recommends that the Australian Government undertake a comprehensive whole-of-government risk assessment of Australia's fuel supply, availability and vulnerability.

The assessment should consider the vulnerabilities in Australia's fuel supply to possible disruptions resulting from military actions, acts of terrorism, natural disasters, industrial accidents and financial and other structural dislocation. Any other external or domestic circumstance that could interfere with Australia's fuel supply should also be considered.

This recommendation has still not been implemented, despite a further Parliamentary Joint Committee March 2018 recommendation to do so.

Recommendation 2 – The committee recommends that the Australian Government require all fuel supply companies to report their fuel stocks to the Department of Industry and Science on a monthly basis.

This recommendation was eventually implemented in 2018.

Recommendation 3 – The committee recommends that the Australian Government develop and publish a comprehensive Transport Energy Plan directed to achieving a secure, affordable and sustainable transport energy supply. The plan should be developed following a public consultation process.

Where appropriate, the plan should set targets for the secure supply of Australia's transport energy.

This recommendation has been ignored by the Government.

The promised 2015 National Energy Security Assessment… was still not delivered.

In March 2018, the Parliamentary Joint Committee on Intelligence and Security published an Advisory report on the Security of Critical Infrastructure Bill 2017.

The first recommendation of that report was: "The Committee recommends that the Department of Home Affairs, in consultation with the Department of Defence and the Department of the Environment and Energy, review and develop measures to ensure that Australia has a continuous supply of fuel to meet its national security priorities.

"As part of developed measures, the Department should consider whether critical fuel assets should be subject to the Security of Critical Infrastructure Bill 2017.

"The Committee considers that the Department should conclude this review within 6 months. The Department should brief the Committee on the outcomes of the review following its conclusion."

The response to that recommendation was due in December 2018….

Crafting an Integrated Energy System Design

Energy issues are so intertwined with other security developments that we cannot afford to ignore them. Solving the energy security issues of today will not be sufficient; we need to anticipate the energy systems of the future.

As we try to address the energy transition challenge, there is an opportunity to learn from others who are making some progress in systems integration.

I suggest that there may be some design thinking that we could adapt from some Defence Forces, that are in the process of transforming to an integrated design force model, and apply it to the challenge of integrated energy system design in Australia. The following is a summary of the Energy Presentation and report posted on the Reports section of this website.

There has been much publicity in recent years about the transformation of our Defence Force into a "5th Generation" Force. The initial discussion centered around the RAAF's Plan Jericho, with subsequent discussion of a 5th Generation Defence Force. The concept of a 5th Generation force was not just about acquiring 5th Generation platforms.

It was about using the opportunity of 5th Generation technologies to integrate the existing 4th Generation platforms, to improve their capability and then, in turn, to amplify the capability of the new 5th Generation

platforms. It was a change in the way of thinking about integrated design, it was about a cultural shift away from the platform towards thinking at the program or systems level.

If we apply the construct of "Generations" of capability to the energy sector we could perhaps describe biomass as 1st Generation, Coal as 2nd Generation, Oil and Gas 3rd Generation and Nuclear and Renewables as 4th Generation. I have referred to the latest energy technologies as 4th Generation because they are being developed and fielded the same as we fielded 4th Generation platforms, such as the F/A-18.

Similar to what was done in Defence, 4th Generation energy systems are being acquired in component pieces, not as a part of an integrated system. This has led, as in the case of the South Australian Electricity blackouts, to systems failures. The question is, can we think about a model for a 5th Generation integrated energy system?

The technologies necessary to implement a 5th Generation energy system exist today.

We just lack the integrated design approach.

An example of such an approach can be shown in combination with solar and wind systems. Despite having the highest deployment of solar on domestic houses in the world, solar and wind systems provide only about 1% each of our energy supply.

The problem is that together they can at times provide more energy than is required; in some cases, it is the local electricity infrastructure that cannot handle the amount of energy that can be produced. At other times, solar and wind systems cannot meet the energy demand and thus they are blamed for supply failures.

Is there a possibility of utilising the energy produced by solar and wind systems differently? There are a range of excellent academic studies that have highlighted the value of pumped hydro systems to store renewable energy. At scale, pumped hydro seems to be the only viable solution, but at considerable cost and time for implementation.

There are also examples of small scale, regionally-based renewable energy storage systems such utilising Hydrogen, which can also be used to produce a range of energy products. Hydrogen, in this case, is the medium to produce both a time and mode shift of renewable energy.

Hydrogen could be used for power generation, for fuel cells in vehicles and trains, to produce ammonia, to supplement gas supplies and to produce gas. It could also provide a significant export resource to countries such as Japan, where Hydrogen imports have been identified as a Government energy policy priority.

Whilst not the panacea for Australia's energy needs, Hydrogen, as but one example, could be an important component of an integrated energy system, particularly as it could employ excess renewable energy capacity.

The production and transformation of energy in regional or sub-regional networks using such "energy integrators" could exploit an energy resource that is not utilised to maximum effect today.

It is about integration, resilience, economics, energy security and scalability.

It is about integrated design.

https://defense.info/re-thinking-strategy/2019/02/shaping-a-21st-century-resilient-defense-infrastructure-the-case-of-energy-security-in-australia/

5th Generation Energy for 5th Generation Air Power

By Nicholas Packer

By 2025 the Royal Australian Air Force will operate a fleet of technologically advanced 5th generation aircraft.

However, in modernising the RAAF capability, an inadequate amount of attention has been afforded to the fuel and energy infrastructure that supports these assets.

In order to ensure these 5th generation capabilities are employed to their fullest, Air Force must capitalise on new and emerging energy technologies that enhance the support provided by air bases.

Australia currently enjoys what it thinks to be a high degree of liquid fuel security. Reports released by the Department of Resources, Energy and Tourism assert that Australia's market-based approach, ready access to the global and regional markets for crude oil and petroleum products, and efficient supply management by industry, has delivered secure, reliable and adequate liquid fuel supplies. Australia's guiding principle is that energy markets should be left to operate freely, without unnecessary government intervention.

To date, this approach has met the current operational requirements of the Air Force and those of the broader domestic economy.

While there are economic benefits to this approach, it discounts current trends in competition for energy sources and market dominance, threats to supply infrastructure, the impact of natural disasters and geopolitical uncertainty (especially in the Indo-Pacific region).

An inadequate appreciation of these trends has created complacency resulting in a 'stove-piped' Australian energy policy; a policy that does not appreciate the complexity inherent in future energy infrastructure systems.

Consequently, energy security and supply is viewed through a 'singular lens'; whereby the focus has been on discrete energy types with discrete global supply chains that are disparate, separately managed, and (most significantly) vulnerable.

Consider the following statistic: Currently 90% of Australia's fuel supplies are imported; 40% as crude oil and the remaining 60% as refined fuels. In contrast to other developed nations, Australia is alone in its total reliance on 'market forces' to ensure secure access to the global fuel supply chain. Furthermore, Australia has no Government-owned strategic oil or fuel reserves and does not mandate minimum stockholding requirements for the fuel refining/importing industry. These oversights induce significant logistics and operational risks to the delivery of Air Force capability.

Should a significant supply disruption occur within key sea lines of communication (SLOC) within the Indo-Pacific (e.g., natural disaster, accident, a commercial failure, an act of terror or war), Australia's capacity to provide fuel for its 5th generation Air Force is immediately jeopardised.

The National Strategy for Energy Security, developed by the United States Energy Security Leadership Council, offers a range of recommendations to counter the challenges created as a result of the current global security environment. The National Strategy is the preeminent document on the topic of energy security and calls on the US government to fundamentally strengthen a combination of energy security measures (Energy Security Leadership Council, 2016), including:

Support, rather than hinder, innovation in energy technology;

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Major reductions in crude oil consumption by increasing domestic energy production;

Reforms to energy-related regulations; and

Transform the domestic distribution section so that oil is no longer its primary fuel.

Australian energy policymakers must undertake policy reform that is reflective of the US approach, appreciating that the challenges and opportunities in energy security are global in nature, and remain cognisant of the significant implications an approximate policy approach has for Australia's national security.

To date, energy policy pundits have been relatively silent to the 2016 Defence White Paper's acknowledgement of the strategic influence of energy supply chains and energy security on national defence. While energy requirements and subsequent security have never been a key driver behind Australian defence policy, the Defence White Paper does raise the requirement to 'improve Defence's fuel resilience.'

Further, when reviewing a critical infrastructure bill in March 2018, the Australian Parliamentary Joint Committee on Intelligence and Security made the following recommendation: "The Department of Home Affairs in consultation with Defence and the Department of the Environment and Energy need to review and develop measures to ensure Australia has a continuous supply of fuel to meet national security priorities."

Adequate, reliable and economically competitive energy to sustain Air Force 5th generation capabilities and infrastructure must be seen as a shared responsibility between the Government and the Australian energy industry.

The importance of a strong Government-industry partnership in addressing energy security challenges in the long-term cannot be understated. In the interim, however, there are a number of practical measures that the Air Force and the wider Australian Defence Force can undertake to fortify the energy requirements of a 5th generation Air Force. These include:

Advancing the development of energy technologies by integrating contractual efficiencies for their use in warehousing and distribution contracts. In particular, create incentives for the purchase and use of medium and heavy-rigid distribution vehicles that use advanced fuel sources.

Use an Air Force and energy industry partnership to create performance-based advanced fuel standards in order to reduce traditional fuels consumption.

Accelerating the adoption of advanced fuel systems into 5th generation aircraft and military vehicles will reduce the logistics and operational risks to Air Force capability associated with the use of traditional fuels;

Empower Estate and Infrastructure Group to pursue efficiencies in airbase energy infrastructure with a view to creating completely self-reliant airbases through, for example, the use of solar and wind systems;

To support the recommendation above, establish an Air Force 'Energy Security Research Grant' to fund research and development in advanced fuel technologies for use in 5th generation aircraft, military vehicles and airbases;

Build an international consensus amongst Australia's coalition and regional partners on the importance of shared responsibility and coordinated action to deal with future energy security challenges.

Air Force cannot remain ignorant to the interdependency of energy and national security as long as it remains heavily dependent on traditional fuels to power its 5th generation aircraft, military vehicles, and airbases.

Despite a current abundance of supply, such dependence introduces operational risks and critical vulnerabilities to 5th generation air power.

While innovation in advanced fuel technologies will require years to mature, through the combination of measures proposed in this article, Australia will move toward being more energy secure, and more self-reliant.

Flight Lieutenant Nicholas Packer is a Logistics Officer in the Royal Australian Air Force. Nicholas is currently posted to RAAF Base East Sale as an instructor at the RAAF Officer Training School mentoring newly commissioned officers through their 17-week ab initio course. The views expressed are his alone and do not reflect the opinion of the Royal Australian Air Force, the Department of Defence, or the Australian Government.

Notes: Advanced fuel sources are distinct from renewable energy sources such as solar and wind power systems. Examples of advanced fuel sources include biodiesel, hydrogen cell, electric-hybrid, ethanol, natural gas and propane.

Development of advanced fuel systems for use in motorsport has demonstrated high technical performance can be achieved from advanced fuel sources.

There are a range of academic studies that have highlighted the value of hydrogen and pumped hydro-systems to store energy generated by solar and wind systems (Blackburn, Energy Security: Is there a problem?, 2018).

http://centralblue.williamsfoundation.org.au/category/5th-generation-air-power/

A "Plan Jericho" for Australian Energy Security: Leveraging the Hydrogen Energy Opportunity

During my current visit to Australia, I had an opportunity to continue my discussions with Air Vice Marshal (Retired) John Blackburn with regard to the challenges facing Australian energy security.

