ADDRESS TO

THE 2016 RAAF AIR POWER CONFERENCE

15 MARCH 2016

Ladies and Gentlemen

Air Chief Marshall Leo Davies it is a real pleasure to be with you today and with so many friends and international visitors. I suspect that a good deal of the conference will necessarily be up in the clouds. During my twenty minutes I hope you don't mind if I bring us all down to sea level.

The question that I have been asked to address is how the Navy looks at air power support in integrated multi-domain operations. That is an interesting question, and one that set me thinking about the overall dynamics of multi-domain operations.

If one poses the question slightly differently – what is Navy looking for from Air Force – one could equally well ask the alternate question – what is Air Force looking for from Navy.

To answer either of these questions, they have to be taken together, because the question is really about integrated multi-domain operations rather than the force components.

So what I hope to do this afternoon is to set out Navy's approach to integrated multi-domain operations and to provide a holistic view of the conduct of warfare in the 21st century.

I must admit to a measure of trepidation in doing so. One must necessarily take a "one defence, three services" approach. I am aware that Trinitarian thinking has not been universally accepted in the world of philosophers and theologians.

But I take heart from the fact that, as strategists and defence planners, we live in the world of combat realities rather than religious beliefs. The pragmatic world of warfare deals with what is, as distinct from what might be hoped for.

So I welcome this conference theme because building the systems that realises successful integrated multi-domain operations is what will deliver both deterrence in times of peace and decisive and distributed lethality in times of war.

We all appreciate that the range and variety of threats we currently face are driving a demand for situational awareness and an ability to engage an adversary, or adversaries, across an extended battle space.

In most circumstances, this will be a land-sea-air battle space where success will depend on the quality of the forces we deploy and our ability to integrate them to achieve the fundamental purpose of strategy – defence of the nation and its interests.

That strategy may require the application of sanctions against those who might threaten us.

As the Defence White Paper puts it, "maintaining Australia's technology edge and capability superiority over potential adversaries is an essential element of our strategic planning".

To channel Andrew Gordon, author of the outstanding analysis of the battle of Jutland *The Rules of the Game*, this might just be "a blinding glimpse of the bleeding obvious".

But in fact technological superiority and the advanced operational skills that sound manpower planning provides in each of the land-sea-air domains goes to the heart of military success in integrated multi-domain operations.

But if we are to maintain our technological edge and capability superiority—as was well defined in the government's White Paper—then we need to ensure we are not just thinking and theorising about multi-domain operations.

We need to turn it into reality by operationalising our technological edge at both the capability planning and doctrinal levels. It is essential that we design this into our forces from the outset.

It can be argued that the key to military success now depends as much on our skills at the drawing board as it does on the battlefield.

Let me give an example. The White Paper discusses the future submarine threat in broad terms.

If we were to view this as an underwater problem, then we would be sowing the seeds of our eventual failure. Why? Quite simply, modern submarines are not predicated on a single operating standard. They are not unidirectional platforms, but rather complex multi-purpose systems that fit into a system of systems.

Their strategic purpose varies across the deterrence-decisive lethality spectrum, as do their operational purposes. Some carry torpedoes, some deploy supersonic ASCMS, and some ballistic missiles.

To me this means the conduct of ASW now and in the future encompasses multi-domain operations because the submarine systems present threats under, on and above the water.

And their effectiveness is massively enhanced when they are strategically and operationally integrated into a joint and combined sea-air system.

During the last 12 months, I have stressed the importance of decisive lethality as a key element of sea power strategy, as it is for air power strategy.

I have also emphasised the importance of a rolling or continuous build approach to both the submarine and surface force, and the enormous advantage that offers to government, Defence and industry.

These capability development and delivery issues are also critical aspects of the "why" and "how" of Navy's contribution to meeting the challenge of maintaining Australia's technology edge. We need that edge across our entire force structure and our resultant force posture.

