THE MULTI-DOMAIN REQUIREMENTS OF AN AUSTRALIAN MARITIME STRATEGY

APRIL 11, 2024 SIR RICHARD WILLIAMS SEMINAR

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INTRODUCTION

The first of two seminars of the Sir Richard Williams Foundation in 2024 was held on 11 April 2024 at the National Gallery of Australia.

The seminar was entitled, The Multi-Domain Requirements of an Australian Maritime Strategy and the aim of the seminar was identified as follows:

Attendees at the April 11, 2024 Williams Foundation Seminar.

"To examine the enduring and emerging multi-domain requirements of an Australian maritime strategy in the context of the Defence Strategic Review. The Seminar examines the requirements through a Defence lens but will consider all national means that contribute to a maritime strategy and the need for coherence across concepts, doctrine, equipment, basing and preparedness. This strategic coherence is needed to

synchronise effects across the Whole of Australian Government, Defence and industry, as well as international partners."

Last year's DSR highlighted the ramped-up threat to Australia and the need to focus on the region, its partnerships and a more effective defence effort by Australia in the regional deterrence context.

The focus of the government in its subsequent priorities has tended to focus on longer term acquisitions, first in terms of nuclear submarines through the AUKUS relationship and for a new surface fleet in its recently released surface fleet review.

A multi-domain operations discussion builds on the work of the Foundation since I have been writing the reports since 2014 upon building a fifth-generation force, which after all revolves around sensor-shooter relationships built across an integrated force delivering multi-domain effects or what I prefer to call a kill-web enabled force.

The focus is upon how you get full value out of your force now and to build out that extant force in the future to become more lethal and survivable. If you are focused on the fight tonight, which any credible combat force must focus on, then long range assets are projections of the possible, not augmentations of the credibility of the operational force.

So any multi-domain discussion inevitably focuses on the way ahead for the force in being, rather than a force planning discussion of a projected future.

When you add a specific target of what is that force in being operating in support of, inevitably gaps are identified, and the question then is how do you close the most significant gaps which threaten your security and defence interests.

Such a focus is in turn raised if one raises the question of the means to the end of what one might consider a maritime threat envelope and strategy to deal with that envelope.

In other words, one would expect the seminar discussion to

focus more on the transition challenges of the ADF and the nation to deal with threat environment in the near to midterm rather than in 2040.

That is what happened at the seminar in which speakers started by highlighting the importance of focusing on the here and now rather than on the force that might exist in 2035 or 2040.

After the initial presentations focused on the current challenges and the role of the ADF and the nation to prepare to deal with them, the discussion shifted to whether Australia had a maritime strategy and if so what were the priorities of such a strategy.

The majority of the presentations focused on specific service on industrial perspectives of how best to meet the multi-domain requirements for the evolving Australian defence challenge.

But at the heart of the discussion was really the major challenge facing Australia: how to close defence gaps? How to engage the nation beyond the ADF in the broader defence challenges facing Australia? How to build a sustainable force?

How does the ADF get more capable in the next three-to-five years and to do so in a way that is a prologue to the anticipated force transformation being designed?

Peter Jennings was the first speaker and he underscored that the DSR had highlighted the near-term threats but the investment was in forces a decade away.

He put the challenge as follows:

Governments can and do promise to spend unbelievable quantities of money on the future force but you only know what you get when you open the box.

Not one cent of it buys deterrence today.

From a deterrence perspective there is potentially some risk in promising strong deterrent capabilities in the future while

maintaining the military capabilities of a skinned cat in the present day.

That is the risk of pre-emption. Indeed, one reason why analysists are so worried about a mid- to late-2020s risk of conflict against Taiwan, or in the South China Sea, is that Xi Jinping may calculate that he faces a 'use it or lose it' choice with the PLA.

Xi's best chance of strategic success to achieve unchallenged military dominance in the Pacific are maximised by early action before his opponents' next generation military capabilities are realised and while the democracies are internally distracted and divided.

The tragedy is that there is so much which could be done with a bit of political and Defence push to strengthen ADF and national capabilities in the relative short term.

For example:

- *Ramping up domestic ammunition production and stockpiling.*
- *Establishing offensive drone capabilities on the basis of existing technology – not everything has to be quantum, AI, hypersonically joint and enabled.*
- *Funding some of the incredibly smart military capabilities that have been developed by Australian businesses.*
- *Researching some of the remarkable military and operational achievements which the Ukrainians (with allied help) and the Israelis have used in recent months.*

Here I'm not just talking about drones; but also optimising air defence capabilities; integrating intelligence and battlefield situational awareness; finding the right balance between exotic

and more prosaic technology; working out how to get things in production in less than a decade.

There is so much that could be done, so much so, in fact that our failure to do any of this makes me wonder if it is not the case that the government and Defence establishment is actually getting what it really wants?

The second presentation was by Mike Pezzullo, the former Secretary of the Department of Home Affairs, who made an impassioned speech reminding the audience that building an effective defence structure is not simply the task of the ADF.

The society needed to be engaged in shaping an Australia more capable of defending itself. You cannot outsource defence and security to an alliance or to the professional military for one needs to build a more resilient and sustainable Australian society and nation.

Jennifer Parker of the National Security College (ANU) provided a comprehensive look at the maritime security challenges facing Australia and argued that in fact there was no strategy to deal with these comprehensive challenges.

Her talk focused attention on what is the demand signal and what is the product needed to deal with that demand signal of maritime security and defence.

Such an approach highlights what are the gaps to be met and how to meet them, which is quite different from force structure planning of an envisaged future force. Rather one looks at demand drivers and what tools a nation has available to it, far beyond simply a professional military.

The remaining presentations provided insights regarding how the ADF is changing to deal with the evolving challenges and I will take a detailed look at these presentations in detail later in this publication. I will then return to the question of the match between the specific recommendations and the challenge of building an effective multi-domain force and sustain-

able society in dealing with the evolving threats and challenges.

THE SEMINAR: THE SIR RICHARD WILLIAMS FOUNDATION PROSPECTUS

The strategic environment continues to deteriorate on a global scale with Australia's immediate region the source of increased risk on a number of levels. Meeting preparedness requirements and implementing the Defence Strategic Review (DSR) while building for the future will place significant strain on the Defence enterprise.

In meeting these near term and longer-term needs, one aspect of the environment endures: Australia's strategic geography, which demands a resourced, coherent, and executable maritime strategy.

In short, a sophisticated and credible maritime strategy is a multi-domain, multi-agency, whole of nation effort requiring an enduring focus on the generation of national power and options that contribute to Australia's national security outcomes at the lowest political risk.

Focus

A maritime strategy considers more than naval operations.

It details the ends, ways, and means necessary for the generation of national power that serves all of a nation's interests.

A maritime strategy must therefore contribute to other elements of national power such as diplomatic, informational, and economic, and is not enough to focus on military capabilities alone.

It must address the broader efforts of Defence and the other agencies which contribute to the security of borders and the exclusive economic zone, as well as protecting the mobility of trade and data either on, above or below the surface.

In many ways, therefore, the objectives of an Australian maritime strategy are no different to other nations, especially those that also rely heavily on the oceans for the passage of trade and the development of economic power.

However, the vast area of interest and Australia's relatively small population poses a complex challenge when identifying the ways and means by which those national objectives are achieved.

In a practical sense, a maritime strategy requires a highly integrated, multi-agency, multi-domain response enabled by, among others, connectivity, logistics, bases, stores, and decision-making superiority. And with an increasingly challenging threat environment, this must all be resilient and ready.

The April 24 Seminar, The Multi-domain Requirements of an Australian Maritime Strategy, will examine the challenges, gaps, and opportunities, through a Defence lens with contributions across Defence and industry.

CHAPTER 1

SHAPING A WAY AHEAD FOR AUSTRALIAN MARITIME STRATEGY

A DISCUSSION of how multi-domain operations could enable Australia to more effectively execute an effective Australian maritime strategy pre-supposes that Australia has a maritime strategy and a fairly clear sense of what its maritime interests are which need to be protected.

The government's Defence Strategic Review last year and the recently released defence strategy certainly highlights a range of maritime capabilities which the government has focused upon to determine how best to enhance Australian defence.

But what are the tools in place and the new tools which need to be acquired to enhance Australian maritime security and defence?

Or in other words, there are prior questions to the question of acquiring new ships.

What are the threats? How to organize for them? Who should be responsible for dealing with them? And how to deal with them most effectively with what means?

The government has highlighted a central focus on a strategy of deterrence by denial. But if the Chinese seriously

disrupt Australia's ability to move goods by sea, who is denying whom?

Jennifer Parker speaking at the Williams Foundation seminar on April 11, 2024.

At the seminar, two presentations directly dealt with the questions of maritime strategy and security.

The presentation Jennifer Parker of the National Security College of the Australian National University addressed the question of whether Australia actually has a maritime strategy and if they did what was it?

The second was by the Commissioner of the Australian Border Force, Michael Outram, and dealt with the very significant question of the daunting challenges to maritime security in a period of disruption of the "rules-based" order.

Parker provided a broad stroke analysis of maritime strategy, rather than reducing the discussion to what platforms and capability which Australia has to operate in the maritime domain. In her presentation she defined maritime strategy for Australia as "the plan to protect Australia's maritime strategic interests using all aspects of national power."

Her perspective meant that she would conclude that a maritime strategy defined as deterrence by denial would be too narrow to capture the full spectrum of demands from the maritime domain that required an appropriate security and defense regime to determine and defend Australian maritime interests.

She mentioned several cases of conflicts in the maritime domain which have been evident in the recent past which illustrate the broad nature of the challenges to be dealt with.

One was the targeting of shipping to send a political message which is evident in what is going on in the Middle East. Given Australia's dependence on maritime trade, this is a problem which Australia clearly needs to be prepared for.

The second has been evident in both the confrontation in the Black Sea and the challenges being addressed by the Nordics and the Baltic states involving the Russians and the Baltic Sea. This is a question of port security and undersea cable protection. Here one is talking about active measures for security and defense, not simply posturing for deterrence.

The third has been the importance of "information war" in the maritime domain evident in the Chinese anything but gray zone confrontation with the Philippines. The Philippines are pulling the strings on their alliance relationships to generate defence options, but they have used transparency to fight back in the information war with the Chinese.

It is also the case that they are adding new defence capabilities which will allow them to counter directly Chinese aggression which again is not building a posture for deterrence by denial – it is about directly confronting the adversary, which has been a major failure, in my view, of characterizing the Chinese as operating the gray zoos.

In a book review I wrote about a book dealing with China and the gray zone, I underscored the limitations of using this

concept from the standpoint of shaping credible action policy:

This is how I highlighted the challenge:

"Western analysts have coined phrases like hybrid war and gray zones as a way to describe peer conflict below the level of general armed conflict. But such language creates a cottage industry of think tank analysts, rather than accurately portraying the international security environment.

"Peer conflict notably between the liberal democracies and the 21st century authoritarian powers is conflict over global dominance and management. It is not about managing the global commons; it is about whose rules dominate and apply. Rather than being hybrid or gray, these conflicts, like most grand strategy since Napoleon, are much more about "non war" than they are about war. They shape the rules of the game to give one side usable advantage. They exploit the risk of moving to a higher intensity of confrontation.

"What limits should be crossed to manipulate the risk of going to a higher intensity of competition?"[1]

In our period of history, no credible defence approach can be designed without a strong security foundation. It is not simply about the point of the spear, or the forces generated in a force design for the professional military. It is about having a society and economy built on solid foundation of security.

The presentation of the Commissioner of the Australian Border Force provided a broad understanding of the need for a robust security policy to underwrite a credible maritime strategy. Michael Outram highlighted the importance of Australia's maritime domain citing its $1 trillion in annual trade and 5% of GDP.

Commissioner Outram speaking at the Williams Foundation seminar April 11, 2024.

He underscored that there are wide ranging security threats in maritime domain which include illegal fishing, cyber-attacks, and biosecurity risks. The challenges of maritime security in the Indo-Pacific region, include the resilience and agility of criminal networks and the limitations of publicly accountable bureaucracies.

To deal with these challenges. the Australian Border Force (ABF) is collaborating with Pacific island nations to build capacity and address growing criminal threats, including illegal fishing and migration.

The Australian Border Force (ABF) and Defence have an overlap in their missions, particularly in the maritime domain, but this overlap is not static and can shift depending on circumstances. The Maritime Border Command within ABF working with defence focus on the challenge or surveilling and monitoring vessels operating in Australia's maritime domain.

In my own view, there is a significant opportunity to leverage autonomous systems into an integrated security and

defence operational culture which will be critical in order to be able to deal with the larger issues which Parker highlighted.

The Commissioner went on to argue that the time was ripe for from serious rethinking about how the Australia government needs to work in this area.

He identified several areas where progress needs to be made:

- Consider developing a new civil maritime security strategy that addresses strategic coherence, governance, funding structures, and the definition and scope of civil maritime security in light of changing geopolitical and technological conditions.
- Conduct a series of future focused scenario-based planning exercises to evaluate whether the current operating model or an alternative model such as an independent Coast Guard could be more effective in addressing strategic shifts over the next decade.
- Give serious thought to whether the regional security situation, shifts in technology, and other factors require a different strategic approach to civil maritime security and a redefining of the scope of operations.
- Determine if the current civil maritime strategic architecture, planning, governance, funding, and structure remains fit for purpose over the next decade.
- Assess if the civil maritime operating model of the past 20 years can be sustained and remains fit for the strategic purpose over the next 20 years.

He concluded with the importance of addressing long-term

structural funding issues to maintain a fit for purpose civil maritime capability appropriate to Australia's interests.

The two presentations taken together underscore the need to focus on how the Australian government is organized to address maritime security and defence issues. And I would argue that to use new technologies in this domain is also required fundamental organizational change as well.

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1. https://defense.info/re-thinking-strategy/2021/12/gray-zones-or-limited-war/

CHAPTER 2

WHAT DOES A 21ST CENTURY DEFENCE STRATEGY LOOK LIKE FOR AUSTRALIA IN A MULTI-POLAR AUTHORITARIAN WORLD?

THE ANSWER IS that it does not look like the defence strategy which has been followed throughout most of the post-war period.

The threat envelope is quite different. There is no American and Western managed rules-based order dominating the world. There are diverse authoritarian movements and states which follow their distinct interests but play off of one another.