Increasingly, there is a perception that Australia needs to create an energy reserve or buffer with regard to energy supplies in case of supply chain disruption. And certainly, it does not make sense to have a serious vulnerability in terms of energy supplies which provides an adversary with an easy option to put pressure on Australia in a crisis.

Blackburn has been at the forefront of the effort to get the Australian government to focus on this challenge.

But in this interview, we assumed the importance of that effort and we discussed a more comprehensive way to provide for a key element for Australian security, namely a reliable and secure energy supply.

Blackburn has argued for what he calls a "fifth generation" approach to energy security, i.e. designing an approach which looks at building an integrated energy system," rather than the exisiting stove-piped approach where various energy supplies and systems are treated in isolation from one another. His explanation of this approach was published previously on Defence.info.

He proposes that the integrated design principles underpinning the Plan Jericho approach whereby the RAAF looked to leverage the F-35 and its entry into service for a major reworking of the entire force, be applied to Australia's energy system. Blackburn believes that the expanded use of Hydrogen, as an energy system

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integrator, could provide a similar trigger for change in Australia's Energy systems as the introduction of the F-35 is doing for the ADF.

A key example of the absence of strategy with regard to energy in Australia is seen in the natural gas sector. According to Blackburn: "When Australia started to extract a lot of gas for exports, only West Australia had a 15% domestic reservation policy. In other words, 15% of the supply had to be kept for domestic use, the rest could be exported. No other state or territory in Australia did that."

"So today, gas in West Australia cost one third or even less than gas on the East Coast of Australia. So much is being exported from the East and North of Australia that the Government is now projecting there won't be enough gas for the domestic supply in the East of Australia in the next few years. There now is a discussion about building liquid natural gas import terminals on the East Coast so we can buy liquid natural gas (that we just exported) from the global market and import it to Australia for the East Coast gas supply. That's a real indicator of the absence of systems thinking.

"Even though we are now the largest exporter of gas in the world, because we didn't have a strategy or a plan, we just let industry export with no controls (apart from West Australia), with the result that now the cost for gas in East Coast is killing business and impacting our economy negatively. Businesses like aluminum producers, fertilizer producers and others, are really suffering on the East Coast because they don't have affordable gas.

"This is an example of a common problem in Australia – a lack of systems thinking in the Government. The focus is on exports and export earnings at the cost of domestic security and domestic cost of energy supplies.

Blackburn argues that if you took a broader view, Government needs to consider how the different energy supplies could be woven under a comprehensive strategy which would enable exports but within an approach that was based first upon domestic costs and supply considerations and national security.

"What would we like to have?

"It's very important for national security purposes to have an integrated energy system design of some sort. Otherwise, it's just like a 3rd Gen Air Force, you buy all these platforms and you hope sometime in the future they'll be sort of connected by data links and they'll be integrated."

"We learned that it didn't work that well so with the 5th Gen Air Force, we're thinking about how do we use parts of that force, in this case, the JSF, as an integration driver which can leverage legacy capabilities and help integrate them into a 21stcentury Air Force."

We then focused on how hydrogen energy, if leveraged with a fifth-generation integrated design perspective in mind, could trigger fundamental change in the energy security domain.

"Hydrogen could be as significant an export in the future as our liquid natural gas is currently. But we need to look beyond that opportunity to see it as a trigger for change.

"Hydrogen can be part of a significant energy transition.

"For example, using a "Hydrogen system" we can store electricity from wind and solar in the form of hydrogen and you can then use a hydrogen gas turbine and generate electricity when you need it. Hydrogen also changes the mode of energy. With hydrogen you can make ammonia, which is important for fertilizers, explosives, and a wide range of products.

"You can also make liquid hydrogen for export which is what Japan will be importing under its future Hydrogen Society model. Japan has a National Policy Statement, in which they indicate that they want to be the first hydrogen society in the world. Japanese companies are looking at how they move away from fossil fuel-based energy in their production. What they're planning is for hydrogen to actually be the energy source for a lot of their production.

"We can be one of the largest exporters of Hydrogen to Japan; likely at the same scale as our current natural gas exports to Japan.

"In other words, there's an energy relationship that could complement our security relationship with Japan.

"The opportunity for us is to use the emergence of hydrogen as a significant factor in our energy market to develop an integrated energy strategy and plan for Australia. This could have a positive impact on our economy, on the environment and defense, improving our our national resilience and, in turn, our national security.

"The challenge we will face is that we do not have any examples of coherent national level strategies and plans in the last few decades. We do not have a national security strategy, nor national strategies for energy components such as oil/fuels, gas or electricity systems. Given that we are the 9thlargest energy producer in the world, the lack of any integrating strategy or plan (apart from "dig it up and export it") beggars belief.

"We don't have a culture of doing that. And this is why the current focus in Australia is on developing a national hydrogen strategy with a strong focus on export.

"I think that there needs to be an expansion of the Terms of Reference for our hydrogen strategy to allow it to look beyond just production of hydrogen for export, to the impact on our energy security as a whole.

Hydrogen production and deployment systems could positively impact our electrical power networks, by providing base loads for networks with a high percentage of renewable generation, frequency stability services and electricity production (via hydrogen gas turbines) when required by the network operators to stabilize the electricity system.

"This results in a more robust distributed energy system which can reinforce electricity system resilience by being able to produce electricity on demand.

"The emergence of hydrogen powered vehicles will also reduce our oil and fuel import dependency which is currently a major energy security risk. Thus hydrogen needs to be considered in the development of a transport energy strategy (which we do not have.)

"Hydrogen can be injected into exisiting methane gas networks in order to reduce gas imports and to lower emissions thus having a significant impact on our gas energy systems.

Put in other terms, in Blackburn's view, a hydrogen strategy is not just about hydrogen but it's about an integrated energy security strategy where Hydrogen acts as both a temporal and mode shifting medium that integrates other "legacy" energy components into a much more resilient and secure system.

"The development of the national Hydrogen strategy can help trigger a change in thinking, to think about integrated design of energy which in turn can significantly improve our national security."

"Once we've done that on the energy sector, you can turn that sort of thinking and apply it to the other parts of national security system.

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"If we could trigger an integrated system design and strategy for energy, we could, in turn, significantly improve our national security and ideally highlight the value of actually having a national security strategy!"

https://sldinfo.com/2019/04/a-plan-jericho-for-australian-energy-security-leveraging-the-hydrogen-energy-opportunity/

The Central Role of IT and Communications in an Australian National Security Strategy

A key aspect of the strategic shift is working to ensure a more secure Australia, notably in terms of energy, information technology and communications.

It is clear that a national security strategy is important as well to shape a more secure Australian communications and IT networks.

Because Australia is part of the global system and certainly not expecting or looking to dominate the global IT or Communications systems, the question is how to shape enough sovereignty to support the force and the nation in times of crisis?

How to build a more robust and secure Australia from the standpoint of IT and communications?

From this perspective, crafting, shaping and ensuring such a capability is a foundational element for 21stcentury defense and security and should be part of any 21stcentury Australian national security strategy.

But it won't be if it is not addressed as such.

From Blackburn's perspective: "Sovereign capabilities in IT and communications are not a nice to have capability, but an essential part of shaping a 21st century national security capability."

As Blackburn put it during our discussion:

"In the Australian Defense Magazine newsletter of the 4th of April, they addressed the new budget which is reasonably favorable for defense. But they also noted the question of where Information and Communications Technology (ICT) programs fit into the way ahead.

"The newsletter asked "Well, why aren't the ICT programs listed on the top 30 list? Defense finance officials commented that ICT programs are usually short in nature, not material related, unlike other defense programs, and it's not core business."

The not a core business piece is really an amazing statement but also revealing.

Such programs tend to be funded in stove pipes and are not worked in a comprehensive manner which is crucial in Blackburn's view both for force integration and national security.

Earlier, Blackburn and Ian McDonald wrote a piece which focused on the fifth generation information management environment. In that piece, they argued for the need for a clean sheet approach to shape the kind of integrated system through secure information could flow to the distributed force.

"The real problem we face today is existing communications and information networks.

"We're not designed as a system, an integrated system, and they're not a good foundation on which to build this fifth-generation integrated force that we talk about.

"There is no proper integrated communications and network architecture; it's all just pieces.

"So how then will be able to deliver on the promise of a fifth generation ADF?"

For this challenge to be addressed, the shaping of such a system needs to be built around a sovereign approach.

Given the nature of global comms and IT, clearly a sovereign approach is about building a national capability through which an Australian team shapes capability which provide for what the ADF wants and needs as well as clearly focusing on robust and secure systems.

What this does not mean is Australia going it alone which would make no sense given the size, skill sets, and capabilities resident in Australia as well as the need to understand adversaries and work closely with allies.

"We have Australian owned, sovereign capabilities in pieces."

"But if you brought our SMEs and an integrator together as a team, you could have an Australian, sovereign, prime system integrated team of these small players.

"Why do we have to go to the US or Europe to get the prime system integrator to come and do the job?

"The key pieces have to be Australian owned. They have to manage the data in Australia. We need to have Australian companies that can build the expertise and maintain it through the capability life cycle.

"It's time for us to mature. And it's time for us to have confidence in our capabilities.

"We need to focus on our IT and Comms systems not just as a core business but as a weapon system and not just for the ADF but for the nation as a whole.

"We'll subcontract and support and overseas help where you need it. No doubt. This is not something we can do by ourselves. But the integrator team has to be led by Australian players with Australians at the lead of it, and not just functioning as subcontractors.'

In a later meeting, Blackburn and I met with a leading information leader in Australia and we discussed the need for a coordinated Australian effort in IT and communications.

This Aussie information leader argued that the broader challenge for industry was to generate secure bandwidth for Australian society, industry and the population.

The military were consumers of the broader effort but within that overall effort, "we need to work with the ADF to shape more innovative ways to ensure secure of data in motion and for data at rest. It is about changing work methods, technologies, and work styles to get away from the hierarchical stove pipes to operating flexible IT capable of empowering a mobile force which needs to connect modular pieces on the fly to execute integrated missions."

We then discussed a case of what was seen in Trident Juncture 2018 where the Norwegian citizens as part of the Total Defense Concept provided information through civilian networks to the allied and Norwegian military operating against the "red" forces.

What this experience highlights is that without a doubt during a crisis period, the authoritarian states will reach into Australian networks to try to influence Australian public opinion and to undercut the ability of the government even if functioning as a whole of government effort to work effectively with the public in working through a crisis.

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In other words, sovereign capabilities in IT and comms are not a nice to have capability, but an essential part of shaping a 21stcentury national security capability.

https://defense.info/re-shaping-defense-security/2019/04/the-central-role-of-it-and-communications-in-an-australian-national-security-strategy-the-perspective-of-air-vice-marshal-retired-john-blackburn/

The Need for an Australian National Security Strategy: The Perspective of Senator Jim Molan

During my current visit to Canberra in support of the Williams Foundation seminar which will focus on enhanced sustainability for Australian defense efforts, it is not surprising that I have been talking with Australians about how to do so. It is clear that as we address the challenges posed by the 21st century authoritarian powers shaping resiliency in our societies is crucial. And this means a priority focus on shaping more secure infrastructures able to sustain defense capabilities through a sustained crisis period.

I had a chance to visit Senator Jim Molan in his office at Parliament House the day before the introduction of the budget. In spite of a busy schedule, a leader in Parliament on defense issues, Jim Molan wished to discuss the need for a national security strategy for Australia. To be clear, Australia has put in motion significant force transformation, a process which will yield a more capable force to shape, operate in and execute a kill web approach.

As important as this is, there is a need for more than a defense strategy focused on force structure modernization. There is a need for a broader national security strategy which embraces key issues such as energy security, resilient communications and IT networks.

