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An Update on the Maritime Patrol Enterprise

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What is Triton's Contribution to the Maritime Kill Web?

05/20/2020

By Robbin Laird

The US Navy has deployed Triton to Guam and has begun its operational history.

According to an article on *USNI News* by Gidget Fuentes published on May 12, 2020, a pair of MQ-4C Tritons operating from Guam has been integrated into fleet operations and provide reach across the Indo-Pacific.

"The Navy is counting on the Triton, which can operate at greater than 50,000-foot altitudes and at the 2,000-mile-plus range, to provide an unmanned platform for persistent, maritime intelligence, surveillance, and reconnaissance capabilities and work alongside its manned fleet of reconnaissance and surveillance patrol aircraft.

"The Tritons with Unmanned Patrol Squadron 19 – the Navy's first unmanned aircraft squadron – arrived in Guam in late January to support CTF-72, which oversees the patrol, reconnaissance and surveillance force in the U.S. 7th Fleet region."

But what exactly does the Triton provide for the interactive kill webs which shape evolving maritime combat capability?

One answer was provided in the Fuentes article:

"The Triton can fly for more than 24-hours at a time, at altitudes higher than 10 miles, with an operational range of 8,200 nautical miles, according to manufacturer North Grumman. The Navy's program of record would field 68 aircraft."

An additional answer focuses on what the sensors onboard the aircraft can provide.

According to an article by Andrew McLaughlin published by Australian Defence Business Review:

"The high-flying Triton can stay aloft for 28 hours and features advanced optical, radar and electronic sensors.

"It will complement the manned P-8A Poseidon, and replace the EP-3E electronic intelligence (ELINT) aircraft in US service. On Guam, the aircraft are currently under the command of the Commander of Task Force (CTF) 72."

These qualities of the platform are obviously important contributions but because the US Navy along with its sister services have moved beyond the platform centric kill chain to shaping interactive webs to guide the strike force, the key question then becomes somewhat different.

What capabilities does the Triton bring to the crisis management and combat environments, and how does it work interactively within the spider webs which make up the kill web enabled force?

A significant part of the answer rests in the recent interview which I did with Rear Admiral Peter Garvin, head of the U.S. Navy's Maritime Patrol enterprise.

From the outset, the US Navy's work with industry has focused on building, operating and supporting a dyad to deliver the common operational picture driving the next round of anti-submarine warfare and maritime domain awareness.

This P-8 dyad with Triton delivers a new capability for the fleet.

This is manned-unmanned teaming being put into practice today, not in some distant combat future.

According to Rear Admiral Garvin: "We are taking full advantage of the leap forward in many sensors and communications technology to interoperate in ways that were previously impossible.

"Faced with a resurgent and challenging ASW threat, we have not given up on the old tool sets, but we are adding to them and weaving them into a new approach.

"We are clearly shifting from linear or sequential operational thinking into a broader understanding and implementation of a web of capabilities.

"In the past, when operating a P-3, you operated alone, you had to be the sensor and the shooter. To be clear, it remains necessary that every P-8 aircraft and crew be ready and able to complete the kill chain organically, but the fact of the matter is that is not the way it always has to be, nor is it the way that we're planning for it to have to be going forward.

"On any given mission, the P-8 could be the sensor and perhaps the allied submarine is the shooter. Or vice versa. Or maybe the destroyer is the one that happens to get the targeting solution and the helicopter is the one that actually drops the weapon.

"Sensor, shooter, communications node, or perhaps several at once, but each platform is all part of a kill web."

Another part of the answer comes from the follow-on interview which I had with Rear Admiral Garvin where we discussed how the dyad interacting with allies was a game changer in terms of building out a much larger canvas upon which the interactive kill webs could operate.

"We started with a discussion of the reach of the maritime patrol enterprise by focusing on a way to conceptualize the way ahead for shaping an integrated distributed force. If one conceptualizes the battlespace as layers of visuals placed one on the other, it becomes clear what is different in terms of leveraging the combat force within an interactive web.

"The first layer would be the operational geography of the battlespace.

"The second layer would be the threat elements most relevant to the blue force.

"The third layer in the case of a maritime patrol enterprise would be commercial maritime shipping traffic. Unlike air traffic, maritime traffic is very diverse, very large, and provides a key masking function for any adversary.

"The fourth layer would be the laydown of blue assets, including the geographic distribution of allied forces in the region or area of interest. The fifth layer would then be where the P-8 / Triton dyad operates.

"With such a schematic, it is quickly evident that if the U.S. Navy's P-8 / Triton dyad is integratable with allied maritime patrol capabilities the reach of both the U.S. and allied interactive web capabilities is substantially enhanced."

If we focus on what I referred to as the third layer, namely, the commercial maritime traffic, the Triton makes a unique contribution here.

With the height at which it operates, and with the sensors onboard, including the AIS tracking system, it provides a significant capability to prioritize those aspects of the maritime domain which need to be prioritized.

This is a major contribution even before we get to the question of what various specialized sensors can provide for other aspects of the maritime battlespace is enhanced by the connectivity built into the platform as well, in terms of an ability to deliver data over various wave forms.

As one Naval officer put it, the way to think about the maritime battlespace as the U.S. Navy evolves its capabilities is an ability to deliver a variety of kill webs which interactively can deliver domain situational awareness dominance.

This means in effect that C2 is moving in an interactive fashion in two directions – C2 at the tactical edge and C2 at the numbered fleet level to dynamically structure and task evolving task forces.

Another way to understand how the Triton contributes uniquely to the evolving kill web approach is an aspect of its unique networking capabilities.

According to Rob Zmarzlak, chief engineer, Triton program, Northrop Grumman: "The platform with its wave forms can reach back to the intelligence community and to the tactical users independently. We can send information to both the fleet and to the intelligence community."

In the discussion with Zmarzlak, he highlighted the importance of focus on how the Triton operates as well as a key way to understand its contribution to the maritime kill web.

This part of the discussion then got at the most overlooked impact of Triton on the evolution of air-maritime forces (do not forget how important Triton will become to targeting in the Pacific for the USAF as it engages in maritime strike operations as well).

For full value to be derived from the Triton fleet, a kill web mentality will have to replace what has been a sortie generation mentality for the carrier fleet.

It is about building in an orbit-enabled concept of operations, rather than thinking of the aircraft in sortie-generation concepts of operations.

What this means is that for the Navy to get full value out of its Triton force it needs to think significantly beyond a dyad approach.

It means embracing what a high altitude remotely piloted vehicle with a sensor package which can help build a common operational picture generated by orbits can provide for a kill web strike force, which may well operate within a sortie-generated concept of operations, which the orbiting high altitude asset will provide.

With a four ship 24/7 coverage of the area where you will operate or wish to operate, the Triton can provide domain knowledge crucial to informing both the threat and opportunity calculus in an area of operations.

And because the orbit is not about sorting into a specific area, one can sort through where the best advantages might lie for the projection of force without tipping your hand by having to fly to a specific tactical area.

This is a work in progress, but it is a new capability which if fully embraced provides significant warfighting advantages to the United States and its allies.

But for those advantages to be realized, appropriate training, and operational approaches need to be shaped, executed and evolved over time.

In an article by Sam LaGrone of *USNI News* published on April 10, 2018, "the pair of 131-ft wingspan UAVs built by Northrop Grumman for intelligence, surveillance and reconnaissance missions will deploy with an early set of capabilities designed for maritime ISR and will grow to include a signals intelligence function in 2021, Triton program manager Capt. Dan Mackin said in a briefing at the Navy League's Sea Air Space 2018 exposition."