As one analyst has put it: "But the end of the Cold War has led to the atomisation of threats – many of these threat groups possess weapons and backing from powerful regional states that in some cases make them as capable as state-based actors.

"Nowhere is this more apparent than in the Middle East, where improved military capabilities are combined with an ideological zealotry that makes normal cost-benefit calculations underpinning deterrence redundant. This makes it very difficult for Washington to achieve the type of deterrence on which long-term regional stability is often based."[1]

And the direct threat to Australia is broad and not narrowly focused on what the Australian Defence Force can do. A sustainable force and a resilient Australia are beyond the scope

of narrowly considered defence investments in a ready force. They are all of government and all of society challenges.

At the Williams Foundation Seminar held on April 11, 2024, the former Australian Secretary of Home Affairs, Mike Pezzullo, clearly underscored how different the era into which Australia and its allies had entered compared to the previous one.

As he put it in his presentation:

"What might this mean for Australia and specifically the Australian defence enterprise?

"Defence planning is rightly focused on a wide range of contingencies. With very little notice the Australian Defence Force could be called upon to undertake rapid deployments into the nearby arc of small states.

"While necessary and important, such ventures would only be marginally relevant to today's great issues of war and peace. The same could be said of vital operations in support of distressed communities in the wake of natural disasters.

"Given long lead times, defence also has to focus on complex capability and programming issues, especially as related to the planned force of 2035 and beyond."

But he cautioned that the threats in front of Australia now needed to drive a re-set in efforts that considered the engagement of the society in its own defence, not just crafting hypothetical future force structures.

And he quite correctly warned against the danger of shaping Potemkin long range capabilities that may never arrive in time to make a difference.

Mike Pezzullo presenting at the Williams Foundation April 11, 2024 Seminar.

He focused much of his attention on the need to engage whole of government in working with economic leaders in shaping a way ahead for a more resilient Australia that could support a sustainable ADF along with core allies working with Australia as a strategic reserve both to deter and to prevail in crisis situations.

He underscored: "The most important question is whether a nation at large has the structures, capabilities and above all, the mindset and the will, that are required to fight and keep fighting to absorb, recover, endure and prevail. These cannot be put in place or engendered on the eve of the storm.

"Now as a practical suggestion to focus relevant effort, we should consider modernizing the earlier practice from the 1930s and and then again from the 1950s of the preparation of a war book. The war book of those times were guides on what would need to be done and by whom, in the event of war.

Preparing a new war book would help to focus the national mind."

He clarified his suggested approach as follows:

"A new war book would deal with the entire span of civil defense and mobilization which would be required to move to a war footing, consisting of a range of coordinated plans. Some would deal with critical infrastructure protection, and national cyber defense. Other plans would deal with the mobilization of labour and industrial production covering supply chains, industrial materials, chemicals, minerals, and so on.

"Sectoral plans would address the allocation, rationing and or stockpiling of fuel, energy, water, food, transport, shipping, aviation, communications, health services, pharmaceuticals, building construction resources, and so on and so forth.

"They would also be plans for the protection of the civil population covering evacuation, rapid fortification and or shelter construction, and for augmenting police fire, rescue and ambulance capacities, and also dealing with social cohesion, border security, domestic security and public safety.

"Lessons could be adapted from international experience, especially Ukraine and Israel, as well as from domestic experiences such as natural disasters, and the COVID pandemic noting however, that war is different."

In short, 21st century defence is not narrowly focused on the ADF and long range investments in a future force.

All one has to look around you and find the activity of the multi-polar authoritarian world and the end of the American-led "rules-based order" to understand the future is now.

How best to shape a way ahead in terms of augmented capabilities in short to mid-term and engage the nation in its own defence for the longer term is really the challenge.

1. https://www.theaustralian.com.au/subscribe/news/1/?sourceCode=TAWEB_WRE170_a_GGL&dest=https%3A%2F%2Fwww.theaustralian.com.au%2Finquirer%2Fplayers-scramble-to-regain-upper-hand-on-deterrence%2Fnews-story%2Fdc4e9e5d44dcd732c9b9978f12f0844f&memtype=anonymous&mode=premium&v21=GROUPA-Segment-2-NOSCORE&V21spcbehaviour=append

CHAPTER 3

MANAGING TRADE-OFFS IN FORCE STRUCTURE DEVELOPMENT

WHEN A NATION IS FACING A DETERIORATING threat environment, one key challenge in ramping up defence investments is how to balance enhancing the current fight to night force with new future platforms as part of a future force structure.

This problem is compounded by the changing nature of the threat envelope for the liberal democracies.

They now face a multi-polar authoritarian state and movement threat envelope whereby these states play off of one another and have various kinds of working relationships which fall short of a complete alliance, but together generate a diverse and diffuse threat to the liberal democracies.

And when it comes to information war, they have a huge advantage of access to the social media-dominated world provide by liberal democratic systems compared to the face recognition controlled authoritarian regimes.

But there is another challenge as well facing force structure design.

The most dynamic new systems for innovation are software designed and AI enabled systems which simply do not follow the pattern of developing and procuring legacy platforms. If

you don't use maritime autonomous systems, for example, you cannot re-design them for you do so in direct relationship to their use.

And as your current force becomes a hybrid one with the growing input from autonomous systems, what then is the nature of the future force which one designs based on legacy thinking?

The challenge of the tension between dealing with growing threats now and delaying design responses much later was highlighted in Peter Jennings, Director of Strategic Analysis Australia, presentation to the recent Sir Richard Williams Foundation Seminar held on April 11, 2024.

Peter Jennings presenting at the Sir Richard Williams Seminar April 11, 2024

The main thrust of the presentation was Jennings perceiving a significant gap between the government's emphasis on the near-term threat and its defence investments. The Australian government is not dealing with ways to enhance ADF capability in the near term but putting their priority investments into a future force.

Jennings noted:

Our worsening strategic outlook is a constant theme in Defence Minister Richard Marle's speeches.

Here is Mr Marle's comments at the Sydney Institute on April 4:

"Recorded military spending in the Indo-Pacific region has increased by almost 50 per cent in the past ten years, with China engaging in the biggest conventional military build-up in the world since the Second World War.

"In the year 2000, China had six nuclear-powered submarines. By the end of this decade, they will have 21. In the year 2000, China had 57 major warships. By the end of this decade, they will have 200.

"These investments are shifting the balance of military power in new and uncertain ways. We are in an environment where the risk of miscalculation increases, and the consequences are more severe.

"And as China's strategic and economic weight grows, it is seeking to shape the world around it.

"For a country like Australia this represents a challenge."

In these comments Mr Marles is absolutely right.

If you don't understand that Australia is facing an increasingly threatening strategic environment, one where the risks of war in the mid-2020s is substantially growing, well, either you must be paying no attention to international developments, or you might conceivably be working in DFAT (Defence Foreign Affairs and Trade).

But what has been the practical response according to Jennings?

"The more our governments seem to talk about strategic risk, the less it seems that we are actually able to take practical steps to strengthen the ADF to present a deterrence to conflict."

In his presentation, he ends by highlighting the impact of investment in the autonomous systems technologies which Australia already has access to and has experimented with. Indeed, one of the great ironies is that Australian industry has contributed significantly to Ukrainian defence efforts in various forms of air and sea autonomous systems, but has not applied this technology to the operational ADF.

Here is what Jennings emphasized:

Australia really should engage in a crash program to field an array of drone technology relevant to the maritime domain. There is existing capability available — including Australian proprietary IP which we could bring into service this year or next.

Imagine how motivating for Defence and industry it would be if the Government said there was a billion dollars available for the rapid development of TRL level 9 -- System Proven and Ready for Full Commercial Deployment —drones.

The challenge would be to have fielded capabilities in 2025, let's say before the next federal election.

Impossible I hear you cry?

The Ukrainians are doing it every week.

Our enemies — everyone from the PLA through to the other authoritarian powers, organised crime and the people smuggling cartels — these groups show themselves to me more agile and faster technology adopters than we are in Australia.

We need to think fast and laterally about how to respond. By definition that means current policy processes in Defence are not well adapted to this task. Not fit for purpose as the DSR said.

Hopefully this conference will be able to surface some new and creative ideas for Australian maritime strategy and that those ideas will get a fair hearing.

I would note that a clear example of what Jennings is

talking about is what is happening in the context of Nordic integration.

And when one looks at recent Norwegian decisions to ramp up its defense budget and to spend it on programs already being built, one gets the idea of what is possible for a focus on enhancing the current force rather than pushing investment into a conceived of future force.

Notably, several years ago the Norwegian Ministry of Defence worked with the German government on building common procurement of a German submarine. The Norwegians are putting forward more money to build out this program, rather than putting that money aside in a future design build.

Jennings highlighted a crucial question: How do you ramp up ADF capabilities now? And I would add, how do you do so in a way that is a building block for your future force?

It is not about putting money in a drain hole: it is about pump priming the process of improving your fight tonight capabilities and building towards a more capable future force.

CHAPTER 4

AIR POWER IN AUSTRALIA'S MARITIME STRATEGY

THIS WAS the title of the presentation by Chris McInnes, a noted Australian airpower and defence analyst, to the April 11, 2024 Williams Foundation Seminar. He provided an overview of how airpower made unique contributions to Australian defence by providing rapid strike options throughout the Australian areas of interest.

McInnes highlighted air power's ability to provide rapid engagement and could do so over extensive operational space to deliver desired effects. He argued that in times of an effects-based approach, airpower transforms the time and space dimension for Australia's maritime strategy.

Airpower provides cost-effective options for Australia's national security and cost-effectiveness should be prioritized in Australia's maritime strategy of denial, focusing on delivering large amounts of high explosives to hard targets like warships, airfields, and ports.

Indeed, his presentation was an argument that airpower provided a cost-effective way to deliver massive firepower at range.

Chris McInnes presenting at the Williams Foundation Seminar April 11, 2024.

His analysis led to his argument that airpower gives Australia time and space to plan, act, and move effectively. This means that prioritizing investment in air superiority to avoid second-best hand in high-stakes situations is crucial.

The presentation can be broken down into three core efforts.

The first was to look back at World War II and examine airpower's key role in the Pacific campaign. It played a crucial and decisive impact on the enemy prior to any other means to encroach on the Japanese advances in the Pacific. A combined arms campaign was necessary to recover territory seized by the Japanese empire, but air power was the tip of the spear and a core element of the ability of the allied air forces from sea and land to destroy enemy forces.

The second revolved around the question of the time-space functionality of airpower. Every platform in the joint force is a time-space entity with core characteristics which define what it is able to do. Airpower can move at speed and range no ship

can; ships provide slower moving capabilities which can build out a presence force.

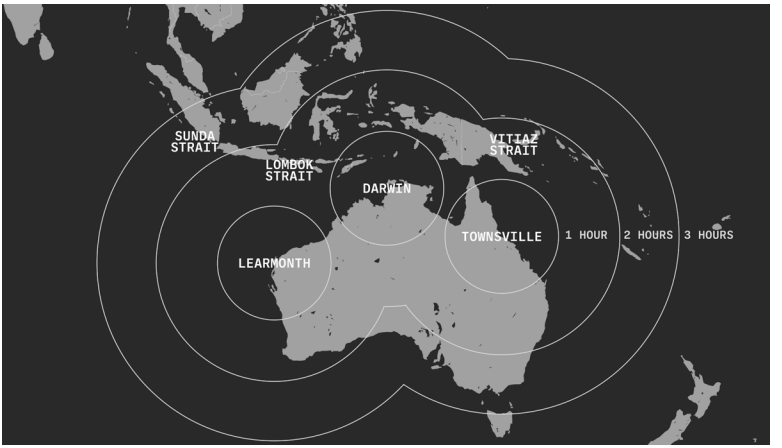
As he argued:

"We can swiftly respond with airpower across huge distances with different options in different places on different days. We have more options available and more time in which to consider them.

"But it works both ways. Three hours from Darwin is also three hours to Darwin. PLA airpower can and does hold Australia and its assets at risk across our region in a discretionary, scalable and sustainable manner and in hours, not days. It has already disrupted Australia's sense of time and space. We are inside our warning time.

"I don't think we've quite latched on to what that means though. Airpower shapes how we sense and exploit time and space, which is the most precious thing for Australia and its maritime strategy."

He used a chart to visually underscore the time-space point about airpower.



McInnes carefully examined the cost-benefit of weapons

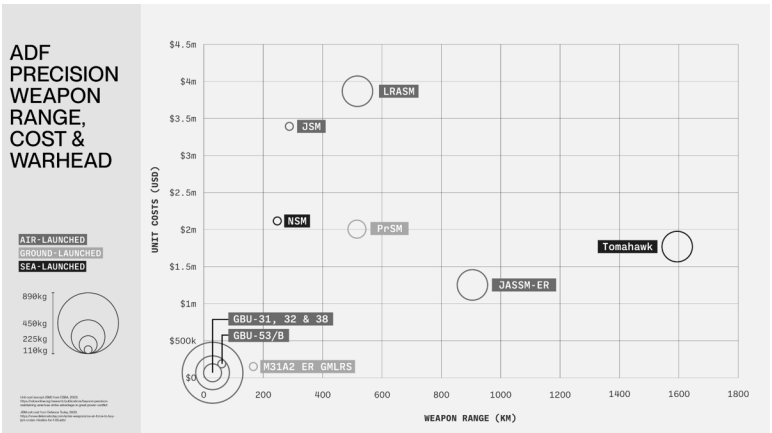
delivery enabled by airpower with standoff weapons from sea or land.

He introduced his analysis as follows:

"My analysis is limited to strike as the central operational feature of Australia's maritime strategy of denial. I see the delivery of large amounts of high explosives as determining strike effectiveness and war, and credibility in circumstances short of war.

"Australia's maritime strategy of denial depends on our ability to deliver large and concentrated amounts of high explosive at long range, we could call this impactful projection. We need to hit hard enough to stop movement in different places on different days across a huge area over and over again.

The charts he showed highlighted the range, unit costs per weapon, and warhead class correlated with the launch platform to assess cost effectiveness of ADF weapons.



He described the charts this way:

"Unit costs are shown in U.S. dollars and are based on U.S. budget figures going back to the 70s. The unit cost of new weapons will fall as more are purchased.