According to Molan: "The world has changed. Our approach has been to contribute to the American-led alliance. We are strong allies but the American place in the world has changed with the rise of China. We need to do more. We need to be an anchor to the alliance working with the US and Japan in forging enhanced deterrent capabilities.

"This means not only do we need to invest more but we need to do it such a way that Australia is a more robust and sustainable society. We are in the throes of major new infrastructure investments but we need to fold security considerations into our infrastructure modernization. How do we ensure that our infrastructure is robust and sustainable against the intrusions of powers like China and Russia? This is a key capability which needs to be built into our national security efforts and needs a national security strategy."

Molan described how the situation is changing in Australia. He noted that the Parliamentary Joint Committee on Intelligence and Security has worked on a bipartisan effort to enhance significantly Australia's counter terrorism efforts.

"We are taking internal counter-terrorism security very seriously and have passed a number of bills strengthening the approach of government to this challenge.

"Now that we have achieved this, we now need to broaden the effort to shape and put in place a broader national security strategy, which would subsume a number of challenges on infrastructure of the sort we talked about earlier in our discussion."

"The Australian government does not know, and cannot say what war it is preparing for. And this is a real problem in terms of where you put your effort and where you need to get results. Clearly, with what the Chinese are doing to intrude into the lives of Australians we need a range of security capabilities, ranging from liquid fuel security, financial security, bank security, government decision making processes and security,

cyber security and so on. These are not separate challenges but part of what needs to be addressed as a government wide national security strategy."

"We are investing more than 70 billion Australian dollars into infrastructure but there is no security perspective guiding the effort. This makes no sense."

Senator Molan then described a crucial area to guide economic development from a national security perspective, namely foreign investment.

"We have a foreign investment review board, which answers to the treasury of the country, and the treasurer makes the final decision about all foreign investment above a certain level goes through the foreign investment review board must be approved by them and to determine whether the investment is in the interest of this country before it is approved.

"The failure of the system was indicated by the decision to lease the Port of Darwin management to the Chinese a couple of years ago with no real consideration of the security implications for Australia.

"This makes no sense., We have now attached to the foreign investment review board, a critical infrastructure commission, which is headed by the ex-head of our security and intelligence organization, whose only job is to make an assessment, or a recommendation, as to where a proposed investment fits in the national security world.

"It is a beginning but we need to shape a more comprehensive national security strategic approach to infrastructure investments and foreign direct investment overall."

"The answer is for this country to get itself squared away with regard to its overall resilience in its core infrastructure."

https://sldinfo.com/2019/04/the-need-for-an-australian-national-security-strategy-the-perspective-of-senator-jim-molan/

APPENDIX III: BACKGROUND PAPERS

Huawei, 5G Networks: ASPI Provides a Case Study With Regard to Restoring Infrastructure Sovereignty

With 2014 came the end of an era.

It was apparent that authoritarian powers were back and in many ways' ascendant.

The response by the liberal democracies has been varied and differentiated.

Some have taken it seriously; others hope that the past period of hope for a globalized democratization process will return.

Nonetheless, the challenge of the 21st century authoritarian powers needs to be addressed as a core one, not simply as an aberration of globalization and the return at some time in the near future the inevitable march to global democratic capitalism.

There are two prongs of the challenge to focus on reality.

Second Line of Defense

The first is building a crisis management force structure which allows for engagement at the low end and escalation dominance throughout.

We have argued that the kill chain concepts of operations which are a work in progress provide a core way ahead to shape such a force.

This is necessary but not sufficient approach to defend our societies against the 21st century authoritarian powers.

The second prong is even more challenging – it is to build secure infrastructure in the liberal democracies.

Given the nature of the global system in commodities like IT and communications, national efforts can provide security for sovereign solutions, but only up to a point.

We no longer have national drafts in most Western states.

But mobilizing support for robust and secure infrastructure is the functional equivalent to a national draft to mobilize the nation against the innovative approaches being taken by 21stcentury authoritarian powers, approaches designed to undercut our way of life and to protect themselves from any counter measures we might take.

This is not about the global market or globalization glorified by the global consulting firms; this is about a strategy to deal with 21st century authoritarian powers exploiting the global markets abroad, while protecting themselves at home, as part of a dominance strategy.

Getting governments to work with industry and society to limit the penetration of authoritarian states within the internal processes of our societies is crucial to shape a more secure and safe liberal democratic systems.

The problem is that the ability of the authoritarian states to operate within our societies has been and is being facilitated by their ability to own or participate in the development of our core infrastructures.

Shaping a more robust and resilient infrastructure for the liberal democracies starts as a national endeavor, but requires cross national cooperation among the liberal democracies to achieve long term success.

Sovereignty in this case can be only semi-sovereignty but if a nations' control disappears through "market forces" being exploited by the authoritarian states then sovereignty simply disappears and with it the ability to defend our societies militarily when the time comes in a crisis.

A case in point is how the Chinese Government is using the global reach of Huawei to own and shape infrastructure in the liberal democratic states to their advantage.

A 2018 report by the Australian Strategic Policy Institute has provided an excellent over to the overall challenge being posed by Huawei and explanations of why the Australian government has acted to restore Australian control for their communications networks.

This obviously is not a one off, and must become part of a broader Australian redesign of infrastructure policy to be built on foundations which ensure a more robust and resilient Australia, but it is a clear beginning.

As Elsa Kania notes in the report:

In Xi Jinping's China—it's worth raising the question of whether any Chinese company has adequate freedom to 'go its own way,' particularly on issues that are sensitive or strategic. In the absence of true rule of law,

even those companies that may wish to resist impositions by the state on their commercial interests have fewer avenues through which to do so.

Meanwhile, there's also a new legal basis that the Chinese government could use to mandate Huawei's compliance with state security interests that may be contrary to corporate imperatives. Notably, in China's National Intelligence Law (国家情报法), released in June 2017, Article 7 declares:

All organizations and citizens shall, in accordance with the law, support, cooperate with, and collaborate in national intelligence work, and guard the secrecy of national intelligence work they are aware of. The state will protect individuals and organizations that support, cooperate with, and collaborate in national intelligence work.

Similarly, Article 12 highlights that national intelligence agencies may 'establish cooperative relationships with relevant individuals and organizations, and entrust them to undertake relevant work'.At the same time, the law itself is ambiguous as to the scope and bounds of what 'intelligence work' may entail. Pursuant to this framework, there appears to be a direct obligation on the part of Huawei—or any other Chinese company or citizen for that matter—to assist the activities of Chinese state intelligence services.

Ultimately, the 'much ado' about Huawei is arguably justified, not so much because Huawei is Huawei but rather because of nature of the CCP and the framework for Chinese intelligence operations. In this regard, the anxieties and uncertainties about Huawei are similarly applicable to any Chinese company operating with this system, absent rule of law and without full transparency.

Danielle Cave then added:

It's a double-edged sword for China. Requiring individuals and organisations to support, cooperate with and collaborate in intelligence activities, of course, comes at a cost. And that cost will be the international expansion plans of Chinese companies—state-owned and private— which have been well and truly boxed into a corner with this law.

The CCP has made it virtually impossible for Chinese companies to expand without attracting understandable and legitimate suspicion. The suspicion will be deeper in countries that invest in countering foreign interference and intelligence activities. Most developed countries, including Australia, fall into that category.

This fascinating tension—between commerce and intelligence collection—will only intensify and will eventually force some tough decisions. What's more important to the CCP? Using Chinese companies operating overseas to collect intelligence or supporting the international success of those companies?

A little from column A and a lot from column B is probably the ideal mix for any government.

But betting big and hoping for roaring global success on both fronts is a crucial mistake. The two just don't go hand in hand. There will be a loser. And this year, at least in Australia, it will be Huawei.

Peter Jennings, the director of ASPI, looked at more than Huawei but at other Chinese efforts in Australia and argued:

The national security calculation for Australia is hardly less stark for the gas and electricity sector as it is for telecommunications.

Second Line of Defense

Can we afford to let the bulk of that critical infrastructure be owned and run by a company that is ultimately subject to an authoritarian one-party state with a massive intelligence apparatus and an equally large cyber force within the PLA looking for national vulnerabilities that might offer exploitable advantage?

Since the Ausgrid decision not to sell NSW's 'poles and wires' to State Grid or CKI, a Critical Infrastructure Centre was created by the Federal Government and a new Security of Critical Infrastructure Act passed by Parliament in 2018 showing that more attention is being paid to how Australia can protect critical infrastructure, particularly from malicious cyber interference.

It's true that one does not need to own an asset to be able to damage it through cyber manipulation, but hands-on access to the hardware and software of the industrial systems running our critical infrastructure is a clear vulnerability. The non-negotiable interaction of Chinese intelligence services with their business community remains a persistent challenge.

The non-national security problem for CKI remains what Treasured Scott Morrison has called the 'aggregation effect' of an ever larger part of Australia's energy infrastructure being owned by a small number of mainly Chinese and Hong Kong businesses.

The Government has warned on a number of occasions that 'Australia's national critical infrastructure is more exposed than ever to sabotage, espionage and coercion.'

The statement is not lightly made and we should take it seriously.

As difficult as these decisions are, Canberra should move quickly to block Huawei's access to 5G and CKI's access to APA's gas and electricity business.

This is the necessary price of maintaining national security interests in the face of an increasingly predatory China looking to maximise its own strategic interests at the expense of all others.

The Australian government in 2018 did ban two big Chinese telcos—Huawei and ZTE—from selling 5G in Australia.

Michael Shoebridge argued that this effort needs to be part of a wider effort.

Australia's decision has been received in odd and expected ways in Beijing. The first, odd, reaction was in the Communist Party's strident mouthpiece, the Global Times, expressing disappointment that Australians won't get cheap Huawei services.

That swiftly moved to more predictable if concerning statements, also in the Global Times, such as 'Canberra stabs Huawei in the back' and 'those who willfully hurt Chinese companies with an excuse of national security will meet their nemesis'.

The Global Times claimed Huawei is 'a company that embodies China's reform and opening up'. China's leaders know this is disingenuous. Beijing's track record on 'opening up' to non-Chinese providers is of partnerships subject to deep control by Chinese authorities and technology transfer to the Chinese entities.

More interestingly, the article asked, 'Will the move cause a domino effect in Western countries?' This gets to a real concern for China's leaders about the precedent effect of the US and Australian decisions.

These fit with rising global concern about how the Chinese state is using its power. Chinese assertiveness under President Xi Jinping's One Belt, One Road China-centred infrastructure initiative has provoked unease in countries from Sri Lanka to Malaysia, and even Tonga.

Add to this the glimpses we are gaining into China's use of digital technologies through 'social credit' to control its citizens and its electronically enabled surveillance and repression of millions of Uyghurs.

So, Xi is right to worry if the reality of the Communist Party in action looks very different from the 'win–win' words of his 'China Dream'. This goes well beyond the Australia–China relationship.

Morrison has set a course in managing the relationship that will welcome our valuable two-way trade in resources and services, based on us selling world-class items that China needs at globally competitive prices.

But he's also laid out clear markers that where our national interests differ—as they do in questions of deep access to, and potential control of, our critical infrastructure—he will put national interests first.

Refreshingly, he won't pretend that repetition of slogans such as 'win–win' and 'mutual benefit' will make everything okay, even if it's the 'correct line' that Beijing wants to hear.

The future directions for broader economic and technology policy seem clear. They align with the government's big strategic direction to work with partners to advance a 'free and open Indo-Pacific'.