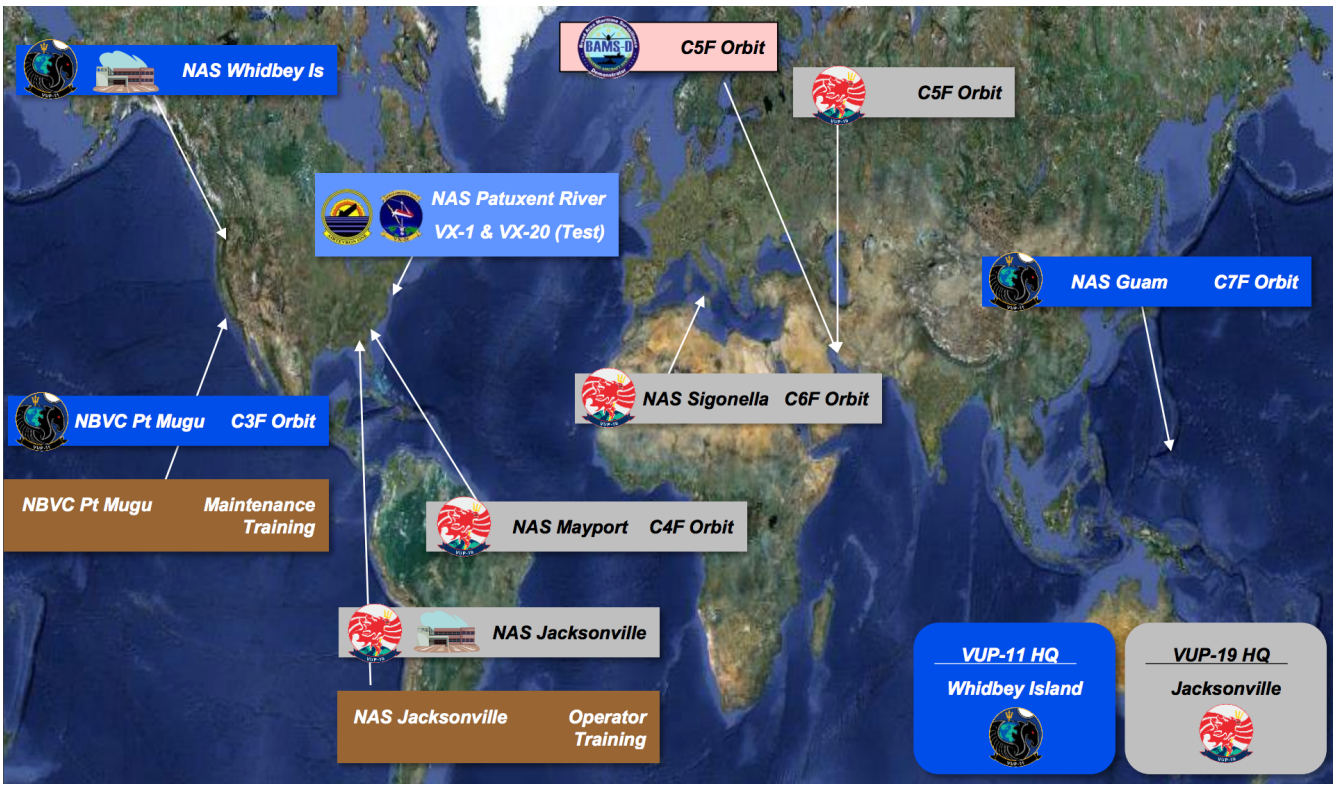
"Part of the IOC process will include adding a top secret "multi-intelligence" function to1 Triton that will eventually replace the Navy's Lockheed Martin EP-3E Aries II manned signals intelligence platforms. Congress mandated the Navy retire the EP-3E Aries II only after it had found a way to field a similar capability.

“Eventually, the Triton program will consist of five four-aircraft orbits around the world. The operators will reside in the two main bases at Mayport and Whidbey Island.

“The system is made up of an aircraft and a main operating base where the warfighter starts taking that data over wideband SATCOM link you start assimilating that data, put that data together to understand the [maritime picture],” Mackin said.

“The Navy will have five operating bases where the aircraft will be maintained, launched and recovered. The forward bases will be at Naval Air Station Sigonella, Italy; an unspecified location in the Middle East; Naval Air Station Guam; Mayport; and Point Mugu.”

In that article, there was a snapshot of a NAVAIR representation of the envisaged Orbit engagement of the Triton.



In short, one cannot describe Triton simply in platform terms, which would miss a lot because it was designed from the ground up to be part of a wider force construct.

It can be described in terms of how it works interactively with its brother, the P-8, to empower ASW operations. It can also be described in terms of its transformational qualities by grasping how orbit CONOPS contribute to shaping the maritime kill web.

Bottom-line: Triton provides a key way ahead for enhanced crisis management and combat capabilities for the joint and coalition force.

Featured Image on the Cover Page: Navy MQ-4C Triton taxis at Andersen Air Force Base on April 29, 2020. US Navy Photo

The Arrival of Triton in the Pacific: New Manned-Unmanned Teaming Capabilities and Delivering new C2/ISR capabilities

01/28/2020

The first two MQ-4C Triton unmanned aircraft arrived in Guam over the past weekend.
"The inaugural deployment of Triton UAS brings enhanced capabilities and a broad increase in maritime domain awareness to our forward fleet commanders," Rear Adm. Peter Garvin, the commander of Patrol and Reconnaissance Group, said in a Navy statement.

"VUP-19, the Navy's first dedicated UAS squadron supported by an outstanding NAVAIR (Naval Air Systems Command) and industry team, is superbly trained and ready to provide the persistent ISR coverage the Navy needs."

"The introduction of MQ-4C Triton to the 7th Fleet area of operations expands the reach of the U.S. Navy's maritime patrol and reconnaissance force in the Western Pacific," Capt. Matt Rutherford, the commander of CTF-72, said in the statement.

"Coupling the capabilities of the MQ-4C with the proven performance of P-8, P-3 and EP-3 will enable improved maritime domain awareness in support of regional and national security objectives."

"This significant milestone marks the culmination of years of hard work by the joint team to prepare Triton for overseas operations," Capt. Dan Mackin, the manager of NAVAIR's Persistent Maritime UAS program office, said in a statement. "The fielding of the Navy's premier unmanned aircraft system and its additive, persistent, multi-sensor data collection and real-time dissemination capability will revolutionize the way maritime intelligence, surveillance and reconnaissance is performed."[1]

Andrew McLaughlin of ADBR noted the event from the Australian perspective and added comments with regard to its importance for Pacific defense.

"The deployment of Triton to Guam brings the system a little closer to Australia and its maritime approaches. The RAAF currently has two MQ-4Cs on order of a requirement for six systems, the first of which is expected to be delivered in 2023.

"RAAF Tritons will be home-based at RAAF Edinburgh near Adelaide, although air vehicles are expected to be forward deployed to RAAF Tindal in the Northern Territory to provide a 'sixth orbit' to neatly complement the five planned deployed locations for the US Navy Tritons. Apart from Guam and Point Mugu, the US Navy also plans to base Tritons at NAS Jacksonville in Florida, the Persian Gulf region, and Sigonella Air Base in Italy."

We have visited the allied bases from which P-8 is being operated in both Europe and in Australia, and have visited Edinburgh where the data management system established there allows for a full blown focus on manned-unmanned teaming in the maritime domain awareness and ASW area.

What can be missed is that this is a major step forward with regard to real world manned-unmanned teaming in a critical area of combat capability.

As we noted in an article published on 9/27/19:

The Triton unmanned system is a key building block for 21st century maritime operations.

In effect, the Triton provides capabilities similar to a low-earth orbiting system which can serve directly the maritime task force commander.

Indeed, a key dimension of the coming of Triton is to ensure that intelligence communities not consider this their asset but ensure that it is considered an operational asset for the fleet, and as part of the maritime domain awareness 360 degree capabilities for the fleet operating as three dimensional warriors.

After our visit to Jax Navy in 2016, we highlighted the importance of this aspect of the coming of Triton, or more accurately, of the coming of the P-8/Triton dyad to the maritime services.

Another key advantage is shaping domain knowledge of the key geographical areas where the dyad will operate.

"The Poseidon operates from 15-30,000 feet normally; the Triton will operate at 50,000 feet and take a broader view."

The world looks differently at each altitude but by rotating crews, a unique perspective is gained by operating at the different altitudes and with different operational approaches to gain knowledge dominance."

This is an approach for a new generation which "wants choice in their careers, rather than being locked into a single platform."

This is about crew resource management as well. It is abut shaping, developing and deploying the right skill to the task.

But the capabilities of the dyad are so good in terms of richness and fidelity of information there is already a tug of war between the intelligence community and the operators.

In an era of distributed lethality or distributed operations in the extended battlespace, the decision makers in the fleet, need the information to inform time-constrained decisions.

The fleet commanders need to make timely decisions; the intelligence community wishes to collect information, first, and inform decision makers later. This structural division will simply not work in the era of distributed decision-making and distributed lethality.

The information-decision cycle has to change to adapt to the technology.

"We need an effective cross-domain solution.

The huge divide between intelligence and operations has to be closed."

Their experience is suggestive that there is a broader need for a very robust discussion on real time actionable intelligence information.

US National Command Authority enforcement of Rules of Engagement (ROE) has had a "good and other" progression over time. The "good" is thoughtful ROEs can save lives from fratricide and friendly fire while still allowing direct and indirect fires to destroy the enemy.

The "other" is what we have quipped is the new OODA loop, an OO-L-DA loop in which L stands lag time in combat tempo for Legal review. But after Navy Jax we came away with concern for what yet again is a roles and mission discussion on the flow of strategic and tactical "Intelligence ROE"

If not addressed and debated early, a template of actionable intelligence information going directly into IC NRO/NSA/NGO and upper echelon commands to be analyzed and disseminated may inhibit combat effectiveness and the decisiveness need to prevail in the contested and extended battlespace.

Time sensitive intel is critical at lower level direct action combat commanders from the Squadron pilots, CAG and Strike Group Commanders. The ROE in the traditional IC formula of "up and out" may not be in harmony with ever evolving speed of light sensor shooter technological advances.

