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The CMV-22b Threat to Enhancing the Fleet's Capability to Operate in Contested Operations



September 23, 2022

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The U.S. Navy is facing a very significant challenge in transitioning from support to the U.S. joint force and to allies in the land wars to operating in a contested battlespace with peer competitors. There are many aspects of change associated with that strategic shift and I have dealt with the broad transition in my book with Ed Timperlake, *A Maritime Kill Web Force in the Making: Deterrence and Warfighting in the XXIst Century*.

But as the fleet looks to enhance its lethality and survivability in a distributed battlespace, no aspect of prevailing in that battlespace is more important than logistics support in the contested battlespace. This is how Rear Admiral Meyer put it with regard to how the Navy was reworking carrier operations in a way that highlighted this key logistics requirement:

“The fact that our carrier strike groups can move 700-plus miles in a 24-hour period, the increasing range and lethality of our ever-advancing air wing and the weapons that those aircraft carry can hold huge areas of the surface at risk. Over the course of a three-day period, it would mean just a staggering volume of a real estate, roughly the entire Pacific AOR over a 72-hour period. But it is that logistics support train that is really a key part that makes that happen.”

But how will the Navy ensure this happens and in a financial and strategic environment whereby building out such capability in the near to mid term is critical but difficult to do?

One answer is to leverage the transition from the C-2 to the CMV-22B, to ramp up the buy while the production line remains “hot,” and to leverage the arrival of this new air capability to reimagine fleet support as well.

This report brings together some initial articles which will form a series looking at the coming of the CMV-22B to the fleet and how it can provide a thread of logistics innovation to re-imagine how to deliver logistics support to the carrier in a contested environment as well as to provide for wider fleet support in such conditions.

Carrier Support Begins a New Era: The Arrival of the CMV-22B to VRM 30

06/25/2020

The first CMV-22B Osprey has arrived in San Diego at Naval Air Station North Island and is assigned to the “Titans” of Navy’s Fleet Logistics Multi-Mission Squadron (VRM) 30.

The squadron was stood up in 2018 to operate the CMV-22B as a replacement for the Navy’s legacy C-2A Greyhound carrier onboard delivery (COD) aircraft.

I visited Amarillo Texas in February when the U.S. Navy unveiled one of its first CMV-22Bs.

At that ceremony, Captain Dewon Chaney, Commodore of the Fleet Logistics Multi-Mission Wing highlighted the coming of the new capability and what it meant for the US Navy.

What is the status of the CODs?

Every Carrier Air Wing Commander and Carrier CO has received that question numerous times from the Carrier Strike Group Commander while on deployment. And for good reason...

The COD, or Carrier On-board Delivery, aircraft is the only long-range aerial logistics platform providing logistical support for the Carrier Strike Group, ensuring its time sensitive combat capability.

Sure, there are ways to get some items to the carrier but that time lag in most cases is at the cost of readiness for the warfare commander.

The Navy saw the need to replace the aircraft providing this critical capability years ago and embarked on multiple efforts to inform that decision. The Navy selected V-22 as the future COD platform.

The first aircraft is being delivered today (well actually a week ago but who is counting). And our first deployment will be here in a blink of an eye!

But the devil in the details with this particularly accelerated program is making sure that the fleet can man, train, and equip those at the tip of the spear potentially in harm's way.

As of October, last year as the Wing Commodore, I have the honor, privilege and responsibility, given to me by Vice Admiral Miller, to be the lead for the Navy's CMV-22 community along with our partners at well into the 2040s. Delivery of this aircraft is a major milestone on the path to initial operational capability in 2021.

The CMV-22 has the capability to internally carry the F-35C engine power module. This capability is a game changer for the Air Wing of the Future and drove the need to match up the F-35C and CMV-22 operational deployments.

The first CMV-22 deployment is now less than a year from initial delivery of N3, which is scheduled for late June of this year.

Its success is key to maintaining combat lethality for the Air Wing of the future and our Navy,,, CMV-22s will operate from all aircraft carriers providing a significant range increase for operations from the Sea Bases enabling Combatant Commanders to exercise increased flexibility and options for warfare dominance. If you're in a fight.. it's always good to have options!

Every month following the first initial deployment, there will be a CMV-22 detachment operating with a US aircraft carrier somewhere in the world....

From another perspective, the CMV-22B is entering the U.S. Navy as the entire fleet is going through a kill web transition.

I had discussed this transition with the US Navy Air Boss in San Diego a week before "Chainsaw" Chaney made his remarks in Amarillo, Texas.

VADM Miller discussed with me how he one might consider the change underway for the carrier Air Wing.

*What is underway is a shift from integrating the air wing around relatively modest and sequential modernization efforts for the core platforms to a **robust transformation process** in which new assets enter the force and create a swirl of transformation opportunities, challenges, and pressures.*

How might we take this new asset and expand the reach and effectiveness of the carrier strike group?

How might it empower maritime, air, and ground forces as we shape a more effective (i.e. a more integratable) force?