This is a vision of broad economic and security partnerships, not deep dependency on single markets and partners. That drive towards economic diversification is one we'll probably hear a lot more of as the new Morrison government gets underway.

https://sldinfo.com/2019/04/huawei-5g-networks-aspi-provides-a-case-study-with-regard-to-restoring-infrastructure-sovereignty/

The report can be found at the following link on ASPI's website:

https://www.aspi.org.au/report/huawei-and-australias-5g-network

The Return of Geography in the Defense of Australia

As Australia thinks through its options for enhanced capabilities to defend the nation in the changing strategic context of the Indo-Pacific region, Australian geography may well be returning in a way not seen since the days of World War II.

During World War II, Japan directly attacked Australia in order to try to ensure that it would not function as a launch point against Japanese extended territorial defense. Japan had significantly expanded its territory and control over the Pacific and its islands; it was threatened by the United States and its ability to operate in the Pacific from various island bases and certainly the notion that Australia could become the unsinkable aircraft carrier for the allies was a key concern for Japan.

Although dramatically attacking Darwin with the same naval task force which had earlier attacked Pearl Harbor, the Japanese ultimately failed in its efforts to negate Australia and its role as the key ally of the United States in defeating the Empire of Japan.

The Battle of the Coral Sea was clearly a key turning point in this phase of the War.

With the Chinese pushing out from the mainland and shaping a phased island strategy, their ability to project power out into the Pacific raises again the question of the role of Australian territory, notably Western Australia and the Northern territories in the defense of Australia.

Second Line of Defense

An enhanced role for these territories in extended deterrence is a distinct possibility for the Australian Defence going forward.

Some in Australia would see this as a Fortress Australia policy, but it really something quite different.

It about the ADF can operate from Western Australia and the Northern Territories much more flexibly and do so as if the territory operated a chessboard across which forces could be moved in a crisis.

There first of all is the question of Australian forces and the ability to do so.

The RAAF will certainly look at agile basing and enhanced capabilities to operate from a variety of airstrips and mobile bases.

The Navy already operates their submarine force from Western Australia and as the new build submarines are added to the force, might next flexibility be considered in how to operate the force, somewhat similar to how Australia operated in World War II.

This leaves the key question of the role of the Army.

There is a beginning of change within the Australian Army as new strike capabilities in support of the maritime force and new active defense capabilities are being built.

But might not the Army have an even more significant role as the Aussies look to leverage F-35 2.0 and provide longer range strike and active defense capabilities for a power projection force designed to go much deeper into the Indo-Pacific region to defend Australian interests?

In addition, there is the consideration of key allies, notably Japan and the United States.

For the United States, a major challenge is to generate a much more mobile and flexible force able to operate with an alternative to large fixed bases.

Cooperation with Australia could provide flexible basing in a crisis but only if the United States can really learn how to show up for relatively short periods of time but operated a sustainable force.

And to do this without permanent basing of a sort not relevant to the 21st century and the crisis management challenges on the horizon.

For the Japanese, as they add new military capabilities, such as new ships, new submarines, new aircraft and new strike systems, they clearly will be looking to move capabilities on a short-term basis outside of the limited perimeter of their island chain.

A good starting point for change could well be for Japan and the United States to learn how to operate their F-35s from the sustainment facilities the Aussies are building for their own F-35s.

This would mean that if desired by the Australians in a crisis, the United States, Japanese or other F-35 partners could fly to bases in Australia, bases with significant active defenses or ability to operate from mobile bases, and be maintained by Australian sovereign capability.

The F-35 inherently can do this; but it would require a revolution in sustainment thinking on the US and allied side to achieve what is inherent in the aircraft itself as a combat system.

It is a case study of a broader set of changes which could interweave with the changing role which territory will play in 21st century extended deterrence in the Indo-Pacific region.

And such a return of geography, raises some fundamental questions as well for the ADF, notably for the Army which has thought of itself largely in out of Australia expeditionary terms. Now it might play a much more significant role in terms of the defense of Australia in terms of its national territory, notably in Western Australia and the Northern Territories.

For the United States to be an effective partner in such a change would require significant alterations in how the US power projection forces operate as well. It would require building on those areas where common platforms are yielding potential for common sustainment and weaponization solutions, but generated from the Aussie side.

It is not about turning Australia into a Fed Ex set of terminals for the American forces; it is about an agile, flexible engagement force which could show up for 90 days in a crisis and support common policies and interests.

And the weaving in of the Japanese will be a challenge as well both on the Australian and Japanese as well for the Americans who have to shed their superpower mindset and think in terms of regional crisis management and their contributions and role in a tailored set of crisis solutions.

To reset how to think about geography in relationship to the new platforms and technologies is a major challenge not only in a rethink of Australian defense but for Australia's closest allies as well.

This means as well that infrastructure and its defense becomes a core strategic challenge for both Australia and its closest allies.

It is high time to recognize that Chinese efforts to buy commercial ports and infrastructure really is about ensuring that the obvious trajectory of change for Australia and its closest allies is something which the Chinese wish to obviate without firing a shot.

https://defense.info/re-thinking-strategy/2018/10/the-return-of-geography-in-the-defense-of-australia/

The Strategic Shift and Crafting a 21st Century Sustainment Capability

The liberal democracies are facing a demanding shift from fighting the land wars in the Middle East to completely reshaping their forces for crisis management challenges with peer competitors.

On the one hand, military capabilities are being reshaped to operate in such an environment, and there is a clear opportunity to leverage new platforms and systems to shape a military structure more aligned with the new strategic environment.

On the other hand, the civilian side of the equation needs even more significant change to get into the world of crisis management where hybrid war, multi-domain conflict and modern combat tools are used.

While preparing for large-scale conflict is an important metric, and even more important one is to reshape the capabilities of the liberal democracies to understand, prepare for, and learn how to use military tools most appropriate to conflict management.

This means putting the force packages together which can gain an advantage, but also learning how to terminate conflict.

At the heart of the challenge of rebuilding an effective force package to deal with peer competitors is the underlying need to build a 21stcentury infrastructure capability to support military operations in a contested environment.

Second Line of Defense

With the focus on the Middle East, logistical systems in the United States, in the West and in the Pacific were lightly protected and operated through either using commercial systems or systems which operated similar to Fed Ex.

When dealing with a peer competitor, one can expect those systems to be targeted early on.

The challenge then is to build hardened shelters, active defense and to find ways to stockpile the parts, and repair capabilities, which can allow US and allied forces to sustain an ops tempo which allows us to prevail in a significant crisis.

The German Case

My recent trip to Germany highlighted how difficult the rebuild process will be.

The Germans are projected by NATO to be the logistical hub for NATO in the support of operations to the new members of NATO to the East. Germany is where forces will move through and forward to support combat or deterrent operations against the Russians.

But according to several retired senior Bundeswehr officers with whom I spoke during my February 2019 visit, the German military simply has no such hardened supply capabilities today.

A good example of the thinking is the support center for the Eurofighter in Munich. The center is above ground, and a centralized support facility.

There is no active defense; there is no bunkering of parts or anything remotely connected to the needs of a strategic shift.

Obviously, the Germans are not alone and there is the broader question of the significant rebuild in European infrastructure, which is necessary to prepare for sustained operations in the face of Russian aggression.

Shaping a New Approach

It was very clear from discussions during my visits to Finland, Norway and Denmark this past year that the return of direct defense is not really about a return to the Cold War and the Soviet-Western conflict.

Direct defense has changed as the tools available to the Russians have changed, notably with an ability to leverage cyber tools to leverage Western digital society. and, more generally, to be able to achieve military and political objectives with means other than direct use of lethal force.

This is why the West needs to shape new approaches and evolve thinking about crisis management in the digital age.

It means that NATO countries need to work as hard at infrastructure defense in the digital age as they have been working on counter-terrorism since September 11th.

The Finnish Case

There is little doubt that the Finns provide significant domain expertise into how to operate a force under duress from the Russians.

They have some significant history on their side and during my visit last year to Finland I had many discussions with Finnish officials about the central importance of hardened facilitates and the need to operate a distributed force while under the threat or under actual attack.

For example, Jukka Juuisti, Permanent Secretary in the Finnish Ministry of Defence underscored:

"If you look at the map of Finland, it's not an island but in practice we are an island.

"The vast majority of our trade is coming by ships.

"In that sense we are an island and this means that we have taken the security of supply always very seriously.

"It is the nature of Finland that we believe that we have to be able to take care of some of the most vital things by ourselves.

"That's the reason for example that security of supply is so important for us.

"For example, with regard to ammunition and those kinds of supplies, we have a lot of stocks here in Finland.

"Of course, with regard to some of the equipment we never can have enough in our own resources.

"The security of supply has got another respect also, which is the civilian side of the aspect.

"We have a security of supply agency, which is extremely important for us and it takes care of the civilian part of the security of supply.

"For example, electricity and telecommunications are vital for the survival of the nation, and one needs have to have the security of supply in those areas. Security of supply agency collects the money in such a way that they are financially safeguarded.

"Whenever we buy some gasoline, they collect some part of that purchase for the security of supply funds.

"It is organized in that way.

"We are continuously investing, in effect, in security of supply for the civilian sector."

"And we think broadly about civilian defense as part of our mobilization strategy.

"That's the reason we were still building shelters for the civilians, both to maintain infrastructure in times of crisis and for civilian protection as well."

Shaping a Way Ahead

New paradigms, new tools, new training and new thinking is required to shape various ways ahead to shape a more robust infrastructure notably in a digital age.

Article III within the NATO treaty underscores the importance of each state focusing resources on the defense of its nation.

In the world we are facing now, this may well mean much more attention to security of supply chains, robust infrastructure defense and taking a hard look at the vulnerabilities which globalization has introduced within NATO nations.

Put in other terms, robustness in infrastructure can provide a key element of defense in dealing with 21st century adversaries, as important as the build up of kinetic capabilities.

The return of direct defense but with the challenge of shaping more robust national and coalition infrastructure also means that the classic distinction between counter-value and counter-force targeting is changing.
Second Line of Defense

Eroding infrastructure with non-lethal means is as much counter-force as it is counter-value.

We need to find new vocabulary as well to describe the various routes to enhanced direct defense for core NATO nations.

The F-35 Opportunity

There is no one path to solving the challenge of a 21stcentury robust infrastructure and sustainment set of capabilities.

But given the commitment of several key allies to the F-35, the emerging F-35 global enterprise does provide an opportunity to shape a new approach.

First, there is the various national approaches which key nations can take.

For example, at Orland Air Base, the Norwegians are building a hardened air base to support F-35 operations.

Force protection is a key part of building out the base, and, indeed, the center of excellence both for ground based air defence, force protection and mobile logistic support operates currently from the base.

Second, cross learning among the European Air Forces in the UK, Denmark, the Netherlands, Norway, Belgium and Italy as well as US-facilities in Europe will allow the creation of effective templates for sustained operations and support necessary for the F-35 to play its key role of providing the tip of the spear for deterrence operations.

Third, the inherent sustainment capabilities built into the F-35 as an air system could allow the US and the allies to shape a new approach to sustained engagement.

The common systems throughout the global fleet and the cross training and cross operations of the aircraft can allow stockpiling of common parts in allied locations closer to potential areas of interest than being warehoused in the United States or at fixed and well known locations.

Allied maintainers certainly could work with US maintainers to cross maintain US and allied F-35s at an allied location.

This would dramatically change the ability of the US and allies to fly to an allied base or location and shape a strike or defense force which could make a decisive difference in a crisis.

And the Fed Ex model could be put to bed with the large number of airlifters and tankers needed to supply forward bases in a crises; in place of this, the US and allies could invest in advance in capabilities at a common allied location likely to be most relevant to a crisis situation.

