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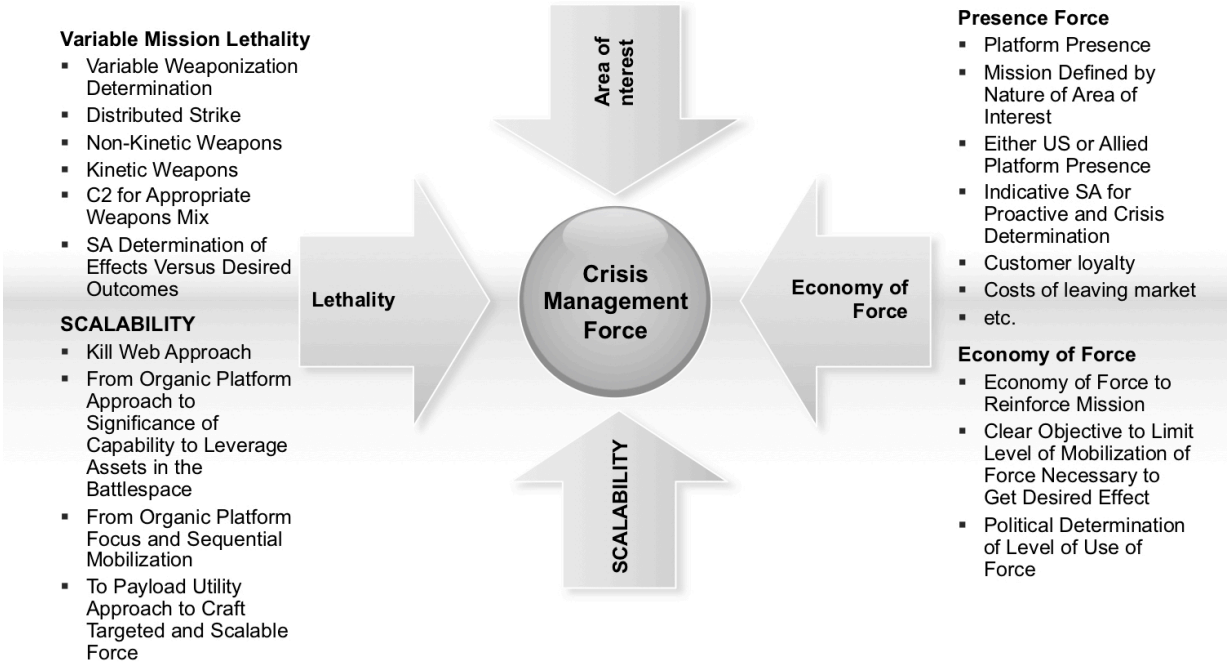
The Rebuild of Conventional Capabilities for Full-Spectrum Crisis Management

Crisis Management Force Structure

From Presence to Conflict Dominance Force



October 19, 2019

Re-Shaping Crisis Management

05/15/2018
By Robbin Laird

The strategic shift is a crucial one for the liberal democracies.

That strategic shift is from a primary focus on counter insurgency and stability operations to operating in a contested environment with high tempo and high intensity combat systems as a primary tool set.

It is about managing conflict with peer to peer competitors.

On the one hand, the military capabilities are being reshaped to operate in such an environment, and there is a clear opportunity to leverage new platforms and systems to shape a military structure more aligned with the new strategic environment.

On the other hand, the civilian side of the equation needs even more significant change to get into the world of crisis management where hybrid war, mult-domain conflict and modern combat tools are used.

While preparing for large-scale conflict is an important metric, and even more important one is to reshape the capabilities of the liberal democracies to understand, prepare for, and learn how to use military tools most appropriate to conflict management.

This means putting the force packages together which can gain an advantage, but also learning how to terminate conflict.

Already we have seen two examples of crisis management using high intensity conflict forces under the Trump Administration, and both involved using military tools to degrade Syrian chemical weapons capabilities. The military strikes were the visible side of the effort; the back channel discussions with the allies and the Russians were the less visible one.

But crisis management of this sort is going to become the new normal, and rather than forming yet another committee of experts to lecture the Trump Administration on what Inside the Beltway thinks is proper behavior, it is time for some PhD brain power to be generated to deal with how to understand the new combat systems and how best to master these systems from a political military point of view to deliver significantly enhanced crisis management capabilities.

Recently, Paul Bracken provided some PhD brain power on the subject and he highlighted a key aspect of what I am calling the strategic shift to crisis management for 21st century peer-to-peer conflicts.

The key point for today is that there are many levels of intensity above counterinsurgency and counter terrorism, yet well short of total war. In terms of escalation intensity, this is about one-third up the escalation ladder.

Here, there are issues of war termination, disengagement, maneuvering for advantage, signaling, — and yes, further escalation — in a war that is quite limited compared to World War II, but far above the intensity of combat in Iraq and Afghanistan…..

A particular area of focus should be exemplary attacks.

Examples include select attack of U.S. ships, Chinese or Russian bases, and command and control.

These are above crisis management as it is usually conceived in the West.

But they are well below total war.

Each side had better think through the dynamics of scenarios in this space.

Deep strike for exemplary attacks, precise targeting, option packages for limited war, and command and control in a degraded environment need to be thought through beforehand.

The Russians have done this, with their escalate to deescalate strategy.

I recently played a war game where Russian exemplary attacks were a turning point, and they were used quite effectively to terminate a conflict on favorable terms.

In East Asia, exemplary attacks are also important as the ability to track US ships increases.

Great power rivalry has returned.

A wider range of possibilities has opened up.

But binary thinking — that strategy is either low intensity or all-out war – has not.

I want to focus on the following Bracken observation: *These are above crisis management as it is usually conceived in the West.*

The point can be put bluntly – we need to rethink crisis management rather than simply thinking the strategic shift is from fighting terrorists to preparing for World War III and musing on how we will lose.

And that is a key area of work facing civilian strategists, but only if they understand that the new military capabilities open up opportunities as well for something more effective than simply doing nothing or very little or launching major combat operations.

Figuring out how to leverage the new capabilities and to build upon these in shaping scalable and agile force capabilities is part of what civilians need to learn with regard to how to think about tools for crisis management.

The other part is to think through a realistic assessment of how to work with authoritarian leaders who are our adversaries in the midst of a crisis so that conflict termination can be achieved but without following the Chamberlain model.

At the heart of this is a fundamental change to C2, both for the military and for the civilian leadership which is supposed to provide strategic guidance.

But simply identifying a geographical location to send the military and then failing to find a time when the return ticket can be issued is not effective leadership.

My recent visits with the Nordics highlight a region thinking through these kinds of issues.

On the one hand, the enhanced military collaboration among the Nordics seen in things like Cross Border training or the coming Trident Juncture 2018 exercise in Norway is clearly about working through how to generate the combat power which can be tailored to a crisis.

On the other hand, the Nordics within the framework of NORDEFCO, or the working relationship with the United States as seen in the new trilateral agreement signed by the US, Sweden and Finland are examples of working through the civilian side of crisis management.

It is a work in progress and not one where the United States is clearly in the lead. Given that crises are regional, our allies have important contributions in shaping a way ahead to manage crises in their region as well.

And the Nordics are clearly doing this.

We need to rework our military C2; and even more importantly, put a rest to our civilian strategists simply campaigning for a place in the next Administration.

We do need to focus on how we can turn the Russian and Chinese anti-access and area denial strategies into a 21st century version of the Maginot Line. And we are already building systems and capabilities that can do so, but not without a transformation focus and effort.

But we need to learn to not self-deter and to explore ways to push the leaders of the non-liberal powers hard and to also understand how to engage with them as well.

This is neither the world of the High School Musical which the globalization folks seem to champion; nor the harsh world of zero sum conflict which hardliners to the right seem to live in.

It is a world where conflict and crisis management are the new normal between and among peer competitors.

Conventional Deterrence in the Pacific: The Challenge of Building an Integrated Distributed Force

The new Sec Def, Mark Esper, has prioritized defense efforts in the Pacific as a key anchor to the Great Power strategy. In particular, given the withdrawal from the INF treaty, a key focus is upon the building of new conventional longer-range missiles deployed throughout the US and allied Pacific defense perimeter.

This entails interactive technological, force structure and geographical deployment dynamics. We have argued that a new basing structure combined with a capability to deploy and operate an integrated distributed force is at the heart of the strategic shift, and not only in the Pacific.[1]

This is a key part of the effort to shape a full spectrum crisis management capability whose con-ops is shaped to deal with adversary operations within what some call the "gray zone" or within the "hybrid warfare" area.[2]

The nature of the threat facing the liberal democracies was well put by a senior Finnish official: "The timeline for early warning is shorter; the threshold for the use of force is lower."
What is unfolding is that capabilities traditionally associated with high end warfare are being drawn upon for lower threshold conflicts, designed to achieve political effect without firing a shot.

Higher end capabilities being developed by China are Russia are becoming tools to achieve political-military objectives throughout the diplomatic engagement spectrum.

This means that not only do the liberal democracies need to shape more effective higher end capabilities but they need to learn how to use force packages which are making up a higher end, higher

[1] https://defense.info/re-thinking-strategy/2019/08/reshaping-perimeter-defense-a-new-pacific-island-strategy/

[2] https://defense.info/book-review/2019/03/chinas-maritime-gray-zone-operations/

tempo or higher intensity capability as part of a range of both military operations but proactive engagement to shape peer adversary behavior.

In today's world, this is what full spectrum crisis management is all about. It is not simply about escalation ladders; it is about the capability to operate tailored task forces within a crisis setting to dominate and prevail within that crisis. If that stops the level of escalation that is one way of looking at it. But in today's world, it is not just about that but it is about the ability to operate and prevail within a diversity of crises which might not be located on what one might consider an escalation ladder.

They are very likely to be diffuse within which the authoritarian powers are using surrogates and we and our allies are trying to prevail in a more open setting which we are required to do as liberal democracies.

This means that a core legacy from the land wars and COIN efforts needs to be jettisoned if we are to succeed – namely, the OODLA loop. The OODA loop is changing with the new technologies which allow distributed operators to become empowered to decide in the tactical decision-making situation.

But the legalistic approach to hierarchical approval to distributed decisions simply will take away the advantages of the new distributed approach and give the advantage to our authoritarian adversaries.

What we are seeing is a blending of technological change, with con-ops changes and which in turn affect the use and definition of relevant military geography. In other words, the modernization of conventional forces also has an effect on geography.

As Joshua Tallis argued in his book on maritime security, the notion of what is a littoral region has undergone change over time in part due to the evolution of military technologies.

"Broadly speaking, the littoral region is the 'area of land susceptible to military influence from the sea, and the sea area susceptible to influence from the land.' In military terms, 'a littoral zone is the portion of land space that can be engaged using sea-based weapon systems, plus the adjacent sea space (surface and subsurface0 that can be engaged using land-based weapon system, and the surrounding airspace and cyberspace.' The littoral is therefore defined by the technological capability of a military, and as a result, the littoral is not like other geographic terms."3

What is changing is that the force we are shaping to operate in the littorals has expansive reach beyond the presence force in the littorals themselves. If you are not present; you are not present. We have to start by having enough platforms to be able to operate in areas of interest. But what changes with the integrated distribute ops approach is what a presence force can now mean. Historically, we a presence force is about what organically included within that presence force; now we are looking at reach or scalability of force. We are looking at economy of force whereby what is operating directly in the area of interest is part of distributed force.

The presence force however small needs to be well integrated but not just in terms of itself but its ability to operate via C2 or ISR connectors to an enhanced capability. But that enhanced capability needs to be deployed in order to be tailorable to the presence force and to provide enhanced lethality and effectiveness appropriate to the political action needed to be taken.

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[3] Joshua Tallis, *The War for Muddy Waters* (USNI Press, 2019, p. 2).

This rests really on a significant rework of C2 in order for a distributed force to have the flexibility to operate not just within a limited geographical area but to expand its ability to operate by reaching beyond the geographical boundaries of what the organic presence force is capable of doing by itself.

This requires multi-domain SA – this is not about the intelligence community running its precious space- based assets and hoarding material. This is about looking for the coming confrontation which could trigger a crisis and the SA capabilities airborne, at sea and on the ground would provide the most usable SA monitoring. This is not "actionable intelligence." This is about shaping force domain knowledge about anticipation of events.

This requires tailored force packaging and take advantage of what the new military technologies and platforms can provide in terms of multi-domain delivery by a small force rather than a large air-sea enterprise which can only fully function if unleashed in sequential waves.

This is not classic deterrence – it is about pre-crisis and crisis engagement.

The force we are building will have five key interactives capabilities:

- Enough platforms with allied and US forces in mind to provide significant presence;
- A capability to maximize economy of force with that presence;
- Scalability whereby the presence force can reach back if necessary at the speed of light and receive combat reinforcements;
- Be able to tap into variable lethality capabilities appropriate to the mission or the threat in order to exercise dominance.
- And to have the situational awareness relevant to proactive crisis management at the point of interest and an ability to link the fluidity of local knowledge to appropriate tactical and strategic decisions.

The new approach is one which can be expressed in terms of a kill web, that is a US and allied force so scalable that if an ally goes on a presence mission and is threatened by a ramp up of force from a Russia or China, that that presence force can reach back to relevant allies as well as their own force structure.

The inherent advantage for the US and its allies is the capability to shape a more integrated force which can leverage one another in a crisis.

A shift to a kill web approach to force building, training and operations is a foundation from which the US and its allies can best leverage the force we have and the upgrade paths to follow.[4]

[4] https://sldinfo.com/2017/09/the-maritime-services-and-the-kill-web/

A kill web linked force allows a modest force package – economy of force – to reach back to other combat assets to provide for enhanced options in a crisis or to ramp up the level of conflict if that is being dictated by the situation.

The evolution of 21st century weapon technology is breaking down the barriers between offensive and defensive systems. Is missile defense about providing defense or is it about enabling global reach, for offense or defense?

Likewise, the new 5th generation aircraft have been largely not understood because they are inherently multi-domain systems, which can be used for forward defense or forward offensive operations.

Indeed, an inherent characteristic of many new systems is that they are really about presence and putting a grid over an operational area, and therefore they can be used to support strike or defense within an integrated approach.

In the 20th Century, surge was built upon the notion of signaling. One would put in a particular combat capability – a Carrier Battle Group, Amphibious Ready Group, or Air Expeditionary Wing – to put down your marker and to warn a potential adversary that you were there and ready to be taken seriously. If one needed to, additional forces would be sent in to escalate and build up force.

With the new multi-domain systems – 5th generation aircraft and Aegis for example – the key is presence and integration able to support strike or defense in a single operational presence capability. Now the adversary cannot be certain that you are simply putting down a marker.

This is what former Air Force Secretary Michael Wynne calls the offense-defense enterprise.[5]

The strategic thrust of integrating modern systems is to create a grid that can operate in an area as a seamless whole, able to strike or defend simultaneously. Inherent in such an enterprise is scalability and reach-back. By deploying the tron warfare grid or a C2/Information superiority "honeycomb", the shooters in the enterprise can reach back to each other to enable the entire grid of operation, for either defense or offense.[6]

Put in other terms, presence is augmented at the same time as scalability is as well. This provides a significant force multiplier across the crisis management spectrum.

In effect, what could be established from the United States 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 which now rests on trying to proliferate power projection platforms, when neither the money nor the numbers are there.

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[5] https://sldinfo.com/2013/08/reset-rebuild-rethink-us-defense-concepts-of-operations/

[6] https://sldinfo.com/2014/11/shaping-a-21st-century-approach-to-tron-warfare/

The New USMC Commandant Lays Down His Approach: Reshaping the Force for Full Spectrum Crisis Management

07/18/2019
By Robbin Laird

In my work with the Williams Foundation, the Australian Defence Force has spearheaded a public discussion of their version of the strategic shift from the land wars to high-end warfare.

My own work with them has highlighted that the shift really is about designing an integrated force capable of operating across the spectrum of crisis management.

In our article published earlier this year we focused on "Full Spectrum Crisis Management for the Liberal Democracies," and argued the following:

As the strategic shift from the land wars gains momentum the investments and training in an appropriate 21stcentury crisis management and high intensity combat force will not be modeled on the Cold War European based force. It is not about a German-US Army brotherhood with significant presence. It is not about re-establishing air-land battle

It is about leveraging core force integration capabilities, such as F-35 with the Aegis, which can provide a pull function moving the US and the allies towards a more flexible and scalable force, which can operate over the spectrum of operations.

As Vice Admiral Barrett, the former Chief of the Australian Navy highlighted with regard to how he saw the build out of the Australian Navy: "We are not building an interoperable Navy; we are contributing to an integrated Australian Defence Force able to exercise sovereign options and work closely with core allies."

Because the adversaries are building to mass and are emphasizing expansion of strike capabilities controlled by a very hierarchical command structure, the kind of force which will best fit Western interests and capabilities is clearly a. distributed one. Fortunately, the technology is already here to build effectively down this path, a path that allows engagement at the low end and provides building blocks to higher end capabilities.

The force we need to build will have five key interactives capabilities:

1. *Enough platforms with allied and US forces in mind to provide significant presence;*
2. *A capability to maximize economy of force with that presence;*
3. *Scalability whereby the presence force can reach back if necessary at the speed of light and receive combat reinforcements;*
4. *Be able to tap into variable lethality capabilities appropriate to the mission or the threat in order to exercise dominance.*
5. *And to have the situational awareness relevant to proactive crisis management at the point of interest and an ability to link the fluidity of local knowledge to appropriate tactical and strategic decisions.*

The new approach is one which can be expressed in terms of a kill web, that is a US and allied force so scalable that if an ally goes on a presence mission and is threatened by a ramp up of force from a Russia or China, that that presence force can reach back to relevant allies as well as their own force structure.

The inherent advantage for the US and its allies is the capability to shape a more integrated force, which can leverage one another in a crisis.

The new guidance of General Berger, the 38th Commandant of the USMC, clearly is focused on the strategic shift.

A few years ago, the Corps returned to the sea as one Commandant put it.

With General Berger, not only has the Corps returned to the sea but also they fully intend to craft more integrated operations with the US Navy and the joint force to project power from the sea in contested environments, as a key foundational capability.

According to the Commandant's Guidance:

"Adversary advances in long-range precision fires make closer naval integration an imperative.

"The focal point of the future integrated naval force will shift from traditional power projection to meet the new challenges associated with maintaining persistent naval forward presence to enable sea control and denial operations. The Fleet Marine Force (FMF) will support the Joint Force Maritime Component Command (JFMCC) and fleet commander concept of operations, especially in close and confined seas, where enemy long-range precision fires threaten maneuver by traditional large-signature naval platforms.

"Future naval force development and employment will include new capabilities that will ensure that the Navy- Marine Corps team cannot be excluded from any region in advancing or protecting our national interests or those of our allies. Marines will focus on exploiting positional advantage and defending key maritime terrain that enables persistent sea control and denial operations forward. Together, the Navy-Marine Corps Team will enable the joint force to partner, persist and operate forward despite adversary employment of long-range precision fires."(page 2).

And in case you missed the point, this is how the Commandant returns to his core theme at the end of his guidance:

"While the next four years will be a period of substantive change – let me be clear – we are not experiencing an identity crisis nor are we at risk of irrelevance.

"We are a naval expeditionary force capable of deterring malign behavior and, when necessary, fighting inside our adversary's weapons-engagement-zone to facilitate sea denial in support of fleet operation and joint force horizontal escalation." (page 23)

And to do so with a force designed to operate from the ground up (quite literally) against peer competitors.

"We will divest of legacy defense programs and force structure that support legacy capabilities.

"If provided the opportunity to secure additional modernization dollars in exchange for force structure, I am prepared to do so." (Page 2).

And in so doing, his guidance highlights a number of trends, which we have observed over the past few years, which he has, not only embraced, but also has provided succinct guidance and clear thinking on the way ahead.

With regard to the ampbhious fleet and role of the USMC, it has been clear for some time that the old concept of the ARG-MEU is not up to the task.

What the Marines have really been focusing on is their ability to operate within an amphibious task force in which a variety of sea base capabilities combined with airpower and enhanced powers can deliver to the crisis management environment.

https://defense.info/re-shaping-defense-security/2019/03/presence-economy-of-force-and-scalability-the-new-amphibious-task-force/

https://sldinfo.com/2016/09/transforming-the-power-projection-forces-for-the-liberal-democracies/

https://sldinfo.com/2014/07/shaping-a-21st-century-presence-and-assault-force-visiting-the-uss-america-military-sealift-command-and-second-marine-air-wing/

https://sldinfo.com/2014/10/the-uss-america-redefining-amphibious-assault/

https://sldinfo.com/2016/12/the-marines-onboard-the-uss-america-the-remaking-of-the-amphibious-strike-force/

With regard to building the force, the Marines have shown a forward lean with regard to new systems like the Osprey, the F-35 B and the CH-53K. T

The new Commandant is very clear that this forward lean needs to be reinforced and accelerated and we have focused for several years on how innovations on the air side of the Marine Corps has clearly been doing the lean forward, which has often been an uphill battle.

https://defense.info/defense-systems/the-evolution-of-the-amphibious-task-force-and-the-coming-of-the-ch-53k/

The new Commandant clearly understands the importance of force integration and prioritizing key elements in the Marines force rebuild which are "integratable" and up to the task of operating in a flexible task force which is inherently "integratable."

Adversary advances in long-range precision fires make closer naval integration an imperative. The focal point of the future integrated naval force will shift from traditional power projection to meet the new challenges associated with maintaining persistent naval forward presence to enable sea control and denial operations. The Fleet Marine Force (FMF) will support the Joint Force Maritime Component Command (JFMCC) and fleet commander concept of operations, especially in close and confined seas, where enemy long-range precision fires threaten maneuver by traditional large-signature naval platforms.

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The new Commandant as well in his focus on the future of the amphibious task force has a very wide lens on what can and should be included in Marine Corps operations with regard to that task force.

And most notably, he is focused on mix and match building blocks which can be deployed in a variety of force packages, rather than defining the Marine Corps in terms of the MAGTF per se.