During a recent visit to San Diego, I had a chance to discuss such an evolving perspective with the Navy's Air Boss, Vice Admiral "Bullet" Miller.

We started by discussing the F-35 which for him is a major forcing function change in the CVW.

But his focus is clearly upon not simply introducing the aircraft into the force but ensuring that it is part of the launch of a transformative process for shaping the evolving air wing....

The Air Boss is looking to focus his attention on enhanced combat lethality which the fleet can deliver to the maritime services and the joint force.

What is being set in motion is a new approach where each new platform which comes into the force might be considered at the center of a cluster of changes.

The change is not just about integrating a new platform in the flight ops of the carrier.

The change is also about how the new platform affects what one can do with adjacent assets in the CSG or how to integrate with adjacent U.S. or allied combat platforms, forces, and capabilities.

To give an example, the U.S. Navy is replacing the C-2 with the [CMV-22](#) in the resupply role.

But the Navy would be foolish to simply think in terms of strictly C-2 replacement lines and missions.

So how should the Navy operate, modernize, and leverage its Ospreys?

For Miller, the initial task is to get the Osprey onboard the carrier and integrated with CVW operations.

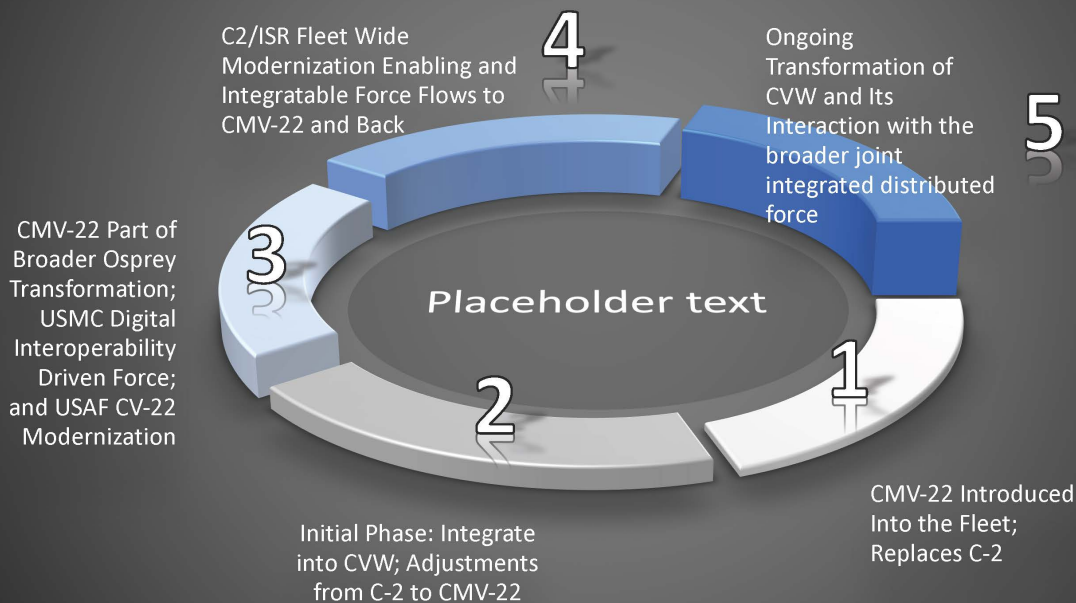
But while doing so, it is important to focus on how the Osprey working within the CVW can provide a more integrated force.

Vice Admiral Miller and his team are looking for the first five-year period in operating the CMV-22 for the Navy to think through the role of the Osprey as a transformative force, rather than simply being a new asset onboard a carrier.

Hence, one can look at the CMV-22 innovation cluster in the following manner:

CMV-22 Cluster

IOC, Integration into CVW Ops, and Interactive Contributor to Integrable Joint and Coalition Force



Such an approach is embedded in the rethink from operating and training an integrated air wing to an integratable air wing.

Preparing for the U.S. Navy's Transition from the C2 to the CMV-22B: Meeting the Challenge

04/16/2020

On February 7, 2020, the U.S. Navy officially received its first CMV-22B Osprey, the replacement for its venerable C-2 Greyhound aircraft.

I attended the ceremony held at Amarillo, Texas and had a chance to talk with a number of the participants before and after the ceremony.

Having followed the Osprey since 2007 and observed its impact on the USMC, it was never a simple case of the MV-22 replacing the CH-46 'Phrog' and its mission.

The tiltrotor is not the same in any real sense as a traditional rotorcraft, and the increased range and speed of the Osprey and its unique operating envelope has proven to be a significant capability for the Marine Corps which they have been able to leverage to transform their core operations.

Now the U.S. Navy will be transitioning from a fixed-wing aircraft configured to operate with the cats and traps system onboard an aircraft carrier (the C-2) to an aircraft (the Osprey), which is not limited by that system will not operate in any way like a C-2.

It is undoubtedly going to also be a significant opportunity for the Navy to manage the transition and to understand fully how to make the most of the new aircraft's capabilities to conduct Airborne Logistics from the Sea Base in new and innovative ways.

