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Visiting 2nd Marine Air Wing

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2nd Marine Wing at Trident Juncture 2018: The Case of MAG-31

02/12/2019

By Robbin Laird

Last year during my visit to Norway, I had a chance to visit several airbases and talk with a wide variety of Norwegian officers and defense officials.

With the return of direct defense challenges to the Nordics, there has been a major shift to recapitalizing the force, introducing mobilization measures and reworking the concepts of operations to deal with the Russian threat.

But it has been nearly two decades since the Nordics have faced a direct defense threat and at that time, they were facing the Soviet Bloc, and not simply Russia.

This meant that the core threat they faced in times of war would be an amphibious assault from the Soviets similar to what the Germans did against them in World War II.

But now the threat is different and the concepts of operations not the same as well.

As I wrote in a recent article in the Canadian publication Front Line Defence:

It is clearly not your daddy's Cold War but, for the younger generation, not having lived through it, it can be a bit of a shock facing a nuclear power that has threatened Northern Europe (several times) with destruction if they don't comply with how the Russians want to see security and defense develop in Europe.

But there is no Warsaw Pact. The Russians cannot lead an envelopment campaign in the event of war against Northern Europe. In the Kola Peninsula, Russia maintains the greatest concentration of military power on earth, and this makes Northern Europe a key flashpoint as Russia pushes its military power to areas of interest, including the Middle East.

The opening of the Arctic is clearly changing the strategic geography as Putin stands up new military bases, including air bases, to provide greater reach and range and affecting his ability to project force out into the North Atlantic. The Nordic countries recognize that the extended reach of Russian strike capability (longer-range missiles) changes the threat calculus.

For the Nordics, the Trident Juncture 2018 exercise was a building block for shaping approaches to dealing with the new strategic situation.

During my visit to Norway this past Spring, I had a chance to talk with one of the key Norwegian officers involved in the preparation for the exercise.

According to Col. Lars Lervik:

“A key focus of the exercise from the NATO side is exercising our ability to conduct high intensity operations in a multi-national environment.

“What we’re looking at here is confronting an opponent who has the whole arsenal available.

“We need to be able to function not only as individuals and individual nations, but actually function together.

“This is a key focus of the exercise.”

Trident Juncture 2018 is also a command post exercise as well and given that Norway is reworking its C2 capabilities as part of defense modernization, the exercise provides an opportunity to input multinational operational training as well into the transformation process.

Col Lars Lervik highlighted that “It is very important to ensure that we have the procedures in place necessary to operate an integrated force on Norwegian territory in a higher intensity operational environment.

“We are starting really to be serious about C2 again.”

During my visit to 2nd Marine Air Wing in January 2019, I had a chance to talk with Marines involved in the exercise to get their sense of the return of direct defense in Northern Europe and the challenges facing the Marines to provide the kind of force engagement which ultimately the Nordics, the US and NATO would like to see in terms of coalition interoperability necessary to operate in a crisis situation.

During my visit I had a chance to talk with Col. Pares, Commanding Officer of MAG-31, and with the Commander of VMFA Squadron 224, Lt. Col. Joshua Pieczonka.

According to both officers, from the standpoint of mobilization the exercise was a success, but the years of working in the Middle East had clearly have not allowed them to focus on their ability to fight in the cold.

But the exercise really did not achieve a core goal – training for the high-end fight.

The Marines showed up, flew, but not really do a good job of integrating with the Marine Corps force deployed to Norway nor with the Norwegian and allied forces as well.

I pointed out that the Nordics are now shifting to the direct defense challenge but doing so is a work in progress.

It would be important to influence what they are investing in so that the Marines could plug and play more effectively in the future.

Pares: “We’ve been sending squadrons for years now to the sandbox in the Middle East, and it’s been a long time since we sent anybody back to the North.

“So, thanks to the Commandant’s direction, we’re attempting to get back into cold weather operating environments.

“And so really for us, we haven’t really looked at this really strategically. It’s direct asking from the Commandant and to get back familiar with working in those types of environments, so we’re looking for cold weather training opportunities.

“We want to make sure our equipment is still able to operate there, and that we know how to operate there. And so we’re looking for more of these opportunities.”

He noted that they were going to Finland as part of the Arctic Challenge exercise in May 2019 as well.

Lt. Col. Joshua Pieczonka noted that his previous experience has all been in hot weather type climate environments.

“I think we can essentially declare it as a success from the lower level operational tactical level, but we need to augment our ability to do higher end training in this exercise environment.

“We did take eight F18s, packed them up and moved them across the Atlantic Ocean. It’s always challenging to cross the ocean. It’s more so challenging when you get in the winter months, of course, where this airplane has a finite amount of places that we can put it once we get going.

“We were able to move essentially the majority of the VMFA, and put it in place over a couple of days. And there was already a Marine wing support squadron footprint there for us, so we had a life support. Basic life support required to operate already existed.

Figure 1 An F/A-18D Hornet, with Marine All-Weather Fighter Attack Squadron (VMFA) 224, conducts an aerial refuel in Norway, during Exercise Trident Juncture 18, Oct. 24, 2018. U.S. Marine Corps photo by Gunnery Sgt. Christopher Giannetti)

"We had a threshold requirement that was in place to receive us.

"So from a strategic perspective, of getting something somewhere into a base and just figuring out operations and then having a very warm reception by our Norwegian counterparts, were ready to receive us and help us move forward, is very well done."

But the exercise demonstrated that this was a beginning not an end point.

There is a clear need to work through how Marines coming to Norway in a crisis can bring their full combat capabilities to the fight and to integrate those capabilities with the Norwegians.

This clearly will be a work in progress and with the Nordic commitment to the F-35 as well, there will be an important opportunity to leverage the stand up of the combat capability in the Nordic region to shape better competencies and capabilities in the C2 area to ensure that the force can be optimized for the high-end fight.

Col. Phares emphasized that there was a clear emphasis on seeking out cold weather training opportunities for the Marines, and that the Commandant has put significant emphasis on so doing.

He underscored that with the challenge of ramping up readiness for the Marine Corps and the shift from the desert, training opportunities at the higher end were clearly necessary.

And the Trident Juncture 2018 exercise only partly met this requirement as improvement will be needed on all sides to ensure that the insertion force into Norway can bring its full combat capability to the fight.

An example of a work in progress has been the introduction of the G/ATOR radar.

When I visited MAWTS-1 last year, they had introduced the new G/ATOR radar into the WTI course. During the WTI course, they were focused on unlocking the capabilities the new radar could bring to the USMC and the joint force.

One example of this being tested at MAWTS-1 is the continued integration of Ground/Air Task Oriented Radar (G/ATOR) TACDEMOs.

G/ATOR provides targeting information and fires support ashore.

One challenge will be to shape a MAGTF, joint and allied understanding of how to efficiently operate in concert.

This is magnified with the introduction of the F-35 which provides significant MAGTF organic support but also possesses capabilities to enable joint and allied fourth generation aircraft as well.

A key focus was how to manage and conduct Integrated Fire Control between G/ATOR and F-35.