On the one hand: "Moving forward, the Marine Corps must maximize our inherent relationship with the Navy, along with our expertise coordinating elements of the MAGTF, to effectively coordinate across all warfighting domains to support the Joint Force." (page 5).

But on the other hand: "We are not defined by any particular organizing construct – the Marine Air-Ground Task Force (MAGTF) cannot be our only solution for all crises." (page 2).

The new Commandant also understands the importance of both bringing to shore or operating from islands or other land or sea bases, long-range fires to support crisis management maneuver forces.

"Marine Corps integration into the Fleet via composite warfare will be a prerequisite to the successful execution of amphibious operations: Marines cannot be passive passengers en route to the amphibious objective area.

"As long-range precision stand-off weapons improve and diffuse along the world's littorals, Marines must contribute to the fight alongside our Navy shipmates from the moment we embark. Once ashore, Marine Forces operating within CW will increase the Fleet's lethality and resiliency and will contribute to all domain access, deterrence, sea control, and power projection." (page 10).

And later in the document he adds:

"Our investments in air-delivered long-range precision fires (LRPF) are known, suitable, and sufficient; however, we remain woefully behind in the development of ground-based long-range precision-fires that can be fielded in the near term which have sufficient range and precision to deter malign activities or conflict.

"Our capability development focus has fixated on those capabilities with sufficient range and lethality to support infantry and ground maneuver.

"This singular focus is no longer appropriate or acceptable.

"Our ground- based fires must be relevant to the fleet and joint force commanders and provide overmatch against potential adversaries, or they risk irrelevance." (page 13).

The new Commandant has highlighted one of the key elements of being to operate against peer competitors, namely, a distributed force which can be commanded in a denied and contested combat environment.

In our various visits to 2nd Marine Air Wing and MAWTS-1, it is very clear that the Marines have been working very hard on leveraging their new capabilities, such as the F-35B, to deliver a 21st century full spectrum crisis management force.

"While others may wait for a clearer picture of the future operating environment, we will focus our efforts on driving change and influencing future operating environment outcomes.

"One way to drive the continued evolution of the future operating environment is Distributed Operations (DO). DO capable forces are a critically important component of Marine Corps modernization." (pp. 11-12).

He then underscores the nature of the challenge to be met:

"Our lack of progress in implementing DO is in part due to an inadequate description of why we would distribute forces and why we would conduct distributed operations.

"In my judgment, we distribute for five reasons:

1. We disperse to better accomplish the mission against a distant or distributed adversary.
2. We disperse to improve maneuver options in order to gain a positional advantage to assault, or engage more effectively with direct or indirect fires.
3. We disperse to reduce the effects of enemy fires.
4. We disperse to impose costs and induce uncertainty.
5. We disperse to reduce our signature to avoid detection. In a precision strike regime, sensing first and shooting first are a tremendous advantage." (page 12).

To do requires, a significant focus on robust C2, which means an ability to operate in a degraded and contested environment.

In many ways, working this challenge is at the heart of the kind of force integration, which the Commandant seeks.

"Future force development must also contribute to an integrated operational architecture and enable information environment operations. Friendly forces must be able to disguise actions and intentions, as well as deceive the enemy, through the use of decoys, signature management, and signature reduction.

"Preserving the ability to command and control in a contested information network environment is paramount." (page 12).

The Commandant has delivered a very coherent and timely statement of the way ahead, which fully underscores the strategic shift from the land wars to full spectrum crisis management.

But nowhere so when he brings together his thinking with regard to the sea base, the amphibious task force, or reshaping the force to leverage new capabilities, which enable full spectrum crisis management.

"The amphibious fleet and littoral maneuver craft also require significant future force development. The amphibious fleet must be diversified in composition and increased in capacity by developing smaller, specialized ships, as a complement to the existing family of large multipurpose ships. Doing so will improve resilience, dispersion, and the ability to operate in complex archipelagoes and contested littorals without incurring unacceptable risk. Initial options for examination include:

- A "hybrid" amphibious ship to transport landing craft and enable the ability to fight in a contested littoral.
- An inexpensive, self-deploying "connector" capable of delivering rolling stock on or near-shore in a contested littoral.
- Considering how a wider array of smaller "black bottom" ships might supplement the maritime preposition and amphibious fleets." (page 12)

And the mix and match capability he has in mind for the evolving amphibious task force and tailored to a wide variety of force insertion settings is suggested in his treatment of sensors and remote systems.

He has in mind that the use of so-called unmanned systems are integrated within the task force not so much to replace current manned systems, but actually to do what a remote can do – operate as a target, or assisting targeting in determining how best to guide and operate in the insertion force operating in a crisis setting.

"Creating new capabilities that intentionally initiate stand-in engagements is a disruptive "button hook" in force development that runs counter to the action that our adversaries anticipate.

"Rather than heavily investing in expensive and exquisite capabilities that regional aggressors have optimized their forces to target, naval forces will persist forward with many smaller, low signature, affordable platforms that can economically host a dense array of lethal and non- lethal payloads.

"By exploiting the technical revolution in autonomy, advanced manufacturing, and artificial intelligence, the naval forces can create many new risk-worthy unmanned and minimally-manned platforms that can be employed in stand-in engagements to create tactical dilemmas that adversaries will confront when attacking our allies and forces forward.

"Stand-in Forces will be supported from expeditionary advanced bases (EABs) and will complement the low signature of the EABs with an equally low signature force structure comprised largely of unmanned platforms that operate ashore, afloat, submerged, and aloft in close concert to overwhelm enemy platforms." (Page 10).

In short, the Commandant's guidance is decidedly not what passes for strategy often inside the Beltway, metaphysical phrases that have no real meaning: the third offset comes to mind.

Rather it is clear statement, which responds both to the threat environment, and to the evolving capabilities of the USMC and US Navy team, and key elements of the joint force as well.

It prioritizes a strategic shift to full spectrum crisis manament and lays out a realistic path to get there.

And he certainly has grasped that the nation does not have forever to get there – it is is the priority for military transformation over the next five years.

https://sldinfo.com/2016/01/c2-modernization-an-essential-element-for-21st-century-force-structure-innovation/

Transformation and Ongoing Combat Innovation: The Key Role of the 0-5 Year Reshaping of the Combat Force

08/19/2019
By Defense.info

One of the key features of our approach to military transformation was and continues to be how to leverage the new systems we are already bringing on line which allows us to expand our deterrence in depth capabilities.

There is way too much emphasis Inside the Beltway on potential and hypothetical future systems and significant denigration of how the newly being introduced systems when much more effectively integrated with robust C2 rather than some hegemonic Amazon cloud like system can deliver the capabilities we need in the evolving five year period in front of our forces.

It too often seems that the approach is shaping dense briefings of the world in 2030 as a deterrent to our adversaries rather than building out the capabilities, which are within reach as new systems enter the force.

Although interesting to speculate about technology and the future of warfare, the core point is the future is now. The US and its allies have to be ready in the near to mid term to deal with 21stcentury adversaries who will use a variety of crisis management and warfighting tools to advance their interests.

This means leveraging the force we are evolving now to reshape effective concepts of operations to prevail now.

Such an approach is reinforced as we introduce software upgradeable systems as the core platforms for our combat force. And such a change also calls for reshaping the business rules, which drive acquisition as well.

As Brian Morra put it in an article published in 2017:

The digital nature of new weapon systems like the F-35 makes multi-phased development and multi-modal budgeting feasible.

This approach bears some similarity to the spiral-development approaches used in the past.

However, a new approach will need to be qualitatively different than traditional spiral development.

The ability to upgrade new weapon systems primarily through software upgrades makes this new approach possible.

The new approach would have shorter upgrade cycles or modes, based on 3-5 year centers.

Budget planning will need to change since each new "mode" would blend acquisition and O&S monies. Each new mode would require a business case to support decisions to deploy funds.

This is a very different approach.

It would require different business rules and procedures than are currently employed by the DoD's acquisition centers.

The obstacles to this kind of reform are not technical, although some will assert that technical issues are insurmountable. The real obstacles are DoD's current business rules and acquisition policies and budgeting procedures.

The question is will we reform these procedures now, or will we only do so when we are confronted with a crisis?

The US aerospace and defense industry maintains proprietary control over its core capabilities.

This is a key challenge that DoD confronts that China (in the main) does not. In order to have affordable, multi-modal weapons system development, DoD will have to establish new business rules to enable proprietary sharing or compartmentation schemes that create the conditions for development across proprietary stove pipes.

The need is clear.

The DoD requires business rules appropriate for high-intensity acquisition to meet the rapidly evolving threats represented principally by China and Russia.

The growing importance of cyber and digitally-enabled systems means that DoD can no longer operate with industrial-age procurement and sustainment rules.

Fortunately, the transition to digital systems lend themselves to a new, multi-modal approach that will help the United States keep pace with evolving threats.

And in a recent piece by Michael Shoebridge, director of the defence, strategy and national security program at ASPI, he argued that such an approach was crucial to Australian capability development as well.

In his piece. he highlighted the role which the Australian government was adopting with regard to Australian Special Forces and argued that the core principle being adopted for acquisition in this area could be generalized throughout the defense structure, very much along the lines which we have been arguing as well.

The $500 million announced by the Morrison government to be spent over four years to keep Australia's special forces' capabilities at the global leading edge as part of a $3 billion, 20-year program isn't new news in one way—it was announced in the 2016 defence white paper—but it's big news in another.

'Project Greyfin' is a stark recognition of the need to keep up with rapid technological change and to make rolling investments to do so, rather than one-off big-bang spends every 10 or 15 years, as has been common practice for capability investments for some decades now.

What's different about Project Greyfin is that (despite its name) it's a long-term program, not the normal big defence project. That may sound like language games, but it's about a different concept for investment. It's an approach that's based on the understanding that specifying in 2019 what special forces will need in the 2030s is probably a mug's game. The rate of change in what's possible—and therefore in what's needed—is enormous.

A few examples show what this looks like. We know about trends in defence innovation, but the specifics aren't clear enough to enable Defence to buy or sign a contract right now. By 2030, new materials for vehicles and clothing may allow masking of the heat signatures and other signals that can be spotted and used to target people and machines. New battery types will allow energy storage to power advanced electronics carried by soldiers and various autonomous vehicles that help special forces operate remotely for long periods of time.

Advances in smart munitions—what we used to think of as bullets—will probably look more like guided rounds that are almost as intelligent as current missiles, with seekers and sensors that allow them to find and guide themselves to targets.

And autonomous drones will proliferate, as will the kinds of things they can do to help special forces remain undetected, collect the intelligence they need, and protect themselves from adversaries.

So, we know that designing the detail now about what special forces will need to have in the 2030s won't work. Encouragingly, though, the government's path is taking this into account. The plan seems to be to let special forces folk do a mix of buying now what is available and at the leading edge of fielded capability and also investing in concept and demonstrator activities that help define what will be acquired in the next four-year phase of Greyfin. That should allow both Defence and industry to develop long-term partnerships and development programs with the confidence that the money will be there when the right equipment is mature.

Special forces are probably the most trusted to deliver value for money on investment across Australia's national security community. They can be expected to experiment wisely and for clear operational purposes.

Nevertheless, the broad government procurement system that even the special forces can't escape probably needs to change to allow the real promise of this new approach to work. A total of $500 million over four years is still a significant amount of taxpayer money, so there'll be a temptation in places like the Department of Finance—and even among Defence's internal finance and procurement staff—to inflict the same heavy-handed procurement processes on Greyfin as on much larger major systems programs like frigates and submarines.

That would be a mistake, because it would work against the entire purpose of this new type of investment program—which is about being able to match our military's speed of adoption of technology to the speed of change in the technological environment.

The goal for those overseeing Greyfin needs to be to show how they can accommodate this new approach within the Commonwealth's broad procurement principles and keep it moving at speed.

Some project management risk needs to be accepted in exchange for reducing the risk that our militaries—or our intelligence agencies—will be outmatched by better equipped adversaries whose governments let them experiment and adopt the successful results. It's about realising that minimising the project management risk just shifts the risk to the capability outcomes—and so to our soldiers in the field.

At the same time, special forces are in good company in needing to find a way to introduce new technologies rapidly and continually. The rest of Australia's national security community—whether the big Defence organisation, Home Affairs, or Australia's intelligence agencies—face this same defining problem.

Even the largest, slowest-moving capability programs—like the future submarine—need better ways of balancing capability risk with project risk in this new environment. It's critical to spread the more agile Greyfin approach to them, and to have central agencies and Commonwealth procurement staff help with this by rethinking their processes to accommodate this new approach.

That will take a new type of oversight and project management that is not designed around engineering-age mindsets and processes. It may even take setting up a separate capability development process, with its own purpose-built oversight arrangements, rather than trying to make the existing one—designed to deal with big platform acquisitions during times of relatively stable technology—run faster.

Because the special forces are, well, special they have often been allowed to bypass slower project development and acquisition routes because the government wants to make sure they're ready to be deployed at very short notice and have the best equipment on hand. Some of that sense of urgency should now be applied to how Defence, and Australia's broader national security community, updates its kit with new technology if we are to retain capability advantages.

Special forces have often been the innovation leaders for the broader Australian Army. Now they need to be pathfinders for Australia's national security community in another way—establishing how procurement principles and practice can change to shift the risk approach from one concentrated on reducing project risks to one that's more focused on limiting capability risks by embracing more rapid technological change.

Our future special forces soldiers and future members of every national security agency will benefit, as will Australia's security.

21st Century Authoritarian Powers and the Reshaping of Warfare in the Contest for Global Leadership

07/30/2019
By Robbin Laird

In their assessment of the challenges facing UK defense policy and the rebuilding of UK forces, Michael Ashcroft and Isabel Oakeshoot underscored the nature of the Russian challenge to the UK and to European defense posed by the 21st century political and military capabilities being used by Russia to reshape the European and global environment to their advantage.

"In this very modern approach to warfare, everything is a potential weapon, from the media to energy supplies.

"Culture and language; money as investment; bribes; organized crime; deception and so-called psyops (psychological operations); subversion; dirty tricks; espionage: all are marshaled to the cause of undermining liberal democracy." [1]

They are referring to the use by Putin's Russia of a highly organized political and hybrid warfare approach, which is backed up the modernization of relevant conventional forces.

As the authors put it clearly:

"Of course, hard power is not the obvious or only answer to hybrid war.

"It is no use pointing a gun at computer viruses, Facebook or Twitter.

"But without hard power, hybrid can swiftly become conventional – as the Ukrainians have found – and a country unable to mount a credible military response to a co-ordinated and comprehensive hybrid attack is a country unable to defend itself."[2]

In our work on the strategic shift from the past twenty years of military operations in the Middle East to being able to operate and win in full spectrum crisis management settings, mastering political warfare and shaping ways to prevail in hybrid warfare are key tool sets for the liberal democracies.

What is problematical is whether the strategic elites in the liberal democracies and notably their political masters are ready for the shift in the global game in which peer competitors master political and hybrid warfare backed by relevant conventional military forces.

The non-liberal powers are clearly leveraging new military capabilities to support their global diplomacy to try to get outcomes and advantages that enhance their position and interests.

The systems they are building and deploying are clearly recognized by the Western militaries as requiring a response; less recognized is how the spectrum of conflict is shifting in terms of using higher end capabilities for normal diplomatic gains.

It is about hard power underwriting other warfighting tool sets, notably those associated with political warfare, which underwrites hybrid warfare, which in turn is empowered by escalation capabilities residing in a robust conventional military force structure, which in turn is underwritten by modern nuclear weapons as well.

This is quite different from the classic distinction made between hard and soft power, and is really about thinking through how political warfare tools and hybrid warfare concepts of operations are key parts of full spectrum crisis management.

In a recent speech by the Chief of the Defence Force (Australia), General Angus Campbell highlighted how he saw warfare in 2025.

He noted that the main challenges are already here, so we do not need to wait until 2025 to focus on the nature of the challenge and to think through the question of relevant capabilities.

In that speech, General Campbell highlighted Russian thinking and actions as highlighting the new nature of warfare and deterrence facing the liberal democracies.

Russia's actions are a case in point.

In 2013, General Valery Gerasimov — the Chief of the General Staff of the Russian Armed Forces — outlined a new doctrine with six phases of conflict.

Essentially, he sees conflict as opening with a covert phase — intensive information and political operations — which then continues to and combines with other phases, including economic and escalating non-kinetic measures.

In most situations, Western countries take few, if any, actions during the first two phases.

And it's typically only at the end of phase three — just before crisis point — that diplomatic and economic steps are taken.

By then, to the Russians, the war is half fought — and, perhaps, already won.38

Political warfare is triumphant.

Now, some have argued that this doctrine is simply a well-articulated version of what the Russians have always done and, certainly, the actions of the former Soviet Union back that up.

But how it is practised —the nature and intensity of the actions — are orders of magnitude greater in scale, reach and sophistication.

The Ukraine Crisis in 2014 was an example of this. We saw masked Russian Special forces — the "little green men" — and Russian-backed para- military groups seize buildings and infrastructure in Crimea.

This "masked warfare" was a nod to Soviet-style disruption. But it was also accompanied by computer attacks, manipulation of social and mass media, collapse of the national financial system, and other deceptive operations.

Together, they paralysed the Ukrainian government, and the international community. No effective action could be taken.

On this, it's worth pointing out a recent analysis by Hasan Suzen, from Beyond the Horizon International Strategic Studies Group. Among Russia's overt direct and indirect actions, Suzen lists energy blackmail, economic manipulation and white propaganda, and military build-up in various eastern locations.

Russia's covert direct and indirect actions are no less broad.

There's black propaganda and diplomatic support to oppositions, cyber and troll attacks, mobilising locals and arming civilians, exporting corruption, and employing Trojan horses.

Meanwhile, the only covert action in the NATO column was cyber defence — and back then it was accompanied by a question mark.

Instead, NATO and EU counteractions have, according to Suzen, been "based primarily on public diplomacy, strategic communication, and limited economic sanctions and assurance measures."

It's this environment that has some suggesting that we need to "reconceptualise [our] understanding of conflict."

The character of war — they claim — is clearly changing.

In this world view:

- *War is likely to be less about open conflict and the use of kinetic force,*
- *It will be about undermining adversaries, with no domain off limits, and*
- *War is now … it will always be political warfare … and it will occasionally become violent.*

This is challenging for many of us.

As I've said, we believe — rightly — that peace should always be the natural state.

We distinguish sharply between peace and war….

It's important that here — at a conference like this — these ideas are discussed and reflected upon.

Because they raise important questions that many of you need to consider and, eventually, we all need to answer.

Questions such as:

Are we, indeed, too rigid in our conception of war?

What parts of our state deter, or defend us from, modern forms of political warfare?

Can modern, open democracies conduct political warfare?

Will the brinkmanship of political warfare inevitably drive us to violent conflict?

Or, perversely, is it actually an element of state-on-state competition that helps keep us out of violent conflict?

Are we, as some scholars suggest, ignorant and naive? Ignorant of our history, naive of our competitors?

I encourage you to think deeply on these questions. Because to return to Trotsky, while, right now and in the war of 2025, you may not be interested in political warfare … political warfare is most certainly interested in you.[3]

But what exactly is the relationship among political warfare, hybrid warfare and conventional capabilities in the Russian approach to reasserting its position within Europe and beyond?

Or in the case of China, the use of political and hybrid warfare to ensure that its global power grows as the "gray zone" operations are expanded with the liberal democracies only able to respond by using high end kinetic tools or most likely doing nothing at all.

A recent report authored by Ross Babbage with a number of case studies provided by his contributors of how the Chinese and Russians have shaped a 21st century authoritarian approach to escalation dominance provides solid analysis and conclusions about the nature of the challenge and ways this challenge can be met.

These reports were published by CSBA and a briefing was held on July 23, 2019 to release the two reports and their two appendices (containing the case studies).

Or put in blunt terms, simply building up a hard power military capability to deal with the strategic shift from the Middle East land wars to dealing with peer competitors is a necessary but not sufficient condition for 21st century escalation dominance or deterrence.

Babbage's argument highlights how political warfare prepares the ground for hybrid warfare, where kinetic means are blended in with the initiatives prepared by political warfare.

And both are underwritten by background relevant conventional warfare capabilities.

In effect, Babbage is suggesting that 21st century authoritarian states are taking on liberal democracies at the level of their core values and are challenging them to protect their interests.

What Babbage argues is that unless the liberal democracies sort through ways to engage at the level of political warfare and to both shape denial and proactive strategies to do so, liberal democracies will respond to the 21st century authoritarians with higher end conventional force when it might be too late or the tools not the ones most effective to head off or deal with the challenge.

Without political warfare tools linked in fundamental ways to engage in hybrid war, the liberal democracies will not only be disadvantaged but will see their global influence reside as well.

In other words, the liberal democracies are in a global contest, not of their own making.

And to engage in this global contest, the war of values is central – Remember Mr. Gorbachev tear down this wall – but expressed in whole of government and a comprehensive coalition effort for the liberal democracies.

Some Westerners might be tempted to define political warfare to encompass only diplomatic persuasion, influence operations, intimidation, and some types of subversion.

This narrow definition would see political warfare standing alongside economic warfare, cyber warfare, and many other forms of coercion short of conventional military combat.

This report takes another path by drawing on Clausewitzian logic to argue that political warfare encompasses the use of a very wide range of national and international instruments in efforts to persuade, intimidate, coerce, undermine, and weaken opponents, and hence achieve desired political goals.

This approach mirrors that of the Russian and Chinese regimes, both of which marshal and maneuver numerous instruments in coordinated political warfare operations in order to win political advances. The only major activity excluded from this conception of political warfare is the use of kinetic force.

In consequence, political warfare is defined in this report as "diverse operations to influence, persuade, and coerce nation states, organizations, and individuals to operate in accord with one's strategic interests without employing kinetic force." The techniques range widely from more political measures such as assertive diplomacy, intense media campaigns, economic sanctions, subversion, corruption, and the theft of intellectual property to more strategic measures such as exerting coercive pressure through the deployment of powerful paramilitary and military forces.