FOOTNOTES

1. These quotes were taken from an article by Ben Warner, *USNI News*, which was published on January 27, 2020.

   https://news.usni.org/2020/01/27/navys-first-mq-4c-triton-unmanned-aircraft-deploy-to-guam?utm_source=USNI+News&utm_campaign=bd030932c0-USNI_NEWS_DAILY&utm_medium=email&utm_term=0_0dd4a1450b-bd030932c0-230422265&mc_cid=bd030932c0&mc_eid=d5b4bb05ef

The Strategic Shift and Dynamic Targeting: Meeting the Challenge

05/28/2020

By Robbin Laird

With the strategic shift from the land wars to the more fluid battlespace involving peer competitors engaged in full spectrum crisis management with the United States and its allies, one aspect of the change for military forces is how to use lethal force effectively.

This comes down in part to how to target dynamically in a fluid political and military situation.

And within the dynamics of management of escalation, how do I ensure that I have had the combat effect which provides an effective solution set?

From a strictly military point of view, the strategic shift is from deliberate to dynamic targeting.

As one analyst has put the issue of the shift affecting the maritime domain:

"Perhaps the most acute differences that the maritime theater will present are the target sets.

"Targets that can be categorized as deliberate will now be the exception to the rule. Relatively fixed land targets will yield to highly mobile maritime targets.

"Therefore, targets may be known but not fixed."[1]

How significant the shift is can be seen in a USAF explanation of the difference between deliberate and dynamic targeting.

"Dynamic targeting complements the deliberate planning efforts, as part of an overall operation, but also poses some challenges in the execution of targets designated within the dynamic targeting process.

"Dynamic targets are identified too late, or not selected for action in time to be included in deliberate targeting."[2]

The assessment adds that:

"Dynamic targeting is a term that applies to all targeting that is prosecuted outside of a given day's preplanned air tasking order (ATO) targets (i.e., the unplanned and unanticipated targets)."

"It represents the targeting portion of the "execution" phase of effects-based approach to operations (EBAO). It is essential for commanders and air operations center (AOC) personnel to keep effects-based principles and the JFC's objectives in mind during dynamic targeting and ATO execution.

"It is easy for those caught up in the daily battle rhythm to become too focused on tactical-level details, losing sight of objectives, desired effects, or other aspects of commander's intent.

"When this happens, execution can devolve into blind target servicing, unguided by strategy, with little or no anticipation of enemy actions."

But what if dynamic targeting becomes the norm and deliberate targeting the exception?

With specific regard to the Pacific, the strategic shift could well generate a significant targeting shift.

But how to train, plan, and execute a dynamic targeting approach?

That is a challenge being addressed by the NAWDC team, with CDR Joseph Fraser, head of the Information Warfare Directorate, which has been designated the executive agent for targeting for the United States Navy.

I had a chance to discuss the strategic shift and the way ahead for working integrated strike within the maritime kill web with CDR Fraser.

I have a number of takeaways from that conversation, but am not quoting the CDR directly, for those takeaways will include some of my own personal extrapolations.

The first takeaway is simple enough: NAWDC is an integrated warfighting center, not simply the classic Top Gun venue.

With officers from the various elements of Navy warfighting present within NAWDC, as well as enhanced engagement with the other services' warfighting centers, NAWDC makes perfect sense to work the 360 degree dynamic targeting solutions set for an integrated distributed force.

Obviously, this is both challenging and a work in progress.

But the core point is that Navy has laid the foundation within and at NAWDC to shape such a way ahead.

The second takeaway is that the new combat platforms coming into the force provide the information and data environment to work a dynamic targeting solution set.

Notably, both the F-35 and the Advanced Hawkeye have come to the carrier wing since we were last at Fallon, but it is also the case that the data being generated by these aircraft are being worked across not just the fleet but the joint combat force.

Or put another way, the new platforms coming to the fleet are capable of enabling a kill web maritime force.

Or put yet another way, the quality of the data that's coming off of these new platforms enables dynamic targeting.

The third takeaway is that with the reliance on a precision weapons stockpile, it is crucial to get best value out of that capability.

It is not World War II weapons stockpiles at work; weapon effectiveness in terms of being able to identify and destroy targets that matter most need to be prioritized and dealt with in a combat situation.

The fourth takeaway is that within a cluttered maritime combat environment, target identification is always challenging, but if one wants to prioritize the most significant targets, clearly effective ISR with time urgent decision making against mobile targets is a key element for mission success.

The fifth takeaway is that by working a new model of dynamic weapons engagement now prior to the coming of directed energy weapons to the fleet, it will be possible to determine how to use these new technologies effectively by which platforms, in which situations and in which combat areas within the fluid and extended battlespace.

This can also be true with regard to future precision weapons as well and can provide a guide for shaping a future weapons inventory.

Which weapons would make a significant difference if added to the fleet to maximize dynamic targeting capabilities against which adversaries and in which situations?

The sixth takeaway is this is an area where expanded work with the other services is clearly crucial.

But if the Pacific is taken as a baseline case, then the question of maritime targets, or targets that operate within that domain become crucial challenges to be dealt with.

And, certainly in my view, these targeting challenges really have little to deal with the legacy targeting solution sets generated in the land wars, and, frankly, the lessons learned will have to be unlearned to some extent.

What this means in blunt terms, is that the Navy plays a key role in this strategic targeting shift.

In short, we are talking about targeting solutions enabled by interactive webs, but not necessarily what passes for joint targeting.

The maritime domain is very different from the land or air-space domain.

While the US Army and USAF can provide key capabilities to provide for dynamic targeting, the domain knowledge of the US Navy will be a central piece of the puzzle.

And much the same could be said with regard to the other domains, and what the role of the US Navy would be in a dynamic targeting solution set.

Much like how words like C2, ISR and training are being changed fundamentally in terms of their meaning with the building of a kill web integrated distributed force, the term joint also is changing, or will need to change if combat effectiveness is to be realized.

There is a tendency to slip into the last twenty years of jointness which has been dominated by the US Army and the land wars.

The Pacific is dramatically different.

FOOTNOTES

1. Lt. Commander Mitchell S. McCallister, "The Maritime Dynamic Targeting Gap," Naval War College, May 4, 2012.
2. https://www.doctrine.af.mil/Portals/61/documents/Annex_3-60/3-60-D16-Target-Dynamic.pdf