For example, the Aussies are standing up a significant support structure in Australia for regional support.

As they do so, allies such as the US and Japan can shape an approach to what I would call sustained engagement.

With crises to come in which the F-35s will play a key role, the Australians can provide operating locations for allies, without having to base those allies on a long term basis.

This allows Australia its sovereignty but also allows allies like the United States and Japan to gain operational depth which will be crucial for deterrence in the region.

Because they are flying virtually the same aircraft, stockpiling parts and leveraging an expanded sustainment base with the Australian maintainers leading the way for the USAF to move to a new approach to operations which does not require them to operate like Fed Ex flying in resources to then stand up support in a crisis.

The USAF or the Japanese could fly to Australia and be supported by Australian based supplies and maintainers supplemented by Japanese and US maintainers and could operate rapidly in a crisis, rather than engaging in a significant airlift and tanking support set of missions to stand up aircraft in Australia on a case by case basis.

It is not about just showing up; it is about being able to do sustained engagement with an agile expeditionary support structure to establish and operate from a solid operational footprint.

An allied approach towards sustained engagement when married with Aussie rethinking about how to use their geography as well as base mobility creativity would significantly enhance deterrence and operational flexibility in a crisis.

Fourth, realizing a capability for the US or another ally of a given country to fly in, operate, and be sustained through a significant ops cycle also allows for another key enabler for engaging in the kinds of operations facing the liberal democracies.

Shaping a Mobile Basing Capability for Crisis Management

Clearly, mobile basing is required to operate against peer competitors like Russia or China who have prioritized a missile strike force as a major part of their crisis dominance or shock and awe strategy against us.

The Finns have lived this already so there is no shock in a possible shock and awe strategy against them.

According to Lt. General Kim Jäämeri in my interview with him last year:

“It is becoming clear to our partners that you cannot run air operations in a legacy manner under the threat of missile barrages of long range weapons.

“The legacy approach to operating from air bases just won’t work in these conditions.

“For many of our partners, this is a revelation; for us it has been a fact of life for a long time, and we have operated with this threat in the forefront of operations for a long time.”

The importance of shift to mobile basing will only happen if a shift from the legacy sustainment approach is realized.

The nature of this shift was highlighted during visits with the Marines at Yuma Marine Corps Air Station, in Australia and in the United Kingdom.

One aspect of the change which I observed and discussed during my visits to Finland, the United Kingdom, and Australia and to MCAS Yuma is the importance of being able to do mobile basing.

At the Williams Foundation Seminar in Canberra in March 2018, the 11th Air Force Commander, Lt. Gen. Kenneth Wilsbach, highlighted the nature of the challenge requiring the shift to mobile basing.

“From a USAF standpoint, we are organized for efficiency, and in the high intensity conflict that we might find ourselves in, in the Pacific, that efficiency might be actually our Achilles heel, because it requires us to put massive amounts of equipment on a few bases.

Second Line of Defense

"Those bases, as we most know, are within the weapons engagement zone of potential adversaries," Wilsbach said.

"So, the United States Air Force, along with the Australian Air Force, has been working on a concept called Agile Combat Employment, which seeks to disperse the force, and make it difficult for the enemy to know where are you at, when are you going to be there, and how long are you are going to be there.

"We're at the very preliminary stages of being able to do this but the organization is part of the problem for us, because we are very used to, over the last several decades, of being in very large bases, very large organizations, and we stovepipe the various career fields, and one commander is not in charge of the force that you need to disperse.

"We're taking a look at this, of how we might reorganize, to be able to employ this concept in the Pacific, and other places."

And during a visit to Amberley Airbase just before the Williams Foundation seminar in March 2018, I met with the Commander of the RAAF's Combat Support Group.

"We are having to reacquaint ourselves with some tasks and challenges which we parked to the side a bit while we were in the Middle East for so long.

"We did not have to worry so much about mobile basing to counter the principal threats in that theatre," Robinson said.

"The mindset is in transition now."

He underscored that this clearly is an army and air force challenge.

"We are good at supporting maneuver with our tactical transport aircraft and Australia's Army aviation capability, including the Tiger Reconnaissance Helicopter, but what we need to do is move to the next level of support to maneuver the most lethal part of our air power capability across a range of airfield options."

Core capabilities such as providing fuel for air systems when operationalized for a mobile airbasing force on Australian territory are clearly different from supporting a fixed airbase.

For example, "expeditionary fuel capabilities is something that's very much on the forefront of my mind.

"Lean and agile support packages to operate expeditionary airfields are also key, so that we can offer the best possible maneuver options to the aviators without tying down strategic airlift."

Whether to pursue mobile basing or build greater depth in Australian territorial defense is one of the core choices facing Australia as it continues its force modernization.

Either they can emphasize going deeper into the air-maritime domain in the Pacific or significantly augment their mobile defense capabilities leveraging the vast Australian territory.

The role of active defenses working with airpower mobility would be a priority in this second case.

My visit last year to the United Kingdom where I saw again HMS Queen Elizabeth reinforced this point.

As the UK works through its post-Brexit defense policy, the role of the Nordic countries looms as increasingly significant.

The new Queen Elizabeth carriers are clearly very relevant to Northern Tier Defense and Mediterranean operations.

As a senior UK official put it during my visit in May to Portsmouth:

"The carriers will be the most protected air base which we will have.

"And we can move that base globally to affect the area of interest important to us.

"For example, with regard to Northern Europe, we could range up and down the coastlines in the area and hold at risk adversary forces.

"I think we can send a powerful message to any adversary."

The Strategic Shift

The UK is working closely with the US Marines who have mobile basing in their DNA.

In recent Marine training exercises, which they call WTIs, have clearly emphasized the concept of mobility and strike from mobile bases.

The F-35B was at the heart of this, but mobility also requires a focus on support, which is integrated to the point of operation, rather than focused on having a series of Walmarts and maintainers with accounts at a Walmart store.

It is about reshaping logistics to enhance operations to the point of attack, and this will be a major challenge to how the US focuses on its support structure for F-35.

In short, the strategic shift to high-end warfighting will highlight core competencies and capabilities such as mobile basing.

The transition will not be easy, either for the warriors or the decision-makers in Washington or elsewhere.

The Return of Direct Defense in Europe: The Challenge to the Infrastructures of the Liberal Democratic Societies

Robbin Laird

Russia and China as 21stcentury authoritarian powers are challenging the liberal democracies in both classic military terms as well as in less classic ways.

The Russians with their approach to hybrid warfare and the Chinese with their evolving operational approaches in the "gray zone" are crafting innovative approaches to enhance their objectives short of significant engagements with peer competitors.

They are working to push the "red line" further down the spectrum of conflict and shaping a wider range of operational space within which their forces and capabilities can achieve desire objectives.

Another key area in which they are operating is with the direct engagement of their peer competitors is through expanded control or influence within the infrastructures of the economies and societies of those competitors.

The Finnish Perspective

Second Line of Defense

The Finns have focused squarely on ways to enhance their capability to resist incursions from the Russians and to work towards expanded ways to enhance democratic military capabilities. They prioritize security of supply and have maintained military inscription system to prepare to mobilize in a crisis as well.

The Finns recognize that this is not enough given the nature of their 21stcentury competitor. They have established a new Centre to deal with the challenge of not just new ways of conducting influence operations but against European infrastructure as well. And they have done so in a manner which underscores that a purely national solution is not enough and requires a broader European Union response as well.

The Government of Finland has stood up a new Centre designed in part to shape better understanding which can in turn help the member states develop the tool sets for better crisis management.

This is how the Finnish government put it with regard to the new center in its press release dated October 1, 2017.

The European Centre of Excellence for Countering Hybrid Threats has reached initial operational capability on 1 September 2017. The Act on the European Centre of Excellence for Countering Hybrid Threats entered into force on 1 July 2017, following which Matti Saarelainen, Doctor of Social Science, was appointed Director of the Centre. The Centre has now acquired premises in Helsinki, established a secretariat consisting of seven experts and made the operational plans for this year.

"Hybrid threats have become a permanent part of the Finnish and European security environment, and the establishment of the Centre responds well to this current challenge.

Since early July, rapid progress has been made to allow the Centre to begin its operations. The Steering Board will be briefed on the progress at its meeting next week," says Jori Arvonen, Chair of the Steering Board of the Centre.

The Centre will launch its activities at a high-level seminar to be held in Helsinki on 6 September. The seminar will bring together representatives of the 12 participating countries, the EU and NATO. Approximately 100 participants will take part in the seminar. The Centre's communication channel (www.hybridcoe.fi) will also be opened at the seminar. Minister for Foreign Affairs Timo Soini and Minister of the Interior Paula Risikko will speak at the seminar as representatives of the host country. The official inauguration of the Centre will be held on 2 October.

The Centre is faced with many expectations or images. For example, the Centre is not an ´operational centre for anti-hybrid warfare´ or a ´cyber bomb disposal unit´. Instead, its aim is to contribute to a better understanding of hybrid influencing by state and non-state actors and how to counter hybrid threats. The Centre has three key roles, according to the Director of the Centre.

"First of all, the Centre is a centre of excellence which promotes the countering of hybrid threats at strategic level through research and training, for example. Secondly, the Centre aims to create multinational networks of experts in comprehensive security. These networks can, for instance, relate to situation awareness activities. Thirdly, the Centre serves as a platform for cooperation between the EU and NATO in evaluating societies' vulnerabilities and enhancing resilience," says Director Matti Saarelainen.

The EU and NATO take an active part in the Centre's Steering Board meetings and other activities. As a signal of the EU and NATO's commitment to cooperation, Julian King, EU Commissioner for the Security Union, and Arndt Freytag von Loringhoven, NATO Assistant Secretary General for Intelligence and Security, will participate in the high-level seminar on 6 September.

Currently, the 12 participating countries to the Centre are Estonia, Finland, France, Germany, Latvia, Lithuania, Norway, Poland, Spain, Sweden, the United Kingdom and the United States. EU and NATO countries have the possibility of joining as participant countries.

http://valtioneuvosto.fi/en/article/-/asset_publisher/1410869/eurooppalaisen-hybridiosaamiskeskuksen-toiminta-kaynnistyy-helsingissa

During a 2018 visit to the Centre, we interviewed Päivi Tampere, Head of Communications for the Centre, and with Juha Mustonen, Director of International Relations and discussed the approach of the new Centre to the authoritarian states.

The Centre is based on a 21st century model whereby a small staff operates a focal point to organize working groups, activities and networks among the member governments and flows through that activity to publications and white papers for the working groups.

As Tampere put it: "The approach has been to establish in Helsinki to have a rather small secretariat whose role is to coordinate and ask the right questions, and organize the work.

"We have 13 member states currently. EU member states or NATO allies can be members of our Centre."

"We have established three core networks to address three key areas of interest.

"The first is hybrid-influencing led by UK;

"The second community of interest headed by a Finn which is addressing "vulnerabilities and resiliencies."

"And we are looking at a broad set of issues, such as the ability of adversaries to buy property next to Western military bases, issues such as legal resilience, maritime security, energy questions and a wide variety of activities which allow adversaries to more effectively compete in hybrid influencing."

"The third COI called Strategy and Defense is led by Germany.

"In each network, we have experts who are working the challenges practically and we are tapping these networks to share best practices what has worked and what hasn't worked in countering hybrid threats.

"The Centre also organizes targeted trainings and exercises to practitioners.

"All the activities aim at building participating states' capacity to counter hybrid threats.

"The aim of the Centre's research pool is to share insight to hybrid threats and make our public outreach publications to improve awareness of the hybrid challenge."

With Juha Mustonen, who came from the Finnish Ministry of Foreign Affairs to his current position, we discussed the challenges and the way ahead for the Centre.