"We focused on how to maximize three core systems – G/ATOR, the Composite Tracking Network (CTN) and CAC2S (the latest software iteration of the Common Aviation Command and Control System) as they are fielded to the force for the first time as a systemic whole."

"We are going to be able to provide significantly greater information to all of the shooters, whether airborne, shipborne or ground based missile defense systems."

The Marines brought the new radar to the Trident Juncture 2018 exercise but really were able to demonstrate its transportability more than what it could contribute to the fight.

Clearly, the goal must be to not only bring the new radar into the Nordic environment but work the connectivity and force integration which would allow that radar to contribute to Marine Corps and allied operations in a crisis situation.

This is an example of the work in progress.

2nd MAW engagement Trident Juncture 2018 is an important turning point in the strategic shift.

They demonstrated they can show up effectively to support crisis management, but it remains necessary to shape the force integration in Norway to be able to gain the level of warfighting capabilities needed in a crisis.

Col. Matthew H. Phares, MAG-31 Commanding Officer

Colonel Matthew H Phares graduated from West Virginia University with a B.S. in Aerospace Engineering. He was commissioned in 1993 as a naval aviator. Following designation as an F/A-18 pilot he was assigned to VMFA-251 where he completed two carrier deployments, flying combat missions in support of Operation Southern Watch in Iraq and in Afghanistan in support of Operation Enduring Freedom. He also completed the Strike Fighter Tactics Instructor course. Following his tour with VMFA-

251, he was assigned to 2nd Light Armored Reconnaissance Battalion during the Iraq invasion as a Forward Air Controller in support of Operation Iraqi Freedom.

As a field grade officer, he returned to MCAS Beaufort and was assigned to VMFA(AW)-533 where he filled multiple billets as the pilot training officer, Operations officer and Aviation Maintenance officer. He also completed the MAWTS-1 Weapons and Tactics Instructor course. While assigned to the Hawks, he completed a deployment to the western Pacific as part of the Unit Deployment Program and another deployment to Iraq in support of Operation Iraqi Freedom. Following his tour at VMFA(AW)-533, he attended the Marine Corps Command and Staff College before being assigned as the section head for MMOA-4.

Promoted to Lieutenant Colonel, he returned to MCAS Beaufort in June 2010, and assumed command of Headquarters Squadron 31. In June 2011, he assumed Command of Marine Fighter Attack Squadron 115 and completed a deployment to the western Pacific as part of the Unit Deployment Program. Relinquishing command in February 2013, Lieutenant Colonel Phares was selected to attend Top Level School at the National War College. In June 2014, Lieutenant Colonel Phares was assigned to the Joint Staff where he served as the Kinetic Weapons Branch Chief in the J-8 Force Application Division. In May 2016, Colonel Phares was selected to serve as the Military Aide to the Deputy Under Secretary of the Navy for Policy. In August 2017, he assumed his current duties assigned to the staff of 2nd Marine Aircraft Wing.

Colonel Phares' personal decorations include the Legion of Merit, Defense Meritorious Service Medal, Meritorious Service Medal (2nd award), 12 Air Medal's (one single action with combat V and eleven strike flight awards), Navy Commendation Medal with combat V, Navy Achievement Medal and the Combat Action Ribbon.

https://www.mag31.marines.mil/Leaders/Article/601688/colonel-matthew-h-phares/

Lt. Col. Joshua M. Pieczonka, VMFA(AW)-224

Lieutenant Colonel Pieczonka graduated from The State University of New York at Buffalo in May 1997 with a bachelor's of science degree in Exercise Science, was commissioned in April 1998 a second lieutenant, and ordered to The Basic School (TBS).

In April 1999, Lieutenant Colonel Pieczonka reported for Naval Flight Officer (NFO) training at NAS Pensacola, FL. He was designated an NFO in October 2000 and ordered to Marine Fighter Attack Training Squadron 101 (VMFAT-101), MCAS Miramar CA for training as a Weapons Systems Officer (WSO) in the F/A-18D. Upon completion of training with VMFAT-101 in January 2002, Lieutenant Colonel Pieczonka was directed to report to Marine All-Weather Fighter Attack Squadron 533 (VMFA(AW)-533) at MCAS Beaufort, SC.

During his tour with VMFA(AW)-533, Lieutenant Colonel Pieczonka served as a Schedules and Flight Officer, Ground Safety Officer, and Assistant WSO Training Officer. Lieutenant Colonel Pieczonka executed deployments in support of Operation Southern Watch, Operation Iraqi Freedom and a Western Pacific deployment as part of the Marine Corps' Unit Deployment Program (UDP).

Lieutenant Colonel Pieczonka detached from VMFA(AW)-533 in May 2005 and reported for duty as a Forward Air Controller with the 2d Reconnaissance Battalion at Camp Lejeune, NC where he served as the Battalion Air Officer. While attached to the 2d Marine Division, he was again order to the Central Command (CENTCOM) area of responsibility (AOR) as a combat replacement individual augment to

Operation Iraqi Freedom. He executed operations as the assistant Regimental Air Officer for Regimental Combat Team Two (RCT-2) aboard Camp Ripper at Al Asad Airbase, Iraq. Lieutenant Colonel Pieczonka returned to serve the remainder of his FAC tour as the Air Officer for 2d Tank Battalion.

In November 2006, Lieutenant Colonel Pieczonka reported to Marine Aviation Weapons and Tactics Squadron One where he served as an Air Officer Department Instructor. While on staff at MAWTS-1, he completed the Weapons and Tactics Instructor (WTI) Course in the spring of 2008 and served an additional role as an F/A-18 instructor for the remainder of his tour. Lieutenant Colonel Pieczonka was the subject matter expert for Close Air Support execution and doctrine, terminal attack control standardization, Digital Precision Strike Suite (DPSS) and portable targeting devices, precision guided weapons targeting and mensuration, and fixed-wing tactics.

Lieutenant Colonel Pieczonka was selected to attend the United States Air Force, Air Command and Staff College, Air University at Maxwell Air Force Base in Montgomery, AL in the summer of 2009. He earned a Master's Degree in Operational Art and Military Science with a concentration on Small Wars and Counter Insurgency Operations.

In August 2010, Lieutenant Colonel Pieczonka reported for duty to the 3rd Marine Aircraft Wing, Marine Aircraft Group-11, and was assigned to VMFA(AW)-225.

During his tour of duty, he executed the Operations Officer, Assistant Aircraft Maintenance Officer, and Director of Safety and Standardization Officer billets. Lieutenant Colonel Pieczonka executed two western Pacific UDPs during his 29 months with the Vikings. He completed the remainder of his MAG-11 tour as the Tactics Training Facility (TTF) Officer in Charge and the MAG-11 WTI.

Lieutenant Colonel Pieczonka reported to Headquarters, United States Marine Corps, Department of Aviation in June 2013 to serve in the Aviation Weapons Requirements Branch (APW) as the Aviation Training System Requirements Officer. In the summer of 2014, he was reassigned to the Aviation Plans, Programs, Joint/Congressional Matters, Doctrine and Budgeting Branch (APP) as the Tactical Air Control Party, Joint Fire Support, and Joint Close Air Support Executive Steering Committee Action Officer. He also served as the Contract Air Services/Adversary Requirements Officer.