The Evolving Role of Rotary Wing Platforms in the Integratable Carrier Air Wing

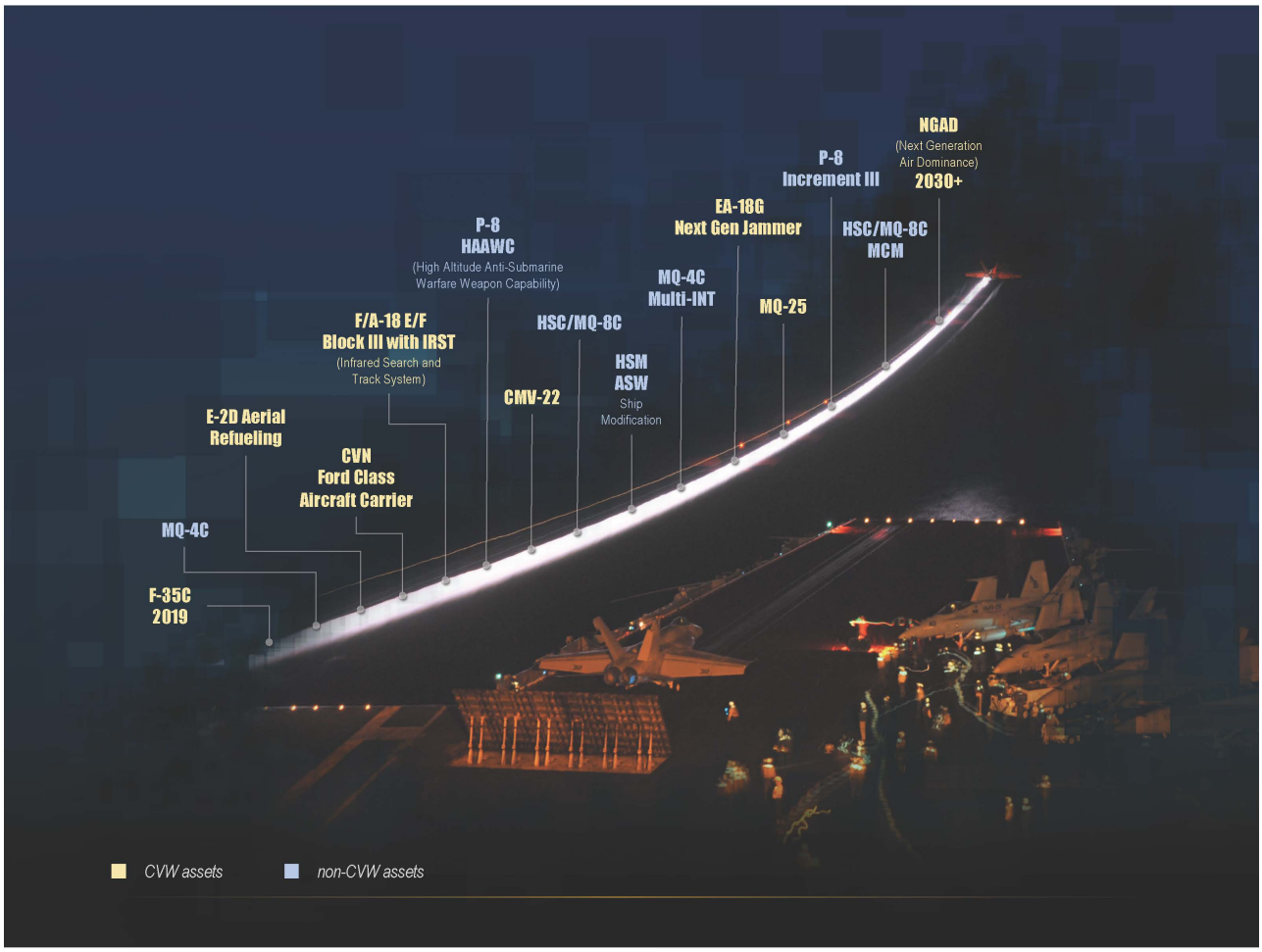
05/01/2020

By Robbin Laird

During my last meeting with Vice Admiral Miller in San Diego, we discussed the way ahead with regard to the air wing as it become integrated into a wider kill web concepts of operations.

In that conversation, we highlighted the shift as one from building an integrated air wing to working an open ended and evolving integratable air wing.

A key element in such a shift is when new platforms come onboard, the carrier or parts of the air wing, work with non-organic combat asset with integratability as key challenge and opportunity to be worked across the force to ensure that the distributed force can exercise maximum effectiveness.



Carrier Air Wing innovations highlighting platforms coming onboard which will shape clusters of innovations driving forward innovation onboard the large deck carrier. Credit: US Navy.

This focus creates a major training challenge but also significantly expands the impact which training can have on operations.

I discussed this challenge with VADM Miller and Rear Admiral Brophy, the head of NAWDC or the Naval Aviation Warfighting Center, during my last visit to San Diego.

The head of Fallon, Rear Admiral Richard Brophy, joined the conversation with the Air Boss, and clearly underscored the challenge: "How do we best train the most lethal integrated air wing preparing to deploy, but at same time, prepare for the significant changes which introducing new platforms and concepts of operations can bring to the force?

As the Air Boss put it: "We need to properly train the integratable air wing and we are investing in expanded ranges and new approaches such as Live Virtual Constructive training.
"I often use the quote that 'your performance in combat never raises to the level of your expectations but rather it falls to the level of your training.'

"This is why the training piece is so central to the development for the way ahead for the integrable training.

"It is not just about learning what we have done; but it is working the path to what we can do."

NAWDC is working with the key American warfighting centers to shape a way ahead for Naval aviation within the broader world of building an integrated distributed force operating across the spectrum of warfare.

This affects each platform or core competence being worked at NAWDC.

Recently, I had the chance to talk with CDR Jeremy "Shed" Clark, Senior Leader at the Naval Rotary Wing Weapons School (SEAWOLF) at NAWDC.

The Seawolf School focuses on Romeo, Sierra, and Fire Scout training, with Romeo being the sensor rich ASW/SUW/EW and related tasked focus helo onboard the Navy's large deck carriers.

We discussed the shift which the Admirals had outlined in my San Diego meeting and how it affected the training approach for the helicopter communities.

The shift from focusing largely on a targeted task for carrier defense and upon how the organic capabilities on the Romeo and Sierra could play their task most effectively to one where the focus is on broadening the sensor and strike partners of these platforms who can contribute to carrier strike and defense is a significant one.

Rather than quote the CDR directly, I will identify a number of takeaways which I drew from the conversation but for which I am not going to hold him responsible for.

The first point is that the aperture of considering the role of all rotory wing assets expands significantly as one shifts from a legacy carrier strike operation focus to broader support to a distributed maritime force.

Due to the nature of where helicopters deploy this means that the sensors onboard these platforms can see their reach significantly expanded by being able to integrate with other sensors in the battlespace.

Rather than being platform focused, the shift is to empower the Romeo/Sierra/Fire Scout and their reach with an expanded sensor network.

This sensor network will be found both onboard each helicopter as well as with other aircraft onboard the carrier, but more broadly into the interactive allied working capabilities in the expanded battlespace.

The second point is that new assets coming onboard the carrier are going to be looked at from the outset in terms of what they can contribute to the sensor network and decision-making capabilities of the strike force.

For example, we discussed the coming of the MQ-25. The Romeo community is already looking at how having sensors onboard the MQ-25 can expand the reach and range of what the Romeo's onboard sensors can accomplish for the maritime distributed force.

It is also the case that as sensor demands currently made on the Romeo can be shifted elsewhere.

The Romeo can refocus its task priorities and enhance its contributions to broader mission sets such as ASW and to focus on contributing capabilities that other platforms within the strike group are not prioritized to perform.

The third point is that the new generation of Navy operators are clearly thinking in kill web terms – they are not focused simply on what their platform can do based on how they were trained, but how they can work in the broader battlespace to deliver the desired effects working closely with partners in the sensor, decision-making and strike web.

He argued that this meant that NAWDC is looking at how to change the entire dynamic of the strike group with such an approach.

The fourth point is that with the distributed sensor network being built, manned helicopters can reduce the amount of time they need to be airborne to provide a core sensor set of tasks.

The so-called unmanned revolution is ultimately about expanding the sensor network and allowing the manned operators within that network to operate more efficiently and more effectively; it is not primarily about replacing them in the battlespace.

The fifth point is that the kill web learning curve has a major impact on thinking about acquisition.

Rather than focusing on the systems proprietary to a specific task oriented platform, the focus is shifting towards integratability: what system can I tap onboard my platform via integratability with other combat assets, and what systems do I have onboard which provide a specific capability which the kill force needs to be able to leverage to enhance combat effectiveness?

The sixth point we discussed was the repurposing of the Fire Scout unmanned system.

Originally, this was platform tasked, namely, to support the littoral combat ship.

But with the new approach of utilizing all assets within a kill-web, the question is how the helicopters working with Fire Scout can add the fleet needed capabilities, and where might the Fire Scout operate from within the fleet to gain maximum impact?

This a significant shift and part of the dynamics of change unfolding at NAWDC.

And CDR Clark highlighted that his team is working on ways to deliver some EW capability via Fire Scout integration with assets onboard the Growler EW aircraft.

In short, the shift is dramatic.

Historically, training was done in stove pipes.

One would train to be the best operator you could be on that platform.

Now, that is not enough; obviously critical but the foundation for working a different way.

The focus is upon working in a kill web and cross-linking capabilities within a distributed integrated force.

The Transformation of the Maritime Patrol "Aircraft" Enterprise: The Perspective of Rear Admiral Peter Garvin

12/20/2019

By Robbin Laird

Recently, I had the opportunity to visit with Rear Admiral Pete Garvin in his office in Norfolk Virginia to discuss the way ahead with the US Navy's Patrol and Reconnaissance Force (MPRF).

Commander Patrol and Reconnaissance Group / Commander Patrol and Reconnaissance Group Pacific (CPRG/CPRG-PAC) provides oversight to more than 7,000 men and women on both coasts operating the U.S. Navy's maritime patrol aircraft including the P-8A "Poseidon", P-3C "Orion", EP-3 "Aries II" and MQ-4C "Triton" unmanned aircraft system.

The MPRF is organized into two Patrol and Reconnaissance Wings at NAS Jacksonville, Florida, and NAS Whidbey Island, Washington including 14 Patrol and Reconnaissance squadrons, one Fleet Replacement Squadron (FRS) and over 45 subordinate commands. The MPRF is the Navy's premier provider for airborne Anti-Submarine Warfare (ASW), Anti-Surface Warfare (ASuW), and maritime Intelligence, Surveillance, and Reconnaissance (ISR) operations.

We discussed the force transformation currently underway as the foundation for further innovation moving into the future for the maritime force in its global operations. The P-8A and MQ-4C are not simply replacement platforms for the P-3 and EP-3. The change is as dramatic as the Marines going from the CH-46 to an Osprey which could only be described as a process of transformation rather than a transition from older to newer platforms.

It is not simply that these are different platforms, but the question of how to title the article suggests the dynamics of change. These are not merely maritime patrol aircraft but rather a synergistic 'Family of Systems' empowering global maritime domain awareness and the joint strike enterprise.

Most importantly, while the P-8A is a capable engagement platform in its own right, the information generated by the P-8A/MQ-4C dyad empowers and enhances the organic ASW strike capability on the P-8.

Moreover, the entirety of Department of Defenses' strike capability is enhanced against adversarial multi-domain forces.