"The charts clearly show that the delivering the weight of explosive our maritime strategy needs is going to be very expensive, particularly if we become overly reliant on stand-off missiles rather than stand-in weapons in the bottom left corner. It is remarkable how often one reads of the ADF need for long range missiles because of the apparently short range of our air power.

"We must however distinguish between stand-off range – which is the distance a weapon travels from its launcher, and which is what the first chart shows – and effective reach, which incorporates the distance the platform and weapons can rapidly cover.

"When considering effective reach rather than stand-off range, the picture changes dramatically. Stand-in weapons suddenly become some of our longest-range options.

"The second chart incorporates a modest strike radius for the Super Hornet, our shortest-range weapon carrying aircraft. The ADF certainly does need stand-off weapons as they have specific utility against particular targets including air defenses, but they are expensive and inefficient high explosive delivery devices.

"Every exquisite component is single use and many many missiles are needed for strikes, particularly against defended targets. They must carry and do everything internally, including propulsion, navigation and communication. This forces trade-offs, often in warhead size."

"Stand-in weapons are much lower cost and almost entirely warhead, including our largest options. They do rely on expensive delivery platforms, but these are reusable, and multi-role. We do need standoff weapons for specific tasks. But once that is done, stand-in weapons are our most economical and among our longest range options for maritime strategy of denial."

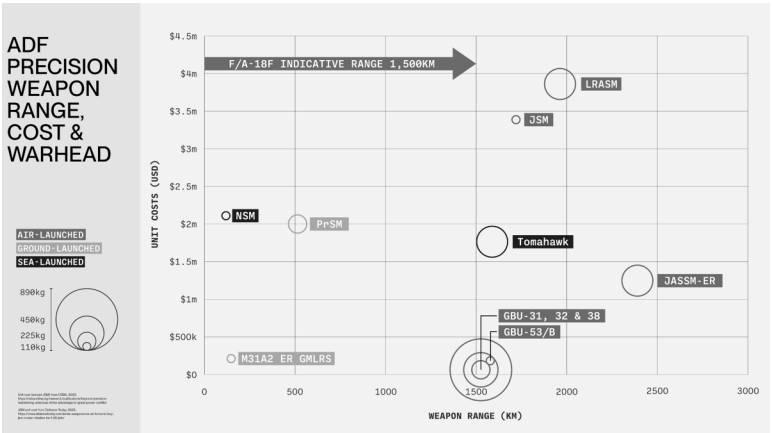
He then focused on the key question of the operational

infrastructure for the ADF and its operations, arguing that criticism of airpower as too dependent on vulnerable bases and supply lines overlooked the reality that these dependencies could not be avoided.

This is how he put it when looking at the opportunity costs of different operations:

"What are the trade-offs?

"It seems unavoidable that Australia will always need bases and supplies in its north for military operations in our region. Because at some point, all operations need bases and they will all need air power of some kind. Suggestions that dispersing Australia's assets throughout the archipelago to our north can somehow minimize these costs are hard to square.



"Even assuming we hold permission to fly missiles through our neighbours airspace, the units will need to supply and defend themselves locally against air and other attack and they will still need supply lines back to Australia, which will have to be secured using air and sea power."

McInnes's closing point was to call for a renewed emphasis

on the primacy of air superiority in airpower thinking and investment. As he said:

"However, we will have no options at all without air superiority. And this I contend is where we have reason for concern. In its simplest sense, air superiority is the condition under which we can operate free from prohibitive interference by the enemy.

"Air superiority can be general or local in time and space, it is almost never absolute, and it is a continuous struggle. It is deeply ingrained in the design and operation of Western societies and military forces, including the ADF. It is fundamentally why Australia has an Air Force. It was explicitly the prime campaign for Australian air power until the turn of the century.

"But the Western bloc has lost sight of this primacy over the last 30 years due to complacency and distraction. While the U.S. is reinvigorating it's air superiority approach, its Air Force is struggling for funding while operating its oldest and smallest aircraft fleet since it was formed.

"Russia's invasion of Ukraine has given European air forces a rude wake up. Australia has strengths in the air but it would appear requirements exceed resources geographically and across missions. Mass and tempo are limited."

"Air superiority is a fast-moving competition and deeply unforgiving for those who fall behind. The primacy of air superiority needs to be restored, particularly as the threat grows and funding is squeezed."

The really decisive aspect of his presentation and indeed what is at the core of the evolution of 21st century combat forces, is the question of payloads and platforms or what I refer to as the evolution of the kill-web force.

At the heart of the evolution of fifth generation enabled operations is a significant shift in terms of the sensor-shooter

relationship whereby the weapons to be fired at an adversary do not necessarily come for the platform which has the sensor which has identified the target.

This is at the heart of the F-35 development which frankly is still not fully understood and comprehended in the defence analytical world.

If your goal is to deliver lethal payloads, there are a variety of ways to do so.

But at the heart of the issue is where are they launched from and determining what target sets determine which weapons you need and their range. With manned and uncrewed air assets, one significantly reduces the range of the weapon necessary to strike a target as opposed to being launched from land or a ship.

The U.S. aircraft carriers have combined speed, mobility, and launching airpower to close the distance for the missiles being fired.

To conclude, I want to build on McInnes's focus on the need dramatically to reduce the cost of the weapons being used. I would argue that we need to build the functional equivalent of the 155mm shell used by the artillery for an air-launched missile which can be produced across the allied forces.

This will not be a super long missile, probably in the range of 400 miles, but the long range TLAMS which go further are expensive and in limited supply. What this means is that the future belongs to the common air missile produced in quantity that could also be fired from the ground or sea. The functional equivalent of the role of the shells of the 88 in the German army in World War II is what I envisage.

CHAPTER 5

ALIGNING AIRPOWER CAPABILITIES WITH AUSTRALIA'S MARITIME STRATEGY

AT THE APRIL 11, 2024 Williams Foundation seminar, the former head of the Air Warfare Center and now Director General for Air Combat Capability, Air Commodore Ross Bender, addressed the way ahead for the RAAF in dovetailing with the new strategic focus of the Australian government.

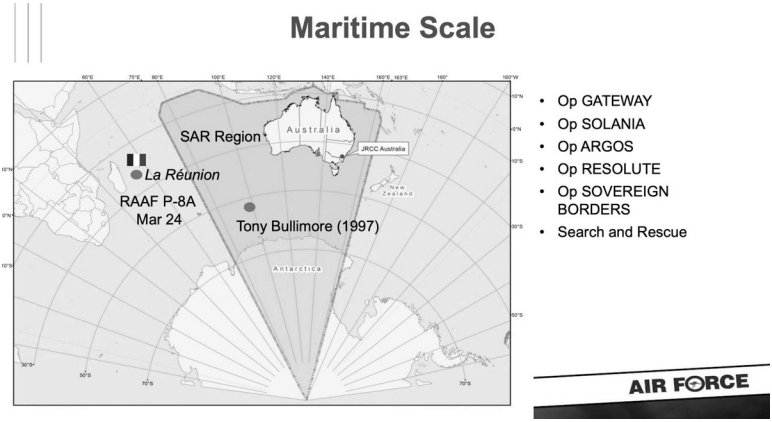
Air Commodore Bender noted that the RAAF although closely partnered with other allies is focused on "conducting campaigns directed to the operational and strategic goals supporting national defense."

It is focused in this sense, and increasingly on the region.

The speed and range of airpower is an essential contribution to the defense of Australia's maritime interests.

As Bender put it: "The ADF must be able to operate across great distances to assure the security of our economic interests and be able to support our allies and partners. Air capability is vital to the maritime domain by providing the speed and responsiveness which it can deliver."

He provided a slide which reminded the audience of an aspect of the range and focus challenge.



He commented on this slide as follows: "And though we'll discuss northern approaches, we should not forget the south with the Antarctic Treaty in mind, which from 2048, any of the parties can call for review.

"I also flag our contributions to some long standing and some relatively new maritime surveillance operations throughout our region, supporting the Australian Government and importantly, our regional partners.

"You might be aware of the Australian P-8 that recently visited La Réunion. Australia is a maritime nation and the ADF must be able to operate across great distances to assure the security of economic interests and be able to support our allies and partners."[1]

I would note that the ADF is truly dependent on what the RAAF can do as it provides both the air capability associated with the USAF in the United States as well as what the U.S. Navy provides for the U.S. military. It delivers strike, reconnaissance, maritime ISR and targeting data to the ADF.

If the RAAF is not capable of performing its air delivered 360 degree capabilities, then the entire maritime domain defense enterprise for Australia is severely weakened.

In his talk, he discussed the need for the RAAF to develop

its own version of agile employment which largely will evolve over ways to operate from the Northern areas of Australia where there are significant infrastructure and work force limitations. The challenge of fuel and logistical support to a distributed force is a major one to be met.

Air Commodore Bender presenting at the Williams Foundation Seminar April 11, 2024.

I would note that it has been announced that there is to be acquisition of AGM-158C LRASM anti-ship missiles to be carried on F/A-18Fs, P-8As and eventually F-35As, as well as AGM-158B JASSM-ER air-to-ground missiles. Another item is integration of the Kongsberg Joint Strike Missile on the F-35A. E/A-18G Growlers will receive 63 AGM-88E AARGM-ER missiles for attacking radars.

And as McInnes noted in his presentation, the range of these missiles in terms of effective attack is expanded by the operation of the air platform themselves.

Bender then discussed the coming of Triton to the ADF.

"Triton will operate from RAAF base Tyndall in the

Northern Territory and be controlled from RAAF base Edinburgh in South Australia, a clear example of the new paradigm for the ADF and the Air Force. The platform is high cost, requires a highly skilled workforce to operate and maintain, but its capability is ideally suited for constant observation of our northern approaches."

But the plan is to expand over time autonomous capabilities augmenting the manned and remotely piloted combat force.

Air Commodore Bender underscored: "Advanced autonomous concepts and capabilities, such as collaborative combat aircraft, can expand the projected envelope of high value, air or maritime assets, while extending their effective reach."

A challenging and I personally believe costly effort that is not fully recognized in realistic budget discussions is simply adapting the RAAF to new operational conditions and contexts.

This is how Air Commodore Bender put It: "There must be important efforts to address a challenge in operating force in Australia. We can't consider our bases as sanctuaries anymore, disconnected from the support base in Australia. How do we continue to operate and demonstrate resilience and maintain the initiative to support deterrence?

"The Air Force is adopting an agile operations concept of a maneuver across a dispersed and hardened network of bases. Of course, this approach must include the measures we can take through the development of integrated air and missile defense capabilities. This protection also requires an understanding of own force signatures, and the automated threat environment, including to supporting and enabling elements.

"An agile posture increases deterrence by being strategically predictable, but operationally unpredictable. Strategic predictability comes from ensuring potential adversaries are

left under no doubt about our resolve to ensure survivable, resilient, and enduring airpower operations. Agility at the level we think necessary requires new approaches to combat support, logistics and command and control.

"At its heart, an agile operations concept provides a network of air domain access points to enable aircraft to move rapidly to enable us to aggregate effects, and then disaggregate and reconstitute to complicate advisory targeting. Agile operations enable the resilience of our airpower."

But what is the challenge in moving ahead with such a vision?

What follow are my own thoughts and not those of any speaker during the day of the Williams Foundation seminar from the ADF.

The reality is that the government is cutting airpower in favor of its investments in the future maritime force, notably SSNs and the future surface fleet. This leaves clear gaps with regard to the enhancing of ADF capability in the crucial three-to-five year period facing the ADF.

Government documents and officials have embraced the notion that Australia's warning time is significantly reduced but the reality is that the government is cutting current capability to pay for a force 10 years away.

One needs to be clear.

The decision to cut funding for the fourth squadron of F-35s is a significant reduction in capability. Notably, when one considers the range at which F-35s operating as an allied fleet can move data for targeting, eliminating the numbers of aircraft have an impact.

And the RAAF F-35s are capable of integration with those of the USAF and in fact now operate in such a manner.

This is not interoperability but integratability which is a very unique contribution delivered by the F-35 across the ADF

and U.S. militaries fleet of F-35s, USMC, US Navy and USAF.

This is simply not true of a legacy aircraft like the Super Hornet, for in fact that is why the ADF was buying the F-35 in the first place.

And air autonomous systems are not a solution for the three-to-five-year period in and of themselves but might become useful adjuncts as ISR or C2 nodes in a kill web especially as Triton comes on board. There could be accelerated capability to move data from Triton to loyal wingman operations if there is an operational and budgetary space for the USE of autonomous systems prioritized by the government in the three-to-five-year period.

And the work on the Australian approach to agile combat employment is a priority but will be costly up front and require new working relationships between Army and the RAAF as well.

In an interview I did last year with John Blackburn with Air Vice-Marshal Darren Goldie, then the Air Commander of the RAAF, we discussed the challenge of re-focusing the force:

"We don't have the level of knowledge and normative experience we need to generate regarding infrastructure across Western and Northern Australia for the Australian version of agile combat employment."

He contrasted the Australian to the PACAF approach to agility. The USAF in his view was working on how to trim down support staff for air operations and learning how to use multiple bases in the Pacific, some of which they owned and some of which they did not own.

The Australian concept he was highlighting was focused on Australian geography and how the joint force and the infrastructure which could be built — much of it mobile – could allow for dispersed air combat operations.

This meant in his view that "we need to have a clear understanding of the fail and no-fail enablers" for the kind of dispersed operations necessary to enhance the ADF's deterrent capability.

A key element of this is C2. Rather than looking to traditional CAOC battle management, the focus needs as well to focus on C2 in a dispersed or disaggregate way, where the commander knows what is available to them in an area of operations and aggregate those forces into an integrated combat element operating as a distributed entity.

Goldie commented: "We are developing concepts about how we will do command and control on a more geographic basis. This builds on our history with Darwin and Tindal to a certain extent, although technology has widened that scale to be a truly continental distributed control concept.

"We already a familiar with how an air asset like the Wedgetail can take over the C2 of an air battle when communications are cut to the CAOC, but we don't have a great understanding of how that works from a geographic basing perspective. What authorities to move aircraft, people and other assets are vested in local area Commanders that would be resilient to degradation in communications from the theatre commander – or JFACC?