There is another major aspect or indeed opportunity, that has nothing to do with the COD (Carrier On-board Delivery) mission.

The Osprey has proven capable of a wide range of operations, from Special Forces transport to performing a Medical Evacuation off of a submarine, but the US Navy is not buying it for those missions.

Yet, given the demanding strategic environment in which the fleet is operating and going to operate, it is difficult to believe that the Navy will not wish broaden the envelope of what the Osprey can do for the fleet.

To do so will lead inevitably to the demand to buy more than a simple COD replacement would dictate.

Because the Osprey is a multi-service, and multi-national asset, there will be opportunities as well to leverage collaborative investment as well.

This has not been possible with the C-2 because it was and is a uniquely Navy plane.

How then might the Navy use the aircraft beyond the classic C-2 ops rhythm?

And how might the Navy take advantage of a broader investment or production set of opportunities posed by multi-service and multinational partners?

What is clear is that the challenging path of transition which the Marine Corps took from CH-46 to MV-22 will not be as difficult for the Navy.

They can already build on the experience of the Marine Corps.

Nonetheless, it is clear that there will be unique aspects of its fleet introduction.

During my visit to Amarillo in February 2020, I had a chance to talk with a retired Navy officer who was involved throughout his career with the C-2 as well as becoming involved in the process of working the C-2 replacement effort.

Currently, CAPT (ret.) Sean McDermott is a commercial airline pilot who served in the US Navy for 26 years. He was involved with the C-2 during the majority of his career, starting as a Greyhound pilot and eventually commanding one of the Navy's two fleet logistics squadrons.

In the final years of his service, McDermott was involved in working through options for the Navy as they considered C-2 replacements, with an eventual Osprey selection.

In our discussion, McDermott highlighted a key point which logistics pilots are keen to underscore: “You don’t care about logistics until you don’t have the supplies you need at the time you want them.”

He noted that when he became part of the C-2 community, there were two squadrons, based at three locations.

One, VRC-40 ‘Rawhides’ was located on the East Coast at Norfolk, VA, and the second, VRC-30, ‘Providers’, on the West Coast in San Diego California. There is also a permanently forward-deployed detachment of VRC-30 based in Iwakuni Japan.

Both squadrons fall under Airborne Command & Control and Logistics Wing (ACCLW) headquartered in Point Mugu, CA. The wing was traditionally led by officers with an E-2 Hawkeye background.

This meant that there was little opportunity for C-2 pilots to lead the community beyond the possibility of becoming a squadron commander or O-5 (Commander) rank, vice O-6 (Captain/Commodore) rank.

Lacking the upward mobility, post-squadron command has made it more difficult for the C-2 leadership to become involved in future planning and to be able to be in the best position their assets for more robust mission opportunities.

As a story [published in 2010](#) in the *Virginian Pilot* newspaper noted for the 50th anniversary of VRC-40:

McDermott and the other members of his squadron, known as the Rawhides, aren’t used to being the center of attention. In naval aviation, glory usually goes to the fighter pilots and their jets, not to those who deliver mail, spare parts and passengers.

“We’re a light switch. We’re the Internet.

They expect us to be there all the time,” McDermott said.

“The only time we’re visible is when we’re not there.”

McDermott underscored the challenges facing C-2 leaders getting into a position to shape the future of their mission within the overall world of carrier aviation.

“In general, there is no upward mobility for C-2 COs.

“In general, the preponderance of the leadership of the wing are E-2 Naval Flight Officers.

“This means that you’ve got somebody who’s your boss who’s never flown your plane, never done your mission, doesn’t have a complete understanding of the challenges that are unique to deploying detachments across the planet.

“They had about 140 people in their squadron when they were commanding officers and a C-2 squadron is 400 people.”

McDermott noted that one of the encouraging signs with the CMV-22B transition is that a new Wing, COMVRMWING has been stood up, and its Commodore who is in charge of the Osprey team now being charged to take over the COD mission.

This CMV-22 wing should provide a more dedicated voice to implement new ideas for airborne logistics operations as well as exploring how the aircraft could be used to support other missions for the Navy in a distributed maritime environment.

We discussed at length his experience with the challenges of getting the Osprey engaged with the Navy fleet and eventually on to the carrier for a fleet battle experiment as well as in support of humanitarian assistance missions.

He was also involved in the efforts to deploy Ospreys onto foreign ships, and he worked closely with the Marine experimental squadron VMX-22 and [Col. Michael Orr](#), who we interviewed often during the time frame when the Osprey transition was accelerating, to leverage the Marine's experience with the aircraft to shepherd Navy interest.

On the cover of our book, *Rebuilding American Military Power In The Pacific*, we chose a photo of Col. Orr landing on the USS *George H.W. Bush*.

McDermott was on that carrier during those trials and highlighted how challenging it was to get support to land the Ospreys onboard the large deck carriers.

The Marine aviation leadership created VMX-22 to lead the way forward, first with Ospreys and preparing the way for the next round of aviation innovation.