During his tour in the Pentagon, Lieutenant Colonel Pieczonka deployed forward in 2015 to augment the Combined Joint Force Land Component Command, Combined Joint Task Force-Iraq as the Strike Director at the operations center in Baghdad, Iraq in support of Operation Inherent Resolve.

In August 2016, Lieutenant Colonel Pieczonka reported to Marine Aircraft Group 31 at MCAS Beaufort, SC. He executed the F/A-18 WSO refresh period of instruction at VMFAT-101, and served as the Marine Aviation Training System Site Beaufort Operations Officer and acting Officer in Charge until 26 March 2017. Lieutenant Colonel Pieczonka was reassigned and directed to report to VMFA(AW)-224 to assume the Executive Officer billet and accompany the Bengals on the deployment in support of Special Purpose Marine Air Ground Task Force – Crisis Response, CENTCOM (SPMAGTF-CR-CC) 17.2. On 23 February 2018, Lieutenant Colonel Pieczonka assumed command of VMFA(AW)-224 and is currently executing that assignment.

Lieutenant Colonel Pieczonka's personal awards include the Defense Meritorious Service Medal, Meritorious Service Medal, Air Medal (with Strike Flight Numeral 8), Navy and Marine Corps

Commendation Medal (with 2 Gold Stars in lieu of 2nd and 3rd Awards), and the Navy and Marine Corps Achievement Medal with Combat Distinguishing Device.

2nd Marine Wing at Trident Juncture 2018: The Case of MAG-26

02/13/2019

By Robbin Laird

Last year during my visit to Norway, I had a chance to visit several airbases and talk with a wide variety of Norwegian officers and defense officials.

With the return of direct defense challenges to the Nordics, there has been a major shift to recapitalizing the force, introducing mobilization measures and reworking the concepts of operations to deal with the Russian threat.

But it has been nearly two decades since the Nordics have faced a direct defense threat and at that time, they were facing the Soviet Bloc, and not simply Russia. This meant that the core threat they faced in times of war would be an amphibious assault from the Soviets similar to what the Germans did against them in World War II.

But now the threat is different and the concepts of operations not the same as well.

For the Nordics, the Trident Juncture 2018 exercise was a building block for shaping approaches to dealing with the new strategic situation.

The Norwegian Ministry of Defence described the exercise as follows:

The exercise will test the whole military chain – from troop training at the tactical level, to command over large forces. It will train the troops of the NATO Response Force and forces from other allies and partners, ensuring they can work seamlessly together.

WHY NORWAY?

This exercise has air, sea and land elements, and Norway offers the possibility to train realistically in all of these domains. The cold and wet weather will pose additional challenges for NATO troops, and will train them to operate in extreme conditions.

Norway offered to host Trident Juncture 18, and NATO accepted the offer more than four years ago. Norway has a long tradition of hosting major allied and multinational military exercises. Among them are Cold Response, Dynamic Mongoose and Arctic Challenge.

WHY DO WE EXERCISE?

Since 2014, collective defence has become a more prominent feature of NATO, due to the changes in the global security situation. In order to train and test NATO's ability to plan and conduct a major collective defence operation, the Alliance has held several large-scale exercises. This autumn, the turn has come to Norway.

Trident Juncture is also a great platform to cooperate with close partners like Finland and Sweden – exchanging best practices and working together to address crises.

(For a comparison of Trident Juncture 2015 and 2018, and what has already happened in three short years, see the following:

https://defense.info/highlight-of-the-week/trident-juncture-exercises/).

During my visit to 2nd Marine Air Wing earlier this month, I had a chance to talk with Marines involved in the exercise to get their sense of the return of direct defense in Northern Europe and the challenges facing the Marines to provide the kind of force engagement which ultimately the Nordics, the US and NATO would like to see in terms of coalition interoperability necessary to operate in a crisis situation.

In my first article based on my visit, I focused on MAG-31 and the role of fast jets; in this article, I am going to focus upon MAG-26 and the participation of VMM-365 in the exercise. VMM-365 is an Osprey squadron.

I had a chance to talk with the CO of MAG-26, Col. Boniface, whom I have met with several times before he took this command, and Lt. Col. Fowler, the CO of VMM-365.

According to Col. Boniface: "It is important to note that during the exercise, which encompassed actions in Iceland and Norway, the V-22 operated above the Arctic Circle.

"We were able to deploy, engage and provide presence in the exercise. We had to deal with the weather and operating conditions in the region, which are quite different from where our Marines have spent most of their time in the past decade.

"And we need to continue to learn how to operate in those conditions, and to have the domain knowledge of how to exercise patience and timing appropriate to operations in the Nordic region.

"The weather comes in, each fjord has its own weather so to speak and we have to learn patience and how to deal with the second and third order affects which operating in cold weather generates."

Most of the conversation about the Trident Juncture 2018 engagement involving MAG-26 focused on the experiences of VMM-365 and Lt. Col. Fowler provided an overview and various insights into the USMC experience.

According to Lt. Col. Fowler, the impact of Hurricane Florence on North Carolina meant that they had reduced participation in the exercise. The initial plan was to send six aircraft, but they did send 114 Marines and 4 Ospreys to the exercise.

Figure 2 A MV-22B Osprey with Marine Medium Tiltrotor Squadron 365 conducts flight operations during Trident Juncture 18 at Vaernes Air Base, Norway, Nov. 1, 2018. (U.S. Marine Corps photo by Lance Cpl. Cody J. Ohira)

Lt. Col. Fowler highlighted that they operated from the Iwo Jima amphibious ship and in Iceland did a raid against an "enemy" airfield. That raid was launched from the ship and the force returned to the ship after the raid.

The raid did not highlight the long-range capability of the Osprey but rather operated as integral part of the insertion force which also included CH-53Es and related assets.

A major piece of the operations in both Iceland and Norway was working with the Osprey in cold weather conditions. Notably, they were operating the Osprey's de-icing capabilities and getting a comfort level with the aircraft in cold weather conditions.

Lt. Col. Fowler underscored the point made by Col. Boniface with regard to the importance of weather conditioning and learning in Norway during the exercise.

"The Norwegians are great partners. They supported us as we worked our learning curve in the cold weather environment. But clearly we need to improve the communication systems used during the exercise, to get the full combat capability out of our force and to better integrate with the Norwegian force as well."

And as all pilots note when flying in Norway, it is not just the weather, which is challenging but the terrain and the infrastructure built into the terrain as well.

"With the towers and power lines running throughout the fjords, it is dangerous for aircraft operations. And we operate both as a helicopter and as an airplane so we faced challenges which are both the same but different for both type of craft all rolled up into one type of aircraft!"

"There was extensive use of UASs as well during the exercise, which creates a challenge to sort out the operations of the manned with the unmanned aircraft operating in the same airspace as well. Clearly, this is a work in progress."