"We need to focus on how we can design our force to manoeuvre effectively using our own territory as the chessboard."

Air Vice-Marshal Goldie underscored that the ability to work with limited resources to generate air combat capability is exercised regularly by the normal activity of 75 Squadron, flying F-35s in Australia's Air Combat Group. This squadron operates from RAAF Base Tindal in the Northern Territory and as Goldie put it: "they have to operate with what they have in a very austere area."

He highlighted a recent exercise which 75 squadron did

with their Malaysian partners. The squadron operated their F-35s, and each day practiced operations using a different support structure. One day the operated with a C-27J which carried secure communication, along with HF communications systems and dealing with bandwidth challenges each bearer posed.

Another day they would operate with a ground vehicle packed with support equipment and on another day they would operate without either support capability. The point being the need is to learn to operate in austere support environments and to shape the skill sets to do so.

By learning how to use Australian territory to support agile air operations, and to take those capabilities to partner or allied operational areas, Australia will significantly enhance its deterrent capabilities going forward. This is a key challenge being squarely addressed by the RAAF.[2]

So what can be achieved in the near to midterm along these lines?

In my view, this is a key measure of the credibility of Australian deterrence by denial or whatever other term you might use.

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1. https://defense.info/partners-corner/2024/03/raaf-p-8a-poseidon-works-with-the-french-on-reunion/
2. https://sldinfo.com/2023/04/agile-basing-and-endurability-as-a-key-deterrent-capability-a-conversation-with-the-air-commander-australia/

CHAPTER 6

MULTI-DOMAIN OPERATIONS IN THE MARITIME DOMAIN: THE SIGNIFICANCE OF DIGITAL INTEROPERABILITY

THE APRIL 11, 2024 Williams Foundation Seminar focused on multi-domain operations in support of maritime security and defence. The progress made as the ADF has been building a fifth generation enabled force needs to be continued in the years ahead.

What is at stake is building an effective kill web enabled force which is built on a digital integration effort to allow the ADF to get best results from its deployed force in the operating area of significance.

We have just seen a real-world example of what this means as the Iran attack on Israel was deflected by a kill web force of sensors and shooters spread across a coalition in support of the defence of Israel.

I highlighted this future in a piece I wrote in 2012 and published in *The Proceedings* entitled the long reach of Aegis. That piece was focused on how F-35 integration with Aegis would yield significant results in defense capabilities.[1]

And when I visited the HMAS Hobart in Sydney Harbour, I was reminded how important a common combat system is for integration across a coalition and one's ability to shape digital integration across a multi-domain force.

After a visit to HMAS Hobart in 2018, this is what I wrote:

The ship introduces a new level of combat capability into the Royal Australian Navy in which the ship's reach is significantly greater than any previous ship operational in the Aussie fleet because of its Aegis Combat system.

It is a key building block in shaping an integrated air-sea task force navy in that the capabilities onboard the ship can contribute to an integrated C2, ISR and strike grid in which the evolving capabilities of the ADF can cover a wider area of operation in the waters surrounding Australia or in service of missions further abroad.

As Rear Admiral Mayer noted during an interview I conducted with him while he was Commander of the Australian fleet:[2]

"We are joint by necessity.

"Unlike the US Navy, we do not have our own air force or our own army. Joint is not a theological choice, it's an operational necessity."

What clearly this means is that the future of the Hobart class is working ways to operate in an integrated battlespace with land-based RAAF F-35s, Tritons and P-8s among other air assets.

Their future is not protecting the carrier battle group, as the Aussies have no carrier.

Rather, their future is to provide air defence for accompanying ships in addition to land forces and infrastructure in coastal areas, and for self-protection against missiles and aircraft.

The skill sets being learned to operate the ship, notably the workflow on board the ship, in terms of the use of data, ISR and C2 systems, working situational awareness throughout the work stations onboard the ship, are foundational for other ships coming to the fleet.

With the coming of the HMAS Brisbane, the HMAS Hobart will no longer be a single ship but the lead into a class of ships.

And with the Australian decision with regard to its new frigates which will leverage the Aegis combat system capability as well, the HMAS Hobart has become the lead into a whole new approach to how the Australian fleet will shape its combat networks as well.[3]

The importance of continuing to build integratability across the fleet was emphasized at the seminar by Liam Catterson in his presentation. He is a former Royal Australian Naval officer who served on the Hobart and operated the Aegis combat system. He is now with Lockheed Martin Australia.

In his presentation he highlighted the significance of the Aegis Combat System for fleet and ADF integrability with the U.S. Navy and Australia's other core maritime allies in the region, Japan and South Korea, all of whom operate Aegis and F-35s.

Catterson underscored the following:

It is important to note that the current fleet of three Hobart-class DDGs are interoperable with the Aegis equipped platforms of the USN, and other Aegis equipped coalition partners, such as the Japanese Maritime Self-Defence Force and the Republic of Korean Navy.

This point was best illustrated through the first operational deployments within the Indo-pacific supporting 7th fleet activities, becoming a integral platform in the INDOPACOM theatre as opposed to previous deployments.

This can be attributed in part to Aegis being as much a fighting philosophy as it is a Combat Management System, melding the concepts of a layered defensive posture, through depth of fire, sensor optimisation, autonomy and integrated fire control through Cooperative Engagement Capability.

Without a CMS, a warship ceases to be that; no longer an

instrument of deterrence. Without an interoperable CMS, a warship is a well-informed target and a potential hindrance to the joint force.

This is a critical distinction when considering the acquisition of any future classes of surface combatants. The density of VLS cells in an Aegis destroyer is force projection however it is the Aegis Combat System that makes it a force multiplier.

Slide from Catterson's presentation to the Sir Richard Williams Seminar 11 April 2024.

I had a chance to follow up with Catterson in a meeting at his office in Canberra on 15 April 2024. We discussed the way ahead with the digital backbone of a kill web force and the contribution of the common combat system built around Aegis for the Australian fleet and its integration with those of its allies in the region.

We started by discussing how the Aegis combat system enabled significant interoperability across the allied forces in the Pacific.

As Catterson noted: "One of the key things about the Aegis combat system operating across the Indo Pacific is that it provides a strong backbone of interconnectivity and interoperability from Australia all the way through the north through to Japan, and then across the Sea of Japan to the Republic of Korea as well.

"The Aegis combat system provides a common language

across the Indo Pacific fleets allowing for the for the fleets to deploy and operate together and to conduct combat operations in a coherent manner."

Liam Catterson attending the Sir Richard Williams Foundation seminar April 11, 2024.

I then raised a key issue. When one mentions the Aegis combat system at a seminar like we had at Williams, one might think that it is special pleading for a specific company, in this case Lockheed Martin.

But over the years the combat system has changed dramatically and it is clearly the U.S. Navy driving the development with Lockheed a close partners, but it is essentially a U.S. Navy combat system today.

Catterson provided an explanation of this development.

"One of the strengths of Aegis is it was developed by the US Navy, and it has been a strong customer holding corporations to account to deliver what they wanted.

"Lockheed has been fortunate to be in lockstep with the US Navy, but it's the US Navy driving these changes for it

allows them to embark on the next generation of an integrated combat system for the fleet.

"This will enable them to operate as a system of systems to allow for interoperability, but also to enable cost effective and rapid roll out of developmental changes."

He closed with this thought which is very relevant to the future development of ADF multi-domain capabilities:

"One of the strengths of the Aegis program is leveraging the operational experience from not only the U.S. but also other Aegis users as well. This allows for upgrading the fleet in a spiral development process. And this allows countries to remain in lockstep with each other. This means that integration costs are spread out over different partner nations in that manner."

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1. https://www.usni.org/magazines/proceedings/2012/january/long-reach-aegis
2. https://sldinfo.com/2016/09/the-network-as-a-weapon-system-the-perspective-of-rear-admiral-mayer-commander-australian-fleet/
3. https://sldinfo.com/2018/08/visiting-hmas-hobart-a-key-building-block-in-the-remaking-of-the-royal-australian-navy/

CHAPTER 7

MULTI-DOMAIN OPERATIONS IN AUSTRALIA'S MARITIME STRATEGY: THE ARMY, NAVY, AND AIR FORCE ORIENT THEIR EFFORTS

THE FOCUS of the April 11., 2024 Williams Foundation seminar was on multi-domain operations in support of a maritime strategy. But each service focuses primarily on a particular domain and sees its role in terms of a maritime strategy from their perspective.

What then really does multi-domain mean from the standpoint of each service in pursuit of an effective maritime strategy?

This is determined in part by how one defines what an effective strategy requires and this determination is shaped by whether you are a land, air or surface or sub-surface force.

A multi-domain focus can blur an essential perspective: in particular operations, who is the supported and supported force in pursuit of what outcome or effect desired in an operation?

The Army Role

The changes being worked by the Australian government have a very significant impact on the Australian Army. Not only is their role focused on the region and operations from the northern areas of the country, but their template for operations is shifting as well. They are becoming a littoral maneuver force

in support of operations in the maritime regions and areas north of Australia.

And the USMC rotation to the Northern Territories will be part of shaping that template. It should be noted that the Marines are working their open template for operations throughout the region, and the Australian Army and USMC will almost certainly dovetail operations.

As they template is shaped, it is obvious that funding or new equipment needs to be provided. Some is already in place in terms of providing for longer range strike and for ships to move Army forces within the region.

As a USNI News piece described the changes in an October 2, 2023 article:

The Australian Army is slated to shift its focus to the littorals after announcing last week several major changes, which include the redeploying a sizable portion of soldiers and equipment across the country and optimizing several brigades for littoral and amphibious missions...

The Australian Department of Defence announced these changes in response to the 2023 Defence Strategic Review...The DSR recommended it to be "optimized for littoral operations in our northern land and maritime spaces and provide a long-range strike capability."

Aside from reducing the procurement of infantry fighting vehicles and self-propelled howitzers, some of the top recommendations for the Australian Army were to speed up the procurement and increase the quantity of HIMARS, land-based maritime Strike systems and amphibious vessels.

Last week's announcement highlighted significant changes to the mission sets of the 1st, 7th and 3rd multirole combat brigades, which will become more specialized.

The 1st Brigade will be transformed into a light combat brigade, which will allow it to be "light, agile and quick to

deploy in the littoral environment" and "support land-based long-range fires." While Australia has ordered HIMARS, under LAND 4100 Phase 2 the Australian Army is looking to procure a land-based maritime strike capability...

The 7th and 3rd will become motorized and armored combat brigades, respectively. However, like 1st Brigade, the two also will focus on littoral and amphibious operations. To address these littoral missions, brand-new littoral lift groups are also slated to be created and collocated with the brigades in their respective basing locations.

Littoral lift groups will host Army Littoral Manoeuvre Vessels, including both landing craft medium and heavy, which will be procured in Phases 1 and 2 LAND 8710...

At the moment, 2nd Battalion, Royal Australian Regiment, is Australia's premier and only amphibious-focused unit. With the changes announced last week, all three of the Australian Army's active brigades will have either littoral or amphibious focuses.[1]

On the one hand, the Army is to play a role in supporting maritime operations by being able to deliver strike in support of maritime forces. On the other hand, the Army needs to have sufficient size to hold ground in significant areas out to Australia's first island chain in time of conflict, and the Army then would be the supported force.

The USMC unlike the Australian Army has organic lift and long-distance assets such as the Osprey and the F-35B which can support its littoral operations. The Australian Army is a rotorcraft enabled force without the kind of lift which the Osprey and the CH-53K provide the USMC. And the integration of the F-35 into the USMC maneuver element is a key element changing how the rest of the littoral force can operate. Will a similar role occur with Australian F-35s and the Australian Army?

Brigadier James Davis presenting at the Williams Foundation April 11, 2024.

At the seminar, the Army perspective was provided BRIG James Davis, Director General Future Land Warfare. In his presentation, he underscored to the audience that "the majority of the infrastructure which supports a maritime strategy is on land."

In that sense, littoral maneuver from one land location to another within the littoral maneuver space.

"Ports, airports, sensors, satellite dishes, terrestrial launch and recovery are land-based. For context, Australia has 59,000 kilometers of coast and 50% of our population live within a few kilometers of our coasts. Beyond are shores but within our sovereign area are 8,222 islands and numerous offshore installations."

He underscored that the "DSR described an Army optimized for littoral and archipelagic operations." And here he provided a clear sense of the Army role and perspective: "The littoral is an area for the fusion of cross-domain effects and where land forces can make their greatest contribution to the integrated force."

He argued that the government has therefore shifted resources within Army to work in this domain. "This includes government direction to establish a new long range fires regiment equipped with 36 HIMARS launchers and a littoral group of 18 medium watercraft, pending approval of a second long-range strike regiment, and eight heavy landing craft will be in service from the end of the decade."

A key role for the Australian Army is working in the neighborhood. "In peacetime, army watercraft will operate to provide organic mobility to the integrated force and to work with our partners and allies in the region, building collective understanding capability and offsetting risk, because armies are the largest arm of the militaries in our region."

He then added: "In conflict, we see special and general-purpose forces using these vessels operating in operations below the engagement threshold. They will be able to enable joint and integrated C4 by getting communications nodes and relays to the right places, and getting sensors, weapons and influence to where they can exert domain control largely in the maritime domain.

"This includes maritime strike systems with ranges of hundreds of kilometers. The value of these systems will be the difficulty of detecting or engaging them."

He noted that "land forces will also support all domain targeting."

And control of territory within the littoral region is crucial as well. He underscored that "at times, more robust application of land power will be needed to maintain or gain control of specific terrain, such as offshore islands. These outposts have always been critical in maritime strategy."

He provided a good description of the new template. He highlighted some of the initial investments to make the template real but there are significant changes in aviation as

well as watercraft, including in autonomous systems to be made and paid for in the years ahead.

The Air Force Role

In the presentation of Air Commodore Mick Durant, Director General Strategy and Planning—Air Force, the role of the RAAF in maritime operations was highlighted.

Air Commodore Mick Durant presenting at the Williams Foundation Seminar April 11, 2024.

Given that the RAAF provides the air element for the Royal Australian Navy this is somewhat equivalent to a discussion of how the U.S. Navy's air arm works with the fleet and then with the USAF, but it is different because the integration of the RAAF and the RAN is a key element of the operational realities of the ADF.