Because they worked under strong leadership, they could partner with a Navy leader like McDermott to create an opportunity for the Osprey to become a large deck carrier asset.

As McDermott noted about Col. Orr: "I have a lot of respect for Mike, clearly a leader who is willing to support change and innovation."

But as the trials evolved, there were opportunities to demonstrate how an Osprey could do things a C-2 never could do, given the flexibility of the aircraft and its speed and range.

He provided several examples of this.

One involved when Orr's group arrived back in Norfolk on an Osprey, and when taxiing, out came a chief petty officer blocking their way. They stopped and the chief said that there was an urgent need to get a part to an F/A-18 Hornet so that it can fly off of the carrier prior to getting to port.

The ship was pulling in the next day, and if they did not get the aircraft off of the ship, the aircraft would need to be craned off the ship while in port, not something the Navy likes to do.

The catapults have already been shut down on the ship and were not available.

Obviously, this was not a barrier for the Osprey which flew to the ship, delivered the part and left within 90 seconds from the ship.

McDermott recalled: “The Air Boss on the carrier was an E-2 guy and he underscored, “Let’s see a COD do that!”

We concluded our discussion by focusing upon the potential impact of the multi-mission Osprey to the fleet.

McDermott put it this way: “With the C-2 we did one thing – Carrier On-board Delivery.

“With the Osprey, Combatant Commanders already know the multi-mission capability of the V-22 and will be tempted to utilize them for a variety of other missions.

“This is not something that would happen with a C-2. Carrier leadership will eventually struggle to fence off their logistics assets from outside tasking.”

In other words, there is an anticipated operational demand that they will want to leverage fully the new versatile capabilities of the Osprey.

He noted that with the new platform being introduced to carrier aviation, it will be possible to leverage it to shape a greater range of capabilities for the COD asset.

He noted that as the Marines began to get comfortable with the MV-22, they shaped the unique Special Purpose Marine Air-Ground Task Force (SP-MAGTF), which has become a highly demanded asset.

He argued that such innovation was certainly possible for the Navy as it worked with its new COD aircraft.

One area he noted were forward deployed locations that would benefit like operations in Bahrain.

Ospreys deployed to these locations could not only better support logistics but would also have the flexibility to support other mission sets for combatant commanders.

“With the coming of the new platform into the fleet, one innovation which might be considered is how to use the new Navy Osprey as part of a broader sustainment effort encompassing Marine Corps and Navy Ospreys.

“It also is an area where the multi-mission capabilities of the aircraft for the Navy can be explored as well.

“In other words, where the Marines leveraged their Ospreys to build and equip SP-MAGTF, perhaps the US Navy can leverage the Bahrain anchor from which to build regional sustainment and explore ways to build out the multi-mission capabilities it would want from its CMV-22s.”

This clearly might require the Navy to consider from the outset ways to ramp up the buy and to prepare for ways in which the fleet commanders will employ it to leverage fully the aircraft capabilities, and, at the very least, utilizing its capability to provide improved logistics to Navy and Maritime Sealift Command ships.

The Way Ahead for the CMV-22B: The Integratable Air Wing and the USS Carl Vinson

04/06/2021

The CMV-22B is an essential part of the evolving air wing on the large deck carriers. The process of shaping this new capability is part of the overall transformation of the large deck carrier and its role in the evolving capabilities of the U.S. Navy and its transformation of fighting as a fleet.

New platforms should never be understood as in and of themselves but as part of the evolution of a force, and when significant change is underway, the transformation of the force. This is certainly the case with the CMV-22B.

The Navy has a huge advantage in bringing the lift-focused Osprey to its flight decks. For it builds on the significant operational experience of the USMC in operating this aircraft globally. This means that the Navy is drawing upon the ecosystem associated with the Osprey and taking that platform and its ecosystem onto its evolving large deck carrier fleet.

In a story published by the USS Carl Vinson on [February 26, 2021](#), the operation of the first CMV-22B squadron in delivering an F-35C power module onboard the ship was highlighted.

The “Titans” of Fleet Logistics Multi-Mission Squadron (VRM) 30 and members of Carrier Air Wing (CVW) 2 successfully delivered an F-35C power module aboard USS Carl Vinson (CVN 70) in the U. S. Navy’s first, at-sea replenishment for this component.

This success follows a November 2020 milestone, during which VRM-30, CVW-2 and Vinson conducted the Navy’s first landings, take-offs, and refueling of a Navy CMV-22B Osprey from an aircraft carrier.

The at-sea power module replenishment evolution consisted of loading, transporting and unloading the F135 power module from a shore-based location to the carrier by way of a CMV-22B. The power module is an engine component used by all three F-35 Lightning II variants.

The CMV-22B is the U.S. Navy version of the V-22 Osprey, a multi-engine, dual-piloted, self-deployable, medium lift, vertical takeoff and landing (VTOL) tilt-rotor aircraft. The CMV-22B can transport cargo and passengers as far as 1,150 nautical miles; provides enhanced survivability and beyond-line-of-sight communications; and has the required cargo capacity and fast cargo loading/unloading. Coupled with its ability to transport the F-35 power module inside its cargo bay, CMV-22B is the ideal choice to provide required carrier on-board delivery capabilities for F-35C operations at sea. The delivery marks a milestone in the integration of CMV-22B to the Carrier Air Wing, validates the F135 modular maintenance concept at sea, and most importantly supports future carrier air wing deployments with next-generation platforms.