We hear a lot about the coming of Artificial Intelligence and new sensors to the combat force, but the P-8A and MQ-4C are bringing these capabilities to the force today. With pre-mission planning and post-mission product dissemination supported by a dedicated "TacMobile" ground element, these platforms comprise a solid foundation for the new MDA enterprise. Working together, the weapon systems will deliver decisive information to the right place at the right time to empower the multi-domain combat force. These systems are designed to be quickly software upgradeable and evolve over time as combat performance, and contact with the adversary, provide significant real-world feedback.

Although these are US Naval platforms, they are designed to connect with the larger C2/ISR infrastructure, changing the capabilities and operations of the entire U.S. and allied combat forces.

With core allies buying P-8 and MQ-4C, this force is truly global.

My visits to Norway, the United Kingdom, and Australia have provided significant opportunities to discuss with those nations, how they are engaged with the United States in recrafting the MDA and strike enterprise.

F-35 and P-8/Triton Belts

F-35 and P-8/Triton Force

Integration of RAF Lakenheath and RAF Marham Provides Unique Impacts and Advantages.

"I see there is great potential for two countries to develop in concert, side-by-side, and to set, set the model for joint operations.

"As we get this right, we can bring in the Danes, the Norwegians and Dutch who are close in geography and the Israelis and Italians as well to shape the evolving joint operational culture and approach.

"Before you know it, you've got eight countries flying this airplane seamlessly integrated because of the work that Lakenheath and Marham are doing in the 20 nautical mile radius of the two bases."

- P-8: Lossie, Iceland, Norway

These platforms provide significant situational awareness for a task force, and can operate in effect as combat clouds for a tailored task force operating across the spectrum of conflict.

At the International Fighter Conference 2019, there was significant discussion of the coming of manned and unmanned teaming. There were no naval aviators at the conference but if they had been present, they would have told the conference that the U.S. Navy is already working and improving manned/unmanned teaming concepts and doctrine.

With the coming of Triton, a completely new approach is being shaped on how to operate, and leverage the data and systems onboard the manned and unmanned air systems joined at the hip, namely, the P-8 and the Triton.

There is an obvious return to the anti-submarine mission by the U.S. and allied navies with the growing capabilities of the 21st century authoritarian powers.

However, as adversary submarines evolve, and their impact on warfare becomes even more pronounced, ASW can no longer be considered as a narrow warfighting specialty.

This is reflected in Rear Admiral Garvin's virtuous circle with regard to what he expects from his command, namely, professionalism, agility and lethality.

The professionalism which defines and underpins the force is, in part, about driving the force in new innovative directions. To think and operate differently in the face of an evolving threat. Operational and tactical agility is critical to ensure that the force can deliver the significant combat effect expected from a 21st century maritime reconnaissance and strike force. Finally, it is necessary but insufficient to be able to find and fix an adversary.

The ability to finish must be realized lest we resign ourselves to be mere observers of a problem.

The Australians consider the P-8/Triton force to be part of their fifth-generation transition in that the information being processed and worked by the machines in the dyad and the analysts onboard or ashore is informing assets across the enterprise with regard to threats and resolutions required by the entire combat force.

It is not simply about organic capabilities.

The P-3 flew alone and unafraid; the dyad is flying as part of a wider networked enterprise, and one which can be tailored to a threat, or an area of interest, and can operate as a combat cloud empowering a tailored force designed to achieve the desired combat effects.

The information generated by the 'Family of Systems' can be used with the gray zone forces such as the USCG cutters or the new Australian Offshore Patrol Vessels. The P-8/Triton dyad is a key enabler of full spectrum crisis management operations, which require the kind of force transformation which the P-8/Triton is a key part of delivering the U.S. and core allies.

A key consideration is the growing importance of what one might call "proactive ISR."

It is crucial to study the operational environment and to map anomalies; this provides a powerful baseline from which to prepare future operations, which require force packages that can deliver the desired kinetic or non-kinetic effect.

Moreover, an unambiguous understanding of the environment, including pattern of life and timely recognition of changes in those patterns, serves to inform decision makers earlier and perhaps seek solutions short of kinetic.

This is not about collecting more data for the intelligence community back in the United States; it is about generating operational domain knowledge that can be leveraged rapidly in a crisis and to shape the kind of C2 capabilities which are required in combat at the speed of light.

Historically, a presence force is about what is organically included within that presence force; today we are looking at combat reach or scalability of force.

Faced with limited resources, it is necessary for planners to exercise economy of force by tailoring distributed forces to a specific area of interest for as long as required.

The presence force however small needs to be integrated not just in terms of itself but also in its ability to operate via common C2 or ISR connectors with both allied and U.S. forces. This enhanced capability needs to be forward deployed in order to provide enhanced MDA, lethality and effectiveness appropriate to achieve the desired political/military outcome.

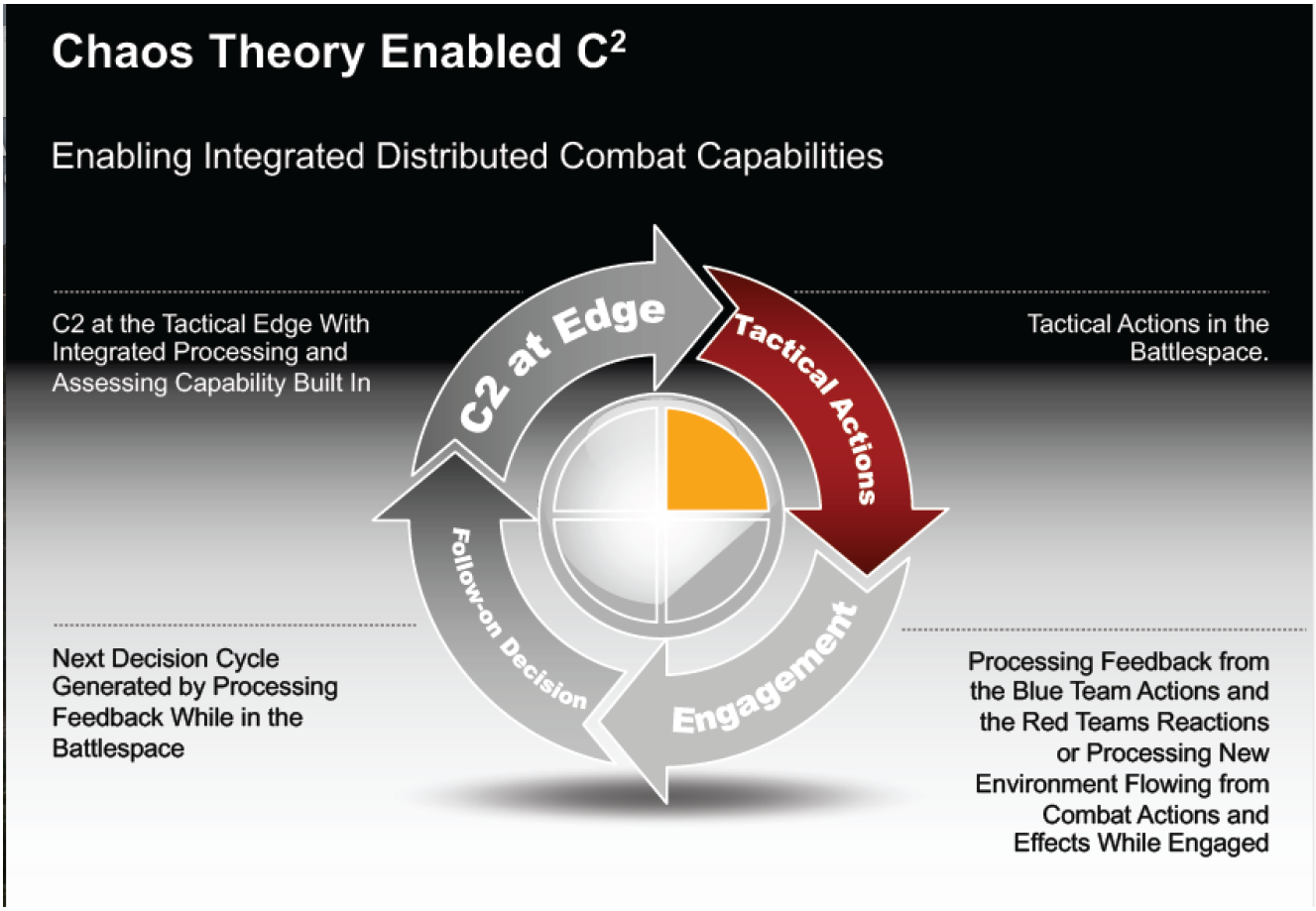
Success rests on a significant rework of C2 networks to allow a distributed force the flexibility to operate not just within a limited geographical area, but reach beyond the geographical boundaries of what the organic presence force is capable of doing by itself.

This is about shaping force domain knowledge well in advance of and in anticipation of events.

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

This new approach can be expressed in terms of a kill web, that is a U.S. and allied force so scalable and responsive that if an ally executes 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 in a timely and effective manner.

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.