Political warfare is used extensively by the regimes in Beijing and Moscow to shape the strategic space, but it can also be used to prepare targeted environments for more substantial unconventional and conventional kinetic military operations.

Political warfare is clearly distinguished from so-called hybrid warfare and other forms of conflict that inhabit the gray area between Western conceptions of "peace" and "conventionalwar." Whereas political warfare employs a range of instruments, it does not involve combat by military or para-military forces.

Hybrid warfare operations, by contrast, involve the use of or commitment to use military or paramilitary forces in kinetic combat operations or a strategic commitment to engage in combat if deploying forces are seriously challenged.

In short, political warfare involves coercive operations without kinetic force, whereas hybrid warfare involves coercive operations with the actual or authorized use of kinetic force. In some situations, political warfare may be employed for some time prior to and following a temporary escalatory phase of kinetic hybrid warfare, as was the case with the Crimea crisis in 2013–2015.

Babbage sees political warfare as a very dynamic capability in which the whole of society rather than simply the whole of government addresses ways to achieve the national interest through comprehensive political engagement, not simply diplomatic engagement, to provide a shaping function for the achievement of national goals by whatever means might prove necessary down the road.

In effect, what his reports underscore is a dynamic process along the following lines:

Babbage highlights a number of capabilities, which the liberal democracies need to acquire and shape to be able to conduct political warfare and hybrid warfare.

At the heart of his recommendations are the need to craft political warfare capabilities as core competencies in which organizational redesign within liberal democratic states creates conditions in which personnel are trained to both understand and to prepare for political conflict and in which key coalition partners work together towards reshaping a global political agenda within which what the 21st century authoritarian states are about is the focus of attention.

Rather than assuming the unending rise of democracy in the world, liberal democracies need to represent that the future is not necessarily on their side.

A key element among his recommendations is to shape the human capital needed to engage in such activity.

But this will be especially difficult given the conflicts within the "United" States, the "United" Kingdom or the European "Union."

In effect, what is missing are civil capabilities to lead out in the full spectrum of crisis management within which capabilities exist to engage prior to gray zone encounters or prior to being subjected to the salami slicing authoritarian approach to hybrid warfare.

In other words, although Babbage's study is about political warfare, it really is about the nature of the challenge which the 21st century authoritarians pose to the liberal democracies.

We are witnessing a global engagement in which conflict is framed and driven by the authoritarian powers until the point is reached where liberal democracies admit that their global sphere of influence is shrinking and that the world becomes safe for authoritarianism.

As he notes in his report:

"Deterring, confronting, and defeating authoritarian state political warfare campaigns is critically important for the West.

"Failing to properly address this challenge risks a further shift in the global balance of power, the loss of additional strategic space, a serious weakening of allies and international partners, a demoralization of the democratic world, and an emboldening of authoritarian regimes to launch new and more threatening campaigns. Ignoring the political warfare domain could mean that in a future crisis U.S. and allied forces would have little choice to arrive late to a battlefield that has been politically prepared by the West's opponents."

The Australian and UK Defense Transformation Approaches

07/27/2019
By Robbin Laird, Research Fellow, The Williams Foundation, Canberra, Australia

The UK and Australia are both in the throes of significant force transformation.

But unlike earlier periods of history, the Australians are not simply the students of UK military development.

They are crafting their own path, one which has a significant impact on the UK as well.

The two differ in key ways, as the UK relies more on a legacy air force and the role of its national defense industry is much more significant in shaping the options open to the RAF and to the Royal Navy

The Australian Approach

The Australians have taken a much more comprehensive approach to transformation, one built around what they refer to as building a fifth-generation force, than the Brits who are relying more significantly on a modernized legacy force, the Typhoon.

But both the Australians and the UK have identified significantly enhanced integration of their air forces with their navies as a key way ahead, and the role of the F-35 is a key part of shaping such integration.

At the most recent Fighter Conference held in Berlin in November 2018, Air Marshal (Retired) Brown laid out the path of airpower transformation which has been the keystone of the process of change for the Australian Defence Force.

In the case of the Royal Australian Air Force (RAAF) and the Australian Defence Force (ADF), the acquisition of the F-35 has been seen as not providing a replacement aircraft but providing a trigger to broader force transformation, with a future is now mentality.

Brown provided an overview of how the ADF is looking at the crafting of a fifth gen force or a fifth generation enabled force and some of the highlights from his presentation underscore how the Aussies are looking at this dynamic of change.

For the last 5 – 10 years in Australia we have been determining the characteristics of combat operations in the post 2025 era.

The RAAF we have been very fortunate to have been well supported and funded by government.

In the RAAF it's been nice to say that most pieces of the future combat fleet are in place or that the funding has been secured. It will be a F-35's supplemented by Super Hornets and they will well be supported by systems like Wedgetail, Growler, KC-30s, and air defence systems like Vigilaire and over-the-horizon radar, and I even think the Maritime Patrol Fleets, P-8s and Tritons, will all contribute to the air combat system…..

We have concluded in Australia, that air operations will be characterized by the capability to connect air, ground and maritime forces.

In the ADF we have actually called that 5th Generation enabled CONOPs. The ultimate goal is that the combat and strike power of a single aircraft is not defined by what it carries itself but by its ability to direct and rely upon its network partners.

Even to the point of using other platforms weapons.

We have been in the process of developing 5th Gen CONOPS across the ADF informed by the forcing function of 5thGen aircraft and the associated air, maritime and land systems.

In a 5thGen force, C2 systems will be enabled by flying ISR and C2 system, the combination of sensors and Stealth will enable aircraft like the JSF to operate in an Adversaries airspace and allow aircraft to serve as nodes in a dispersed and distributed air battle management system….

One of the things that the critics of the F-35 don't get is, in all the studies of air combat, the amazing statistic is that 5% of the pilots have taken 95% of the kills.

Now, when you do the analysis of those 95% of the kills and what makes the difference with those 5% of pilots, it was their superior situational awareness in all the situations that they faced that made the difference.

And the F-35 gives you a massive leap in situational awareness, and that's the key factor in 5th generation capability. It's the integrated fused picture.

It's worth briefly working through the value chain of the F-35. I'll start in operations and I'll work my way towards fundamental inputs to capability, and we'll just have a bit of a look at some areas that we have been working on.

Over the last 10 years I almost get a hoarse voice trying to explain to people why 5th generation capabilities are important in the F-35 and why speed and maneuverability don't necessarily have the same impact that they previously had.

What is 5th generation?

It's low observability, it's a low infrared signature, it's low electronic emissions, it's an AESA radar, it's the data links associated with that, but the most important thing in my mind that the JSF brings is the fused picture – that situational awareness that it actually brings to the operator.

And your level of situational awareness is a combination of all those things. If you look at the difference between an F-35 and a legacy platform, you don't have to manipulate the sensors.

You've got a fused picture on the display, you don't have to have as much communications between the flights; the pilots fundamentally got a lot more brain space to actually look at the tactical situation and go forward.

Now what are the implications for Air Battle Management?

We're already implemented some of this with the rest of the ADF.

We're successfully fusing the picture between Wedgetail and the Navy Destroyers and Frigates. One of the great decisions we made with Wedgetail was that on each one of the crews there's a Navy Air Intercept Controller.

We've had Mission Commander who's are Navy Lieutenant Commanders – and our recent experience on exercises and in Iraq and Syria with the Super Hornet and Wedgetail have really shown the power of that integration.

When you look at the F-35 be able to find, fix, track, target, engage and assess. That's the cycle. The JSF can do that all by itself, but it is far more powerful if you look at the find and fix and you use a lot of the systems we've got from Vigilare to JORN to Space Based Systems, to maybe even the Triton and P-8.

They're all part of that find and fix. And if I was to look at track – Wedgetail, AWD, Growler are all parts of that. The engage – well, that's the job of Super Hornet, JSF and Growler, and what we aspire to is to have, some integrated fire control with the Royal Australian Navy.

That's all well within the realms of possibilities.

The more nodes you've got, the better off it is for the entire system. And what we see is the advantage of the F-35, it does increase the capability of the entire system….

After his presentation, I had a chance to sit down and discuss his presentation and the way ahead for the ADF leveraging the F-35 as a trigger point for change.

In the discussion after his presentation, Air Marshal (Retired) Brown highlighted a number of key points which he believes are central to thinking about the future of airpower.

First, he argued that buying an advanced plane and getting on with it was crucial

"70% of your cost is about maintaining, supporting and modernizing your airplane. Why would you want to do that with a legacy jet when you can buy a fifth gen jet?"

Second, by getting the F-35 into service, the ADF could then look to add what is missing to that jet or to the air system and then look to shed legacy assets.

A case in point is support to the Australian Navy.

"When we have an effective maritime strike weapon onboard the F-35, we will look to retire our Super Hornets, with the exception of the Growler. Flying the Super Hornet has prepared us for F-35 in some key ways, notably in terms of the security requirements necessary to manage data generated by the aircraft."

Third, the 5thgen approach as characterized by Brown is a shift to working the interconnected force in a different way.

He provided an example with regard to CEC and the Air Warfare destroyer.

"Our Navy has just started deploying our air warfare destroyers but we have already demonstrated CEC interoperability with the US Navy.

"We will put CEC on our Wedgetails to be able to provide weapons quality tracks to our ships, hence enhancing significantly the range for the strike capability of our fleet.

"And as we go forward we will find ways to directly link our F-35s with the fleet as well.

“Our Navy and Army are now focused on fifth generation communciaitons with their platforms as well, which is why having the F-35 in the force can drive change in the strategic direction in which you want to go.

“You fly a legacy asset you cannot drive the kind of change the ADF needs in the near to mid-term.

“It is not an abstract, long-range aspiration or goal.

“As the head of the RAF Lightning force, noted, the future is now.”

Fourth, the change in the overall structure of the ADF and the architecture to guide its development is being driven by a fifth-generation mentality and approach as well.

“Our architecture is not up to speed with what the F-35 can provide.

“We have a great airplane with enormous capability which will continue to evolve but a lot of the supporting infrastructure we’ve got is not designed to get the best out of that airplane.

“And I think that our focus needs to be on getting the rest of the system up to speed.”

Finally, fifth generation warfare training requires a paradigm shift.

“If you want an integrated system, you’ve got to train with an integrated system.

“You can exploit a lot of the capabilities that the F-35 brings to the fight in the live environment but the only place you can do it as a force is in the simulated environment.

“We need to develop fifth gen warfare networked simulation capabilities.

“And you just can’t afford for the simulated environment to be behind the airplane.

“It’s got to be updated at the same rate that the aero plane is being updated.

A key part of how the RAAF has generated a broader perspective on transformation has been supporting the reshaping of defense perspectives, and that has been done in part through what they have named Plan Jericho.

In my 2015 report for the Williams Foundation, the Plan Jericho approach was highlighted. This report looked at the RAAF approach to the transformation of jointness as they prepare to introduce the F-35 into the force.

The Aussies have a modern air fleet, with Super Hornets, KC-30A tankers, the Wedgetail E-7 battle management system Heron UAVs, and C-17s, recently in service and are seeing Growlers, the Triton UAV, the P-8 and the F-35 coming into the fleet shortly.

But no platform fights alone, and the Aussies are looking at how to rework their forces to shape a more interactive and enabled force. The F-35 is seen as not a replacement aircraft, but one which takes the integrated enablement of the force to the next level, but that will not happen without the transformation of the RAAF and with it of the ADF.

The Williams Foundation of Canberra, Australia held a one-day seminar/workshop on Plan Jericho on 6 August 2015, which featured presentations from the RAAF and industry as well as from the USAF looking at the way ahead.

Former Air Vice Marshal John Blackburn, one of the key stalwarts of the Plan Jericho effort, introduced the session. Blackburn hammered home really the most significant and challenging point – it is about design driven innovation, not simply R and D, technology or mini-experiments driven.

Rather than piecemeal, bits and pieces of applications of technologies to platform modernization or patchwork modernization, Plan Jericho aimed at a different goal – design driven innovation.

Blackburn contrasted the network-centric efforts of the 1990s with what Plan Jericho had in mind. In the network centric effort, stove pipes were linked; it was about filling gaps, linking disparate systems, and getting as much connectivity as possible – with the basic operational mantra of the diverse platform drivers largely unchanged, namely to drive ahead with the diverse cultures, but better connected.

In contrast, Plan Jericho looked to design innovation and a way ahead, where connectivity could be built-in from the design to the delivery of capability, and whereby the operators would look at the effect which the force could deliver, not just their own platform set.

The UK Approach

The RAF does not yet have a Plan Jericho but with the coming IOC of the carrier, perhaps that is in the works as a way to look more comprehensively at the transformation path facing the UK forces.

But the RAF is undergoing a fundamental change, one which might be characterized as a triple transition.

The first transition is from the Tornado to Typhoon.

The second is the transition is to a fifth generation enabled air combat force.

The third transition is the deployment of F-35s aboard the new Queen Elizabeth class carriers and shaping their operational integration with land-based Typhoons into an air-sea-land combat package.

For the Brits, their weapons complex strategy which highlights a central role for the weapons company MBDA, as a means of ensuring weapons sovereignty is a key part of the triple transition.

The weapons revolution is being set into play enabling the capability to shape an integrated offensive-defensive strike force. And at the heart of this transition are MBDA weapons being acquired through the UK's Team Complex Weapons approach.

This is an approach which expands the partnership between industry and government whereby the customer can work more closely with industry to shape and drive the needs customized to its force development.

In this case, the customer needs to enable its high-end legacy aircraft with an integrated approach to fifth generation enablement.

The first transition is about the Tornado going out of service with the Typhoon subsuming many of its core missions. And this is being done by modifications to the Typhoon in its cockpit and software and the incorporation of key Tornado weapons, such as Storm Shadow and Brimstone.

This overall transition is referred to by the UK as the Centurion program which is designed to transition Tornado capabilities to the Typhoon which have been recently completed.

The incorporation of Tornado weapons is part of the Phases 2 and 3 Enhancement packages for Typhoon and also includes the introduction of a new missile the Meteor that can be considered to be a new capability being added to the force.

The Meteor adds range and lethality to the Typhoon in terms of its ability to carry out its air superiority missions.

While the incorporation of the Tornado weapons provides for an expanded Typhoon role, the addition of Meteor represents the next step in the weapons revolution enabled by fifth generation aircraft.

The Meteor's longer range means that forward targeting by F-35s with data sent to Typhoons enables the air combat force to significantly enhance its overall capability to deliver longer range strikes against adversary air forces.

It shifts the consideration from the role Meteor can play on Eurofighter organically, to one whereby Eurofighter is providing strike for the penetrating air combat force enabled by the F-35.

This has already been seen at Red Flags.

Discussions with the Aussies, Brits and Americans involved in this year's high-end exercises emphasized that Typhoon's strike weapons were enabled by targeting data from F-35s operating deeper in the battlespace.

When Meteor is added to Typhoon this means that Typhoons can fire its weapons load against targets identified by the F-35 force at a greater distance because of Meteor with network enabled kill capabilities.

This is the template for weapons to come.

It is about weapons in the force being empowered by forward targeting and decision making by the F-35 which in turn then highlights the importance of high weapons load outs which the Typhoon is designed for.

The Meteor then provides a strike means of much greater range than current US shorter range strike weapons.

In other words, the RAF is preparing itself with its longer-range strike weapons, Storm Shadow and Meteor, to be a core weapons carrier for an F-35 enabled combat force.

And the force is being designed along these lines.

There are other key advantages of the approach as well.

With various European legacy air forces buying Meteor and Storm Shadow, stockpiling of weapons can be enabled to reduce costs and to enhance capabilities at the same time.

With Meteor to fly on multiple European air frames, development costs can be reduced, modernization enhanced and logistical reach enhanced.

This also is a template upon which forces can build.

Both templates – off-boarding of strike and weapons stockpiling across air frames – are key to the next phase of the weapons revolution.

The first will be about building out capabilities from a force which no longer is focused on what the single combat aircraft or its close proximity wing men can deliver but upon what the combat force can deliver enabled by F-35 forward based decision making and target identification.

A glimpse of this future was seen in Red Flag 17-1 one where one RAF pilot asked "Where are our SEAD weapons for Typhoon?

The F-35 identified clearly the targets; but why is it dropping weapons in the SEAD mission?

Why not pass that on to us and we can then fire the long range SEAD weapons against targets identified, selected and ordered up by the F-35s?"

Good question and will be answered by the next phase of the weapons revolution.

Another part of this evolving template was seen in tests earlier this year whereby MADL data (the video data stream which the F-35s use to transfer machine to machine data) was passed to Typhoons.

This development opens up the possibilities of transferring selective targeting video packages to other elements of the combat force.

And this could well see the transfer of another of the Tornado experiences, namely, the role of the weapons officer.

The Tornado has continued to fly for so long with effectiveness largely because of the combination of a weapons officer on board and the arrival of dual seeker Brimstone.

This strike package is a bus containing weapons which are independently directed to their target and managed by the weapons officer onboard Tornado.

Spear 3, a new MBDA weapon, will allow the single cockpit aircraft to use automation to replicate some of this capability.

But the role of the weapons officer could well be transitioned from a platform like Tornado to the combat force itself.

There is no reason that the weapons officer could not be flying on the Wedgetail, or A400M or another aircraft whereby the distributed strike force has embedded in it lower cost weapons which are guided to their targets by a weapons manager supporting the fifth generation enabled strike force.

And this will clearly be the case as the capabilities of the naval surface fleet flow into the air combat force as well.

Clearly, there is no reason weapons from a surface ship could not become part of the strike arsenal of an F-35 enabled air combat force. The UK is in a good position to do this as their F-35 force will be flown by an integrated team of Air Force and Navy pilots and enabling a carrier strike force.

In other words, the way the RAF is approaching Typhoon-F-35 integration prioritizes the weapons revolution and network enablement.

But it is really the introduction of the new carrier flying F-35Bs which really opens the transformation aperture for RAF and Royal Navy integration.

As Group Captain Ian Townsend, a key officer involved in working the F-35 introduction into service for the RAF and now the RAF Marham Base Commander and currently the F-35 force commander, put it with regard to the Queen Elizabeth and F-35 transition:

As an airman, I like anything that enhances my ability to deliver air power, and the ship certainly does that.

The ship has been tailor-made from first principles to deliver F-35 operational output.

The ship is part of the F35 air system.

I think this is the key change to where we were in Joint Force Harrier where the ship was really just a delivery vehicle.

The ship was just a runway.

The Queen Elizabeth class aircraft carriers are much more than that.

They are right at the heart of the air system's capability fundamentally enabling and supporting what the air vehicle is doing three, or four, or five hundred miles away from the ship.

And that wasn't quite the same in Joint Force Harrier with the Invincible Class CVS carriers.

So it's very different for us.

Everyone involved in embarked F-35 operations needs to understand what the air vehicle is going off to do because everybody on the ship is much closer to that end delivery of effect.

This is a very different concept of operations from 15 years ago.

The new Queen Elizabeth class carrier is the largest warship ever built in the United Kingdom. While most of the focus of the press coverage has been on the process of building the carrier and now its sea trials, the carrier is coming at a very interesting point in British history.

There is a clear need to shape a post-Brexit defense policy, and having a significant epicenter of national sovereignty able to operate throughout the region and beyond

But it is also at the heart of integrating UK forces to deliver UK capabilities within the integrated battlespace, both in terms of an integrated carrier strike force as well as in terms of shaping the various war fighting systems which will come together onboard the ship.

It is however at the heart of shaping 21st century interoperability.

There is the interoperability being worked with the US Navy, as evidenced in the Saxon Warrior exercise off of Scotland.

There is the interoperability being worked as the USMC will operate its F-35Bs off of the ship. This will require an ability for the ship to operate US weapons onboard as well as to accommodate USMC maintainers as well with their specific national maintenance approaches.

The ship is an F-35 carrier and will work its interoperability with other F-35s as well in the region, notably with the Dutch, the Norwegians, the Danes, the Italians, the Israelis, the US and perhaps others Europeans as well.

In other words, the carrier is at the vortex of a turn in British history, and a key element of shaping 21st century force integration and interoperability.

This triple transition requires significant RAF and Royal Navy collaboration to ensure effective use of the integrated force in full spectrum crisis management.

And this is clearly a work in progress one informed in part by the relationship the UK is evolving with Australia, particularly in anticipation of the post-Brexit environment.

Australian Sovereignty and Maritime Security: RADM Goddard Discusses the Role of the Maritime Border Command

05/29/2019

By Robbin Laird

During my recent stay in Australia in April 2019, I had the chance to meet with RADM Lee Goddard, Commander of the Maritime Border Command. His command oversees the operational side of ensuring maritime security for Australia.

Because Australia has no land borders, dealing with challenges like migration, drug smuggling and a variety of gray zone threats, the Maritime Border Command is a major player in operations to ensure Australian sovereignty on its borders.

It does so by a whole of government approach, which includes the ability to use defense assets as a key part of its operational approach. It really is designed to provide for integrated operations to try to optimize Australian security, in a very challenging environment.

The challenge simply starts with how extensive the sea borders are around Australia. We focused in our meeting on the Northern waters and the challenges associated with those waters. But the broader picture is even more daunting in terms of surveillance and determining paths of action.

The reach North to New Guinea is where Australia almost reaches the land of a neighboring country. To the North is a key SLOC where significant trade comes into Australia, and to the West are the Malaccan straits.

We discussed challenges associated with the Lombok Strait, the strait connecting the Java Sea to the Indian Ocean, and is located between the islands of Bali and Lombok in Indonesia. The Gili Islands are on the Lombok side.

According to Wikipedia:

Its narrowest point is at its southern opening, with a width of about 20 km (12 miles) between the islands of Lombok and Nusa Penida, in the middle of the strait. At the northern opening, it is 40 km (25 miles) across. Its total length is about 60 km (37 miles). Because it is 250 m (820 feet) deep[1] — much deeper than the Strait of Malacca — ships that draw too much water to pass through Malacca (so-called "post Malaccamax" vessels) often use the Lombok Strait, instead.