“The CMV-22B is a great addition to the carrier air wing,” said Capt. Matt Thrasher, commander, CVW-2. “The Osprey is a robust logistical platform that not only supports the F-35C but also gives the entire air wing increased range and transport capacity. Its addition to our team ensures that CVW-2 remains ready to perform as-advertised while on deployment.”

CVW-2 is currently embarked aboard Vinson under the command of Carrier Strike Group (CSG) 1.

CVW-2 is leading the charge in introducing and integrating the next generation of aircraft and capabilities in the Fleet as the U.S. Navy's first Carrier Air Wing to deploy with the F-35C Lightning II, E-2D Hawkeye and the CMV-22B Osprey. The Navy's next iteration of the Carrier Air Wing will be more lethal and survivable through the integration of organic fourth-generation kinematics and fifth-generation information and survivability, increased command and control and airborne electronic attack capacity, all sustained with a reliable logistical support platform.

"With the addition of the newest fifth-generation aircraft, the Navy has delivered the world's most capable, lethal and ready air wing to our strike group," said Rear Adm. Timothy J. Kott, commander, CSG-1. "Delivering the right balance of presence and power, including airpower supremacy, strike groups continue to be one of our nation's primary on-call assets in times of need. By maintaining a lethal, ready strike group, manned by the world's most skilled Sailors and outfitted with the best equipment, fifth generation aircraft will help America maintain our advantage at sea and protect our nation for years to come."

Capable of embarking both the F-35C and the CMV-22B, Vinson is the first aircraft carrier equipped to support fifth-generation aircraft. With its recent modifications, no other weapons system has the responsiveness, endurance, multi-dimensional might, inherent battlespace awareness or command and control capabilities of the Vinson and CVW-2.

Upgrades included enhanced jet blast deflectors able to take the increased heat generated by the F-35C and the Autonomic Logistics Information System (ALIS), the new computer network that supports the unique maintenance and tactical operations functions of the advanced aircraft.

"Our crews and staffs have done a fantastic job during integrated operations with the new aircraft and associated upgrades," said Capt. P. Scott Miller, Vinson's commanding officer. "We are truly a team. The successful replenishment of the power module is another testament to that team and our Sailors, who are the most dedicated, best trained and well educated in the world. The continued professionalism and warfighter spirit they demonstrate each and every day is the number one key to our success time and time again."

Vinson is currently completing a series of "work ups" and certifications in preparation for future operational tasking.

But the image of the CMV-22B delivering the engine module for the F-35C onboard the Vinson does not reflect the effort to get to this point in preparing the air wing of the future or my preferred term the integratable air wing for the arrival of both the F-35 and the Osprey onboard the next phase of the large deck carrier's transformation.

The coming of the F-35 to the carrier is part of the enhanced reach of the carrier; the coming of the Navy's version of the Osprey is part of reshaping the logistics capabilities which the DMO logistics support for the fleet entails. Cross-decking will be a key part of both re-imaging how the large deck carrier and the amphibious fleet can provide for the evolution of sea-basing.[\[1\]](#)

The Navy's logistics air arm which the CMV-22B is transforming will certainly be able to work across decks in the fleet. This is clearly not something which the legacy aircraft for the logistics mission, the C-2A, could not do.

For example, in the Black Widow exercise last Fall held by Second Fleet, the USS Wasp was part of the USW force. It operated Romeos off of its deck. If did so in a combat situation, those helicopters could be joined with the Link-16 and full motion capable Viper attack helicopter to provide for ship defense. Those aircraft – the Romeos and Vipers – when getting low on the appropriate weapons could be resupplied by an MSC ship, but if not available or not able to provide the appropriate weapons in a timely fashion – could have a CMV-22B land onboard to provide such a capability from a North Atlantic base, from a large deck carrier, or from some other capable ship. The point is rather simple – the CMV-22B could land and load from all of those decks or locations; the C-2A cannot.[\[2\]](#)

Recently, I had a chance to discuss the training and preparation for the effort with Captain Dewon “Chainsaw” Chaney, the Commander of COMVRMWING (or Fleet Logistics Multi-Mission Wing). We last met at North Island Air Station in San Diego early last summer. Since that time the original squadron VRM-30 has been joined by the second squadron, VRM-50. The squadrons now have six CMV-22Bs.

The command has stood up a training facility for the load ins and load outs onto the CMV-22Bs. According to Captain Chaney: “We were loaned some cargo containers from HMX-1 to do load outs from both a C-130 and a C-40 to train for maximum operational flexibility for the detachments. We did not want to work simply with the cargo containers for the C-130 but with the C-40 as well to ensure that we have greater flexibility. Instead of ISU-90s which work with C-130s, we have the ISU-50s which work with the C-40s and C-130s. We have three dets worth of ISU-50s at the base so we can work with both aircraft.”