"Influencing has always been a continuum first with peaceful means and then if needed with military means.

"Blurring the line between peace time influencing and war time influencing on a target country is at core of the hybrid threats challenge.

"A state can even cross the threshold of warfare but if it does not cross the threshold of attribution, there will be no military response at least if action is not attributed to that particular state.

"Indeed, the detection and attribution issue is a key one in shaping a response to hybrid threat."
Second Line of Defense

And with the kind of non-liberal states we are talking about, and with their expanded presence in our societies, they gain significant understanding and influence within our societies so they are working within our systems almost like interest groups, but with a focus on information war as well.

Mustonen: Adversaries can amplify vulnerabilities by buying land, doing investments, making these kinds of economic interdependencies.

"They can be in dialogue with our citizens or groups of our citizens, for example, to fostering anti-immigrant sentiments and exploiting them to have greater access to certain groups inside the European societies.

"For example, the narratives of some European far right groupings have become quite close to some adversaries' narratives."

Question: But your focus is not only on the use of domestic influence but mixing this with kinetic power as well to shape Western positions and opinion as well, isn't it?

Mustonen: Adversaries are using many instruments of power. One may identify a demonstration affect from the limited use of military power and then by demonstrating our vulnerabilities a trial of a psychological affect within Western societies to shape policies more favorable to their interests.

"If you are using many instruments of power, below the threshold of warfare, their synergetic effect can cause your bigger gain in your target societies, and this is the dark side of comprehensive approach."

"The challenge is to understand the thresholds of influence and the approaches.

"What is legitimate and what is not?

"And how do we counter punch against the use of hybrid influencing by Non-Western adversaries?

"How can we prevent our adversaries from exploiting democratic fractures and vulnerabilities, to enhance their own power positions?

"How do we do so without losing our credibility as governments in front of our own people?"

Clearly, a key opportunity for the center is to shape a narrative and core questions which Western societies need to address, especially with all the conflict within our societies over fake news and the like.

Mustonen: Shaping a credible narrative and framing the right questions is a core challenge but one which the Centre will hope to achieve in the period ahead.

"We are putting these issues in front of our participants and aim at improving our understanding of hybrid threats and the ways we can comprehensively response to the threats."

The Authoritarian Regime Approach

These two approaches – military enabled (hybrid war and "gray zone" con-ops) – and direct infrastructure engagement – lay a solid foundation for the authoritarian powers to engage effectively in information war, another key element of challenging the European democracies.

This challenge was the focus of a study published in 2018 written by Thomas Mahnken, Ross Babbage, and Toshi Yoshihara which was entitled "Countering Comprehensive Coercion: Competitive Strategies Against Authoritarian Political Warfare." [1]

"Authoritarian regimes in Beijing and Moscow have clearly committed themselves to far-ranging efforts at political warfare that hope to achieve the ability to comprehensively coerce the United States and its allies.

"Only by clearly and frankly acknowledging the problem and organizing the respective governments to respond do we stand a chance of defending fee societies from these sophisticated efforts at manipulating public opinion and the decision-making pace of elected officials and government policy makers."

One of the authors of the report, Ross Babbage, discussed with us further how he looks at the challenge.

"For the liberal democracies, there is a pretty clear break between what we would consider war and peace.

"For the Chinese and the Russians, there is not quite the same distinction.

"They perceive a broad range of gray areas within which political warfare is the norm and it is a question of how effective it is; not how legitimate it is.

"They are employing various tools, such as political and economic coercion, cyber intrusion, espionage of various types, active intelligence operations and so forth."

Shaping a purely military response to the new challenges posed by direct defense in Europe is a necessary but not sufficient response to the threats posed by the 21stcentury authoritarian states.

Babbage went on to identify in the interview how we might repond.

What can we do to actually stop this and fix it?"

At present we are not telling the story of foreign political warfare broadly enough within our political and economic sectors.

We've got to improve our information operations. We need to throw sunlight on what these guys are doing and do so in a comprehensive and sustained manner.

Beyond that effort, I would identify a number of potential components of what one might call an effective counter strategy.

First is a denial strategy.

Here the objective is to deny, not just the operations and make them ineffective, but also to deny the political benefits that authoritarian states seek to win by conducting their operations.

Second is a cost imposition strategy.

We need to find ways to correlate their behavior with an imposed cost. We need to make clear that if they are going to behave like this, it will cost them in specific ways.

Third is focused on defeating their strategy, or making their strategy counterproductive.

We can turn their strategy on its head and make it counter-productive even within their own societies.

Their own societies are fair game given the behavior of the of our combined assets Russians and Chinese.

Fourth is to make it damaging, and even dangerous, for authoritarian regimes to sustain their political warfare strategy.

Second Line of Defense

Authoritarian regimes have their own vulnerabilities and we need to focus on the seams in their systems to make their political warfare strategies very costly and risky.

And we need to do this comprehensively as democratic allies.

There's no reason why we can't coordinate and cooperate and make the most of our combined resources, as we did in the Cold War.

But do we have the right tools and coordination mechanisms for an all-of-alliance strategy to work well?

In my view, the Western allies have a great deal of work to do.

A Danish Perspective

During a conference held in Copenhagen on October 11, 2018, the Danish Minister of Defence provided an overview on how the government views defence and security, particularly challenges in direct defence of Denmark and Europe – cyberwar posed by Russia and the need to enhance infrastructure defence are of key concern.

The lines between domestic security and national defense are clearly blurred in an era where Russians have expanded their tools sets to target Western infrastructure. Such hidden attacks also blur the lines between peace and war.

Within an alliance context, the Danes and other Nordic nations, are having to focus on direct defense as their core national mission. This will mean a shift from a focus on out of area operations back to the core challenge of defending the homeland.

Russian actions, starting in Georgia in 2008 and then in the Crimea in 2014, have created a significant environment of uncertainty for European nations, one in which a refocus on direct defense is required.

Denmark is earmarking new funds for defense and buying new capabilities as well, such as the F-35. By reworking their national command systems, as well as working with Nordic allies and other NATO partners, they will find more effective solutions to augment defensive force capabilities in a crisis.

It was very clear from our visits to Finland, Norway and Denmark over the past few years, that the return to direct defense has changed as the tools have changed, notably with an ability to leverage cyber tools to attack Western digital society to achieve political objectives with means other than use of lethal force.

This is why the West needs to shape new approaches and evolve thinking about crisis management in the digital age. It means that NATO countries need to work as hard at infrastructure defense in the digital age as they have been working on terrorism since September 11th.

New paradigms, new tools, new training and new thinking is required to shape various ways ahead for a more robust infrastructure in a digital age.

Article III of the NATO treaty underscores the importance of each state focusing resources on the defense of its nation. In the world we are facing now, this will mean much more attention to security of supply chains, robust security of infrastructure, and taking a hard look at any vulnerabilities.

Robustness in infrastructure can provide a key defense element in dealing with 21st century adversaries, and setting standards may prove more important than the buildup of classic lethal capabilities.

A return to direct defense, with the challenge of shaping more robust national and coalition infrastructure, also means that the classic distinction between counter-value and counter-force targeting is changing. Eroding infrastructure with non-lethal means is as much counter-force as it is counter-value.

We need to find new vocabulary to describe the various routes to enhanced direct defense for core NATO nations.

A new strategic geography is emerging, in which North America, the Arctic and Northern Europe are contiguous operational territory that is being targeted by Russia, and NATO members need to focus on ways to enhance their capabilities to operate seamlessly in a timely manner across this entire chessboard.

In an effort to shape more interactive capability across a common but changing strategic geography, the Nordic nations have enhanced their cooperation with Poland and the Baltic states. They must be flexible enough to evolve as the reach and lethality of Russia's air and maritime strike capabilities increases.

Clearly, tasks have changed, expanded and mutated.

An example of a very different dynamic associated with direct defense this time around, is how to shape a flexible basing structure.

What does basing in this environment mean? Can allies leverage national basing with the very flexible force packages needed to resolve a crisis?

One of the sponsors of the Danish Conference was Risk Intelligence, provide a very cogent perspective on how to look at the challenge.

Their CEO, Hans Tino Hansen, a well-known Danish security and defense analyst explains the new context and challenges facing the Nordic countries:

"We need to look at the Arctic Northern European area, Baltic area, as one. We need to connect the dots from Greenland to Poland or Lithuania and everything in between. We need to look at the area as an integrated geography, which we didn't do during the Cold War.

"In the Cold War, we were also used to the Soviet Union and the Warsaw Pact being able to actually attack on all fronts at the same time, which the Russians wouldn't today because they are not the power that they used to be.

"And clearly we need to look beyond the defense of the Baltic region to get the bigger connectivity picture."

He went on to assert the need to rethink and rebuild infrastructure and forces to deal with the strategic geography that now defines the Russian challenge and the capabilities they have […] to threaten our interests and our forces."

Evaluating threats across a spectrum of conflict is the new reality. "We face a range of threats in the so-called gray area which define key aspects of the spectrum of conflict which need to be dealt with or deterred."

A system of crisis identification with robust procedures for crisis management will go a long way towards effective strengthening of infrastructure in the face of the wider spectrum of Russian tools.

Second Line of Defense

"A crisis can be different levels. It can be local, it can be regional, it can be global and it might even be in the cyber domain and independent of geography. We need to make sure that the politicians are not only able to deal with the global ones but can also react to something lesser," Hansen says.

"The question becomes how to define a crisis.

"Is it when x-amount of infrastructure or public utilities have been disrupted or compromised?

"And for how long does the situation have to extend before it qualifies as a crisis?

"This certainly calls for systems and sensors/analysis to identify when an incident, or a series of incidents, amount to a crisis. Ultimately, that means politicians need to be trained in the procedures necessary in a crisis similar to what we did in the WINTEX exercises during the old days during the Cold War, where they learned to operate and identify and make decisions in such a challenging environment".

In short, the Russian challenge has returned – but in a 21st century context. that incorporates incredibly invasive infrastructure threats.

Direct defense strategies must include these threats as part of any comprehensive national security concept.

Strategic Communications and Resilience – Speech by Director Matti Saarelainen

"This morning I'm going to take my 10 minutes to talk about three things:1) How states and institutions can response to Hybrid threats effectively (and Strategic Communication's role in that)
2) Where EU and NATO can improve their response to Hybrid Threats
3) What the Hybrid CoE is doing to enable Member States and the institutions to build capability in this area

How: Given the theme of this conference I wanted to focus on the centrality of communication to effective Hybrid response. A few thoughts.

Separation anxiety- Strategic Communication suffers from a degree of separation anxiety- it is often treated as a separate field, with separate experts and communities. But at Hybrid CoE we see it as an intrinsic part of the response.

Effective resilience requires an open conversation with our population about unfolding Hybrid events (and our response to them) which maintains trust in our values, democratic processes and governance structures. Resilience also requires persuasive communications as we prepare our populations- campaigns which encourage them to change their behaviour and improve their own personal resilience are critical- whether we are asking them to put aside peanut butter or improve password security.

Separately, Effective deterrence of Hybrid threats requires States to demonstrate: resolve, coherence, capability, agility, willingness to attribute and desire to act in concert. To shape the adversary's perception, we need to make sure our actions are effectively communicated- to achieve ultimate impact. Our strategic communicators are best placed to do this.

All this speaks to the importance of strong- connective tissue between strategic communicators, policy makers and the intelligence community. They should not be an afterthought in the national or institutional crisis response structures. They should be at the policy making table, thinking not just about how to communicate the government or institution's response but what that response should be. They also need to be in close contact with the intelligence community. Strategic communicators often have a detailed understanding of the open source debate surrounding a Hybrid event (and access to the tools required to analyse it). Given the challenge of information sharing within and between governments open source material can and should be the

bedrock of our resilience and deterrence strategy. A strong relationship between these two communities will ensure it is effectively leveraged.