One change which is critical to reshaping operations is the nature of the local community, meaning that when operating in Norway it was clear that they are a committed ally and the population was highly committed to supporting Marine Corps operations, including providing real time intelligence with regard to the "enemy" force. This was noted as a significant difference from USMC operations in the Middle East.

In short, the picture provided of MAG-26 involvement in Trident Juncture 2018 reinforced the picture provided by MAG-31. The exercise was a success in terms of being able to project force, but to get the full combat value from a Marine Corps force in a real crisis, significant effort needs to be directed towards enhanced capabilities to integrate the insertion force with the host nation and its force.

My discussions in Norway as well as Denmark have underscored how important shaping an effective C2 system for the defense of Northern Europe. In an interview with Brigadier General Rygg conducted last year at Bodø Airbase, the Chief of the Norwegian Air Operations Centre highlighted the importance of getting C2 right in the new strategic situation.

https://defense.info/interview-of-the-week/brigadier-general-jan-ove-rygg-on-shaping-the-way-ahead-for-the-norwegian-forces/

Brigadier General Rygg: "We are building out new C2 capabilities within the National Joint Headquarters. It is about technology and reworking the workflow.

"We are bringing the key players into a close working relationship within the mountain to provide for better crisis management support as well."

As infrastructure changes, the focus will as well to provide for crisis management support.

Brigadier General Rygg: "We are shifting from a classic joint targeting approach to a joint effects approach. Every time that you do something with the military, you are creating an effect.

"We are fielding new systems, which provide capabilities we have not had in the past.

"How do we use these systems to create the appropriate joint effect?"

The kind of C2 system needed is clearly an agile, scalable and flexible one.

Brigadier General Rygg: "We may need to provide for mission control where the autonomy of key systems will be maximized.

"We may need to have a tight hierarchical C2 system.

"It depends on the threat; it depends on the mission and on the crisis management situation.

"But we need to build in redundancy and flexibility from the ground up."

Clearly, the Marines agree and would underscore the core importance of enhanced interoperability in a crisis situation to get full benefit from working together.

Colonel Chris Boniface

MAG-26 Commanding Officer

Colonel Boniface is a 1994 graduate of the University of South Alabama and entered the Marine Corps through the Platoon Leader's Class Program.

After completing flight training in December 1997, First Lieutenant Boniface was assigned to Marine Medium Helicopter Squadron (HMM) 365, where he served as the Assistant Logistics Officer, Current Operations Officer, and Squadron Weapons and Tactics Instructor. During this tour he completed two deployments with the 26th Marine Expeditionary Unit (MEU) supporting Operations JOINT GUARDIAN and ALLIED FORCE during the 1999 Kosovo War, Turkish earthquake relief operations for Operation AVID RESPONSE, and a 2001-2002 deployment to Afghanistan for Operation ENDURING FREEDOM.

In 2003, Captain Boniface reported to the 4th Marine Expeditionary Brigade (Anti-Terrorism) for duty as the Air Officer. In October of that year, he transferred to the 8th Marine Regiment to serve as the Regimental Air Officer and deployed to Port-au-Prince, Haiti as part of SPMAGTF-8, CJTF Haiti for Operation SECURE TOMORROW.

Major Boniface reported to HMM-264 in September 2004. During this tour he served as the Logistics Officer and deployed to Iraq for Operation IRAQI FREEDOM. Between deployments, Major Boniface assumed the duties of the Squadron's Aviation Maintenance Officer, and in January 2007, deployed with the 26th MEU to the U.S. Central Command area of responsibility.

Upon completing his second deployment with HMM-264, Major Boniface reported to Marine Medium Tiltrotor Training Squadron (VMM) 204 for training on the MV-22 Osprey. After his initial training, he remained onboard as an instructor pilot and Fleet Projects Officer before assisting in the stand-up of VMM-264 as the Operations Officer.

Following his selection to command, Lieutenant Colonel Boniface was directed to report to VMM-266 to serve as the Executive Officer and subsequently deployed with the 26th MEU. During this deployment he participated in Operations ODYSSEY DAWN and UNIFIED PROTECTOR off the coast of Libya.

From May 2011 until December 2013, Lieutenant Colonel Boniface commanded VMM-266. During his command tour, VMM-266 (REINFORCED) deployed as the Aviation Combat Element, 26th MEU to the U.S. Central Command, U.S. Africa Command, and U.S. European Command areas of responsibility.

Before taking command of MAG 26, Colonel Boniface served as the Branch Chief of the Iran Division on the Joint Staff, Strategic Plans and Policy (J-5), Middle East Directorate.

Colonel Boniface is a 2003 graduate of the Expeditionary Warfare School, a 2008 graduate of the Marine Corps Command and Staff College, and a 2015 graduate of the National War College.

Lt. Col. Mark C. Fowler

VMM-365 Commanding Officer

Lieutenant Colonel Mark C. Fowler is a graduate of North Carolina State University and commissioned as a Second Lieutenant in April 2000. Following commissioning, he reported to the Basic School in Quantico, VA for initial officer training and upon completion, reported to Pensacola, FL for initial flight training. He was designated a Naval Aviator in December 2002. Following initial flight training, he reported to Marine Medium Helicopter Training Squadron (HMMT) 164 for training in the CH-46E and was designated a helicopter second pilot in May 2003.

After completing initial CH-46E flight training, he reported to Marine Aircraft Group (MAG) 26, Marine Corps Air Station (MCAS) New River, where he joined the Marine Medium Helicopter Squadron (HMM) 261 "Raging Bulls" from June 2003 to January 2007. During this time, he completed two deployments with the squadron. The first deployment was in support of Operation Iraqi Freedom (OIF II and OIF 2-1) to Al Asad Air Base, Iraq from Jan 2004 until Sept 2004. He worked in the operations department as a scheduler writer and Assistant Training Officer. He became a Helicopter Aircraft Commander (HAC) during the deployment. His second deployment was the 22nd Marine Expeditionary Unit's (22d MEU) deployment to Iraq in support of OIF 4-6. During the deployment, he held the billet of Administration Officer.

Upon returning from the 22d MEU deployment, he was assigned as the Pilot Training Officer (PTO) for the squadron. He managed the daily, weekly, and monthly scheduling for all squadron pilots and aircrew, maintaining T&R currency, proficiency, and combat readiness.

In November 2006, he attended the Tactical Air Control Party school at Expeditionary Warfare Training Group Atlantic (EWTGLANT) in Dam Neck, VA and was designated a Forward Air Controller (FAC). In January 2007, he reported to Third Battalion, Eighth Marines (3/8), Camp Lejeune, NC to serve as a FAC. He deployed with Battalion Landing Team (BLT) 3/8 and the 22d MEU in support of OIF and Humanitarian Assistance to Bangladesh. Following his tour with 3/8, he reported to Marine Medium Tiltrotor Training Squadron (VMMT) 204 at MCAS New River for MV-22 transition.