Captain Chaney had shown me the MV-22 fuselage at the base during my June 2020 visit which they used as a cargo trainer. They have since moved that fuselage from the VRM-30 hangar to a temporary tent facility where they do the training. This allows the operators to train without having to do so on an operational aircraft which reduces the risk which training poses to such an aircraft. The tent facility is being replaced by a permanent building to house the cargo load trainer. This project is already funded.

According to Captain Chaney: “With the power module mockup, we have a dummy slide for that mockup, as well as cargo containers which we can use to train the aircrewmembers to load the aircraft without the threat of damaging an actual CMV. This allows the squadrons to work through the crawl/walk/run aspects of training for the load out process both in terms of putting the power module and cargo onto the aircraft and taking it off that aircraft.”

Because there are not many non-RFI power modules available to use for training, the team built a module that is the same shape and weight of an actual power module. An RFI part means that it is ready for issue. It is working; you can take it out of a box and use. A non-RFI means that it is not ready for issue, or it is not ready to be used. Eventually, they were able to obtain a non-RFI power module as well.

This meant that with their mock-up or with the non-RFI power module, they could shape a training cycle to learn how best to load in and load out the F-35 power module onto the aircraft in support of the

mission. In my words, the team was shaping the kind of muscle memory crucial to be able to do that when they would fly to the USS Carl Vinson.

Members of the Vinson logistics team have worked with the team at North Island San Diego to prepare for the February 2021 engagement of VRM-30 onboard the ship as well. As the deployment of the F-35 detachment onboard the USS Carl Vinson is scheduled for this year, obviously, the CMV-22B team needs to be ready to support the new aircraft onboard the first large deck carrier which will deploy it. Next up is the USS Abraham Lincoln. There is a demand side of CMV-22B squadron preparation driven by the arrival of modified large deck carriers operating the F-35C.

The flight simulator will be coming soon to North Island as well. This will obviously provide a significant boost to shaping Navy core competencies to operate the new aircraft in support of Navy logistical operations as well.

This means that the large deck carrier will be operating two new aircraft which are working together to deliver a new combat capability for the fleet. Much like the F-35s onboard large deck carriers are expanding the reach of the carrier air wings operating within the fleet, the CMV-22Bs can do so by the potential of providing logistical support for DMO operations as well.

[1] For example, see several of the interviews which I conducted last year and are highlighted in my book *Training for the High-End Fight* (2021).

[2] For a discussion of the role of the USS WASP in the 2020 Black Widow exercise, see the following: Robbin Laird and Ed Timperlake, “21st Century USW: A Kill Web Team Sport,” *Second Line of Defense* (March 28, 2021).

Enhancing U.S. Navy Fleet Capabilities: Reshaping the Approach to Sustaining the Force

09/08/2022

Recently, the [U.S. navy’s CNO Gilday](#) underscored that fleet numbers are limited by the relatively limited defense industrial capacity in the United States.

A clear challenge is to rebuild and enhance the “arsenal of democracy.”

“We have an industrial capacity that’s limited. In other words, we can only get so many ships off the production line a year. My goal would be to optimize those production lines for destroyers, for frigates, for amphibious ships, for the light amphibious ships, for supply ships,”

He was talking not simply about major capital ships but across the board the support fleet or the sustainment side of the fleet as well.

There is no short to mid-term solution in terms of providing for an answer to the shortfall even with a ramping up the industrial base.

This means that in addition to ramping up the industrial base or rethinking how to shape the industrial base which can deliver more platforms and payloads to the global U.S. Navy, innovative solutions need to be found in providing for expanded maritime crisis management and combat capabilities.

My colleague, [Marcus Hellyer](#) of the Australian Strategic Policy Institute, and a leading expert on military systems in Australia, highlighted in a February 1, 2021, article how the U.S. Navy can deal with one of the key challenges facing the fleet, namely, the Chinese maritime build out.

This is how he puts it: “Whether under the name of mosaic warfare, distributed lethality, or some other term, they involve disaggregating capabilities such as weapons, sensors, processing power and communications systems into smaller vessels and vehicles, some manned, some unmanned.

“The individual components would be cheaper, but when linked into a resilient network or mesh enabled by artificial intelligence, together they would provide greater, more responsive lethality while being able to suffer attrition. Such concepts have made some progress towards reality, but overall have struggled to gain traction.”

My colleague Ed Timperlake and I have recently published our book which suggests a way ahead for the US Navy to expand its capabilities in the face of the shortage of hulls of various classes of capital ships.

We argued that re-working how the fleet operates as a fleet and with enhanced integrability with air and land forces, a distributed maritime force through a kill web con-ops can enhance its survivability at the same time ensuring the level of lethality required to deal with the fleets of adversary nations.