The Lombok Strait is notable as one of the main passages for the Indonesian Throughflow that exchanges water between the Indian Ocean and the Pacific Ocean.

The importance of this strait and the other straits coming into Australian waters is determined both the need to protect Australian territory and the security and safety of its maritime trade.

To provide for Australian maritime security, the focus has been upon three strategic directions.

First, the Australian government has a very clear set of regulations and laws governing immigration and approaches to dealing with security at sea.

As Rear Admiral Goddard put it: "I can act on suspicion; which allows us to be proactive in dealing with threats."

Second, the force is organized as an integrated one, so that new capabilities coming into the ADF, like the P-8, Triton, Offshore Patrol Vessels and new frigates and other Australian Border Force assets can be leveraged as necessary for operations.

Operation Resolute is a combined force approach to providing for perimeter defense and security of Australia.

As it was put on the Royal Australian Navy website:

Operation RESOLUTE is the ADF's contribution to the Whole-of-Government effort to protect Australia's borders and offshore maritime interests.

It is the only ADF operation that currently defends the Australia homeland and its assets.

The Operation RESOLUTE Area of Operations covers approximately 10 per cent of the world's surface and includes Australia's Exclusive Economic Zone which extends up to 200nm around the mainland. Christmas, Cocos, Keeling, Norfolk, Heard, Macquarie and Lord Howe Islands also fall within the Operation RESOLUTE boundaries.

Commander Maritime Border Command (MBC) is the overarching operational authority that coordinates and controls both Defence and Australian Border Force assets from his headquarters in Canberra.

Maritime Border Command is the multi-agency taskforce which utilises assets and personnel from both the Australian Border Force (ABF) and the Australian Defence Force (ADF) to safeguard Australia's maritime jurisdiction. Its maritime surveillance and response activities are commanded and controlled from the Australian Maritime Border Operations Centre in Canberra.

We discussed some of the new technologies which allow for greater SA over the maritime zones, but of course the challenge is to turn SA into ways to influence actors in the maritime zone.

"It does no good just to know something is happening; how do we observe but let the bad guys know we see them and can deal with them?"

Third, obviously IT and C2 are key elements of bringing the force to bear on the threats.

But doing so is a significant challenge, but one where new technologies and new capabilities to leverage those capabilities for decision making clearly are helping.

This is a work in progress where the Commander works with several government departments as well as industry to deliver more effective intelligence to determine where the key threats are to be found and being able to deploy assets to that threat.

Rear Admiral Goddard underscored that developments in the IT and decision tools area were already helping and would be of enhanced performance in the period ahead.

"With some of the new AI tools we will be able to process information more rapidly and turn SA into better decision making."

Fourth, obviously this means working closely with partners in the region, such as Malaysian, Indonesia and the Philippines and shaping ways to operate more effectively with one another.

There are several examples of Australia expanding its working relationships with neighbors, which means as well finding ways to share information and to train together for common actions.

A challenge being posed by the Navies in the region is that they are clearly are generating what have been called gray zone threats.

This is why the Command is really part of more broadly understand security capability within an overall national crisis management effort.

And as the threats change or challenges change, the capabilities for the Command working with the ADF will need to change as well.

The USCG Experience and Parallel

My own observations with regard to the challenges for the way ahead come from working with the USCG.

As the gray zone challenges become more dominant in the maritime security environment, a key challenge is getting the military and civilian sides of how to deal with the challenge.

It becomes less a law enforcement function and more one that is a crisis management challenge where various types of authorities need to be exercised.

And this has certainly been a challenge for the US in which we can use military force or do law enforcement but we are not as good as we need to be in terms of being organized for what falls in between.

And that is precisely the area that is growing in strategic importance and significance

The structure which the Australians have built with the Maritime Border Command can provide a good focal point for sorting out good ways to shape 21st century crisis management capabilities; but it too will be a challenge for them as well.

An illustration of who the interagency process works in Australia to deliver maritime security was provided in this February 27, 2018 article on joint patrol operations off of the East Coast of Australia.

Commander MBC Rear Admiral Peter Laver said the patrol provided an opportunity to gather intelligence and work closely with our partners, stakeholders and the broader community to inform them about what suspicious activity to look out for and how to report it.

"Local knowledge is a great source and is perfectly placed to recognise signs of illegal fishing, prohibited imports and other criminal attempts to breach our borders," Rear Admiral Laver said.

"Our officers spend weeks at a time at sea, quite often out of view of the general public, but patrols like this allow us to demonstrate that no matter where you are around the Australian coast, we are never far away."

ADV Cape Fourcroy Commanding Officer Lieutenant Ken Brown said the multi-agency patrol was a great way to foster collaboration and his crew was ready to tackle any civil maritime security threat.

"The opportunity to share our intelligence and operational expertise is invaluable to our work and increases Australia's capability to disrupt illegal activity in our waters, whether it be foreign fishing, drug smuggling or any other civil maritime security threat," Lieutenant Brown said.

"This was a great chance to showcase what we do and assure the Australian people that we are out on the seas, patrolling and protecting our waters and securing Australia's borders."

AFMA's General Manager of Fisheries Operations, Peter Venslovas, said that collaboration between Australian authorities is paramount to ensuring the future of Australia's marine life.

"AFMA works closely with other government agencies including ABF and the ADF on activities like deploying fisheries officers on joint patrols to further our work in deterring and combatting illegal foreign fishing," Mr Venslovas said.

"Protecting the marine environment from threats of illegal, unreported and unregulated fishing activity is one of our main priorities."

The vessel departed Cairns on 8 February 2018 and has visited ports including Bundaberg, Coffs Harbour, Sydney, and Brisbane.

https://www.afma.gov.au/joint-agency-patrol-targets-east-coast-maritime-threats

Editor's Note: In an interview we did with Rear Admiral Day of the USCG in 2010, he laid out the nature of the situational awareness effort to shaping a successful engagement effort:

SLD: Could you provide us with an overview of C4ISR works in the USCG?

Admiral Day: Let's talk about how C4ISR is used in support of Coast Guard missions. And what changes have occurred—drastic changes—in the last 10 years and the drastic changes that are going to be needed even in the next five. These changes may or may not occur, because they may or may not make the funding threshold. In most cases right now, they are not going to make the funding threshold.

SLD: C4ISR is essential for a modern Coast Guard to function. Although ethereal to many, the glue, which holds the platforms together, is clearly C4ISR. Could you provide a sense of the shift in performance enabled by the new C4ISR systems?

Admiral Day: Let's talk about just the Eastern Pacific drug mission. Let's just use that as an example. In the old days, we literally went down there and bored holes in the water, and if we came across a drug

vessel, it was by sheer luck. It might be on a lookout list, and we might happen to see it. Let's fast-forward now to the 2000s and what we've started being able to do.

By being able to fuse actionable intelligence, and not only that, but intelligence communicated at light speed. So now, we're to the point where we're telling a Cutter to go point A, pick up smuggler B with load C. And we're doing that in real time with delivery of a common operational picture, which has been fused with intelligence. That was unheard of 10 years ago.

SLD: So you're contrasting on the one hand the hunt-and-peck method or the stumble across by chance method, versus having enough information to actually target a problem.

Admiral Day: And not only that, taking information from a wide range of intelligence sources and agencies that we can participate with and bringing it in and fusing it. And leveraging all those tools and being able to process that information to figure out anomalies and actually start doing these interdictions.

SLD: Could you contrast your experiences as a young sailor and a sailor doing the mission now?

Admiral Day: Well, it's a whole different framework. The framework is shaped by most of the fusion of the information which is being done off the Cutter. The Cutter is merely a delivery mechanism for capability; the Cutter is now the point of the spear. It has enabled the networks and all the systems back ashore at our Command Centers and our Intelligence Coordination Centers, whether it'd be from Joint Inter-Agency Task Force (JIATF) South or whether it'd be our own.

This ability to communicate that to them in real time allows to literally send them a common operational picture: the X is already on your radar screen, and you say go to that target.

SLD: So the difference here is that in the first case, you're just throwing a spear out to the ocean.

Admiral Day: And hope you hit something.

SLD: And where you land, hopefully somebody's near the spear. So the way you're thinking is we have this grid over an area, and your platforms are the customers, so to speak, or the enforcers.

Admiral Day: Absolutely. They're the operational element that we are producing information for their mission execution.

SLD: The C4ISR systems are essential to changing the calculus of operations as well as enabling the USCG in its joint role as well?

Admiral Day: Yes. For example, in the eastern Pacific, that's done in JIATF South, which is an interagency task-force, they're doing the lay-down based on the information that they've got.

They're getting the intelligence feeds as well we're getting intelligence feed and feeding into it.

Rear Admiral Lee Goddard

Rear Admiral Lee Goddard was promoted to his current rank and became the Commander Maritime Border Command in February 2019. Prior to this he was seconded as a Branch Head to the Department of Prime Minister and Cabinet.

Lee Goddard joined the Royal Australian Navy (RAN) in 1987 from Melbourne through the Australian Defence Force Academy where he completed his degree studies graduating with a Bachelor of Science in 1989. In his final year he was appointed as the first Naval Academy Cadet Captain and was awarded the RSL Sword of Leadership on graduation. In the following year while completing Seaman Officer training at the RAN College (Jervis Bay) in 1990 he was appointed College Captain and awarded the Queen's Medal.

Throughout his career he has served at sea in Australian, Canadian, Malaysian and US Navy warships, and on operations in the Middle East. He gained his Bridge Watch-keeping Certificate in early 1992 while serving on exchange with the Canadian Navy, in HMCS Yukon based in Victoria, British Colombia. Later in 1993-1995 he served as a Watch/Executive Officer onboard Australia's national tall ship STS Young Endeavour and he has been posted overseas to Malaysia and Bahrain.

In 1996 he completed the RAN Principal Warfare Officer's course where as dux he was awarded both the Sydney-Emden prize and the RAN Sword of Excellence. He was a member of the commissioning crews of the ANZAC Class frigates HMAS Arunta (Warfare Officer) during 1997 – 1999 and HMAS Stuart (Executive Officer) during 2001 – 2003. During 2006-2008 he commanded the ANZAC Class frigate, HMAS Parramatta, and the ship was awarded the Duke of Gloucester Cup in late 2008. Lee Goodard was awarded the Conspicuous Service Cross (CSC), on Australia Day 2007, for service as the commander operations in the maritime component of Joint Operations Command.

Following on from his first sea command in 2008 he was appointed Commander Sea Training.In 2009 he was posted as an inaugural member of the 'New Generation Navy' Team, as the Deputy Director Transformation & Innovation working closely with the Nous Group that reported directly to the Chief of Navy.

He was then selected to attend the US Naval War College in Newport Rhode Island, where he joined the Naval Command College, graduating in June 2010 and was awarded the War College's International Leadership Prize. He was subsequently asked to remain at the War College as an International Fellow, teaching within the Department of Strategy and Policy at the Masters level.

On his return to Australia in early 2011 he was appointed as the Director Military Strategic Commitments at the Australian Defence Headquarters, working within the strategic level of Defence and across Government. He returned to sea in late 2012 to assume command of the upgraded Anzac Class warship HMAS Perth. On promotion to commodore in late 2014 he assumed the role of Commander Surface Forces.

Rear Admiral Goddard was awarded a Master of Arts (International Relations) in 1996, is member of the Australian Naval Institute council and has previously served as councilor with the Australian

Institute of International Affairs. He has contributed to a range of professional and academic journals focused on international affairs and security issues.

China's Maritime Gray Zone Operations

03/26/2019
By Robbin Laird

The book edited by Andrew S. Erickson and Ryan D. Martinson on Chinese maritime operations which they label as operating in the "gray zone" is a first rate piece of work.

The books identifies and discusses in detail "gray zone" operations, namely, operations short of the use of lethal force but empowered by a well worked out chain of maritime power elements up to and including the presence of combat forces.

The goal is to reshape the external environment in ways favorable without the need to engage in kinetic operations. In the hybrid war concept, lethal operations are the supporting not the tip of the spear element to achieve what the state actor is hoping to achieve tactically or strategically.

The book argues that this is a phase short of what the Russians have done which has been labelled hybrid warfare.

But from my point of view both gray zone ops and hybrid war ops are part of a broader strategic reality, namely, the nature of crisis management facing the liberal democracies competing with the authoritarian states in a peer-to-peer competition.

The challenge can be put bluntly — deterrence has been designed on the Western side with large scale engagement of enemy forces in mind.

What if deterrence in this sense is the necessary but not sufficient capability to constrain the actions of the authoritarians?

What if you can deter from full scale war, but by so doing not be able to control what your adversary is doing in terms of expanding his global reach and reshaping the strategic environment to his benefit?

What if you have organized yourself for deterrence but not effective crisis management?

The gray zone concept in my view is subsumed in this broader strategic shift and challenge.

There is also a key question whether gray zone operations is the strategic focus or really a phase on the way to engaging in kinetic operations as part of the way ahead.

What if the US and its key allies are not willing or able to respond and the Chinese expand their appraoch over time?

We can not assume that as Chinese look at the world or read RAND studies that they will not believe that actually striking a US or allied warship might not be a useful part of their evolving appraoch to crisis management.

From this point of view the discussions of the book could be seen as a historic look at a phase of Chinese maritime power and the evolving approach to strategic engagement in the region and beyond.

I would note that the focus in the book is on the US Navy and its responses.

Having worked with the USCG for years, I found the resource neglect of the service and the strategic decision to stick them into the Department of Homeland security as significant strategic failures on the part of the US.

First, the engagement in the Middle East has stolen resources from many security and non-security accounts, among them the USCG.

And then the focus on the return of Great Power politics, although admirable must focus on the nature of who these competitors actually are and how they operate.

How do we constrain Chine, and not just deter it?

Many years ago when I started a series on Pacific defense for the then AOL Defense, now Breaking Defense, I actually started with the significance of the USCG and why they were a foundational element for the kind of "constrainment" as well as deterrent strategy we needed to shape.

That series led eventually to our co-authored book on Pacific strategy which again started with the "constrainment" challenge not just the deterrence one.

What I had not realized was that it is the broader challenge which the authoritarian states were generating for crisis management against the liberal democracies which was in play.

And that this was the core strategic shift from the land wars.

This book simply validates how important the missing USCG National Security and Offshore Patrol vessel hulls and trained personnel are.

Instead, the US focused on Littoral Combat Ships which made no sense.

The white hulls are crucial to a "constrainment strategy", and the expansion of the Chinese Coast Guard in the region has been central to the gray zone operations discussed in the book.

I would highly recommend reading this important book and thinking through what it teaches us, or challenges us to think about in terms of the much broader spectrum of crisis management we are facing.

And please rebuild the USCG and get it the hell out of the Department of Homeland Security so that it can focus on its global role.

his is what I wrote in my piece on AOL Defense in the second piece in my Pacific series and published on August 14, 2012:

As Vice Admiral Manson Brown, the recently departed Coat Guard Pacific commander, underscored in an interview last year:

"Many people believe that we need to be a coastal coast guard, focused on the ports, waterways, and coastal environment.

"But the reality is that because our national interests extend well beyond our shore, whether it's our vessels, or our mariners, or our possessions and our territories, we need to have presence well beyond our shores to influence good outcomes.

"As the Pacific Area Commander, I'm also the USCG Pacific Fleet Commander. That's a powerful synergy. I'm responsible for the close-in game, and I'm responsible for the away game. Now the away game has some tangible authorities and capabilities, such as fisheries enforcement and search and rescue presence," he said.

At the heart of a strategic rethink in building a U.S. Pacific maritime security strategy is coming to terms with the differences between these two domains, the security and military. The security domain is based on multiple-sum actions; military activity is by its very nature rooted in unilateral action. If one starts with the military side of the equation and then defines the characteristics of a maritime security equation the formula is skewed towards unilateral action against multiple-sum activity.

But there is another aspect of change as well. Increasingly, the United States is rethinking its overall defense policy. A shift is underway toward preparing its forces for global operations for conventional engagement in flexible conditions.

Conventional engagement is built on a sliding scale from insertion of forces to achieve political effect to the use of high intensity sledgehammer capabilities. Policymakers and specialists alike increasingly question the utility of high-tech, high-intensity warfare capabilities for most conventional engagement missions.

In parallel to the relationship between those two domains is the relationship between the Coast Guard and the Navy, rooted in a sliding scale on levels of violence. This needs to be replaced by a new look, which emphasizes the intersection between security operations and conventional engagement, with high-intensity capabilities as an escalatory tool.

To protect the littorals of the United States is a foundational element for Pacific defense, and allows the U.S. to focus on multiple sum outcomes to enhance defense and security, but at the same time it lays a solid foundation for moving deeper into the Pacific for military or extended security operations when needed.

A reflection of such an approach is the North Pacific Coast Guard Forum. Again one must remember the central place the Great Circle Route plays in trans-Pacific shipping and the immensity of the Pacific. Given these conditions, the Coast Guard has participated in a collaborative security effort in the North Pacific designed to enhance littoral protection of the United States.

Among the key participants are the Canadians, Russians, the Japanese, the South Koreans and the Chinese.

Admiral Day, an active participant in the forum during his tenure, notes that members have participated in numerous exercises and several joint operations.

But for the United States to play a more effective role in defending its own littorals and to be more effective in the kind of multi-national collaboration which building Pacific security and providing a solid foundation for littoral defense, a key element are presence assets.

"And it's presence, in a competitive sense, because if we are not there, someone else will be there, whether it's the illegal fishers or whether it's Chinese influence in the region," said Vice Adm. Manson Brown. "We need to be very concerned about the balance of power in the neighborhood.

If you look at some of the other players that are operating in the neighborhood there is clearly an active power game going on. To keep the US presence relevant, the Coast Guard's National Security Cutters are a core asset.

The inability to fund these and the putting in limbo of the smaller cutters, the so-called OPCs, or Offshore Patrol Cutters, underscores a central question: without effective littoral presence (for U.S. shores) how does one do security and defense in the Pacific?

The size and immensity of the Pacific means you operate with what you have; you do not have shore infrastructure easily at hand to support a ship. Ships need to be big enough to have onboard provisions and fuel, as well as aviation assets to operate over time and distance.

In short, providing for littoral defense and security on the shores of the United States requires a reaffirmation of the Coast Guard's Title X role and ending the logjam of funding support for the cutter fleet and the service's aviation assets which enable that fleet to have range and reach.

Or let me be blunt: What the Chinese have done should not be a strategic surprise or a black swan.

It is simply something for which we did not prepare nor resource.

Presence, Economy of Force and Scalability: The New Amphibious Task Force

03/30/2019
By Robbin Laird

The USMC is considered the nation's crisis management force.

But with the rise of new authoritarian powers, peer-to-peer maneuvering and conflict are now a clear part of crisis management.

The good news is that the evolution of the USN-USMC team at sea has evolved over the pst decade, and now the amphibious task force piece of crisis management is a key element bringing presence, economy of force, scalability and lethality to the operational force.

Prior to the coming of the Osprey, the amphibious force was operating within a 200 square mile box. The Amphibious Ready Group-Marine Expeditionary Unit could engage in the high end fight only with the presence of the carrier task force or USAF support.

This all changed with the Osprey.

Now the Marines could operate at much greater distance and the ARG-MEU evolved to operate over a much wider area.

Within the first decade of the change, the three ship ARG-MEU began to be part of different land-based operations, and the C2 side of the operation became a bit confused and muddled from the standpoint of the amphibious task force itself.

With the coming of the F-35B to the amphibious force, now the crisis management force had a high end asset able to provide tip of the spear ISR, C2 and weapons to the fight.

We have seen this with the first deployed F-35B enabled amphibious task force which has just returned from the Middle East this year.

The deployment marked the first combat sorties by the F-35B multi-mission jet, flown by the Wake Island Avengers of Marine Fighter Attack Squadron (VMFA) 211 from Marine Corps Air Station Yuma, Ariz. Missions included support to ground forces in Iraq, Syria and Afghanistan.

The amphibious force operated in three geographic regions during the deployment, mostly in the U.S. 7th Fleet and 5th Fleet – and Anchorage also traveled to the Mediterranean to support U.S. 6th Fleet operations and train with the Italian military.

"The 13th MEU provided support to Operation Inherent Resolve and Operation Freedom's Sentinel while simultaneously supporting maritime security and theater security cooperation events in the U.S. 5th Fleet and 6th Fleet areas of operations," Col. Chandler Nelms, the 13th MEU commander, said in a news release. "Our dynamic operations demonstrated the flexibility of the amphibious task force….."

The F-35B squadron is part of the 13th MEU's air combat element led by Marine Medium Tiltrotor Squadron 166 (Reinforced).

The 3rd Battalion, 1st Marines led the Battalion Landing Team 3/1 as the MEU's ground combat element, and Combat Logistics Battalion 13 served as its logistics element. The Essex ARG includes includes the Blackjacks of Helicopter Sea Combat Squadron 21 and detachments from Assault Craft Unit 5, Naval Beach Group 1, Beachmaster Unit 1, Fleet Surgical Team 3 and Tactical Air Control Squadron 11….

The following is the March 1, 2019 release from U.S. 3rd Fleet.

Essex Amphibious Ready Group Returns from Deployment

By Third Fleet Public Affairs

SAN DIEGO (NNS) — Sailors and Marines of the Essex (LHD 2) Amphibious Ready Group (ARG) returned to their homeport of San Diego, following a successful deployment to the Indo-Pacific, Middle East, Mediterranean, and Horn of Africa regions, March 1.

More than 4,500 sailors and Marines of the Essex ARG and embarked 13th Marine Expeditionary Unit (MEU) conducted maritime security operations and theater security cooperation efforts in support of regional security, stability, and the free flow of maritime commerce.

"This deployment was a great example of dynamic force employment," said Capt. Gerald Olin, commander, Amphibious Squadron (PHIBRON) 1. "We were successful on our deployment because we operated the way we trained. Our team was manned, trained and equipped successfully so that we were able to meet mission requirements in every fleet."