In February of 2009, he was designated a MV-22B (Osprey) pilot and executed orders to VMM-365. While at VMM-365, he served as the Training Officer during the squadron aircraft transition from CH-46 to the MV-22B, thereby becoming a plank owner. In June of 2010, VMM-365 deployed in support of Operation Enduring Freedom (OEF) to Bastion Air Base, Afghanistan.

In the February of 2011, he reported to VMMT-204 for assignment as an Instructor Pilot. While at VMMT-204, he served as the Administration Officer, Aircraft Maintenance Officer, Assistant NATOPS instructor and MAG-26 Functional Check Flight standardization officer.

In September of 2013, he rejoined VMM-365 and served as the Aircraft Maintenance Officer (AMO), Executive Officer (XO), assistant NATOPS instructor (ANI), and Night Systems Instructor (NSI). During this time, VMM-365 deployed as the Aviation Combat Element (ACE) for the 24th MEU, in support of Operation Inherent Resolve from December 2014 to July 2015.

In August of 2015, Major Fowler reported to MAG-26 headquarters to serve as the MAG Maintenance Readiness Officer. This position was created by the MAG-26 Commanding Officer in order to increase readiness and improve the Ice Protection System (IPS) on the MV-22.

In August of 2016, he executed orders to II Marine Expeditionary Force (MEF), Camp Lejeune to serve as the MEF Air Officer. During this time, he worked to ensure the safe and efficient use of limited aviation assets and resources whether deployed or CONUS.

His personal decorations include the Air Medal with numeral "6", and the Navy and Marine Corps Commendation Medal with a gold star.

The Osprey at 2nd Marine Air Wing: An Update from Colonel Boniface

02/14/2019

During my visit to 2ndMAW in January 2019, I had a chance to talk with the Commanding Officer of MAG-26, Colonel Boniface.

I have had the opportunity to talk with Chris Boniface several times since we first met at the Bold Alligator exercises almost a decade ago.

We have published several interviews with him, and we recently posted an article providing a compilation of his comments over the years as well on defense.info.

https://defense.info/interview-of-the-week/colonel-boniface-on-osprey-enabled-usmc-ops/

It has been a couple of years since I last visited with the Osprey community at New River, and the discussion with Colonel Boniface provided some significant updates on their activities.

We discussed a number of key developments.

First, the Marines like the other services have been hit with significant readiness challenges rooted in the sequestration period.

High tempo ops continued while support dollars were significantly reduced. This is hardly a recipe for success.

Col. Boniface: "When I got here about a year and a half ago, the goal was to basically recover readiness. We've had every squadron has either deployed, deploying, or come home.

"And, with that being said, we also saw a significant dip in readiness. We've seen about an 85 percent increase in availability of aircraft over the last year and a half."

Second, while the restoration of support dollars is clearly underway, the challenge is to put in place a more effective support approach to the Osprey fleet which is seeing new users put in place as well as the opportunity to put more effective global support in place as well. In other words, enhanced financial support clearly is a necessary but not sufficient condition to get the support enterprise right.

“One of the biggest challenges that I have here is mitigating the long term down process.

“My problems aren’t necessarily operational.

“My problems are an insufficient supply system and a significant amount of corrosion that I have on some of these aircraft.

“The corrosion piece is being addressed but the corrosion piece takes awhile to get the engineers to come back and say that this aircraft is good.

“But, we don’t have a suitable amount of the engineers and engineering support to be able to turn these corrosion problems and fix them quick enough and turn them into available aircraft.”

There is a significant opportunity to think through what the next round of logistical sustainment for the Osprey fleet could be.

As Col. Boniface put it: “We need better predictability, forecasting, and availability of parts. It’s very difficult to identify where your next supply shortfall is coming from and that’s where this community struggles.”

I added the comment that somebody needs to be thinking through the re-crafting the sustainment enterprise so that the money is put into non-repeatable mistakes and ensures a more predictable and sustainment logistics support enterprise.

There clearly is a need for a healthy supply system built on supporting global operational realities and this challenge will become even more significant with the strategic shift in operations underway.

Col. Boniface added: “We just need a better supply model which can level out the supply chain support to the deployed force.”

Third, when I first visited New River several years ago and talked with the Osprey training squadron, there major focus was upon Marines and the Air Force.

Now with the US Navy buying Ospreys as well as the Japanese, there are new stakeholders in the training process, and that training squadron has not become a priority effort within MAG-26 for sure.

Fourth, the Osprey is hitting its mid-term life cycle and will need upgrades, which will enable the aircraft to continue being effective going ahead.

And along with upgrades, the challenge of repairs associated with corrosion, a normal challenge for a sea-borne fleet needs to be addressed as well.

Fifth, MAG-26 like other elements of the USMC are facing the challenge of shifting from the Middle East land wars, as a primary focus, to work in regions quite different against peer competitors.

Figure 3 A MV-22B Osprey with Marine Medium Tiltrotor Squadron 365 conducts flight operations during Trident Juncture 18 at Vaernes Air Base, Norway, Nov. 1, 2018. (U.S. Marine Corps photo by Lance Cpl. Cody J. Ohira)

The specific case we discussed was the engagement of MAG-29 in Trident Juncture 2018, where really for the first time for Marines who had operated the Osprey for many years in the Middle East, they had to deal with Cold Weather and the dynamcis of weather in Iceland and in Norway.

According to Col. Boniface: "It is important to note that during the exercise, which encompassed actions in Iceland and Norway, the V-22 operated above the Arctic Circle.

"We were able to deploy, engage and provide presence in the exercise.

"We had to deal with the weather and operating conditions in the region, which are quite different from where our Marines have spent most of their time in the past decade.

"And we need to continue to learn how to operate in those conditions, and to have the domain knowledge of how to exercise patience and timing appropriate to operations in the Nordic region.

"The weather comes in, each fjord has its own weather so to speak and we have to learn patience and how to deal with the second and third order affects which operating in cold weather generates."

In short, MAG-26 is in good hands but face significant challenges as the force is reworked to deal with the new strategic environment, and one in which a more effective logistical enterprise needs to be put in place for global operations.

As the Navy and the Japanese join the Osprey nation perhaps this will be easier to get done.

The USMC and a New Chapter in Heavy Lift: The CH-53K Logs Demo at New River

01/29/2019

By Robbin Laird

A decade ago I was present at the creation of the Osprey nation and did many interviews and visits as the aircraft was stood up and supported in operations.

It was such a different aircraft from the CH-46 that the maintainers with whom I met a decade ago clearly new they had a new animal to work with.

This animal was a complicated beast, with some of the digital maintenance capabilities, which are now becoming central to new air platforms.

They had the initial manuals to work with on digital readers, but it was clear that this was going to be a challenging transition from the CH-46 to the Osprey for the maintainers.

And it has been.

With the CH-53K, it looks enough like a CH-53E to be a cousin.

But it is not.

It too is a very different aircraft, one which has left fully the mechanical age for the digital one.

And the Marines having learned from the Osprey experience are clearly focused on ways to ensure support for the K fleet as it is stood up.

The aircraft has been designed to simplify and reduce significantly the mechanical parts in the aircraft, in terms of an E to K transition. The plane has its health maintenance system built into the aircraft configuration, rather than being a bolt on system.