Their integration already is multi-domain so what is necessary is to sort out how the addition of the SSN's alter this and how the new fleet elements will work to reinforce or disrupt integration already created by the 2017 government focus on the Aegis combat system being the digital backbone of the fleet which has enabled deeper RAN and RAAF integration, and in

fact such digital integration is crucial to shaping multi-domain operations.

As he commenced his presentation Durant highlighted the operational challenge: "From an airpower viewpoint, we will operate at distance from our home bases from austere and remote locations across our north and operate deep into the Indian Ocean and Pacific Ocean and the surrounding areas."

And closing kill chains across a vast region highlights the need to integrate sensors to deliver to weapons effects across the combat chessboard.

In effect, the RAAF provides both sensors and shooters in the maritime areas of operation, and sensors to enable the fleet and its targeting efforts as well. Notably, the coming of Triton is symptomatic of these integration efforts whereby targeting data is generated outside of the weapons engagement zone and transmitted to other sensors and to shooter in the engagement zone.

As Durant underscored: "Our potential adversaries will also be highly adaptive, and we are seeking to do the same. This also draws a requirement for the integrative force to think more deeply about building resiliency, as well as managing its own signature. All of this is underpinned by the air force intelligence and enterprise targeting capabilities.

"With the introduction of new platforms such as the F 35, the P-8, the Triton, and the Peregrine, the complexity and volume of intelligence data has and will continue to increase exponentially. Defense intelligence capabilities will need to embrace automation and edge processing to accelerate Association, correlation, and fusion of data within high capacity resilient and redundant networks."

He emphasized the air agility basing issue in which the ISR and C2 systems needed to embrace a dispersed force operating from various locations on Australian territory. The intersection

of a kill web C4ISR system with force distribution is a crucial way ahead for the RAAF.

Air Commodore Durant put it this way: "The key airpower principle of centralized control may prove to be transient. However, distributed and decentralized clusters will be able to generate both deliberate and dynamic air effects. To contextualize this through an integrated air and missile defense lens, we will never have enough exquisite interceptors to interdict all threats and to protect all key nodes.

"This not only reinforces the criticality of passive protection measures of camouflage. deception and hardening, but it also underscores the need for new approaches to create distributed mass. A more asymmetric force mix that includes uncrewed and autonomous systems, to complement the force in being is how a small to medium size Air Force might generate greater mass lethality and survivability into its air combat system."

He highlighted progress underway, such as the creation of regional air force development teams across northern Australia to examine how to enhance force posture options.

Air Commodore Durant provided an example of progress evidenced in the last Talisman Sabre exercise. "Last year's exercise provided a huge opportunity for Air Force and Navy to integrate the ADF its most potent air defence maritime capabilities with HMS Sydney and Hobart integrating their air and missile defense capabilities with the Wedgetail aircraft. Combined with an equally potent force of P-8s, Growlers and F 35 stealth fighter aircraft, the participants exercised against an equally formidable threat environment where emerging capability capabilities were trialed.

"Our emerging agile control teams established remote command and control linkages for the joint force demonstrating an ability to pass data using multiple discrete nodes

providing resilience to a connectivity matrix in a denied environment.

"Additionally, our maritime strike platforms exercised and tested their ability to find, fix and target discrete maritime assets at tactically significant ranges. Against an equally challenging threat environment, the joint force exercised their ability to introduce new tactics and procedures throughout the exercise to counter emerging threat capabilities."

Air Commodore Durant provided another example of the way ahead with regard to operational innovation evidenced in the coalition exercise Cope North.

This is how he put it: "The focus of the exercise was to stress, validate and improve national and trilateral agile combat employment capabilities. Commencing in Guam, the exercise saw the activation and operation of United States Air Force and Japanese self-defence force and our own RAAF assets from the main operating base to six Island forward operating bases. Over the course of three weeks. Air Force representatives from Air Command innovation and Jericho joined the exercise to work with the USAF combined rapid capability development team.

"This team was focused on solving critical operational problem sets as they arose in theater, or as a response to adverse reaction with the ability to rapidly deploy the solution to the frontline in order to maintain the competitive advantage of the coalition effect."

He concluded: "The ability for airpower to deliver impactful projection within our maritime approaches requires a combination of effective defence, combined with a series of highly integrated multi-domain offensive counters as part of the integrated force and in conjunction with allies and partners. This is how airpower will deliver a strategy of denial in our key maritime approaches."

The Navy Role

The perspective of the Royal Australian Navy was presented by Rear Admiral Stephen Hughes, Head of Navy Capability. Hughes presented at the last seminar as well and there he provided a number of insights.

Rear Admiral Stephen Hughes presenting at the Williams Foundation Seminar April 11, 2024.

At that seminar, RADM Stephen Hughes, Head Navy Capability, underscored that when focusing on the maritime domain, one is inherently focused on multi-domain strike. The maritime warfighting domain is shaped by strike whether coming from land, surface, subsurface or air domains, as well the cyber and space domains.

"To attain long range strike capabilities allows us to move from a strategy of defense to a strategy of deterrence through denial which signifies a national shift that aims to hold an adversary at risk a greater range raising a question in the adversary's mind about whether they want to attempt to act against us.

"So what does the maritime force bring to the fight?

"A maritime force is able to be agile, mobile expeditionary scalable, sustainable, versatile, networked, and lethal. Maritime force provides critical advantages through their ability to use the oceans to maneuver and hide in the case of submarines, and the airspace and the space above that domain. Maritime force combines distributed fleet operations, and mobile expeditionary forces with sea control and sea denial capabilities.

"However, a maritime force does not compete, deter, or fight alone. The maritime force is an integral part of the joint force and works closely with allies and partners to bring to bear maritime effects. Controlling the seas enables the maritime force to project power in support of Joint Force efforts. surging into the theater of operations, where adversaries must cross open water. Sea denial deprives them the initiative prevents them from achieving their objectives.

"Maritime force controls or denies the seas by destroying an adversary's fleet or their associated air support. And in in the modern battle space even extends into space. It can contain it in areas that prevents meaningful operations prohibited from leaving port by controlling sea lines of communication. Maritime forces capable of controlling critical choke points enable joint forces to impose military and economic costs on the adversary."

He also added comments with regard to the innovation which Navy is working to enhance multi-domain strike. "The future of our strike capability needs to include the use of uncrewed systems. Navy is working with industry in exploring solutions through the autonomous warrior series of experimental exercises. And such systems will have the ability to strike deep against an adversary by deploying mines and other guided weapons by using sovereign Australian capabilities."

As he underscored: "The defense strategic review has

placed a premium on accelerating lethality for deterrence and impactful projection,"

He cited the examples not only of acquiring TLAMS but the development of greater maritime strike capabilities. against maritime forces, whether from an F-35 or from anti-ship missile capabilities.

At this seminar, he added an update with regard to what the Australian government has focused on in its strategic shift, namely, a focused force on the region which will eventually include nuclear attack submarines and new surface ships as announced in the fleet review recently announced.

As the government announced on February 20, 2024, the intention was to expand the surface fleet.

Today, the Albanese Government has released its blueprint for a larger and more lethal surface combatant fleet for the Royal Australian Navy, more than doubling the size of the surface combatant fleet under the former government's plan.

This follows the Government's careful consideration of the recommendations of the independent analysis of the surface combatant fleet, commissioned in response to the Defence Strategic Review.

Our strategic circumstances require a larger and more lethal surface combatant fleet, complemented by a conventionally-armed, nuclear-powered submarine fleet.

Navy's future fleet will be integral to ensure the safety and security of our sea lines of communication and maritime trade, through operations in our immediate region. This fleet will constitute the largest number of surface combatants since WWII.

The independent analysis of Navy's surface combatant fleet lamented the current surface combatant fleet was the oldest fleet Navy has operated in its history, and emphasised the need for

immediate action to boost Navy's air defence, long-range strike, presence and anti-submarine warfare capabilities.

In line with independent analysis' recommendations, Navy's future surface combatant fleet will comprise:

- *26 major surface combatants consisting of:*
- *Three Hobart class air warfare destroyers with upgraded air defence and strike capabilities*
- *Six Hunter class frigates to boost Navy's undersea warfare and strike capabilities*
- *11 new general purpose frigates that will provide maritime and land strike, air defence and escort capabilities*
- *Six new Large Optionally Crewed Surface Vessels (LOSVs) that will significantly increase Navy's long-range strike capacity*
- *Six remaining Anzac class frigates with the two oldest ships to be decommissioned as per their planned service life.*

The Government has also accepted the independent analysis' recommendations to have:

25 minor war vessels to contribute to civil maritime security operations, which includes six Offshore Patrol Vessels (OPVs).

The Hunter class frigates will be built at the Osborne shipyard in South Australia, and will be followed by the replacement of the Hobart class destroyer. The Hobart destroyers will be upgraded at Osborne with the latest US Navy Aegis combat system.

The new general purpose frigate will be accelerated to replace the Anzac class frigates, meaning the Transition Capability Assurance (TransCAP) upgrades are no longer required.

These new general purpose frigates will be modern, capable and more lethal, requiring smaller crews than the Anzac.

Consolidation of the Henderson precinct is currently underway, as recommended by the Defence Strategic Review. Successful and timely consolidation will enable eight new general purpose frigates to be built at the Henderson precinct, and will also enable a pathway to build six new Large Optionally Crewed Surface Vessels in Western Australia.

The Albanese Government is committed to continuous naval shipbuilding in Australia and the design of Navy's future fleet will provide a stable and ongoing pipeline of work to the 2040s and beyond.

Although the review described projected fleet size, the crucial question is how the subsurface and surface fleet, crewed and uncrewed, are integrated in or integratable within a kill web force.

It is about the effects created through such a force rather than simply having a ship building program in my view. In fact when a colleague and I were working for a senior U.S. Navy Admiral, we began to work on a project that he thought was long overdue, namely, replacing the 30 year shipbuilding program with a very different measure, namely a 30 year Navy capability plan. The words are significant here.

This is in my view one of the challenges is using a phrase like multi-domain as it may obscure what the real objective is, namely, to project power and to have effective mobile defence of your forces and nation to deliver the desired combat and strategic effects.

The future of the Royal Australian Navy rests within this matrix, and as Vice Admiral Barrett has argued in my recent interview with him, that ramping up capability in the three-to-five-year period rests ultimately on the ability to shape operational space to use autonomous systems,

As he stated: "The surface combatant review took an eye to considering autonomous systems but considered them a generation away. But the reality is that we are already down the autonomous systems path now.

"It is wrong simply to focus on long range prospects for autonomous systems not yet here, such as platforms which could potentially carry a large number of weapons cells, rather than on the systems that are already here. The current systems can deliver significant ISR capability for example, and we need to integrate these systems into the operating force."

The other key consideration is the integration of the combat systems in the surface and subsurface fleet in a way that allows for the kind of integration mentioned earlier in the Air Force perspective, namely the air warfare destroyer's integration of air force combat systems.

In 2017, the Australian government took a key decision which in my view is crucial to maintain.

This was the October 3, 2017 announcement:

The new approach for combat management systems will ensure our Navy's future ships are fitted out to protect Australia in the decades ahead.

Under the plan, the combat management system for Australia's fleet of nine Future Frigates will be provided by the Aegis Combat Management System, together with an Australian tactical interface, which will be developed by SAAB Australia.

This decision will maximise the Future Frigate's air warfare capabilities, enabling these ships to engage threat missiles at long range, which is vital given rogue states are developing missiles with advanced range and speed.

The Future Frigates will be operating in a complex and growing threat environment. By bringing together the proven

Aegis system, with a cutting edge Australian tactical interface developed by SAAB Australia, our Future Frigates will have the best capability to defeat future threats above and below the surface, while also ensuring we maintain sovereign control of key technologies, such as the Australian designed and built CEA phased array radar.

In the past, Defence has taken the tendered combat management systems individually, which has meant that the Navy has operated numerous systems at the same time. This has not allowed defence industry to strategically invest for the long-term and has also increased the cost of training, maintenance and repair.

Under the Turnbull Government's new strategic enterprise approach, the Government has now mandated that where the high-end warfighting capabilities of the Aegis system are not required, a SAAB Australia developed combat management system will be used on all of Australia's future ship projects.

This includes mandating a SAAB Australia combat management system on the upcoming Offshore Patrol Vessels, which will be built in Australia from 2018, and an Australian tactical interface developed by SAAB Australia for the Hobart class Air Warfare Destroyers when their Aegis combat management system is upgraded in the future, consistent with the 2016 Defence White Paper.

Further, it guarantees the development of a long-term sustainable Australian Combat Management System industry, which is integral to the implementation of the Government's Naval Shipbuilding Plan.[2]

Frankly, nothing has changed for the necessity of such an approach. And in fact arguing for a multi-domain integrated Navy only underscores its necessity.

1. https://news.usni.org/2023/10/02/australian-army-shifting-priorities-to-amphibious-littoral-operations
2. https://www.minister.defence.gov.au/media-releases/2017-10-03/new-approach-naval-combat-systems

CHAPTER 8

SHAPING C2 FOR THE ADF AND COALITION FORCES: THE PERSPECTIVE OF AIR VICE MARSHAL MIKE KITCHER

WHEN I WAS in Australia in September of last year, I had a chance to talk to the then Deputy Chief Joint Operations (DCJOPS), Air Vice-Marshal Mike Kitcher.

In that interview, he discussed how the refocus on direct defence in Australia affected the Joint Operations Command.

Kitcher noted in that interview: "The focus in this period, up to say 2017, for CJOPS was on operations in the Middle East whilst managing operations in our region.

"We clearly have leveraged the earlier experiences in our renewed focus on the conduct of Operations, Actions and Activites, OAA, in the Indo Pacific. We are focused on developing a theatre campaign plan to translate strategic guidance into the OAA we execute in our region to achieve our desired objectives.

"We are focused on ways we can operate as a joint force to optimise our regional OAA to have the maximum positive effect in supporting our theater campaign plan.

"You don't get the maximum benefits from a joint force unless firstly the services provide you with trained personnel capable of executing joint missions and then HQJOC, through focused joint planning, maximises the potential of the indi-

vidual components. We have made good progress along this path but still have a way to go."