Where: Mr. Chairman, you asked me to focus on where I think the EU and NATO response was strong and where there was room for improvements. Hybrid CoE has a unique perspective, being neither EU, nor NATO and given one of our core goals is acting as a neutral facilitator between the two. A couple of thoughts on each.

On strengths, I want to pause a moment on vulnerabilities and values. Often the values which are central to these institutions: respect for human rights, strong democratic institutions, the market economy, freedom of speech and media and rule of law are singled out as intrinsic vulnerabilities. And there is no doubt many of these have been exploited by our adversaries for their own ends. But they are also the values with which we won the Cold War. They are in fact our strength. They form the foundation of our resilience as institutions (and the resilience of the member states within them). It is both glib and true to say we need to be better about communicating them.

On a more practical level, EU and NATO have developed a strong set of commitments and actions on countering Hybrid Threats. There is a good level of awareness of Hybrid and political will, at the most senior levels, to address it. The key now is to implement these effectively and and communicate that implementation with impact. While initiatives are key, it is their implementation which will shift the dial.

And with that I turn to a discussion on where the collective response could be improved… At our inauguration Commissioner King encouraged the Centre to be challenging… So, in that spirit a few areas for the EU and NATO to consider.

Hybrid threats are full spectrum in nature. The use of multiple means in coordination and with malign intent to achieve a political ends requires a coordinated response. At Hybrid CoE, when we talk about deterrence our underlying principle is that we will most effectively deny the benefit or impose cost on our adversary if all aspects of government and society are coordinated in their response. The same is true at the institutional level. Between them, EU and NATO have the capabilities to detect and respond to a hybrid attack. They also have the tools to effectively impose cost and deny benefit to the adversary. There is still a need at a strategic level to have discussions between the two organisations about using these capabilities and tools in a coordinated and coherent way, as part of a campaign to protect the values that are central to the institutions. So strategic level discussions about a coordinated response is key.

This however requires a whole of institution response to Hybrid within each organisation. The bureaucratic vulnerability, as we call it at the Centre is the single biggest spoiler in any actor's response to Hybrid threats. Siloes, blocks and poor information flow hampers response. On the EU side this means coherence between the Commission, EEAS, Council and Parliament and on the NATO side this is fusion across the civilian military divide. Both organisations are restructuring their approach to Hybrid internally, so we are keen to see the results. The logical extension of this is the creation of informal communities across the organisations (more on that later).

Agility is also key in cross institutional response and where there is always room for improvement at the national and institutional level. Particularly when it comes to crisis responses and political decision making. The PACE exercises have been key in exercising the organisations alongside each other. There is no substitute for exercising to test agility. Coherent and parallel exercising will remain important and the Hybrid CoE was pleased to support a joint NAC/PSC scenario-based discussion last autumn which tested this agility and provided an opportunity for a strategic discussion about a coordinated response. They will also support the exercises proposed as part of the Finnish EU Presidency.
Second Line of Defense

Member States provide a key role in encouraging and supporting effective institutional response to Hybrid Threats. They also critical to overcoming some of the key barriers to closer institutional cooperation on Hybrid Threats. I continue to encourage all Hybrid CoE Member States to support their institutions in overcoming these barriers and being more ambitious in their implementation of these actions.

What the Hybrid CoE does to support the institutions and Member States to improve response.

In the last nearly two years we have focused our work in four key areas which we believe to be key to improving the Euro-Atlantic region's response to Hybrid threats.

Networks: We have built practitioner networks across our 20 member states, EU and NATO and the private sector. These networks train, exercise and share best practice with one another, as well as coordinating action and testing policy response options. We have practitioner networks on: energy, drones, maritime security, technology and hybrid warfare, strategic communication, open source data, countering hostile states and legislative resilience. A networked response requires a networked solution.

Training: One of the Centre's core goals is to improve the capability of its member states to counter Hybrid threats. Training is an important way in which we do this. We have two flagship training events. One on using open source material to counter Hybrid threats. As I noted earlier, open source material is a critical enabler in building situational awareness and responding to Hybrid Threats. We train analysts and policy makers from across our Member States EU and NATO to analyse open source data and use it as part of their policy response to countering disinformation. We have run this course twice already and will run it on a further three occasions this year. This builds and supports our digital community of analysts across our 20 member states EU and NATO. We also train journalists to counter disinformation (with thanks to NATO support).

The second flagship training is on countering electoral interference. Elections, as I need not tell this community, are particularly susceptible to Hybrid attack. The two day event aims to bring together strategic communicators, intelligence and other government practitioners involved in securing elections- it and exercises them together. Facebook and Microsoft are our private sector partners. This roadshow will take place in six capitals this year.

Exercising and scenario based discussions are mainstreamed in most of our activities because they are so critical to ensuring agility and testing the ability to coordinate. We have held two strategic multinational exercises on Hybrid Threats with participation of our member states, EU and NATO. We have also held numerous subject specific exercises on everything from de-synchronisation of energy supply networks, to countering electoral interference (and in support of the Romanian Presidency last week hosted an exercise on mass casualties – to support EU and NATO crisis response). In addition to running our own exercises we run them for institutions- the NAC/PSC scenario-based discussion is a case in point. We also support others with scenario development.

Trend Mapping and Intellectual Matchmaking: There are plenty of actors out there willing to admire the problem but at Hybrid CoE we are actively engaged in trying to counter it. Trend mapping has been key to this. We have a unique methodology for doing this which brings nominated academic experts from across our Member States (we call them our expert pools) together with practitioners working on that topic to map emerging trends in the Hybrid landscape. In Madrid last week we held a trend mapping exercise in this academic/practitioner format behind closed doors on Russia. We find this intellectual matchmaking the most effective way of ensuring cutting edge academic thinking makes it into the policy making bloodstream.

High Level Retreat: Finally, we host an annual EU/NATO high level retreat in Helsinki for senior leaders from both organisations. This outcome focused event gives staff from both organisations the chance to talk (beyond

the confines of staff to staff cooperation) about emerging challenges and how the two institutions can develop a collective response.

It has been a pleasure to address you this morning. At the Centre we aim to lead the conversation on Countering Hybrid Threats. I look forward to hearing what follows."

[1]https://csbaonline.org/research/publications/countering-comprehensive-coercion-competitive-strategies-against-authoritar

https://defense.info/re-shaping-defense-security/2019/03/the-strategic-shift-and-crafting-a-21st-century-sustainment-capability/

Crafting 21st Century Logistics Concepts of Operations: A Look at The Defense Science Board Report on Survivable Logistics

Building a 21st century military infrastructure will be key to shaping an effective deterrence in depth strategy for the liberal democracies.

Moving from approaches which have highlighted lean support, just-in-time logistics, commercially vulnerable information systems and simply upgrading the current USAF Fed Ex delivery system for global operations will fall far short.

We will need to leverage what new systems can deliver such as the F-35 and the CH-53K in terms of putting in place much more effective leveraging of the supply chain and in the case of the F-35 leveraging a global enterprise.

This will require significant changes in US practices, antiquated security policies, and ways to do sustained engagement, rather than moving the force to an area of interest followed by the USTRANSCOM Fed Ex fleet.

A recent report of the Defense Science Board provided a helpful look at what they called "survivable logistics."

As Craig Fields, Chairman of the Defense Science Board, put it in his letter recommending the report:

"Survivable logistics is the key enabler underpinning all U.S. military power.

"Without the ability to provide our soldiers, sailors, airmen, and marines with the resources needed to win on the battlefield, the development of advanced tactics and technologies will not have the opportunity to matter."

And in overview comments on the report to the Chairman of the Defense Science Board, the co-leaders of the report made the following points regarding the findings of the working group:

The Task Force found significant shortfalls that, if left unaddressed, will put at risk U.S. ability to project power and sustain the fight against a strategic competitor. There are four main areas that require attention. First, the United States must start survivable logistics at home. This includes conducting realistic wargames and exercises that accurately reflect the threats to and capabilities of the joint logistics enterprise, as well as addressing longstanding issues with the defense industrial base.

Second, the United States must protect, modernize, and leverage the mobility triad (i.e., surface, air, prepositioning). New concepts of operations are needed to ensure that ground, air, and sea lines of

communication remain open while under attack. Better prepositioning and enhanced cooperation with commercial partners will be needed.

Third, protecting and enhancing logistics information is paramount. Military and commercial networks are susceptible to espionage, manipulation, and attack by adversaries. Logistics data is neither as accessible nor used as efficiently as it should be. Technological solutions to these problems already exist, or will exist in the near future. The DoD must adopt them quickly.

Finally, the United States must exploit globally integrated logistics to support the 2018 National Defense Strategy. U.S. military units will need to be restructured to better balance Active and Reserve Component capabilities. Logistics demand must be reduced, and research, development, technology, and engineering (RDT&E) funding must be increased to meet this need. To enable resiliency and complicate an adversary's targeting, it is imperative that logistics concepts of operations (CONOPs) be revised to align with anticipated future joint operating concepts.

Bill Gertz in a recent article published on January 9, 2019 highlighted the challenges which the report raised which require focused attention.

"The strategic American military system for moving troops, weapons, and supplies over long distances has decayed significantly and needs rapid upgrading to be ready for any future war with China or Russia, according to a report by the Pentagon's Defense Science Board.

"A special task force on survivable logistics evaluated the military's current airlift, sealift, and prepositioned equipment and supplies and found major problems with supporting forces during a "high-end" conflict…..

The task force report urged modernizing the logistics "mobility triad" to bolster warfighting capabilities.

"The mobility triad, which includes sealift, airlift, and prepositioned assets, is plagued by readiness issues and shortages that must be addressed in order for the United States to defeat a strategic competitor," the report said.

The study noted that commercial ships and vessels used for logistics have been shrinking for decades and will decrease by 50 percent from current levels by 2033.

A Civil Reserve Airlift Fleet, a key element of the logistics system, is part of the logistics system used to move troops and bulk air cargo in war time.

However, both the air fleet and sealift commercial ships have not been tested in war games to determine how they would survive a large-scale conflict involving the shootdown of aircraft by missiles and fighters or transport ships sunk by submarines.

"Accounting for attrition, [anti-access, area-denial] threats, and risks to commercial civilian airmen and mariners requires wargaming and solutions," the report said.

Anti-access and area denial weapons include advanced, precision-guided missiles, air defenses, fighter aircraft, submarines, and asymmetric warfare capabilities such as cyber attacks and anti-satellite missile strikes. Taken together, the weapons could prevent the U.S. military from mobilizing, communicating, and moving forces during a major conflict.

Additionally, the Pentagon's current policy of storing weapons and equipment overseas closer to potential front lines does not meet the current demands of the Pentagon's new national defense strategy. Prepositioning plans need to be updated, the report said.

Such stored equipment and weapons also are vulnerable to attack in the earlier stages of a conflict.

"The use of deception and 'hiding in plain sight' by our adversaries should be considered," the report said. "Opportunities exist to leverage commercial networks and vessels for DoD prepositioning."

The report urged the Air Force and Navy to develop new tactics, techniques and procedures with U.S. flag carriers for convoy operations, such as long-range maritime patrols, to protect mobility forces and secure air and sea lanes against high-tech threats.

The Joint Staff and Transportation Command also were urged in the report to develop new and innovative plans for long-range distribution of warfighting assets, such as mobile basing, airships, joint high-speed vessels, autonomous barges, and precision air drop capabilities.