And the Marines are focused on the overall logistics sustainment infrastructure integrated into the evolving concepts of operations being considered for the aircraft, rather than treating logistics as an aftermarket effort.

This core focus and effort can easily be overlooked as part of the 21st century air systems revolution.

But what is envisaged is really revolutionary for a force like the USMC and unless you spend time with the team working what they call the log demo it would be easy to miss the significant and strategic change, which the Marines, NAVAIR and Sikorsky are shaping.

Recently, I visited New River and had a chance to talk with several members of the log demo team.

This is a very impressive group of Marines, NAVAIR officials and Sikorsky field representatives and support elements.

The aircraft in the hangar on which the log demo is worked will be one of the initial aircraft in the first operational squadron, which will be based at New River as well.

In this article I will focus on the discussion I had with two key team leaders, namely Lt. Col. Jade Campbell and Lt. Col. Stu Howell, both with the VMX-1 detachment in New River.

As our readers now, VMX-1 is headquartered now in Yuma with detachments at New River and in Pax River.

The detachment at New River is focused on the CH-53, both legacy and the new aircraft.

Lt. Col. Jade Campbell is an experienced CH-53E operator and has recently spent time in Australia working in the Australian Ministry of Defence, and clearly the Aussie innovation spirit both rubbed off and was influenced by such a Marine. Just prior to that he was the Commanding Officer for HMH-366 the heavy lift squadron based at New River.

We interviewed LtCol Stu Howell earlier and he is an experienced CH-53K pilot as well as having been involved in the Presidential helicopter program and being part of the squadron which flies the President.

We started by focusing on how radically different the K is from the E and how that would be reflected in a new generation of operators of the aircraft.

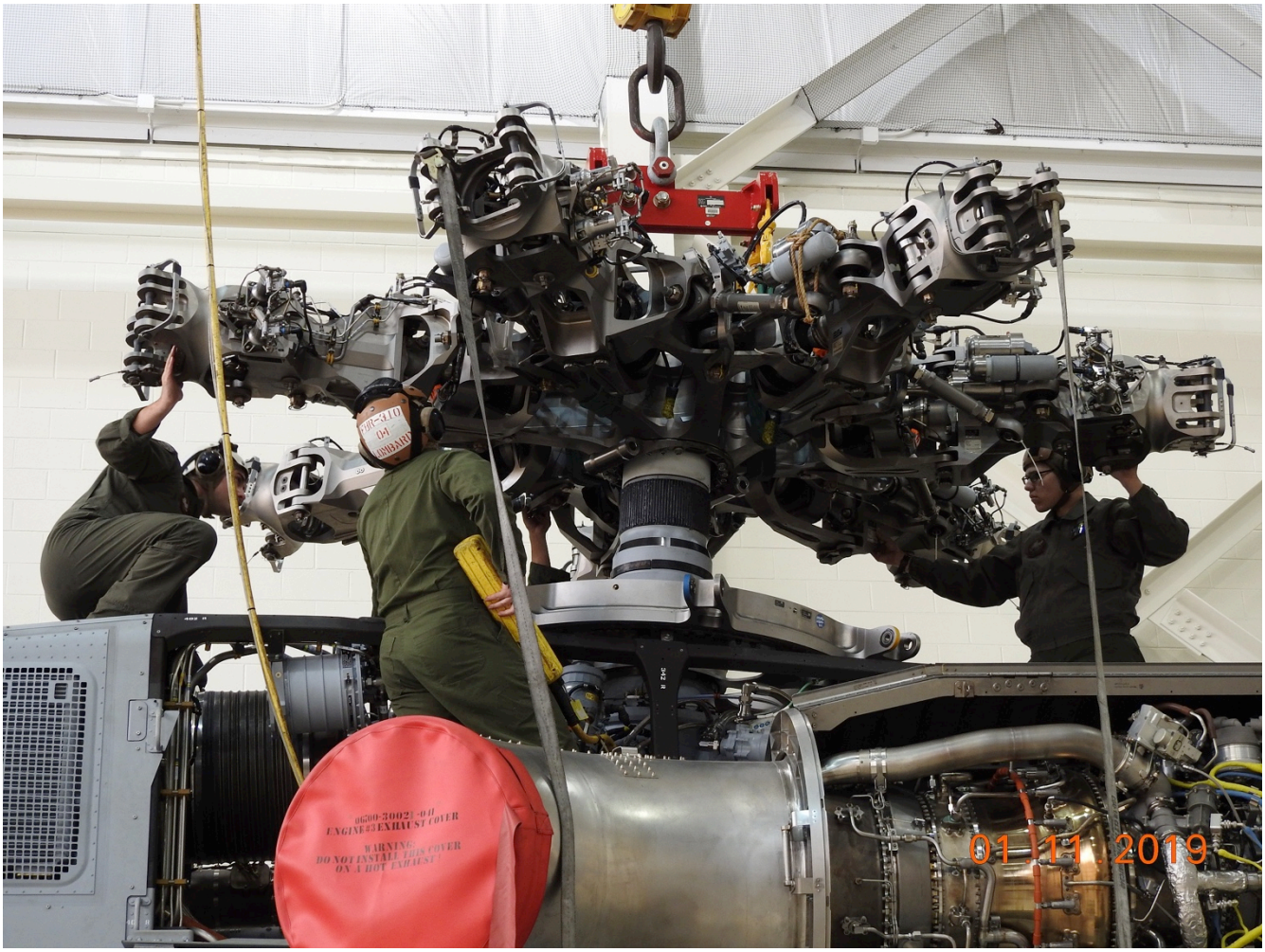

Figure 4 Marine maintainers working a main rotor head install on the CH-53K. Credit: USMC

LtCol Campbell underscored that a core competence of the E pilot is an ability to hover in difficult conditions; because the K does this with digital systems, the pilots will focus more no how their aircraft operates within the broader mission effort.

As LtCol Campbell put it: “Unlike with the E, there’s no challenge hovering a Kilo on a moonless night in a dusty zone.

“And that allows the K pilot to have the mental bandwidth to think about the battlespace.

“We are talking about a generational shift from a primary focus on being to operate a mechanical aircraft in the battlespace to one where the pilots can focus on the battlespace and their role within it while the aircraft takes care of the functions that had to be done by the pilot while flying the E.”

The log demo encompasses several activities.

The baseline activity is to take the manuals as prepared to maintain the aircraft.

The team then is testing out every aspect of procedures to determine what works, what needs to be modified and what new procedures might be more effective with the aircraft.

With regard to the baseline, they are verifying and modifying and redesigning the manual for the K.

As LtCol Howell put it: "We're not redesigning the aircraft, but we are creating better procedures or mitigating fixes to help improve the safety of the aircraft."

While doing this core bread and butter activity, the team is looking more broadly at how the skill levels and mix are changing to do a K and focusing upon how the USMC might organize itself more effectively to optimize the kind of workforce which a K needs versus the legacy E.