Air Vice-Marshal Kitcher highlighted that we are "now squarely focused on managing operations in a coordinated fashion in our region." And this means both how to get the best joint force effect but also how to coordinate the ADF effort with core allies in also getting the optimum coalition effect.

Obviously in working with coalition partners, national sovereignty has to be respected but at the same time for effectiveness in operations coalition forces need to operate in an integrated manner.

This is a key tension which needs to be managed, notably in crises where the government of the day will make decisions about the allowable operations of their national forces, these individual decisions may challenge the effectiveness of a coalition force.[1]

At the April 11, 2024 Williams Foundation seminar, Kitcher focused on the C2 aspect involved in the changes we talked about last year.

Distributed C2 for the ADF and C2 directing coalition operations are critical challenges to be met as the ADF adapts to the operating the "focused force" the government has mandated.

Air Vice-Marshal Kitcher presenting at the Williams Foundation Seminar April 11, 2024

At the seminar, Kitcher underscored that "we are focused on building a headquarters that's capable of planning, executing, managing regional operations, from competition through crisis to conflict."

He underscored that the ADF was working on a model different from the American model of the combatant commander.

"The size and scale of the personnel involved in a U.S. Combatant Command compared to the ADF is very different. When we add component commands to a joint operation, we need to have a need to consider the numbers of people that we have available in our component command model. And we need to cut our cloth to the numbers that exist realistically."

I would personally add observing American command structures that they have generally been very large, and a key change underway is to shift to distributed C2 which is forcing changes in terms of the size of strategic or theater level command.

And not surprisingly, ADF work in this area has an influence on those military commanders who are actually working in innovative ways with regard to C2 innovations,

When Vice Admiral Lewis became commander of the Second Fleet, he focused specifically on how to lean out command elements and empower distributed forces to execute mission command.

This is a subject which we discussed in some detail in our various visits to the Norfolk-based command.

He provided an example of the changes being worked by JOC as seen in the last Talisman Sabre exercise.

And we discussed that further in a meeting later in the month. At that meeting, he discussed with me further the changes in the operational command and control approach.

He argued that "at the seminar, I discussed a component

C2 model in which six components were being blended in, namely six components, space and cyber as well as the more traditional air, land, maritime and special forces.

At Talisman Sabre we introduced we shaped a logistics coordination command for the entire coalition effort for nearly 30,000 people involved in the exercise.

He assessed the state of the art to date as follows: "We are working to understand the supported and supporting commander roles within the components, and which components are relatively mature, which components have to mature, which components are well versed and operating as components and which components are working hard to design and execute their component functions.

"With regard to our maritime environment where we find ourselves in our region, all of the six components could be the supported commander for particular periods in particular events. But broadly speaking, the air and maritime component is the most logical components to lead in as the supported command with the other components supporting the air and or maritime component across the spectrum of operations.

"And the key relationship then becomes that between the component command and the JOC at the operational level on how to successfully integrate those two functions."

We then turned to the recent Talisman Sabre exercise experience.

According to Kitcher: "For the first time, we had a single leader of U.S. forces at the Corps level working the U.S. engagement. And each coalition nation had that level of leadership deemed appropriate for the size and scale of their involvement in the exercise.

"That is a model we will continue with. Within JOC we embrace that leadership model, and we embrace as well the engagement various different government departments such as

the Australian Federal Police and their embedded liaison officers in JOC as well."

In short, the kind of impactful presence which Australia is building in the region, C2 is a key element for creation of enhanced capability in the defence of Australia.

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1. https://defense.info/interview-of-the-week/air-vice-marshal-michael-kitcher-on-australias-joint-operations-command/

CHAPTER 9

HOW TO ENHANCE SPACE'S CONTRIBUTION TO AUSTRALIAN MULTI-DOMAIN OPERATIONS IN SUPPORT OF MARITIME OPERATIONS

AUSTRALIA HAS MORE demands than it has budget. It has more challenges than it has forces.

So how to maximize the effect of what capabilities Australia has going forward?

How to maximize the economy of force to deal with persistent and expanding threats?

Part of the answer is to focus on enhanced leveraging of what can be generated from the space domain. The strategic shift in what space delivers in the past few years is driven by the arrival of constellations of LEO satellites which provide reach and coverage for data of various sorts, including of course communications which is historically unprecedented.

The challenge for governments is how to leverage such constellations and create government organizations, strategy, and support to do so. Australia is no different but capabilities and resources more limited than they have been for the U.S. or several of its other allies.

Leveraging the commercial sector and its innovations then is even more critical for a modest space player like Australia. This would require a smart sovereignty effort but focuses effort and investments from its government.

At the Williams Foundation seminar on April 11, 2014, Nick Miller, Senior Director, Space Solutions & Strategy, Optus Satellite & Space Systems, provided his perspective on a way ahead. He started by characterizing the stakes of the game as follows:

"Without space, there would be no effective mult-idomain capability. It is a critical enabler. Space once deemed the final frontier is now seen as a potential battleground. In this domain, where the stakes are as high as the orbits, the mastery of space technology is not merely an option, it is vital for our national security."

He told the audience that Optus as Australia's leading satellite owner and operator "transmits via its fleet 27 gigabits of data every minute of every day."

Miller argued that "with a robust enterprise satellite network, Australia can improve its ability to conduct comprehensive ISR operations and as a nation with vast maritime domains and extensive borders, satellite data is crucial for maritime operations and to protect vital sea lines of communications for Australia as well as enhancing our Border Force."

Several speakers at the seminar highlighted the importance of undersea cables for transmitting data into and out of Australia in support of the Australian way of life.

Miller argued that satellite networks provide redundancy to ensure flow of data in times of disruption. "As part of readiness preparation, a comprehensive satellite network would support critical and effective command and control capabilities for the ADF and support a whole of government approach in situations such as natural disasters, search and rescue operations, and national emergencies where the subsea cables may have been compromised."

Nick Miller speaking at the April 11, 2024 Williams Foundation Seminar.

Much of his presentation argued for a robust commercial and government working relationship including government funding to deal with the increasing challenge of protecting operational space assets. Not only do adversarial powers plan and practice space denial, but the impact of space debris on operational constellations is significant.

Such joint efforts between government and the commercial sector in space are crucial to ensure that Australia has the skilled workforce necessary to support broader space efforts, and to have the required expertise in times of crisis.

Miller underscored: "Luckily in Australia, we have some personnel with nearly 40 years of experience and this is something we're offering the defense sector and can be a foundation from which to expand the skill base."

But to have the kind of effective public-private partnership which Australia needs requires an innovative acquisition process.

Miller opined: "There needs to be a capability to fast track satellite technologies. Flexible contracting models are needed to provide incentives for Australian companies and research institutions to innovate more rapidly in satellite technology.

"There is a need to bolster local industry and academia grants, tax incentives and government contracts awarded to homegrown enterprises encouraging domestic innovation and reducing dependence on overseas providers.

"Optus itself is looking into how a partnership with universities, startups and government could deliver a new and unique novel LEO capability."

Professor Andrew Carr recently underscored that strategy is not about writing documents with lofty words and concepts – it is about finding ways to identify and address core problems with realistic solutions.

As he wrote recently: 'Strategy as problem solving' shifts the emphasis from declaring our principles to diagnosing our problems. The key work of Australian strategists in the years to come will be twofold: to identify which problems are most important, based on their significance, the likelihood of harm and how we might resolve them; and to interrogate their dynamics, understanding why they're so hard and where leverage points may be found to seek better patterns of order."*

Miller presented a thoughtful way to proceed with strategy understood in Carr's terms.

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* https://www.aspistrategist.org.au/national-defence-strategy-tackling-problems-not-just-declaring-principles/

CHAPTER 10

LOGISTICS AND SUSTAINMENT FOR AN EVOLVING DEFENCE OF AUSTRALIA STRATEGY

THERE IS NO MORE daunting challenge facing a credible Australian defence strategy in it is region than that of logistics and sustainment. Australia is so dependent on imports of supplies, and overseas production of military equipment that the nation is very exposed to its logistics and sustainment shortfalls.

And when looks at the wider world of its allies, the picture is not brilliant. The war in Ukraine and the challenge for Europe and the United States to provide basic supplies has been daunting.

Bluntly put, the democracies have moved from their industrial base and have not built defense in depth. The only country in the West that remained committed to national mobilization was Finland, where I conducted several interviews during a past visit precisely on how they have addressed how they have built in mobilization from the ground up.

If Australia is to have a credible logistics and sustainment foundation, investments need to be made in supplies and stockpiles, in the building of industrial base – probably through joint efforts with allies – accepting the need for industrialization in key areas, an energy policy that leverages their natural supplies

and capabilities, and working with South Korea, Japan and the United States on an innovative way to enhance Australia's potential role as a strategic bastion in the Pacific based on enhanced supplies, support structures and production capabilities in Australia which allies invest in as well.

But whether or not Australia can achieve this is a major challenge which will require investments significantly beyond what the government is contemplating and an engagement with industry that requires a major shift in how the defense industrial base is built, sustained, and how the ADF can work much more directly in the development of evolving capabilities, such as autonomous weapons.

MAJGEN Jason Walk, Commander Joint Logistics, addressing the April 11, 2024 Williams Foundation Seminar.

At the April 11, 2024 Williams Foundation seminar, MAJGEN Jason Walk, Commander Joint Logistics, provided an overview of how the logistics challenge is being defined and focused on in the wake of the Defence Strategic Review.

This is how characterized the change: "The DSR directed that the defence logistics network be adequately resourced to deliver persistent support and sustainment for operations. This considered by itself is a step change in defence capability and capacity, demanding first, that defence first confirm its logistics

gaps before embarking upon the most substantial investment in the defence logistics network, arguably since World War Two."

After discussing the need for robust cyber defence to protect the network, and shaping space based capabilities to support such a network, he then turned to the question of the near-term focus.

"So what are the problems we're trying to address within the defence logistics network?

"The log network underpins defence's force posture, ensuring the right stuff gets to the right location at the right time. Accordingly, the defense strategic review required the ADF to develop a Northern Australian network of bases to provide a platform of logistic support for denial and deterrence. To address this, defence's ambition for the defence logistics network can be summarized as making a more a more agile, effective, integrated and resilient network."

I have spent a great deal of time with the various logistics commands in the United States and seen over the last thirty years significant change in multi-modal logistics. But the ability of the U.S. to deploy military power relies very heavily upon commercial systems which will be difficult to depend on in times of crisis, more limited air lift and tanker capacity than would be needed for the USAF alone, let alone for the US Army, and a Military Sealift Command whose capability is limited by the decline of the US merchant marine, for MSC is operated by mariners not the U.S. Navy. The Navy is buying Ospreys because of the limited lift capabilities available to the Navy.

So what then about Australia? Will we see an upsurge of the means to provide for the support a distributed and more mobile force will need.

MAJGEN Jason Walk addressed this challenge as follows:

"First of all, to an agile and multi modal logistics. A key

logistics problem that we face is the paucity of strategic maritime lift capabilities to enable the projection and sustainment of forces. The solution is to build a diverse multi modal logistics network that leverages a mix of transportation capabilities across land, sea and air. This will allow the agility to rapidly reorganize reprioritize and adapt the delivery of logistics effects in response to changing requirements or threats.

"Leveraging industry support in areas of reduced threat will enable the focused application of limited ADF strategic lift assets.

"One initiative under consideration by government is the establishment of a maritime strategic fleet. Importantly, this reflects our support and sustainment of military capability will require a whole of government indeed a whole of nation endeavor. Effective logistics with increased stocks, the ADF in Australia at large lacks sufficient stocks of critical commodities, like explosive ordnance fuel to sustain operations, especially in our northern regions. The solution is to invest in depth and redundancy to build up strategic reserves and material stocks to meet the demands of the integrated force.

"In conflict, these critical supplies must be replenished and forward positioned to optimize operational availability and freedom of action of our deployed forces. This is a focus of a number of defense projects moving forward and we are establishing closer linkage with other government agencies and industry.

"The National Fuel Council which had its inaugural meeting early last year or mid last year is an example of that. The integration of logistics across all domains and coalition's is equally important, logistics interoperability that can support an integrated force and operations in coalition with allies is critical.

"The solution is to design an integrated logistics network

that reduces friction and complexity. The defence logistics network seeks to minimize organizational seams across the defence enterprise and reinforce interfaces with industry, whole of government, allies and partners."

The speaker provided a good description of the challenge.

But frankly, this is a daunting one, in which phases needed to be shaped and credibly funded. This will not be critical just for the ADF but for an credible cooperation policy in which South Korea, Japan and the United States would participate in effectively.

And let me be blunt: this would have to be addressed in real terms by investments and policy changes by those allies as well. This is not about a focus simply on AUKUS – this is about building a credible and real arsenal of democracy in our time.

AUKUS can too easily used as a Rorschach image where one can see what one wants. It is not an end in itself. If meaningful, it is a gateway to solving a strategic challenge such as that discussed by the speaker.

CHAPTER 11

COGNITIVE AND INFORMATION WAR AND THE "GRAY ZONE"

AN ASPECT of modern Western strategic thinking has been a focus on gray zone conflict.

This is an area I have always found confusing.

In a world which I would characterize as one of the rise of multi-polar authoritarian movements and states, their constant conflict efforts are indeed been in the gray zone punctuated with direct periods of violence against the West and its legacy of a "rules-based order."

But as this is going on, it would be difficult not to factor in the domestic conflicts in both the UK and the United States which affects the AUKUS partners of Australia. So how well is Australia doing in the gray zone or information or cognitive warfare areas?

The is a major aspect affecting any credible strategy involving a " whole of government" strategy or a whole of society effort to deal with threats in the region.

The West over the past few years has done considerably better in the cyber-war domain, but given the penetration of authoritarian movements and states within our social networks, and the extensive disruption in the West with regard to migra-

tion, I do not think we can make the same judgement with regard to information or cognitive war.

At the Williams Foundation Seminar on April 11, 2024, the subject of information war was addressed by Major General Anna Duncan, Commander Cyber Command. Her talk highlighted the importance of gaining information advantage in conflict.

Major General Anna Duncan, Commander Cyber Command, presents at the Williams Foundation Seminar, April 11, 2024.

She started with this definition: "What is information advantage? From a military perspective, information advantage, ideally occurs through the integration and through the use of the moral and information informational elements of fighting power. We would seek to gain an information advantage over an opponent by targeting their understanding and thus degrade their will to fight."