To solve transport shortage problems, the task force urged re-opening production lines for more cargo aircraft to better protect against loss in war. The panel also recommended bolstering the service life of commercial fleets.

Better preparations are needed for moving forces in a major conflict and the Army and Marine Corps should develop better prepositioning systems at sea and on land.

One option recommended by the task force is to put an infantry brigade combat teams aboard roll-on/roll-off ships and related equipment on other ships and on land to support the both the European Command and Indo-Pacific Command.

To save money, more roll-on/roll-off transport ships are needed, and used foreign ships that cost around $25 million should be purchased instead of building new U.S. ships that would cost up to $850 million each.

The task force emphasized the need to bolster logistics systems and supporting industrial base in the United States as a first step in preparing to wage war.

"If the homeland industrial base, electrical grid, or any other critical infrastructure is compromised, military forces will not be able to arrive in theater on time or at all," the report said. "Therefore, it is critical that attention to survivable logistics begin at home."

The report urged the Pentagon to use artificial intelligence and machine learning to bolster military logistics using predictive analysis, demand forecasting, production scheduling, anomaly detection, and supply-chain optimization.

To counter cyber attacks, the task force urged developing the use of blockchain technology that allows digital information to be shared but not copied.

A blockchain-like test infrastructure for military logistics would enable the Pentagon "to evaluate potential offensive and defensive cyber applications of blockchain-like technology and other distributed database technologies," the report said.

Ed Timperlake, a former Pentagon logistics official under President Ronald Reagan, said the task force report and its recommendations show the strategic brilliance of the Defense Science Board.

"As President Reagan's principle director of mobilization and requirements, an office eliminated during the Clinton administration's 'peace dividend' years, failure in logistics can not only limit the ability to fight a peer-to-peer war but can mean the difference between victory and defeat," Timperlake said.

Second Line of Defense

Dakota Wood, a defense analyst at the Heritage Foundation, said the report on military logistics weaknesses was not surprising.

"Logistics is the poor step child of the military," Wood said adding that logistics systems often are short-changed in administration and congressional budgeting processes. Fighters and warships often get more budgetary attention, he noted.

For example, vital KC-135 aerial refueling tankers were built beginning in the 1950s and their replacement, the KC-46 has faced repeated development delays.

The Defense Science Board "is saying that if you want to be effective in war we do not have the material capacity to sustain that initial combat power surge and sustain that over time," Wood said. "And it's going to take a long time and a lot of investment to get to where we need to be."

https://defense.info/re-thinking-strategy/2019/01/crafting-21st-century-logistics-concepts-of-operations-a-look-at-the-defense-science-board-report-on-survivable-logistics/

Limping to War: Preparedness and Its Paradoxes

By David Beaumont.

'Over time we lost strategic agility. Our units became hollow. Our ability to operate away from the Australian support base degraded dangerously. Our capacity to generate, sustain and rotate forces eroded. The tremendous efforts of all of the Australian Defence Force in East Timor concealed these deficiencies in the Army's capabilities. But we learnt some important lessons during that deployment. We needed increased readiness, enhanced mobilisation capabilities, more and better strategic lift, improved logistics, improved engineering capability, better mobility, improved long-range communications and an ability to win water, distribute fuel over the shore as well as improved stevedoring and medical services.'

– Chief of Army LTGEN Peter Leahy, 2004[1]

The importance of a high-level of preparedness to a military is self-evident. An unprepared military offers political leaders few options, corrupts strategy, is inefficient and ineffective, and poses a national risk. The term 'preparedness', or those associated with it such as 'readiness', is never far from the vernacular of senior military leaders – and rightly so.[2]

It is mentioned as the first of five priorities within the Australian Army's 'Army in Motion' narrative, just as it's virtually the only priority for the incoming US Chairman of the Joint Chiefs of Staff, General Milley (saying, in 2016, 'there is no number two'). Given the frequency preparedness, readiness and other associate terms have been mentioned in recent years, it's hard to avoid thinking that Western militaries have some pretty serious problems. For example, American commentators go so far as saying there is a 'crisis' in flagging a range of contemporary preparedness problems within the US Department of Defense including aviation incidents, capability gaps created with lower Defence budgets, and inadequate logistics support to the fielded force.

All militaries can be picked apart leaving deficiencies to be found, and some of these deficiencies might be particularly significant. But the reason these deficiencies are becoming problematic, and preparedness emphasised as an issue, is because of the changing nature of the perceived imminent threat. A comprehensive study such as the Final Report of the Defense Science Board (DSB) Task Force on Survivable Logistics, one which looks at the roots of preparedness in the logistics infrastructure of the US military, was really only possible when a potential adversary – either Russia or China – could be identified as being capable of 'catastrophic destruction of military supply chains and deployment of personnel and materiel'. As those

militaries who fought the coalition counter-insurgency wars of the Middle-east adjust to new strategic realities, new preparedness requirements have understandably manifested with capability gaps emerging as a consequence. Given it is virtually impossible to design an armed force that can perform every conceivable type of military mission, it's understandable that preparedness would become a major problem at this time of strategic transition.

Being definitive about threats or objectives certainly helps in answering the question 'is the military prepared?' Nonetheless, it remains a question that is difficult to answer. As with logistics, there is no single owner of the preparedness problem and different agencies, commanders and Defence leaders will often view preparedness outcomes as it applies to themselves and their organisations. In practice, and as highlighted by Dr Thomas Galvin of the US Army War College, the question we are really asking two 'rolled into one.' [3]

The first – the one that military preparedness systems typically answer – is 'are the capabilities on hand prepared for X?' This is what daily life in the military is all about; generating forces, individual and collective training, assessing capabilities and conducting remedial activities to correct any problems or deficiencies. Galvin's second question is 'are the right capabilities on hand for X?' As Even though the capabilities on hand might be ready, they might not be the right ones for the situation. Thus what we might call 'modernisation' or 'capability management', a process which applies prediction through acquisition, plays its part.

I contend there is actually a third question which may be extrapolated from the other two. The 'logisticians question' and one recognised in the doctrine of many militaries, is 'can those capabilities be sustained for X?' Planners may have predicted the characteristics of the war before them, with capabilities ready to meet the threat, but the ability to deploy and support those forces will ultimately determine their worth. The reason this is important is shown in the exceptions and qualifications given to recent operational successes. For example, it is widely accepted that the Australian Defence Force (ADF) had little logistics capacity to sustain a large second-rotation force after intervening in East Timor in 1999. Similarly, a RAND report highlighted that while the US Army was nominally ready for Operation Iraqi Freedom in 2003, there were real limits to the time in which high-intensity operations could be sustained – luckily, these limits were not tested.

To answer the three questions requires different information, applied in different processes, usually with different management systems, with different decisions made by different leaders who value aspects of the problem in different ways. The 'convergence' of these questions can determine the success of the entire system of preparedness.

This is because different preparedness requirements can be a source of competition for resources; modernising the right capabilities might come at the literal expense of the logistics resources needed to sustain them properly, or having the capabilities available at any given point of time. It's a competition at the heart of perennial debates about funding the 'teeth' or the 'tail', the retention of 'seed corn' capabilities in militaries where the prospect for their use is low, and why periods of 'bloc' replacement of capabilities – right now for the ADF – are real risk periods for Defence organisations.

This convergence might, in fact, be the strategic centre-of-gravity and the penultimate point of internal-to-Defence decision making and risk management. It is also what most strategic organisational restructures – such as the ADF's 1997 Defence Efficiency Review, many of the acquisition and sustainment reforms undertaken in the 2000's, or the more recent First Principles Review – are really about.

Preparedness systems are tension-ridden to the point of having paradoxical features. For the reasons mentioned earlier, trade-offs are common, and over a myriad of issues. For example, by limiting the issue of equipment or training to components of the force it might be possible to achieve greater things in other areas

deemed higher priority. More significant is the paradox of 'more is less', where the desire to train in a way that approximates operations is paid through 'evanescence and self-destruction'.[4]

Routine exercises and training can achieve high standards of preparedness, at least for a time. There comes a point, however, where human energy is consumed, machinery is run-down, supplies exhausted and the performance of units begins to drop.[5] Accidents occur as risk tolerance increases and people and organisations are pushed to their limits to achieve results. Compromises made across the force create varied standards of preparedness, or obviate true assessments of certain capabilities, systems and processes.

Perhaps it is inevitable that militaries limp to war. At the very least it's unsurprising that Martin Van Creveld could conclude that 'most armies appear to have prepared their campaigns as best they can on an ad hoc basis' in his assessment of logistics performance.[6]War is against the strategic planner when it comes to preparing forces. At any stage a Defence force might get any one of the three preparedness questions 'wrong', with consequences for the allocation of resources, interest or time. Alternatively, they could simply prepare for the wrong circumstance – or pretend they can prepare to a high standard for anything – and the entire preparedness equation can produce inadequate answers. The consequence of this could range from a delay to mobilisation as industry and Defence work together to fill a capability gap, or generate supplies and stocks to resource capabilities adequately, right to operational and potentially strategic capitulation.

The lesson from history is military staff have better uses for their time than imagining detailed 'blueprints for victory' well in advance of conflict.[7] Instead they should be focussed on the dull yet critical problems of mobilisation, identifying changing contexts, developing potential solutions to address preparedness challenges, and understanding the risks and limitations of any alternative options.

Just trying to develop a coherent sense of the many variables that affect preparedness or mobilisation for war is challenge enough for any Defence leader and their staff appointed to the task; a problem made more difficult with the diffusion of responsibility for preparedness across strategic headquarters and commands. Peacetime should be spent establishing the organisational and logistics agencies and structures that enable a smooth(er) transition into conflict. There is no guarantee that the architects of strategy will heed the results of planning as events outpace the products of industrious minds, or proclivities and politics prevail. But the gruelling staff-work entailed in preparedness planning might just be enough to win in war.

There has never been a fine line between peace and war to simplify our preparedness and mobilisation decisions, nor will opponents wait until each other is ready for the fight. It's clearly important to take preparedness out of the headlines and give the topic the attention it deserves. Indeed, this is why Logistics in War will focus on preparedness in 2019 – for many preparedness problems are grounded in logistics. This article has touched on several of the important concepts concerning preparedness, but as we know from previous articles, there are a whole range of factors which influence preparedness outcomes.

The reality is that all actions within a military lead to preparedness outcomes, bar the warfighting itself. This means that it is well worth the effort to make sense of the issue today to not only advise senior civilian and military leaders, but to avoid the costs of poorly made strategic choices.

If you would like to contribute on this vital topic, please contact us at logisticsinwar@outlook.com

The thoughts here are those of the author, and do not represent any official position. David Beaumont can be followed on Twitter @davidblogistics or LinkedIn. Images by the Australian Department of Defence.

[1] ADDP 00.2 Preparedness and Mobilisation, Department of Defence, Australia, p4-4, available at defence.gov.au/adfwc/Documents/DoctrineLibrary/ADDP/ADDP_00_2_preparedness_and_mobilisation.pdf

[2] In Australian doctrine, preparedness comprises 'readiness', the availability of a capability at a given point in time, and 'sustainability' which considers how long that capability can maintain the necessary level combat power. Terms vary in different militaries, and it's always important to confirm definitions when discussing preparedness.

[3] Galvin, T., Military Preparedness, US War College, USA, 2005, p 1; available at https://ssi.armywarcollege.edu/PDFfiles/PCorner/MilitaryPreparedness.pdf

[4] Betts., R., Military readiness: concepts, choices, consequences, Brookings, USA, 1995, p 70

[5] Ibid. p 70

[6] Van Creveld, M., Supplying War, 2nd edition, Cambridge University Press, UK, 2004, p 236

[7] Betts., p 235

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