The P-8/Triton dyad lays a solid foundation for the wide range of innovations we can expect as the integrated distributed force evolves: expanded use of artificial intelligence, acceleration of the speed for software upgradeability, achieving transient combat advantage from more rapid rewriting of software code, an enhanced ability to leverage the weapons enterprise operating from a wide variety of air, ground, and naval platforms (off-boarding), and an ability to expand the capabilities of manned-unmanned teaming as autonomous maritime systems become key elements of the maritime force in the years to come.

In short, the Maritime Patrol and Reconnaissance Force is not simply transitioning, it is transforming.

It is delivering significant new capabilities now, and laying a solid foundation for the future. It is empowering what the Aussies would call a fifth-generation multi-domain combat force.

You can either live in the past and lose ground; or you can lean forward and build out the foundation for the integrated distributed force.

The Maritime Patrol Enterprise: Shaping a Kill Web Future

05/05/2020

By Robbin Laird

I have had a chance to visit with Rear Admiral Garvin and his team in Norfolk last Fall and earlier this year.

We discussed the evolving approach to theater ASW in those discussions along with the evolving approach to training and shaping an effective distributed maritime force.

We continued our discussion during a phone interview on April 30, 2020 and focused on the evolving capabilities of the Maritime Patrol Enterprise and its intersection with the distributed maritime force and a kill web concept of operations.

Rear Admiral Garvin leads the U.S. Navy's global maritime patrol and reconnaissance enterprise.

This means that he trains, certifies and deploys the U.S. Navy's Maritime Patrol and Reconnaissance Forces worldwide in support of theater Fleet and Combatant Commanders. This global oversight provides him a unique opportunity to focus on the entire scope of maritime operations, rather than focused narrowly upon one particular theater.

A 1989 US Naval Academy graduate, he witnessed the last 30 plus years of change in the political/military environment as a P-3 pilot. This meant as well that he was entering the force coincident with the perceived sunsetting of the Soviet Naval threat and transition to a new era of maritime patrol operations.

He began his deployed operational experience at Keflavik, Iceland as part of the US and NATO ASW force prosecuting former Soviet, now Russian submarines. Contrast this with his last operational deployment focused almost entirely on over land ISR contribution to CENTCOM forces.

Despite the decades-long increase in overland ISR and combat focused missions, the Navy did not abandon its key ASW mission set.

During my first discussion with a naval officer in 2011 about the coming P-3 to P-8/Triton transition, the Navy's attention was focused squarely on delivering a new 21st century capability to effectively meet a growing ASW threat, and to do so via the kind of manned-unmanned teaming which the P-8/Triton dyad demands.

In that 2011 discussion with then Commander Jake Johansson, he highlighted how he thought P-8 would change the approach.

The P-8 gives you a range of capabilities that could be flexibly used in different ways. They will allow you the ability to fly from different bases farther from the fight. The ability to reach more distant operational areas may impact our on station time but the increased reliability of the aircraft and the inflight refueling capability will ultimately result in a force with increased responsiveness as well as more capability and flexibility for Combatant Commanders.

We can protect our P-8 fleet a little bit better by having a little bit of distance between us and the fight as well. We will also be able to rapidly get into theater or into that area of responsibility that we need to be in, do our business and come back.

CDR Johansson then highlighted the potential synergy between BAMS, which has evolved into Triton, and the P-8 for the ASW mission sets.

I call them remotely-piloted, because it takes a lot of people to operate these systems. We moved to the family of systems (BAMS and P-8) because we felt that we could move some of the persistent ISR capabilities to a more capable platform, BAMS. BAMS long dwell time can provide the persistence necessary more efficiently than a rotation of P-8 24/7/365. Also, if we used P-8 to do that we would have to increase squadron manpower to give them the necessary crews to fly 24/7 MDA in addition to the ASW/ASUW missions.

We hope to have 5 orbits flying 24/7/365 to cover the maritime picture were required. The great thing about BAMS and P-8 is that they can work together to meet the COCOMS requirements. BAMS can provide the persistence and the P-8 can be used to conduct the specialized skill-sets that the BAMS cannot. BAMS can provide you the maritime picture while the P-8 either responds to BAMS intelligence or conducts ASW/ASUW.

This Family of Systems concept can become quite a lethal combination if we employ it correctly.

That was in 2011; now in 2020, I am talking with Rear Admiral Garvin and although the language has evolved somewhat, the operational experience being gained with P-8 and the coming of Triton certainly validates CDR Johansson's forecast.

Question: In a way the approach we took with our allies to defend the GIUK, which included SOSUS, manned aircraft, and combat ships of various types, is being morphed today into a 360-degree manned-unmanned teaming tracking and kill web.

Is that a fair way to put it?

Rear Admiral Garvin: It is. We are following a similar mission construct working with our allies but the thinking and modality has advanced significantly.

"We are taking full advantage of the leap forward in many sensors and communications technology to interoperate in ways that were previously impossible. Faced with a resurgent and challenging ASW threat, we have not given up on the old tool sets, but we are adding to them and weaving them into a new approach.

"We are clearly shifting from linear or sequential operational thinking into a broader understanding and implementation of a web of capabilities.

"In the past, when operating a P-3, you operated alone, you had to be the sensor and the shooter. To be clear, it remains necessary that every P-8 aircraft and crew be ready and able to complete the kill

chain organically, but the fact of the matter is that is not the way it always *has* to be, nor is it the way that we're planning for it to *have* to be going forward.

"On any given mission, the P-8 could be the sensor and perhaps the allied submarine is the shooter. Or vice versa. Or maybe the destroyer is the one that happens to get the targeting solution and the helicopter is the one that actually drops the weapon. Sensor, shooter, communications node, or perhaps several at once, but each platform is all part of a kill web."

Question: The P-8 and the Triton are clearly a dyad, a point often overlooked.

How should we view the dyadic nature of the two platforms?

Rear Admiral Garvin: There are several ways to look at this.

The first is to understand that both platforms are obviously software driven and are modernized through spiral development.

We focus on spiral development of the dyad in common, not just in terms of them as separate platforms. It is about interactive spiral development to deliver the desired combat effect.

"Another key element of teaming is that during the course of their career, the operators of P-8 and Triton have the opportunity to rotate between the platforms.

"This gives them an innate understanding of the mission set and each platform's capabilities. They, better than anyone, will know what the dyad can deliver, up to an including a high level of platform-to-platform interaction. The goal is to be able to steer the sensors or use the sensor data from a Triton inside the P-8 itself.

"The idea of P-8 and Triton operators working closely together has proved to be quite prescient.

"Our first Triton squadron, VUP-19 is down in Jacksonville, Florida under Commander, Patrol and Reconnaissance Wing 11. And when we build out the full complement of Tritons, we'll have VUP-11 flying out of Wing 10 in Whidbey Island, Washington. Triton aircrew literally work down the hall and across the street from their P-8 brothers and sisters.

"The Maritime Patrol and Reconnaissance aviator of the future will be well versed in the synergy inherent in both manned and unmanned platforms.

"The unblinking stare of a Triton enhances the Fleet Commander's MDA and understanding of an adversary's pattern-of-life by observing their movements in the optical and electromagnetic spectrum.

"Moreover, Triton serves as a force multiplier and enabler for the P-8. Early in Triton program development, we embraced manned and unmanned teaming and saw it as a way to expand our reach and effectiveness in the maritime domain.

"One key software capability which empowers integration is Minotaur.

"The Minotaur Track Management and Mission Management system was developed in conjunction with the Johns Hopkins University Applied Physics Laboratory. Minotaur was designed to integrate sensors and data into a comprehensive picture which allows multiple aircraft and vessels to share networked information.

"It is basically a data fusion engine and like many software capabilities these days, doesn't physically have to present on a platform to be of use.

"These capabilities ride on a Minotaur web where, if you are on the right network, you can access data from whatever terminal you happen to be on.

Question: With such an approach to integratabilty, then this allows the fleet to be able to collaborate with one another without each platform having to be topped up with organic generators of data and to have to maximize the sensor-shooter balance on a particular platform.

This then must provide flexibility as well when flying a dyad rather than a single aircraft to work a broad range mission like ASW?

Rear Admiral Garvin: It does.

It also provides for resiliency through multiple sensor points in the kill web empowering multiple kill points on that web.

"This begs the question, how much resiliency do you want to build in? Do you need several platforms that carry the actual data engine, with the rest of the force simply having access to data produced by the data fusion engine?

"It becomes a question of cost-benefit and how much resilience do you want to build into each individual platform.

Question: In other words, the new approach allows for a differentiated but integrated approach to system development across the force seen as interactive platforms?

Rear Admiral Garvin: I think of it this way, rather than taking an evolutionary or iterative approach, what this allows for is a step change approach.

"We're thinking beyond just the iterative."

This discussion with Rear Admiral Garvin drives home a key point for me that the MPA dyad operates in a way that is not simply a U.S. Navy capability for a narrowly confined ASW mission sets.