She cautioned that was not new in warfare but clearly what is new is the nature of information networks in liberal democra-

cies and how conflict has escalated within these societies by the emergence of tribal clubs which operate within social media which has challenged the ability of democracies to shape consensus.

When I attended a UNESCO event in Barcelona in 1996 which focused on the new information society, I highlighted this danger associated with an internet society. But the extent to which the tribes have grown to disaggregate democracies was certainly not my thought at the time.

The point is important – precisely in the 1990s when many were trumping the global ascendency of democracies, we were building tools which would in fact undercut that ascendency.

Gray zone conflict in my view goes hand in hand with information warfare. Western militaries are building more flexible militaries which can operate as a more distributed force but we have not seen the adaptation of the political class to how in fact confront adversaries in the gray zone effectively nor how to use penetration of authoritarian societies or movements to our advantage.

Duncan provided a professional treatment of how the ADF is working through how in conflict to gain an information advantage over adversarial forces. A military officer dealing with cyber and information warfare scopes the focus on information advantage over adversarial forces in a conflict.

This is obviously crucial, but the actual conduct of information war occurs every time an authoritarian government or movement defines the perceived geopolitical reality inside Western societies.

A murderous organization like Hamas defines the ideas for a protest at my former school, Columbia University, due to their information war capabilities.

I would close by including an article I published in December 2021 which underscored gray zone conflict which I

also thinks expand the notion of what is entailed in the kind of information war which the West is not very good at engaging in.

Western analysts have coined phrases like hybrid war and gray zones as a way to describe peer conflict below the level of general armed conflict.

But such language creates a cottage industry of think tank analysts, rather than accurately portraying the international security environment.

Peer conflict notably between the liberal democracies and the 21st century authoritarian powers is conflict over global dominance and management. It is not about managing the global commons; it is about whose rules dominate and apply.

Rather than being hybrid or gray, these conflicts, like most grand strategy since Napoleon, are much more about "non war" than they are about war. They shape the rules of the game to give one side usable advantage. They exploit the risk of moving to a higher intensity of confrontation.

Russia is doing this right now in Ukraine. China, likewise, is doing it in the South China Sea and in the Sea of Japan. It's critical to understand this point, and terms like gray zone operations and hybrid war don't capture the challenge of escalation control.

There are two games being played. One game is over the immediate contentions of the major powers. Ukraine and Taiwan must be protected from attack.

But the second game is just as important, it asks what limits should be crossed to manipulate the risk of going to a higher intensity of competition?

In the Cold War these limits defined the "system dynamics" of the competition. Shaping them was important, because they were the foundation for winning a war that might erupt, or toward stabilizing a competition in a way that gave advantage to one side or the other.

Seen this way Korea, Vietnam, Berlin, etc. were about winning those local wars. But they were more importantly about shaping the global competition between the United States and the Soviet Union.

Quite elaborate rules were worked out for this. It took substantial time during the evolution of the Cold War (to make sure that it was indeed was a cold war from a global conflagration point of view) for this learning curve to develop. Limited wars, like Korea, produced know how about escalation control and dominance.

The problem today is that we are only at the earliest parts of this learning curve for our age. We're in a long term competition with authoritarian powers, but it's like it was 1949 in terms of our know how for managing this rivalry to our advantage. The problem isn't simply to defend Ukraine and Taiwan; it's to do it in such a way that doesn't lead to crazy escalations or that doesn't scare the daylights at of our allies.

Taiwan and Ukraine are not sideshows to global conflict; they are the early test cases of competition in a second nuclear age.

Recently, I discussed the question of how best to describe the terminology to describe peer conflict with my colleague Dr. Paul Bracken the author of The Second Nuclear Age.

According to Bracken, it is preferable to use the term "limited war" to describe the nature of conflict between the authoritarian powers and the liberal democracies. "A term was invented in the Cold War which is also quite useful to analyze the contemporary situation, namely, limited war. This term referred to conflict at lower levels and sub-crisis maneuvering. And that is what is going or today in cyber and outer space, to use two examples. But it also applied to higher levels of conflict like limited nuclear war."

"The notion of limited war focuses escalation as a strategy. What is the difference between limited and controlled war?

"That's a really important question with enormous implications for command and control. Today, for example, limits are determined in a decision making process whereby the Pentagon goes to the White House and says we'd like to do this operation. The White says yes or no.

"Left out of this is any discussion of building a command and control system for controlled war. This means keeping war controlled even if things go wrong — as they always do. Without an emphasis on controlled war, and not just limited war, I would estimate that the United States will be highly risk averse, that is, the fear of an escalation spiral will drive the United States toward inaction.

"Look at the Ukraine. The first U.S. reaction to the Russian buildup was to immediately take military options off the table. The White House refocused its strategy on financial sanctions instead. It looked as if the United States was desperately searching for ways not to use force. Soft power, gray zone operations, the weaponization of finance — these are clearly important and I think we should use them.

"But they look like a frantic attempt to any use of force, like British foreign policy in the 1930s.

"Our language shapes our strategy. An image of war that blows up, that's unlimited, or that you've declined to fight because of your fear that it would become so is where we are. In academic studies and think tanks the focus is overwhelmingly on "1914" spirals, accidental war, entanglement, and inadvertent escalation.

"If it's going to be controlled or limited, how are you defining that it is limited? Is it limited by geography? Is it limited by the intensity of operations? Is it limited by the additional political issues that you will bring into the dispute?

"These are never specified in discussions that I see of hybrid or gray zone warfare. To use a very sensitive example. In a Taiwan scenario, will the United States Navy and Air Force be allowed to strike targets in China?

I see a real danger that this isn't being thought through. If we think it through only in a crisis we're likely to find a lot of surprises in how the White House and Joint Chiefs of Staff see things differently.

These expressions – hybrid war and gray zone conflict – are treated as if they self evident in term of their meaning. Yet they are part of a larger chain of activities and events.

We use the term peer competitor but that is a bit confusing as well as these authoritarian regimes do not have the same ethical constraints or objectives as do liberal democratic regimes. This core cultural, political and ideological conflict who might well escalate a conflict beyond the terms of what we might wish to fight actually.

And that really is the point – escalate and the liberal democracies withdraw and redefine to their disadvantage what the authoritarian powers wish to do.

Bracken noted: "That's a good distinction too, because it brings in the fact that for 20 years we've been fighting an enemy in the Middle East who really can't strike back at the United States or Europe other than with low-level terrorist actions. That will not be the case with Russia, China, and others.

"The challenge is to define limited war, and I would add, controlled war. Is it geographic or Is it the intensity of the operations? How big of a war is it before people start unlocking the nuclear weapons?

"Every war game I've played has seen China declare that its "no first use" policy is terminated. The China player does this to deter the United States from making precision strikes and cyber

attacks on China. This seriously needs consideration before we get into a real crisis.

"Russia and China' are trying to come in with a level of intensity in escalation which is low enough so that it doesn't trigger a big Pearl Harbor response. And that could go on for a long time and is a very interesting future to explore."

Limited war requires learning about escalation control i.e. about controlled war, which when one uses that term, rather than hybrid war or gray zone conflict, connects limited war to the wider set of questions relating political objectives of the authoritarian powers.

Bracken concluded: "I believe using those terms adds to the intellectual chaos in Washington. It prevents us from having a clear policy discussion of what the alternatives for escalation control and management are in any particular crisis. This is a lot more dangerous than mishandling the Afghan exit, or the COVID pandemic."[1]

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1. https://defense.info/re-thinking-strategy/2021/12/gray-zones-or-limited-war/

CHAPTER 12

REMOTELY PILOTED AIRCRAFT, AUTONOMOUS SYSTEMS AND HOW TO STRENGTHEN THE ADF IN THE NEXT 3-5 YEARS

THE AUSTRALIAN GOVERNMENT is shifting resources from the Air Force and the Army and from the surface fleet to pay for a new fleet of eight SSNs with the first coming only in several years.

How then to ensure that the ADF is effective in the next five years as money and manpower is moved to what seems to be an SSN-enabled Navy with the other services adapting to this shift?

When working through the various presentations at the Williams Foundation Seminar held on April 11, 2024, there is no clear answer to this very significant challenge.

But one presentation at the seminar did raise the specter of how a pathway could be shaped to carve a way ahead, namely, the one by James Lawless entitled, "Layered Defence: The Role of Autonomy and Autonomous Systems in the Maritime Domain."

How might the new Triton Remotely Piloted Aircraft (RPA) and the various payloads which maritime and air autonomous systems deliver could accelerate change?

These systems can provide the kind of ISR and data management capabilities which Australia would need for the

targeting enterprise envisaged in the "impactful projection" approach of the government which rests on effective targeting,

If one is trying to navigate the complexities of what the current Australian government is really trying to do and find a way to assess the ADF effects which result from such an effort, I would argue that one would focus on the ability to deliver strike across the areas of strategic and tactical interest to Australia and its core allies.

It is about effects and real delivery of an impact, not simply a focus on future platforms which are not going to be here any time soon.

So how to navigate through the blizzard of reports, statements and assertions by the government?

Let me start by simply citing the government's recent release indeed on their approach to strike.

According to a government press release:

Long-range strike capabilities and advanced targeting systems will receive $28 billion to $35 billion in the coming decade under the 2024 Integrated Investment Program.

The largest portion, $12 billion to $15 billion, will go to bolstering Navy's sea-based strike capability, including the acquisition of Tomahawk cruise missiles.

These will arm Hobart-class destroyers, Hunter-class frigates and, potentially, Virginia-class submarines, allowing them to hold targets at risk at longer ranges.

The funding covers Evolved Sea Sparrow Block II, SM-2 and SM-6 missiles to intercept airborne threats, along with continued integration of the Naval Strike Missile for use against heavily protected targets.

RAAF's air-launched strike capability also received investment for the F/A-18F Super Hornet, P-8A Poseidon and F-35A Lightning II to be equipped with more advanced weapons.

Funding for development of hypersonic missiles could give Super Hornets the ability to attack targets at longer ranges.

Army's acquisition of land-based long-range fires are also covered in the investment program.

This includes accelerated and expanded acquisition of 42 High Mobility Artillery Rocket Systems for Army's first long-range fires regiment.

These will fire the Precision Strike Missile that can engage potential adversaries more than 500km away.

Funding also covers Army's Guided Multiple Launch Rocket System munitions, along with new radars to extend sensor and command and control networks.[1]

But how to assess how these various programs will integrate across a kill web to deliver the kind of effects which will be credible to an adversary?

It is a question of how targeting is done, who the data for targeting can be passed to and the range of the weapon carried on a fixed or moving platform and location and with what effects when considered across the allied strike enterprise.

None of this is resolved only by funding considerations, and, for example, their needs to be a realistic public discussion of how new SSNs actually fit into the strike enterprise, for otherwise their is simply cacophony not coherence in the strike enterprise.

And any use of TLAMs by Australia in the context of a Pacific conflict where three adversarial nuclear powers are operating needs to be credibly sorted out if one is framing deterrence by denial as the core focus of Australian defence.

Malcolm Davis of ASPI raised some helpful insights in to how to interpret the government and its framing of the strike enterprise.

In his April 24, 2024 piece on "impactful projection constrained," he highlighted the following:

Strike capability featured in the 2024 update of Australia's Integrated Investment Plan (IIP), the equipment spending program that accompanied the National Defence Strategy (NDS) published on 17 April. But the strike capability acquisitions were all re-announcements—or, to take a positive view, confirmations.

They included acquisition by the navy of more than 200 Tomahawk Block IV cruise missiles, to be deployed on Hobart-class destroyers, Virginia-class submarines and maybe Hunter-class frigates. Integration of the Naval Strike Missile on surface combatants was in there, too.

The army's long-range fires mission, highlighted in the 2023 Defence Strategic Review (DSR), is centered on acquisition of 47 HIMARS launcher vehicles that can fire various long-range guided munitions, including PRsM ballistic missiles, at land and maritime targets. PRsMs have a range of 500km but could eventually reach beyond 1000km.

If forward host nation support is available in a crisis, then the littoral capability for the army will be crucial in supporting deterrence by denial with these land-based long-range fires—but we cannot assume availability of such support.

With that uncertainty in mind, establishing agreements to ensure forward host nation support for the army should be a high priority for defence diplomacy, as noted in the NDS, in coming years.

Air force capabilities include a previously announced acquisition of AGM-158C LRASM anti-ship missiles to be carried on F/A-18Fs, P-8As and eventually F-35As, as well as AGM-158B JASSM-ER air-to-ground missiles.

Another item is integration of the Kongsberg Joint Strike Missile on the F-35A. E/A-18G Growlers will get 63 AGM-88E AARGM-ER missiles for attacking radars.[2]

What is not really clear is how this fits into a strategic

mosaic whereby a kill web enabled force can deliver sustained strike to provide for integrated operations in Australia's primary area of strategic interest which in my view is out to their first island chain.

This is important not just for the ADF and Australia but to credibly provide any ability to provide a sanctuary for allied forces to be able to leverage Australia's evolving support structure.

Davis went on in his article to argue for a focus on longer range strike going forward. He argued: "Impactful projection as part of deterrence by denial is the right choice—but we need to reach farther to deter more effectively. A failure to extend our reach could see deterrence by denial fall short in a real crisis."

But what remains a challenge is to build a force that would be meaningful for longer range strike which can work with allies whose interests both coincide and differ from Australia's.

What would South Korea, Japan, the United States and Australia agree on in terms of coordinated strike in a confrontation with China with North Korea and Russia almost certainly involved?

I would argue this starts by having an effective ISR integrated force which can deliver reliable data to the ADF throughout the enterprise.

Given that the government has decided to cut the fourth F-35 squadron, the RAAF is left with one significant new platform which will be crucial to shaping such an enterprise, namely the Triton.

And the introduction of Triton will be first deployed as a variety of new autonomous systems could be available to the ADF to build a layered ISR network to provide the targeting needed for both "impactful projection" and the "impactful presence".

Such capability is necessary for the direct defence of

Australia and to play the role of strategic reserve for its core allies.

In fact, a layered ISR/C2 network is a key element of "impactful presence" which can be built in this interim period where the government is re-orienting the ADF in a direction towards an SSN-enabled maritime force.