During the ARG/MEU's deployment, the ships conducted subject matter exchanges and important theater security cooperation exercises with regional partners in 5th, 6th and 7th fleets as well as participated in military operations.

"Our dynamic Blue-Green team performed admirably and their accomplishments speak wonders to the resolve, resiliency and incredible sacrifice the Sailors, Marines, and their families made to make this a successful deployment," said Olin. "I am proud to have been part of this deployment with this team, and after such a successful deployment, I know our Sailors and Marines, as well as their friends and families, are excited to be home."

Essex is comprised of amphibious assault ship USS Essex (LHD 2), amphibious transport dock USS Anchorage (LPD 23), and amphibious dock landing ship USS Rushmore (LSD 47). Embarked commands include "Blackjacks" of Helicopter Sea Combat Squadron (HSC-21), Assault Craft Unit 5, Naval Beach Group 1, Beachmaster Unit 1, Fleet Surgical Team 3, and Tactical Air Control Squadron 11.

13th MEU is commanded by Col. Chandler Nelms and consists of the Command Element, the Aviation Combat Element comprised of Marine Medium Tiltrotor Squadron 166 (Reinforced), Marine Fighter Attack Squadron 211, the Ground Combat Element comprised of Battalion Landing Team 3/1 (Reinforced), and the Logistics Combat Element comprised of Combat Logistics Battalion 13.

The end of this deployment is uniquely significant, as it was the inaugural combat deployment of the Marine Corps F-35B Lightning II.

"The Essex was embarked with the next generation of air assets," said Olin. "The full integration of the Marine Corps F-35B Lightning II drastically enhanced the ARG/MEU lethality and proved to be a credible strike and defense capability. The MV-22 provided the range and cargo capacity to maintain critical logistical lines of effort to maintain continued support of operations. This Essex deployment perfectly demonstrated the promising future of aviation for the ARG/MEU teams."

Throughout deployment, the ARG/MEU participated in a variety of exercises with multi-national partners throughout the Indo-Pacific, Mediterranean, and Middle East regions, which strengthened partnerships and increased combat readiness, amphibious and crisis-response capabilities, and communication between U.S. and partner nation forces.

In the western Pacific, sailors and Marines worked with militaries during bilateral Cooperation Afloat Readiness and Training exercises with Malaysia and Indonesia. Simultaneously, sailors and Marines of the Anchorage worked with the military of Sri Lanka to bolster regional partnerships.

In the Middle East, the team participated in exercises with a variety of partners during bilateral engagements such as Eastern Maverick 19 with Qatar and the Theater Amphibious Combat Rehearsal, which was conducted in Djibouti.

"Our Sailors and Marines did an absolutely fantastic job this deployment," said Capt. Brian Mutty, commanding officer of Essex. "It was impressive to watch the Navy/Marine Corps teams execute every mission we were tasked with. During Theater Amphibious Combat Rehearsal and Eastern Maverick, the coordination between the Navy-Marine Corps team effectively projected power from the sea and ashore. Furthermore, the ship provided direct combat support for Operations Inherent Resolve and Freedom's Sentinel."

As Rushmore and Essex conducted operations in the Middle East, Anchorage represented the ARG/MEU team as they operated in the Mediterranean Sea. The steadfast and formidable presence of Anchorage and the 13th MEU decisively advanced stability and security objectives in the region.

"Our ARG/MEU team operated across two geographic combatant commands simultaneously supporting multiple operations, exercises and subject matter expert exchanges," said Capt. Dennis Jacko, commanding officer of Anchorage. "The inherent flexibility of the ARG/MEU is what makes our team so valuable to theater commanders, and the robust capability of the LPD 17 Class to execute independent operations provides a force multiplier in every ARG."

The new capabilities of the new amphibious group was demonstrated during this deployment as well.

In an article by Alex Lockie published on September 11, 2018, the role of the amphibious task force off of Syria was highlighted and the force would not be playing this role without the F-35B onboard.

A U.S. Marine Corps aircraft carrier full of F-35B stealth jets showed up in the Middle East after Russia threatened U.S. forces in Syria in the latest military buildup between the world's two greatest nuclear powers.

Russia sailed a small armada to the Mediterranean sea in August as its prepares with its ally, Syria, an offensive against the last rebel stronghold in the country after predicting a chemical weapons attack that it prematurely blamed on U.S.-aligned forces.

Until recently, the U.S. had no capital ships and just one or two destroyers in the Mediterranean, but the USS Essex, a small, flat-deck aircraft carrier used to launch U.S. Marine Corps F-35B stealth jets that can take off almost vertically, just arrived off the horn of Africa, USNI News reports.

Though the Essex remains on the opposite side of the Suez Canal from Russia's ships in the Mediterranean, it's a quick-moving ship. Additionally, the F-35Bs can fly about 550 miles out from the ship in stealth configurations that make them hard to detect for enemy defenses.

Direct combat between Russia and the U.S. remains unlikely, as both sides work together to avoid accidental conflict and neither side seems willing to escalate a fight over Syria into a massive war.

But Syria has hosted the world's liveliest air defense and battlespace for years. Missile fires have taken down Israeli, Syrian, and Russian jets over the course of the war. Syria has seen the combat debut of the F-35 and the first U.S. air-to-air kill between manned aircraft since 1999.

The F-35Bs aboard the Essex will train on a variety of missions near the Red Sea, such as how to provide close air support for Marine units optimized to take beaches, or how to respond to an attack.

"Our primary mission is crisis response… being current and absolutely ready for anything the geographic combatant commander needs us to do while we are here," Col. Chandler Nelms, commander of the military expeditionary unit aboard the Essex told USNI.

Gidget Fuentes in an article published on February 27, 2019 by USNI News highlighted the new roles for the amphibious task force which the deployment is presaging.

The Marine Corps is slowly replacing its aging fleet of AV-8B Harrier attack aircraft with the fifth-generation fighter that boasts suites of advanced avionics, navigation, communications and weapons systems that added a wide range of new capabilities to the Essex ARG.

"It's got the short-takeoff capability of the Harrier, the speed and payload of a (F/A-18) Hornet, and it's got the forcible entry options that stealth technologies give us," Nelms said.

"Because of its air-to-air capability and its sensors for air-to-ground capabilities, it also provides a new dynamic for the ARG commander, for the commodore, while we're out conducting blue-water operations or littoral operations or defending the ARG. … On its first deployment, it was kept very busy."

"[It] increases battlespace awareness with data fusion and the ability to share information with the ships and the ships' combat control system," Capt. Gerald Olin, Amphibious Squadron 1 commander and Essex ARG/MEU commodore, told USNI News from Essex. "So it's really an extension of our sensors, and it also brings to the table a greater increased lethality than what we had with previous generation aircraft…"

The aircraft and its integration with the ship and integration with the mission exceed my expectations," Lt. Col. Kyle Shoop, who commands VMFA-211, told USNI News. "Just in our time with 5th Fleet, we supported over 50 days of combat for over 1,200 flight hours … didn't drop a single line of FRAG or combat support."

At times, the jets flew off Essex for long missions, "and we kept employing ordnance in both theaters," Shoop said, referring to Afghanistan for Operation Freedom Sentinel and Syria and Iraq for Operation Inherent Resolve.

"The jet itself proved to be very reliable. Throughout that whole time period, Marines did a great job keeping it serviceable," he said. "We were gone away from the ship for an extreme amount of time – a lot of times over five, six hours away from the ship – and they'd turn them around that night to fly again the next day. So that went really well."

The F-35B performed "like we expected," Shoop added. "Some of the sensors onboard would do better than, say, a Harrier would through adverse weather or things like that. So it proved to be pretty versatile…"

The addition of the F-35B also gave commanders an aircraft capable of helping defend the amphibious task force. Its onboard systems provided a data link so "we could communicate with and incorporate into our defensive posture," said Olin, whose career includes operational deployments with carrier strike groups.

"That's kind of the model I'm used to. We were able to emulate that, to some extent, here on the Essex ARG by using the F-35 for deck-launched interceptor support, defensive counter-air, anti-surface warfare type of missions. So that was a really great addition to the package here, above what we and I had experienced with the AV-8 Harrier on the last deployment."

"I think we have already proven that the [F-35B] is reliable and that it integrates well on the amphibious shipping," Nelms said. "So the next step now is just continue to develop the tactics, the techniques, the procedures of how we fight with that. We got a really good look at that on this deployment, and I think there's a lot more to be explored in the future."

The articles cited above discuss the recently returned ARG-MEU force which deployed with the F-35 for the first time.

It is clear that the multi-domain aircraft is at the heart of changing the ARG-MEU for a launch point for helo or Osprey enabled forces and providing a high end capability integrated into the insertion force.

But we have argued for many years, the F-35 is an enabler but you will not get full value from the aircraft, not the global fleet unless you change the entire approach and put into operation new technologies and capabilities which enabled what we initially called the honeycomb force and what we know use, the more widely used term, the kill web.

For the ARG-MEU what this has meant that a significant cluster of innovations is changing the nature of it s capabilities and making a key element for crisis management against peer authoritarian powers.

First has been the maturation of the Osprey.

Second has been building a new class of amphibious ships which can make significantly greater advantage of Marine Aviation as the enabler for the assault or insertion force.

The USS America is a whole new class of ships which has three decks and an ability to support aviation in a way that the two deck large deck amphibs simply can not.

Third has been the significant emphasis of the Marines on shaping a digital interoperable force, one which can reshape the nature of distributed operations.

Fourth has been the sun-setting of the Prowler EW aircraft and focusing on tron warfare built into the operational force.

Fifth has been adding new ships to the task force, some from the Military Sealift Command and working through ways to add capabilities to the task force as a crisis unfolds.

Sixth is training for operating in contested environments and dealing with degraded C2 and here the F-35 can provide key capabilities as a crisis might evolve.

Seventh is the ability to put the new G/ATOR system ashore which can provide the ashore insertion force with significant new reachback capabilities or scalability.

Eighth is the ability to work interoperability between the F-35 and land and sea missile defense systems.

Integration with Aegis provides a significant and rapid asset which can affect the battlespace rapidly.

(Not to put fine a point on this, we already anticipated this in 2011 when this article was written:

https://www.usni.org/magazines/proceedings/2012/january/long-reach-aegis)

And with the Marines latest artillery pieces being linked ashore or afloat, the Marines are working towards what they see as a more integrated kill web farce.

Again, one that can provide presence as the task force enters an area of interest but one which has the capability to add task force elements from ground, sea or air elements within connectivity reach.

Ninth the coming additions to Marine Corps Aviation are conceived of in terms of adding new capabilities to a kill-web enabled amphibious task force.

The new CH-53k is not an E; it has combat systems onboard which change the nature of what a heavy lift helicopter can bring to the fight and can deal with contingencies requiring an augmented ground maneuver force.

Tenth any new unmanned system to be added to the force is seen to contribute to the kill web evolution and if it becomes more a speed bump rather than a contributor, then the Marines will wait until they get the kind of unmanned systems they are looking for.

(See my chapter on the USMC in the new book, One Nation Under Drones.)

Eleventh the force can operate and be sustained from the seabase.

This means that mobile basing is inherent to the force, something which the F-35B can do ashore or afloat.

This means as well as directed energy weapons enter the force, they can be placed on the asset most ready to support it, namely a ship with enough power to operate these systems.

In short, the F-35B has been an enabler of a significant change to the amphibious task force.

But its full value will become expanded or realized only as the task force itself evolves.

With the significant evolution of the amphibious task force into one which can provide presence, economy of force and scalability through the kill web to other Army, Navy or Air Force assets or through the F-35 global fleet through rapid allied augmentations, the USN-USMC team is at the heart of reshaping the kind of crisis management capability crucial to deal with the authoritarian peer competitors we are now confronting globally.

The Strategic Shift and Crafting a 21st Century Sustainment Capability

03/03/2019
By Robbin Laird

The liberal democracies are facing a demanding shift from fighting the land wars in the Middle East to completely reshaping their forces for crisis management challenges with peer competitors.

On the one hand, military capabilities are being reshaped to operate in such an environment, and there is a clear opportunity to leverage new platforms and systems to shape a military structure more aligned with the new strategic environment.

On the other hand, the civilian side of the equation needs even more significant change to get into the world of crisis management where hybrid war, mult-domain conflict and modern combat tools are used.

While preparing for large-scale conflict is an important metric, and even more important one is to reshape the capabilities of the liberal democracies to understand, prepare for, and learn how to use military tools most appropriate to conflict management.

This means putting the force packages together which can gain an advantage, but also learning how to terminate conflict.

At the heart of the challenge of rebuilding an effective force package to deal with peer competitors is the underlying need to build a 21st century infrastructure capability to support military operations in a contested environment.

With the focus on the Middle East, logistical systems in the United States, in the West and in the Pacific were lightly protected and operated through either using commercial systems or systems which operated similar to Fed Ex.

When dealing with a peer competitor, one can expect those systems to be targeted early on.

The challenge then is to build hardened shelters, active defense and to find ways to stockpile the parts, and repair capabilities, which can allow US and allied forces to sustain an ops tempo which allows us to prevail in a significant crisis.

The German Case

My recent trip to Germany highlighted how difficult the rebuild process will be.

The Germans are projected by NATO to be the logistical hub for NATO in the support of operations to the new members of NATO to the East. Germany is where forces will move through and forward to support combat or deterrent operations against the Russians.

But according to several retired senior Bundeswehr officers with whom I spoke during my February 2019 visit, the German military simply has no such hardened supply capabilities today.

A good example of the thinking is the support center for the Eurofighter in Munich. The center is above ground, and a centralized support facility.

There is no active defense; there is no bunkering of parts or anything remotely connected to the needs of a strategic shift.

Obviously, the Germans are not alone and there is the broader question of the significant rebuild in European infrastructure, which is necessary to prepare for sustained operations in the face of Russian aggression.

Shaping a New Approach

It was very clear from discussions during my visits to Finland, Norway and Denmark this past year that the return of direct defense is not really about a return to the Cold War and the Soviet-Western conflict.

Direct defense has changed as the tools available to the Russians have changed, notably with an ability to leverage cyber tools to leverage Western digital society. and, more generally, to be able to achieve military and political objectives with means other than direct use of lethal force.

This is why the West needs to shape new approaches and evolve thinking about crisis management in the digital age.

It means that NATO countries need to work as hard at infrastructure defense in the digital age as they have been working on counter-terrorism since September 11th.

The Finnish Case

There is little doubt that the Finns provide significant domain expertise into how to operate a force under duress from the Russians.

They have some significant history on their side and during my visit last year to Finland I had many discussions with Finnish officials about the central importance of hardened facilitates and the need to operate a distributed force while under the threat or under actual attack.

For example, Jukka Juuisti, Permanent Secretary in the Finnish Ministry of Defence underscored:

“If you look at the map of Finland, it’s not an island but in practice we are an island.

“The vast majority of our trade is coming by ships.

“In that sense we are an island and this means that we have taken the security of supply always very seriously.

“It is the nature of Finland that we believe that we have to be able to take care of some of the most vital things by ourselves.

“That’s the reason for example that security of supply is so important for us.

“For example, with regard to ammunition and those kinds of supplies, we have a lot of stocks here in Finland.

“Of course, with regard to some of the equipment we never can have enough in our own resources.

“The security of supply has got another respect also, which is the civilian side of the aspect.

“We have a security of supply agency, which is extremely important for us and it takes care of the civilian part of the security of supply.

“For example, electricity and telecommunications are vital for the survival of the nation, and one needs have to have the security of supply in those areas. Security of supply agency collects the money in such a way that they are financially safeguarded.

"Whenever we buy some gasoline, they collect some part of that purchase for the security of supply funds.

"It is organized in that way.

"We are continuously investing, in effect, in security of supply for the civilian sector."

"And we think broadly about civilian defense as part of our mobilization strategy.

"That's the reason we were still building shelters for the civilians, both to maintain infrastructure in times of crisis and for civilian protection as well."

Shaping a Way Ahead

New paradigms, new tools, new training and new thinking is required to shape various ways ahead to shape a more robust infrastructure notably in a digital age.

Article III within the NATO treaty underscores the importance of each state focusing resources on the defense of its nation.

In the world we are facing now, this may well mean much more attention to security of supply chains, robust infrastructure defense and taking a hard look at the vulnerabilities which globalization has introduced within NATO nations.

Put in other terms, robustness in infrastructure can provide a key element of defense in dealing with 21st century adversaries, as important as the build up of kinetic capabilities.

The return of direct defense but with the challenge of shaping more robust national and coalition infrastructure also means that the classic distinction between counter-value and counter-force targeting is changing.

Eroding infrastructure with non-lethal means is as much counter-force as it is counter-value.

We need to find new vocabulary as well to describe the various routes to enhanced direct defense for core NATO nations.

The F-35 Opportunity

There is no one path to solving the challenge of a 21st century robust infrastructure and sustainment set of capabilities.

But given the commitment of several key allies to the F-35, the emerging F-35 global enterprise does provide an opportunity to shape a new approach.

First, there is the various national approaches which key nations can take.

For example, at Orland Air Base, the Norwegians are building a hardened air base to support F-35 operations.

Force protection is a key part of building out the base, and, indeed, the center of excellence both for ground based air defence, force protection and mobile logistic support operates currently from the base.

Second, cross learning among the European Air Forces in the UK, Denmark, the Netherlands, Norway, Belgium and Italy as well as US-facilities in Europe will allow the creation of effective templates for sustained operations and support necessary for the F-35 to play its key role of providing the tip of the spear for deterrence operations.

Third, the inherent sustainment capabilities built into the F-35 as an air system could allow the US and the allies to shape a new approach to sustained engagement.

The common systems throughout the global fleet and the cross training and cross operations of the aircraft can allow stockpiling of common parts in allied locations closer to potential areas of interest than being warehoused in the United States or at fixed and well known locations.

Allied maintainers certainly could work with US maintainers to cross maintain US and allied F-35s at an allied location.

This would dramatically change the ability of the US and allies to fly to an allied base or location and shape a strike or defense force which could make a decisive difference in a crisis.

And the Fed Ex model could be put to bed with the large number of airlifters and tankers needed to supply forward bases in a crises; in place of this, the US and allies could invest in advance in capabilities at a common allied location likely to be most relevant to a crisis situation.

For example, the Aussies are standing up a significant support structure in Australia for regional support.

As they do so, allies such as the US and Japan can shape an approach to what I would call sustained engagement.

With crises to come in which the F-35s will play a key role, the Australians can provide operating locations for allies, without having to base those allies on a long term basis.

This allows Australia its sovereignty but also allows allies like the United States and Japan to gain operational depth which will be crucial for deterrence in the region.

Because they are flying virtually the same aircraft, stockpiling parts and leveraging an expanded sustainment base with the Australian maintainers leading the way for the USAF to move to a new approach to operations which does not require them to operate like Fed Ex flying in resources to then stand up support in a crisis.

The USAF or the Japanese could fly to Australia and be supported by Australian based supplies and maintainers supplemented by Japanese and US maintainers and could operate rapidly in a crisis, rather than engaging in a significant airlift and tanking support set of missions to stand up aircraft in Australia on a case by case basis.

It is not about just showing up; it is about being able to do sustained engagement with an agile expeditionary support structure to establish and operate from a solid operational footprint.

An allied approach towards sustained engagement when married with Aussie rethinking about how to use their geography as well as base mobility creativity would significantly enhance deterrence and operational flexibility in a crisis.

Fourth, realizing a capability for the US or another ally of a given country to fly in, operate, and be sustained through a significant ops cycle also allows for another key enabler for engaging in the kinds of operations facing the liberal democracies.

Shaping a Mobile Basing Capability for Crisis Management

Clearly, mobile basing is required to operate against peer competitors like Russia or China who have prioritized a missile strike force as a major part of their crisis dominance or shock and awe strategy against us.

The Finns have lived this already so there is no shock in a possible shock and awe strategy against them.

According to Lt. General Kim Jäämeri in my interview with him last year:

“It is becoming clear to our partners that you cannot run air operations in a legacy manner under the threat of missile barrages of long range weapons.

“The legacy approach to operating from air bases just won’t work in these conditions.

“For many of our partners, this is a revelation; for us it has been a fact of life for a long time, and we have operated with this threat in the forefront of operations for a long time.”

The importance of shift to mobile basing will only happen if a shift from the legacy sustainment approach is realized.

The nature of this shift was highlighted during visits with the Marines at Yuma Marine Corps Air Station, in Australia and in the United Kingdom.

One aspect of the change which I observed and discussed during my visits to Finland, the United Kingdom, and Australia and to MCAS Yuma is the importance of being able to do mobile basing.

At the Williams Foundation Seminar in Canberra in March 2018, the 11th Air Force Commander, Lt. Gen. Kenneth Wilsbach, highlighted the nature of the challenge requiring the shift to mobile basing.

“From a USAF standpoint, we are organized for efficiency, and in the high intensity conflict that we might find ourselves in, in the Pacific, that efficiency might be actually our Achilles heel, because it requires us to put massive amounts of equipment on a few bases.

“Those bases, as we most know, are within the weapons engagement zone of potential adversaries,” Wilsbach said.

“So, the United States Air Force, along with the Australian Air Force, has been working on a concept called Agile Combat Employment, which seeks to disperse the force, and make it difficult for the enemy to know where are you at, when are you going to be there, and how long are you are going to be there.

“We’re at the very preliminary stages of being able to do this but the organization is part of the problem for us, because we are very used to, over the last several decades, of being in very large bases, very large organizations, and we stovepipe the various career fields, and one commander is not in charge of the force that you need to disperse.

“We’re taking a look at this, of how we might reorganize, to be able to employ this concept in the Pacific, and other places.”

And during a visit to Amberley Airbase just before the Williams Foundation seminar in March 2018, I met with the Commander of the RAAF’s Combat Support Group.

“We are having to reacquaint ourselves with some tasks and challenges which we parked to the side a bit while we were in the Middle East for so long.

“We did not have to worry so much about mobile basing to counter the principal threats in that theatre,” Robinson said.