The USAF is clearly concerned with the maritime threat to their air bases and needs to ensure that a joint capability is available to degrade that threat as rapidly as possible to ensure that the USAF has as robust an airpower capability as possible.

Certainly, the B-21 is being built in a way that would optimize its air-maritime role. And clearly a core bomber capability is to get to an area of interest rapidly and to deliver a customized strike package.

Hence, for me the new MPA approach is a key part of the evolving USAF approach to future capabilities as well.

The color of the uniform perhaps belies how joint a kill web approach to platforms really is.

Development, Training and Learning: Shaping the Skill Sets for the 21st Century Fight

02/23/2020

By Robbin Laird

The strategic shift from the land wars of the past two decades to preparing for the high-end fight is having a significant effect on the dynamics of change affecting the very nature of the C2 and ISR needed for operations in the contested battlespace.

An ability to prevail in full spectrum crisis management is highlighting the shift to distributed operations but in such a way that the force is integrateable to achieve the mass necessary to prevail across the spectrum of operations.

Much like the character of C2 and ISR is changing significantly, training is also seeing fundamental shifts as well.

For the US Navy, training has always been important, and what is occurring in the wake of the changes in the national security strategy might appear to be a replication of what has gone down for the past twenty years; but it is not.

In fact, it is challenging to describe the nature of the shift with regard to training.

Much like the shifts in C2 and ISR which I have discussed with the Navy's Air Boss in a recent interview, the shifts in training are equally significant.

Indeed, when I visited San Diego last Fall, I had a chance to talk with Vice Admiral Miller about how one might conceptualize the nature of the shift in training for the US Navy.

In that article, the discussion highlighted a number of the changes underway but the target goal was highlighted by the Air Boss as follows: *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."*

With the focus on ensuring the capability of the distributed fleet to deliver the desired effects throughout the spectrum of conflict and crisis management, the goal is for the sailors, operators and leaders of the combat force to have the most appropriate skill sets available for the 21st century fight.

And with the introduction of new technologies into the fleet, ranging from the new capabilities being provided for the integrateable air wing, to the expanded capabilities of the surface fleet with the weapons revolution and the evolution of the maritime remote extenders, to the return to a priority role for ASW with the submarine fleet and the maritime reconnaissance assets working together to deliver enhanced capabilities to deter and to defeat adversarial subsurface assets, the dynamics of training change as well.

For example, with software upgradeable aircraft, the capabilities of the aviation assets you operated with on your last tour are likely to not be the same as you will deploy with in your next tour.

In a visit to Norfolk last Fall, Rear Admiral Peter Garvin, Commander of the Maritime Patrol and Reconnaissance Group (MPRF), we discussed how he saw the training challenge evolving.

There is an obvious return to the anti-submarine mission by the U.S. and allied navies with the growing capabilities of the 21st century authoritarian powers. However, as adversary submarines evolve, and their impact on warfare becomes even more pronounced, ASW can no longer be considered as a narrow warfighting specialty.

This is reflected in Rear Admiral Garvin's virtuous circle with regard to what he expects from his command, namely, professionalism, agility and lethality. The professionalism which defines and underpins the force is, in part, about driving the force in new innovative directions. To think and operate differently in the face of an evolving threat. Operational and tactical agility is critical to ensure that the force can deliver the significant combat effect expected from a 21st century maritime reconnaissance and strike force.

Finally, it is necessary but insufficient to be able to find and fix an adversary. The ability to finish must be realized lest we resign ourselves to be mere observers of a problem.

And it is not simply about organic capabilities on your platform. The P-3 flew alone and unafraid; the dyad is flying as part of a wider networked enterprise, and one which can be tailored to a threat, or an area of interest, and can operate as a combat cloud empowering a tailored force designed to achieve the desired combat effects.

The information generated by the 'Family of Systems' can be used with the gray zone forces such as the USCG cutters or the new Australian Offshore Patrol Vessels. The P-8/Triton dyad is a key enabler of full spectrum crisis management operations, which require the kind of force transformation which the P-8/Triton is a key part of delivering the U.S. and core allies.

How do you train your P-8 team to be to work with the gray zone assets to deliver the kind of crisis management effect you want and need?

Clearly, the training mission is evolving to prepare for the high-end fight, and indeed, preparing to operate across the spectrum of crisis management.

But how best to describe the kind of evolution training for the fleet is undergoing?

To continue further throughout on how best to do so, I had the chance to visit Norfolk this month to discuss the focus and the challenges with three admirals who are key players in shaping a way ahead.

My host was Rear Admiral Peter Garvin, and he invited two other admirals as well to the discussion.

The first Rear Admiral John F. Meier, head of the Navy Warfare Development Command, with whom Ed Timperlake and I had met with when he was the CO of the USS Gerald R. Ford.

The second was Rear Admiral Dan Cheever, Commander, Carrier Strike Group FOUR.

The day before Ed and I met with Rear Admiral Gregory Harris, the head of N-98, who introduced into our discussion a key hook into my discussions with the three admirals in Norfolk.

We were discussing the evolving role of Naval Aviation Warfighting Development Center at Fallon and the Admiral referred to Carrier Strike Group FOUR as a "mini" Fallon, which was, of course, suggestive of the dynamics of change within training.

We had a wide-ranging discussion about a number of issues, but I will focus here on our discussion about the dynamics of change revolved around the training concept or construct.

What I will identify are my take-aways from the conversation, which I am not going to attribute to any one admiral, or even suggest that there was a consensus on the points I will identify.

What I am providing are key takeaways from my perspective of how the Navy is addressing the dynamics of training for the high end fight or in my terms, operating across the full spectrum of crisis management.

For me, the ability to operate across the full spectrum of crisis management highlights the central contribution which the Navy-Marine Corps team delivers to the nation.

Operating from global sea-bases, with an ability to deliver a variety of lethal and non-lethal effects, from the insertion of Marines, to delivering strategic strike, from my perspective, in the era we have entered, the capabilities which the Navy-Marine Corps teams, indeed all of the sea services, including the Military Sealift Command and the US Coast Guard, provide essential capabilities for the direct defense of the nation.

One key challenge facing training is the nature of the 21st century authoritarian powers.

How will they fight?

How will their evolving technologies fit into their evolving concepts of operations?

What will most effective deter or provide for escalation control against them?

There is no simple way to know this.

When I spent my time in the US government and in government think tanks, I did a great deal of work on thinking through how Soviet and Warsaw Pact forces might fight.

That was difficult enough, but now with the Chinese, Russians, and Iranians to mention three authoritarian regimes, it is a challenge to know how they will operate and how to train to deter, dissuade, or defeat them.

A second challenge is our own capabilities.

How will we perform in such engagements?

We can train to what we have in our combat inventory, we can seek to better integrate across joint and coalition forces, but what will prove to be the most decisive effect we can deliver against an adversary?

This means that those leading the training effort have to think through the scope of what the adversary can do and we can do, and to shape the targets of an evolving training approach.

And to do so within the context of dynamically changing technology, both in terms of new platforms, but the upgrading of those platforms, notably as software upgradeability becomes the norm across the force.

The aviation elements of the Marine Corps-Navy team clearly have been in advance of the surface fleet in terms of embracing software upgradeability, but this strategic shift is underway there as well.

The Admirals all emphasized the importance of the learning curve from operations informing training commands, and the training commands enabling more effective next cycle operations.

In this sense training, was not simply replicating skill sets but combat learning reshaping skill sets as well.

Clearly, the Admirals underscored that there was a sense of urgency about the training effort understood in these terms, and no sense of complacency whatsoever about the nature of the challenges the Navy faced in getting it right to deal with the various contingencies of the 21st century fight.

The Navy has laid a solid foundation for working a way ahead and that is based on the forging of an effort to enhance the synergy and cross linkages among the various training commands to work to draw upon each community's capabilities more effectively.

Specifically, NAWDC (Naval Air Warfare Development Center), SMWDC (Naval Surface and Mine Warfighting Development Center), UWDC (Undersea Warfare Development Center), NIWDC (Naval Information Warfare Development Center) and exercise and training commands, notably Carrier Strike Groups FOUR and FIFTEEN, are closely aligned and working through integrated operational approaches and capabilities.

When we visited Fallon in the past, we have seen the evolution not just in terms of naval integration (with surface warfare officers at Fallon) but the working relationships with Nellis (USAF) and MAWTS-1 (USMC).

And given the evolution of the USMC, the Navy teams with Marine Expeditionary Forces (MEFs), Marine Air Ground Task Force Training Command (MAGTAFTC), and Expeditionary Operations Training Group (EOTGs) in order to train the Navy and Marine Corps Team, notably with regard to the activities of CSG-4/15 for exercises.

Naval Warfare Development center is at the heart of Navy training for their all domain focus and efforts. NWDC isthe key Warfare Development Center which bridges the tactical to the operational and even the strategic level.

The synergy across the training enterprise is at the heart of being able to deliver the integrated distributed force as a core warfighting capability to deal with evolving 21st century threats.