As LtCol Howell emphasized: "We're verifying the publications and the procedures, but we're also writing the playbook on what should our table of organization be within a heavy lift maintenance department.

"Obviously, the E and the K are very different aircraft and will be maintained differently.

"How should we staff the heavy lift maintenance department in light of this change?"

"Is it appropriate for an 18-year-old straight out of high school with a year of training to do the kind of maintenance that we're talking about?

"Or do we need to change that approach?"

"For the maintainers, it's how do we support the fly, fix, fly regime which will be shaped for the Kilo?

"And how do organize to operate effectively for a fly, fix, fly regime for this new aircraft?

"It really is about having a logistical infrastructure inclusive of an effective maintenance approach in order to have the optimal support for the ops temp we need."

And they are looking past the single aircraft they are working on getting ready for the fleet management side of it, which in part is being done by both NAVAIR and Sikorsky at Pax River.

There the focus is upon how to leverage the big data being generated by the fleet to better position NAVAIR and the Marines to have a supply chain, which empowers operations, rather than as operating an impediment.

How to ensure that right parts being available on a timely basis to support real world operations, rather than simply having a rigid and arbitrary schedule of parts delivery?

The US Navy is working the broader question of the support enterprise.

They are looking at how parts movement to support onboard ship operations might be optimized.

They are looking as well at the locations where the K will be based and focusing on how to ensure that the supply chain can be optimized to support both the land and sea bases.

As LtCol. Howell noted: “The rotor head was pulled off and put into its transportation box.

“How will that be tractor trailered to Connecticut for overhaul or to Cherry Point?

“Do the resources that are available at New River and Cherry Point account for that?”

Obviously, the lessons being learned at the log demo are being transferred to the initial operating squadron, which is on site at New River as well.

After the log demo what is next for the Kilo?

“The Marines will take four aircraft through initial tests and evaluation which then become the seed corn for the first operational squadron and the first training instructors.”

Preparing for Effective Fleet Support: The CH-53K Log Demo at New River

01/29/2019
By Robbin Laird

With the coming of software upgradeable aircraft which have health management systems built in, there is a strategic opportunity or better put, a strategic imperative, to leverage those systems to gain knowledge and mastery of a combat fleet.

The opportunity is there to gain predictive knowledge about fleet performance and to shape a workforce and approach to enhanced aircraft availability and better ability to deal with the required ops tempo.

A case in point is the CH-53K.

It is a digital rich aircraft with its health maintenance system built in.

And the Marines along with NAVAIR and Sikorsky are currently working the logistics side of the aircraft at New River to determine best procedures to maintain the aircraft, and how to structure the workforce and shape a logistics infrastructure, which can be optimized for fleet operations and support.

Recently, I visited the Marine Corps-NAVAIR-Sikorsky team working the logs demo at VMX-1 to get an overview on the approach.

I am looking forward to returning later this year and to have a chance to talk with the entire team as they are present at the creation of a very different approach to combat aircraft.

An issue facing software upgradeable aircraft such as the K is the concurrency challenge. This challenge has most frequently been identified with the F-35 but it is at the heart of the change which software upgradeability brings to a fleet.

Because software drops can be placed directly into combat aircraft much more rapidly than the historical cycle of modernization, the new capabilities need to be reflected in both the pilot and maintenance simulators as well to ensure that there is integration of training, and operations across the fleet.

But the gap, which occurs between the software drop in the aircraft and the software on the simulators for both maintainers and pilots, is the concurrency challenge and one, which clearly needs to be addressed.

During my visit to New River, I had a chance to discuss this with the logs demo team but will return to this challenge and ways to resolve it in later articles.

Figure 5 Marines working on the rotor head which is a major piece of what allows the aircraft to carry three times the weight externally compared to a CH-53E. VMX-1

During my visit, I had a chance to talk with Jim Lambert, the head field representative for Sikorsky working on the Log Demo. He is a very experienced CH-53 Marine who has worked with Sikorsky for a number of years in support of CH-53s operating worldwide.

He has brought that operational fleet experience to his work on the K and has been with the aircraft from before its birth and is being deployed to work with the K through its migration from factory to the logs demo to the first operational squadron.

Obviously, that kind of domain knowledge is crucial to getting the most effective combat aircraft to the force.

A key aspect of what we discussed was the opportunity to build out fleet knowledge from which aircraft availability would be enhanced over the experience of flying earlier generation CH-53s.

According to Lambert: "We're actually collecting fleet-wide diagnostic data which has not been done before on this scale.

"Every aircraft is contributing to a metric showing usage and trending all these data points.

"Once the data is collected it is analyzed to identify any negative trends and adjust as needed to optimize the fleet and increase aircraft availability.

"This allows the fleet to identify possible part issues or new failure modes at the earliest possible point.

"This allows the operator to validate its logistics foot print real time and to be predictive with fleet needs to put parts in the system ahead of need.

"This is all done in the background of the user ensuring the maintainer has what they need when they need it.

"This sets up for a proactive based approach to fleet support as opposed to the current reactive approach."

What I saw through the early years of the Osprey was a clear problem with lack of understanding of parts failures and lack of confidence or familiarity of Marine maintainers with the certain key parts performance which led to a more hit and miss approach to manage the parts flow.

This point was driven home to me in the interview I did with Col. Seymour prior to his retirement from the USMC, a senior Marine who knew the Osprey better than anyone.

In the exit interview I did with Colonel Christopher 'Mongo' Seymour in the summer of 2013 during the week prior to his retirement, the hard hitting and well-respected Marine Corps leader provided a look back and a way ahead with regard to sustainment of the Osprey.

QUESTION: A major challenge in fielding a new system is getting the supply chain up and working and getting the inevitably maintenance problems sorted out.

How have you worked through these problems?

Col. Seymour: There are three separate streams of activity which need to align to really get the new system up and running and integrated into operations.

The first is getting the Marines committed to owning the system and learning how to fix "new" problems, which come up with a new system.

The problems are different and have to be worked differently.

You need to get the maintainers to change their culture.

Sorting out problems with the gearbox is a good example of what needed to be done.

The gearbox on this airplane is very complex and central to its unique operational capabilities.

The gearbox inside the nacelle turns a rotor, and they were chipping.

This is high-end engineering.

But it was chipping and when it did so maintainers put it aside and waited for a new part.

This meant the fleet was going to be degraded.

The flight line needed to take ownership of the problem because a lot of it was self-inflicted gunshot wounds.

Maintainers would look to blame someone else when they had a Prop Rotor gearbox go bad.

As it turns out, the technology required was to use isotropic oil that actually absorbs moisture out of the air, so if you have a gearbox that's not turning and boiling the oil out on a regular basis, it goes long term down.

It's sucking in the moisture of the North Carolina Coast into the oil.

And the maintainers would leave it out on the flight line all opened up just breathing the air, and then when they finally got a part or piece, they try to fire it up and another gearbox would chip or another problem would manifest itself someplace else. It was an endless loop.

We took some ownership here on flight line, and shaped better maintenance practices, and to help industry.