The nation's industrial baseline will be the very thing that enables us to keep pace and stay ahead. Like Air Force, Navy is a materiel system that requires an innovative and agile industrial base to enable it to meet the ever-evolving challenges ahead. It's about future proofing.

For our armed forces to meet their mandated purposes, we need to be able to force an adversary to pause and reflect. As I have said elsewhere, we need to be able to "mess with the adversary's mind".

We need to be able to generate uncertainty and to use that uncertainty to our advantage.

We do this by being able to force errors of judgement and decision in our adversary because we are capable of deploying offensive lethal force at a time and place of our choosing— as both a joint and combined force.

The deterrence we collectively achieve is the consequences of holding the adversary's operating systems constantly at risk.

To put this point in a way that I know will appeal to Air Force thinkers, we want the adversary to disappear up his own OODA loop.

Uncertainty and ambiguity confuse the adversary in observing, complicate any attempt at orienting, destabilise his deciding and prevent his acting.

And while we will always seek to leverage the ambiguity of our force disposition by forcing the adversary to ask "where the hell are they" and "will they or won't they", the fact is that we must be able to deliver lethal force if the adversary chooses to initiate armed engagement.

The key issue for Navy in this area is its ability to contribute decisive lethality across a distributed system—the ability to deliver distributed lethality across all three domains.

This, I think, is what Douhet (*Doue*) was really getting at in his seminal work on airpower. Strategic bombing is nothing if it is not distributed lethality.

I have discussed in short compass the theoretical foundations of the rolling and continuous build approach to the RAN's submarine and surface combatant system.

It is much more than an Australian industry jobs plan, important though that is.

And it both recognises and advocates the critical role that Australian Industry will play in making this strategy successful.

It also, I might add, transforms the Navy from a defence enterprise into a national enterprise.

Leveraging a continuous and evolving industrial backbone is the means by which Navy will maintain its technological edge and capability superiority, thereby providing the deterrent and war winning effects that the government requires.

Deterrence and victory are the outcome of a force that is lethal, available, sustainable and affordable. A rolling and continuous build strategy for both submarines and surface forces is the means by which we will achieve this.

This brings me back to the central theme of this conference - multi-domain integration, on which our ability to fight by means of increased situational awareness and collaborative targeting fundamentally depends.

As we progress our build programs, we are quite consciously designing our next generation fleet within a multi-domain framework, leveraging the availability of real time operational information.

While we have had significant exposure to systems that expand situational awareness, Navy is just starting to see the potential for remote cueing of weapons with the introduction Cooperative Engagement Capability on the *Hobart* Class.

The ability in the future to integrate the fleet with Wedgetail, JSF and other mission systems is essential if we are to achieve the capability dividend that this technology provides.

And interoperability with comparable US systems will be the *sine qua non* if we are to achieve distributed lethality.

The recent release of open source information and discussion regarding the USN's development of Naval Integrated Fire Control – Counter Air (NIFC-CA) provides a guide to what is possible when the integration of a specific system within a system of systems is successful.

We are not likely to achieve distributed lethality in exactly the same manner as the USN.

However what they are doing serves as a example of what can be achieved, noting the commonality of systems and operational objectives between the USN and the RAN, between the USAF and the RAAF, and between our national armed forces as a whole.

Air force is implementing its component of this capability in Plan Jericho – a fifth generation air force.

Navy has Plan Pelorus, a plan that aimed to launch the Navy onto its new trajectory as we recapitalise the fleet.

As I have said, it is the continuous build strategy for our fleet that will deliver the platforms and system that maintain the technology edge.

So under this new paradigm, how does Navy now work with the RAAF to ensure we are designing for integration?

This allows me to segue into a brief discussion of some of the challenges that multi-domain operations bring for both of us, and how the Navy will ensure that our continuous build strategy meets these challenges.

The first issue is the size of this battle space and how we achieve the situational awareness and co-operative targeting required to counter the rising threat.