There are a number of key drivers of change as well which we discussed.

One key driver is the evolution of technology to allow for better capabilities to make decisions at the tactical edge.

A second is the challenge of speed, or the need to operate effectively in a combat environment in which combat speed is a key aspect, as opposed to slo mo war evidenced in the land wars.

How to shape con-ops that master C2 at the tactical edge, and rapid decision making in a fluid but high-speed combat environment?

In a way, what we were discussing is a shift from training preparing for the next fight with relatively high confidence that the next one was symmetric with what we know to be a shift to proactive training.

How to shape the skill sets for the fight which is evolving in terms of technologies and concepts of operations for both Red and Blue?

In short, the Navy is in the throes of dealing with changes in the strategic environment and the evolving capabilities which the Navy-Marine Corps team can deploy in that environment.

And to do so requires opening the aperture on the combat learning available to the fleet through its training efforts.

Training across the Navy and the joint force is required to do so.

Extending the Reach of the Kill Web: The US Navy Works with Allies on the Maritime Patrol Enterprise

05/13/2020

By Robbin Laird

In our last interview with Rear Admiral Garvin, we focused on how the P-8 / Triton dyad was reshaping the approach of the airborne element of the anti-submarine network.

We spoke at length about how the Maritime Patrol and Reconnaissance Force (MPRF) could be recast into interactive webs that will empower more effective strike at the most critical point of attack.

In effect, what we see coming in the Pacific and in the Atlantic are interactive sensor webs that extend the reach of core platforms and their onboard sensors.

The fusing of multiple sensors via a common interactive self-healing web enhances the ability of the entire force, including key partners and allies, to cooperatively engage enemy targets in a time of conflict.

Interactive webs can be used for a wide range of purposes throughout the spectrum of conflict and are a key foundation for full spectrum crisis management. To play their critical role when it comes to strike, whether kinetic or non-kinetic, this final layer of the web needs to have the highest standards of protection possible.

As one analyst has put it: "The kill part of the web is crucial.

"However, there are many scenarios where the same web is needed, but for other purposes.

"The point is that the "web" facilitates alignment of sensing, C2, and actionable outcomes (i.e. – shooters of various types)."

The interactive webs enhance the reach of any platform within a task force and thus create synergy amongst non-contiguous assets that are combined against a specific threat.

Interactive webs also provide redundancy and depth for distributed operations and inherent resiliency and survivability that a convergent combat force simply will not have.

We started with a discussion of the reach of the maritime patrol enterprise by focusing on a way to conceptualize the way ahead for shaping an integrated distributed force.

If one conceptualizes the battlespace as layers of visuals placed one on the other, it becomes clear what is different in terms of leveraging the combat force within an interactive web. The first layer would be the operational geography of the battlespace.

The second layer would be the threat elements most relevant to the blue force.

The third layer in the case of a maritime patrol enterprise would be commercial maritime shipping traffic. Unlike air traffic, maritime traffic is very diverse, very large, and provides a key masking function for any adversary.

The fourth layer would be the laydown of blue assets, including the geographic distribution of allied forces in the region or area of interest. The fifth layer would then be where the P-8 / Triton dyad operates.

With such a schematic, it is quickly evident that if the U.S. Navy's P-8 / Triton dyad is integratable with allied maritime patrol capabilities the reach of both the U.S. and allied interactive web capabilities is substantially enhanced.

It is also obvious that if key allies are not engaged then there are holes in the web structure which will either simply be gaps or need to be filled by other means.

In simple terms, it is clear that the United States and its allies must operate within a convergent set of interactive webs to shape a shared and actionable common operating picture.

The results will significantly empower a combined strike force and, even more importantly, inform decision makers about how to prioritize targets in a fluid combat situation.

There is a particular and often intellectually neglected part of this problem–the existence of offensive nuclear capability.

As an example, in the Pacific there are three nuclear powers. Nuclear deterrence is woven throughout any considerations of conventional operations, so there is a clear need to add a strategic overlay of the battlespace, which considers potential consequences and focuses on making the right target decisions in a fluid battlespace. This "wildcard" should give pause to those who tout AI enabled kill chains.

Decision makers need to step back and consider that while more rapid destruction of targets is important, it must be guided by both tactical and strategic decisions with due regard not just to combat but political effects as well in full spectrum crisis management. Having men in the loop in airborne systems, like the MPRF can certainly contribute to target discrimination efforts.

We also considered the specific challenges of the US Navy working with allies in the maritime patrol enterprise.

For obvious reasons, we first focused on those allies who have already joined the P-8 / Triton dyad effort.

We then discussed those allies who had not done so but are key partners in working interactive webs with the United States. Prior to highlighting that discussion, let me review who the P-8 / Triton partners are to date.

Australia is the only U.S. ally pursuing both the P-8 and the Triton. As a cooperative partner, similar to the F-35, they participated in the development of P-8A and Triton capabilities from the ground up with the USN.

The British have made a very welcome reentry into the Maritime Patrol and Reconnaissance arena with the P-8 as well.

During recent visits to RAF Lossiemouth, I saw the program being stood up in Scotland, and they were doing it in such a way that other P-8 partners would be supported as well.

At Lossiemouth I discussed the new infrastructure with key RAF officials responsible for the effort, and that interview will be published later but the key role of standing up new infrastructure to support this effort is crucial to handle the new data rich airplanes, as well as the work with allies in operating the assets.

Having visited Norway earlier this year and having discussed among other things, the coming of the P-8 and the F-35 in Norway, it is clear that what happens on the other side of the North Sea (i.e., the UK) is of keen interest to Norway.

And talking with the RAF and Royal Navy, the changes in Norway are also part of broader UK considerations when it comes to the reshaping of NATO defense capabilities in a dynamic region. The changes on the UK side of the North Sea are experiencing the standup of a P-8 base at Lossie, which will integrate with US P-8 operations from Iceland and with those of Norway as well.

In effect, a Maritime Domain Awareness highway or belt is being constructed from the UK through to Norway.

A key challenge will be establishing ways to share data and enable rapid decision-making in a region where the Russians are modernizing forces and expanded reach into the Arctic.

The Pacific partnership is being expanded as well with the addition of South Korea.

In 2018, the South Korean government announced that would purchase six of the aircraft. They are thereby joining India, which has its own systems configured on the aircraft. India first P-8I squadron was stood up at Rajali in November 2015.

The Indian Navy operates its entire fleet of eight P-8I maritime patrol aircraft from Rajali and the Indian government announced last year that they intended to buy 10 additional P-8s.

With regard to the P-8 / Triton partners, Rear Admiral Garvin highlighted the opportunities for co-learning, which are generated from common training that occurs at VP-30 and the Maritime Patrol and Reconnaissance Weapons School at NAS Jacksonville, Fl.

He highlighted the famous quote, "You cannot surge trust."

The working relationships built during high-end tactical training carry over into operations whereby a global community of operators can share operational experience and enrich development of the enterprise.

"My first international visit upon taking command was to Australia, leadership there referred to our working relationship as "mateship."

"This term accurately describes the collaborative nature of our partnership and demonstrates its importance to ourselves and the rest of the world."

"We have built similar relationships on varying scales, all around the world.

"These relationships serve as force multipliers, which opens the door to cooperatively leverage technology to deliver networked sensors and a shared understanding of the decisions and options we share across the extended battlespace."

"Our allies understand the fundamental nature of their region better than we do.

"If you have properly maintained these important working relationships, both interpersonal and technological, then you will have access to the cultural knowledge and human geography that might otherwise would not be available to you.

"We become stronger interactively with our allies by sharing domain knowledge to operate across a wider geographical area."

"In effect, we are shaping kill web "matesmanship."

"We clearly have closer relationships with some allies than with others, which shapes policy and data sharing. However, the technology is now out there which can allow us, within the right policy framework, to provide data at appropriate security levels much more rapidly than in the past.

"Our policy frameworks simply need to catch up with our technologies."

"History has shown us that it is infinitely more difficult to sort out our working relationships in times of intense conflict.

"Those partnerships need to be nurtured and exercised now to help shape our interactive webs into a truly effective strike force over the extended battlespace."

For Rear Admiral Garvin, working with partner and allied maritime patrol partners is crucial, even when those close partners are operating different platforms.

For example, Japan indigenously developed their own replacement aircraft for its legacy P-3s. He highlighted the healthy sharing arrangements the U.S. Navy has with the Japanese Maritime Self-Defense Force in the MDA area.

Similarly, we enjoy a very close relationship with Canada, who operates a significantly modernized P-3, the CP-140 Aurora. He noted that the aperture for increased cooperation with India was opening up as well, a process which he clearly welcomed.

As Rear Admiral Garvin put it: "Put simply, the idea of partners and allies sharing in the web you describe must have, at its core, that underlying, underpinning relationship built upon trust.

"Sometimes buying the same kit does make it easier. But without that relationship it doesn't matter if you bought the exact same kit."