Some analysts confuse the new approach with an older approach labeled network centric warfare. But as we put it in the book: “The strategic context and thrust of the kill web focus is upon force distribution, scalability and integratability for a modular combat force. This is very different from network centric warfare for it is about shaping new concepts of operations, new ways to build multi-domain force packages and those forces are operating in a very different strategic context within which Cebrowski was living in.”

We focused in the book on ways to reshape con-ops of distributed forces and how modular task forces can be built.

This is how we put it: “At the strategic level, rather than the experience of the land wars where central control drilled down to the battalion level and geographic control, the focus is upon understanding the interactive multi-domain combat effects of distributed forces, With the deployment of multiple modular task forces to the point of strategic or tactical interest, the kill webs may reshape the entire battlespace. The centralized command, in turn, is focused on leveraging those evolving effects to shape combat or crisis management outcomes at the broader escalation management strategic level.”

And with the operation of such forces a key challenge then is how to sustain such forces at sea or how maritime forces can better integrate with air forces working agile combat employment or land forces providing weapons reach or supply capabilities which can be projected to the fleet.

In the book, we deal with a wide range of ways, the air, sea, and land forces can work in new and innovative ways to deliver distributed integrated force capabilities.

But in this series, I am going to focus on how in the short to midterm, the fleet can ramp up its capability to be sustained at sea, or to provide support to ground and air forces operating from mobile bases to ensure their effectiveness and solvability.

In other words, what can be acquired in the short to mid-term which allows the fleet to be better sustained when it is engaged in distributed maritime operations, and how can such a fleet further support joint force distribution as well, and how can the two efforts synergistically reinforce one another?

The importance of this re-focus cannot be understated. As we quoted Rear Admiral Meier in our book: “So, when we look at that Pacific fight, logistics is the key. I think as we look at the new concepts and we started to look at logistics, for the last 20-some years, we built a logistic posture that was peacetime and focused, just-in-time efficient. As the wing commander, I knew how many engines were located on what ship and what was available. We had just a correct number of supplies based on demand, which is rearward looking.

“But in the future, it’s going to be a different kind of usage. We’re going to operate 24 hours, seven offs, we’re going to operate a lot more sorties, but our posture is based on a peacetime demand signal. We have to get into more of a push logistics, more algorithms that predict when operations ramp up, the supply system is ramping up prior to that, and start moving those key components forward.

“We had to get the ability to have these algorithms to accurately predict to say, when I’m about to have the first day of the war and I’m going to launch these long weapons, I don’t need to wait until I fire the weapon to call back home to say, send more out here. They should be moving forward, even before I pull the trigger. So, the next day the resupply ship is pulling up, and I’m reloading. That’s the kind of mindset we need to be able to do. That’s kind of what we’re trying to get at operational logistics; is more of a forward looking instead of a rearward peacetime kind of a focus.”

How will we do this in the face of ship hull shortages of the sort the CNO underscored?

The Integratable Airwing and the CMV-22B Thread

09/12/2022

To meet the challenge of operating a distributed fleet but working force integration, the Navy along with the joint force clearly need to find ways to work more effectively with one another.

And as I highlighted in my initial piece in the series, sustainability in a contested environment is a crucial capability to be able to do so.

In my meetings with Vice Admiral (Retired) DeWolfe Miller when he was the Navy Air Boss, we focused on what I would call the integratable air wing. This is referred to officially as the airwing of the future, but I think this is simply too narrow of a characterization.

The evolution of the carrier clearly requires the ability to use its air assets for the wider fleet in new and innovative ways, as well as to work ways that the carrier and other capital ships can tap into land-based and non-Navy air assets to expand the reach of the force to enhance its survivability and lethality.

My colleague Ed Timperlake and I discuss at some length the evolution of the carrier along the lines of this article in our book *A Maritime Kill Web Force in the Making*.

As we describe the concept of the integratable air wing in the book: “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 and the CMV-22B. These new capabilities are being worked into an evolving Naval strike force to shape new capabilities for the carrier and for the distributed force.”

We underscored that what is underway is a shift from integrating the air wing around relatively modest and sequential modernization efforts for the core platforms to a robust transformation process in which new assets enter the force and create a swirl of transformation opportunities, challenges, and pressures.

“How might we take this new asset and expand the reach and effectiveness of the carrier strike group? How might it empower maritime, air, and ground forces as we shape a more effective (i.e., a more operationally integrated in terms of effects) force? What is being set in motion is a new approach where each new platform which comes into the force might be considered at the center of a cluster of changes.

“The change is not just about integrating a new platform in the flight ops of the carrier. The change is also about how the new platform affects what one can do with adjacent assets in the CSG or how to integrate with adjacent U.S. or allied combat platforms, forces, and capabilities.”

The CMV-22B is being introduced into the fleet and fits perfectly into the integratable air wing model.

The Navy is buying the CMV-22B to replace the venerable C-2A Greyhound to provide for logistical support to the carriers.

Yet the CMV-22B with its flexibility to land on a wide range of seabases, and to move rapidly from a variety of land bases means that it can lead to a significant rethink of how to perform logistics support across the fleet and to be able to work very differently with the joint force as well.