“The mindset is in transition now.”

He underscored that this clearly is an army and air force challenge.

“We are good at supporting maneuver with our tactical transport aircraft and Australia’s Army aviation capability, including the Tiger Reconnaissance Helicopter, but what we need to do is move to the next level of support to maneuver the most lethal part of our air power capability across a range of airfield options.”

Core capabilities such as providing fuel for air systems when operationalized for a mobile airbasing force on Australian territory are clearly different from supporting a fixed airbase.

For example, “expeditionary fuel capabilities is something that’s very much on the forefront of my mind.

“Lean and agile support packages to operate expeditionary airfields are also key, so that we can offer the best possible maneuver options to the aviators without tying down strategic airlift.”

Whether to pursue mobile basing or build greater depth in Australian territorial defense is one of the core choices facing Australia as it continues its force modernization.

Either they can emphasize going deeper into the air-maritime domain in the Pacific or significantly augment their mobile defense capabilities leveraging the vast Australian territory.

The role of active defenses working with airpower mobility would be a priority in this second case.

My visit last year to the United Kingdom where I saw again HMS Queen Elizabeth reinforced this point.

As the UK works through its post-Brexit defense policy, the role of the Nordic countries looms as increasingly significant.

The new Queen Elizabeth carriers are clearly very relevant to Northern Tier Defense and Mediterranean operations.

As a senior UK official put it during my visit in May to Portsmouth:

“The carriers will be the most protected air base which we will have.

“And we can move that base globally to affect the area of interest important to us.

“For example, with regard to Northern Europe, we could range up and down the coastlines in the area and hold at risk adversary forces.

“I think we can send a powerful message to any adversary.”

The Strategic Shift

The UK is working closely with the US Marines who have mobile basing in their DNA.

In recent Marine training exercises, which they call WTIs, have clearly emphasized the concept of mobility and strike from mobile bases.

The F-35B was at the heart of this, but mobility also requires a focus on support, which is integrated to the point of operation, rather than focused on having a series of Walmarts and maintainers with accounts at a Walmart store.

It is about reshaping logistics to enhance operations to the point of attack, and this will be a major challenge to how the US focuses on its support structure for F-35.

In short, the strategic shift to high-end warfighting will highlight core competencies and capabilities such as mobile basing.

The transition will not be easy, either for the warriors or the decision-makers in Washington or elsewhere.

Evolving the Capabilities of the MAGTF: The Case Study of the F-35 and HIMARS

11/10/2017

2017-11-01 By Robbin Laird

The Marine Corps is being shaped for the transition from a slow motion ground war to higher intensity warfare.

This reshaping is being driven by the new aviation assets, the introduction of broad range digital interoperability within the MAGTF and by evolving concepts of operations associated with distributed warfare.

At the heart of the transition is an ability to leverage all of the key combat assets, ground, sea or in the air and to deliver a force able to operate in the distributed battlespace.

Last August, Lt. General (Retired) Davis, former Deputy Commandant of Aviation, highlighted the nature of the transition as applied to the electronic warfare case.

He described the USMC transition from a core aircraft delivering an EW effect to building out the MAGTF to include ubiquitous access to non-kinetic electronic warfare capabilities.

The core approach going forward is very clear.

"MAGTF EW transitions the Marine Corps from a focus on low density/high-demand EW platforms, to a distributed, platform-agnostic strategy – where every platform contributes/ functions as a sensor, shooter and sharer – to include EW."

"Under MAGTF EW the Marine Corps is leveraging emerging technologies and integrating multiple platforms, payloads, nodes, and capabilities to provide commanders with an organic and persistent air and ground EW capability."

Davis underscored that with the changing nature of warfare and how the Marines operate, shaping a distributed strategy was a necessity, not an option.

"We operate on ships, from ships to shore and ashore."

"We cannot simply have an on call EW asset.

"We can confront the threat requiring an EW capability anywhere we operate."

https://sldinfo.com/lt-general-retired-davis-focuses-on-distributed-electronic-warfare-capabilities/

An additional case study of the evolution was evident in the Weapons and Tactics Instructor Course held in April 2017 by MAWTS-1 at Yuma Air Station.

During the exercise, the F-35B was being integrated into the overall MAGTF operations including integrated target identification and fire support to the new HIMARS system.

According to the USMC, the High Mobility Artillery Rocket System is described as follows:

HIMARS is a C-5 transportable, wheeled, indirect fire, rocket/missile system capable of firing all current and future rockets and missiles in the Multiple-Launch Rocket System Family of Munitions (MFOM).

The HIMARS launcher consists of a fire control system, carrier (automotive platform), and launcher-loader module that performs all operations necessary to complete a fire mission. The basic system is defined as one launcher, one resupply vehicle, and two resupply trailers.

HIMARS addresses an identified, critical warfighting deficiency in Marine Corps fire support. HIMARS employs the Guided Multiple Launch Rocket System (GMLRS) rocket to provide precision fires in support of the MAGTF.

HIMARS is a transformational, responsive, general-support/general-support reinforcing precision indirect fire weapon system that accurately engages targets at long ranges (in excess of 40 miles) with high volumes of lethal precision fires in all weather conditions and throughout all phases of combat operations ashore.

https://marinecorpsconceptsandprograms.com/programs/fire-support/high-mobility-artillery-rocket-system-himars

But this is a platform-centric description not one which indicates how it can contribute to the fight in a distributed battlespace.

For the Marines, HIMARS can be used ashore or as they have just demonstrated can be fired from an amphibious ship as well during Dawn Blitz.

In the photo below, U.S. Marines with Battery R, 5th Battalion, 11th Marine Regiment, 1st Marine Division are seen launching a rocket from a High Mobility Artillery Rocket System (HIMARS) off the USS Anchorage (LPD-23) during Exercise Dawn Blitz, Oct. 22, 2017.

Dawn Blitz 17 allowed the amphibious force to integrate the F-35B Lightning II and HIMARS into the exercise to validate a capability with platforms not traditionally used at the Marine Expeditionary Brigade/Expeditionary Strike Group or Marine Expeditionary Unit/Amphibious Ready Group levels.

In the most recent WTI exercise, the F-35 continued to develop tactics, techniques, and procedures (TTPs) for HIMARS firing.

This development can be missed or simply look like legacy aircraft support to a ground firing capability.

But it is not.

The F-35s sensors provide significant range and ability to target discriminate which can be shared with the ground force to guide their operational trajectories as well as, in the case of HIMARS, a key target to destroy.

Due to F-35 sensor fusion, F-35 pilots can identify key targets to support ground fires and can themselves add weapons to the fight.

In other words, rather than just doing close air support, the F-35 is capable of integrating air and ground fires into an overall distributed strike force that was not possible with 4th generation platforms.

HIMARS integration with F-35 and the shipboard firing are case studies of the transition of the USMC, not simply case studies of more advanced ways to do what they have been doing.

On October 23, 2017, I spoke with the Commanding Officer of MAWTS-1, Col Wellons, and one of his officers involved in the WTI course.

In an earlier interview, we discussed how the Marines were looking at the impact of the F-35 on the MAGTF:

Question: How does the integration of the F-35 into your operations, change how you think about those operations?

Col Wellons: A lot of that can be quickly become classified but let me give you an example, which does not fall into that category.

Historically, when we could come off of an L class ship with MV-22s, CH-53s, H-1s and AV-8Bs we would be faced with a serious AAA or MANPADS threat that would force us to avoid part of or an entire objective area.

With the F-35, we can leverage its increased survivability over 4th generation platforms in contested environments to accomplish the mission.

In Afghanistan and Iraq we have not had prohibitive interference in our air operations. However, that cannot be assumed in other areas of operation due to the proliferation of double digit SAMS. The F-35 allows us to operate in such areas.

The situational awareness (SA) that the airplane provides is a game changer for us.

In the past, we would receive input from the Senior Watch Officer on the ground with regard to our broader combat SA. That type of information is now resident within the cockpit of the F-35. The F-35 pilot can share information, that situational awareness, with other airborne platforms and the ground force commander in ways that are going to increase our operational tempo and allow us to do things that historically we wouldn't have been able to do.

The ability of the F35 to be able to recognize, identify, and kill the types of prohibitive threats that would prevent us from putting in assault support platforms and ground forces is crucial to the way ahead.

The F-35 can do this now, not some future iteration.

https://sldinfo.com/the-way-ahead-for-usmc-con-ops-the-perspective-of-col-wellons-co-of-mawts-1/

During the recent interview, we discussed further work on F-35 integration and the expanded role of digital interoperability within the MAGTF as exercised in the WTI course.

Question: The Marines are operating the F-35 in Japan and are standing up other squadrons as well.

That is what I would call F-35 1.0; you are focusing on F-35 2.0 at MAWTS, namely how the asset is part of the overall transformation of the MAGTF, both as cause and consequence.

Can you describe what you are doing with regard to F-35 2.0?

Col Wellons: "We have expanded the hot loading capability of the F-35, which is part of our distributed operational approach.

"To date, we have hot loaded GBU-12s and 32s and most recently have done so with AIM-120s.

"That process has gone very well.

"With the next block of software which is coming shortly, we will load weapons externally as well which will expand the envelope.

"All this is part of an overall distributed approach. We are using MV-22s to bring ordnance and fuel to remote sites in order to rearm and refuel F-35s, increasing sortie generation.

"What this means is that we can bring fifth generation capabilities to the fight by deploying from FARPS throughout the battlespace, rather than having to operate from a fixed airfield.

"When you combine the ability to operate from ships moving at sea with distributable FARPS on land, we are providing for a powerful distributed, survivable, and unpredictable force to support the Commander's objectives in the battlespace.

"This capability is going to enable aviation operations, in an anti-access / area denial (A2/AD) scenario.

"We'll be able to take an MV-22, fly it into a FARP somewhere and have the F-35s join.

"The MV-22s provide fuel and ordnance to the F-35s.

"We can do the hot load, hot refuel, and you're in and out of there in a very short period of time."

Question: Can you now describe the HIMARS integration with F-35?

Col Wellons: "This class we continued the learning process.

“We were able to validate and verify, via ground testing, the ability of the F-35 to share digital targeting information with a ground node

“But I will ask my Aviation Development, Tactics and Evaluation Department Head, LtCol Ryan Schiller, to further discuss the process.”

LtCol Schiller: “Utilizing the targeting capabilities of the F-35 and its inherent survivability as a 5th-gen fighter combined with the standoff range and capability provided by HIMARS gives us a key capability to fight and strike in the A2/AD environment.

“We are clearly expanding the aperture of our focus on how to leverage the F-35 for the MAGTF.

“With regard to HIMARS we are looking to shipboard use in certain scenarios as well.

“It is important to expand the adversary’s sense of uncertainty as to how and when we might strike, generating capabilities that support a distributed force will help us reach that objective

“We intend to continue developing TTPs for HIMARS integration with F-35.

“During the next WTI class, we plan to fire a HIMARS using digital targeting information passed via an F-35.”

Question: How did the last WTI course provide a way forward on the digital transformation approach?

LtCol Schiller: “This was the first WTI class in which we integrated digital interoperability, in the form of the Marine Air Ground Tablet (MAGTAB), into every single event.

“Digital interoperability is about distributed situational awareness to the force and the new platforms and new capabilities we are developing are key to the way ahead.

“We are shaping a fifth generation MAGTF, a MAGTF where important and time sensitive information can be distributed throughout the force in order to compress the OODA loop and be proactive vice reactive on the battlefield.

Col Wellons: “Digital interoperability is one of the most important things we did in this WTI course.

“We have the ability to have a networked MAGTF, where Marines in the air and on the ground are able to see real-time position location information of friendly forces, watch sensor feeds, synchronize execution checklist items, publish 9-lines, and chat, among other key items.

“It is being fielded now although refinement continues.”

Full-Spectrum Crisis Management for the Liberal Democracies: Crafting a Kill Web Force

04/02/2019

As the strategic shift from the land wars gains momentum the investments and training in an appropriate 21st century crisis management and high intensity combat force will not be modelled on the Cold War European based force. It is not about a German-US Army brotherhood with significant presence. It is not about re-establishing air-land battle

It is about leveraging core force integration capabilities, such as F-35 with the Aegis, which can provide a pull function moving the US and the allies towards a more flexible and scalable force which can operate over the spectrum of operations.

As Vice Admiral Barrett, the former Chief of the Australian Navy highlighted with regard to how he saw the build out of the Australian Navy: "We are not building an interoperable Navy; we are contributing to an integrated Australian Defence Force able to exercise sovereign options and work closely with core allies."

Because the adversaries are building to mass and are emphasizing expansion of strike capabilities controlled by a very hierarchical command structure, the kind of force which will best fit Western interests and capabilities is clearly a. distributed one. Fortunately, the technology is already here to build effectively down this path, a path which allows engagement at the low end and provides building blocks to higher end capabilities.

The force we need to build will have five key interactives capabilities:

1. Enough platforms with allied and US forces in mind to provide significant presence;
2. A capability to maximize economy of force with that presence;
3. Scalability whereby the presence force can reach back if necessary at the speed of light and receive combat reinforcements;
4. Be able to tap into variable lethality capabilities appropriate to the mission or the threat in order to exercise dominance.
5. And to have the situational awareness relevant to proactive crisis management at the point of interest and an ability to link the fluidity of local knowledge to appropriate tactical and strategic decisions.

To be blunt about the last point – a cutting edge new system, the Triton UAV, is part of the new maritime SA force for the US and slelected allies. The SA on this aircraft needs to be used by the presence forces and not be part of the "intelligence collection" team back in the United States. Or put in other words, the new challenges require a significant challenge in terms of how the very un-agile US intelligence process tries to "own" information.

The new approach is one which can be expressed in terms of a kill web, that is a US and allied force so scalable that if an ally goes on a presence mission and is threatened by a ramp up of force from a Russia or China, that that presence force can reach back to relevant allies as well as their own force structure.

The inherent advantage for the US and its allies is the capability to shape a more integrated force which can leverage one another in a crisis.

A good example has been the evolution of the Aegis fleet in the Pacific.

The enhanced capability of the US and allied navies is coming not just from platforms but from kill web integration.

There is no greater case in point than how the US Navy and the allies are integrating their Aegis destroyers.

Earlier, this year, the Australian Navy demonstrated its ability to integrate with the US Navy with regard to the CEC system.

According to Andrew McLaughlin in an article published on January 7, 2019:

The tests were conducted in conjunction with the US Navy at the vast Pacific test ranges near Hawaii and off the coast of California, and saw the vessel's systems and crew challenged in realistic tests and demonstrations. This included testing the vessel's ability to integrate with US Navy assets via the Co-Operative Engagement Capability (CEC), a US high-end naval networking capability so far made only available to Australia.

"We were presented with some of the world's toughest and most challenging threats; modern anti-ship missiles, maritime strike aircraft, fighters and high-speed attack craft," Commanding Officer of HMAS Hobart, CAPT John Stavridis told Navy Today. "On every occasion we successfully defended all threats."

Part of HMAS Hobart's systems validation included a series of at sea tests known as Combat System Ship Qualification Trials (CSSQT) which aim to achieve a sustainable level of combat and weapon system readiness.

"This ship represents the future of the Royal Australian Navy's surface combatants: capable, competent and lethal," Fleet Commander, RADM Jonathan Mead said upon HMAS Hobart's return to Sydney. "With her recently commissioned sister ship, HMAS Brisbane, and soon to be delivered NUSHIP Sydney they will be able to defend our Fleet against any threat."

As part of the increasingly integrated maritime threesome — the US, Australian and Japanese Navies — the Japanese recently added a new platform to the mix.

According to Naval Today:

Japan's second Asahi-class destroyer, the JS Shiranui, entered Japan Maritime Self Defense Force (JMSDF) service in a ceremony at Mitsubishi Heavy Industries' Nagasaki Shipyard on February 27.

The lead ship in the class was commissioned a year before, on March 8, 2018.

The 5,100-ton general-purpose escort destroyers were previously designated as 25DD and are designed on the basis of Akizuki-class destroyers but with a focus on anti-submarine instead of anti-air warfare.

JS Shiranui (DD-120) was launched in October 2017 and was commissioned without delays.

Asahi-class destroyers are lauded as fuel-efficient ships featuring COGLAG, a combined gas turbine engine and electric propulsion system. They measure 151 meters in length and reach speeds of 30 knots, according to the Japan defense ministry. Armament includes Mark 41 vertical launch systems for self protection, 62-caliber naval guns, close-in weapon systems and two Mark 32 surface vessel torpedo tubes.

The destroyers will have a complement of around 230 and embark one Mitsubishi-built SH-60J/K are anti-submarine patrol helicopter.

Asahi-class destroyers are the first JMSDF ships to deploy with periscope detection radars in addition to being equipped with new towed array sonars.

Earlier, when the first of the new destroyers was launched from its shipyard last year, the integration piece was highlighted.

Japan launches first 27DDG-class AEGIS destroyer from a shipyard in Yokohama today (July 31). She has named "Maya" after mountain in Japan and WWII heavy cruiser.

The US$1.5 billion vessel is the seventh Aegis destroyer acquired by Japan Maritime Self-Defense Force, but the first to be fitted with the advanced Cooperative Engagement Capability (CEC) system. With a displacement of 8,200 tons and a length of 170 meters, it is scheduled to enter service by 2020.

Supplied by the US, the CEC system enables real-time sharing of intelligence on battlefield situations and hostile targets between ships in allied navies, while information and parameters are synced across all platforms linked to a sensory network. Sharing of radar and fire-controlling data will also be possible with the US Navy.

Warships equipped with this system can intercept incoming ballistic missiles in steep, lofted trajectories, and track dozens of targets simultaneously while firing clusters of defensive missiles, according to Japan Times. One such missile is the SM-3 Block IIA.

Japan will have eight Aegis destroyers with a ballistic missile defense capability by 2021. At their core will be a computer-based command-and-decision element capable of mounting simultaneous operations against a range of threats.

Because all three of these navies are part of the F-35 global enterprise as well, integration of F-35s with Aegis is part of the combat capability facing adversaries in the Pacific.

A shift to a kill web approach to force building, training and operations is a foundation from which the US and its allies can best leverage the force we have and the upgrade paths to follow. A kill web linked force allows a modest force package –

economy of force – to reach back to other combat assets to provide for enhanced options in a crisis or to ramp up the level of conflict if that is being dictated by the situation.

The evolution of 21st century weapon technology is breaking down the barriers between offensive and defensive systems. Is missile defense about providing defense or is it about enabling global reach, for offense or defense? Likewise, the new 5th generation aircraft have been largely not understood because they are inherently multi-domain systems, which can be used for forward defense or forward offensive operations.

Indeed, an inherent characteristic of many new systems is that they are really about presence and putting a grid over an operational area, and therefore they can be used to support strike or defense within an integrated approach.

In the 20th Century, surge was built upon the notion of signaling. One would put in a particular combat capability – a Carrier Battle Group, Amphibious Ready Group, or Air Expeditionary Wing – to put down your marker and to warn a potential adversary that you were there and ready to be taken seriously. If one needed to, additional forces would be sent in to escalate and build up force.

With the new multi-domain systems – 5th generation aircraft and Aegis for example – the key is presence and integration able to support strike or defense in a single operational presence capability. Now the adversary cannot be certain that you are simply putting down a marker.

This is what former Air Force Secretary Michael Wynne calls the attack and defense enterprise.

The strategic thrust of integrating modern systems is to create a grid that can operate in an area as a seamless whole, able to strike or defend simultaneously. This is why Wynne has underscored since at least 2005 that fifth generation aircraft are not merely replacements for existing tactical systems but a whole new approach to integrating defense and offense.

When one can add the strike and defensive systems of other players, notably missiles and sensors aboard surface ships like Aegis, then one can create the reality of what Ed Timperlake, a former fighter pilot, has described as the F-35 being able to consider Aegis as his wingman.

By shaping a tron warfare 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.

The US Navy leadership has coined their version of this approach, the "kill web." In an interview we did with Rear Admiral Admiral Manazir, then head of N-98, Naval Aviation.

If you architect the joint force together, you achieve a great effect.

It is clear that C2 (command and control) is changing and along with it the CAOC (Combined Air and Space Operations Center).

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.

Inherent in such an enterprise is scalability and reach-back.

By deploying the tron warfare grid or a C2/Information superiority "honeycomb", the shooters in the enterprise can reach back to each other to enable the entire grid of operation, for either defense or offense.

By being able to plug into the F-35 and Aegis enabled honeycomb, the United States providees force augmentation and surge capability to those allies and at the same time those allies enable forward deployments which the United States would not own or operate.

Put in other terms, presence is augmented at the same time as scalability is as well. This provides a significant force multiplier across the crisis management spectrum.

In effect, what could be established from the United States 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 which now rests on trying to proliferate power projection platforms, when neither the money nor the numbers are there.

Put bluntly, if you do not get, you do not get it. The fifth generation enabled force is here; and the challenge is clearly to leverage it as one builds out new elements of the kill web to enhance the scope and lethality of the US and allied force structure in either the Pacific or Europe.

Shaping a Kill Web Approach to Dealing with the High-End Fight

04/28/2018

We are focusing on several aspects of change in the global strategic situation as well the approach which U.S. and allied forces are taking to engage effectively as the strategic situation changes.

One key dynamic of change is the distribution of sensors and strike throughout the battlespace and the use of C2 and task forces to concentrate force on leveraging a strike and sensing grid to gain combat dominance.