This is a significant issue when we consider the sheer volume of data that can be generated by integrated multi-domain sensors.

The task of collecting, managing, collating and distributing the data that is available on these systems and transform it into knowledge that the war fighter can use is significant.

What we are talking about is harnessing “big data”. And with this comes all the issues associated with trying to find the right signal to act upon against the backdrop of noise that is generated by the vastness of real time data collection.

This is not a question of redesigning or modernising the methods and approaches used twenty years ago and applying them to the new battle space.

This is new data and requires innovative ways to manage and interpret it. This will be essential if the ADF is to fully utilise the advantage that the technology can deliver to operations in the 21st century. As a technology based institution, we have no option but to do this.

The second issue is the life cycle of the technology edge. The time a technology edge can be sustained before it needs refreshing is decreasing.

It is no longer sufficient or efficient to allow 10 years to acquire a technology or system to defeat a threat, provide a mid-life capability upgrade and then use the system well past its intended design life.

Again, rolling and continuous ship building will profoundly change how our processes support the capability cycle.

It will mean that refresh, or re-design, approvals and funding will work in a continuum. It will be intrinsic to the program—an expectation from the outset—not an *ex post facto* "leap of faith" made in the face of delay and, ultimately, obsolescence.

With new technologies, current technology refreshes have a half-life of years not decades. Indeed some changes in the cyber domain are measured in months.

So as we insert an upgrade, we will know that we have already funded the next iteration. This is new for Australia. It is an innovation that is as exciting as it is daunting.

The agility to maintain the technology edge into both new and existing platforms is as essential for the Air Force as it is for the Navy if we are to bring value to future operations

We see this agility in our current submarine force through the integration of the USN combat system. We need to make sure the lesson learnt from this approach is applied across our surface force, so that the appropriate refresh cycle is supported by the continuous build strategy.

The third issue is the hardening of networks. Not only do we need to protect the networks and systems that deliver distributed lethality, but we must also recognise that the protection of the network enablers is just as important.

As we become more reliant on distributed lethality to provide battle-space advantage, the hardening of air force and naval platforms is critical.

This is important to Navy, as our platforms consist of many different networks such as administrative networks or platform networks that control hotel services and propulsion, all of which need to have their vulnerabilities mitigated or removed.

Addressing the Challenge

The challenge here is one for the national defence enterprise to address. Note I say "national defence enterprise" because it is not just the Navy or the ADF that is engaged. This is a challenge for Government, Defence, Industry and the nation.

We need to ensure that we have a Naval enterprise that fits into a larger ADF enterprise to deliver the required effect and enable operations across multiple domains.

This will not be easy.

To achieve the level of systems integration needed for the delivery of decisive and distributed lethality that expands the engagement window beyond any given platform's organic sensors is a constant and consuming task.

But it is essential that we meet this challenge if we are to ensure a technological edge and the consequent capability superiority.

My workload would be much less if the RAN were designed and structured to meet the more limited purposes of an exclusive Naval policy.

But a "go it alone" navy would also be sub-optimal. It would be a national albatross rather than a national asset.

By virtue of its history, its tradition, its doctrine and its culture, the Royal Australian Navy is well positioned to meet the demands of working within a joint and combined operations with allies and partners.

Cooperation and interoperability are, as it was, in our DNA as a service.

We must convert our hard-won collaborative operational experience and use it to deliver a naval enterprise that will provide a continuous build approach to fleet management, thereby enabling us to fight and win together—on, over and under the sea.

Conclusion

To conclude: The ADF is now and will become an ever more capable multi-domain force able to project power though the integration and networking of capabilities and their transformation into systems.

This will be a system of systems that will provide battle space response and dominance where and when required.

The ships, submarines and aircraft of the future fleet, and the air capabilities of the future air force, not to mention the critical Army capabilities that are essential if we are to occupy and hold ground, will be integrated into this multi- domain force.

This is how the future ADF will fight and win.

Thank you.