Once we got that Prop Rotor gearbox moving back out of the red into the black, the internal culture of the community changed to become significantly more optimistic, you know.

The maintenance man-hours required to change a proper gearbox initially was estimated at 1800 maintenance man-hours.

We're doing it now in about 380.

That's how good we got at it.

What the logs demo with the CH-53k is focused on doing is putting the Marines on the side of the learning curve where the experience described by Col. Seymour is NOT repeated with regard to the CH-53k compared to the Osprey.

Lambert argued that working as a team from the ground up and having field representatives intimately familiar with the MAINTENANCE of the aircraft was crucial to getting the right kind of support in operations that the K would need.

In other words, how to execute the "Mongo" corrective with regard to the K?

As Lambert put it: "As field reps, we will stay on this flight line as long as we need to keep training Marines and assisting them troubleshooting airplanes.

"Our goal also is to bring fleet continuity of experience to ensure that the Marine maintainers are comfortable with the airplane and not doing what you have described as the Mongo challenge or corrective.

"We're here to say, "No, it really is okay what you are doing. And here's why it's okay."

"Our main goal is to remove insecurities generated by lack of familiarity or operating from the way the CH-53E is maintained and to try to provide them a little bit of comfort with the new approaches to sustaining a new aircraft.

"Because we're in this crawl, walk, run environment as we stand up the K."

In short, the Marines are pioneering a 21st century approach to maintaining a 21st century software upgradeable aircraft.

This is clearly not a CH-53E but a whole new animal, which requires a whole new approach.

Working the Logistics Con-Ops as the CH-53K Enters the Force

By Robbin Laird

The heavy lift transition from CH-53E to CH-53K is one of the last modernization efforts of Marine Corps Aviation set in motion when Lt. General Trautman was Deputy Commandant of Aviation.

Although this essential capability is last replacing the readiness challenged 30-year-old CH-53E, it is leveraging lessons learned from previous transitions of the MV-22, H-1, and F-35.

These lessons learned will be key into the maintainability and reliability ending up in increased readiness for future MAGTF heavy lift.

The shift from the CH-53E to the CH-53K is a significant one for the USMC.

And preparing for that shift to support the aircraft in operations is a key pillar for the change, and key enabler for a more combat ready aircraft.

The shift from a mechanical to a digital aircraft is a significant one, and the CH-53K has been designed from the ground up with sustainability in mind.

Marine maintainers have been involved from the outset in the design of the aircraft to facilitate more rapid and more effective logistical support for a combat fleet creating a front-loaded aircraft from a maintenance point of view.

Now at New River MCAS, the first CH-53K has arrived for the Marines, and Marine Corps logisticians who have earlier been involved in the design of the aircraft are being joined by other logisticians in working through the procedures to maintain the aircraft prior to having that aircraft be part of the first operational squadron.

The loggies are shaping the template to then be used by the first operational squadron, which in turn will refine and evolve the template.

I will visit New River later this year to see these efforts first hand, but can clearly recall my experience more than a decade ago visiting the Marines as they stood up the Osprey and made the transition from the CH-46.

I will return to those experiences and compare and contrast them with the E to K experience as well in a future article.

Recently, I had a chance to talk with several Marines involved in the log demo as the effort is referred to.

LtCol Stu Howell, CH-53K LOTD, VMX1 CH-53K Det as well as SSgt Curtis A. Kelly, SSgt Jeremy C. Lombard and SSgt Mike V. Farina provided insight into the progress with regard to working the maintenance and logistics procedures as the Marines prepare to stand up their first operational squadron.

In that discussion on August 29, 2018, much of it revolved something similar to the transition from other mechanical to digital aircraft, namely, the ability of the aircraft to self-diagnose and the data rich sensors built into the aircraft provided a very different environment within which to work procedures.

But of course, computer aides have their own dynamics and challenges and as this is a young aircraft from the standpoint of getting ready for operations.

A significant part of the effort is parts validation and taking maintenance procedures shaped by the manufacturer to refining them by the operating force logisticians.

The team working the log demo is a mixture of Sikorsky reps and Marines, although many of the Sikorsky employees are former Marines, if there really is such a thing.

The core point from the Marines: "Everything is much more straightforward to work on."

The design process has yielded an easier aircraft to work on in terms of the accessibility of systems, as well as the digital nature of the aircraft has seen several aspects of the E are simply not on the K.

The flight controls aspect especially noted as a key improvement due to the fly by wire system onboard the K.

"This aircraft is much more plug and play compared to the E.

"A lot of the systems on the E have been eliminated with how the K has been designed and built."

In other words, there is a three-fold shift.

First, there is the simplification provided by the design for maintainability process.

Second, there are ways in which the shift from a mechanical to a digital aircraft removes mechanical systems which require maintenance.

And third, there is the challenge of validating and working with the computer information and sensor systems on the aircraft to get comfortable with how they work and to modify them with evolving maintenance procedures.

"Log demo is synonymous with maintenance evaluation and validation; we are not flying the aircraft.

"We are assessing the procedures and improving them."

"The access to a dynamic component is significantly easier with this aircraft compare to an E.

“This aircraft does not have the miles of cable and boxes.

“It is now about install a box, validate and move forward.

“We are looking at each component and evaluating it.

“And then putting it back in as part of the evaluation and validation process.”

The goal is to turn over to the first squadron an aircraft with effective and efficient maintenance procedures.

The team emphasized the importance of learning how to marry those procedures with the tools to provide for maintenance as well.

As the Marines are operating this both on ships and in austere operating areas, learning how to ensure that the match between the executed procedures and the tools required is a key part of the log demo as well.

“Do we have the right torque wrench?

“Do we have the right socket?

“Do we have the right stand to work on gear box?”

Figure 6 The flight crew gathers around the first CH-53K King Stallion at Marine Corps Air Station New River, North Carolina, May 16, 2018. (U.S. Marine Corps photo by Lance Cpl. Leynard Kyle Plazo)

This will be applied to similar other issues, like engine boxes, to things like the containers necessary to transport maintenance tools and parts.

In other words, it is about maintenance procedures with a core focus on sustainable deployability and conducting expeditionary operations

The goal is to be able to run out of the gate rather than to slow down initial operations because of incomplete maintenance procedures and training.

With regard to training, there is a challenge similar to the F-35 where maintainers need to be able to understand the operation of the aircraft as a system, rather than being simply federated maintainers focused on simply repairing core parts and remaining largely focused on the core elements.

There is a need to understand the overall system and how to plug in your area of expertise to the overall performance of the aircraft.

"We need revisit training to understand how the magic boxes work overall with regard to the whole aircraft.

"Everybody needs to be digitally competent.

"The component EOSs need to understand how the aircraft talks to us digitally from a systems point of view."

This aircraft is clearly not CH-53E 2.

"It is a shift to conditions based maintenance which is a significant change for sure.

"It is much easier to navigate through the maintenance process with the digital information process.

"It is not that hard to move from the E to the K.

"But not sure that those who will be K guys could make a transition to working on an E."

"You are more of technician on the K; with regard to the E, you are more of a mechanic."