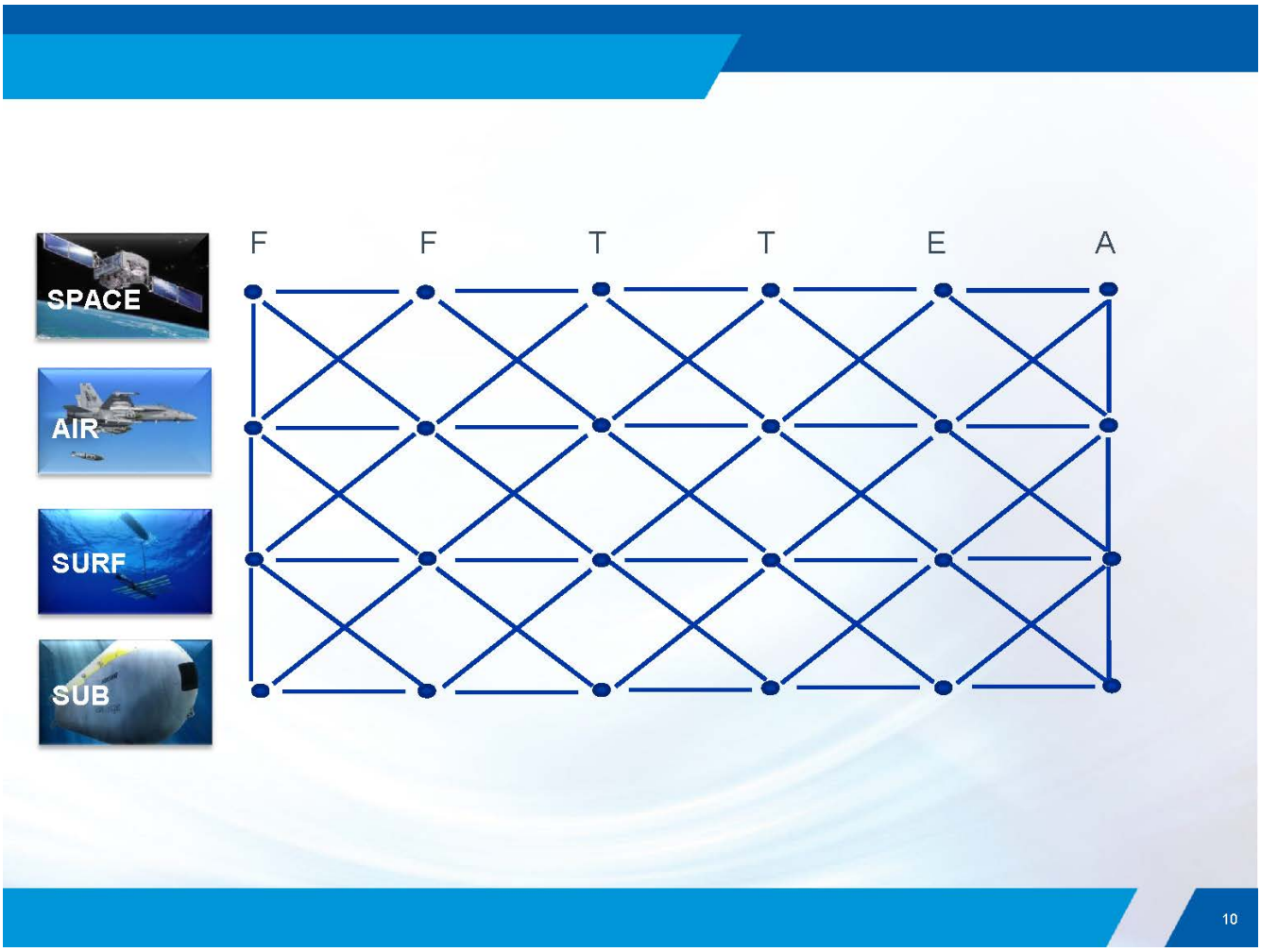
When Rear Admiral Manazir was the commanding officer of N-9, Deputy Chief of Naval Operations for Warfare Systems, we discussed with him the core concept and its implications.

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

It is about building integration from the ground up so that forces can work seamlessly together through multiple networks, rather than relying on a single point of failure large network.

And when discussing how the USAF and US Navy need to work more effectively together in the future, this is how he put it:

How do we achieve distributed effects across all domains in the battlespace?



We are working closely with General Goldfein through various Service interaction groups; most effectively at the highly classified level.

We talk about issues that are common to our Services on a regular basis.

The core commonality between the two is that both are expeditionary services.

When we get into the battle area, Air Force assets can strike, reset, and strike again.

Naval forces operating in the maritime domain provide persistence.

If you combine Air Force and Naval combat capabilities you have a winning combination.

If you architect the joint force together, you achieve a great effect.

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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.

Rear Admiral Manazir has retired from the US Navy and now is working with Boeing.

In the Footsteps of Admiral Nimitz: VADM Miller and His Team Focused on 21st Century "Training"

10/12/2019
By Robbin Laird

As Admiral Nimitz confronted the last century's challenges in the Pacific, he concluded a core lesson for this century's Pacific warriors:

"Having confronted the Imperial Japanese Navy's skill, energy, persistence, and courage, Nimitz identified the key to victory: 'training, TRAINING and M-O-R-E T-R-A-I-N-I-N-G.' as quoted in Neptunes's Inferno, The U.S. Navy at Guadalcanal (James D. Hornfischer)"

The US and its core allies are shaping new capabilities to deal with the various threats and challenges in the Pacific in the time of the Asian century.

Flexibility in operations and agility in inserting force with a proper calibration of effect will be enhanced as new systems come on line in the years ahead. But these systems will have the proper effect only in the hands of skilled warriors.

https://sldinfo.com/2014/03/the-rise-of-pacific-warriors-training-for-21st-century-joint-and-coalition-operations/

Recently, I visited Naval Air Station, North Island, in San Diego, to meet with VADM Miller, Commander Naval Air Forces, or the "Air Boss" of the US Navy.

Joining the discussion was the F-35 US Navy Wing Commander, Captain Max McCoy.

We discussed the evolution of the Naval Air Wings in the context of the Navy working what we have called in the past "the kill web," or what I am now referring to as building an integrated distributed force.

VADM Miller started by underscoring that significant change is underway for the carrier air wing or CAG.

The F-35 is providing a forcing function of change.

According to VADM Miller:

"5th generation capability is a catalyst for change: how we fight, how we train, how we maintain and sustain aircraft, how we flight test, and how man our squadrons (pilots & maintenance personnel).

"The emphasis is interoperability, networking, distributed forces, and integration."

But several new capabilities are being introduced into the operational force, such as the Triton, P-8s, modernized Super Hornets, the new Hawkeye, the MQ-25 unmanned tanker.

These new capabilities are being worked into an evolving Naval strike force to shape new capabilities for the carrier and for the distributed force.

The new Commandant of the USMC has highlighted how he sees the evolution of the USN-USMC team to shape a distributed offensive defensive capability and the changes described by the Commandant along with changes to the carrier force are adding up to a significant trajectory of change for the sea-based force.

I asked him what are his top funding priorities and he underscored the key challenge of sustainment and getting the force fully supported for its demanding global deployment challenges.

But along with sustainment he highlighted the key challenge of shaping a new approach to training and testing in which the force evolves more rapidly in its combat learning skills from the standpoint of force interoperability.

The training function is changing dramatically, and in many ways, the reality underlying the function is changing dramatically as the capabilities and the focus on what I would call shaping an integrated distributed force change as well.

Captain Max McCoy highlighted what one might call the forcing function of the F-35 and of the F-35 aviators upon the training dynamic.

“We are teaching F-35C pilots to be wingmen, but training them to think like mission commanders.

“F-35C provides more situational awareness than ever before and pilots must be able to influence the battlespace both kinetically and non-kinetically.

“The pilot must interpret cockpit information and determine the best means to ensure mission success either through his own actions or by networking to a distributed force.”

They need to think like mission commanders, in which they are operating in terms of both leveraging and contributing to the networked force.

This means that the skill sets being learned are not the classic TTPs for a combat pilot but are focused on learning how to empower and leverage an integrated force.

“Training can no longer focus solely on T/M/S capabilities.

“Training has to develop young aviators who appreciate their role within a larger maneuver/combat element.

“Specifically, how does F-35C complement 4th generation capabilities within the Carrier Air Wing and surface combatants distributed within the Carrier Strike Group?

“It is no longer about fighting as a section or division of fighter aircraft.

"We only win if we fight as an interoperable, networked, and distributed force.

"We are still learning and incorporating 5th generation capability into the Navy.

"Our efforts must be calculated and measured but push beyond historical comfort zones.

"We must embrace what is new and redefine what is basic warfighting capability.

"This starts with the Fleet Replacement Squadron (FRS) and Air Combat Training Continuum (ACTC) syllabi.

"We must make integrated training a key component of a pilot's progression from FRS graduate to mission commander. F-35C is an enabler, if and only if, we train our pilots to think well beyond the limits of their cockpit and reach of an individual aircraft's weapons system".

They are learning how to operate as distributed force packages.

This is leading to radical disjunctures from traditional training approaches and thinking.

How do you best train your aviators to tap into networks and provide for distributed strike?

In shifting from a training focus on traditional TTPs, how do Naval aviator's problem solve differently?

How to reshape effectively the infrastructure to support new training approaches?

How do Naval aviators integrate with and maximize their impact for and on the combat force?

Live Virtual Constructive Training provides a technological path, but is a necessary but not sufficient tool set for the Navy to get where they need to go.

Training is now about shaping domain knowledge for the operational force to ensure that "we can be as good as we can be all of the time."

According to Vice Admiral Miller and Captain McCoy:

"The ability to reshape training and change culture requires a warfighting community to break from traditional training methods either on the range, at sea and in the simulated environment.

"There are numerous reasons why we must find a new balance among live, virtual and constructive (LVC) training in a distributed mission training (DMT) construct.

"Range infrastructure, threat simulation, cost to operate, and security are driving us to search for new training opportunities.

"However, the most important reason is operational readiness – warfighting first.

"We must be ready and prepared to fight at all times independent of FRTP/OFRP phase. LVC/DMT is the only way to be good all of the time given a unit's resourcing that includes manpower, aircraft, and flight hour budget.

"It forces integration among 4th and 5th generation aircraft while also providing the medium to integrate with surface combatants.

"Again, in the future, we are all wingmen in the battlespace who must think well beyond the cockpit or bridge of our platforms. LVC/DMT will be the proving ground that unlocks how we think and encourages TTP development that would otherwise be hindered by fiscal constraints and under-resourced or inadequate ranges.

"It is the bridge that builds cooperation and cohesiveness among communities. LVC/DMT is the common ground that teaches our amazing tacticians how to appreciate a wide range of capabilities that are far more effective in the collective."

If Admiral Nimitz would visit Naval Air Station, North Island, today, he would be amazed and pleased to see the technology in the hands and coming into the hands of the Naval aviation community.

But he certainly would wish to see the 21st century re-set of training underway to be fully supported and funded.

Crafting a Network of Networks for a 21st Century Combat Force

10/15/2019
By Robbin Laird

Over the past thirty years, the United States and its core allies have gone through three phases of innovation with regard to conventional forces. The first was air-land battle designed for the European theater and executed in the 1991 Iraqi War. The second was the innovations associated with the land wars and the joint force support for COIN operations. The third which is unfolding now is designed to deal with 21st century high intensity operations which can be conducted by peer competitors.

This new phase might be called shaping, exercising and building an integrated distributed force.

This entails interactive technological, force structure and geographical deployment dynamics. We have argued that a new basing structure combined with a capability to deploy and operate an integrated distributed force is at the heart of the strategic shift, and not only in the Pacific.

This is a key part of the effort to shape a full spectrum crisis management capability whose con-ops is shaped to deal with adversary operations within what some call the "gray zone" or within the "hybrid warfare" area.

The nature of the threat facing the liberal democracies was well put by a senior Finnish official: "The timeline for early warning is shorter; the threshold for the use of force is lower."

What is unfolding is that capabilities traditionally associated with high end warfare are being drawn upon for lower threshold conflicts, designed to achieve political effect without firing a shot.

Higher end capabilities being developed by China and Russia are becoming tools to achieve political-military objectives throughout the diplomatic engagement spectrum.

This means that not only do the liberal democracies need to shape more effective higher end capabilities but they need to learn how to use force packages which are making up a higher end, higher tempo or higher intensity capability as part of a range of both military operations but proactive engagement to shape peer adversary behavior.

In today's world, this is what full spectrum crisis management is all about. It is not simply about escalation ladders; it is about the capability to operate tailored task forces within a crisis setting – to dominate and prevail within a diversity of crises which might not be located on what one might consider an escalation ladder.

This means that a core legacy from the land wars and COIN efforts needs to be jettisoned if we are to succeed – namely, the OODLA loop. The OODA loop is changing with the new technologies which allow distributed operators to become empowered to decide in the tactical decision-making situation.

But the legacy approach to hierarchical approval to distributed decisions simply will take away the advantages of the new distributed approach and give the advantage to our authoritarian adversaries.

What is changing is that the force we are shaping to operate in the littorals has expansive reach beyond the presence force in the littorals themselves. If you are not present; you are not present. We have to start by having enough platforms to be able to operate in areas of interest.

But what changes with the integrated distributed ops approach is what a presence force can now mean.

Historically, a presence force is about what is organically included within that presence force; now we are looking at reach or scalability of force. We are looking at economy of force whereby what is operating directly in the area of interest is part of distributed force.

The presence force however small needs to be well integrated but not just in terms of itself but its ability to operate via C2 or ISR connectors to an enhanced capability. But that enhanced capability needs to be deployed in order to be tailorable to the presence force and to provide enhanced lethality and effectiveness appropriate to the political action needed to be taken.

This rests really on a significant rework of C2 in order for a distributed force to have the flexibility to operate not just within a limited geographical area but to expand its ability to operate by reaching beyond the geographical boundaries of what the organic presence force is capable of doing by itself.

This requires multi-domain SA. This is not about the intelligence community running its space- based assets and developing reports. This is about looking for the coming confrontation which could trigger a crisis and the SA capabilities airborne, at sea and on the ground that would provide the most usable SA

monitoring. This is not "actionable intelligence." This is about shaping force domain knowledge in anticipation of events.

This also requires tailored force packaging to take advantage of what the new military technologies and platforms can provide in terms of multi-domain delivery by a small force rather than a large air-sea enterprise which can only fully function if unleashed in sequential waves.

This is not classic deterrence – it is about pre-crisis and crisis engagement.

The force we are building will have five key capabilities:

- Enough platforms with allied and US forces in mind to provide significant presence;
- A capability to maximize economy of force with that presence;
- Scalability whereby the presence force can reach back if necessary at the speed of light and receive combat reinforcements;
- Be able to tap into variable lethality capabilities appropriate to the mission or the threat in order to exercise dominance.
- And to have the situational awareness relevant to proactive crisis management at the point of interest and an ability to link the fluidity of local knowledge to appropriate tactical and strategic decisions.

The new approach is one which can be expressed in terms of a kill web, that is a US and allied force so scalable that if an ally goes on a presence mission and is threatened by a ramp up of force from a Russia or China, that that presence force can reach back to relevant allies as well as their own force structure.

A shift to a kill web approach to force building, training and operations is a foundation from which the US and its allies can best leverage the force we have and the upgrade paths to follow.

For this approach to work, there is a clear need for a different kind of C2 and ISR infrastructure to enable the shift in concepts of operations.

Indeed, when describing C2 and ISR or various mutations like C4ISR, the early notions of C2 and ISR seen in both air-land battle and in joint support to the land wars, tend to be extended into the discussions of the C2 and ISR infrastructure for the kill web or for force building of the integrated distributed force.

But the technology associated with C2 and ISR has changed significantly throughout this thirty year period, and the technology to shape a very different kind of C2 and ISR infrastructure is at hand to build enablement for distributed operations.

Recently, I had a chance to talk with an industry leader with regard to the evolution of C2 and ISR infrastructure.

Marja Phipps currently is business development director for Cubic Mission Solutions (CMS), a business division of Cubic Corporation.

She has more than thirty year's experience in the C2 and ISR areas and has lived through the thirty-year development of C2 and ISR with the cycles of innovation changing dramatically to create the new technological situation in which we find ourselves.

She has focused on providing C4ISR system offerings to military services, defense agencies, intelligence community and multinational partners. Her domain expertise includes communications and networking, knowledge-based systems, multi-INT Processing Exploitation and Dissemination tradecraft, and enterprise interoperability.

What she explained is that the earlier concepts of networking relied on hardwired networks, and single point networking solutions. This meant that the network required careful planning and coordination with the particular platforms which were using the networks to get the combat or joint effect from a networked capability.

"Earlier we built a dedicated single network connection for a specific task, such as providing targeting information to the platforms involved in a specific operation."

The "networked" force was built around platforms that would use networked information to create desired and often scripted events.

But the C2 and ISR revolution we are now facing is reversing the logic of platforms to infrastructure; it is now about how flexible C2 and ISR interactive systems can inform the force elements to shape interactive combat operations on the fly.

That is, the new capabilities are enabling tactical decision making at the edge and posing real challenges to traditional understandings of how information interacts with decision making.

It is about learning how to fight effectively at the speed of light in order to achieve combat dominance.

And these new capabilities are providing a real impact on force development, concepts of operations and force training as well.

"With the new technologies and capabilities, we are now reusing networks for multiple purposes and making sure that they can adapt to the changing con-ops as well."

"We are seeing integration of the networks and the integration of the information management services and then the dual nature of the applications on top of those integrations.

"Rather than building a single purpose intel common operating picture, we are now capable of building an integrated intelligence and battlespace management common operating picture for the use of the combat forces engaged in operations."

She argued that there are significant changes at each layer of the C2 and ISR systems becoming increasingly integrated for a distributed force.

"At each layer, we are making the technology more robust. For example, at the communications layer, the connections are more redundant and protected and are data agnostic.

"You don't have a dedicated network for one piece of data or between specific platforms, you've got the ability to network anything essentially."

In other words, "we are building an adaptable network of networks. In traditional networks, when data is brought in from a dedicated system, it needs to be repurposed for other tasks as needed."

What the technology is allowing us to do, is to think about C2 and ISR in a very different fashion, and to think in terms of enabling a small force operations or Lego block approach to the buildup of forces.

The new C2 and ISR infrastructure allows one to think about force development differently.

Phipps noted: "Access data points are becoming ubiquitous and operating in conjunction with processing data services which are scalable across a highly redundant protected communications network."

"We are putting communications capabilities understood in terms of being able to operate with scalable processing and data services at the tactical edge.

"The edge players are becoming key players in the decision making involving the distributed force.

"They are not just sending data back but they are making decisions at the tactical edge.

"The network gives you the access to not only the ISR data, but the C2 processes as well. The targeting data can be repurposed as well for additional decision-making, not just at the edge but back into the larger combat enterprise."

This obviously requires rethinking considerably the nature of decision making and the viability of the classic notion of the OODA loop.

If the machines are fusing data or doing the OO function, then the DA part of the equation becomes transformed, notably if done in terms of decision making at the tactical edge.

The decisions at the edge will drive a reshaping of the information about the battlespace because actors at the tactical edge are recreating the information environment itself.

In effect, chaos theory becomes a key element of understanding of what C2 at the tactical edge means in terms of the nature of the fleeting information in a distributed combat space itself.

"With the new technologies, what you are calling the new C2 and ISR infrastructure enables new warfighting approaches which need to be shaped, exercised and executed, and in turn affect how our forces train for the high-end fight."

She underscored a key difference from the earlier phase of network centric warfare.

"I think of net-centric as a hardwired con-ops. I think it's preplanned. You can do it, but there's no adaptability, there's no protection, there's no scalability as far as those architectures were concerned.

“Now we’re going to the next step where we’re making networks adaptable and scalable so that you can essentially re-plan on the fly and make decisions differently, in a distributed manner.

“It’s not a preplanned or scripted way of operating anymore.”

She went on to argue that the focus needed to be going forward on what she called “smart network management.”

What she highlighted is the importance of what might call information parsimony, or getting the right information, to the right person, at the right time.

One of the challenges facing analysts discussing networks is that assumption that too much information is being collected and data is overwhelming the human decision maker. If that is the case, then we are talking about bad network architecture and information management.

She focused on how the key layers in the modern approach to networking interact with one another.

“In an adaptive network of networks, there are several layers interacting dynamically with one another, from a comms layer, to a data processing layer, to a data distribution layer with a network management layer able to dynamically provide for information parsimony.”

On the technology side, it is about both hardware and software solutions which are allowing new capabilities to emerge which allow for a smart networking capability to emerge.

“We’re talking about adaptability and upgradeability here. It’s not just about software upgradeability, it’s about hardware changes that allow for more flexible software solutions and more flexible cross-engagement solutions.”

With the new C2 and ISR infrastructure the opportunity to enhance the capabilities of the legacy force are significant.

“One can add information management and decision processes on an airborne platform with a small processing footprintt.

“You could make good decisions on what you do as far as control on that platform versus what you’re doing as far as control on another platform.

“And it’s across domains as well. We should not think of just a certain processing or information management activity taking place on the ground or in the air.

“We’re also talking space as well and figuring out how to basically connect across all those layers and the assets across those layers as well.”

And going forward we will look at new platforms quite differently.

Rather than discussing generations of platforms, with the information and decision-making infrastructure building out an integrated distributed force, we will look at platforms in terms of what

they contribute to the overall capability to such a force, rather than simply becoming autistic injections into the force.

Operation Rapid Forge: Highlighting the Challenge To Shape a Sustainment Capability to Enable an Integrated Distributed Force.

10/14/2019

By Robbin Laird

To deal with the challenge posed by the 21st century authoritarian powers, the United States military and its allies are rebuilding their combat approach.

The strategic trajectory is to shape a force which can prevail in an area of interest with a coordinated or integrated dispersed or distributed force.

A recently completed exercise, Operation Rapid Forge, is a step in this direction.

Here the focus was upon how to generate sufficient force to defend the Baltic States in a crisis, and to do so by inserting a force which had reach back to a broader and more powerful integrated force.

At the conclusion of the exercise, Airman 1st Class Kyle Cope, 52nd Fighter Wing Public Affairs, provided an overview on the exercise in an article published July 28, 2019.

The 10-day operation helped ensure U.S. forces' ability to fulfill the European Deterrence Initiative, a policy to assure and defend NATO allies, while promoting deterrence in an increasingly complex security environment.