This latter subject I will explore in a later piece.

The Navy’s logistics air arm which the CMV-22B is transforming will certainly be able to work across decks in the fleet.

This is clearly not something which the legacy aircraft for the logistics mission, the C-2A, could do.

Captain Dewon “Chainsaw” Chaney, the Commander of COMVRMWING (or Fleet Logistics Multi-Mission Wing), in an interview I did with him last year underscored that it was clear that the Osprey was not the Greyhound and that as the platform operates within the fleet, the aperture is open on how it might work to support fleet operations.

This is how he put it: “The Osprey provides flexible options for austere support. I think we’re going to need that as we look toward the future and where we’re potentially going to operate, where we may be forced to operate, depending on the evolving combat situation.”

And in my discussions with Vice Admiral (Retired) De Wolfe Miller, the initial task was clearly identified as getting the Osprey onboard the carrier and integrated with CVW operations.

But while doing so, it is important to focus on how the Osprey working within the CVW can provide a more integrated force.

Vice Admiral Miller underscored that he and his team are looking for the first five-year period in operating the CMV-22 for the Navy to think through the role of the Osprey as a transformative force, rather than simply being a new asset onboard a carrier.

The current buy of CMV-22Bs is to provide enough Ospreys to perform the logistics function for the carrier force in its normal peacetime roles.

But to enhance in the short and mid-term the lethality and survivability of the fleet, a low hanging fruit is to ramp up the numbers of this core logistics asset to ensure that the fleet can perform the logistics required in a contested environment.

But I would argue even more broadly than this goal.

Buying a significant number of CMV-22Bs can allow the Navy far more rapidly and cost effectively to meet the shortfall on logistics support for the wider fleet as well as to shape new ways of working with the joint force, both to support them as well as for finding new ways for the joint force to enhance the operational reach, survivability and lethality of the fleet itself.

In other words, ramping up the CMV-22B buy provides a thread which can tie together the wider fleet and the joint force into a more lethal and effective kill web force.

Where Does the CMV-22b Fit into U.S. Navy's Evolving Concept of Operations?

09/19/2022

A great place to go to approach ways to answer that question is to visit The Naval Aviation Warfighting Development Center or NAWDC which is best known to the public as "Top Gun."

When I last visited NAWDC in 2020 which I did twice in that year, it was very clear from the visits and the discussions, that there was significant rethinking underway with regard to how Naval aviation could interact with the kind of fleet innovation necessary for effective distributed maritime operations.

The theme of integratability beyond the carrier air wing is a key one being worked at NAWDC.

As the head of NAWDC at the time of my visit, Rear Admiral Brophy, put it: "From a training standpoint, we work from the perspective of 'it is not going to be a carrier strike group that wins the next fight on its own, it's going to be an integrated joint force that wins the next fight. We've really broadened our aperture. Everything we do here now is based off of a single lens: does it move the needle for great power competition or not?'"

A measure of the change at NAWDC has been the generation of working groups based at NAWDC that reach out to the fleet to devise and implement new ways to operate in the evolving strategic situation. COVID-19 slowed down this process, but the trajectory is clear. For example, in the first quarter of 2020, NAWDC sponsored work with the other Navy warfighting centers to address the question of fleet-wide TTPs to execute maritime strike. The purpose is to think beyond the classic airwing focus to a wider integratable air wing in support of fleet-wide operations than simply relying on U.S. Navy operated platforms.

During my visit, I had a chance to talk with a number of the Departments working specific aspects of air wing training. There was clearly much re-thinking going on driven by the coming of the F-35 among other drivers of change. One of the most important take-aways from the visit was to learn more about MISR officers, which highlights a significant change in the fleet towards understanding the broader role of ISR in supporting fleet and joint operations.

But one question I asked the various Department heads was: where does the CMV-22b fit in?

There is a rotary wing department; would it be there?

Perhaps, but the officers I spoke to got the core point – this “logistics” asset was more than that. How could it drive innovation for the fleet and how might it evolve in ways benefiting from broader fleet innovation?

The arrival of the MISR officers and the CMV-22b provide an example of such innovation which might happen.

This is what I wrote after my July 2020 visit to NAWDC:

“There is another aspect of the coming of MISR to the fleet which could have a significant impact on operational capabilities beyond what the head of the MISR program discussed. And that flowed from conversations at lunch with the MISR course participants.

“There is a clear opportunity to add passive sensing to platforms operating within the force. For example, the CMV-22Bs will fly to the fleet for the logistics function, but why not place passive sensors on the aircraft to scoop up ISR information which can be distributed to an appropriate functional area?

“For example, the Romeo, P-8 and Triton communities are working to shape more effective integration. Clearly, MISR officers will know that ISR dynamics within that functional area and might be the perfect players to suggest what passive sensing on the CMV-22B might best provide to that force package or to one of the elements within that package.”

When one is operating in a contested environment, not only are the logistics challenging, but getting the right information from a fluid combat environment is crucial as well.

The CMV-22b certainly enable the first but could also provide inputs for the second.