Let me next turn to the presentation and discussion I had with James Lawless, the former Navy officer now with Northrop Grumman, who discussed the role which such systems can enable for Australia to have the ISR/C2 layered system which in my view is a crucial building block in the next three to five years for the ADF.

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1. https://www.defence.gov.au/news-events/news/2024-04-23/boost-ability-strike-afar

2. https://www.aspistrategist.org.au/defence-strategic-review-impactful-projection-constrained/

CHAPTER 13

LAYERED ISR AND A FOCUSED FORCE

IF YOU WANT to shape an effective focused force with modest capability, for certain you need to operate as a kill web.

I focused on the concept of the kill web in a co-authored book with my colleague Ed Timperlake and then most recently in my book on the coming of maritime autonomous systems.

This is how we discussed the kill web:

In 2016, we discussed the kill web approach with Rear Adm. Manazir both when he was at N-98 and N-9 in Op Nav. With him we discussed the kill web approach as a way to shape more effective integration of forces and convergence of efforts.

The kill chain is a linear concept which is about connecting assets to deliver fire power while the kill web is about distributed operations and the ability of force packages or modular task forces to deliver force dominance in a specific area of interest.

The kill web is about building integration from the ground up so that forces can work seamlessly together through multiple networks, operating at the point of interest.

In that interview, he highlighted the key significance of evolving C2 capabilities to deliver a kill web capability.

"The hierarchical CAOC is an artifact of nearly 16 years of ground war where we had complete air superiority; however, as

we build the kill web, we need to be able to make decisions much more rapidly. As such, C2 is ubiquitous across the kill web.

"Where is information being processed? Where is knowledge being gained? Where is the human in the loop? Where can core C2 decisions best be made and what will they look like in the fluid battlespace?

"The key task is to create decision superiority. But what is the best way to achieve that in the fluid battlespace we will continue to operate in? What equipment and what systems allow me to ensure decision superiority?

"We are creating a force for distributed fleet operations. When we say distributed, we mean a fleet that is widely separated geographically, capable of extended reach.

"Importantly, if we have a network that shares vast amounts of information and creates decision superiority in various places, but then gets severed, we still need to be able to fight independently without those networks.

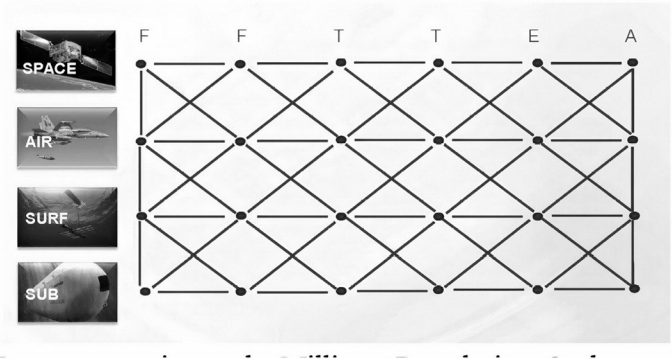
"This requires significant and persistent training with new technologies but also informs us about the types of technologies we need to develop and acquire in the future.

"Additionally, we need to have mission orders in place so that our fleet can operate effectively even when networks are disrupted during combat; able to operate in a modular-force approach with decisions being made at the right level of operations for combat success."

In the graphic provided by Rear Admiral (Retired) Manazir in the Williams Foundation 2018 Seminar, he took the sequence of find, fix, track, target, engage and assess and highlighted how those functions were now exercised in a distributed integrated manner by the various platforms operating within a task force or in our terms a combat cluster.

This task force, or combat cluster, can be understood either organized organically or scalable and aggregable, and operating

as flexible modular task forces. With the distribution of sensors and strike throughout the battlespace, the force operates as a strike and sensing grids to gain combat dominance.



In a presentation to the Williams Foundation, Canberra, Australia on March 22, 2018, Rear Admiral Manazir then retried, provided his graphic representation of how to understand the kill web.

In some ways, the difference can be seen as a shift from a linear kill chain to a distributed kill web. The difference in focus was highlighted in a discussion in 2020 with Cmdr. Peter "Two Times Salvaggio, the head of the new Maritime Intelligence Surveillance and Reconnaissance (ISR) program at the Navy's Naval Air Warfare Development Center, at Air Station Fallon, Nevada.

He underscored: We need a paradigm shift: The Navy needs to focus on the left side of the kill chain.

The kill chain is described as find, fix, target, engage and assess. For the U.S. Navy, the weight of effort has been upon target and engage. As "Two Times" puts it: But if you cannot find, fix, or track something, you never get to target.

There is another challenge as well: in a crisis, knowing what to hit and what to avoid is crucial to crisis management. This

clearly requires the kind of ISR management skills to inform the appropriate decision makers as well.

The ISR piece is particularly challenging as one operates across a multi-domain battlespace to be able to identify the best ISR information, even if it is not contained within the ISR assets within your organic task force. And the training side of this is very challenging.

That challenge might be put this way: How does one build the skills in the Navy to do what you want to do with regard to managing ISR data and deliver it in the correct but timely manner and how to get the command level to understand the absolute centrality of having such skill sets?

Here we are entering the domain of the kill web. The focus is upon how force packages are configured, and how they are empowered to leverage ISR and fire capabilities at the point of interest, and to both contribute to and leverage capabilities resident in other force packages available to deliver the desired combat or crisis management effect.

At the Williams Foundation Seminar held on April 11, 2024, James Lawless, a former Navy officer and now with Northrop Grumman, Australia, focused on how shaping layered ISR capabilities for the ADF by leveraging Triton and autonomous systems could empower the force going forward.

As Lawless underscored, that it is a daunting task to provide for direct defence of Australia given its size, location, and modest military capabilities.

He pictured the physical nature of the challenge but seen from the perspective of ISR capabilities which could be used to size the challenge and provide the manoeuvre space for the ADF to maximize their relevant impact as follows:

He argued that by building layers of ISR capability which would work seamlessly with one another, the ADF could best leverage its assets and provide decision makers with options for having the most decisive effect.

In other words, ISR is an enabling capability whereby one could winnow down the threat to determine where one needed to act and if possible, with the most decisive effect.

It was a nice to have capability: it is the INDISPENSIBLE capability if one is to have a focused force in reality and not just in terms of a phrase in a government document.

But then how to build this capability in the next three to five years more effectively?

The government is reducing the F-35 force by one squadron which is a major cut driven by the need to raise money for the SSN program when the government has not allocated more money to pay for it.

The major new asset coming to the RAAF is the Triton. This asset is not really understood by many defence analysts and certainly not by the public. It is a high value remotely piloted asset that can operate at high altitude and see over a wide operational area and do so why not having to operate in the weapons engagement zone.

When I visited RAAF Edinbourgh, I was impressed that the RAAF was building a common data floor for P-8s, Triton and the Peregrine. And the plan is to take integrated data and deliver it to mobile operating stations to serve the ADF.

An obvious investment which needs to be made now and capability delivered in the near to mid-term is AI enabled data management and routing to the force packages that need an integrated data stream. This is clearly a key three-to-five year capability which needs to be delivered and not just some day in the imagined world of defence procurement and (here is the killer) "planning".

James Lawless presenting at the Williams Foundation Seminar April 11, 2024.

But what Lawless did in his presentation was to identify various ways air and maritime autonomous systems could operate to contribute data relevant to the operations of a focused force. Autonomous systems could fill out the areas operating below Triton to move data into the weapons engagement zone as well as to inform operating forces of threats and opportunities in the battle space. They were key capabilities in terms of where on the chessboard to move your combat clusters to maximize their impact.

The Triton RPA and autonomous systems layering provide

the ADF with a significant and unique opportunity to help the government build a focused force.

But perhaps, the kill web concept might be thought of what we described as building a honeycomb deployed force when we wrote our book on rethinking military presence in the Pacific.

Rather than thinking of a top-down concept of managing force distribution, we focused on how you build honeycomb "cells" throughout the area of operations which could then be linked. The new technologies for ISR delivered by an RPA like Triton and the various autonomous systems which Lawless discussed can enable clusters of combat forces distributed in the area of interest or act as honeycomb cells so to speak.

In that 2013 book this is how we envisaged the C5ISR service enterprise enabling such an approach for the U.S. working with its allies in the Pacific:

"By shaping a C^5ISR system inextricably intertwined with platforms and assets, which can honeycomb an area of operation, an attack-and-defense enterprise can operate to deter aggressors and adversaries or to conduct successful military operations. Inherent in such an enterprise is scalability and reachback. By deploying the C^5ISR honeycomb, the shooters in the enterprise can reach back to each other to enable the entire grid of operation, for either defense or offense.

"In effect, what could be established from the U.S. perspective is a plug-in approach rather than a push approach to projecting power. The allies are always forward deployed; the United States does not to attempt to replicate what those allies need to do in their own defense.

"But what the United States can offer is strategic depth to those allies. At the same time if interoperability and interactive sustainability are recognized as a strategic objective of the first order, then the United States can shape a more realistic approach than one that now rests on trying to proliferate power

projection platforms, when neither the money nor the numbers are there.

"In effect such an approach would be re-creating a 21st-century version of the big blue blanket. In World War II, especially in the Pacific theater, the concept of a big blue blanket evolved. It took thousands of ships and planes with appropriate logistical support to fight and win. Now with a 21st-century electronic revolution of sensors, shooters, and a honeycomb of networks a modern version of a big blue blanket can be shaped that can enable the fleet."

We then took the C^5ISR point forward into the notion of concepts of operations.

"To shape a 21st-century strategy that can encompass such challenges as dealing with the Chinese colossus, the North Korean stability and nuclear issues, the Arctic opening and the resetting of the Russian role, and providing for security for the maritime trade "highways" requires a remaking of traditional U.S. and allied capabilities and working relationships...

"The strategy is founded on having platform presence. Deploying assets such as USCG assets—for example, the National Security Cutter, USN surface platforms, Aegis, or other surface assets—and sub-surface assets, and having bases forward deployed gives the United States has core assets that if linked together into a scalable force make significant gains in capability possible.

"Such a persistent presence force must be highly interoperable with allied forces and commercial forces in order to lay down the grid that can allow for a scalable "honeycomb" of deployable capabilities.

"The honeycomb concept is central rather than simply thinking in networking terms. Various U.S. joint or allied forces can operate in an area with great autonomy, but that autonomy

is not founded on significant isolation from linkage back to other forces.

"Hence the force is scalable. Scalability is the crucial glue to make such a persistent force possible. The reach from Japan to South Korea to Singapore to Australia is about how allies are reshaping their forces and working toward greater reach and capabilities.

"A scalable structure allows for an economy of force.

"Presence and engagement in various local cells of the honeycomb may well be able to deal with whatever the problem in that vector might be.

"And remembering that in the era of Black Swans, one is not certain where the next "crisis" or "engagement" might be. The author of *The Black Swan* underscored that the key impediment to learning is that we focus excessively on what we do know and that we tend to focus on the precise.

"We are not ready for the unexpected. For the author, the rare event equals uncertainty. He argued that the extreme event is the starting point in knowledge, not the reverse.

"The author in the concluding parts of his second edition advocated redundancy as a core capability necessary for the kind of agile response one needs in Black Swan or Gray Swan events. To clarify, a black swan is a large-impact and rare event beyond the realm of normal expectations. A Gray Swan is a large-impact event that is somewhat predictable but overlooked as major stakeholders in society and globally simply hope to not have to contemplate the consequences of such events.[1]

"The key conclusion here is rather simple: we need to rebuild our forces to be more agile and have more flexible expectations of what engagements we are about to engage in. And shaping plug-and-play capability with allies and partners becomes significantly more important in the period ahead."[2]

1. Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable* (Penguin), 2008.
2. Robbin Laird, Edward Timperlake, and Richard Weitz. *Rebuilding American Military Power in the Pacific: A 21st-Century Strategy* (Praeger Security International). ABC-CLIO. Kindle Edition, 2013.

CHAPTER 14
CONCLUSION

THE SEMINAR WAS CONCLUDED by comments by WGCDR Sally Knox, the moderator for the seminar, and by Air Marshal (Retired) Geoff Brown.

WGCDR Knox provided a succinct summary of what a multi-domain approach to a maritime strategy entailed.

"An Australian Maritime strategy necessitates a highly integrated multi-agency multi-domain response enabled by, among other things, connectivity, logistics, bases, stores and decision making superiority. In short, it must be resourceful.

"Wherever given the increasingly challenging threat environment we face it must also be characterized by readiness and resilience.

"A successful maritime strategy requires seamless coordination across agencies and domains. From connectivity to logistics, every aspect must work in harmony to ensure readiness. A maritime strategy must be comprehensive.

WGCDR Knox concluding the April 11, 2024
Williams Foundation Seminar.

"It isn't just about naval operations, it encompasses all aspects of national power from diplomacy to economics, safeguarding our borders and trade. Such a strategy demands a holistic approach.

"However, our demographic landscape presents a complex challenge in achieving our national objectives. Crafting a credible maritime strategy demands a multi-domain, multi-agency efforts.

"A robust maritime strategy is essential for our national security. It's not just about military capabilities, it's about leveraging all elements of power to protect our interests effectively."

Air Marshal (Retired) Brown, Chairman of the Sir Richard Williams Foundation, provided a perspective with regard to the Defence Strategic Review and the expected Defence Investment Plan which was released shortly after the seminar.

He put his concerns this way. "Xi Jinping and Putin are 71. The strategy indicates that we are in a dangerous period something like 1936 and we have a plan for 1956. But I am not sure that these leaders are going to wait until they are 91 to do their damage."

He then discussed the key issue which in my view really shapes the question of the credibility of the ADF going forward. He noted that the Defence Investment Plan was

cutting the current force to pay for a future force, and significantly.

Air Marshal (Retired) Brown listening to one of the presentations to Williams Foundation Seminar April 11, 2024.

"Despite all the rhetoric, do we have an executable plan. How do we ensure that the ADF over the next three to five years becomes more capable?"

Or as I would put it investments for future forces to be paid for by future governments is always a tricky thing. But cuts in capability such as the fourth F-35 squadron are really and decisive reductions in the current force, the only one which adversaries see and take account of.

I also have a problem with future oriented defence planning. How well did we forecast 2020 when we were living in 2019?