Members of the 4th Fighter Wing, Seymour Johnson Air Force Base, North Carolina, set up a mobile command and control facility in a simulated austere environment. The 4th FW and the 421st Expeditionary Fighter Squadron, Hill AFB, Utah, used the C2 node throughout the operation for sorties as the U.S. forces practiced interoperability with NATO partners.

"Rapid Forge is assuring our NATO partners," said U.S. Air Force Col. Donn Yates, 4th FW commander. "Rapid Forge is developing interoperability between 4th and 5th generation aircraft, F-35A (Lightning II) and F-15E (Strike Eagle) and it is also rapidly projecting airpower into the theater using amazing capabilities that we have and then being able to test and experiment with command and control, in accordance with a flexible mindset."

The operation was a collaborative effort between European and U.S. Forces.

"European forces from NATO member nations of Estonia, Latvia, Lithuania and Poland participated alongside Airmen from U.S. Air Forces in Europe, F-15E Strike Eagles from the 4th FW and F-35A Lightning II from the 421st EFS," said U.S. Air Force Lt. Col. Maxwell Cover, 421st EFS F-35A pilot.

A key part of Operation Rapid Forge was testing the U.S. Air Force's ability to operate in an austere environment.

"The U.S. Air Force had been looking to explore its ability to deploy a light and lean force to rapidly stand up a C2 facility anywhere in the world," Yates said. "This ability prevents U.S. forces from being restricted to a fixed site, while demonstrating we are a credible and capable competitor with any adversary."

Operating this way has resulted in the concept of the multifunctional Airman, an Airman who is trained to perform a variety of tasks, not just those within their specific specialty.

Cover said the 421st EFS had a team of highly trained maintenance personnel at each training location for Operation Rapid Forge. Airmen were cross-trained into all the different F-35A maintenance functional areas. Instead of having seven to nine personnel to operate all the functional areas, two personnel can do all the F-35A servicing.

The 4th FW also discovered the concept of the multifunctional Airman to be beneficial.

Yates said his base built their team towards the multifunctional Airman concept prior deploying to Operation Rapid Forge. He said for his team, the concept involved training Airmen to fuel jets, marshal aircraft, provide security and lead troops, among other skills.

This concept makes expeditionary operations like Rapid Forge possible.

"The multifunctional Airman concept is key to operating in an austere environment," Cover said. "We want to minimize our footprint and change the calculus of where a potential adversary thinks we can operate. To do that, we are going to need to cut down the number of people we need to accomplish the mission and have more of a middleweight fighting force that is highly capable."

The continued change in strategy and policy during Operation Rapid Forge was intended to strengthen the deterrence effect of U.S. forces.

Cover said it is important the U.S. Air Force maintains a strategy that seeks a continuing advantage to deter aggression and assure NATO allies. Operation Rapid Forge was built upon a strategy that allows the U.S. to promote deterrence of possible aggressors by operating in remote locations with a minimal footprint, while still maintaining the strength of our fighting force.

The lessons and skills learned from Operation Rapid Forge resulted in a successful operation.

"We came here to accomplish three objectives," Yates said. "Get the team here in a very quick timeline, establish our air expeditionary wing and achieve training, and get everyone home safe. We have accomplished the first two objectives and are working on the third, so I consider Rapid Forge to be a huge success."

This sentence "Operation Rapid Forge was built upon a strategy that allows the U.S. to promote deterrence of possible aggressors by operating in remote locations with a minimal footprint, while still maintaining the strength of our fighting force" highlights the heart of a strategy for the operation of an integrated distributed force.

To do so requires, an operational base, however temporary, to generate combat operations.

To operate, you need fuel and weapons which means that you need to operate dispersed FARPs or forward arming and refueling points which are viable enough to do the job. Which almost certainly means having capabilities to be defended even if mobile or temporary.

Earlier this year, the USAF exercised its FARP capabilities in Arizona. According to an article by Airman 1st Class Kristine Legate, 355th Wing Public Affairs in an article published on February 19, 2019:

DAVIS-MONTHAN AIR FORCE BASE, Ariz.(AFNS) — In the darkness of night, forward area refueling point team members wait for a HC-130J Combat King II to land – marking the start of training.

FARP, a specialty within the petroleum, oils and lubrication career field, trains Airmen to effectively refuel aircraft in remote locations when air-to-air refueling is not possible or when fueling stations are not accessible.

Davis-Monthan is one of seven bases which can provide FARP capabilities. Of the entire U.S. Air Force, there are a total of 63 qualified FARP team members – nine for each base.

"We come in with everything we need to deliver fuel from one aircraft to another," said Staff Sgt. Drake Burch, 355th Logistics Readiness Squadron FARP operator. "So that others have enough fuel to complete their missions and make it back home safe."

FARP plays a role in the U.S. military's adaptive basing abilities to deliver airpower lethality more effectively and efficiently anywhere in the world by being able to provide a mobile refueling point anywhere an aircraft can land.

"With the ability to set up a refueling site with both minimal equipment and personnel, we are able to provide versatility while leaving a low footprint" Burch said.

To maintain readiness in adverse conditions, FARP training can take place anytime, day or night, and consists of members wearing roughly 60 pounds of gear, to include: a rifle, vest, magazines, night-vision goggles, a helmet and survival gear, while performing refueling tasks to simulate encounters they may face downrange.

"We practice how we play," said Staff Sgt. Matthew Lara, 355th LRS FARP operator. "It helps us prepare for real-world situations. Downrange we could have scenarios where we have to land, refuel and leave in under an hour."

Training can be strenuous and demanding. To even qualify for FARP, Airmen must pass Survival, Evasion, Resistance, and Escape (SERE) school and go through an altitude chamber. In training situations, which can sometimes take place in pitch black darkness, FARP members must show they can refuel aircraft even in the most austere environments. Training in less-than-ideal conditions allow Airmen to hone their skills which will, in turn, allow them to support the mission in any situation.

"It's demanding – both physically and mentally. On the job, exhaustion can easily creep up on you and thoughts of wanting to quit start to cross your mind, but you don't quit," Lara said. "In a real-world situation you can't just stop, you have to keep going to complete the mission."

The force needs a common operating picture and a C2 system which provide a backbone for the combat mass necessary to achieve combat success. The distributed force package however small needs to be well integrated but not just in terms of itself but its ability to operate via C2 or ISR connectors to an enhanced capability.

But that enhanced capability needs to be deployed in order to be tailorable to the distributed operational force operating almost like a lego block and to provide enhanced lethality and effectiveness appropriate to the political action needed to be taken.

This rests really on a significant rework of C2 in order for a distributed force to have the flexibility to operate not just within a limited geographical area but to expand its ability to operate by reaching beyond the geographical boundaries of what the organic presence force is capable of doing by itself.

This requires multi-domain SA – this is not about the intelligence community running its precious space- based assets and hoarding material. This is about looking for the coming confrontation which could trigger a crisis and the SA capabilities airborne, at sea and on the ground would provide the most usable SA monitoring. This is not "actionable intelligence." This is about shaping force domain knowledge about anticipation of events.

For an integrated distributed force able to operate over an extended period of time, a key challenge will be to build a sustainment capability to enable an integrated distributed force.

If one took the kind of capability exercised in Operation Rapid Forge as a foundational one to deal with the peer competitors, how would you sustain such an approach over a period of time necessary to prevail?

It is clear that to do so would require effective, integrated and globally integratable support structures. And this requirement runs straight into the legacy system which the US has used for force support for the entire post-Cold War period.

Or put another way, without significant legal and security changes in the sustainment system for US forces, effective global performance for an integrated distributed force will simply not be sustainable for an extended period of combat.

This means that rather than looking at logistics as the tail for global power projection, sustainment for an integrated distributed force is the tail wagging the dog.

This means that the core new programs the U.S. is fielding, notably the F-35 and the P-8, to mention two, need to leverage their global presence and allies who are in the program to have sustainable and protected supply and repair centers close to the area of interest from which the allies and the U.S. can work interchangeably.

I have argued that in the case of the US and Australia one could stand up over the next five years a sustained engagement strategy. As Australia looks to enhance its own sustainment capabilities and to expand the use of its Northern geography, and the US looks to reshape its deterrence in depth capabilities with allies in the Pacific, reshaping the logistics support approach could be a key building block for crafting an integrated distributed force in the Pacific.

As I argued in an earlier article:

As the Aussies work out their sustainment approach on the various airbases where the F-35s will operate in normal times as well as crisis times, the F-35 partners of Australia have a significant strategic opportunity — namely, to learn how to do sustained engagement operations working with the RAAF in supporting regional deterrence operations.

The Aussies are standing up a significant support structure in Australia for regional support. As they do so, allies such as the US and Japan can shape an approach to what I would call sustained engagement.

With crises to come in which the F-35s will play a key role, the Australians can provide operating locations for allies, without having to base those allies on a long term basis. This allows Australia its sovereignty but also allows allies like the United States and Japan to gain operational depth, which will be crucial for deterrence in the region.

Because they are flying virtually the same aircraft, stockpiling parts and leveraging an expanded sustainment base with the Australian maintainers leading the way for the USAF to move to a new approach to operations which does not require them to operate like Fed Ex flying in resources to then stand up support in a crisis.

The USAF or the Japanese could fly to Australia and be supported by Australian based supplies and maintainers supplemented by Japanese and US maintainers and could operate rapidly in a crisis, rather than engaging in a significant airlift and tanking support set of missions to stand up aircraft in Australia on a case by case basis.

It is not about just showing up; it is about being able to do sustained engagement with a very light expeditionary support structure to establish and operate from a solid operational footprint.

Lt. Col. David Beaumont, an Australian logistics officer and expert, provided his perspective on how he saw this aspect of the potential for the F-35 program.

"This is the beauty of the program – it supports what we might also call 'theatre setting', or creating logistics (sustainment) and other arrangement s we could conceivably operate in.

"In coalition, we'll effectively be operating a strategic 'hub and spoke' support network for the aircraft where a range of coalition bases (countries) offer hubs for operations, with supply chains between them the spokes. The other advantage is considerable redundancy if the supply chains are interdicted in one area.

This inherent capability within the F-35 global enterprise "makes interoperability among allies a fundamental issue for immediate attention."

For the sea services, this means as well bolstering and reshaping its capabilities for at sea support as well.

Notably, in the new USMC Commandant's guidance, he highlighted how he saw the USN-USMC team reworking its capabilities to provide combat blocs within what I am calling an integrated distributed force. He highlighted the importance of distributed combat blocs or perhaps small task forces to operate against adversary positions within an area of interest and to do so for sustained periods of time.

While there has been much discussion of the capital fleet and of the weaponization of that fleet, what is missing is a clear commitment and investment in the logistics support fleet that can make any of this happen. In fact, the littoral combat ship was bought with scant regard to the Military Sealift Command and its inability to support a forward deployed LCS and as a result, LCSs are now being attached to task forces.

This means that the slow, steady and perhaps irreversible decline of U.S. and allied merchant marines will make support to an integrated distributed fleet very difficult indeed. Not only do we need merchant mariners but a significant upsurge in the supply ships necessary to tank, arm and generally support the fleet, and if distributed this demand signal goes up significantly,

This is not simply a U.S. problem but an allied problem as well.

Innovations are clearly underway that will allow the supply challenge for a distributed force to be improved. An ability to do 3D printing for parts onboard ships is one example. Directed energy weapons supplementing or supplanting today's kinetic weapons is another.

An ability to leverage remote basing as well as new forms of supply via unmanned vessels can provide new tool sets as well.

But the point can be put bluntly – the tail is going to wag the dog on this one.

Without a significant commitment to sourcing, reworking, and investing in new approaches and strategies for the US to work with allies for distributed support, the promise inherent in a shift to an integrated distributed force will not be met.

The original version of this article was published in *Front Line Defence,* Issue 3, 2019.

The article is entitled: "An Integrated Distributed Force" and starts on page 18 in the magazine.

Coda: The Basing Challenge

Under the latest National Defense Strategy, the Air Force is questioning the resiliency of its established bases and putting thought into how the service could establish a makeshift airfield or use partner nations' bases to distribute assets should war break out.

"It is about combat-credible forward forces; that is, forces that are or can rapidly get forward, survive a withering Chinese or Russian assault, and blunt the adversary's aggression," Elbridge Colby, who co-led development of the National Defense Strategy, wrote in January 2019 testimony to Congress. "And it is about bases, operating locations and logistic networks that can perform their missions in support of these goals, even under heavy and sustained enemy attacks."

Simply put, the Air Force can't count on its installations to withstand the type of prolonged attacks that Russia and China could mount, and the service must be able to swiftly regenerate air power from alternate sites should its primary bases became unusable.

That problem was on the mind of Air Force Chief of Staff Gen. Dave Goldfein during a July trip to Finland.

The Finnish Air Force disperses its aircraft among four bases inside the country, but all its aircraft can operate from Finland's many "road bases"— basically a highway strip that is equipped to function as a runway. The service trains its personnel to secure and stand up road bases, and it regularly demonstrates its ability to operate from the bases during exercises.

The U.S. Air Force could learn from that, Goldfein told Defense News after the visit.

"While we do have a lot of bases, I don't know which of those are going to be available for the time I need it," he said.

"So I've got to be more agile than that, and it might be that I'm setting up a base that doesn't actually exist. I have a long enough track of concrete, some source of water, and that's all I've got, and now I have to rapidly stand it up and do all those key tasks," he added. "Stand up a base, defend the base, receive forces, be able to connect into the command and control, and then be able to operate in a contested environment. They're already thinking about that."

One means of doing this involves pre-positioning equipment in Europe, as well as making key investments to partner nations' bases to fund things like runway repairs and new hangars. Last year, the U.S. Air Force conducted a proof of concept for "deployable air bases," demonstrating that airmen could transfer shipping containers full of equipment to Poland's 31st Air Base in Krzesiny and set up a camp and airfield infrastructure needed to launch planes.

https://www.defensenews.com/smr/a-modern-nato/2019/08/28/denied-hot-meals-and-indoor-toilets-us-airmen-prepare-for-the-fog-of-war/

A Key Element for the Future Evolution of the Integrated Distributed Force: Evolving Remote Maritime Capabilities

10/17/2019

In today's world, full spectrum crisis management is not simply about escalation ladders; it is about the capability to operate tailored task forces within a crisis setting to dominate and prevail within that crisis.

If that stops the level of escalation that is one way of looking at it. But in today's world, it is not just about that but it is about the ability to operate and prevail within a diversity of crises which might not be located on what one might consider an escalation ladder.

They are very likely to be diffuse within which the authoritarian powers are using surrogates and we and our allies are trying to prevail in a more open setting which we are required to do as liberal democracies.

This means that a core legacy from the land wars and COIN efforts needs to be jettisoned if we are to succeed – namely, the OODLA loop.

This is how the OODA loop has worked in the land wars, with the lawyers in the loop, and hence the OODLA loop.

The OODA loop is changing with the new technologies which allow distributed operators to become empowered to decide in the tactical decision-making situation.

But the legalistic approach to hierarchical approval to distributed decisions simply will take away the advantages of the new distributed approach and give the advantage to our authoritarian adversaries.

What we are seeing is a blending of technological change, with con-ops changes and which in turn affect the use and definition of relevant military geography.

In other words, the modernization of conventional forces also has an effect on geography.

What is changing is that the force we are shaping to operate in the littorals has expansive reach beyond the presence force in the littorals themselves.

If you are not present; you are not present. We have to start by having enough platforms to be able to operate in areas of interest.

But what changes with the integrated distribute ops approach is what a presence force can now mean. Historically, what a presence force is about what organically included within that presence force; now we are looking at reach or scalability of force.

We are looking at economy of force whereby what is operating directly in the area of interest is part of distributed force.

The presence force however small needs to be well integrated but not just in terms of itself but its ability to operate via C2 or ISR connectors to an enhanced capability.

But that enhanced capability needs to be deployed in order to be tailorable to the presence force and to provide enhanced lethality and effectiveness appropriate to the political action needed to be taken.

This rests really on a significant rework of C2 in order for a distributed force to have the flexibility to operate not just within a limited geographical area but to expand its ability to operate by reaching beyond the geographical boundaries of what the organic presence force is capable of doing by itself.

This requires multi-domain SA – this is not about the intelligence community running its precious space- based assets and hoarding material. This is about looking for the coming confrontation which could trigger a crisis and the SA capabilities airborne, at sea and on the ground would provide the most usable SA monitoring. This is not "actionable intelligence."

This is about shaping force domain knowledge about anticipation of events.

This requires tailored force packaging and takes advantage of what the new military technologies and platforms can provide in terms of multi-domain delivery by a small force rather than a large air-sea enterprise which can only fully function if unleashed in sequential waves.

In the maritime domain, an evolving capability which will operate in concert with capital ships are unmanned maritime systems or remotes.

Such systems come in two forms: underwater unmanned systems and surface unmanned systems, which when the con-ops matures will work interactively with one another to extend the reach of the manned surface fleet to provide for perimeter defense via a flexible picket fence so to speak, and to provide a significant impact to the reworking of C2 highlighted above.

In many ways, the F-35 force package is directly forcing a significant revision of where D takes place in the OODA loop. Tactical decision making at the edge needs to be worked as the F-35 pushes decision making capability to the edge.

As that is worked through, the next phase will entail how remotes can provide not just SA and remote targeting capabilities, but share in the decision making with the humans in the loop.

For the Air Forces, this will be about sorting through how loyal wingman can work with manned combat air assets; for maritime forces it will be about how above and below sea remotes can be woven into the extended reach of a capital ship and become part of a force package, and, in turn, changing the nature of what a combat fleet looks like.

In other words, there are waves of learning how to work with remotes and to incorporate them into an integrated distributed force.

Over the next five years, we will see a significant presence of maritime remotes and as operational experience is gained, the next wave of learning will go from treating these as platforms adding to the capability of the fleet, to becoming core parts of an integrated distributed force with significant changes in the concepts of operations of the combat fleets as well.

During my visit to the Chief of the Royal Australian Navy's Seapower conference which was held in Sydney from October 8th through the 10th, 2019, I had a chance to discuss with officers of the Royal Australian Navy as well as defense industry leaders the evolving maritime remote capabilities currently available and on the horizon.

One of those industry leaders I met with was Daryl Slocum of L3HarrisTechnologies.

He has been involved with maritime remote systems since his graduate student days and as head of the OceanServer program, is based in Massachusetts at the L3Harris facility located there. He was at the conference engaging with various Navies attending the conference to discuss the capabilities which L3Harris has in the maritime remotes area.

I took advantage of his presence to discuss more generally how one might understand how maritime remotes are developing and might develop in the future, and their role and contribution to the maritime combat force.

Slocum views maritime remotes as force multipliers.

As the durability of the systems evolves and they can operate at greater range and operate with greater loiter times, the core question is what the fleet commanders want these systems to do.

This means that the focus is clearly upon payloads, and how to take the information on these remotes generated by the various payloads and to get that information in a timely manner to the users in the combat fleet.

Right now, unmanned underwater systems can operate with a variety of payloads, the most significant of which can provide remote mapping and situational awareness.

As the capabilities to do onboard processing on the remotes ramps up, information can be processed on the platform and with the aid of evolving artificial intelligence can determine provide for information parsimony.

This means that the systems onboard the platforms as their capabilities evolve will be able to send core information to users highlighting threats and opportunities for the combat fleet.

And as the ability of the remotes to work with one another evolves, surface and subsurface remotes will be able to work together so that the communication limits imposed by underwater coms can be mitigated by surface remotes working as transmitters.

We discussed the impact of these projected capabilities on capital ship design.

It is clear that new capital ships need to have onboard processing capabilities and decision tools to be able to leverage what a deployed system of remotes might be able to deliver to that capital ship.

This means as well that maritime warriors will need to learn to work with thinking machines as decision making at sea will evolve as well.

Slocum highlighted that the Iver family of L3Harris underwater remotes were platform agnostic, which meant that they can work with a wide variety of users worldwide.

This means as well that they can focus on building a platform which is battery agnostic as well to incorporate changes in the evolution of battery capabilities, which are of course, crucial to durability, speed and range of the remotes.

We both agreed that is important to get these systems out of the labs and into the fleet to get the kind of operational experience necessary to drive innovation moving forward with essentially a software upgradeable platform.

Slocum indicated that they had this kind of relationship with the US Navy in San Diego as the US Navy gets read to tap into remotes as a key part of the counter mine mission.

As he described the goal of a remote platform which is payload agnostic:

“Today, I want to do a side scan mission; tomorrow, I might want to do an ISR mission; and the day after tomorrow, I might want to do a SiGINT mission.”

By having a small form factor platform, with a capability to operate with a diversity of payloads, the remote can be incorporated into a wide array of missions which can expand what the capital ship itself is capable of doing.

Indeed, the impact of remotes can expand what a support fleet can do.

There is no reason that a U.S. Military Sealift Command ship cannot incorporate remotes and expand the concept of what kind of support MSC ships can provide, beyond physical things such as fuel and supplies.

In other words, remotes can provide for con-ops diversification within the combat fleet, including the supply component of that fleet as well.

Clearly, such capabilities could provide significant enhancements with regard to perimeter defense in various ways, including masking what that remote actually is and what it is doing.

Currently, L3Harris has more than 300 Iver platforms operating worldwide, with 2/3 of them with military customers and 1/3 with civilian customers, including research centers as well.

We closed by discussing where the remote capabilities might be in five years' time.

Slocum saw Iver as being able to operate for longer times, and taking onboard new payloads. He projected that onboard processing capability would take a leap forward which would lead to making more timely use of the data being collected by the remotes.

A key breakthrough point will be when remotes can make a decision about which data needs to be sent back home to the human decision maker.

Beyond the five year time line, Slocum saw that after working through operational experience in that time period, the ability of remotes to work together would become more mature.

And as that capability evolves, the entire reworking of the decision cycle will evolve as well.

In short, it is not just about remotes as a platform; they are being introduced at the same time as the military is undergoing a transformation to shape an integrated distributed force.

And for the maritime forces, remotes will provide a core capability to fleet enhancement.